Integrating Resilience Attributes into Operations:

A Note for Practitioners

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WORLD BANK GROUP

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Acknowledgments

Contents

Introducing the Resilience Attributes Approach

1

The Climate Resilience Imperative

Climate change drives many of the shocks and stressors that keep or bring vulnerable households into poverty. Studies suggests that a 1°C rise in warming reduces income by 1.2 percent in the short run, and by 0.5 percent in the long run. Climate change has the power to push more than 100 million people into extreme poverty by 2030, with Sub-Saharan Africa and South Asia, the poorest regions of the world, being the hardest hit.[1]

Climate impacts constitute one the defining challenges of our time. Modeling studies indicate that climate change could result in global crop yield losses as large as 5 percent in 2030 and 30 percent in 2080, threatening food security and exacerbating vulnerability at a global scale.[2] Natural hazards are increasing linked to climate change, and will become more intense and frequent in many regions. The number of people exposed to droughts could increase by 9–17 percent in 2030,[3] the number of people exposed to river floods could increase by 4–15 by the same year,[4] and coastal flood risks are expected to increase rapidly with sea level rise.[5] Heat waves that are considered exceptional today will become common. Scientists indicate that warming levels could reach 1.5°C by 2052, and as early as 2030, if carbon-intensive human activities continue to increase at the current rate.[6] In a sample of 30 African countries, two-thirds are warming faster than the world as a whole—a trend expected to continue in coming decades.[7] The Next Generation *Africa Climate Business Plan (ACBP)* (FY21-26) highlights the urgency to leapfrog into novel development pathways, and emphasizes resilience building and adaptation as cornerstone for a greener and more prosperous future.

Climate change impacts can't be addressed without acknowledging that it has disproportionate effects on the poor, and profound consequences on the countries' economic growth and development pathways. The effects of drought, heavy precipitation, floods, increased temperature and extreme climate events, among other manifestations, impose a heavy burden on the

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1   Hallegate, S. et. al(2016) Shock Waves: Managing the Impacts of Climate Change on Poverty. Climate Change and Development Series. Washington, DC: World Bank. doi:10.1596/978-1-4648-0673-5.

2   Ibid.,

3   Ibid.,

4   Hallegatte, S., C. Green, R. J. Nicholls, and J. Corfee-Morlot. 2013. "Future Flood Losses in Major Coastal Cities." Nat. Clim. Change 3: 802–06.

5   Winsemius, H., Jongman, B., Veldkamp, T., Hallegatte, S., Bangalore, M., & Ward, P. (2018). Disaster risk, climate change, and poverty: Assessing the global exposure of poor people to floods and droughts. Environment and Development Economics, 23(3), 328-348.

6   IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

7   Bookings Institution (2017, Foresight Africa 2017. Bishop, R., (2017) Confronting Climate Change: Africa's Leadership on an Increasingly Urgent Issue. Chapter 5. Retrieved from *https://www.brookings.edu/wp-content/uploads/2017/01/global_20170109_foresight_africa_chapter-5.pdf*

capacity of people, assets, institutions, and services to cope with and recover from shocks, and to adapt to change.

In vulnerable contexts that are already affected by multiple, and often simultaneous shocks and stressors (e.g., conflict, violence and fragility, food insecurity, pandemics, environmental degradation), resilience building is more crucial than ever before. Climate adaptation and resilience are key to achieving development priorities such as food, water, environmental, and human security.[8] Building climate resilience constitutes a key approach in countries' efforts to build back stronger and better after a shock, and to establish a development pathway that allows them to thrive and transform despite uncertainty.

> **Resilience is not a new concept in the international development field. There is no standard definition of the term, nor is there a 'one size fits all' approach to building it. It is broadly defined by the Intergovernmental Panel on Climate Change (IPCC) as the capacity of social, economic and environmental systems to cope with a hazardous event, trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and the capacity for adaptation, learning and transformation.**

Building Climate Resilience in Development Practice

The increasing frequency and intensity of climate impacts are raising the stakes of development actions, and influencing the way in which projects are designed, monitored and implemented. Integrating the notion of resilience in development practice requires practitioners to 'unpack' what resilience means and what it implies for their project. Unpacking the concept is also key to embed resilience more systematically into the project's design and monitoring, and ultimately, for strengthening impact.

