World Bank Group

Measuring Climate Impact: A Draft Approach for Going from Inputs to Outcomes

Discussion Paper

December 2023

1. Measuring Climate Impact: From Inputs to Outcomes

1. Existing reporting of the Multilateral Development Bank (MDB) climate finance commitments does not tell the whole story. The MDBs have made significant progress in scaling up climate finance commitments. However, climate finance neither measures the results nor the outcomes of climate actions. While more climate financing may lead to better climate and development outcomes, the relationship is not necessarily one to one. There is a need for a common approach to reporting climate results that could be adopted across the MDBs, and potentially more widely across financial markets, to better signal what works and should be scaled and replicated, versus what does not and requires course correction to mobilize the financing needed to support the goals of the Paris Agreement.

2. This Discussion Paper, "Measuring Climate Impact: A Draft Approach for Going from Inputs to Outcomes" is based on inputs from MDB working groups on mitigation and adaptation, as well as UN agencies, academic institutions, think tanks, and other international experts. It reflects a consensus around the necessity of shifting institutional focus on climate efforts towards an outcome orientation.

3. The Paper proposes a framework to define, measure, and link global progress on climate (mitigation and adaptation) with institutional results. It builds on the joint MDB work on climate results metrics and impact reporting and promotes an outcome-focused approach, supported by data-driven decision making and progress measurement. The approach recognizes that countries have differentiated needs and circumstances in integrating climate and development.

4. The Paper proposes developing climate metrics at three levels.

(i) **Global and Country Indicators**: to track climate mitigation as well as adaptation and resilience progress, through: (i) global greenhouse gas (GHG) emissions with the ambition to pursue efforts in line with the Paris Agreement; and (ii) the number of people that are highly vulnerable to climate risks – an essential consideration for all countries, but particularly those with the greatest development needs.

(ii) **Institutional Results Indicators**: to track aggregate contributions from interventions by: (i) systematically reporting the emissions footprint of all our financing operations; and (ii) tracking how many people are benefitting from resilience building measures from all our financing operations.

(iii) **Project-Relevant Results Indicators**: (i) measure results in priority sectors where transitions are necessary to reach net zero GHG emissions, such as energy, transport, agriculture, urban, and industry, while also tracking how to support the enabling environment; and (ii) measure project results that build climate resilience in key dimensions, such as infrastructure and built environment, ecosystems, people and firms, economic systems, and governance and institutions, in order to simplify and standardize the vast number of indicators that are in use.

5. The Paper is not a new reporting mechanism but rather aims to help deepen collaboration towards a common approach to measure results across countries, sectors, MDBs, the private sector, and other stakeholders. Over the next months, the goal is to collaboratively develop methodologies for the most common and relevant indicators that would contribute to a standardized approach that better measures climate and development outcomes.

6. An enhanced approach to outcome measurement will enable the development community to augment its impact. It will support more informed risks and boost incentives to draw in more finance from all sources to make the planet more livable for people around the world. It can also support countries to measure their own efforts and results more effectively, making it easier for them to identify and address policy bottlenecks and track private sector investment opportunities.

2. Developing a Climate Results Framework

7. On 1 January 2016, the Sustainable Development Goals (SDGs) officially came into force. The World Bank Group (WBG) has made the elimination of extreme poverty by 2030 a central institutional goal, consistent with the SDGs. To help inform action towards this goal, the WBG developed a comprehensive approach to measuring poverty, globally and within its client countries. Initially, a lack of data required significant estimates. However, a robust poverty measurement framework has now been developed. The framework enabled reporting both on global progress towards eliminating poverty and operations' contributions toward poverty reduction. From 2013 to 2019, the data shows a 17 percent reduction in people living on less than $2.15/day, declining from about 850 million people to about 700 million people.

8. These poverty indicators are helping to shine a light on the lost gains of recent years in the face of profound challenges and rapid changes. The latest poverty assessments find that poverty rose sharply from 2019 to 2020, largely due to the global COVID-19 pandemic, and that subsequent declines in poverty have been slower than before the pandemic. This attenuation of progress is also driven by many other forces: the intensifying climate crisis, persistent and conflict-driven food insecurity, and country fragility. Natural disasters, exacerbated by climate change, are having staggering impacts, particularly in developing countries. These forces are contributing to slowed economic growth in much of the developing world from around six percent per year in previous decades to about four percent now and in the coming decade. With each lost percentage point of growth, 100 million people fall into poverty and another 50 million people are pushed into extreme poverty.

9. We are seeing firsthand how deteriorating planetary conditions are hindering development and contributing to global suffering. Unaddressed, climate change could push up to 132 million more people into extreme poverty by 2030. Recognizing the evolving nature of this immense global challenge, the WBG has updated its institutional vision and focus "to create a world free of poverty on a livable planet". This update recognizes that effective development approaches must consider planetary boundaries and the importance of environmental resources and the climate. While the climate agenda is broad and far reaching, ensuring a livable planet requires two key things: (i) halting GHG emissions and transitioning to net zero GHG emissions over the next few decades; and (ii) ensuring that all people on the planet are resilient to climate hazards now and in the decades to come.

