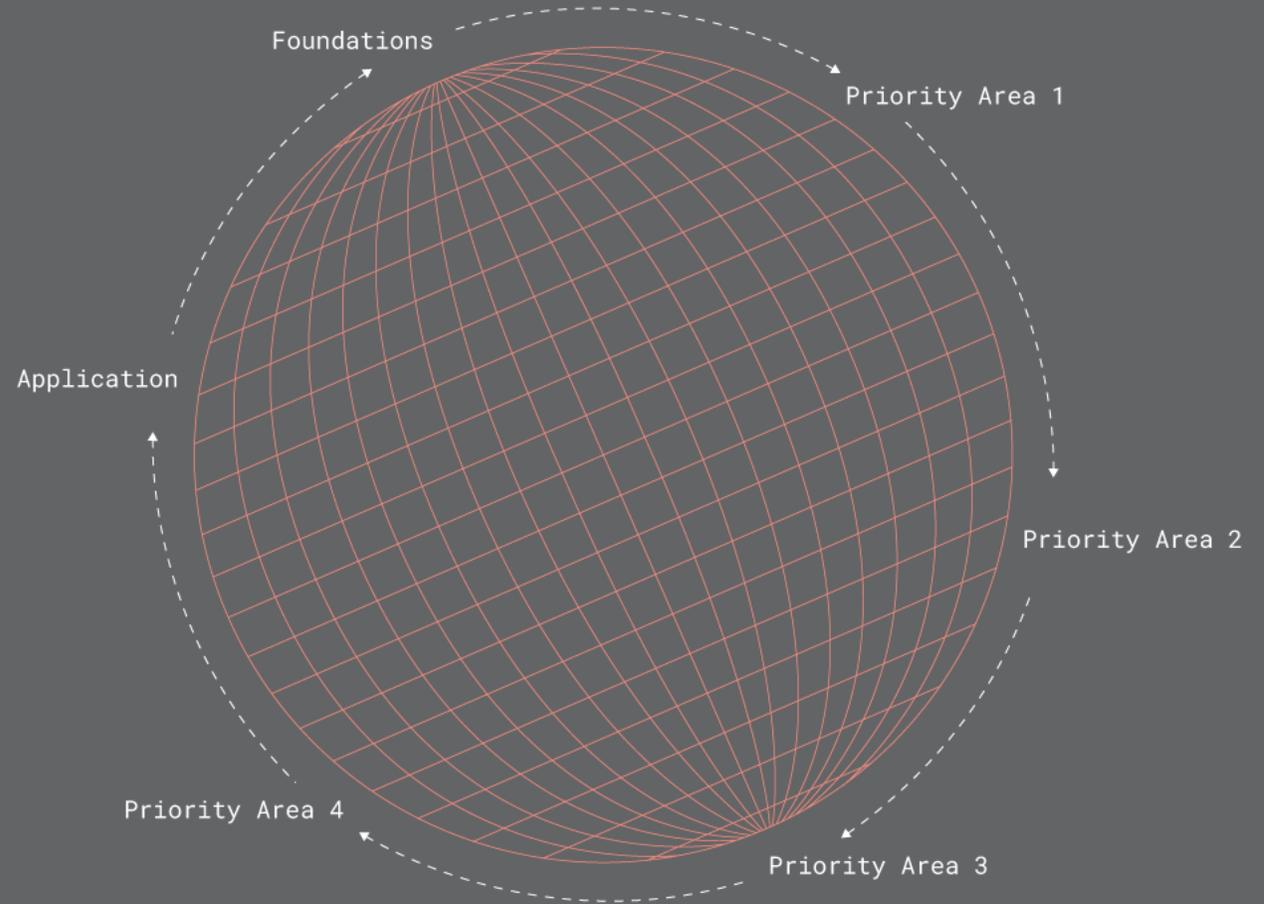


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# The Adaptation Principles

A Guide for Designing  
Strategies for  
Climate Change Adaptation  
and Resilience

Stephane Hallegatte  
Jun Rentschler  
Julie Rozenberg



[ 6 PRINCIPLES // 26 ACTIONS // 12 TOOLBOXES // 111 INDICATORS ]

# Adaptation Principles

## APPLICATION >>

**Prioritization, implementation, and monitoring**

## LEAD MINISTRY >>

*Finance/economy and ministry in charge of climate change*

## PRIORITY AREA 1 >>

**Facilitate the adaptation of firms and people**

## LEAD MINISTRY >>

*Economy*

## PRIORITY AREA 2 >>

**Adapt land use plans and protect critical public assets, services**

## LEAD MINISTRY >>

*Planning, investment, or infrastructure*

## PRIORITY AREA 3 >>

**Help firms and people manage residual risks and natural disasters**

## LEAD MINISTRY >>

*Interior, environment, social protection*

## PRIORITY AREA 4 >>

**Manage financial and macrofiscal issues**

## LEAD MINISTRY >>

*Finance*

## FOUNDATIONS >>

**Rapid, robust, and inclusive development**

## LEAD MINISTRY >>

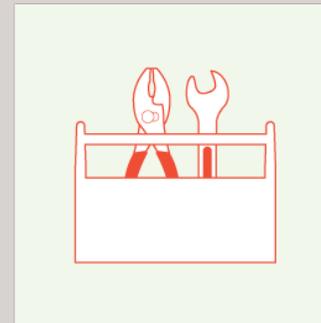
*Finance/economy*

# A tailor-made strategy

[ 6 PRINCIPLES // 26 ACTIONS // 12 TOOLBOXES // 111 INDICATORS ]