Key elements in the definition of resilience relate to (a) building capacity (to absorb, adapt and/or transform), and to (b) ensuring a dynamic systems-based approach (by working with multiple actors/sectors, and across levels -local, sub-national, national and regional) to address (context relevant) shocks and stressors.

In the context of climate – building resilience to extreme events (e.g., floods), as well as slow onset events (e.g., droughts, sea level rise) related to rising temperatures, are both critically important. Details on who or what is exposed to what kind of

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8   World Bank, 2020.

hazards alter the scale, nature, and timeframe of resilience-related interventions (e.g., protecting coastal cities from rapid onset and strong magnitude events, versus interventions aimed at supporting subsistence farmers during continuous low-impact events, such as precipitation variability and shortfalls).

Resilience has been widely adopted in the international development field, however, there is a risk for the concept to be used as a 'buzzword', lacking a robust integration into the projects' design. Strengthening the design of resilience projects to address and counter climate risks through more holistic, integrative approaches is key for the achievement of economic growth and climate smart development. Applying a resilience lens from the projects' outset can support the integration of climate risks in the planning of climate-sensitive investments, enhance progress tracking, and deliver more sustainable outcomes.

This Note provides practitioners and World Bank project teams with an overview of a novel approach to enhance climate resilience into project design and monitoring and implementation.

The next section of the Note provides an overview of the resilience attributes approach, including the main reasons why to use it, and how it can contribute to strengthen the climate resilience design and monitoring of operations.
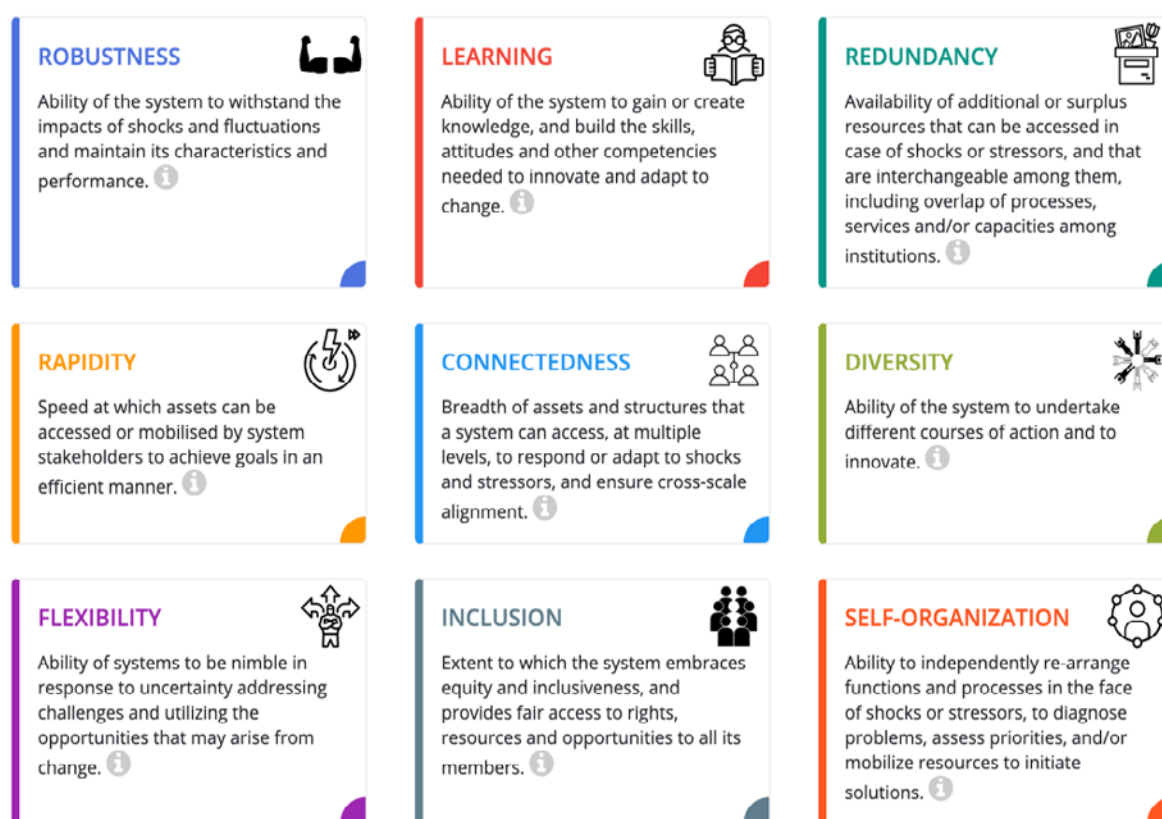
Resilience Attributes: Stronger Design, Monitoring and Impact

