SCALING UP RESILIENCE-BUILDING MEASURES THROUGH COMMUNITY-DRIVEN DEVELOPMENT PROJECTS

GUIDANCE NOTE

SEPTEMBER 2018

Canada

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Photos on the front cover:

Top row, from left: Pre-school children crossing a foot bridge in Barangay Katipunan, Pilar, Surigao del Norte, Philippines; sea wall and mangrove forest just outside barangay in Pilar, Surigao del Norte, Philippines; mangrove management training of San Miguel Unity for Progress, Philippines.

Bottom row, from left: Fishing community in Dala Township, southern bank of the Yangon River, Myanmar; well located in the Trapeang Prey village, Phnom Dey commune, Phnom Srok district, Banteay Meanchey province, Cambodia; new classrooms built in Bislig Elementary School, on the island of Leyte, Philippines.

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Take urgent action to combat climate change and its impact
Target 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

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Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks, and disasters.

Article 7:
Paragraph 1: Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development…"

Article 7:
Paragraph 5: Parties acknowledge that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate.

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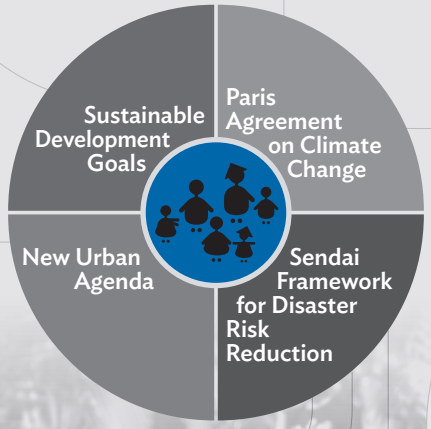
Shared Vision
Paragraph 13 (g) Adopt and implement disaster risk reduction and management, reduce vulnerability, build resilience and responsiveness to natural and human-made hazards and foster mitigation of and adaptation to climate change



Article 8:
Paragraph 4:
Accordingly, areas of cooperation and facilitation to enhance understanding, action and support may include: (a) Early warning systems; (b) Emergency preparedness; (c) Slow onset events; (d) Events that may involve irreversible and permanent loss and damage; (e) Comprehensive risk assessment and management;(f) Risk insurance facilities, climate risk pooling and other insurance solutions; (g) Non-economic losses; and (h) Resilience of communities, livelihoods and ecosystems.

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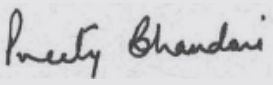
Sea wall and mangrove forest just outside barangay in Pilar, Surigao del Norte, Philippines (*photo ADB*).

FOREWORD

The Asia and Pacific region has made significant progress in reducing poverty over the last half century. However, these achievements in social and economic development may not be sustained due to the vulnerability of the region to significant climate change and disaster risks. The impacts of these risks will be borne mostly by poor and vulnerable groups and are expected to further increase in the context of the region's overlapping development challenges such as rising inequality, demographic change, poor quality infrastructure, deficits in public services, unplanned urban growth, and weak institutions. If the ambition of the Paris Agreement on Climate Change and the Sendai Framework for Disaster Risk Reduction are to be achieved, strengthening the resilience of the poor and vulnerable to climate change and disasters must be considered an integral part of efforts to achieve the Sustainable Development Goals, especially the goal of ending poverty in all its forms everywhere.

Community-driven development projects have at their core the objectives of poverty reduction and community empowerment. Community-driven development projects adopt inclusive, participatory, and bottom-up approaches to address gaps in access to community infrastructure and social services. Such projects are ideal for strengthening community disaster resilience as they enable the participation of poor and vulnerable populations in identifying climate and disaster risk, and prioritizing measures to manage such risks in the context of wider community development. Moreover, community-driven development projects can scale programs up to district or national coverage, which becomes essential in the face of rapidly increasing climate and disaster risk. When implemented in conjunction with governance reforms aimed at decentralization, community-driven development projects can facilitate the participation of the poor and most vulnerable in decision-making processes, including allocation of resources to manage disaster and climate risk at the local level.

This volume provides guidance to community-driven development practitioners on how resilience-building measures can be implemented in community-driven development projects yet be flexible enough to address local characteristics of risk and ensure that no one is left behind.



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Fishing community in Dala Township, southern bank of the Yangon River, Myanmar (*photo ADB*).

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The guidance note was prepared under the overall supervision of Yukiko Ito, Senior Social Development Specialist, Sustainable Development and Climate Change Department (SDCC); and Arghya Sinha Roy, Senior Disaster Risk Management Specialist (Climate Change Adaptation), SDCC. Grendel Saldevar-Perez, Senior Operations Assistant, and Tanya Concepcion (consultant) provided invaluable overall coordination support in finalizing the document.

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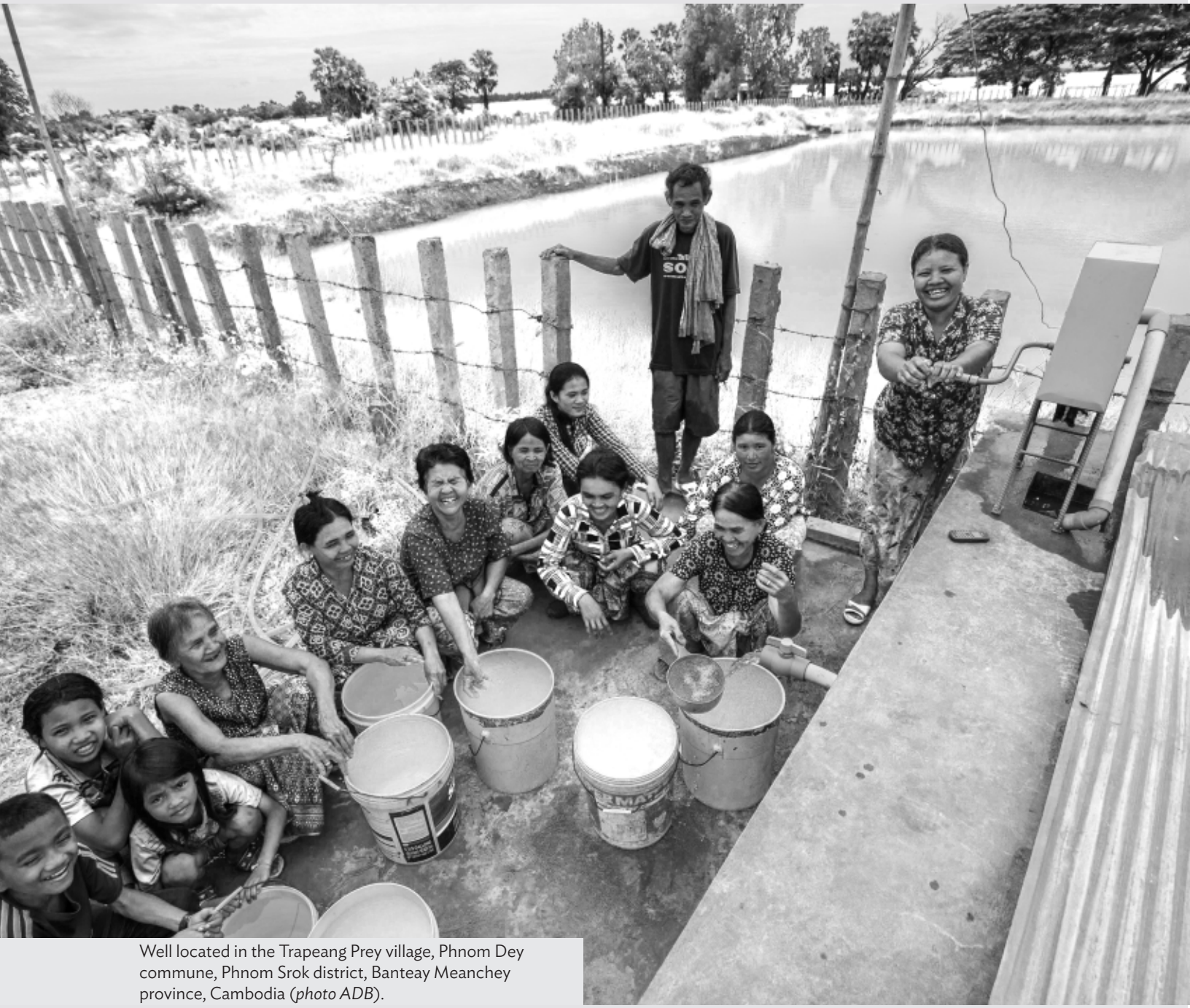


Well located in the Trapeang Prey village, Phnom Dey commune, Phnom Srok district, Banteay Meanchey province, Cambodia (*photo ADB*).

1/ INTRODUCTION

1.1 Why this Guidance Note?

The poor and vulnerable populations suffer disproportionately from the adverse impacts of climate change and disasters, which results in loss of life, damage to household and community assets, disruption of livelihoods, and loss of income. The intensity, and in some cases, frequency of climate-related hazards is increasing due to climate change, resulting in greater impact from disasters on the lives and livelihoods of the poor and vulnerable population. Further, the livelihoods of poor population are often dependent on agriculture, water resources, coastal management, and other climate-sensitive sectors. The vulnerabilities in these sectors are increasing due to changes in climate variables, including atmospheric temperature, precipitation, and sea-level rise. The poor are then forced to adopt various coping strategies, such as reducing consumption and making investment choices on education, health, and livelihoods that may impact their long-term well-being.

Thus, if efforts to reduce poverty in Asia and the Pacific are to be sustained, strengthening disaster and climate resilience should be one of the core strategies of poverty reduction. Investments are needed to reduce risk by improving the design, construction, and maintenance of household and community assets and local infrastructure and strengthening resilience of livelihoods and associated skills. Moreover, with uncertainties inherent in disaster and climate risk, investments are also needed to strengthen systems for managing residual risk through strengthened early warning, disaster preparedness, and improved financial preparedness for disasters.

Community-driven development (CDD) projects (see Box 1) aim to reduce poverty and improve access of the poor to basic services. They support community-level subprojects focusing on improving infrastructure, including: (i) basic social services facilities: water system, school buildings, health station and daycare centers; (ii) basic access infrastructure: access roads and small bridges; (iii) community enterprise facilities; and (iv) environmental management-related infrastructure and strengthening capacity of communities and local institutions. CDD projects have worked well in Asia and the Pacific countries where local government capacity is limited or absent, including in post-conflict and disaster-affected areas.

Box 1: Defining Community-Driven Development

Community-Driven development (CDD) is a subset of the broader community-based development approach, and it gives control over planning decisions and investment resources for local development to community groups. It targets communities as a whole, working through community-based organizations in partnership with local governments as implementers, allowing them a greater role in the planning, design, and execution of development projects. The involvement of communities includes participation in assemblies or meetings; mapping of terrain, resources, facilities, services and people; supply or procurement of materials and labor; management of community contributions; procurement and management of contractors; operations and maintenance; community monitoring; and management and accounting for funds. A key element of CDD is the provision of resources, usually in block grants, directly to communities to implement development projects of their choice.

Source: Asian Development Bank

CDD projects that factor disaster and climate risk considerations in its overall design and in the implementation of individual subprojects, are ideal for strengthening community resilience and scaling up such resilience building measures. Pertaining to structural and nonstructural solutions, resilience-building measures can support communities in resisting, absorbing, adapting to, and recovering from the effects of climate and disaster-related shock and stresses in a timely and efficient manner, without jeopardizing their sustained socioeconomic advancement and development (see Table 1 for definition of key resilience-related terms). This is important for several reasons as described below and elaborated in Figure 1:

1. With the impacts of climate and disaster risk felt the most in communities, CDD projects, through CDD's participatory approaches, allow identification of localized risk—their historical patterns and observed changes—and assess the exposure of people, their assets, and livelihoods.

2. With the root causes of climate and disaster risk being inextricably linked with socioeconomic conditions, ideal resilience-building solutions at the community level are those that are implemented as part of community development interventions related to infrastructure, skills development and livelihoods, which are the focus of CDD projects.

3. Strengthening resilience through CDD approaches is cost-effective and produces multiple dividends including reducing losses, unlocking the development potential of the area, and generating co-benefits.

4. When implemented in conjunction with policy and institutional reforms aimed at decentralization, such as reforms to institutionalize fiscal transfers to villages or to roll out bottom-up planning and budgeting processes, CDD projects can facilitate the participation of the poor and most vulnerable in decision-making processes, including decisions related to managing disaster and climate risk.