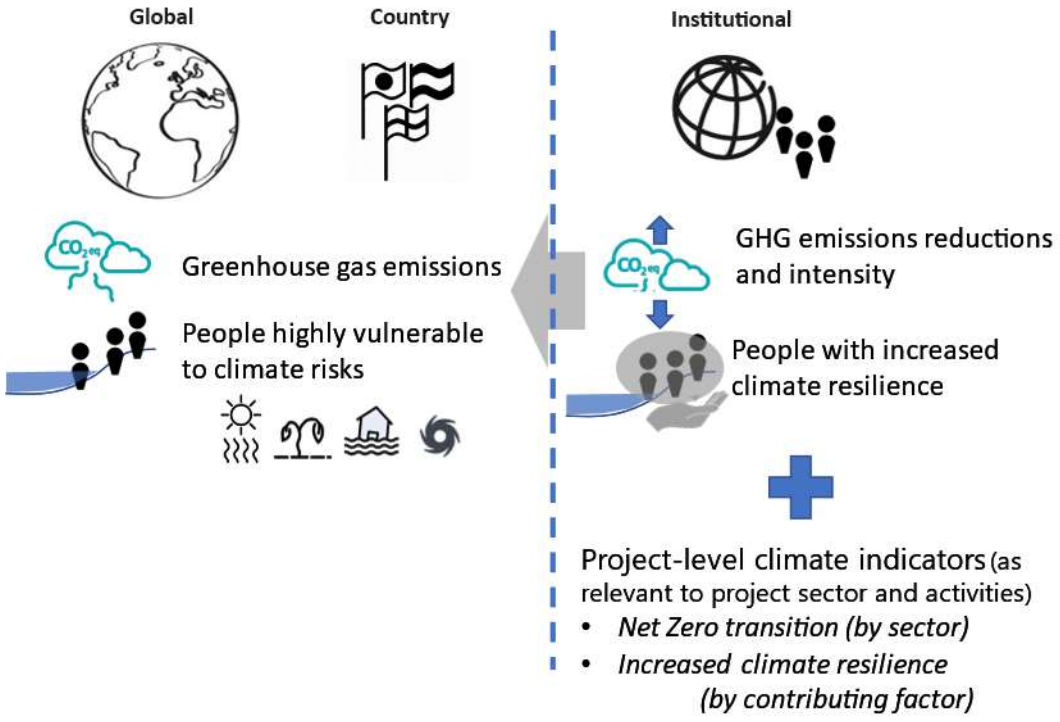
10. The absence of a consolidated climate results framework to guide the use of climate indicators, has led to a proliferation of climate indicators. This proliferation makes it difficult to aggregate climate results, convey the degree to which the operations are contributing to countries' climate needs, and leaves teams with scant guidance on how to select indicators that can best represent climate results. Furthermore, each MDB has its own approach for reporting climate results, further complicating cross-MDB climate results reporting, stock-taking and collaboration.

11. Globally, financial markets are also increasingly focused on identifying, assessing, and reporting on climate-related risks, dependencies, and impacts. Several efforts are underway to help ensure that reporting metrics are useful for internal decision-making, while also being consistent and harmonized. These efforts seek to move to greater convergence and alignment of corporate reporting and environmental, social, and governance (ESG) standards with global policy goals. Equally important are efforts to harmonize methodologies, such as carbon accounting, and capturing insights that bring forward innovative solutions in climate adaptation.

12. To address these issues, a proposed new climate results framework can track climate results and complement the tracking of climate finance. This proposed framework recognizes the mitigation, adaptation, and finance objectives of the Paris Agreement, while accounting for the diversity of development support provided by the MDBs. The framework will provide a means for measuring climate results and ensuring progress on low GHG emissions development and building resilience. Importantly, it can augment reporting on climate finance, continue monitoring the climate outcomes of our development support, and align our efforts with global standards in carbon accounting.

13. The proposed framework includes a comprehensive set of indicators to track global and country progress towards ensuring a livable planet as well as more specific climate results from typical MDB operations. One set of indicators relates to climate resilience and adaptation—an essential consideration for all countries, but particularly those with the greatest development needs. Another set of indicators relates to the transition to net zero GHG emissions—an essential global goal to limit global warming to 1.5 degrees Celsius. The framework includes a small set of global- and country-level indicators that evaluate how the world is progressing on climate resilience and the net zero transition. The framework also includes a consolidated set of institutional contribution indicators to measure how operations support country and global progress. Importantly, the framework recognizes that countries have differentiated needs and circumstances in integrating climate and development (Figure 1).

