Concepts of sustainable infrastructure and their implementation

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Washington Area Branch (WAB) of IAIA
Workshop on

Large Infrastructure Projects:
Integrating Sustainability and Managing Risks

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Content

What is sustainable infrastructure ?

➔The landscape of concepts

How we can achieve more sustainability in infrastructure projects?

➔The interaction of safeguards and SI assessment methods

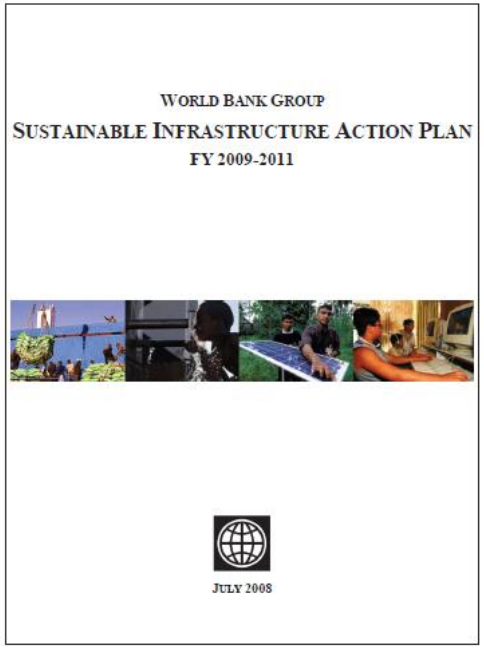
UN ESCAP: „Sustainable Infrastructure in Asia“ in 2006

- **Use resources efficiently** to obtain greater value from fewer resources and to reduce waste and impacts.
- **Minimize externalities** when considering market failures, including life cycle costs and the social benefits of policy tools.
- Use both mandatory and voluntary **systems for assessing and reducing environmental impacts**, including raising awareness of policy makers and the public.
- Promote the **use of eco-efficient indicators** to measure environmental sustainability for infrastructure development.
- **Promote appropriate technology** for eco-efficient infrastructure focusing on local and renewal energy, climate responsive design for building, and waste management and treatment.
- **Promote effective multi-stakeholder partnership** involving key actors.
- **Use innovative financing and procurement methods** such as cost sharing and partnering.
- **Promote demand-side management** or a service-focused approach keeping in mind the end users’ needs.

Source: Sustainable Infrastructure in Asia, Overview and Proceedings, Seoul Initiative Policy Forum on Sustainable Infrastructure, Seoul, Republic of Korea, 6-8 September 2006

SI in the „World Bank SI Action Plan“ of 2007

- Address the following sectors: transport, energy, water, and Information and Communication Technologies (ICT) for development;
- Focused approach to **complex cross-sectoral issues** such as the role of infrastructure in climate change mitigation and adaptation efforts, the role of public private partnerships (PPPs) in the provision of infrastructure services, and new ways to provide infrastructure support for rural-urban integration and development;
- Focus on **social and environmental objectives** in addition to the economic/financial viability and ensure access to **affordable infrastructure services** through a platform of **strong governance**;
- **Leverage WBG financing** through:
  (a) support to governments to create a market environment supportive of private investment;
  (b) direct support for private financing of infrastructure;
  (c) advocacy to ramp up harmonized donor financing
  (d) use of financial products that address the financial risks faced by clients and reduce the overall project costs.

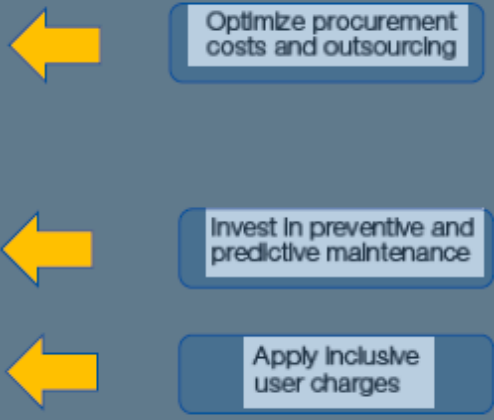


Source: http://siteresources.worldbank.org/INTSDNETWORK/Resources/SIAP-Final-July08.pdf

Sustainable Infrastructure in EBRD

European Bank
for Reconstruction and Development

- There is no single definition
- EBRD views the issue holistically, encompassing investments and institutional strengthening to foster:
  - improved environmental quality
  - financial durability
  - funding stability
  - safety and acccessibility
  - connectivity
  - whole-life asset management
  - affordability and
  - social and political acceptability



Source: Presentation of Thomas Maier, Managing Director Infrastructure of EBRD, Berlin September 30th 2015

The current draft of the characteristics of SI at the IDB

Sustainable infrastructure projects are:

- Set within an integrated and **cross-sector planning** context
- Take into account the perspectives of public, private, and civil society **stakeholders** as well as the value of **ecosystems** and their services
- Planned and designed to deliver accessible and cost effective **infrastructure services** to meet the needs of target populations
- Built to minimize costs of operation and maintenance over the whole **lifecycle of the project**, using proven and well tested technologies
- **Resilient and adaptable** to foreseeable changes including in climate, environment, and demand
- **Economically and fiscally viable** and thus attractive for innovative financing models including private capital

Source: IDB draft paper on principles for sustainable infrastructure , May 2015

The MDB's view on quality of infrastructure (Nov. 2014)

Role of infrastructure:

- Is key to tackling poverty and promoting inclusive growth,
- Helps improve access to basic services, especially for poor people,
- Links producers to markets and connects countries to the opportunities in the global economy,
- Is essential to overcome bottlenecks to growth, and as an enabler of private sector led growth.