2

Ensuring a robust resilience design and progress tracking is key to designing interventions that strengthen crisis preparedness and early response to shocks, and that contribute to adaptation to slow-onset events. Stronger resilience design, monitoring and impact requires a more granular, more in depth understanding of resilience building in the project's context, in order to identify the best approach to strengthen absorptive, adaptive and transformative capacities. The integration of **resilience attributes** — defined as key characteristics that help build and secure resilience — can help to achieve climate resilient outcomes through well-designed projects.[9] (Figure 1).

Figure 1 Resilience Attributes. Source: Resilience Booster Tool.

ROBUSTNESS
Ability of the system to withstand the impacts of shocks and fluctuations and maintain its characteristics and performance. ⓘ

LEARNING
Ability of the system to gain or create knowledge, and build the skills, attitudes and other competencies needed to innovate and adapt to change. ⓘ

REDUNDANCY
Availability of additional or surplus resources that can be accessed in case of shocks or stressors, and that are interchangeable among them, including overlap of processes, services and/or capacities among institutions. ⓘ

RAPIDITY
Speed at which assets can be accessed or mobilised by system stakeholders to achieve goals in an efficient manner. ⓘ

CONNECTEDNESS
Breadth of assets and structures that a system can access, at multiple levels, to respond or adapt to shocks and stressors, and ensure cross-scale alignment. ⓘ

DIVERSITY
Ability of the system to undertake different courses of action and to innovate. ⓘ

FLEXIBILITY
Ability of systems to be nimble in response to uncertainty addressing challenges and utilizing the opportunities that may arise from change. ⓘ

INCLUSION
Extent to which the system embraces equity and inclusiveness, and provides fair access to rights, resources and opportunities to all its members. ⓘ

SELF-ORGANIZATION
Ability to independently re-arrange functions and processes in the face of shocks or stressors, to diagnose problems, assess priorities, and/or mobilize resources to initiate solutions. ⓘ

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9   Adapted from WB's ReM&E initiative and the Resilience Assessment, Benchmarking and Impact Toolkit (RABIT) .

> **Defined as a set of characteristics that are critical for vulnerable systems to build resilience, that is, to be able to absorb, adapt and potentially transform amidst the impact of short-term shocks and long-term stressors, the resilience attributes can serve to refine and strengthen a project's resilience approach in order to maximize impact.**

A compilation of key concepts and definitions that are needed to integrate Resilience Attributes as part of the project's design and implementation are provided in **Annex 1**.

The resilience attributes are dynamic and closely inter-related, and are not exclusive or exhaustive. They can be realized through a variety of activities designed into a project, contributing to building 'core' resilience capacities (i.e., adaptive, absorptive, and/or transformative capacities). While these attributes can be applied more broadly — to build resilience to any kind of shock or stressor — they provide a useful framework to address climate related risks and impacts in vulnerable contexts.

> **Integrating context-relevant attributes can help strengthen the design, monitoring and resilience impact of development projects and operations.**

Why Use Resilience Attributes?

Integrating resilience attributes early in the design process (e.g., at the Concept Note stage) can contribute to a stronger resilience design, as the key resilience concepts and definitions are embedded in the project's structure and narrative from the onset. However, teams can also integrate them in subsequent stages of the project's preparation or during implementation.

The approach provides an opportunity for teams to gain a more in-depth understanding of the key concepts and definitions that underpin resilience – including resilience capacities, attributes and markers – which are concepts that otherwise may not have been explicitly addressed as part of the design, or discussed, validated and tracked during the project cycle. Integrating resilience attributes as part of the project's design and implementation can also contribute to meet broader institutional or corporate commitments (Box 2).

Box 2. Helping to meet WB corporate climate commitments

Mainstreaming climate change and addressing climate resilience constitute key priorities in the World Bank's 2025 climate change targets. The 2025 Action Plan outlines a strong commitment to improve the planning and implementation of interventions to address more robustly and systematically climate-related risk. In addition to the Bank's corporate and regional targets, IDA19 policy commitments support stronger resilience building, with climate change identified as one of the special themes of focus.