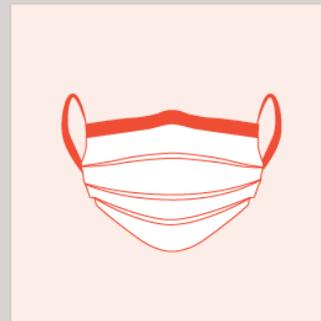
Screening questions >>  
**Identify and tailor actions**



Toolboxes >>  
**Evaluate risks  
and opportunities**



Sample targets  
and indicators >>  
**Monitor and evaluate  
progress**



COVID-19 >>  
**Explore how the  
pandemic changes  
response**



# A list of 111 indicators to use as targets and for monitoring



Indicator  
or target



## Priority Area 4: Manage financial and macrofiscal Issues

### ACTION 4.1 >> Include contingent liabilities from natural disasters and environmental shocks into the planning and budgeting process

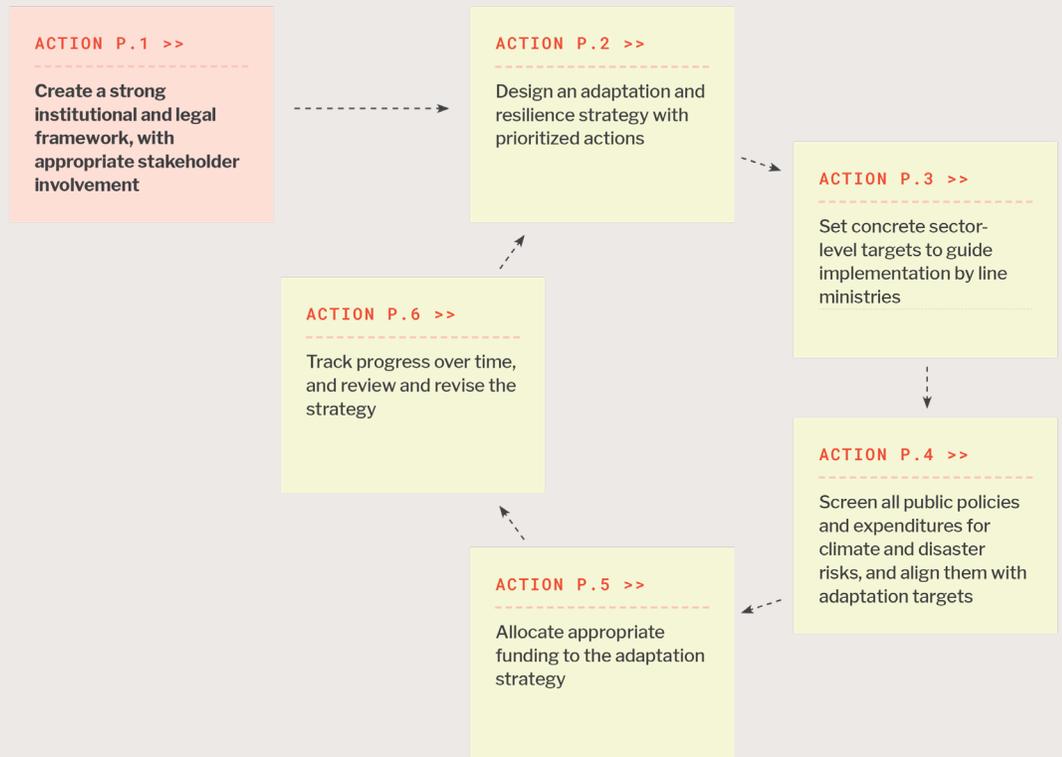
- » Risk to public asset and corresponding contingent liabilities assessed
- » Emergency and social protection spending needs and corresponding contingent liabilities assessed
- » Explicit and implicit contingent liabilities quantified and included in budget documents
- » Risk to GDP and tax revenues estimated and included in budget documents

### ACTION 4.2 >> Develop a financial strategy to manage contingent liabilities, combining multiple instruments

- » Percentage of explicit and implicit contingent liabilities covered by an instrument such as reserve funds, contingent credit lines, and insurance products
- » Disaster escape clause in budget processes approved
- » Process in place to manage inflow of international aid in case of major disaster, including using existing financial instruments to coordinate delivery
- » PD-PFM Review conducted and approved
- » PD-PFM principles and processes approved

### ACTION 4.3 >> Anticipate and plan for long-term macroeconomic impacts

- » Sector-level adaptation plans collected, harmonized, and costed, and estimate of public adaptation spending needs produced
- » Long-term plan to diversify tax revenues away from vulnerable sectors approved
- » Share of tax revenues originating from high-vulnerability sectors
- » Climate and disaster impacts included in debt sustainability assessment or financial sector assessment program