Quality of infrastructure spending:

- Infrastructure investments need to be **sustainable: fiscally, economically, socially and environmentally.**
- Projects need to be carefully selected and designed for **effectiveness and efficiency**, maximizing their impact on growth and jobs.
- Think about **public vs. private sector** according to each country's institutional capacity and policy environment.

Source: Statement by Heads of the MDBs and the IMF on Infrastructure in the context of the Australian G20 summit, Press Release of World Bank, Nov. 13th 2014

The civil society‘s view on sustainable infrastructure

Proposed design principles to the Turkish G20-presidency:

- **Comprehensive**

— Applies a whole systems approach to all facets of the design and development process; aims to simultaneously address multiple goals, requirements, conditions and issues;

- **Anticipatory**

— Factoring in critical future trends and needs as well as projected impacts of implementation in the short and long term;

- **Ecologically responsible**

— Reflecting nature's underlying principles while enhancing the Earth’s life support systems;

- **Feasible**

— Relying on current know-how, tested/acceptable technology and existing resources;

- **Verifiable**

— Able to withstand rigorous empirical testing;

- **Replicable**

— Able to scale and adapt to a broad range of conditions.

Source: Open letter to Turkish G20 presidency of March 9th 2015, signed by Foundation Earth and many US signatories

WWF‘s view on SI in cities

Sustainable infrastructure includes assets and projects that:

- reduce the **environmental impact** of urban infrastructure such as energy efficiency and renewable energy projects;
- improve the **climate resilience** of urban areas by improving the ability of infrastructure to cope with the consequences of climate change;
- help to **protect biodiversity and ecosystem services**;
- support the **integration of nature-based assets** into urban development.

Source: Financing the Transition: Sustainable Infrastructure in Cities, A Long Finance report prepared by Z/Yen Group and commissioned by WWF; March 2015

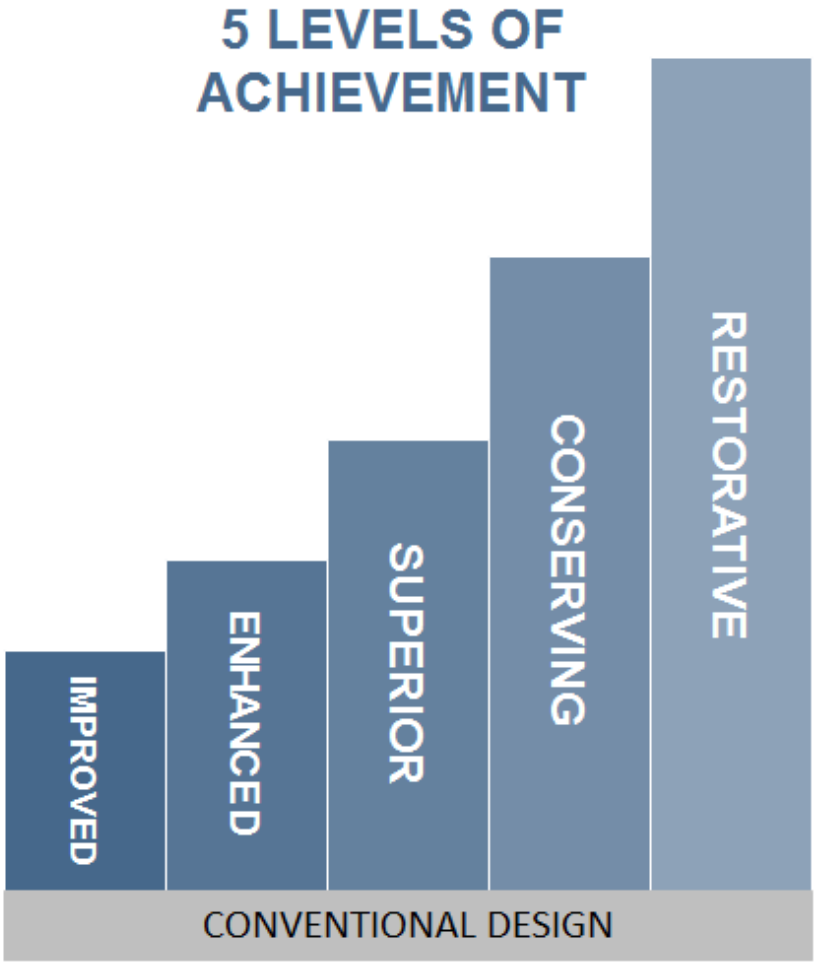
Global Infrastructure Basel's standard on sustainable infrastructure:

Sustainable infrastructure systems are those that:

- Reduce consumption of resources
- Reduce environmental impact
- Increase service value
- Advance social inclusiveness
- Promote transparency and accountability
- Strengthen Human and Labour Rights as well as improve working conditions

Source: SURE Standard Description, Draft for Comment of Sept. 09th, 2015, pages 6f

The Envision Rating System has a very comprehensive approach but does not address the financials



Source: Envision Rating System by Harvard University, Zofnass Program for Sustainable Infrastructure

McKinsey addressed the three sustainability dimensions but does not mention governance

Socially sustainable Infrastructure:

- Inclusive and respects human rights
- Designed to meet the needs of the poor by increasing access,
- Supports poverty reduction, and
- Reduces vulnerability of people to climate change.