The resilience attributes approach can complement other tools and approaches available for resilience building. For World Bank teams, integrating resilience attributes can help meet corporate climate commitments, the Climate and Disaster Risk Screening, the Resilience Rating System, and the Climate Co-benefits.

The integration of resilience attributes was designed as a bottom-up approach, drawing from the design and implementation steps that WB teams are already taking, in order to ensure a more organic integration into current practices. The approach can also help to complement and strengthen existing sectoral Guidelines related to resilience.

Integrating Resilience Attributes into Operations

The integration of resilience attributes can contribute to enhance a project's achievement of climate resilience impact in two main ways:

Strengthening Resilience Design

Resilience attributes can enhance project design by providing teams with a more in-depth look into key factors that play a role in resilience building in their specific context of implementation. The approach facilitates the integration of resilience concepts and definitions, the consideration of key

questions to inform the design from a resilience lens (i.e., resilience of whom, where, to what, and how), as well as the identification and analysis of context-specific characteristics that need to be addressed through project activities and outputs in order to build resilience.

The integration of resilience attributes can help project teams in the identification of interventions/activities that can bolster resilience pathways. By identifying linkages between the project's activities, key resilience attributes and project outcomes, teams can provide a more in-depth description of the way in which the project plans to contribute/or is contributing to resilience building in the context of implementation.

While the approach includes a total of nine inter-related attributes, teams are encouraged to select a small number of key attributes (e.g., 1-3) that are most relevant for the project. Prioritizing resilience attributes is key to ensure a tailored approach to resilience building, based on the context of implementation and on the project's scope.

> **'Key attributes' would be those that respond more directly to the key climate change risks and needs that exist the context of implementation and should be closely related to the intermediate outcomes of the project.**
>
> **For example, if a team has identified through a risk and vulnerability assessments that the context is highly vulnerable to flooding, and that local infrastructure and institutional capacity are very weak, then project activities and outcomes would be closely related to the attribute of 'robustness'. If during participatory consultations the local stakeholders highlighted issues of gender inequality and lack of participation, then the project may integrate activities to increase women's participation, which relates to the attribute of 'inclusion'.**

The linkages the project's outcomes, resilience capacities, resilience attributes and interventions can be visualized in through a 'resilience pathway map', tailored to the project (Figure 2).