5. Experiences show that when designed with due consideration related to shock responsiveness, CDD projects are effective delivery mechanisms for channeling post-disaster recovery and reconstruction efforts.

Figure 1: Examples of Strengthening Resilience through Community-Driven Development Projects

Source: Asian Development Bank

Table 1: Definitions of Key Resilience-Related Terms

Climate change: A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.[a]

Climate change adaptation: In human systems, the process of adjustment to actual or expected climate and its effects to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate.[a]

Disaster: A serious disruption of the functioning of a community or a society involving widespread human, material, economic, or environmental losses and impacts, which exceeds the ability of the affected community of society to cope using its own resources.[b]

Disaster risk: The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, a society, or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability, and capacity.[b]

Disaster risk management: The application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk, and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.[b]

Resilience: The ability of countries, communities, businesses, and individual households to resist, absorb, recover from, and reorganize in response to natural hazard events, without jeopardizing their sustained socioeconomic advancement and development.[c]

Shocks: Sudden, sharp events that threaten a community. In this document, shocks refer to the ones that are triggered by natural hazards.[d]

Stresses: Factors that weaken the fabric of a community on a daily or cyclical basis. In this document, stresses refer to the ones that have origin in change in climate variables.[d]

Vulnerability: The conditions determined by physical, social, economic, and environmental factors or processes that increase the susceptibility of an individual, a community, assets, or systems to the impacts of hazards.[b]

[a] Intergovernmental Panel on Climate Change (IPCC). 2012: Glossary of terms. In C.B. Field, V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley, eds. ***Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation***. A Special Report of Working Groups I and II of the IPCC. Cambridge University Press. pp. 555–564.

[b] UNISDR Terminology on Disaster Risk Reduction. http://www.preventionweb.net/english/professional/terminology/

[c] ADB. 2013. ***Investing In Resilience: Ensuring a Disaster-Resistant Future***. Manila.

[d] Rockefeller Foundation. Adapted from ***100 Resilient Cities.*** http://www.100resilientcities.org/

1.2 Who is this Guidance Note for?

Projects that adopt CDD or community-based development as an approach spread across various sectors, including agriculture, rural development, urban informal settlement upgrading, social development, among others. This guidance note is for **practitioners across government agencies involved in designing CDD and/or community-based development projects and in supporting implementation through different subprojects**. It is also for practitioners from development partner organizations that support governments in the Asia and Pacific region in developing and implementing CDD projects through technical assistance and financing.

1.3 What does the Guidance Note contain?

Apart from this introductory and conclusion section, this guidance note has two sections:

Section 2 offers a **common understanding of the opportunities for Scaling Up Resilience-Building Measures through Community-Driven Projects**. The opportunities lie in how CDD projects can introduce ex ante measures to strengthen resilience of poor communities, which can be implemented at a scale yet be flexible enough to address local characteristics of risks and adopt inclusive processes. Scaling up in this context refers to quantitative, functional, and eventually political scaling up, thereby advancing transformative changes in the communities.

Section 3 proposes a framework (see figure 2 on page 14) comprised of **design considerations and implementation entry points that are critical for CDD projects to scale up resilience-building measures**.

Although this guidance note is based on evidence from literature and operational experiences, especially from CDD projects in Indonesia, Myanmar, the Philippines, and Timor-Leste, it does not provide an exhaustive review of literature on the role of CDD projects in resilience-building. It is not intended to be a detailed technical note, but rather as an introductory note that provides an overview and a working framework to initiate discussions at the country level on investments for Scaling Up Resilience-Building Measures through Community-Driven Projects.

2/ WHY SCALE UP RESILIENCE-BUILDING MEASURES THROUGH COMMUNITY-DRIVEN DEVELOPMENT PROJECTS

This section describes the importance and opportunities provided by CDD projects to scale up resilience-building measures. Improved understanding of these opportunities can help practitioners involved in CDD projects in initiating discussions with decision-makers from sector ministries, ministries of planning and finance, agencies involved in climate change adaptation and disaster risk management, and development partners for increased investments in CDD projects to scale up resilience-building measures.

Pre-school children crossing a foot bridge in Barangay Katipunan, Pilar, Surigao del Norte, Philippines (*photo ADB*).

2.1 Efforts to reduce poverty in the Asia and Pacific Region cannot be sustained if climate change and disaster risks are ignored.

The poor and vulnerable are disproportionately impacted by disasters.

Countries in the Asia and Pacific region have made significant progress in reducing poverty. However, there remains a sizable fraction of the population for whom the threat of poverty is far from over. These people rely on fewer and vulnerable assets—housing and basic services; have limited access to finances—savings, credit, and insurance; lack opportunities to engage in sustainable livelihoods; and are often left out from formal decision-making processes. Consequently, they experience greater impact from slow onset stresses induced by climate change, such as change in temperature, humidity and sea-level rise, and disaster-related shocks, such as flood, tropical cyclone, earthquake, landslide, and tsunami. The impacts of shocks and stresses result in damage to community assets and local infrastructure and losses to livelihoods and income. Lost assets and livelihoods are often the outputs of poverty reduction-related investments of the government, thereby eroding the potential impact of such investments.

Damage of assets reduces productivity and access to services for poor communities.

Community infrastructure, such as roads, culverts, water supply schemes, ponds, rainwater harvesting schemes, schools, health centers, and community buildings, are often damaged in disasters. While the absolute value of asset losses is likely to be smaller compared to losses incurred by wealthier communities, the relative impacts could be far-reaching with reduced productivity and access to key services for poorer communities. In remote areas, such damage could isolate communities, cutting them off from economic, educational, and health facilities. Furthermore, damage to infrastructure can have negative effects on the lives of women and girls, for example, being forced to travel farther to fetch drinking water. The threat of more intense and more frequent climate-related hazards increases the risk to assets in hazard-prone areas, and especially to poorly constructed and/or poorly maintained infrastructure.

Impact on climate-sensitive livelihoods affects income and employment of the poor.

Climate and disaster-related shocks and stresses impact the livelihoods of poorer communities by damaging land from erosion or salt intrusion, resulting in production losses, loss of draught animal and farm equipment, and disruption of microenterprises, among others. The livelihoods of the poor are often less diversified, and dependent on climate-sensitive sectors, i.e., agriculture and food security, water resources, and coastal management. Climate change is increasing the vulnerabilities in the sectors, thereby requiring the poor to adopt different coping strategies, including reducing consumption level and making investment choices regarding education, health, and livelihoods that may impact their long-term well-being. In some cases, the changes in climate variables, i.e., temperature, humidity, wind speed, and precipitation, may make the livelihoods unsustainable, requiring the introduction of alternative livelihoods strategies.

2.2 Top-down resilience-building investments designed in isolation from poverty reduction interventions fall short in addressing the root causes of vulnerability, reaching the most needed, and achieving the required scale.

Local characteristics of risk requires local knowledge and bottom-up approaches in dealing with them.

Identifying historical patterns and observable changes in the occurrence of natural hazards requires local knowledge, as well as in determining the extent of exposure of people, assets, and livelihoods. Moreover, the varying perceptions of people on climate change and disaster risk play a role in shaping that risk, which is why it is important to engage communities in identifying risk and the local interventions for managing them (see Box 2). So too, with the uncertainties associated with climate change and natural hazards, ideal resilience-building measures for communities should be flexible enough to manage uncertainty stemming from possible changes in hazard intensity and frequency and bring wider development gains in the immediate term.

Box 2: Grassroots Women Identify and Prioritize Measures to Manage Localized Risks, Indonesia

Gunungkidul District in the Special Region of Yogyakarta, Indonesia is located in the karst region, characterized by barren land and limestone hills. The physical geography along with prolonged dry seasons creates acute water shortages. The majority of households here depend on agriculture, but increasingly unpredictable weather patterns and recurring drought are causing repeated crop failures. Deforestation has also steadily increased landslide risk. In addition to falling agricultural productivity and incomes, household expenses have increased sharply as they have to buy water and livestock feed.

A group of grassroots women have come forward to address these issues. Working with Yakkum Emergency Unit, a non-government organization, the grassroots women organized a community vulnerability mapping exercise for 10 villages in Gunungkidul District. Local officials, including village heads, village secretaries, and social affairs officers participated in the activity which helped identify the localized vulnerabilities and appropriate strategies. For example, since the communities live on slopes susceptible to landslides, the women have successfully advocated for reforestation and planted trees such as acacia, which can be harvested to supplement incomes and can also reduce soil erosion and thus the risk of landslides. Moreover, with trees planted along the slopes making rice farming unviable, women have opted to planting ginger and other herbs between the trees, which command good prices in local markets.

The grassroots women also organized a dialogue workshop with district local government units to educate officials on the livelihoods and food security initiatives and requested district agencies to support their efforts through their programs. The women have advocated with both village government through formal village consultative process and with the district level authorities who also have programs and budgets for community outreach. Among other things, women's advocacy with government officials has resulted in construction of wells and reservoirs in Kedungpoh village; construction of irrigation, embankments, and drainage in Natah village through the Public Works Agency and Agriculture Agency, and provision of financial and non-financial support for women's rice banks from the village government in Ngalang.

Source: YAKKUM Emergency Unit, Indonesia

Resilience-building investments are needed, with an explicit focus on the poor and vulnerable, which contribute to larger public goods.

While investments that address poverty help people reduce vulnerability (such as enabling communities to settle in safe places, build asset base, improve access to finance, and strengthen skills) and thereby reduce climate and disaster risks, more explicit investments on poverty reduction which adopts climate change and disaster resilience as one of its core strategies are necessary. These investments should cover a full range of resilience-building measures, including (i) interventions aimed at reducing the loss of community assets from potential shocks and stresses; (ii) actions focusing on sustainable livelihoods to reduce the potential longer-term impact of disasters and climate change; and (iii) actions to strengthen residual risk management measures through introducing redundancy in infrastructure system, strengthening early warning systems, improving disaster preparedness, and strengthening disaster risk financing. With natural hazards following no administrative boundaries, investments that go beyond communities and acts as public goods are needed.

Increasing climate change and disaster risk calls for investments that can be scaled up.

Climate and disaster risk is set to increase in the near future. With rampant and unplanned development taking place in many countries, especially in urban areas, increased number of communities are being exposed to natural hazards. For instance, informal urban settlements are often located in unsafe areas and lack access to infrastructure and public services. Poorer rural communities often living close to subsistence levels are already struggling with today's weather-related changes. These challenges will further intensify as climate variables continue to change with climate change. Investments that can be scaled up yet are flexible enough to address local characteristics of risks and adopt inclusive processes are needed. With established and trusted mechanisms and systems in place, a pool of trained and experienced community members who volunteer to lead the process, and trained and experienced facilitators to assist these communities, it is easier to mainstream resilience-building measures through CDD projects. Scaling up may entail a combination of actions (see Table 2) that would need increased organizational capacity, finances, and linkages with other sector projects and organizations.

Table 2: Scaling Up Resilience-Building Measures through Community-Driven Development Projects

	Taxonomy of scaling up [a]	Examples of resilience considerations
Quantitative scaling up (scaling out)	Spread: Increasing the number of people in the project	Expand the geographical scope of a CDD project to include additional communities that are located in high climate and disaster risk areas.
	Replication: A successful project is repeated elsewhere	Replicate a CDD project that has been successful in reducing the impact of disasters faced by the communities through construction and maintenance of resilient community infrastructure.
	Integration: A project is integrated into existing government structures after it has demonstrated its potential	Integrate lessons from a successful CDD project that supported participation of communities in identifying climate and disaster risk, in local development processes.
Functional scaling up	Horizontal: New activities are added to existing projects	Incorporate risk-sensitive livelihood-related interventions in the design of a CDD project that traditionally focused only on community infrastructure.
	Vertical: Other activities related to the same chain of activities as the original ones are added to an existing project	Incorporate community infrastructure component that has a primary objective of disaster risk reduction through a separate funding window to sensitize and incentivize resilience building.
Political scaling up	Future generation of the project influence policy reforms to foster an enabling environment.	Demonstration of the role of local communities in effectively reducing disaster risk through a CDD project influence national government policy to allocate resources at the community level for strengthening disaster resilience.

CDD = community-driven development

[a] Taxonomy of scaling up is adapted from S. Gillespie. 2004. *Scaling Up Community-Driven Development: A Synthesis of Experience*. Washington, DC: International Food Policy Research Institute.

Source: Asian Development Bank

2.3 Increase investments in community-driven development projects for scaling up resilience-building measures targeted at the poor.

Vulnerability reduction is a shared objective of community-driven development and resilience building.