Economically sustainable Infrastructure:

- Provides jobs and helps boost GDP
- Does not burden governments with unpayable debt or users with painfully high charges.
- Seeks to build the capabilities of local suppliers and developers.

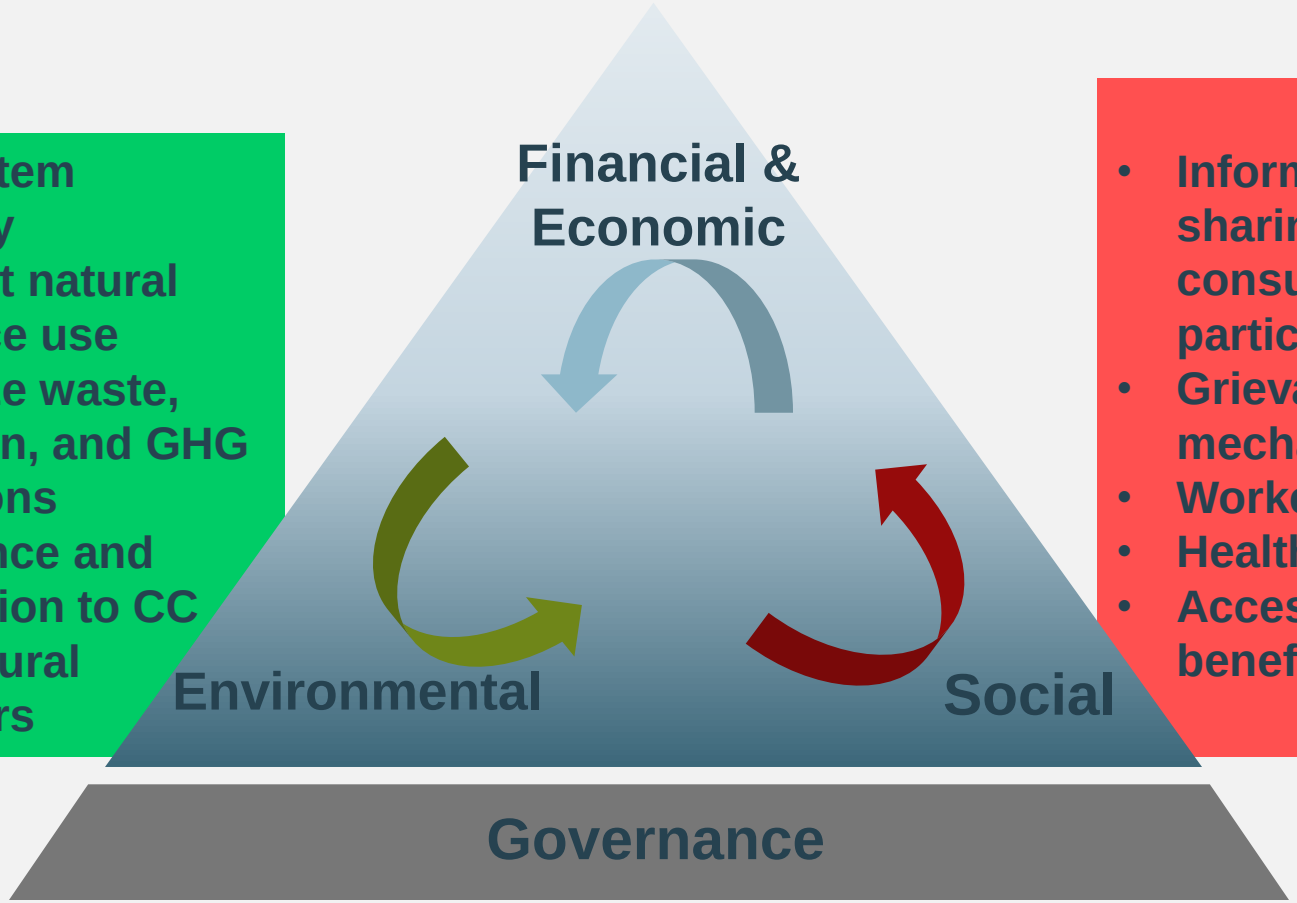
Environmentally sustainable infrastructure:

- Mitigates carbon emissions during construction and operation
- Contributes to the transition to a lower carbon economy
- Is resilient in the face of climate-change risks
- Addresses local environmental challenges, especially regarding water provision and air quality.
- Employs different ways of meeting infrastructure service needs, such as demand-side management systems and responsive power grids.