Figure 2 Sample of a Project's Resilience Pathway Map
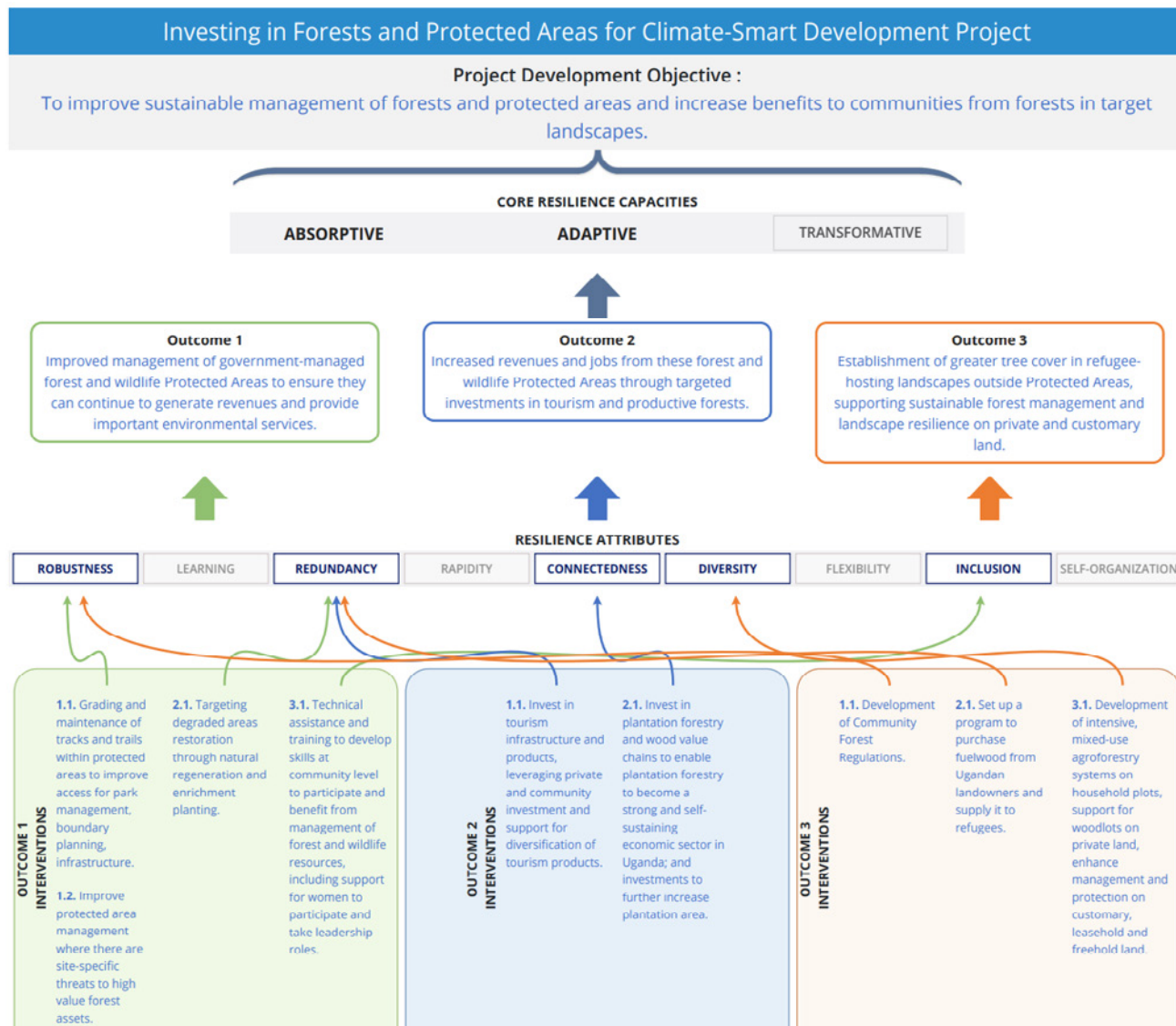
This pathway map provides a 'snapshot' of the project's approach to resilience building and helps teams to strengthen their project design by:

- Making reference to the **priority resilience attributes** in the project's design narrative in support of the achievement of the project's outcomes,

- Making explicit the resilience contribution of project interventions to strengthen **resilience attributes.**

- Making explicit the resilience contribution/linkages of the project's interventions with the **resilience capacities** (absorptive, adaptive, transformative), in alignment with the project's development objective (PDO).

Using the Resilience Booster Tool to integrate Attributes into the Project's Design

Steps 1 to 4 of the Resilience Booster tool are focused on strengthening resilience project design. They are designed to help users understand the resilience context of their project, and to identify and embed key resilience attributes that contribute to the achievement of the project's outcomes through four interrelated steps:

First, the user provides basic project information (name, country/region, development objective, duration, sector) to ensure that the resilience approach is tailored to it throughout the rest of the tool.

Second, the user unpacks the resilience context for the project in relation to resilience to what (shocks and stresses) and resilience of whom (beneficiaries), and identifies the core resilience capacities (absorptive, adaptive, transformative) that the project will contribute to.

Third, the user links the project's outcomes with the resilience attributes that are most relevant to achieve the project's goal.

Fourth, the user embeds the resilience attributes into the project's design, by identifying specific interventions that will support the delivery of those attributes. These inputs allow the user to generate a 'Resilience Pathway Map' tailored to the project, visualizing the linkages between the project's outcomes, key resilience attributes, and specific project interventions.

Strengthening Resilience Monitoring

Tracking the resilience attributes throughout the project cycle can provide teams with additional insights about the project's contribution to resilience, and serve as an input to the projects' Monitoring and Evaluation (M&E) system (e.g. through a qualitative assessment of the project's contribution to attributes at different stages of the project cycle, the identification of/ complement project indicators, identification of unintended impacts). The approach can also help teams to visualize progress towards resilience building throughout the project cycle (Figure 3).

Using the Resilience Booster to integrate Attributes into the Project's Monitoring

The Resilience Booster tool provides users with an optional step (**Step 5**) to complement the project's M&E system by using resilience attributes to monitor resilience progress. This step can be applied by projects that are at the **design stage or under implementation.**

After having completed steps 1-4 described above, the user is guided to select 1 to 3 attributes that are most compelling for the project, in order to monitor them during the project's cycle.

