Using secondary data to assess knowledge uptake and influence of the Rio Doce Panel: Findings and key lessons learned from using the N-Vivo software

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Content

1. Introduction

This report is an analysis of the use of N-Vivo software by the IUCN secretariat in the context of the Rio Doce Panel (RDP), an Independent Scientific and Technical Advisory Panel (ISTAP) missioned to provide recommendations for the resilient and sustainable reparation of the damages caused by the Fundão tailings dam collapse in 2015 in the municipality of Mariana, in the state of Minas Gerais, Brazil. It also presents the lessons learned from this experience to benefit future ISTAPs and IUCN endeavours.

Amidst a complex reparation process that dealt with the disaster's environmental and social impacts, IUCN Secretariat used N-

The RDP was created in 2017 by request of the Renova Foundation (RF) and works to prepare studies with recommendations that seek to provide a long-term view to reparation programmes by drawing on scientific knowledge and integrative, landscape-based approaches. Although most of the recommendations are meant for the RF, others involve different stakeholders in the reparation process that play crucial roles in achieving the RDP's vision. To reach those audiences, the RDP had communication and engagement strategies to promote stakeholder awareness, understanding and Agreement with the recommendations.

The Monitoring, Evaluation, and Learning strategy was designed to understand if the RDP performed as expected and to demonstrate the intended and unintended outcomes of the RDP and its influence on the target audience. The information collected thanks to implementing the MEL strategy should then improve RDP's work and identify lessons that could benefit other ISTAPs in the future. In IUCN's preliminary research design, the Secretariat aimed to collect primary data through direct interactions with stakeholders (interviews and focal groups) to assess their awareness, understanding and use of the RDP's recommendations.

Nevertheless, the high number of stakeholders and their limited availability restricted primary data collection. Additionally, given the significant number of groups involved in the complex reparation efforts – more than 30 stakeholders - IUCN would have had to invest considerable efforts and resources in collecting and analysing data and ultimately

transcripts of meetings between key stakeholders and the

3.2.2   Nodes

Nodes are central to understanding and working with N-Vivo. They are a collection of references about a specific theme, place or area of interest. They allow for gathering related material and information in one place to look for emerging patterns later. The Node function was used to code information into "topic" using a set of 50 themes (see Annex 1) commonly addressed by the Rio Doce RDP in its knowledge products and recommendations. Some of these topics were disaggregated into sub-nodes for more granular analysis.

In our case, we also used

3.2.3

Figure 4- Illustration of Queries Structure

3.2.6   Memos

Relevant information on the progress of the analysis was stored in Memos. Memos were used to register some queries' details and when results were analysed and coded for the last time.

4   Exploring the database

We used a tree steps approach to explore our data set.

1)) We read all the documents with a high potential of containing information relevant to our analysis (e.g., a transcript of a meeting between the RDP and RF staff about an RDP study) and directly coded the identified excerpts into corresponding "topic" nodes;

For long documents (e.g., RF's activity reports, which span several hundred pages) or if the number of documents was overly high (e.g., hundreds of monthly meeting minutes of all of CIF's technical chambers), we ran queries and performed text analytic searches. We defined a list of keywords or expressions related to the "topics" nodes and used

Figure 5. Illustration of the methods used to code relevant information on stakeholders' actions to implement each recommendation.

Source: Cogueto et al., 2021

3) Finally, we divided the RDP's recommendations into six categories to structure our qualitative analyses: i) Comprehensive impact assessment; ii) High-level inter-institutional articulation and governance; iii) Knowledge management, communication and information sharing; iv) Alternative livelihoods and Socioeconomic Impacts; v) Ecosystems and Human Health; vi) Risk and adaptive management. Table 1 provides a more detailed description of these categories and shows how the different recommendations from the RDP were matched to it.

Table 1 – Recommendation Groups and Descriptions

Groups & Number of Recommendations	Description	Recommendations
Environmental and Human Health (9 Recommendations)	Recommendations related to qualifying and improving local ecosystems fall into three different lines of action: i) Continuous effort to monitor the environmental health and the quality of ecosystems; ii) Lake Juparanã-related recommendations; iii) Recommendations focusing on Nature-based solutions;	TR02R03 TR03R02, TR03R05 IP02R02 IP03R01, IP03R02, IP03R03 IP05R01, IP05R03
Governance (11)	An overarching category containing recommendations that promote governance models between different stakeholders involved in the planning and implementation chains. This involves creating common capacities (e.g., sanitary systems), promoting citizen engagement, creating common frameworks between different stakeholders (e.g., Rio Doce Climate Action Plan), establishing public policies, and planning future actions.	TR01R05 TR02R01, TR02R02, TR02R04 TR03R01, TR03R03, TR03R04 TR04R01, TR04R02, TR04R04 IP02R01
Environmental and Social Impact Assessment (3)	Recommendations that produce a socioenvironmental assessment that promote a diagnosis of a degraded area.	TR01R01, TR01R02 IP04R01
Knowledge Management and Communication (5)	Recommendations related to creating, sharing, and communicating data packages in a systematised manner to relevant stakeholders.	TR01R06, TR01R07 TR0403 IP02R03 IP05R02