Evidence has shown that CDD approaches that put communities at the forefront of decision-making are effective and efficient in providing community-built tertiary infrastructure, improving year-around access to services, and in reducing vulnerability and overall poverty. Since community infrastructure may be exposed and vulnerable to not only current but also future disaster risks, CDD projects provide a natural entry point for strengthening resilience of such infrastructure. Moreover, CDD projects generate employment through the involvement of communities in building infrastructure. They also build skills on operations and maintenance of infrastructure, which are critical for managing climate change and disaster risk.

Community-driven development ensures localized risks are understood by the communities and managed in the context of wider development.

Balancing local knowledge and technical support is a hallmark of most CDD project designs. The processes of social preparation and community deliberations of CDD allow the communities to have a collective understanding of natural hazards, their changing patterns, vulnerabilities, and capacities and facilitate consensus-building to prioritize specific investments. The participatory situation analysis during social preparation phase takes into consideration social investigation and environmental scanning to assess various risks, including climate and disaster risks and recommend resilience interventions. The social preparation process is therefore crucial to ensure the voices of women and marginalized population are not left out from public decision-making process. Further, providing communities with control over the use of financial resources ensures that resources for resilience-building are available and prioritized, allows communities to bundle investments and address multiple vulnerabilities, and where appropriate, scale up successful innovative strategies to advance sustainable and inclusive development.

CDD allows the adoption of key resilience qualities—inclusiveness, reflectiveness, flexibility, and resourcefulness.

Most CDD projects require public reporting of target beneficiaries and investment costs. Community assemblies review these lists, which are scrutinized by everyone in the assembly. This built-in inclusive vetting mechanism ensures the identification of the most in need, thereby, lowering risk of errors of inclusion or exclusion. The learning-by-doing approach, which involves community organizing and facilitating of participatory processes by external facilitators or local community leaders, promotes reflectiveness in understanding disaster and climate risks and ensures the inclusion of beneficiaries who are most at risk. Flexibility in the project cycle allows the introduction of tools, such as community risk assessments that help communities make informed choices, increasing the likelihood that they choose subprojects that contribute to resilience-building. Further, the "open-menu" of most CDD projects allows flexibility in prioritizing and financing community-identified subprojects at the time they are most needed.[1] The simple, robust financing arrangements (block grants are disbursed or are readily available to communities for their priority investments) allow partners to channel resources directly to communities using the established, tested, and trusted CDD systems already in place, as often found suitable in post-disaster settings.

[1] Open menu is a common feature of CDD projects. Priorities are not pre-identified; the types of projects that communities may prioritize and fund are left to the communities themselves. Block grants are provided to communities and they decide to use the resources as they see fit, usually subject to certain restrictions on environmental protection, labor standards, and religious sensitivities.

Experience of CDD in post-disaster response and "building back better" has been positive.

Where CDD projects are up and running, they have been used to facilitate post-disaster recovery and reconstruction with good results. Mechanisms that support CDD operations have been used to deliver timely support to disaster-affected communities, taking advantage of the experience of members of the community in working together, proven means of fund transfer and reporting, technical know-how of facilitators and service providers who assist communities to build better subprojects, and organizing and facilitation practices for getting the largest number people involved in the process. In moving from response to recovery and in the subsequent normalization of operations, CDD managers have adjusted program designs and implementation cycles to increase efforts towards building resilience. In these redesigns and adjustments, attention has been on engineering designs (reviewing subproject designs to make sure works can withstand future disasters), participation and inclusion (strengthening and deepening the social facilitation processes to ensure that those most vulnerable to disasters participate and benefit from the project), and awareness. (see Box 3)

Subprojects funded though CDD programs are cost effective and generate positive rates of returns.

The costs of works built through CDD are generally much lower than those built directly by government agencies or contractors for the same type and quality. For example, in the Philippines, the unit cost of CDD subprojects are found to be lower that traditionally procured infrastructure projects, with cost savings ranging from 8% for school buildings to 76% for water supply.[2] More importantly CDD projects are generally associated with good quality works, which, if designed with climate change and disaster risk considerations, are more likely to be resilient and with less maintenance issues, which can affect the long-term viability of government projects. Community ownership and pride in the works are an important factor and allow maintaining robust fiduciary control through built-in mechanisms to ensure that funds are traceable and auditable. This sense of ownership and pride has been attributed to high community participation and significant community contributions of time, materials, and labor in design, implementation, and fund management.[3] Evidence suggests that the economic benefits of community-led resilience-building measures are significantly greater than estimated costs and can contribute to three types of dividends, namely, avoiding damage and losses from disasters, unlocking development potential for the area due to reduced risk, and generating development co-benefits.

[2] E. Araral and C. Holmemo. 2007. Measuring the Costs and Benefits of Community-Driven Development: the KALAHI–CIDSS Project, Philippines. Social Development Papers, Community-Driven Development, Paper No. 102. Washington, DC: World Bank.

[3] E. Araral. 2009. *The Impact of Community-Driven Development on Infrastructure Project Corruption, Cost and Quality: Evidence from Indonesia, Philippines, and Nepal*. Manila: ADB.

Box 3: Participatory Geographical Information System and Space-Based Technology for Disaster Risk Management in Poor Communities

Santa Josefa town in the province of Agusan del Sur, Mindanao, is among the most flood-prone areas in the Philippines. The town sits on the upper and middle portions of the Agusan River basin, the third largest in the country, and experiences year-round rains and occasional tropical cyclones that increase the risks of floods and landslides.

In 2016, the Department of Social Welfare and Development, through its *Kapit-Bisig Laban sa Kahirapan* Comprehensive and Integrated Delivery of Social Services-National Community-Driven Development Program (KC-NCDDP), initiated a pilot test of the Participatory Geographical Information System and Space-based Technology (PGIS-SBT) to map the communities in Santa Josefa. PGIS-SBT uses open-source mobile and web applications which collect and share reliable and timely disaster-related data at the local government and community levels to strengthen their disaster planning and mitigation and support timely and cost-effective post-disaster response, recovery, and reconstruction efforts. Local government officials and employees as well as residents welcomed the innovation and the promise it brings of making the town better prepared for disasters.

With the mobile and web applications, the local government and community can create accurate base maps with astounding details that are crucial in development planning as well as disaster monitoring and response during community workshops. The communities used to rely on hand-drawn maps created using simple analytical tools during community assemblies to illustrate infrastructure and hazards present in a particular village.

In February 2017, heavy rains poured and flooded certain villages in Santa Josefa while a PGIS-SBT training-workshop was ongoing. Participating local government officials, employees, and community volunteers immediately went to work to apply what they have learned. The volunteers, called "Santa Josefa Agusan Del Sur (SJADS) Mappers," eagerly roamed the community while taking photos and recording their observations, which were later uploaded online and shared with local government employees who were monitoring the situation at the municipal hall and coordinating for prompt disaster response.

Though using mobile and web applications appeared difficult to residents and local government employees at first, they overcame their apprehension after witnessing how the PGIS-SBT's crisis-mapping feature facilitates better planning and quicker response operations from the local government.

Municipal Community Empowerment Facilitator Cornelio Cabreto echoes the community's appreciation of PGIS-SBT. He shared, "Having this technology is an advantage. The local government unit will know the actual situation in the area so it can respond promptly. Communications will also be easier for us in times of disasters and emergencies."

The local government unit of Santa Josefa has already acquired the equipment required to use the mapping software applications, which can be operated offline and complement the traditional disaster risk management practices such as the use of megaphones for early warnings. In fact, the data generated during the pilot test were used to draft the village's first disaster risk reduction and management plan.

The PGIS-SBT pilot test presented how the use of participatory approach and tools along with complementing science-based and indigenous knowledge can make disaster risk management effective in a poor community. It also opened the opportunity for national government agencies involved in disaster risk reduction and management such as the Department of Information, Communication and Technology; the Department of Science and Technology; the Department of the Interior and Local Government; the Department of Environment and Natural Resources; the Philippine Institute of Volcanology and Seismology; and the Department of Social Welfare and Development to discuss the creation of an enabling policy and provision of capability-building support to implement and replicate such technology for efficient disaster response and sustainable community monitoring.



Source: Department of Social Welfare and Development, Philippines

2.4 Scaling up resilience-building measures through community-driven development projects can advance the Global Development Agenda.

Strengthening resilience through community-driven development advances global commitments.

The major global agreements adopted by governments in Asia and the Pacific—the 2030 Agenda for Sustainable Development, New Urban Agenda, Sendai Framework for Disaster Risk Reduction, and Paris Agreement on Climate Change—all emphasize the need to advance sustainable development that is resilient to shocks and stresses. Resilience-building through CDD projects contributes directly to the attainment of the Sustainable Development Goals, particularly Goal 1: No poverty and Goal 13: Take urgent action to combat climate change and its impact.[4] CDD supports the implementation of the Sendai Framework for Disaster Risk Reduction, which recognizes the local character of disaster risk and promotes local initiatives for understanding and addressing such risk.[5] So too, CDD is in synergy with the directions of the Paris Agreement on Climate Change, which emphasizes the intrinsic relationship that climate change actions, responses, and impacts have with poverty eradication, and acknowledges that climate change adaptation actions should be country-driven, gender-responsive, participatory, and fully transparent, taking into consideration vulnerable groups, communities, and ecosystems.[6] CDD supports the implementation of the New Urban Agenda, which calls for reducing vulnerability and building resilience to increasing urban risk.[7] Thus, Scaling Up Resilience-Building Measures through Community-Driven Projects will advance implementation of global commitments on sustainable development, disaster risk reduction, and climate change adaptation.

4 United Nations. 2015. Sustainable Development Goals. New York.
5 The Sendai Framework for Disaster Risk Reduction 2015-2030 adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on 18 March 2015.
6 The Paris Agreement on Climate Change 2015-2030 adopted at Conference of the Parties (COP 21) in Paris, on 12 December 2015.
7 United Nations. 2016. New Urban Agenda. New York.

3/ HOW TO SCALE UP RESILIENCE-BUILDING MEASURES THROUGH COMMUNITY-DRIVEN DEVELOPMENT PROJECTS

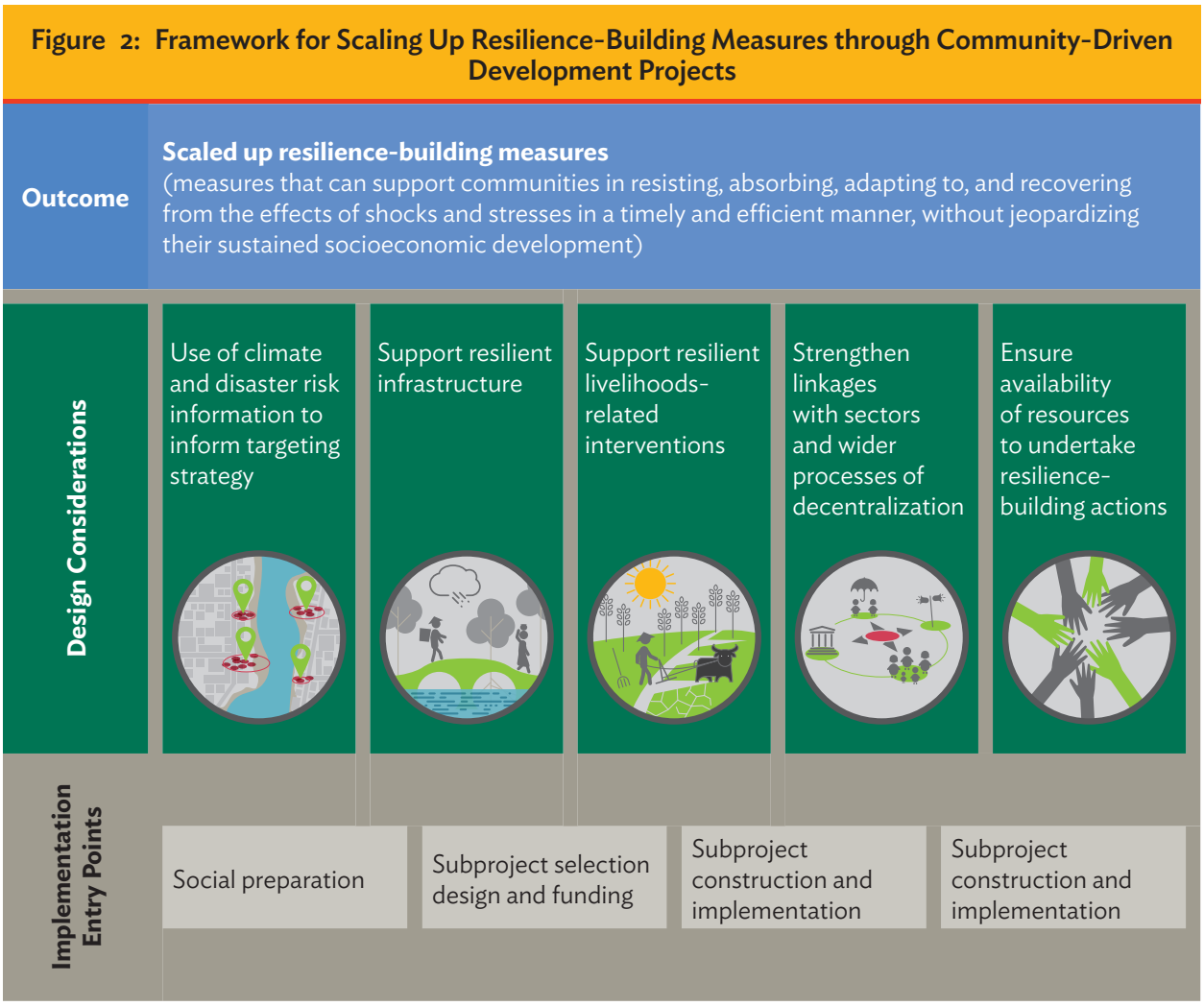
This section proposes considerations for incorporating resilience considerations in the overall design of CDD projects and entry points for factoring resilience in implementation of individual subprojects. Incorporating such considerations may open the possibility for CDD projects to access climate change and disaster risk management-related resources, including technical and financial resources from national and international sources.