Figure 1: Overview of the Proposed Climate Results Framework



2.1. Global Indicators

14. The framework's global indicators will provide an overview of how the world is progressing in terms of limiting GHG emissions and increasing people's resilience to climate risks. These are:

- **Global GHG emissions:** This measures the emissions of the six gases covered by the Kyoto Protocol, including those attributed to land use, land use changes, and forestry.[1] It measures gigatons of CO_2 equivalent emissions of the following six gases: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6).[2]

- **Millions of people highly vulnerable to climate risks globally:** The number of people who are exposed to (i.e., possibly affected, with a certain likelihood) a set of key risks caused by natural climate variability or climate change (such as water scarcity or floods) and have a low level of resilience (i.e., do not have sufficient access to systems and instruments - such as financial instruments or health care - to adapt to, cope with, and recover from these risks,). At rollout, the indicator will consider a subset of risks (focused on climate hazards), a subset of resilience factors, and a simple aggregation methodology (like multidimensional poverty). This indicator will be improved over time as new data are collected and methodologies improve. The methodology for the indicator is currently under development.[3] See Annex I for more details.

2.2. Country Indicators

15. The framework also proposes country-level indicators that provide an overview of how countries are progressing on limiting GHG emissions and increasing people's resilience to climate risks. These indicators are the same as the global indicators, except they are reported at the country-level and further disaggregated by sector for GHG emissions and by population characteristics for climate vulnerability.

- **Country-level GHG emissions:** A measure of emissions of the six gases covered by the Kyoto Protocol, including those attributed to land use, land use changes, and forestry, disaggregated by the following sectors: agriculture, bunker fuels, buildings (energy), electricity/heat (energy), fugitive emissions (energy), manufacturing/construction (energy), other fuel combustion (energy), transportation (energy), industrial processes, land-use change and forestry, and waste.[4]

- **Millions of people highly vulnerable to climate risks by country:** The number of people who are exposed to (i.e., possibly affected, with a certain likelihood) a set of key risks caused by natural climate variability or climate change (such as water scarcity or floods) and have a low level of resilience (i.e., do not have sufficient access to systems and instruments - such as financial instruments or to health care - to adapt to, cope with, and recover from these risks). At rollout, the indicator will consider a subset of risks (focused on climate hazards), a subset of resilience factors, and a simple aggregation methodology (like multidimensional poverty). This indicator will be improved over time as new data are collected and methodologies improve. The number of people will be disaggregated by gender, youth, and level of poverty.

---

1 According to the Intergovernmental Panel on Climate Change, estimates of global total GHG emissions have an uncertainty of approximately 8 percent, with most of the uncertainty attributed to the land use component.

2 Source: Climate Watch Historical GHG Emissions, World Development Indicators. Unit of analysis: tCO2eq/year.

3 Source: Staff estimates. Unit of analysis: people (millions).

4 Sources: Climate Watch Historical GHG Emissions, extended to the most recent full calendar year using data from the Global Carbon Project. Unit of analysis: tCO2eq/year.

The methodology for the indicator is currently under development.[5] See Annex I for more details.

2.3. Institutional Results Indicators

16. The framework includes indicators to measure climate results of operations. These indicators help evaluate how operations contribute towards the decrease in global GHG emissions and increased climate resilience of the population:

- **Net GHG emissions per year**: Annual average of the difference between absolute (project) Scope 1 and Scope 2 GHG, and indirect GHG emissions from other sources (Scope 3) on a case-by-case basis (aggregated over the economic lifetime of the project), and the emissions of a baseline scenario (aggregated over the same time horizon) for eligible operations. Emissions values are estimated during operation preparation using approved GHG accounting methodologies. The indicator value is negative if the operation is reducing emissions compared with the baseline scenario, and positive if the operation is increasing emissions compared with the baseline scenario. Net GHG emissions per year at the portfolio level are calculated as the sum of operation net emissions per year. The indicator builds on and enhances existing methodologies.[6]

- **Millions of people with enhanced resilience to climate risks**. The number of people benefitting directly and indirectly from improved climate risk management and increased climate resilience due to investments and activities by institutions during the intervention period, where data and methodologies exist. It will consider how interventions enhance resilience of their beneficiaries by including structural investments, non-structural and capacity development elements, and improvements to the enabling environment and institutional frameworks for climate resilience. These interventions could include, for example: access to climate-resilient infrastructure, food, and water, enhanced climate disaster response, and support to livelihoods, education, financial mechanisms, and safety nets. The methodology for this indicator is currently under development.[7]

17. The framework also includes additional contribution indicators that provide additional information about GHG emissions. The net emissions indicator measures how an operation would affect GHG emissions relative to what would otherwise occur under a development activity that uses conventional, often higher-emitting, technologies or methods. However, net GHG emissions summed across all MDB operations will likely be small compared to a country's required emissions reduction to achieve net zero. As such, it is challenging to evaluate the emissions reduction achievement of MDB country support. Further, the net emissions indicator is based on a hypothetical and potentially arbitrary business-as-usual reference future. Lastly, the net emissions indicator does not provide information about how consistent such an operation is with the net zero transition. To augment the net emissions indicator, this paper proposes a GHG emissions intensity indicator which can then be compared to a country-specific net zero GHG emissions pathway. This indicator will require continued consultations across the MDBs to fully understand its practicality and to ensure that it does not introduce unintended incentives that work against development and climate objectives.