Source: McKinsey Center for Business and Environment, Financing change: How to mobilize private sector financing for sustainable infrastructure, Jan.2016, P. 8

- Economically and fiscally viable
- Technically feasible
- Cost effective services
- Provide maintenance throughout lifecycle

- Ecosystem integrity
- Efficient natural resource use
- Minimize waste, pollution, and GHG emissions
- Resilience and adaptation to CC and natural disasters



- Information sharing, consultation, participation
- Grievance mechanism
- Worker rights
- Health & Safety
- Access- and benefit-sharing

- Transparency, accountability, measurability
- Local, regional and national level
- Cross-sectoral synergies

Principle	**UN** ESCAP **2006**	**World Bank SI AP**	**EBRD**	**IDB**	**Letter NGO G 20**	**WWF: SI in Cities**	**GIB's SURE Stand**	**MDB statem 2014**	**En-vision**	**IAIA** Panama **2015**	**NCE** McKinsey2016
Design in an integrated cross-sectoral planning context		+		++	++					++	
Ensure good local, regional, national governance, transparency and accountability		++					++			++	
Ensure resilience, adaptable to natural disasters & climate change		++		++	+	++			++	++	++
Maintain landscapes and eco-system integrity and functions	++	+		++	++	++	++	++	++	++	+
Use resources efficiently	++				++	++	++		++	++	+
Minimize waste and hazardous emission including GHG	++	+	+		++	++	++	++	++	++	++
Involve affected public, private, and civil society stakeholders	++	+	+	++			++	++	++	++	+
Contract local workers and respect their rights and protect their health and safety		+					++		++	++	++
Maintain local cultures, heritage, cult. integrity and way of life									++	++	+
Meet the needs of the targeted population	++		+	++				++		++	++
Provide cost effective services		++		++			++			++	+
Be economically and fiscally viable		++	++	++				++		++	++
Innovative financial mechanisms including private capital (PPP)	++	++		++				++		++	
Maintain the assets throughout their lifecycle			++	++					++	++	
Charge services fees which cover the costs of provision			+							++	
Rely on current know-how, tested technology & existing resources				++	++						

IDB and Mercer identified 30 global initiatives driving investment in sustainable infrastructure:

INFLUENCERS — 5 organizations

MOBILIZERS — 13 organizations

TOOL PROVIDERS — 12 organizations

Initiatives were categorized based on role

Influencers

- Those that provide **thought leadership and research** relating to sustainable infrastructure or those working to **influence public or industry policy** and/or the financial system to align infrastructure investment plans with INDCs and other environmental/social outcomes.

Mobilizers

- Those seeking to i) work with governments to **develop "bankable" projects** and/or ii) **convene investors** to channel more funds into sustainable infrastructure projects. In most cases, mobilizers are working with and convening multiple stakeholders.

Tool Providers

- Those seeking to **enable integrated environmental or social analysis** of infrastructure projects into the investment and monitoring process, resulting in increased risk-adjusted returns and environmental/social outcomes.

Initiatives were categorized based on role

Influencers

- OECD Centre on Green Finance and Investment
- Energy Transitions Commission
- Global Infrastructure Investor Association (GIIA)
- Long Term Infrastructure Investors Association (LTIIA)
- New Climate Economy / Global Commission on Climate and Economy

GLOBAL FOCUS

Mobilizers

- Aligned Intermediary
- Climate Investor One
- Danish Climate Investment Fund
- Global Climate Partnership Fund
- Global Green Growth Institute
- Global Infrastructure Facility (GIF)
- Global Infrastructure Hub (GI Hub)
- Green Infrastructure Investment Coalition (GIIC)
- Matchmaker
- Public-Private Infrastructure Advisory Facility (PPIAF)
- Sustainable Development Investment Partnership (SDIP)

MOST FOCUS ON EMERGING MARKETS

Tool Providers

- Bloomberg New Energy Finance
- CEEQUAL / BREEM Infrastructure
- ClearingHouse INFRADEV
- EDHEC Infrastructure Institute-Singapore (EDHECinfra)
- Global Infrastructure Basel (GIB)
- GRESB Infrastructure
- Institute for Sustainable Infrastructure (Envision™)
- IRENA Navigator
- Preqin
- SIF – International Infrastructure Support System
- World Bank Renewable Energy Financial Instrument Tool (“REFINe”)

FOCUS VARIES (MOST GLOBAL)

Content

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➔The interaction of safeguards and SI assessment methods

The Role of IDB's Safeguard Policies in Promoting Sustainable Infrastructure

Dr. Andreas Georgoulias
Zofnass Program for Sustainable Infrastructure
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Scope of Study

Scope

- Investigate the effectiveness of IDB's Safeguards towards sustainability.

Methods

- Perform a comparative analysis of IDB Safeguards and the Envision Rating System for Sustainable Infrastructure.
- Study application of Safeguards in 9 IDB-funded projects.
- Conduct semi-structured interviews with safeguard specialists involved in these projects.
- Identify key trends, best practices, and lessons to keep improving the Bank's existing tools and policies for the development of sustainable infrastructure.

Safeguards and Sustainability

Six IDB cross-sectoral Safeguard policies and guidelines for implementation

OP - 703	Environment and Safeguards Compliance Policy	Prevent and mitigate socio-environmental impacts
OP - 704	Disaster Risk Management Policy	Reduce risks from natural hazards and manage disasters
OP - 710	Operational Policy on Involuntary Resettlement	Improve or restore the living standards of affected populations
OP - 765	Operational Policy on Indigenous Peoples and Strategy for Indigenous Development	Safeguard indigenous peoples and their rights
OP - 270	Operational Policy on Gender Equality in Development	Promote gender equality and womens' empowerment
OP - 102	Access to Information Policy	Improve transparency and facilitate stakeholder engagement

Safeguards and Sustainability

Safeguards: policies to ensure protection against environmental and social harm, improve development value for stakeholders, and enable countries to meet best international practices.