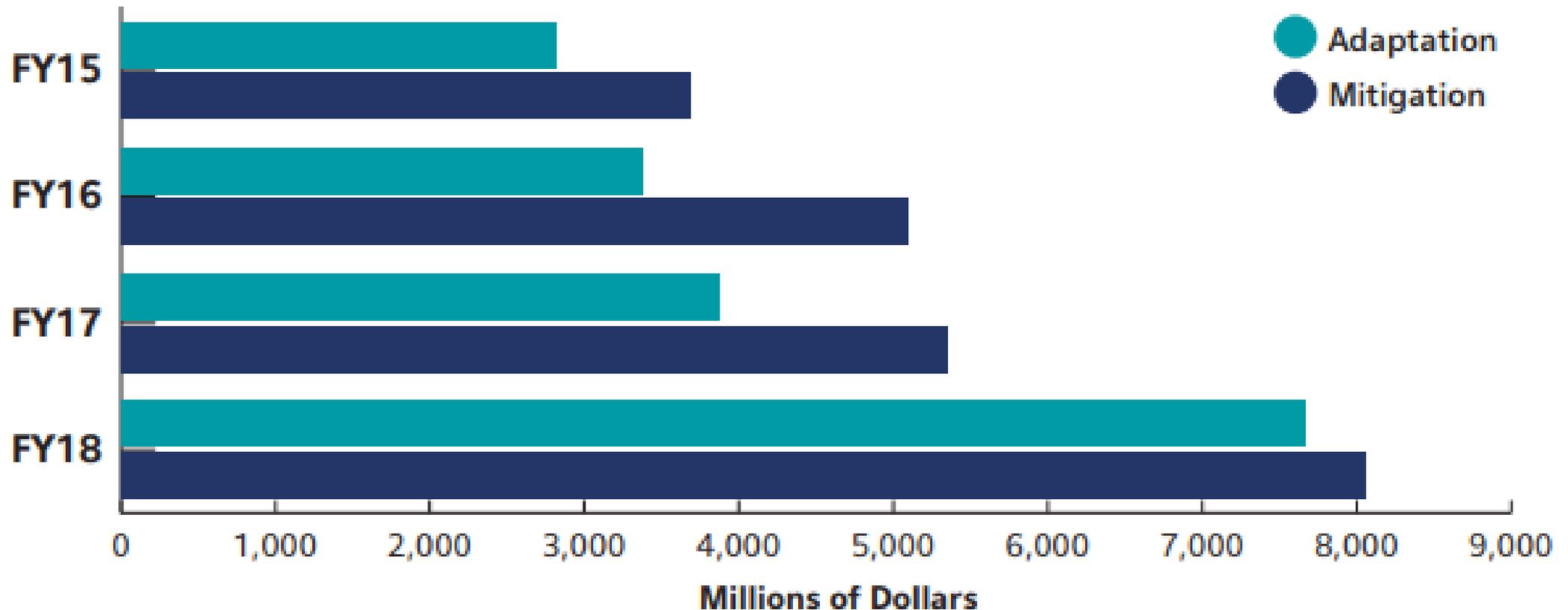




**Are we doing enough? Are we doing it right?  
The World Bank's Resilience Rating System**

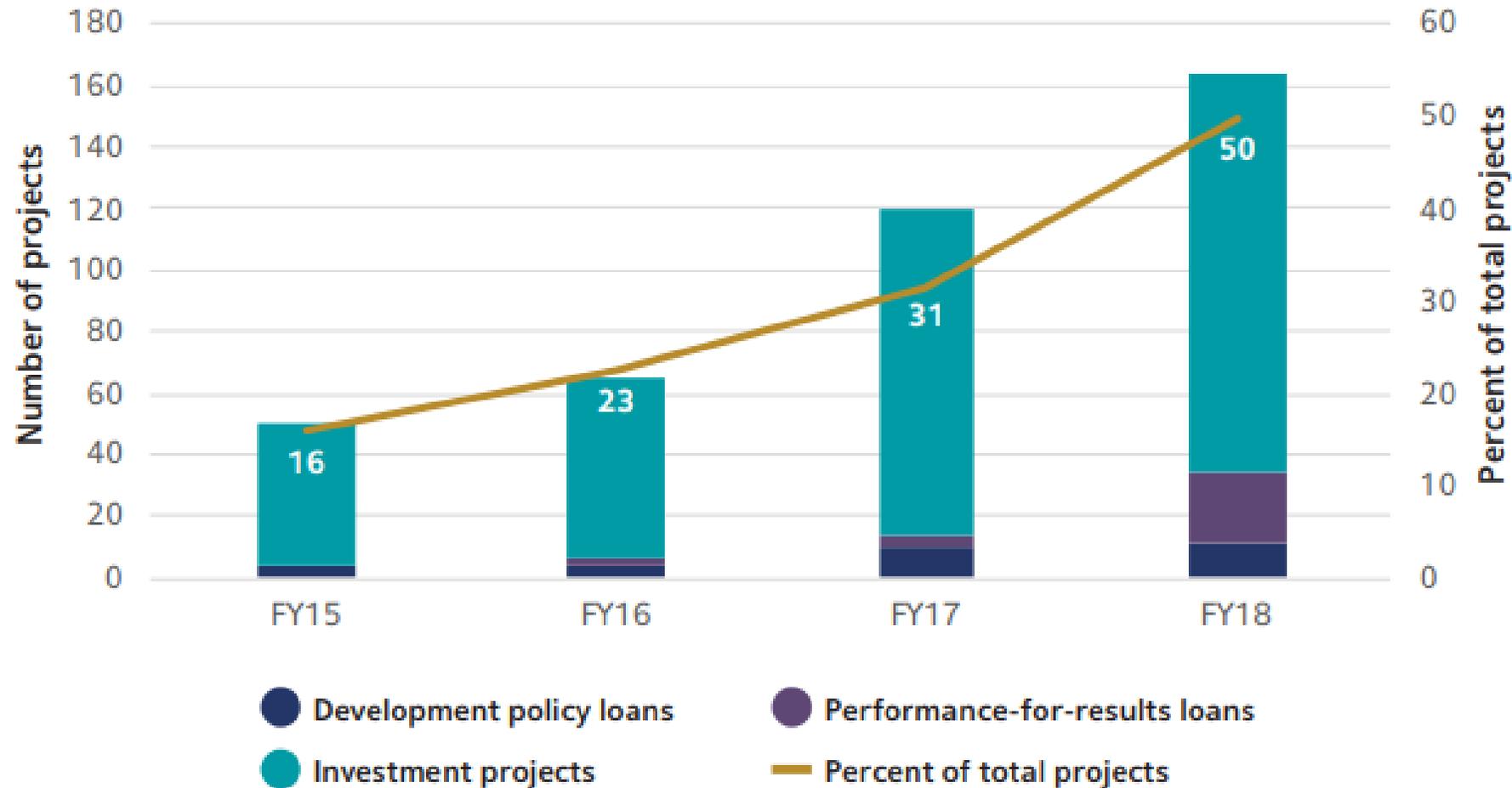
# Growing investments in adaptation and resilience