- **Absolute GHG emissions intensity**: This indicator is defined by scaling the absolute (project) emissions used for the net emissions indicator by an appropriate activity measure (such as kilowatt-hours of produced electricity or hectares of agriculture), to yield GHG emissions

5 Source: Staff estimates. Unit of analysis: people (thousands).
6 Source: WBG assessments. Unit of analysis: tCO2eq/year.
7 Source: WBG assessments. Unit of analysis: beneficiaries (millions).

intensity, measured in terms of emissions/activity measure (e.g., tCO2e/kWh, tCO2e/ha). Annex 2 provides an example for how this indicator can be compared to a country-specific net zero emissions pathway to assess consistency with the net zero transition. The results of this indicator across the portfolio would be summarized but not summed, as it represents net emissions.

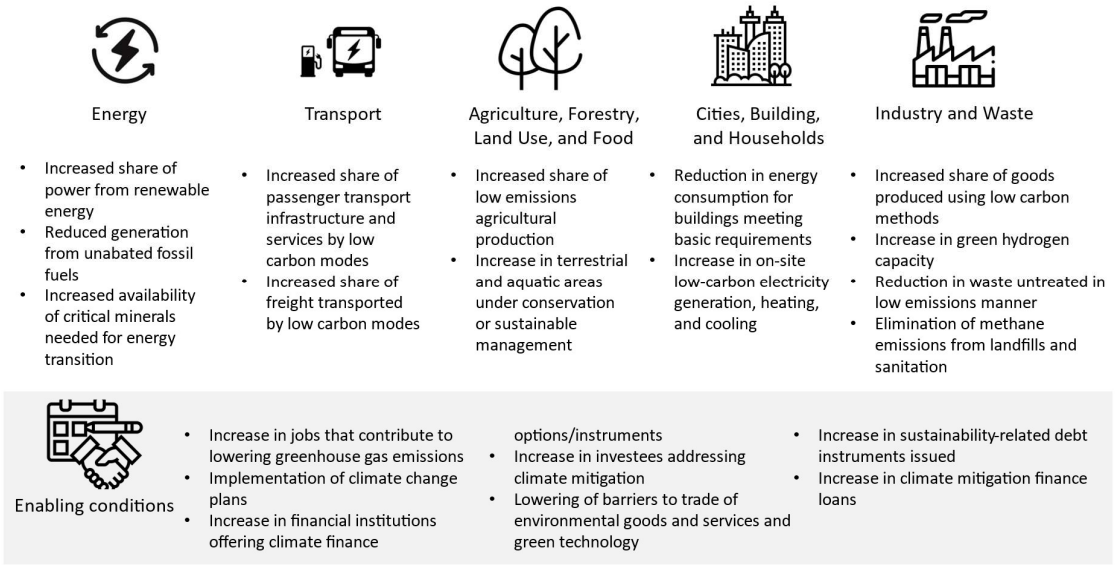
2.4. Project-Relevant Results Indicators

18. The climate outcomes of MDB operations go beyond GHG emissions reductions and number of people with enhanced climate resilience. This proposed framework thus includes a consolidated set of project-relevant contribution indicators that concisely capture the ways in which operations facilitate the net zero emissions transition and/or support the conditions necessary to build community climate resilience. This proposed streamlined indicator set could replace the more than 1,000 different indicators currently integrated into project results frameworks for projects with more than 20 percent climate finance. As the indicators cut across all aspects of a country's economy, individual projects would only be expected to report on the few indicators relevant to the type of project and these would function as core climate sector indicators. These indicators would be selected based on lessons learned from climate indicator reporting within and outside the World Bank Group and take into consideration the indicators already in use by teams for corporate reporting purposes. These indicators represent an improved, more efficient stock-take of progress on climate in key sectors and respond to a requirement already in place.

19. The project-relevant contribution indicators provide a more nuanced and traceable picture of interventions, supporting the aggregation and reporting of a broader set of climate outcomes. The proposed framework currently includes example indicators (see Annex 3). These project-relevant indicators attempt to strike a balance between being comprehensive, to capture the key drivers of emissions and resilience, while also being parsimonious, to simplify the reporting burden placed on project teams. Importantly, these indicators are not developed to score or compare individual projects. Instead, these project-relevant indicators would be summarized at the portfolio level to systematically evaluate the operations portfolio, identify and report on meaningful climate outcomes, and highlight important climate areas to which the portfolio is not contributing.