New classrooms built in Bislig Elementary School, on the island of Leyte, Philippines (*photo ADB*).

3.1 Framework for scaling up resilience through community-driven development projects.

CDD projects share the core objective of poverty reduction and community empowerment, and are effective in addressing local needs of communities, thereby making them a natural fit for scaling up resilience-building measures. However, the rapidly changing multi-hazard landscape and its interaction with local development processes require a more systematic approach and framework to ensure resilience considerations are explicitly integrated in the design and implementation of CDD projects (see Figure 2). The framework features five key considerations that should be factored in the design and implementation of CDD projects to ensure that they deliver on scaling up of resilience-building measures. These design considerations are directly related to four implementation entry points of CDD projects.

Figure 2: Framework for Scaling Up Resilience-Building Measures through Community-Driven Development Projects

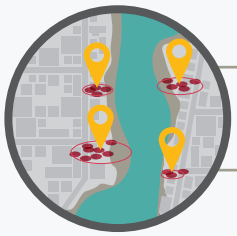


Source: Asian Development Bank

3.2 Design considerations for community driven developments to deliver on resilience outcomes.

The following five considerations should be factored in the design of CDD projects to ensure that they deliver on scaling up of resilience building measures. The considerations are interrelated and success in one is often dependent on the others.

1. Use of climate and disaster risk information to inform targeting strategy
2. Support resilient infrastructure
3. Support resilient livelihoods-related interventions
4. Strengthen linkages with sectors and wider processes of decentralization
5. Ensure availability of resources to undertake resilience-building actions



3.2.1 Design consideration 1: Use of climate and disaster risk information to inform targeting strategy

Why adopt climate and disaster risk informed targeting

Disaster risk is a function of the probability of occurrence of natural hazards of varying severity in a location, exposure to hazards, and vulnerabilities. Thus, the level of risk faced by different communities depend not only on the hazard but also, for example, on where they and their assets are located (i.e., their level of exposure); and factors such as reliance on climate-sensitive livelihoods, structural conditions of housing and community assets, access to weather information (i.e., factors contributing to vulnerability). In CDD projects, this would imply that the subprojects identified by the communities if not planned, designed, constructed, and maintained without hazard considerations could be at risk from potential impacts of disasters.

Moreover, hazard patterns are changing due to climate change; and the level of exposure and vulnerabilities are changing with development, resulting in changing risk patterns. The communities, especially poor populations and their assets which are at risk today may face higher risks or newer forms of risks in the future. Thus, it is important that CDD projects use climate and disaster risk information to inform their targeting strategy.

How to use climate and disaster risk information for targeting

Geographical targeting and allocation of resources. Geographical targeting is one of the common approaches used to identify eligible or priority locations to be covered by CDD projects and develop pro-poor resource allocation targets linked to the project objectives. Poverty maps (or proxy indicators if maps are not available) disaggregated to the lowest administrative level are typically used for identifying geographical areas and specific administrative units within the areas which would benefit from CDD project interventions. Indicator-based determination of priority areas and community-based targeting methods are also used to complement poverty maps.

Recognizing that a significant feature of natural hazards is their geographic location, a good understanding of the likelihood of occurrence of hazard events at specific locations which may have direct or indirect impact on poverty incidence is critical to inform the geographical targeting process. Hazard maps that provide information on the location, severity, and likelihood of occurrence of different hazards—floods, landslides, droughts, earthquakes, and tropical cyclones—should be overlaid with poverty maps being used for geographical targeting. While hazard maps based on historical events might be available and should be used, it is equally important to understand how climate change will likely alter the spatial patterns of meteorological and hydrological hazards in the area. So too, consultations undertaken as part of community-based targeting should include validations of scientific information, questions on natural hazards that are common to the area, past impact of hazard events, and the level of capacity within the community to adapt to, cope with, and recover from a hazard. In high-risk areas, understanding of how current and future hazards interact with livelihoods of the poor or the type of coping capacity adopted by poor communities may be introduced as a guide to enhance the value addition of the CDD projects through resilience-building measures.

It is common that block grant allocations provided under CDD projects are uniform across communities, municipalities or area, allowing for some adjustments based on poverty level, remoteness, number of community in an area, and/or population size. Considering the type and level of risk faced are not homogenous across the communities, climate change and disaster risk concerns could be an additional dimension to guide resource allocation. It will be important to review the allocation criteria to take into account needs of hazard-prone communities, the cost of improving designs and complying with more resilient infrastructure construction standards, and the cost and possibility of inter-community subprojects that may be critical for strengthening resilience. Important as well are the need for resources for maintenance and operations of subprojects especially in areas prone to recurrent hazards.

Prioritization of subprojects. The eligibly investments under CDD projects are determined through wider considerations based on the result of the participatory situation analysis and identification of solutions to address the root cause of the community problem. Careful consideration should take place in integrating the poor and the vulnerable in the decision-making process, including considerations such as high likelihood of usage by the poor, investments that serve as wider public goods, or investments targeted at a selected group (e.g., women). The selection criteria for prioritization of subprojects by the communities are important for achieving the targeting outcomes as they can help ensure the preferences of the poor are reflected in the investment choices.

However, while deciding on community investments it is important to understand the spatial and temporal features of natural hazards common in the area, the potential impacts of such hazards on lives and livelihoods of the poor community, and structural and nonstructural investments that can help strengthen resilience especially to low intensity but high frequency events. The processes undertaken to set such criteria and facilitate prioritization of subprojects should include discussions on natural hazards and the elements at risk (see section 3.3). For example, if the geographical location is at risk from recurrent hazards such as floods or slow onset hazards such as droughts, investments such as small irrigation canals, soil protection or reforestation subprojects can meet dual objectives of strengthening resilience while generating employment. Likewise, extraction of groundwater as part of water system subprojects in areas at severe risk of extended drought periods can have negative effects in the medium- and long-term with respect to groundwater recharge, which should be screened carefully as part of environmental safeguard.

What needs to be done to implement climate and disaster risk-informed targeting

Implementing risk-informed targeting processes will require information and knowledge on both slow-onset and rapid-onset natural hazards and how hazard patterns change over time; identification of communities that are at high risks from natural hazards; understanding of socioeconomic and physical factors that increase the vulnerabilities of the communities to climate and disaster risk; knowledge on government priorities (geographical, sectoral, or population group) on climate change adaptation and disaster risk management; and understanding of hazard-specific resilience-building measures for community infrastructure (e.g., types of measures, costs, local technology, and local capacity).

Gathering such information will require collaboration with national agencies responsible for hazard data, familiarity of past efforts by the government and development partners in undertaking climate and disaster risk assessment, partnerships with civil society organizations to understand community needs, and collaboration with local technical organizations to identify locally appropriate resilience-building measures. A climate change and disaster risk expert should be engaged before the project preparation process initiates to undertake climate and disaster risk assessment (see Box 4), the results of which should inform the targeting strategy of the project to be finalized during the project preparation.

Box 4: Terms of Reference for Climate Change and Disaster Risk Assessment Specialist

The specialist should have a degree in climate science, environmental science, geography, or a closely related discipline; and experience in climate change and disaster risk assessment. Familiarity with climate change and disaster risk issues of the country will be required. The specialist will be responsible for

- developing the methodology for undertaking the climate and disaster risk assessment;
- undertaking the climate and disaster risk assessments including collecting, reviewing and summarizing relevant scientific data on natural hazards for project location, developing median and more extreme scenarios for the key climatic parameters and associated climate-related hazards (using the most current and credible climate projections available), and identifying the likely impacts of climate change and natural hazards on tentative project area;
- work closely with the project preparatory team to inform the geographical selection of the project area based on findings of climate and disaster risk assessment; and
- develop a methodology for community-level risk assessment to be undertaken as part of wider social preparation process during project implementation.

Source: Asian Development Bank

3.2.2 Design consideration 2: **Support resilient infrastructure**

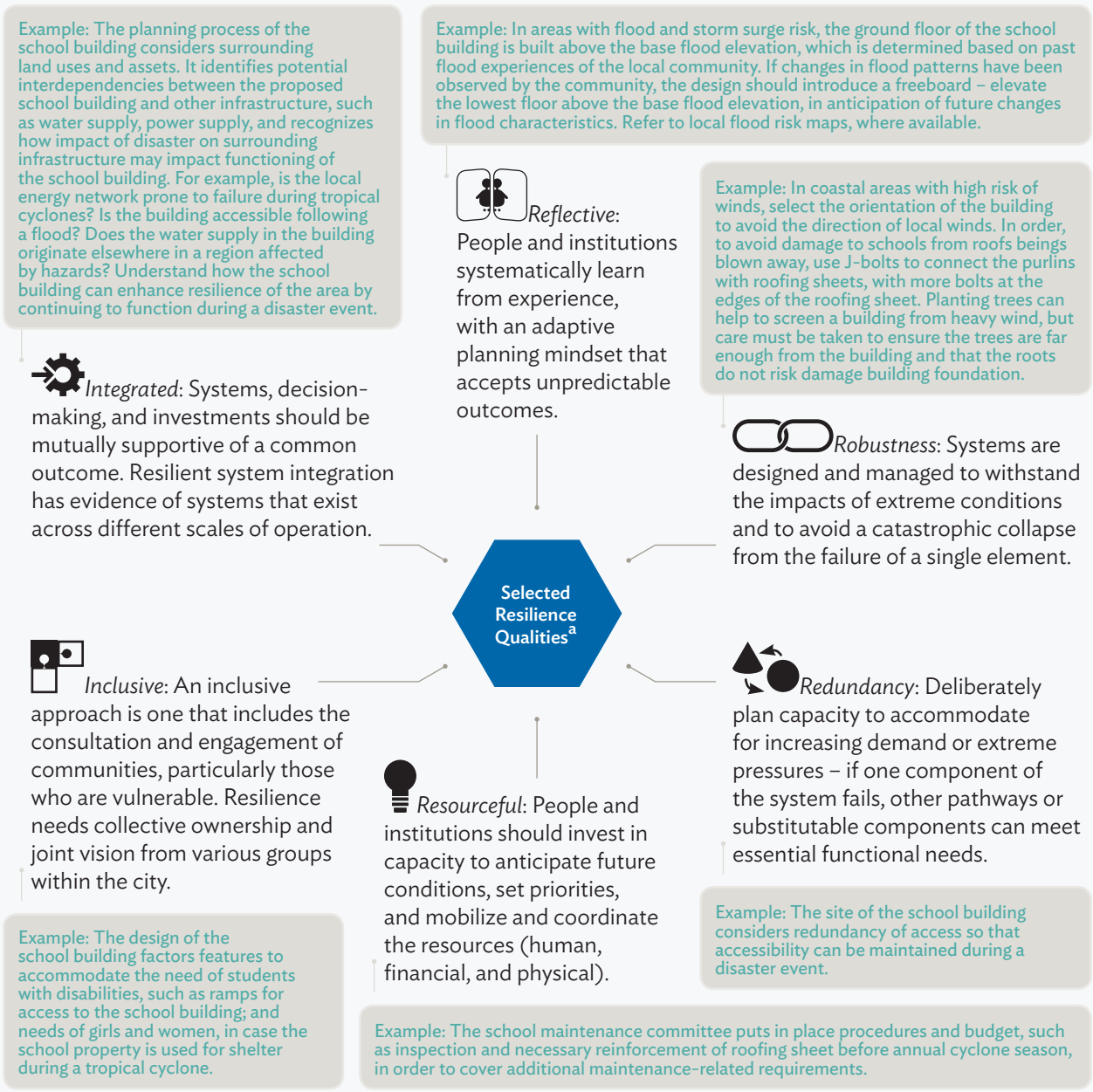
Why support resilient infrastructure

Past experiences, particularly when not using a CDD approach, have shown that community infrastructure was often devastated by disasters, jeopardizing advances made in socioeconomic development. For example, school buildings damaged by tropical cyclones pose risks to the lives of students and teachers and may lead to the closure of school premises thereby affecting the school calendar and have longer term impacts on education achievements. Also, in many cases, community infrastructure such as roads and bridges are the lifeline of poor and remote communities, and thus their damage makes it difficult for post-disaster relief to reach the affected population. The potential impacts of climate change are expected to further impact the infrastructure choices, physical integrity, and functioning of existing infrastructure. For example, CDD projects supporting agriculture-related infrastructure in coastal areas that are facing sea level rise may eventually need to start supporting infrastructure related to alternate livelihoods, such as fisheries.