World Bank Group financing of adaptation and mitigation co-benefits



# Growing investments in adaptation and resilience

Number and share of World Bank Group projects that include adaptation financing, by instrument









**Resilience rating**

```
graph LR; A[Resilience rating] --- B[Resilience of project design]; A --- C[Resilience through project outcomes]; B --- D[Do we have confidence that the project will not underperform (financially, socially, and environmentally) compared with its projected outcomes because of disaster and climate risks?]; C --- E[Do we have confidence that the project will contribute to the resilience of the beneficiaries?];
```

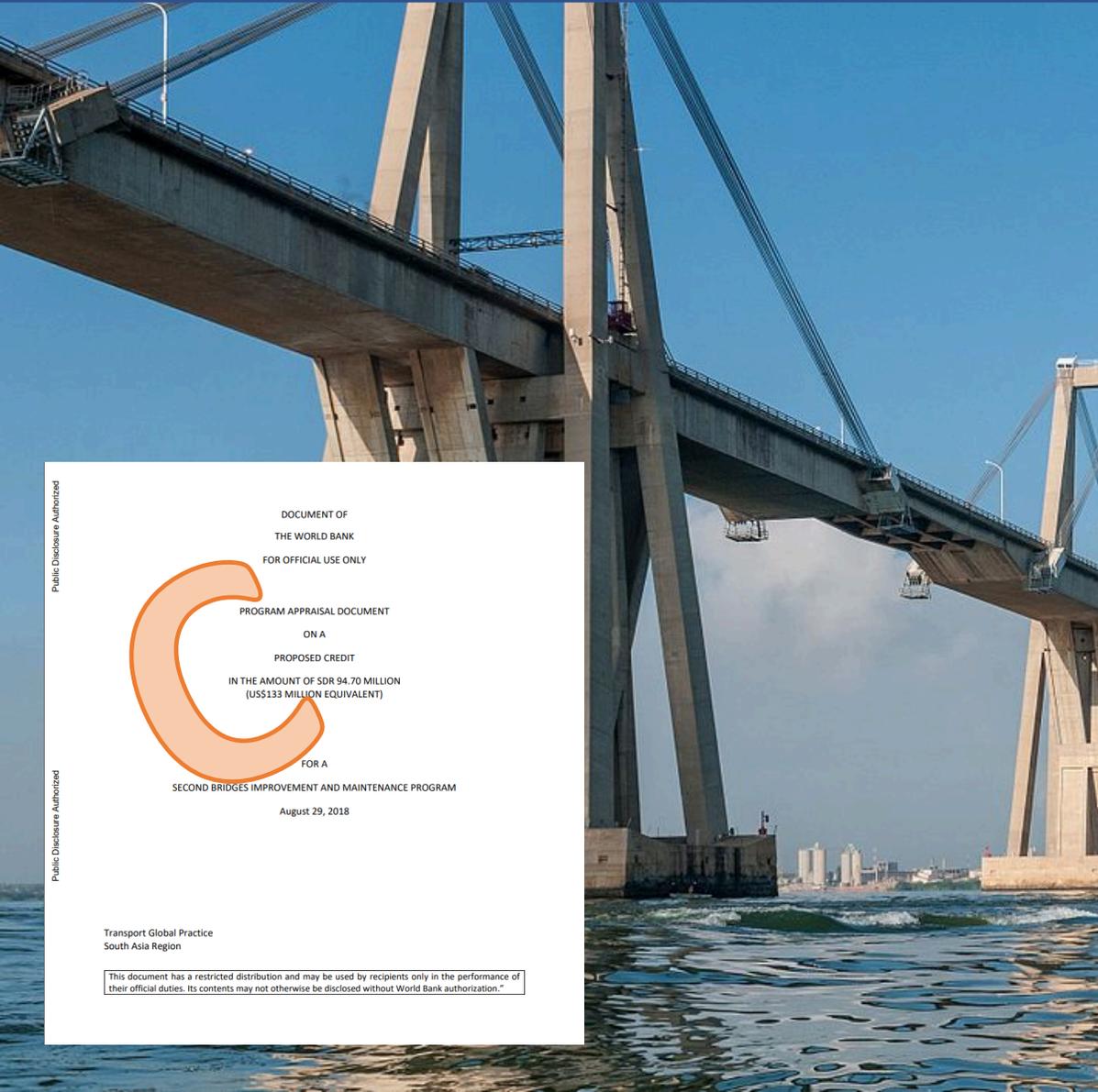
**Resilience of  
project design**

Do we have confidence that the project will not underperform (financially, socially, and environmentally) compared with its projected outcomes because of disaster and climate risks?