- Limited understanding of the benefits and environmental and social outcomes that result from Safeguards.
- **Does the application of safeguard policies facilitate the development of sustainable projects?**

Need to assess the effectiveness of **IDB's Safeguards** in achieving sustainable outcomes.

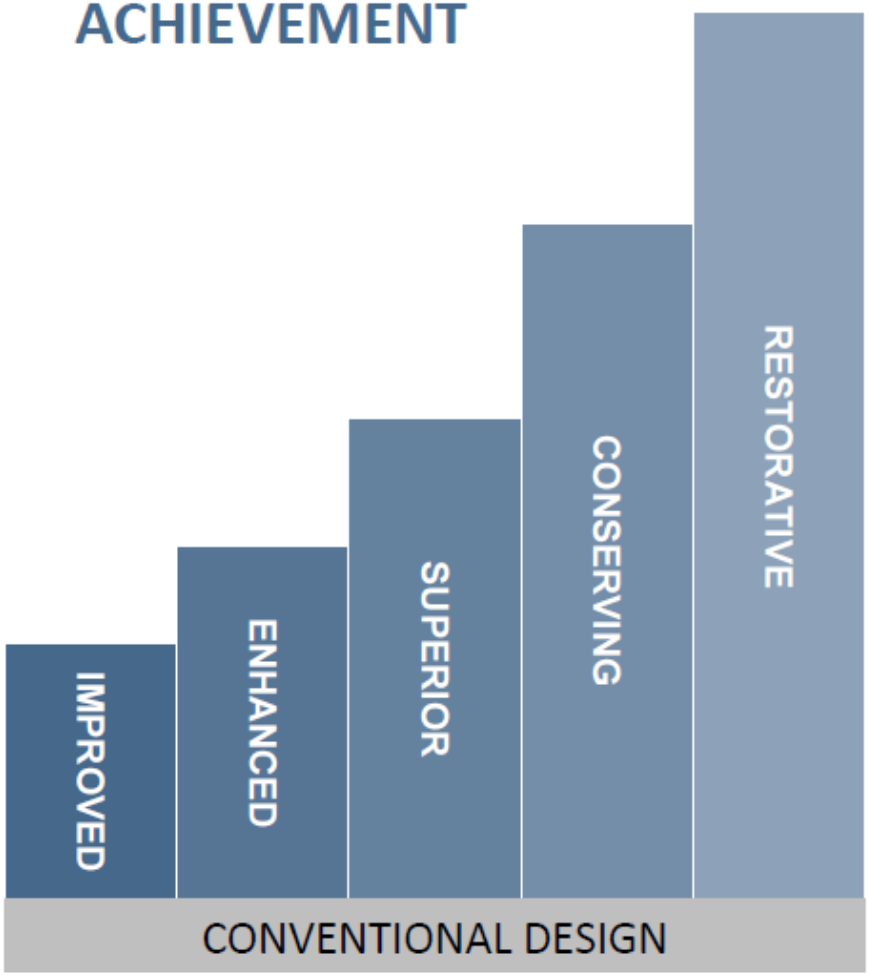
→

Envision Rating System
Set of 63 sustainability indicators

The Envision Rating System

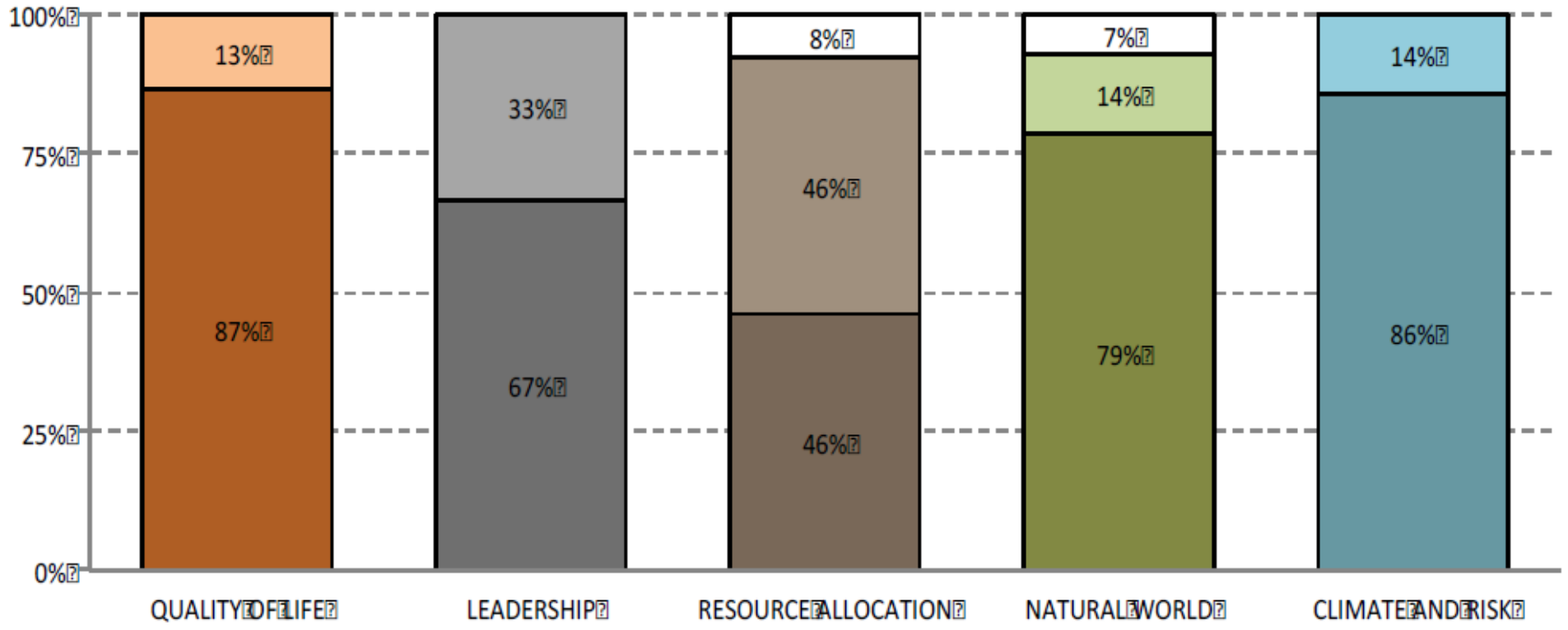
63 CREDITS IN 5 CATEGORIES

5 LEVELS OF ACHIEVEMENT



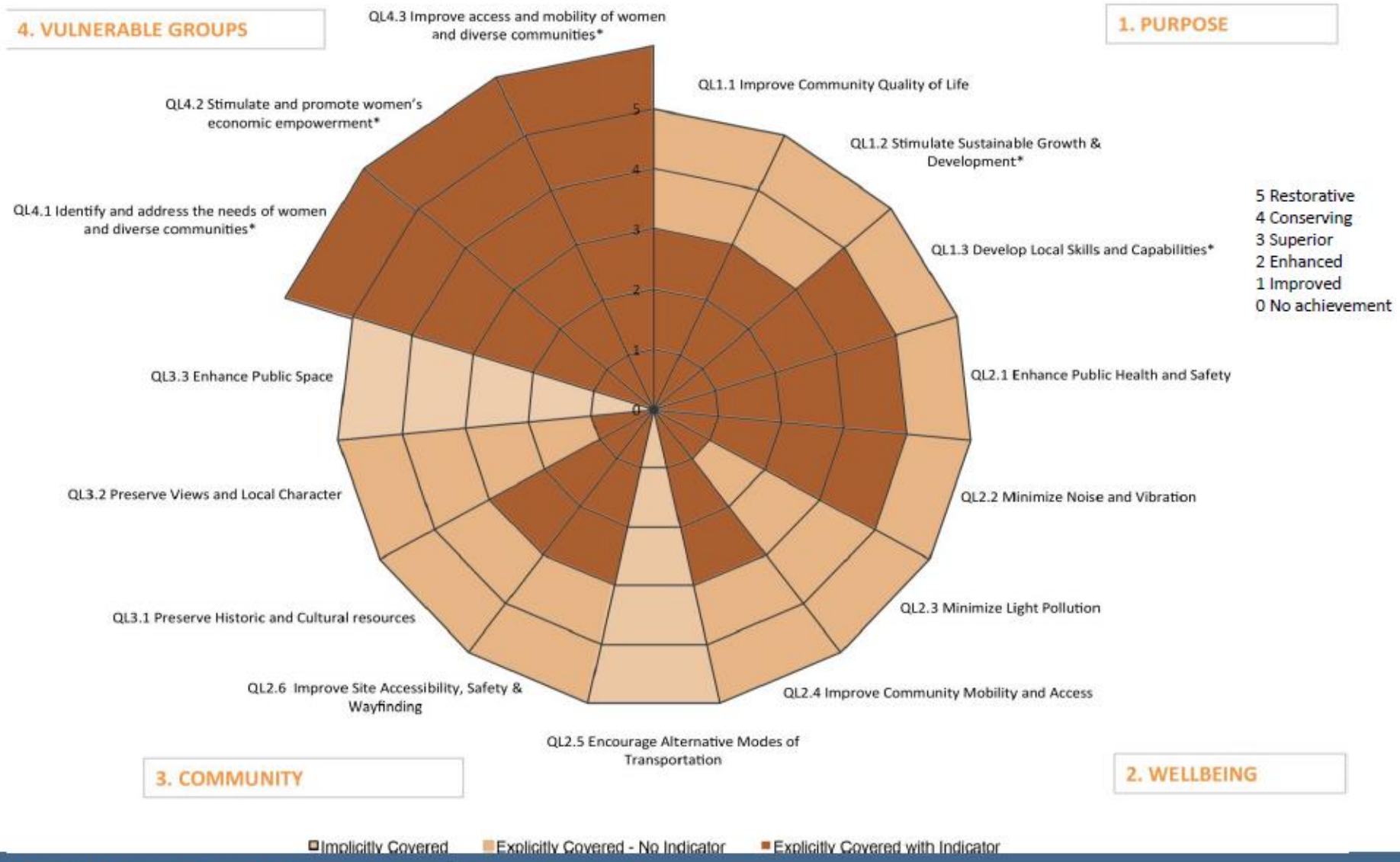
Comparative Analysis

Alignment between Safeguards and Envision