How to support resilient infrastructure through CDD projects

Focus on exposure and vulnerability. The underlying causes that contribute to community infrastructure being at risk include (i) its location in hazard-prone areas, thereby increasing exposure; (ii) structural design that does not take into account hazard-resilient features; and (iii) inadequate maintenance, thereby contributing to increased physical vulnerability. Moreover, changes in climate variables, i.e., temperature, humidity, extreme events, may further impact on the choice of location, construction material, design standards, maintenance requirements of infrastructure subprojects. Factoring Design Consideration 1 will allow having a better understanding of climate change and disaster risk issues in the project area and thereby promote informed decision-making for selection of community subprojects, including infrastructure subprojects that can be implemented to strengthen resilience. However, it will also be important to identify how the design of individual infrastructure subprojects can be further improved to factor in resilience considerations. While actual implementation of such considerations will be undertaken during the project implementation stage (see section 3.3.), it will be important to detail such consideration during the project preparatory stage, especially because it may have implications on resources needed—human and financial—during implementation (for an example, see Figure 3). It is to be noted that the measures should include a combination of structural and nonstructural interventions and provide equal attention to the participatory processes undertaken to identify these measures.

Figure 3: Integrating Resilience Qualities in the Design of School Buildings Located in Typhoon-Prone Areas



[a] Arup International Development, 2014

Source: Asian Development Bank

What needs to be done to support resilient infrastructure

To ensure infrastructure constructed through CDD projects strengthen resilience measures, the following considerations are critical: (i) a resilience infrastructure specialist should be engaged during the project preparation process to ensure the design of community infrastructure to be supported through the CDD project is resilient (see Box 5); (ii) use results of climate change and disaster risk assessment to identify infrastructure that contribute to strengthening resilience (e.g., sea walls, cyclone shelters) (see Design Consideration 1); (iii) review the community infrastructure manual to include/enhance guidance on planning, design, construction and maintenance of infrastructure to higher standards of resilience, in alignment with locally relevant planning and building standards and availability of early warning information (see Box 6); (iv) undertake cost-benefit analysis of typical infrastructure constructed as part of CDD projects to demonstrate the potential benefits of strengthening resilience, including avoiding losses from disasters (e.g., more robust community buildings might reduce fatalities and injuries in the event of a major earthquake); unlocking economic potential of the area due to reduced risk (e.g., increased land value from flood protection or enhanced access to markets resulting from flood-proofed transport infrastructure); generating development co-benefits (e.g., green infrastructure reducing flood risk can improve air quality and provide recreational space); and (v) provide technical skills for communities to be involved in resilient construction and operations of infrastructure to generate livelihoods opportunities, ensure skills and resources are in place to maintain infrastructure locally, and scale-up resilient practices beyond the project. Ensure quality of construction and operation by ensuring adequate technical advice and supervision is available to the communities, appropriate to the level of local capacity.

Box 5: Terms of Reference for Resilient Community Infrastructure Specialist

The specialist should have a postgraduate degree in structural/civil engineering; preferably with international experience in designing and implementing adaptation measures in the context of community infrastructure. The specialist will be responsible for

- assessing potential climate change impact on community infrastructure typically supported through CDD projects;
- developing recommendations on climate proofing community infrastructure (design considerations, costing, operations and maintenance etc.), and revising the infrastructure subproject manual of the project including technical specifications and standard designs;
- providing recommendations on community infrastructure which may not be typically supported by CDD projects but will be critical for strengthening resilience;
- undertaking training for villagers and government staff on resilient infrastructure; and
- contributing to the methodology for community-level risk assessment (from infrastructure perspective) to be undertaken during implementation stage.

Source: Asian Development Bank

Box 6: Principles of Using Climate Risk Information for Community Infrastructure Planning, Design, Construction, and Maintenance

Planning and design. In planning and design, historical climate data and climate trends are used to calculate design values, assuming that average and extreme conditions of the past will represent conditions over the future life span of the structure. Climate design values in national codes and standards include probabilities of risk, such as 10-, 50-, or 100-year return period historical wind speed, rainfall, flood events, etc., and other climatic parameters, such as percentile cold/warm temperatures and humidity. These probabilities of risk are determined by first classifying climate events in terms of magnitude and intensity levels and calculating how frequent an event is likely to occur, expressed as either an average time/interval between occurrences of event (e.g., one in 50 years) or percent/probability of the event occurring within a year or any given period of time.

Climate trends should be monitored, considered in the calculation of infrastructure-relevant variables, and utilized for regularly updating design values. Climate scenarios and the likely risks over the lifespan of the infrastructure should be factored in design and material selection. For instance, hotter, drier conditions can cause pavement softening, reduction in maximum loads that can be transported, increased susceptibility of asphalt-covered surfaces to damage during heat waves, and shortened life expectancy of local roads. Increased precipitation will cause reduction in structural integrity of many infrastructures, accelerate deterioration or cause premature weathering of input materials, increase surface leaching, increase fracture and spalling in building foundations, decrease durability of materials, and increase corrosion. Such trends may prompt the selection of more heat-stable or rain-resistant materials/composition, use of protective coatings, or increasing the magnitude of design parameters or safety factors.

The anticipated increase in intensity and frequency of extreme events imply that the capacity of culverts and storm sewer systems will be more frequently exceeded, and repair and maintenance costs will increase due to more frequent or extensive road damages, bridge washouts, underpass and basement flooding, among others. Such information can be used to increase the design capacity of culverts and drainage systems, retrofit existing ones, or move or rebuild coastal roads and other infrastructure at higher elevation to avoid or reduce flood risks.

Construction. Seasonal and sub-seasonal scale (e.g., monthly) forecasts can guide planning of infrastructure subprojects, such that project phasing avoids seasons or periods with frequent climate-related hazards, and workforce utilization is optimized. For instance, during hot dry summer seasons, night/cooler weather work can be encouraged to reduce equipment failures due to electrical malfunctions and overheating, and to prevent damage such as slab curling, premature cracking, loss of air entrainment in concrete pavements, rutting, and flushing in asphalt pavements. If the construction schedule inevitably falls on a season with frequent hazards, e.g., heavy rain during the monsoon season, anticipate the need for more emergency construction-related activities, due to increased asset damage.

Weather-scale forecasts (up to 10 days) could help in scheduling of works, such as concrete pouring and asphalt paving. If rain is anticipated, enclosure could be prepared to protect the surface of fresh concrete from rain. Rainwater on fresh concrete could soften the surface, decreasing its abrasion resistance and concrete strength, leading to dusting and cracking. For asphalt paving, air temperature and wind velocity are critical information, as untimely asphalt layer cooling could result to a poor surface that will retain water, reducing the life of the pavement.

Maintenance. Seasonal forecast is useful for planning periodic maintenance work, which requires mobilization of specialized equipment and skilled personnel, such as in preventive, resurfacing, overlay, and pavement reconstruction. Sub-seasonal and weather scale forecasts are relevant in scheduling routine small-scale maintenance works, such as patching, pothole repair, and cleaning of silted ditches and culverts. Severe weather forecasts are helpful for anticipating and preparing for urgent maintenance work that may be required from impacts of extreme weather events, such as collapsed culverts or landslides that block a road.

Source: Regional Integrated Multi-hazard Early Warning System for Africa and Asia

3.2.3 Design consideration 3:
Support resilient livelihoods-related interventions

Why support resilient livelihoods

To strengthen resilience, addressing livelihoods-related needs becomes critical.[8] In most developing countries in Asia and the Pacific, many people still depend on agriculture for livelihoods and subsistence. Agriculture in the region is largely rain-fed and vulnerable to impacts of climate variability, which when manifested in the form of too little, too much, or untimely rain, which adversely affect crop growth. Extreme events, such as drought and floods, have far-reaching impacts that could cascade in the subsequent season. For example, subsistence farmers who suffer losses in two seasons, such as the case for drought, could recover only after the third season, if that season is favorable. Within those three seasons, these farmers experience transitional poverty. With no income and high food prices, they become food insecure. Moreover, impacts are not felt only within the sector, but also cascade onto other sectors. Reduced productivity implies shortage of raw materials for agri-processing industries. Reduced agricultural incomes leads to lesser demand for industrial goods. Changes in climate variables may further impact livelihoods and in many cases require diversifying or shifting to alternatives. Thus, strengthening livelihoods resilience of poor communities becomes critical in the face of climate change.

How to support resilient livelihoods through CDD projects

Utilize climate information to determine the scope of livelihood-related interventions. While scoping the geographical focus of a CDD project (see Design Consideration 1) that includes sustainable livelihoods as an objective, it is important to understand the dependence of the communities on climate-sensitive sectors for their livelihoods; how climate variables are changing and their implications to the sectors; and how livelihood resilience can be strengthened (changing cropping pattern, changing crop varieties, diversifying livelihoods, among others). This understanding is also important to identify and prioritize subprojects that can directly or indirectly enhance resilient livelihoods. Examples may include community production subprojects (e.g., agri-processing unit, ice plant); common service facility (e.g., post-harvest facilities and water supply services); livelihood support (e.g., livestock and poultry production); and entrepreneurial skills training.

Strengthen access to financial products to promote risk-informed livelihoods related decision-making. A crucial part of strengthening livelihood resilience is ensuring communities have responsible, ready, and affordable access to financial products, such as savings, credit, and insurance. In absence of access to formal financial services, poor and vulnerable communities (e.g., the landless, women, daily laborers) may face constraints in accessing credit to invest in resilient livelihood strategies and rely on informal loans with excessive interest rates thereby increasing their indebtedness.

Livelihood strategies under CDD projects can support establishment of savings and credit groups, which as a mechanism offer opportunities to strengthen resilience by leveraging community capital and management of resources; forming strong relationships among the members of the savings groups, leading to social capital and its invaluable benefits in crisis settings; providing emergency funds to alleviate hardships of members when disaster strikes (when it is not a shock that affects the entire population); and offering a wide scope in use for business, including spending on resilience-building measures, for example, livelihood diversification.

Resilience may be further deepened as the members of these groups build economic assets, applying their experience and confidence to access a wider and often more affordable range of financial services from banks and microfinance institutions.[9] CDD projects create institutions at the community level that pave the way for livelihood interventions

[8] While livelihoods have always been a high priority of poor communities, CDD projects in many cases have had uneven experience in addressing livelihood-related needs. This is primarily because the community block grants provided in CDD projects are for community goods, and not usually for household or individual capital. So too, livelihood interventions require a set of technical skills (different to constructing infrastructure), which many a times CDD implementing agencies may not possess. Similarly, livelihood interventions require providing communities with different types of support than engineering design or bookkeeping, and for example, may require capacity to operate an enterprise.

[9] Government of Myanmar. 2017. Myanmar National Framework for Community Disaster Resilience. Nay Pyi Taw.

and for financial institutions to break through initial barriers and work more efficiently. The barriers of lack of reach and weak community institutions increase costs of operating for most financial institutions. These are greatly reduced by the presence of CDD projects in difficult-to-reach locations. The leadership pool created by a CDD project can support enterprise-building and livelihoods and serve to link community and financial institutions.