**Resilience through  
project outcomes**

Do we have confidence that the project will contribute to the resilience of the beneficiaries?

# First question: How resilient are our projects? Will they deliver in spite of climate change?



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C

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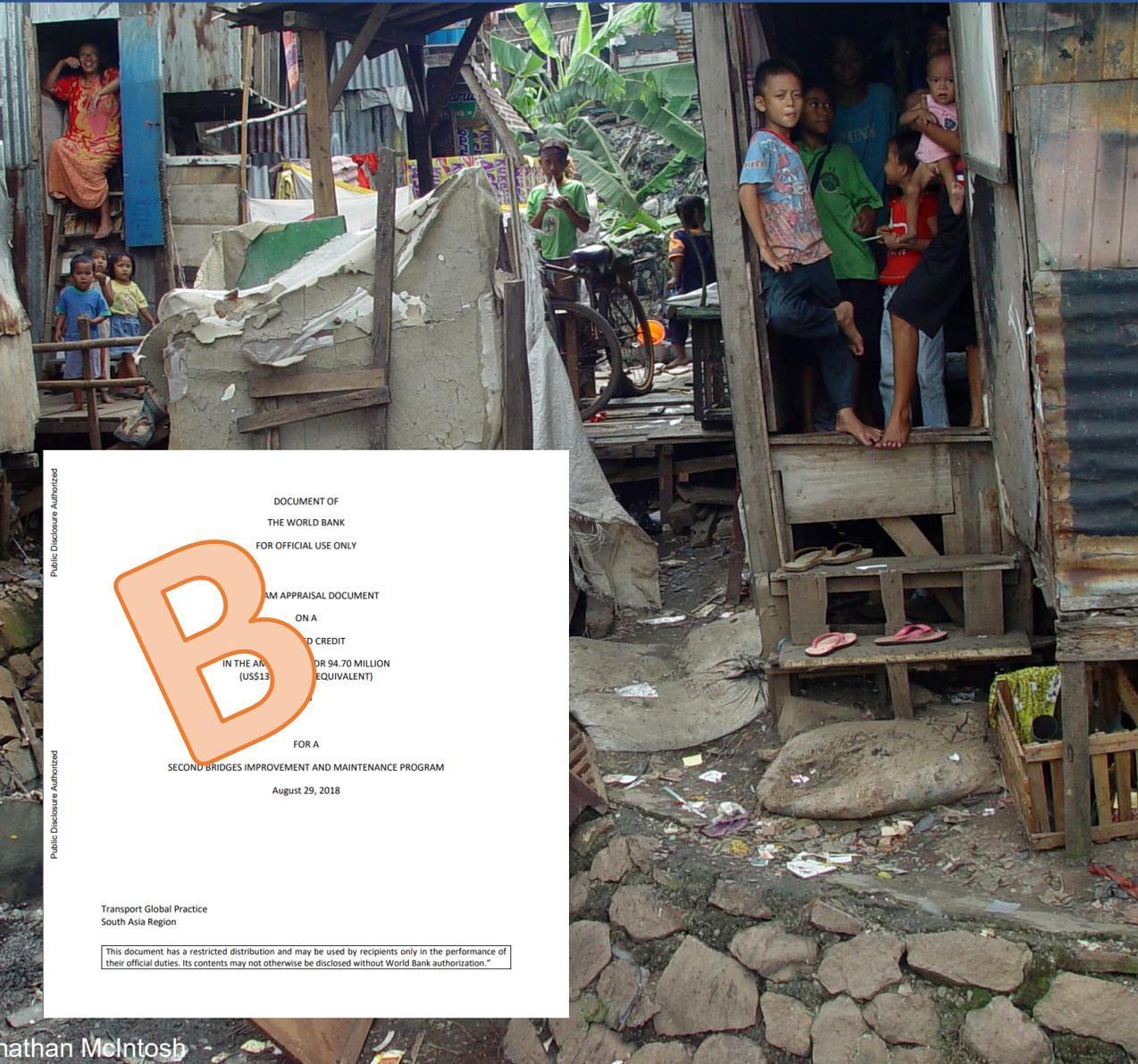
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# Second question: How much do our projects contribute to people's resilience?



