

SUSTAINABLE INFRASTRUCTURE: PUTTING PRINCIPLE INTO PRACTICE

GUIDING PRINCIPLE 9: TRANSPARENT, INCLUSIVE, AND PARTICIPATORY DECISION-MAKING

Infrastructure development should be underpinned by transparent planning, information sharing and decision-making processes that facilitate meaningful, inclusive and participatory stakeholder consultation, and in the case of indigenous peoples, their free, prior and informed consent. National, sub-national and project level grievance mechanisms should be available for addressing stakeholder complaints and concerns.

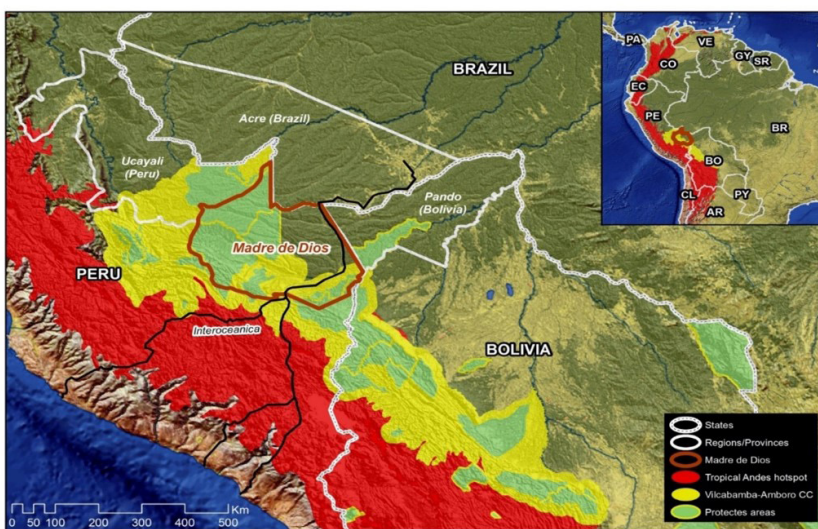
CASE STUDY: ENGAGING STAKEHOLDERS IN PARTICIPATORY SCENARIO PLANNING FOR SUSTAINABLE DEVELOPMENT PATHWAYS IN MADRE DE DIOS, PERU

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This map shows the location of Madre de Dios within the Vilcabamba-Amboro conservation corridor. The red line represents the Interoceanic Highway. Source: *The Future of Madre de Dios: Smithsonian's Working Landscape Simulator for Sustainable Development*. <https://doi.org/10.5479/si.9781944466282.En>



Need for Infrastructure Project/System:

The Madre de Dios (MDD) region of Peru is a biologically and culturally diverse area that forms a key conservation corridor spanning 30 million hectares of protected areas in the Tropical Andes Biodiversity Hotspot, and connecting the Andean foothills with the Amazon. Prior to 2010, the construction of the interoceanic highway began. This road is an important economic corridor that crosses the Andes to connect ports on the Pacific coast with MDD as well as road networks beyond, all the way to São Paulo, Brazil. While the highway has promoted key economic activities related to tourism and export of local products (e.g., Brazil nut, cacao), it has also been linked to environmental harms such as deforestation, fragmentation, pollution, and land use change.

Given this complex context, there is a need for stakeholders and decision makers to manage the MDD landscape sustainably, maintaining the important natural and cultural resources of the region while allowing for economic growth. A sustainable landscape is made up of both green infrastructure (e.g. managed forests, floodplains, wetlands) that provide ecosystem services, and gray infrastructure (e.g., roads, bridges, highways, built environment) that provide economic services. When green and gray are well integrated, a landscape can achieve sustainable development.

Project Description:

To plan for sustainable landscapes predictive tools like participatory scenario planning can be used, allowing for exploration and comparison of different future landscape states (scenarios). Participatory scenario planning involves stakeholder input to the development and prioritization of a suite of potential future scenarios. In 2014, the Smithsonian’s National Zoo and Conservation Biology Institute’s Center for Conservation and Sustainability was approached by a hydrocarbon company to develop a biodiversity action plan for a natural gas infrastructure project in MDD. The company wanted to understand their proposed project in a broader regional context and to understand how to sustainably integrate gas infrastructure into the landscape in the context of landscape change driven by multiple sectors.