updating them was especially helpful in understanding the implementation of the RDP's recommendations. As significant cornerstones of the reparation context, keeping track of these topics also helped keep the RDP updated on unexpected events.

On the one hand, we identified several cases where stakeholders aligned their actions with the RDP's recommendations. In particular, we found evidence that stakeholders' actions aligned with RDP's recommendations in Environmental and Human Health, Governance, Alternative Livelihoods and Socioeconomic Development, Risk Assessment and Adaptive Management and Environmental and Social Impact Assessment. These recorded influences were later catalogued in the Influence Log, which had 58 entries as of March 2023. Some of the most relevant examples of the RDP's influence on their target audience are presented below:

Environmental and Human Health

The World Resource Institute (WRI) used IUCN's Restoration Opportunities Assessment Methodology and TR02 to promote a diagnostic of the basin and argue that the Rio Doce reparation context needs to adopt more policies and increase investments capable of generation institutional and social resilience for adaptation to climate change.

The RDP and other factors influenced the Rio Doce-centred committee's adoption of

Alternative Livelihoods and Socioeconomic Development

Evidence that the public prosecutor used IP02 to justify the fishing ban in July 2019 was found. In early 2020, RF organised a workshop to provide feedback and communicate the overall assessment results on freshwater biodiversity and fish toxicity to affected communities and government authorities. A Renova member also mentioned that IP02 reinforced RF practices under Program 14.

Risk Assessment and Adaptive Management

TR01 showed that Renova needed to produce a more systematic assessment of all the information produced by the academia and technical organisations in the reparation context. This led to the creation of the Impact Curatorship, a department within the RF that focused on transversal subjects and tries to promote integration within the reparation of many programs.

Vale officials used TR02 as a source to develop Brumadinho's disaster reparation efforts. They included chapters addressing Impact Assessment and Climate Change in Paraopeba's watershed Reparation Plan, compiled in response to the disaster caused by the failure of a tailings dam owned by Vale in Brumadinho.

Environmental and Social Impact Assessment

IP04 and TR05's played an important role in constructing an assessment framework on marine and coastal biodiversity by RF. The RDP's links with Renova staff members and Fundação Brasileira de Desenvolvimento Sustentável (FBDS) contributed to making the framework more collaborative and applicable within the reparation context.

Vale's use of TR02 in the Paraopeba basin, the creation of the Impact Curatorship, and the marine impact assessment methodology are significant evidence of the RDP's high impact on scientific production and knowledge creation in the reparation context. Such evidence was also used in other evaluation assessments, such as the External Evaluation and the Legacy Paper, to illustrate RDP's importance further and attest to its influence.

On the other hand, our analyses also show that some specific topics related to RDP's recommendations, such as payment for environmental services and the source-to-sea and landscape approaches, had less uptake than expected. When such trends were observed, extensive reading of the documents where these topics were found was done and helped to understand better why these issues were not moving forward as planned.

We also used the information gaps we identified during our N-Vivo analyses to follow up and engage

N-Vivo

Name	Description
Fishing	
Funding	
Human and ecosystem health	
GAISMA	
Human health	
Info & comm	
Access to information	
Communication	
Info & knowledge management	
Information sharing plan	
Institutional capacity building	
Landscape approach	
Long-lasting legacy	
Mitigation objectives	Objectives of mitigation as cited in TR01
Compensate for damage	that cannot be remediated
Remediate damage	
Restore biophysical environment	Restore the biophysical environment to a desired previous state
Restore or enhance livelihoods	of affected people
More than TTAC	

Name	Description
Multistakeholder	
Stakeholder engagement	
Nature-based solutions	
Partnerships	Partnerships with other organisations
Previous conditions	A baseline of conditions of the basin before the dam break
Previous trends	Trends of the indicators prior to the dam collapse
Programs' impact	The assessment of Renova's programs outcomes
Adaptive management	
Integrated evaluation	Integrated evaluation of programs outcomes
Negative impact	
TTAC review	
Programs' management	of Renova's programs
Rely on specialists	

Name	Description
Sustainability	
Socioeconomic	
Socioenvironmental	
Sustainable fishing	