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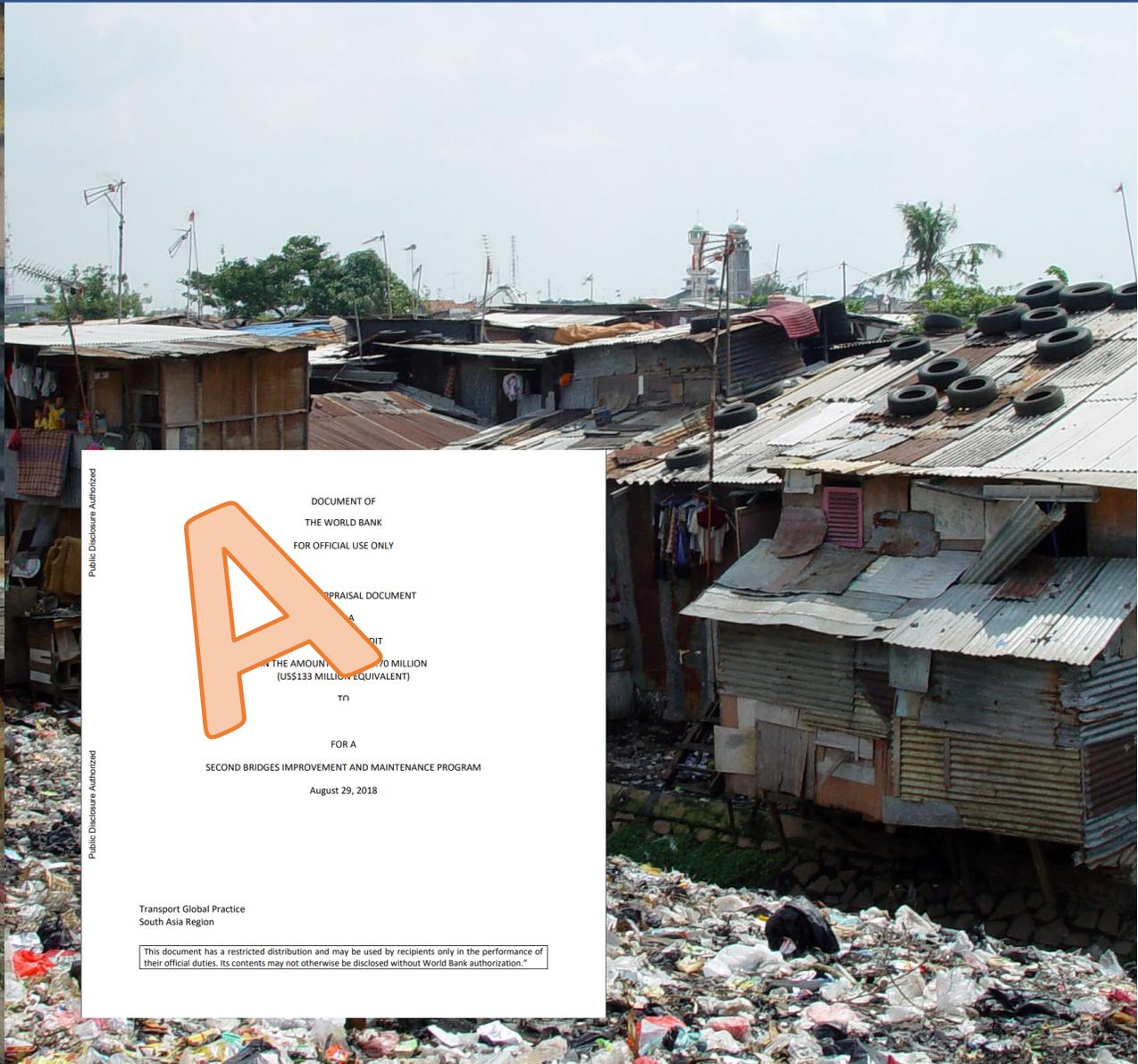
**B**