Moreover, for communities located in high-risk areas, it is equally important to explore opportunities to increase access to insurance products for risk management, such as agriculture insurance, livestock insurance, and disaster microinsurance. Such products can provide immediate access to liquidity to spur livelihood recovery, thereby reducing the overall impact of disasters. Such products can also be designed to complement other social safety nets provided through social protection programs.[10] For example, index-based insurance mechanisms could be built into existing social transfer programs. Key features of these mechanisms could be increasing cash transfers to compensate for the loss of agricultural yield or assets, providing quick insurance pay-outs in case of shocks to those already targeted by a cash transfer program and using existing cash transfer infrastructure, as pay-out delivery mechanisms, and scaling up assistance beyond the core target group to include households that are temporarily pushed into poverty as a result of an extreme weather event.

What needs to be done to support resilient livelihoods

Supporting resilient livelihoods through CDD projects requires analyzing a whole range of information, including historical data (both of climate and agricultural production), as well as seasonal, sub-seasonal, and weather-scale forecasts, including climate projections. Analysis of trends will also be necessary for evaluating current and likely future risks. Such understanding will help in strengthening the design of the livelihood component of the CDD project and avoiding maladaptation. For example, livelihoods that are becoming unsustainable due to slow-onset hazards (e.g., salt water intrusion affecting agricultural lands in coastal areas) should be avoided and alternative livelihoods strategies should be explored. Similarly, supporting livelihood interventions without understanding linkages with wider systematic risk can unwittingly increase future vulnerability (e.g., increasing off-farm income through the sale of natural resources may result in longer term environmental impact).[12] A resilience livelihood specialist should be engaged during the project preparation process to ensure the design of livelihood measures to be supported through the CDD project is resilient (see Box 7).

Box 7: Terms of Reference for Resilient Community Livelihoods Specialist

The specialist should postgraduate degree in livelihoods-related topics (agriculture, livestock, fisheries, forestry etc.); preferably with international experience in designing and implementing adaptation measures in the context of livelihoods. The specialist will be responsible for

- assessing potential climate change impact on livelihoods of population living in the proposed geographical area where the project will be implemented;
- developing recommendations on resilient livelihood measures (household and community level) that can be supported directly under the proposed project;
- providing recommendations on the enabling environment required to implement the proposed resilient livelihood measures taking also into consideration the high proportion of poor landless, including availability of weather and climate information; access to affordable finance; linkages with input suppliers and market;
- undertaking training for villagers and government staff on resilient livelihoods measures; and
- contributing to the methodology for community-level risk assessment (from livelihood perspective) to be undertaken during implementation stage.

Source: Asian Development Bank

[10] ADB. 2018. *Strengthening Resilience through Investments in Social Protection: Guidance Note*. Manila.
[11] S. Ziegler. 2016. *Adaptive Social Protection: Linking Social Protection and Climate Change Adaptation. Discussion Papers on Social Protection*. Bonn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). https://www.giz.de/fachexpertise/downloads/giz2015-en-adaptive-social-protection.pdf

The principles of using climate risk information in agriculture-related livelihoods interventions can be included in the livelihoods manual of CDD projects (see Box 8). Understanding current and future risk, both spatial and temporal, will help in identifying suitable institutions, partners, and skills required for the successful implementation of livelihood components of CDD projects. Discussions with national meteorology and hydrological services, local government, and farmer's association will be useful in determining the project scope.

Box 8: Principles of Using Climate Risk Information for Supporting Agriculture-Related Livelihoods Interventions

Downscaled weather and climate information. Climate information, to be useful for local application needs, to be location-specific, at least according to agri-climatic zones and at different timescales to aid in planning before the start of the cropping season, and utilized in decision-making during the season. Deterministic forecasts now offer lead times of up to 10 days. Probabilistic forecasts offer lead times of up to 6 months or more. Downscaling, with multi-model analysis, improves their accuracy and quantifies uncertainty.

Communication of probabilistic forecasts. Farmers may be familiar with deterministic forecasts, such as weather and tropical cyclone forecasts, which have high accuracies, but not probabilistic forecasts. To aid users in understanding forecasts, national meteorological and hydrological services could communicate the science behind the forecasts through face-to-face meetings with users, television/ radio broadcasts, or through their social media, in addition to use of local language to explain weather-related phenomena, and training of users on forecast interpretation. Methods of communication that allow users to seek clarification are most desired.

Timing of forecast delivery. Forecasts, to be meaningful for application, need to be delivered at times that they are most useful to those that need them. This means that seasonal forecasts need to be available before the cropping season commences, to guide crop planning; daily to 3-day forecasts need to be delivered to farmers before they head out to their fields in the morning. Thus, knowledge of users' planning and decision-making contexts and timeframes is necessary.

Forecast translation into potential impact. Next to understanding forecasts, translating forecasts into potential impact information is necessary for identifying crop management strategies and actions. Potential impact analysis shall consider local climatology, crop type and growth stage, and cropping conditions.

Seamless use of weather and climate information. Seasonal forecasts may be used to guide crop planning for the coming season. For example, if forecast indicates likely below normal rainfall condition, farmers could plant less water-sensitive and short-maturing crop varieties. If the preceding season was dry, farmers without access to irrigation may decide to leave the land fallow and engage in alternative livelihoods. Since seasonal forecasts only indicate shifts in the probability of rainfall (i.e., normal, below normal, or above normal) from long-term data averages, use should be supplemented with historical climate data. Identifying years with the same rainfall probability, rainfall conditions, and crop yield during the season in those years may be determined to provide an indication of the current season's cropping performance. Within the season, sub-seasonal, and the more accurate medium- and short-range forecasts may be used to adjust plans and guide decision-making, such as when to start land preparation and sowing to prevent crucial growth stages from coinciding with dry spells, source out water for supplemental irrigation as needed, and when to apply fertilizers and pesticides such that they will not be leached out by subsequent rainfall.

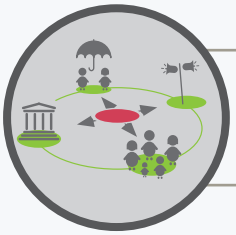
Weather observations and traditional indicators. Users can be engaged to monitor rainfall, one of the important weather parameters for agriculture. Rainfall monitoring shall complement the use of seasonal and sub-seasonal forecasts, which provide indications of accumulated rainfall, but not its distribution within the season or the month. It will also help in the verification of medium- and short-term forecasts. Community-based rainfall observation methods include the use of milk cans or plastic bottles that have been calibrated by the national meteorological and hydrological services. Traditional indicators of weather phenomena, such as change in wind direction, bird migration, and other animal behavior may be integrated into local observation and monitoring mechanisms. User participation in areas like these would contribute to addressing users' cognitive constraints, increase confidence in forecast products, and improve forecast utilization.

Capacity to respond to climate information. While most farmers would have capacity to respond to shorter-term forecasts (e.g., shifting the schedule of fertilizer/pesticide application in response to rainfall forecast), not many may have the capacity to respond to a seasonal forecast, e.g., resources required for early planting to take advantage of a favorable season (i.e., seed supply, machinery/labor for land preparation), or market support if farmers are to plan for non-rice crop in response to significantly below normal seasonal rainfall. Government or external support would be required in this regard.

Cost-benefit vs. cost effectiveness. Subsistence farmers often go for options that entail the least cost, rather than one that provides the maximum gain. Awareness-raising/ training would be required on cost-benefit analysis to influence their option evaluation. The cost-benefit analysis considers the risks that the farmer could absorb, including any trade-off. For instance, switching to a less water-sensitive crop but less nutritious will have impacts on the household member's health, which may be hard to quantify but would have far-reaching effects (e.g., productivity, susceptibility to diseases, etc.). Based on this analysis, decision must be made to select or prioritize strategies with the highest benefit-cost ratio and with the most acceptable or tolerable trade-offs, with least negative impact in the long run.

Aversion to risks vs. managing risks. Farmers are mostly risk-averse, relying on options that have worked well in the past. Using climate information for managing climate-related risks and for optimizing opportunities from a good climate shall transform them into risk managers. Training, demonstrations, and sustained engagement for climate information application would be required.

Source: Asian Development Bank



3.2.4 Design consideration 4: **Strengthen linkages with different sectors and wider process of decentralization**

Why strengthen linkages with sectors and wider process of decentralization

CDD projects cannot work in isolation, especially if objectives of scaling up are to be met. Poor communities can only implement a limited range of measures by themselves. Some solutions are too complex for a community to manage and undertake by itself. Forging linkages for coordination and resource sharing at different levels of government, across villages, and different sectors, including with projects being implemented by civil society organizations, is a common challenge in a CDD scale-up. Addressing this challenge becomes more critical in the context of strengthening resilience. First, the root causes of disaster risk may be outside the administrative boundaries of a settlement, thereby requiring interventions at basin-wide level that would involve all communities participating in CDD projects and higher administrative units. So too, resilience outcomes require looking beyond the immediate footprint of assets being supported under the CDD projects (e.g., water supply) and to explore its interdependencies with assets in other systems and sectors (e.g., power). Second, CDD projects focus at community interventions. However, all households in the communities are not equally at risk from adverse impacts of climate change and disasters. Complementary measures that strengthen resilience of the poor and most vulnerable households in the community are needed, particularly through strengthened linkages between CDD projects and social protection programs. Third, CDD projects have the greater objective of empowering communities, often through creating a space for poor and vulnerable households and communities to become active agents of transformative change. Participation in decision-making processes of these households and communities, especially regarding resilience investments, requires strengthening linkages of CDD projects with wider, risk-informed decentralization processes of government.

How to strengthen linkages with sector projects and local development processes

Linkages with sector projects. Linkages between CDD projects with projects being implemented in similar geographical areas in the same sector and with projects in other sectors, both horizontally and vertically, should be strengthened. This will allow enhancing collaboration and viewing resilience considerations from a systems approach and leveraging capacity and finances that may be available in other sectors to strengthen resilience. For example, CDD projects supporting livelihoods will benefit from partnerships with agricultural extension workshops on training on use of early warning information for crop planning, while water resources-related CDD subprojects will benefit from linkages with larger water resources management projects being implemented at a basin-wide scale. Strong local development planning processes will be important to strengthen these linkages between CDD projects and sector projects. Sources of funding and new dedicated sources of climate finance also offer opportunities to seek new forms of collaboration. However, this also runs the risk of driving a wedge between ministries and agencies who face powerful institutional incentives to try to capture such funds and control the agenda in ways that suit their own purposes.[12]

Linkages with social protection programs. While a focus on communities is important, it may not be sufficient to address the idiosyncratic shocks and stresses induced by climate change and disasters and which typically affect poor and vulnerable households within the community. Thus, social protection programs being implemented in the same geographical space as CDD project should complement each other to strengthen resilience at different scales (household and community). For example, while an entire community may be exposed to flooding and thus can benefit from resilient infrastructure supported through CDD projects, different households within the community may be exposed differently depending on their socioeconomic conditions, requiring tailored household-level support to smoothen consumption (e.g., for the chronic poor) or strengthen livelihoods (e.g., for the transitory poor) through cash transfer and/or cash for work programs. Such programs provide enhanced opportunities to strengthen household resilience, both through ex ante measures to support poor households in reducing risk (reducing vulnerability, limiting exposure and strengthening adaptive capacity), and through ex post measures to support poor households in effective post-disaster response and recovery (see footnote 11).

Linkages with wider decentralization processes. In many cases, CDD projects are formulated to fill in capacity gaps of local governments in the delivery of basic services based on local needs. The longer-term objective of such projects is to empower communities to influence local decision-making processes and strengthen local institutions in delivering basic services and managing resources. Linkages of CDD projects with such wider governance and decentralization processes can strengthen capacity of poor and vulnerable communities in getting local governments to incorporate their resilience-building priorities in local development processes.

What needs to be done to strengthen linkages

The linkages between CDD projects and social protection programs can be enhanced through (i) use of common climate and disaster risk information for respective project targeting processes; (ii) shared public awareness and capacity development sessions focusing on resilient livelihoods and household and community disaster preparedness, among others; (iii) use of common resilient community infrastructure standards that can be used by CDD projects and labor market programs; and (iv) synergy between livelihood infrastructure supported through CDD projects and livelihood interventions (asset transfer, skill training, access to finance) supported through social protection projects being implemented in same communities.