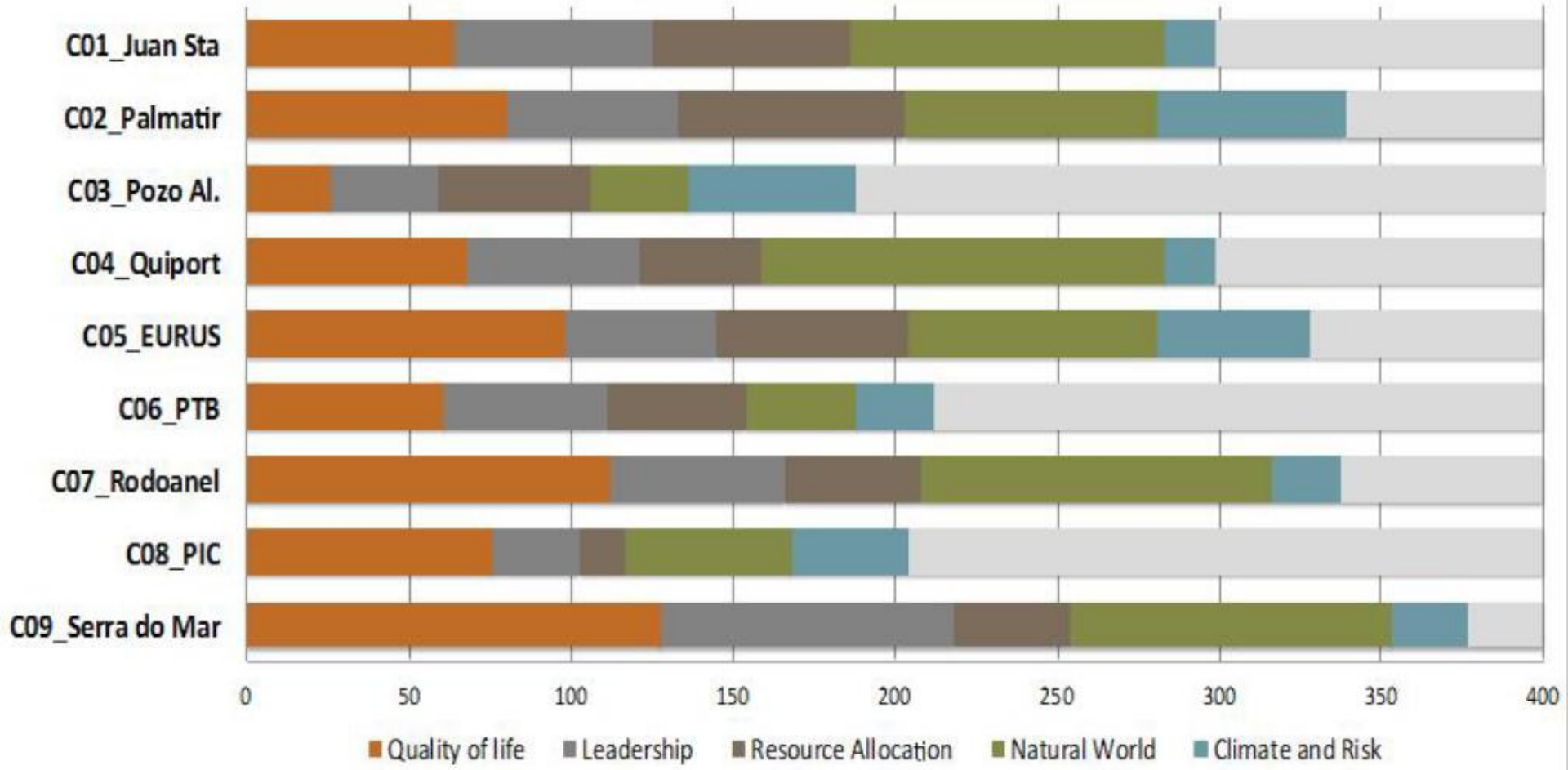
Dark colors indicate the Envision credits explicitly covered, whereas light colors indicate the Envision credits implicitly covered. White indicates credits that are not covered.
The percent coverage was calculated based on the Envision point score of each credit.