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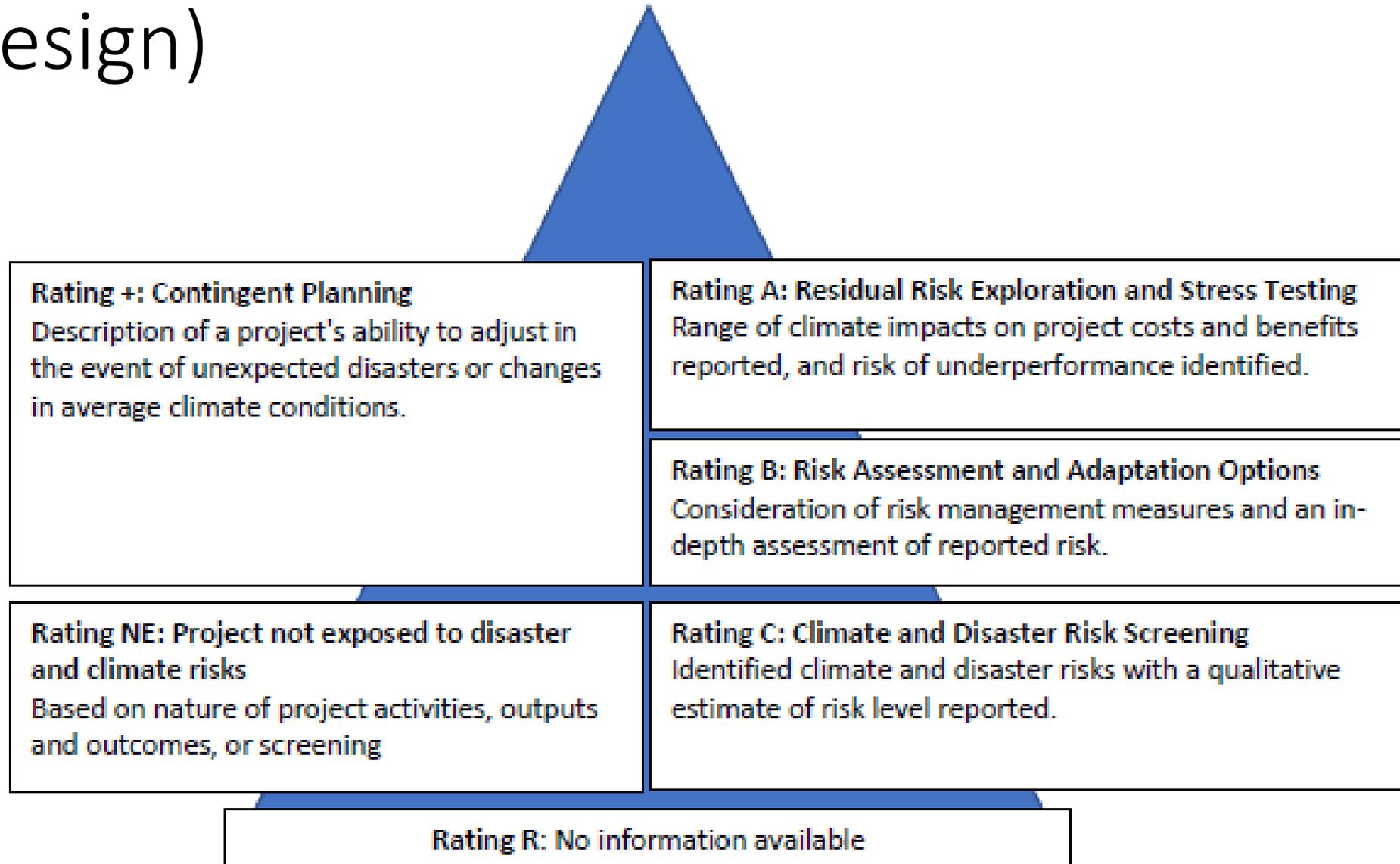
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# Resilience of the project (design)



**Project P**  
PDOs, Estimated IRR or NPV, SORT analysis,  
Result framework

**World Bank toolbox**

e.g., Thinkhazard and CCKP indices, Climate risk screening tool

e.g., expert interviews or back-of-the-envelope calculations, based on ThinkHazard underlying layers, CCKP, or City Scan. List of possible interventions from sectoral guidance notes.

e.g., economic or financial analysis (and accompanying guidance and Excel tool), using on ThinkHazard underlying layers and/or CCKP data. Or existing risk analysis tools (e.g., IFC forestry or road tools)

Does the project document include a risk screening? Is the project exposed to disaster and climate hazard?

Does the project provide a qualitative estimate of the residual risk, and review possible mitigation interventions, with a narrative for inclusion or non-inclusion?

Does the project document provide an estimate of the residual risk (either probability of failure, impact on NPV or IRR), and failure scenarios (with narrative for why those scenarios are implausible or acceptable because manageable)

No screening

No threat identified

No

No

e.g., addition of a systematic uncertainty exploration (DMDU), with contingent plans for failure scenarios

Does the project include adaptability or flexibility in case of surprise or failure, or contingent planning

Rating R

Rating NA

Rating C

Rating B

Rating A

Rating B+

Rating A+

Yes (reported)

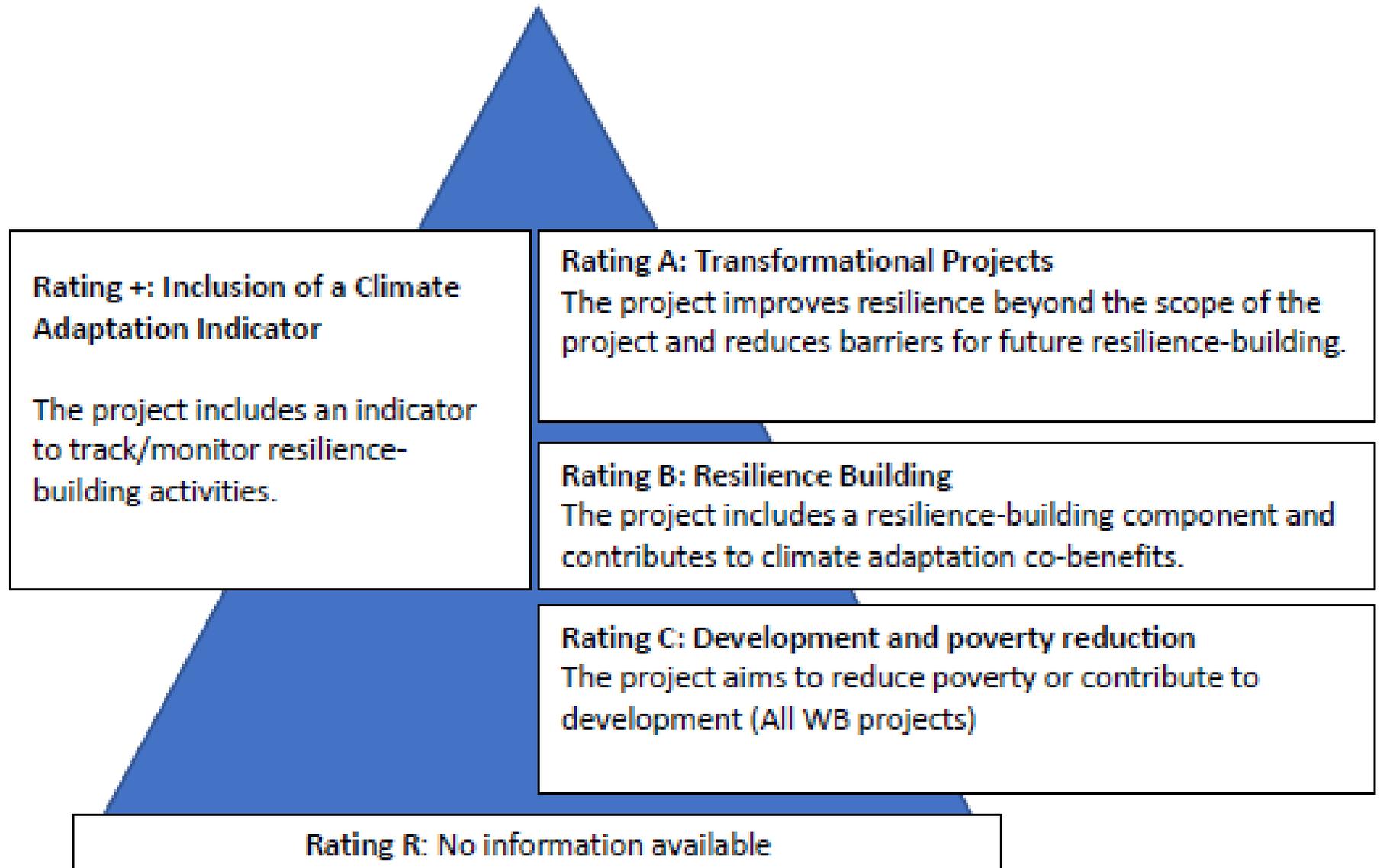
Yes (reported)