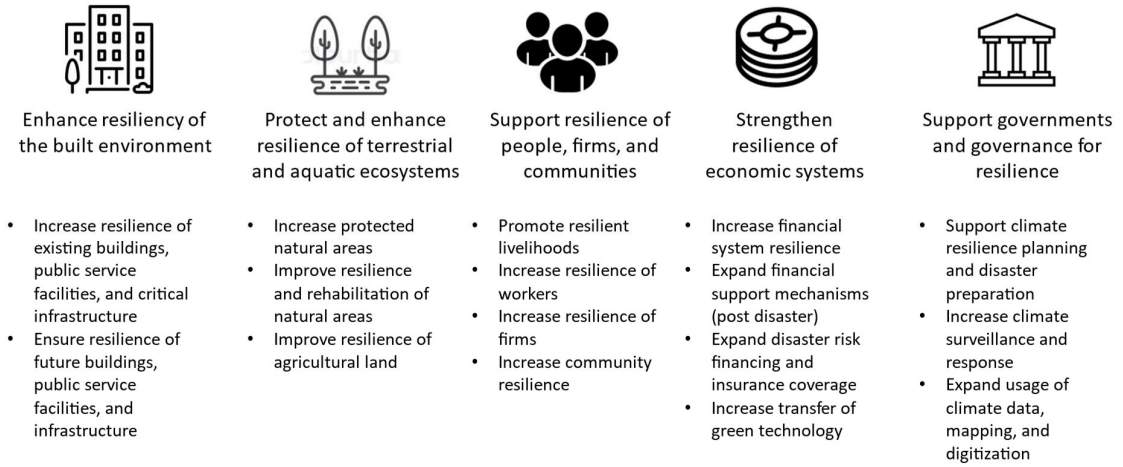
20. For the net zero transition, the project-relevant indicators will report on results related to the key system transitions necessary to reach net zero GHG emissions (Figure 2 and Annex 3).

Figure 2: Results areas for the net zero transition



21. For increasing resilience to climate change, the project-relevant indicators would measure results that build climate resilience in five key economic, environmental, and social systems, and enabling conditions for resilience. The proposed resilience framework builds on the extensive analytical work conducted by the WBG, with input from MDBs and international experts, as well as project monitoring and evaluation processes and results indicators. This framework proposes key themes of resilience outcomes under five resilience dimensions, drawn from the Adaptation and Resilience Readiness Diagnostic, which is based on the Adaptation Principles (Figure 3).[8] Outcomes from these themes could collectively demonstrate the results from interventions that build resilience of investments in the face of climate risks and contribute to building adaptive capacity and resilience of beneficiaries, as well as economic, environmental, and social systems. See Annex 3 for example indicators under discussion.

Figure 3: Resilience dimensions and climate results objectives



[8] The Adaptation and Resilience Readiness Diagnostic and Adaptation Principles outline a set of universal, whole-of-society conditions for reducing vulnerability and building adaptive capacity and resilience that is increasingly used in core WBG diagnostics (e.g., the WBG's Country Climate and Development Reports).

3. Selecting and Reporting Indicators

3.1. Indicator Selection

22. Indicators will be selected using criteria that ensure adequate quality standards, reflect data availability, and support increased transparency with a focus on outcomes. Methodologically, all indicators will draw from a well-established tradition of measuring and monitoring poverty, shared prosperity, sustainability, inclusiveness, and resilience. Furthermore, the project-specific indicators will draw on and consolidate those already in use. With external attention to data quality and transparency, replicable methodologies will be developed and published with underlying data sets. As indicators are only proxies for outcomes, they can be communicated together with more robust evidence from impact evaluations and other relevant sources.

23. Selecting the climate results indicators requires striking the right balance between ambition and feasibility, and investments in data quality. There are multiple issues that will likely affect data quality across the climate results indicators, ranging from ambiguous definitions to unsystematic reporting and misaligned incentives. Based on the above criteria and shortcomings, the universe of indicators readily available is constrained. Project-specific indicators will need to be tracked through a project's development cycle, and data will become available only as a project is implemented. Therefore, new results indicators can take years to produce progress data. The selection indicators should therefore comprise a combination of existing indicators, which while imperfect still allow the collection of data that offers insights, and new indicators that are more technically robust but would take time to operationalize. This approach must be supported by new investments in data, from global datasets to project monitoring frameworks and client capacity.

3.2. Indicator Reporting and Evolution

24. To provide a nuanced and traceable picture of climate results, the proposed framework will both disaggregate and aggregate indicator outcomes. Indicator outcomes will be disaggregated, when feasible, by different population subgroups, including gender, youth, and poverty level to show how just and fair the climate outcomes are. Project-level results will be aggregated across the portfolio to summarize the contribution to countries' climate goals.

25. Over time, it is expected that increased focus on ex-post impact reporting for climate impacts will deliver enhanced methodologies and streamlined results indicators. The institutional contribution and project-relevant climate results indicators would be incorporated into project progress reporting to demonstrate impact. The project results indicators be tracked throughout a project's implementation up to completion/evaluation.

26. At a project's mid-term, there will be an opportunity to revise the assumptions built into the initial estimates of project GHG emissions to best reflect actual project implementation (i.e., an ex-ante revision). At project close project teams can revise the emissions estimate through an ex-post GHG assessment. This is expected to link with global and academic developments in measurement, reporting and verification (MRV) and carbon market methodologies, definitions on resilience and adaptation needs, corresponding tracking of resilience beneficiaries, and scoping of global and country ambition relating to climate. The proposed approach to climate results impact reporting will evolve with these developments to ensure indicators chosen and methods applied illustrate the gains made to achieve a livable planet.