Between 2015 and 2017, a participatory scenario planning process was developed and carried out to evaluate the outcomes of different development trajectories and to feed directly into governmental strategic planning for MDD. The process was designed to incorporate stakeholder priorities and visions of what the future landscape might look like. The project planning framework involved 7 steps (see image below), and stakeholder consultation played a major role in steps 1 (assessing ecosystem services), 2 (developing qualitative scenarios), 6 (developing recommendations), and 7 (communicating results). The stakeholder consultation implemented as part of this project went beyond conventional assessment of environmental and social impacts at a project level to consider synergies and cumulative impacts of infrastructure systems at a landscape level.



Source: *The Future of Madre de Dios: Smithsonian’s Working Landscape Simulator for Sustainable Development.* <https://doi.org/10.5479/si.9781944466282.En>

Based on an initial stakeholder mapping analysis, 51 stakeholders representing government, NGOs, producers, and the private sector were invited to participate in initial consultations, which evaluated priority ecosystem services and their drivers of change in the present and in the future. Thirteen organizations were represented in the initial stakeholder group that chose to participate. This information was used to develop eight qualitative scenarios that were presented to stakeholders in a second round of consultations. In these workshops, scenarios were validated with participants, who were asked to select the most interesting, relevant, and likely to occur scenarios.



The four selected future scenarios were then refined, modeled quantitatively, and presented in a third round of stakeholder consultations. During these workshops, stakeholders were able to visualize for the first time the potential outcomes, based on current knowledge, of the different development scenarios for the landscape in the year 2040. Participants discussed which regional future could best achieve sustainable development for the region, and refined recommendations for promoting sustainable infrastructure and landscape management in the region.

Challenges to Making Infrastructure Sustainable:

Technical and/or Programmatic – There are always challenges to working with a large and diverse stakeholder group, and this was no different. The challenges in this case were mostly related to competing priorities and views between stakeholders and difficulty in maintaining stakeholder interest throughout the project.

Governance and/or Political Challenges – There was high turnover of stakeholders representing government entities, which made continuity of the stakeholder group difficult. With so many levels of government involved, there was some confusion related to overlapping ministry responsibilities within the landscape and a difficulty in coordinating between landscape level planning at the national and regional government level.

Financial and/or Economic Challenges – Once recommendations resulted from this project, it was observed that centralized funding to implement those recommendations did not always reach the province and district levels.

Outcomes and Lessons Learned:

This project compiled a few lessons that are widely applicable for participatory scenario planning:

1. Clear messaging is essential: Engaging with good facilitators and communicators who can lead messaging and stakeholder engagement is enormously helpful. They can help minimize misunderstandings and manage expectations about the outputs and outcomes of a project like this appropriately.
2. Local partners are key: They have detailed knowledge of the local systems, and can help identify the most relevant stakeholders, provide important insights regarding influence and interest among stakeholders, and help achieve balanced participation.
3. Think a step ahead: It is important to invest time prior to the participatory engagement process to understand the layers of governance of the region and how laws are applied at different levels to better promote implementation of results. Considering implementation of recommendations emerging from a strategic landscape plan at the outset, can help coordination among multiple actors throughout the project who can help co-design implementation of the plan.

For Further Information:

- [Sustainable Infrastructure: Transparent, Inclusive, and Participatory Decision-Making webinar recording](#)
- [Smithsonian sustainable infrastructure projects website](#)
- [United Nations Environment Programme. \(2021\). International Good Practice Principles for Sustainable Infrastructure. Nairobi](#)
- [Madre de Dios brief case study description](#)
- [Madre de Dios full case report in English](#)
- [Madre de Dios full case report in Spanish](#)



Workshop participants. Photo credit: Smithsonian's National Zoo and Conservation Biology Institute