While countries in Asia and the Pacific have made advances in mainstreaming disaster risk management and climate change adaptation into local development processes, investments to strengthen decentralization with an explicit focus to deliver on resilience outcomes targeted at the poor remain limited. This is largely due to the lack of enabling environment: (i) lack of robust climate and disaster risk information available at an appropriate scale and in open source format, which can be used for identifying and implementing pro-poor policies; (ii) criteria for inter-governmental fiscal transfers to local governments that do not necessarily include resilience-building indicators and thus result in

[12] A. Margaret et al. 2014. *Climate and Disaster Resilience: The Role of Community-Driven Development*. Social Development Department. Washington DC: World Bank.

a lack of incentives; (iii) limited financial capacity to invest in resilience-building measures, including measures to financially prepare for climate- and disaster-related shocks; (iv) legal barriers which restrict inter-local government cooperation required for resilience-building interventions; (v) limited administrative capacity and lack of clarity on functional assignments for strengthening resilience; and (vi) limited engagement with civil society and private sector in resilience-building measures.

Considering that disaster and climate resilience legal frameworks in many countries call for increased responsibilities at local government level to deliver on resilience outcomes, it will be critical to address the above-mentioned gaps, which will ultimately contribute in scaling up of CDD projects.

Linkages can be established with programs aimed at supporting risk-informed decentralization and that can provide information on climate and disaster risk to local communities; assign functions to maximize the proximity, scale, and capacity advantages of each level of administration; guide the development of relevant institutions and coordination mechanisms; finance resilience-building investments; and foster partnerships with the private sector and community-based organizations.

3.2.5 Design consideration 5: **Ensure availability of resources to undertake resilience-building actions**

Why the need for human and financial resources

CDD works because of investments in building capacities of local communities and government institutions. To scale up climate and disaster resilience through CDD projects, sufficient resources must be allocated to strengthen capacity of staff involved in implementing CDD projects and that of local communities. Further, capacity building activities could range from building awareness and understanding on climate and disaster risk, developing skills on implementing resilience-building measures, and strengthening community-level systems to improve early warning and disaster preparedness measures.

Integrating resilience considerations in CDD projects also require additional financial resources to build community infrastructure that can withstand the potential impact of climate and disaster risk, adopt livelihood measures that factors longer-time changes in risk pattern, and introduce residual risk management features such as improved early warning and community disaster preparedness planning. Also, it is important to introduce zero-sum contingency budget features (nonfunded components that can receive reallocation from other project components in the event of a disaster) in the project design in order to immediately channel additional resources to areas affected by disasters to improve its shock responsiveness.

How to ensure access to resources

Strengthen capacity of CDD project staff. CDD project staff broadly comprise of community facilitators, engineers, and project management staff. Community facilitators have a direct working relationship with community members. Thus, it is important that community facilitators appreciate the importance of strengthening climate and disaster resilience in the context of community development; are aware of local hazards and socioeconomic vulnerabilities and thus able to facilitate community risk mapping processes; and have broad understanding on resilience building measures that can be supported through CDD projects. So too, project engineers should have a good understanding of natural hazardscape of the area, how hazard patterns are changing due to climate change, and what impact it may have on community infrastructure to be supported by CDD projects. CDD project management staff should have the capacity to link community facilitators and engineers with (i) local technical organizations (e.g., universities involved in research on disaster risk reduction and climate change adaptation); (ii) local offices of hydro-metrological agencies involved in producing short-, medium-, and long-range climate information that can be used for early warning and livelihoods-related interventions; (iii) agricultural extension workers to involve them in the delivery of training on the use of climate information for agricultural planning; and

(iv) microfinance organizations to facilitate access of credit and insurance products, and (v) local civil society organizations to leverage on resilience-building initiatives being supported by development partners.

Strengthen capacity of communities participating in CDD projects. A number of areas that can be useful as new training topics or add-ons to existing training plans and modules include (i) improving awareness and understanding of climate and disaster risks; (ii) skills on resilient construction of infrastructure; (iii) awareness on local technologies that can adopted to enhance resilience (e.g., water harvesting technology); (iv) capacity on improving community preparedness, particularly setting up of early warning systems; and (v) skills to strengthen and/or diversify livelihoods.

Secure financial resources for resilience considerations. Community subprojects may incur increases in cost to factor in resilience considerations. Recognizing the benefits of investments in resilience, the core project budget should cover such increase in costs. For additional resilience related needs identified by the communities that cannot be covered under CDD project but are crucial for strengthening wider resilience, efforts should be made to explore the possibility of mobilizing resources from local and/or national disaster risk reduction and climate change-related funds. Where CDD projects are designed with the primary objective of strengthening resilience, efforts should be undertaken to mobilize project resources from national and international climate finances. Recognizing the fact that CDD projects can act as effective channel for undertaking post-disaster recovery and reconstruction activities, zero-sum contingency budgetary lines should be introduced that can be immediately frontloaded for use for post-disaster recovery purposes.

What needs to be done to ensure CDD projects have access to resources required for strengthening resilience

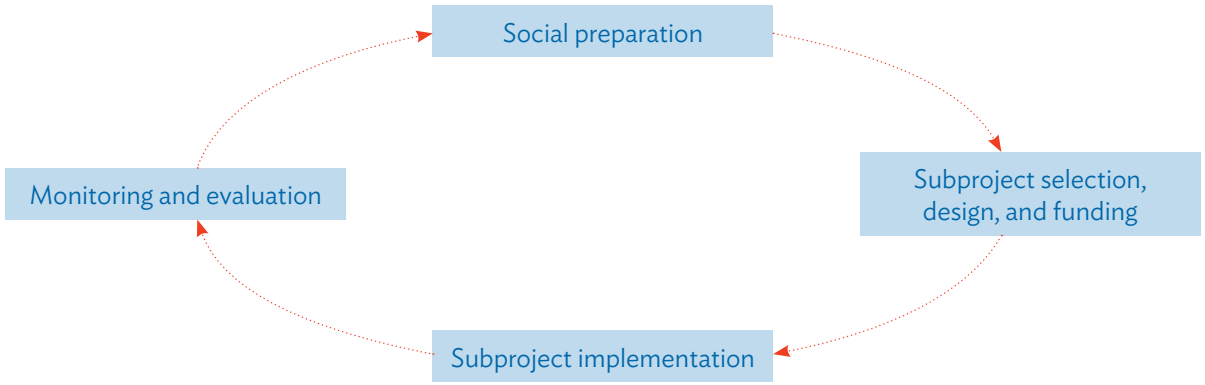
Understanding the merits of addressing climate and disaster risk needs to be strengthened for all CDD project staff. Project engineers should have the capacity to (i) modify design standards of community infrastructure to factor resilience considerations, including, where needed, incorporating green infrastructure measures and (ii) train communities and local contractors involved in construction and maintenance of projects on how to factor in resilience considerations. CDD projects aimed at supporting livelihoods-related interventions require a cadre of livelihood officers, sufficiently trained and equipped with skills in resilient livelihoods options; use of climate risk information for livelihoods planning; market analysis; and with linkages with input suppliers, cooperatives, agricultural extension workers, and financial organizations.

Improving shock-responsiveness of CDD projects will require introducing features to facilitate horizontal scaling up (to include communities affected by disasters as additional beneficiaries); adjusting the project cycle and simplifying procedures for selecting subprojects to meet immediate recovery related needs; and waiving of counterpart contributions from local governments and communities. It is also important that the project staff have the capacity to deliver on post-disaster recovery and reconstruction-related needs, for example to support the local governments in assessing post-disaster needs and supporting the communities in preparing community recovery plans. In term of financial capacity, contingency budget lines with zero-sum component should be introduced. The project can also be closely aligned with wider disaster-related contingency reserves of the government or even link to contingent credit facilities that will allow access to liquidity during disasters.

3.3 Implementation entry points.

The four main stages of a typical CDD project cycle are: (i) social preparation; (ii) subproject identification, preparation of designs and budgets, and approval and transfer of funds; (iii) subproject implementation; and (iv) monitoring and evaluation (see Figure 4). Each stage provides different opportunities for strengthening resilience. Actions to be undertaken in each stage should be identified and the resources required for implementation should be thought through. Guidance on key resilience considerations to be factored in each stage of the CDD project cycle are discussed below.

Figure 4: Community-Driven Development Project Cycle



Source: Asian Development Bank

3.3.1 Social preparation

During the social preparation stage, the project implementers together with the community leaders disseminate information about the project with the wider community and elaborate on the roles and responsibilities of different stakeholders in implementing the project. Community assemblies are convened to initiate the process of community assessment and participatory planning with the end objective of understanding community needs and priorities and identifying beneficiaries. The social preparation process provides opportunities to raise awareness on the potential implications on climate change and disaster risk on development and introduce measures to strengthen resilience.

In the context of strengthening resilience, the key outcome of the social preparation process would be: (i) improved awareness of communities on the current and future hazards relevant to the area; (ii) collective identification of high-risk areas and a common understanding on how locating assets in such areas can increase exposure to the hazards; (iii) identification of segments of the population that are most vulnerable to natural hazards; and (iv) recognition of an increased likelihood that subprojects selected by the communities in some cases might have an explicit objective of strengthening resilience (e.g., cyclone shelters, coastal embankment). Social preparation involves specific actions to be undertaken, discussed below.

Integrate modules on climate change and disaster resilience in the community manual and introduce the modules during community assemblies and participatory planning processes. The modules would facilitate discussions on identifying localized disaster risk including identifying (i) past impact of disasters; (ii) observed changes in climate variables (change in temperature, precipitation, and sea level rise, among others); (iii) the root causes of disaster risk; and (iv) measures (structural and nonstructural) that can strengthen resilience. While it is more common to have discussions on low intensity and high frequency hazards (e.g., flash floods), special considerations should be taken to include discussions on high intensity and low frequency events (e.g., earthquake) which the communities may not have faced in recent years but due to their geographical setting could potentially have devastating impact on the lives and livelihoods of the poor. Existing hazard maps developed by government agencies (e.g., local disaster management committees) and locally relevant awareness raising materials (e.g., videos, posters, booklets) developed by civil society organizations could be used to initiate discussions. Advancements in earth-observation products has allowed understanding how risk has changed over the years (e.g., degradation of coastal mangroves over time). Technical experts from local universities or research institutes can be invited to participate during assemblies.

Undertaking participatory community risk mapping as part of wider situational analysis. The process of undertaking community risk mapping exercise is important in ensuring that perception of climate and disaster risk and potential impacts of hazard events on different section of population (aged, women, children, people with disability, single parents, women-headed households, landless farmers etc.) are discussed. The participatory community risk mapping can be integrated in the wider situational analysis to:

1. identify natural hazards that are prevalent in the area;
2. understand the observed changes in hazard patterns;
3. identify population at risk and understand why they are at risk (e.g., due to their assets being located in hazard-prone areas, and/or due to social economic vulnerabilities such as lack of access to land, information, financial services, and livelihood opportunities);
4. map areas that have high exposure to natural hazards and that can be exposed in the future (e.g., due to changing hazard patterns or due to environmental degradation);
5. understand current zoning ordinances including demarcation of "no-build zones," where applicable; and
6. validate the scientific data and multi-hazard maps based on local knowledge.

Undertaking such analysis will require strengthening capacity of CDD project staff and local governments on climate change and disaster risk concepts and introducing open source tools that can be used to collect scientific data and maps, superimposing such information on community prepared maps. Technical experts familiar with the local area and culture can be invited to join the participatory risk mapping process (see Box 9).

Ensuring that the findings of the community risk mapping, especially the priorities identified by women are adequately reflected in determining the selection criteria for prioritization of subprojects. Recognizing the disproportionate impact of climate change and disaster risk on women, it is important that special considerations are made to increase awareness of women, priority-setting meetings are organized for women, as needed, and quota or special window for funding projects prioritized by women may be introduced. Such proactive measures will increase women's involvement in the project and ensure that the benefits reach women. Similar considerations can be introduced with a focus on other vulnerable population depending on the nature of risk and larger objectives of the project.

Strengthening linkages between the risk-informed community development plan with higher levels of plans and with other sector plans, where relevant. Such linkages will help optimize solutions, especially for hazards that cut across administrative boundaries and measures that require inter-community collaborations. Execution of memorandum of agreements between the project and other government agencies or community-based organizations that elaborate on their roles in the project may be needed.