Using a simple scoring system (0-5), the user can develop a **resilience attributes baseline** (reflecting the current state of the resilience attributes in the project's context), identify **targets** (what project aims to achieve through the interventions), and generate a **visualization** (Figure 3) that can help inform or complement the project's results framework.

The user can refer to the baseline and target values at key milestone stages of the project's implementation (e.g., annual, mid-term and end of project) in order to assess progress on resilience.

In order to track resilience over the project cycle, the approach also provides a series of 'resilience markers' (Annex 1) developed as part of the RABIT Toolkit to help identify and differentiate the attributes, and to complement the project's M&E system — including the results framework.

The resilience attributes approach is the centerpiece of the accompanying *Resilience Booster Tool*, an interactive, step-by-step tool for development practitioners, including World Bank task teams, who are designing or working on climate resilient projects. The tool helps teams to think through, specify and design project activities that build resilience by integrating resilience attributes.

Figure 3 Sample of a Project's Resilience Attributes Baseline and Targets Visualization.

This is a visualization of the project's resilience attributes baseline and targets. The scores (low from 0-1, medium 2-3, or high 4-5) can help inform or complement the project's Results Framework, and can be used as a reference to track progress towards targets annually, at mid-point or at the end of the project.

—— Baseline ----Target

Attribute	Baseline		Target	
ROBUSTNESS	Medium (2)		High (5)	
	Low institutional capacity (e.g., few staff with required technical knowledge) and low physical preparedness.		High institutional capacity and physical preparedness, new policies in place.	
REDUNDANCY	Medium (3)		High (4)	
	Some availability of resources that can be access in case of shocks through community saving groups.		High availability of resources through strengthened saving mechanisms.	
CONNECTEDNESS	Medium (2)		High (4)	
	Some level of interactions/knowledge exchange between the communities with sub-national / national government authorities.		High level of interactions/knowledge exchange between the communities, sub-national and national authorities to respond to shocks.	

The approach used for tracking resilience attributes can be adapted to the project. Teams can use the 'Score Card' included in Step 5 of the _Resilience Booster Tool_, or they can customize the approach. In the latter case, if possible, criteria related to the attributes can be added to other assessment tools and methodologies, so as to ensure their integration in the project's results framework and M&E. Tracking and visualizing resilience attributes can also be adapted to the specific project context.

Reflections about the Approach

3

- Integrating resilience attributes into the project design is an effective approach to ensure a more in-depth, robust resilience lens for the achievement of outcomes. Robust design is crucial to ensure that the notion of resilience is not used as a 'buzzword', but is effectively applied to track and improve impact on absorptive, adaptive and transformative capacities.

- The value added of the attributes resides in helping teams to take good design practices further, by adding granularity to the project's contribution to resilience, and by making explicit the project's contributions to resilience that otherwise may not have been acknowledged/documented and tracked.

- The resilience attributes can't be used or prioritized in a vacuum; they are part of a broader design process that provides valuable information about the vulnerability context. Considering this broader context is essential to identify, prioritize and use the resilience attributes in order strengthen climate resilience outcomes.

- As in every selection process, there can be trade-offs involved in the prioritization of resilience attributes. It is expected that the selection of attributes is not limited to the 1 or 2 "low-hanging fruits", but that teams include other attributes that provide them with a broader understanding of project's contributions to resilience building. This can be done in several ways, including:

- by ensuring that the selection of attributes is informed by the results of the climate and disaster risk assessment and local vulnerability assessments, to have a complete picture of the gaps and needs of the context of implementation;

- by using the attributes as part of the preparation of the project's Theory of Change, to ensure that they are articulated to the achievement of short, medium- and long-term outcomes.

- Tracking and visualizing resilience attributes can support the project's M&E system and facilitate adaptive management. The integration of resilience attributes -and associated 'markers'- allows teams to complement the project's indicators through qualitative measures of progress in resilience building at the project's start (baseline), mid-term and completion. This requires the integration of the attributes as part of the project's M&E design, so as to ensure consistency in the tracking of progress through the project cycle, as well as articulation/complementarity with other data collected.

The value added of attributes doesn't reside only in enriching the project's resilience design and structure, but on strengthening progress monitoring and the achievement of resilience outcomes. The process can be mainstreamed as part of the project's design and led by the project team itself until the project's completion. Integrating resilience attributes is a dynamic process and some of these lessons would need to be tested further and exemplified through future steps.