4. Refining the Climate Results Framework

27. This Discussion Paper is intended to inform the conversation among MDBs and other stakeholders over how we can enhance our focus from measuring inputs (climate finance) to measuring results and outcomes. In the months and years, our aim is for this discussion to lead to a common approach that can be pilot tested and implemented. With the understanding that the MDB community is not monolithic in approach and scope, the framework would be tailored to each institution's reporting needs and climate focus. The MDBs will continue refining, documenting, and pilot testing the indicator methodologies that are included in this Framework.

Annex 1: Estimating people highly vulnerable to climate risks globally and by country

Climate change and extreme weather events exacerbated by a changing climate are increasing the number of people exposed to and highly vulnerable to climate effects, threatening to erase the development gains of recent decades. People with low incomes, with limited access to resources and basic services, or in fragile and conflict-affected contexts are most affected by these weather events and are most vulnerable to climate change. Critically, the link to poverty is profound. As many as 132 million people may be pushed into poverty by 2030 due to intensifying climate change impacts on food security, health, and productivity. Managing the impacts of climate change and supporting sustainable development requires transitioning to more resilient development pathways (IPCC, 2022).

There are many complex and interrelated concepts relevant to assessing who is at risk. People at risk are those who are exposed now, or will be in the future, to climate-related hazards and who lack the capacity to remain safe and healthy, and to recover from climate-related events. These people are at a high risk of falling into poverty or deeper poverty over time. In contrast, people who are resilient to climate risk are those who are either not exposed to climate hazards or have sufficient capacity to endure and recover from climate-related events. Because of the complex relationships among these concepts, there are no simple indicators nor metrics to evaluate the vulnerability to climate risk (or resilience) of people or positive effects of projects on reducing vulnerability to climate risk.

The global and country-level resilience indicators in the proposed climate results framework are: millions of people highly vulnerable to climate risks globally and number of people highly vulnerable to climate risks by country. To evaluate how many people are at risk, the framework considers the following three questions:

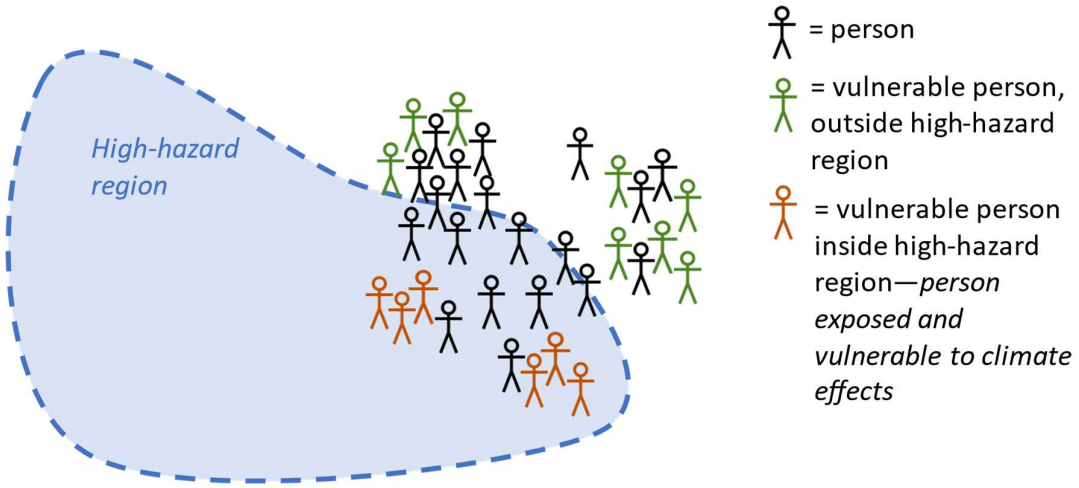
1. **Where are the climate hazards now and in the future?** This looks at the geographic distribution of climate hazards, for instance, extreme temperature, extreme precipitation, drought, wildfire, wind threats, river flooding and coastal flooding. Thresholds will be defined for each hazard to establish where the hazard is sufficiently large to cause climate vulnerability.
2. **Who is exposed to these hazards?** This looks at the population density of the people present in areas with climate hazards or those who are indirectly affected by hazards (for example, people who would experience food insecurity due to climate impacts on food supply or food prices). This would also be a function of the sectors in which they are working.
3. **Who is vulnerable due to a lack of absorptive, adaptive and/or transformative capacity to thrive in the face of the hazards?** This evaluates the existing resilience of the population and their readiness to absorb and adapt to climate shocks, along with the broader sector and development context that may influence the level of risk posed to the project.

People exposed to significant climate hazards and who lack sufficient absorptive, adaptive, and/or transformative capacity will be considered exposed and highly vulnerable to climate effects. To account for the absorptive, adaptive, and transformative capacity of the population, a multidimensional approach to vulnerability is needed. While poverty is a useful proxy for vulnerability, and global poverty data can be readily used today, income alone does not capture people's vulnerability to climate shocks. Household characteristics, such as education level, coverage by social protection, access to health care, and owning a bank account, affect people's ability to absorb or adapt to climate shocks.