Box 9: Use of Participatory Tools to Gather Information on Climate Risk

Semi-structured interviews. It is important to interview a range of key informants such as the police, health workers, fisher folk, and traders, among others. They may know if anything "unusual" is going on in relation to disaster events, agricultural production, and health. Women and men might be affected differently and may have insight into changes in different ways. Consider also including people from a diverse range of livelihoods and roles within the community. It is usually more effective to ask indirect (open) questions, rather than direct (closed) ones to stimulate discussion and be able to get a picture of what is affecting a community. For example, a community, when asked whether they know if the "climate is changing," might not understand the question. But when asked about their agricultural practices, traditional knowledge, and how the present situation and patterns compares with the past, a community might reveal useful information about changes in seasons. Other tools may be useful in conjunction with interview questions (such as observation and secondary data) to confirm or adjust assumptions.

Focus group discussion. Consider gathering the elders of the community to have a general discussion about changes over time. Have discussions with both male and female elders; they may hold different types of knowledge, including traditional knowledge such as weather prediction techniques.

Transect walk. Make observations of possible hazards that might be aggravated by changing weather patterns and note questions that may be asked to the community regarding danger zones and erosion, among others.

Seasonal calendar. The seasonal calendar opens up an opportunity to discuss whether seasons are changing which may have implications to health problems, disasters, and livelihoods. It is recommended to first create a seasonal calendar based on "now" and, after the community has completed that task, ask if these seasons have changed compared to the past 30 years or so. For discussing long-term variation, it is important to include elders in the group. Remember also, it is not one past event, but patterns in the past that is required for a seasonal calendar. The tool can be used to raise awareness that in light of changes to weather patterns, old seasonal calendars and traditional planning approaches may need to be reassessed. A diagram could be used to indicate how things like flowering, planting, and harvest times of crops are changing, new weather and health related hazards might be emerging, or old ones might be appearing at times of the year not expected.

Historical calendar. List major extreme events. Have weather and climate related events such as flood, drought and cyclones changed in frequency or severity? What about health problems? Have there been new emerging ones (vector- or waterborne, which could potentially be affected by changes in climate)? Observations from the community can be cross-compared with trends measured by meteorological and disaster risk management offices. Memory bias is a potential challenge here, so it is important to triangulate information and try to ask clarifying questions to help avoid misinterpretation of apparent drastic changes.

Livelihood analysis. Consider which livelihoods could be most at risk to the hazards associated with climate change in rural and urban areas, for example, small land holder and traditional farming, fishing, and small market trading in shanty towns or slum areas. If possible, determine the different livelihood groups in the areas that are most at risk. List what makes them at risk. This could be done with assistance from planning authorities and community group leaders. Crosscheck the information given about livelihoods with the changes and major climate risks, for example, if they are highly agriculturally dependent and rainfall is decreasing over time or gradual temperature increases and extremes or seasons are shifting, this could be an emerging issue.

Institutional and social network analysis. This tool can reveal where the community currently receives its information from (and trusts) or identify available but underutilized opportunities and resources, e.g., weather forecasts for early warning. Identify local trustworthy partners that could assist communities, e.g., farmers' technical colleges or government agricultural extension services that could help introduce drought/flood resistant agricultural practices and strategies.

Source: Red Cross Red Crescent Climate Centre. 2012. How can climate change be considered in Vulnerability and Capacity Assessments? http://climatecentre.org/downloads/files/VCA%20guidance/VCA-CC-for%20practitioners-JUN2012.pdf

3.3.2 Subproject selection, design, and funding

The situational analysis during social preparation frames the discussions on the type of investment most needed by communities. CDD projects usually support small, community infrastructure. More and more needs for livelihood and financial services are being prioritized by the communities, highlighting the need for diversifying or complementing income sources for community members. Increased awareness on climate change and disaster risk during the social preparation process is likely to increase the chances of subprojects being prioritized that strengthen resilience. This could be in the form of subprojects that have a primary objective of strengthening resilience (e.g., cyclone shelter, sea wall etc.); or subprojects that integrate resilience considerations (e.g., schools being located away from hazard prone areas; the roofs of health centers being designed to withstand high wind speed; raising the height of road leading to evacuation shelter etc.).

Specific actions that can support integration of climate and disaster risk consideration during subproject selection include:

Providing information to communities on the range of structural and nonstructural resilience-building measures that can be implemented to strengthen resilience. Depending on risk context, the measures could be hazard-specific and may require solutions at different levels—household, community, and higher levels of administration. While the subprojects will focus on community measures, understanding of household interventions is equally important, especially in the context of better linkages with social protection and livelihood programs that may be active in the same area and focusing on poor and vulnerable households. Having a common understanding and agreement on interventions that require higher levels of support is equally important, especially in strengthening linkages between community development plans and higher level development plans. The subproject manual can include specific sections on resilience-building subprojects and detail the features related to design, costing, supervision, and maintenance of such subprojects.

Providing technical knowledge and know-how on integrating climate and disaster risk considerations in the planning, design, implementation, and maintenance of all subprojects located in high-risk areas. This will include interventions such as flood proofing of roads and culverts, seismic design of schools and health centers, cyclone resistant agricultural warehouse. It will be important to ensure such considerations factor in multi-hazards that are relevant to the area and current and future risks. The community infrastructure manuals and design templates should be revised to ensure compliance with disaster-resilient design standards and include resilient features related to design, costing, implementation, and maintenance.

Allowing for retrofitting of existing infrastructure to strengthen resilience, including infrastructure built through previous subprojects. Undertaking assessment of community infrastructure to identify priority works that would benefit from retrofitting (e.g., seismic retrofitting of schools).

Combining local knowledge and technical expertise to produce solutions that would contribute to resilience in CDD projects. While local residents undeniably have far-reaching local knowledge, they are not technical experts. Without proper technical inputs or guidance from experts, projects run the risk of suffering from poor technical design, inferior construction quality, and inadequate operation and maintenance arrangements. Hiring additional technical staff or partnering with a local technical university is needed to tap expertise in hydrology, flood management, drought management, earthquake resistant construction, and livelihoods diversification. Partnering with relevant government agencies and civil society organizations is also important.

Ensuring allocations for any increase in cost in CDD projects that incorporate climate and disaster risk considerations. Village or inter-village allocations should be reviewed to accommodate costs of new resilience subprojects, integrating resilience considerations in the design of other subprojects, and for retrofitting of existing infrastructure. Allocations for training and technical assistance, which will be critical for strengthening resilience, should also be ensured. Funding options to strengthen household resilience should also be explored through establishment of revolving funds, access to credit, and other avenues.

Considering activities that are co-beneficial. Recognizing communities have more pressing needs, measures to strengthen resilience to longer-term climate risk may be left out. However, there are often activities that can deliver important co-benefits in terms of building resilience to disasters and climate change together with other developmental gains (e.g., reforestation can provide livelihoods as well as help in stabling slopes)(see footnote 12).

3.3.3 Subproject implementation

In CDD projects, communities manage or directly implement subprojects. The communities participate by doing paid labor, overseeing the work of contractors, managing community subproject committees, providing counterpart contributions to the cost of subprojects, or by actually becoming members of different project committees (e.g., audit, finance, or procurement). To ensure that community members are able to perform the different roles during construction, series of trainings and coaching activities need to accompany the different stages of the project. Local residents receive regular training on financial literacy to help them manage the community accounts, including training and mentoring or on-the-job assistance in procurement, bookkeeping, audits, understanding bank statements, and using cash machines or making withdrawals from or deposits in financial institutions. Skills in construction are also provided to communities, in close collaboration with the engineers of local government offices.

Ensure climate change and disaster risk considerations are factored in construction of subprojects. This will require building skills of local residents on resilience construction. Skills should focus on construction techniques that are suitable for locally available material and practices. Awareness should also be raised on local building standards, zoning regulations, and issues related to environmental safeguards.

Conduct formal trainings for both men and women involved in construction and supervision of subprojects. Partnerships with formal training/vocational training institutions can be established to oversee course content and delivery, with the aim of achieving some form of formal certification. Trainings on such new skills can also come in handy for the communities to gain alternative sources of employment as well as properly maintain subprojects. This contributes to deepening of labor assets that can potentially help in stabilizing consumption when disaster strikes.

Review, and, where needed, adjust the ratio of technical staff to number of subprojects. A technical assistance fund can be established that communities can access for more difficult climate and disaster resilient subprojects.

3.3.4 Monitoring and evaluation

Participatory community monitoring and evaluation feeds into a learning process for succeeding cycles and similar projects in the future, including features such as community-based accountability reviews, grievance redressal processes, and sharing and learning exchanges. Recognizing the current gaps in metrics for resilience because of lack of baseline and constantly shifting risk characteristics is important for CDD projects aiming at strengthening resilience by adopting "learning- by-doing approaches" and introducing structured exchanges to share learning among communities and establish feedback loops to inform future CDD project cycles.

Mangrove management training of San Miguel Unity for Progress, Philippines (*photo ADB*).

4/ CONCLUSION

Climate change and disaster risks are increasing in Asia and the Pacific and will continue to disproportionately impact the poor and vulnerable populations. Interventions are required to strengthen capacity of the poor and vulnerable populations to resist, absorb, adapt to, and recover from the adverse effects of climate change and disasters in a timely and efficient manner, without jeopardizing their sustained socioeconomic advancement and development. CDD projects, with a wider objective of poverty reduction, and ensuring local needs of communities are addressed, provide enhance opportunities for scaling up resilience-building measures. However, tapping such opportunities require a more systematic approach to ensure resilience considerations are explicitly integrated in the design of CDD projects. These considerations are the following:

Improve targeting of project beneficiaries by using climate and disaster risk information. Use climate and disaster risk information to inform its targeting strategy at all levels—geographical targeting and allocation of block grants, development of a menu of eligibility investments, and identification of subprojects.

Support resilient infrastructure. Adopt risk-informed design features that will include infrastructure is not located in hazard prone areas and are designed and constructed to withstand climate and disaster related shocks and stresses and are regularly maintained.

Support resilient livelihoods-related interventions. Utilize climate information to determine the scope of livelihood-related interventions to be directly or indirectly supported under the CDD project and strengthen the project's access to financial products—savings, credit, and insurance.

Strengthen linkages with different sectors and the wider process of decentralization. Strengthen resilience considerations from a systems approach through collaboration with other projects being implemented in similar geographical areas within the same sector and/or other sectors that will allow leveraging on the capacity and finances that may be available in other sectors to strengthen resilience. Strengthen linkages with social protection programs, such as cash transfer and cash-for-work programs in order to complement community resilience-building measures with interventions targeted at the household level.

Ensure availability of resources for undertaking resilience-building actions. Strengthening the capacity of CDD project staff, such as community facilitators, engineers, and project management staff, to implement resilience related measures. Secure financial resources for implementing measures that reduce risk of infrastructure and livelihoods and supports the communities in effective post-disaster recovery and reconstruction. Similarly, actions are to be undertaken in each stage of CDD project cycle implementation to integrate resilience considerations:

- Social preparation. Integrate modules on climate change and disaster resilience in the community manual and deliver such modules during community assemblies and participatory planning processes; undertake participatory community risk mapping as part of a wider situational analysis; ensure the findings of the community risk mapping inform the selection criteria for prioritization of subprojects and are integrated into a wider community development plan; and strengthen linkages between the risk-informed community development plans with higher-levels of plans and with sector plans.

- Subproject selection, design, and funding. Provide information to the communities on the range of structural and nonstructural resilience-building measures that can be implemented to strengthen resilience; provide technical knowledge and know-how on integrating climate and disaster risk considerations in the planning, design, implementation, and maintenance of all subprojects located in high-risk areas; explore alternative options to mobilize resources to implement resilience-building measures that have identified; and demonstrate co-benefits of investing in resilience.
- Subproject implementation. Build skills of local residents in collaboration with engineers of local offices on resilience construction techniques, skills required for diversifying livelihoods and strengthen partnerships with formal training/vocational training institutions.
- Subproject evaluation. Strengthen resilience by adopting a "learning-by-doing approach" and introduce structured exchanges to share learning between the communities and establish feedback loops to inform future CDD project cycles and subproject planning.

Scaling Up Resilience-Building Measures through Community-Driven Development Projects

Guidance Note

The poor and vulnerable populations suffer disproportionately from the adverse impacts of climate change and disasters, which result in loss of life, damage to household and community assets, disruption of livelihoods, and loss of income. Solutions that recognize localized risks and address them in the context of wider socioeconomic development are needed. This guidance note underscores the importance of scaling up resilience-building measures through community-driven development projects. It proposes a framework that recommends five key considerations that should be factored in the design and implementation of community-driven development projects to ensure that they deliver on scaling up of resilience-building measures.

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