Resilience Attributes: Key Concepts & Definitions

1 RESILIENCE

Resilience is the ability of vulnerable systems – countries, regions, communities, infrastructure, value chains, organizations – to absorb (i.e. withstand and recover from) the impact of shocks and stressors (e.g. climate change), to adapt to those impacts, and potentially transform amid change and uncertainty. Resilience plays a crucial role in the achievement of development outcomes.

2 CORE RESILIENCE CAPACITIES

ABSORPTIVE CAPACITY

Ability to prepare for, mitigate, or prevent negative impacts of shocks and hazards so as to preserve and restore essential basic structures and functions.

Example

e.g., strengthening the walls of grain storage sheds to enable them to withstand inclement weather, such as high winds and rain

ADAPTIVE CAPACITY

Ability to adjust, modify or change characteristics and actions to moderate potential future impacts from shocks and stresses, so as to continue to function without major qualitative changes.

Example

e.g., establishing an irrigation system for farmers previously dependent on invariable rainfall to water their crops

TRANSFORMATIVE CAPACITY

Ability to create a fundamentally new system so as to avoid negative impacts from shocks and stresses. Transformation takes place over longer periods of time, as it requires structural change.

Example

e.g., shifting from agriculture to another means of income such as livestock herding, given the chronic climate and disaster risk and stress the current system is facing

* *In the case of many projects, due to timeframe or scope, the main -measurable- contribution to resilience related to absorptive and adaptive capacities, and there may be trade-offs. Transformation takes place over a series of incremental increases (e.g. higher levels of diversity, broader inclusion and participation, incremental policy changes) that teams may be able to identify and track over the project cycle, as a contribution towards long-term transformation.*

These core resilience capacities can be enhanced through several **resilience-building attributes** that may be realized through activities or interventions designed into a project. One or more resilience attributes can contribute to building absorptive, adaptive, and/or transformative capacities.[10]

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10 World Bank. 2017. Operational guidance for monitoring and evaluation (M&E) in climate and disaster resilience-building operations (English). Washington, D.C. : World Bank Group; Resilience Assessment, Benchmarking and Impact Toolkit, RABIT. http://www.niccd.org/resilience/

3 RESILIENCE ATTRIBUTES[11]

Series of characteristics that are critical for vulnerable systems (e.g. communities) to build resilience to the impacts of shocks and stressors. The resilience attributes:

- Are interrelated, and often *overlap and complement each other*;
- The *role and importance* of each attribute is *specific to each project and system of focus* (e.g. rapidity could be more important for a community vulnerable to floods, while robustness could be crucial for infrastructure in areas prone to natural disasters);
- They are *dynamic*, as their role in resilience building is likely to shift (increase or decrease) during the project cycle (e.g. inclusion may not have been considered as a priority at the onset of the project, but can become crucial in the event of increased migration in the area; rapidity can become a priority in case of a natural disaster taking place during the project cycle).
- They can be *prioritized based on the objectives* of a project: a project can integrate 2-3 'top attributes' that better respond to the resilience building needs of the context of implementation.
- They are *not exclusive*: practitioners can identify additional attributes that may be relevant in the context of implementation.

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11   Ospina, A.V. and Heeks R. (2014) Resilience Assessment, Benchmarking and Impact Toolkit (RABIT) Handbook. University of Manchester, U.K.

3 RESILIENCE ATTRIBUTES

The resilience attributes can be *assessed and tracked* throughout the project cycle, helping to complement the M&E system and support adaptive management practices. Considering a series of **resilience markers** for each attribute can help practitioners to identify, assess and track the progress achieved through the implementation of project activities.