Example: Quality of Life



Application of Safeguards in IDB Projects

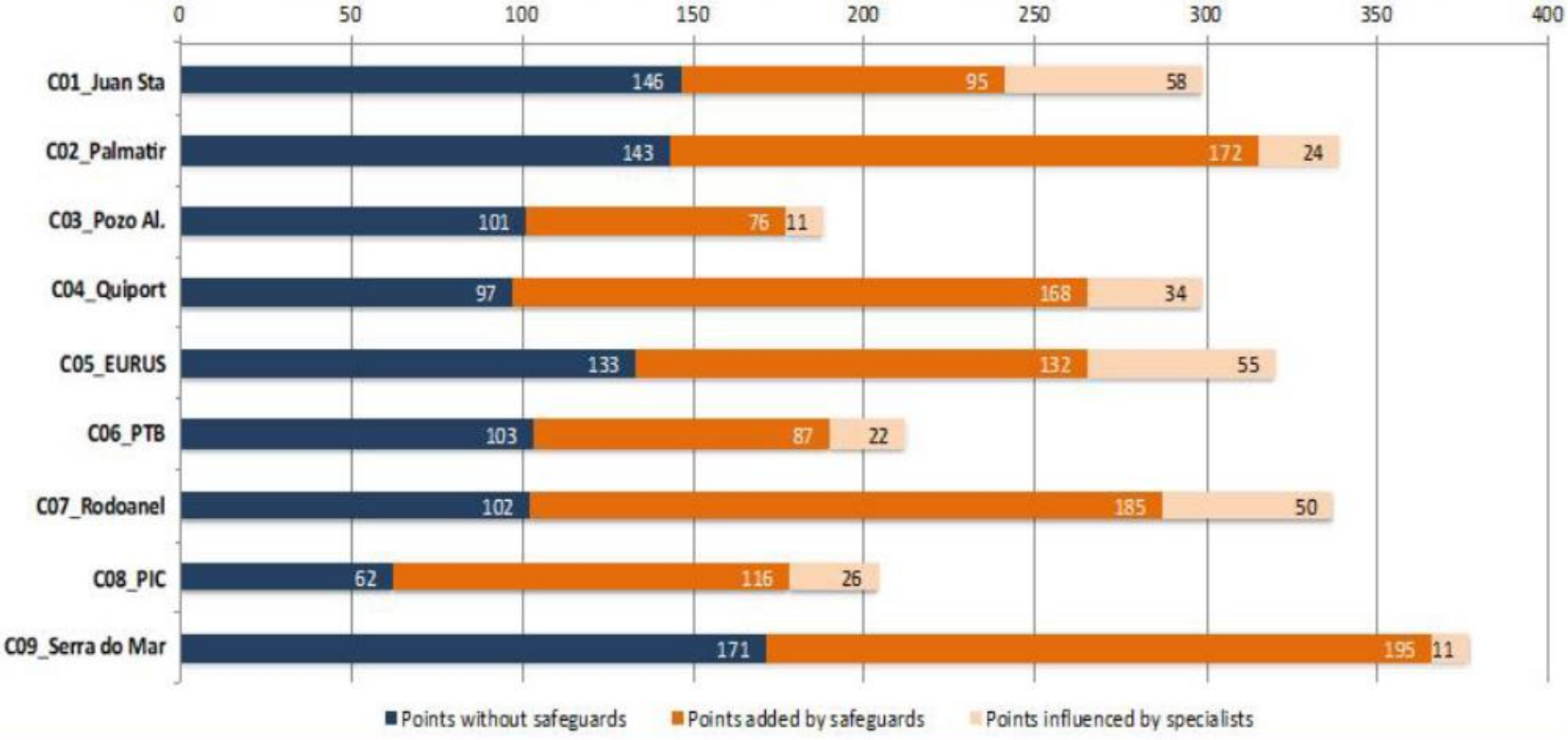
Envision Scores for the 9 Cases



The Benefits of Safeguards

IDB Safeguards are instrumental in sustainable performance

- Safeguards doubled the overall Envision performance of projects
- When IDB was involved earlier, sustainability performance was tripled
- Projects would have achieved a zero Envision rating without Safeguards in certain aspects



The Benefits of Safeguards

Specialists provide key support to project sponsors

- Help sponsors interpret Safeguard principles, implement initiatives that exceed initial project scope
- 6% - 38% of all points added by Safeguards and all "innovation" credits were influenced by specialists

Safeguards enhance national regulations and capacities

- National regulations are oftentimes not enough to account for specific impacts (e.g. lack of consultation and bird studies in Palmatir/ Uruguay, consultation in Pozo Almonte y Calama)
- IDB's studies set a precedent to guide future regulatory revisions and aid sponsors implement similar innovative projects.

Sustainability Opportunities for Upstream Work

Get involved as early as possible in the project cycle

- Sustainability performance is higher when IDB is involved earlier in the project cycle.
- Address earlier aspects often underestimated by sponsors or not covered by national regulations.

Expand assessments to include a wider spectrum of issues

- Aspects beyond those explicitly mentioned in Safeguards were addressed according to the project context.
- More social and environmental issues would expand the information considered when designing projects.

Further integrate climate change and resource planning

- Climate change and vulnerability analyses should be performed to produce the most resilient designs.
- Adaptation measures can be combined with IDB's adaptive management practices during design.

Other Recommendations

Adopt a life-cycle approach

- The calculation of impacts during all project phases is critical.
- Strengthen supervision of maintenance and monitoring plans during implementation, extend coverage during operations.

Integrate a performance-based approach with quantifiable targets

- Performance indicators would establish minimum standards to measure and monitor expected outcomes.
- This could also encourage borrowers to go beyond minimum requirements.

Maximize opportunities in Materials, Community, and Resilience

- Focus on the supply chain of materials to further reduce water and energy consumption.
- Operational policies can be expanded to address projects with low social impact.
- Evaluate the cumulative risk exposure from all types of vulnerabilities, including climate change issues.

Evaluate the need for a comprehensive and overarching policy framework

- An umbrella policy on sustainability would establish priorities and performance indicators for sustainable infrastructure, and simplify required documentation and procedures.

Summary: What needs to be done to achieve sustainability of infrastructure projects?

- **DEFINE:** Reach a common understanding of SI criteria encompassing environmental, social and economic sustainability plus governance
- **MEASURE:** Measure the value added of SI and show its benefits
- **INCENTIVIZE:** Create economic incentives for SI – partner with investors (not only impact investing)
- **HELP:** Create expert task forces to help countries with planning and early project preparation:
  - Leverage **economies of scale**
  - Act as **independent advisor** (not tied to a specific financing instrument or institution)
  - Provide sufficient **funding** for this upfront planning processes
  - Achieve a reputation as **trusted but independent partner** of host country governments

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