Figure 4 illustrates the interplay between a region of high climate hazards, represented spatially by the blue region, a local population that is dispersed across an area outside and inside the high-hazard

region, and the vulnerability of people. People who are vulnerable who are also located within the high-hazard region are considered exposed and highly vulnerable to climate effects.

Figure 4: Illustration of methodology estimating the number of people exposed and highly vulnerable to climate effects



Work undertaken by the WBG used this approach and overlaid household-level data on vulnerability with global exposure data on extreme weather events.[9] Global exposure was estimated for floods, droughts, heatwaves and cyclones. The dimensions of vulnerability considered included access to infrastructure, as a proxy of physical income and asset losses, and data on income, education, social protection and access to finance, as proxies of a household's ability to cope and recover from a shock. Early results from this work show that globally 4.5 billion people are exposed to one of these four shocks and as many as 30 percent of those exposed are vulnerable on one or more of these dimensions. As a result, 18 percent of the population is at high risk (exposed and highly vulnerable to climate effects) in the 80 countries considered.

Overtime, the indicator will be expanded by increasing country coverage and refining the risk thresholds used for exposure to climate hazards and household characteristics of vulnerability. The indicator will be calculated based on current hazards, population distributions, and capacities, as well as for current populations and adaptive capacities under two future scenarios of hazards (+25 years, currently ~2050)—one under successful global action on climate mitigation (+1.5-+2.0 degrees Celsius) and one unsuccessful scenario (+3.0 degrees Celsius).

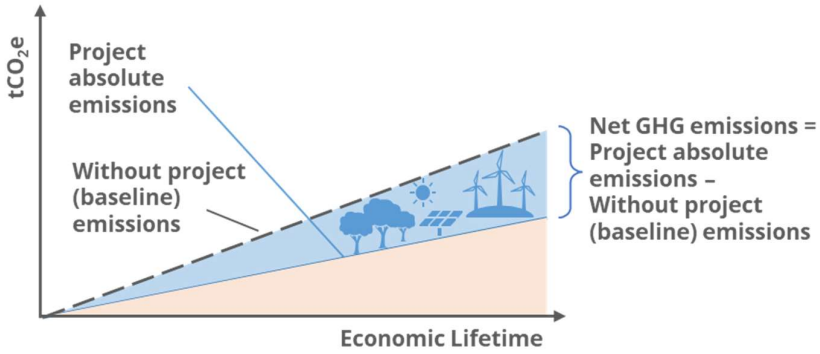
Choices will need to be made in defining thresholds to establish what constitutes significant climate hazards and lack of sufficient capacity. Depending on how thresholds are defined, the proposed vulnerability indicator may be more or less stringent in capturing those at risk. The indicators of vulnerability currently used are consistent with the IPCC working definition of a population with the propensity or predisposition to be adversely affected by climate change-related hazards and encompasses a variety of elements, including sensitivity or susceptibility to harm and the presence or lack of capacity to cope and adapt (IPCC 2022). A technical working group of WBG experts, with input from MDBs and international experts, are working on this topic of measuring people's vulnerability to climate risks, with the objective to share knowledge and achieve consensus on data sources, risk thresholds, and methodological approaches.

[9] Link to the paper is here.

Annex 2: Methodology for estimating GHG emissions from projects

The project-level indicators for measuring project-effects on GHG emissions are based on methodologies currently in use as part of GHG Accounting. The primary indicator is net GHG emissions per year (tCO2e), defined as the annual average of the difference between project emissions and the emissions of a baseline scenario (aggregated over the same time horizon) (Figure 5). Emissions values are estimated during operation preparation using approved GHG accounting methodologies. The indicator value is negative if the operation is reducing emissions compared with the baseline scenario, and positive if the operation is increasing emissions compared with the baseline scenario. Net GHG emissions per year at the portfolio level are calculated as the sum of operation net emissions per year.

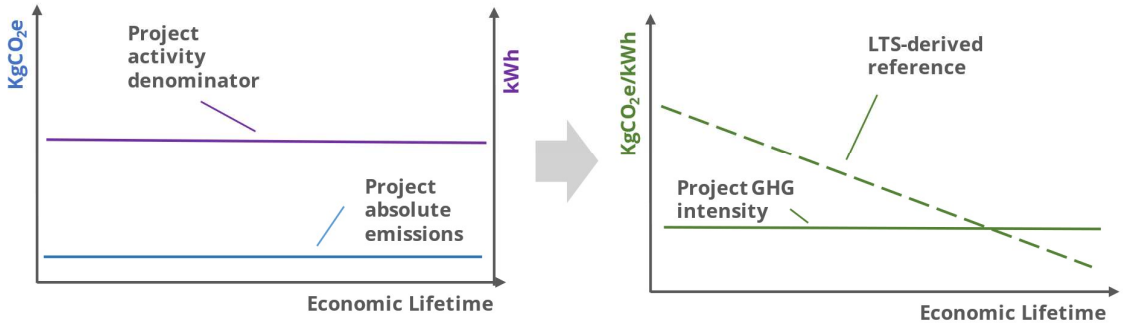
Figure 5: Illustration of net GHG emissions



Project absolute emissions will also be compared to country- and sector-specific net zero pathways to establish the consistency of a projects' emissions to the net zero transition. To do so, requires developing methods to estimate a project's emissions intensity by dividing absolute GHG emissions by relevant project development outcomes (e.g., KgCO2eq/kWh for an energy access project). The change in GHG emissions intensity for the project can then be compared to a country- and sector-specific net zero pathway GHG intensity reference. The reference will be derived from a country's leading emissions pathways, including its Long-Term Strategy (LTS), CCDR pathways, or other identified alternatives. Projects with intensity trajectories near to or below the net zero pathway-derived reference would indicate consistency with a country's net zero emissions transition.