RESILIENCE ATTRIBUTES	RESILIENCE ATTRIBUTES: DEFINITIONS	RESILIENCE ATTRIBUTES: EXAMPLES
ROBUSTNESS	Ability of the system to withstand the impacts of shocks and fluctuations, and maintain its characteristics and performance.	• Physical preparations such as flood barriers, terracing on hills and resistant infrastructure. • Strong institutions that help avoid the system's collapse amidst the impact of climate shocks and stressors. • Design and implementation of new policies and/or regulations that increase preparedness
LEARNING	Ability of the system to gain or create knowledge, and build the skills, attitudes and competencies needed to innovate and adapt to change.	• Availability of capacity-building programmes on adaptation options. • Mechanisms to document traditional adaptation knowledge and lessons learned. • Access to relevant information and knowledge about local climate change impact.
REDUNDANCY	Availability of additional or spare resources and/or institutions that can be accessed in case of shocks or stressors, and that are interchangeable among them (i.e. overlapping functions, services and/or capacities).	• Availability of multiple livelihoods or sources of income (e.g. remittances, cash crops, paid labor), which create a financial surplus or additionality that can be used to respond to climatic events. • Access to multiple sources of support/expertise that can substitute one another (e.g. multiple credit sources) and help to fill gaps in times of need.
RAPIDITY	Speed at which assets can be assessed, mobilised and accessed by system stakeholders to achieve goals in an efficient manner.	• Availability of early-warning systems that alert the community about imminent threats. • Swift access to the information needed to take decisions. • Savings, credit and insurance mechanisms to ensure rapid access to the financial resources required to respond to shocks (e.g. shelter and food needs).
CONNECTEDNESS	Breadth of resources and structures that a system can access, at multiple levels, in order to respond or adapt to shocks or stressors.	• Access to networks (formed by members at the local, regional or national levels) (e.g. regional institutions or a national group of volunteers) • Access to extended markets (regional or international), or organisations to pull resources and support climate responses.

(continued)

3 RESILIENCE ATTRIBUTES

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RESILIENCE ATTRIBUTES	RESILIENCE ATTRIBUTES: DEFINITIONS	RESILIENCE ATTRIBUTES: EXAMPLES
DIVERSITY	Ability of the system to undertake different courses of action and to innovate	• Availability of multiple/diverse livelihood options, land use, and infrastructure choices. • Access to different sources of scientific research and/or information, as well as to traditional/indigenous knowledge to inform responses to shocks. • Access to diverse/varied sources of knowledge that foster innovative responses to climate change challenges.
FLEXIBILITY	Ability of the system to be nimble in response to uncertainty, addressing challenges and utilising the opportunities that may arise from change.	• Availability of flexible institutions that support alternative pathways of action to climatic impacts. • Ability to inform decisions with new information that becomes available, adopt new tools or agricultural inputs that can improve productivity and make crops more resistant to climatic impacts.
INCLUSION	Extent to which the system embraces equity and inclusiveness, and provides fair access to rights, resources and opportunities to its members.	• Availability of programmes to improve the skills and competencies of vulnerable members of the community, including trust, self-worth and other psycho-social factors. • Participative decision-making processes at the community level, transparency and representation of all groups (women, elders, youth, persons with disabilities) within local decisions and processes. • Traditional knowledge and technologies used in local adaptation strategies.
SELF-ORGANIZATION	Ability to independently re-arrange functions and processes in the face of shocks or stressors, to diagnose problems, assess priorities, and/or mobilize resources to initiate solutions.	• Availability of locally led adaptation efforts. • Local organisations that coordinate access to disaster prevention and response resources. • Community-based social networks that help create awareness and disseminate information about local climate change impacts.

*A set of sector-based Resilience Attribute checklists (Agriculture, Energy, Transport and Water) are available in the Resilience Booster Tool.

4 RESILIENCE MARKERS

Specific features that help to identify and distinguish each attribute, as well as to track progress throughout the project cycle (i.e. as a complement to the project's M&E system).

ROBUSTNESS	• Physical preparedness and protection • Institutional capacity • Governance/policies & regulations
LEARNING	• Capacity building • New and traditional knowledge • Experimentation and discovery
REDUNDANCY	• Spare resources / additionality • Functional overlaps and interdependency • Resource substitutability
RAPIDITY	• Rapid resource assessment/ coordination • Rapid resource mobilisation • Rapid resource access
CONNECTEDNESS	• Multi-level networks and cross-scale integration • Resource access and partnerships • Cross-level interactions
DIVERSITY	• Availability of multiple courses of action • Emerging opportunities. • Innovation backbone
FLEXIBILITY	• Adaptable decision-making • Diverse response mechanisms to risks/ opportunities • Modularity and integrability of components
INCLUSION	• Gaps reduction • Inclusiveness and participation • Openness and accountability
SELF-ORGANIZATION	• Collaboration/consensus building • Social networks. • Local leadership and trust, including psycho-social dimensions (e.g. belief, motivation, hope, perceived self-efficacy)

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