Yes (reported)

Yes (reported)

Yes (reported)

# Resilience through the project (outcomes)



**Project P**  
PDOs, Estimated IRR or NPV, SORT analysis,  
Result framework

**Reporting requirement**

For World Bank project, PADs already include a section on broader economic benefits (**nothing more to do**)

Reporting requirements are the **same as for adaptation co-benefits**, including establishing the vulnerability context, the intent to address vulnerability, and the link with project activity

The list of “transformational” activities in the document includes (1) changes in policies, incentives, prices (e.g., subsidy reforms, land-use regulations); (2) demonstration of new technologies; (3) build capacity or create new data.

Does the project create broad economic benefits, such as poverty reduction, stable jobs, better health or education, or higher economic growth?

No evidence

Rating R

Yes (reported)

Does the project identify climate- or disaster-related vulnerabilities and include activities that are intentionally designed to build the resilience of beneficiaries and the broader society/economy?

No

Rating C

Yes (reported)

Is the project “transformational” in its activities to increase resilience? (i.e., does the project build resilience beyond its direct beneficiaries, for instance by facilitating the implementation of other resilience-building projects?)

No

Rating B

Yes (reported)

Rating A

Already required for project with more than 20% of climate cobenefit. An illustrative list of indicators is provided in the document

Does the project monitor/track the progress of resilience-building activities through at least one climate- or disaster-resilience indicator?

Yes (reported)

Rating B+

Yes (reported)

Rating A+

# Standardized reporting template (rating A)

## 1. Background of the analysis

- Selection of the scenarios used for the no-climate-change baseline and the climate change impacts, including choice of emission scenario (RCP) and climate and impact models (including if it has been done with expert opinion).
- Selection of the threshold in terms of NPV or BCR that will be used as a definition of “success” of “failure” for the project.

## 2. Revised NPV or BCR in extreme scenarios

- Provide the results for the four extreme scenarios
- If the project has an acceptable performance in the four scenarios, then the project is robust and the analysis and reporting stops.
- Otherwise, the analysis continues.

## 3. If needed, description of identified switching scenarios

- Provide the NPV and BCR maps showing the space in which the project fails.
- Describe the socioeconomic and climate context in one or more scenarios in which the project fails (NPV or BCR equal to the limit set by the team). Report the Rationale for choosing those scenarios (using the NPV/BCR graphs).
- Three options, depending on the results of the plausibility/consequence analysis:
  - If failure scenario(s) considered implausible: Report narrative on why the identified switching scenarios appears implausible (e.g., the project fails only with extreme sea level rise scenario that exceed most published estimates). Conclude with a “no identified vulnerability” estimate.
  - If failure scenario(s) considered manageable: Provide an explanation of the options available in case of failure to restore the economic viability of the project or explain why the failure is not material for beneficiaries/countries/areas. Conclude with a “no identified vulnerability” estimate.
  - If failure scenario(s) plausible and unmanageable: Conclude with a “significant vulnerability identified” estimate and provide a qualitative (and quantitative if possible) estimate for the plausibility of the scenario and its consequences. Based on the sensitivity analysis figure, indicate the most likely origin of failure (e.g., quantities produced in the average year vs. increase in likelihood of extreme disaster).

# Questions... from me

- Did we get the ambition right? Or is it “too easy”? Or “too difficult”?
- Is the rating from C to A+ able to help teams improve over time, if you can't ask them to do everything perfect tomorrow? Or would it be better to have a simpler label (good enough or not good enough)?
- Do you think the guidance and the rating could be useful in your own work?