Figure 6 provides a simple illustration. For this example, the project is an energy access project in rural Sub-Saharan Africa. The project would construct an electricity mini-grid comprised of a solar array, battery storage, and diesel generation as backup. Once operational, the project provides a fixed level of electricity (on average), measured in terms of kWh. There are some average absolute emissions, due to the use of the diesel generator when stored renewable energy is depleted, measured in KgCO2e (left side of Figure 6). The project's GHG intensity is calculated by dividing the level of a project's absolute emissions by the amount of energy supplied. The project's GHG Intensity, which is constant over time (right side of Figure 6), is then compared to an LTS-derived power-sector emissions intensity reference for the country, which is declining from current levels to near zero. The indicator then quantifies the difference between the two intensity curves, showing in this case that the project is providing power with a lower GHG emissions intensity than the country's LTS.

Figure 6: Illustration of absolute GHG emissions and emissions intensity indicators



These GHG emissions indicators will be aggregated up to the portfolio level for broader reporting. For net emissions, aggregating project results to the portfolio level will be a straightforward summation. For the absolute (gross) contextualized metric, aggregation methods will vary by sector and be more nuanced. In order to report on project and portfolio-level results, gross and net GHG emissions calculations will be performed during project implementation and at project close.

Annex 3: Illustrative project-relevant climate results indicators

As part of the development of this proposed climate results framework, WBG generated lists of indicators for the net zero transition and increasing climate resilience. Tables 1 and 2 present a subset of those discussed for illustration here. An updated set of indicators will be developed and will become part of a toolkit of indicators by sector that the teams can draw upon, as relevant, for a specific country program or operation. Indicators will be designed and utilized in such a way that they support its consistent reporting, as opposed to any standalone climate reporting. This will improve streamlining and standardization efforts and reduce the burden on the operational teams.

Table 1: Sample project-relevant climate results indicators for the net zero transition

Sector	Results area	Example indicators for discussion
Energy	Increased share of power from renewable energy	Renewable energy capacity enabled
	Reduced generation from unabated fossil fuels	Enabled reductions in unabated fossil fuel generation
Transport	Increased share of passenger transport infrastructure and services by low carbon modes	Passengers with access to low carbon transport modes
Agriculture, Forestry, Land Use, and Food	Increased share of low emissions agricultural production	Change in emissions intensity for emissions intensive commodities
Cities, Buildings, and Households	Reduction in energy consumption for buildings meeting basic requirements	Change in energy consumption in buildings (excluding increases to meet basic requirements)
Industry and Waste	Increased share of goods produced using low carbon methods	Change in energy consumed per USD of value added in the productive sector
Enabling conditions	Increase in jobs that contribute to lowering GHG emissions	Number of jobs added that contribute to lower GHG emissions

Table 2: Sample contextual project-relevant climate results indicators for increasing climate resilience

Resilience dimension	Country outcomes	Example indicators for discussion
Enhance resiliency of the built environment	Increase resilience of existing buildings, public service facilities, and critical infrastructure	Number of buildings updated to climate-informed design standards
	Ensure resilience of future buildings, public service facilities, and infrastructure	Number of districts with new building codes and construction standards that account for current and future climate risks
Protect and enhance resilience of terrestrial and aquatic ecosystems	Increase protected natural areas	Percentage of the planet's terrestrial and aquatic areas covered by protected areas and other effective area-based conservation measures (OECMs)
	Improve resilience of agricultural land	Area under climate-smart agriculture (CSA) practices
Support resilience of people, firms, and communities	Promote resilient livelihoods	Number of people engaged in climate-resilient livelihoods, disaggregated by age, gender, and poverty
	Increase resilience of workers	Number of workers with access to climate-adapted practices/technologies/jobs, disaggregated by gender
	Increase resilience of firms	Number of firms using climate-adapted practices and technologies
Strengthen resilience of economic systems	Increase financial system resilience	Size of market regulated to use climate-informed approaches (e.g., exposure assessments, climate risk assessments)
	Expand disaster risk financing and insurance coverage	Number of households with access to disaster risk insurance, disaggregated by poverty status
Support governments and governance for resilience	Support climate resilience planning and disaster preparation	Number of national and local institutions with planning instruments and increased capacity to respond to and recover from disaster induced emergencies
	Increase climate surveillance and response	Number of people covered by integrated surveillance and response systems for climate-related risks