

# **Integrating Poverty and Social Analysis in SEA: The Cases of Pakistan and the Piauí, Brazil<sup>12</sup>**

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## **1. Introduction**

A body of literature has emerged focusing on the theoretical and practical aspects of Strategic Environmental Assessments (SEAs) for policies. However, relatively little attention has been paid to the incorporation of poverty and social aspects into these assessments, even though doing so has the potential to significantly enhance the sustainability of sector or development policy reforms. This paper reviews the assessments prepared to enhance the sustainability of reforms in Pakistan's transport sector and to promote productive and social inclusion in the Piauí, Brazil. Drawing from these experiences, this paper proposes a methodology to integrate environmental, poverty and social dimensions through rigorous analytical work, stakeholder engagement, accountability mechanisms, and social learning.

## **2. Methodological Approach**

The Pakistan and Piauí cases were selected because the same methodological approach was used in them and thus, they demonstrate the approach's usefulness and relevance in different development contexts. The reviewed assessments integrated methodologies developed for Policy SEAs (P-SEA) with methods used to assess the distributional impact of policy reforms on the well-being of different stakeholder groups. The P-SEAs' aim was to assess whether specific policy reforms were likely to cause significant effects on the environment and natural resources, as well as to provide recommendations to incorporate environmental considerations in policy reform programs, in order to manage adverse environmental implications and enhance positive effects. Because the P-SEAs focused in policy design and implementation, their approach differed from more traditional "impact-centered SEAs" consisting mostly of an extension of project-based EIA methods applied at higher decision making stages. In contrast, P-SEA methods were developed recognizing the complexities of policy formulation and the importance of institutions in this process (Dalal-Clayton and Sadler, 2004; Sánchez-Triana and Enriquez, 2007; Ahmed and Sánchez-Triana, 2008; Slunge and Loayza, 2012; Sánchez-Triana et al., 2013).

In each case, the P-SEA was complemented with a Social Accounting Matrix (SAM) representing the flows of all economic transactions that take place within the economy to better understand the effects of potential policies that the Government of Pakistan (GoP) and Government of Piauí (GoPi) aimed to adopt. In the case of Pakistan, the reforms' goal was to remove bottlenecks that would enhance the efficiency of the transport sector and increase economic output (Sánchez-Triana et al., 2013). Thus, the SAM assessed the effects of proposed

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reforms on the income levels of different households and economic groups. In the case of Piauí, proposed reforms in land titling and social programs have the effect of increasing human and social capital in sectors of the local economy. The SAM estimated how such capital increases would be distributed among different economic sectors and which social groups would benefit most.

### **3. Context: The Need for Policy Reform**

In Pakistan, the GoP aimed to strengthen the transport sector, which suffered from low quality, long travelling times, and poor reliability, particularly in rail transport. The sector's inefficient performance had an annual cost of 4-6% of Pakistan's GDP (GoP, 2007). Constraints to the sector's performance included bottlenecks in each subsector (highways and trucking, railways, port and shipping, aviation, and trade logistics) and in the overall lack of strategic coordination needed to facilitate the development of multimodal systems that integrate the strengths of different transport modes into one system.

In Brazil, the GoPi prepared in 2013 a set of reforms aiming to expand coverage of public services associated with productive inclusion, secondary education and health public services, and the institutionalization of a results-based monitoring framework in the public sector. Through these reforms, the GoPi aimed to combat poverty by improving access to basic social and economic infrastructure and income-generating activities, as well as by enhancing local governance, citizen participation, and transparency in decision-making in municipality councils.

While dealing with different types of reforms, the efforts of the GoP and GoPi had some common elements. Among them, both governments shared the need to: (1) focus on policy reforms at a strategic level; and (2) coherently integrate poverty, social and environmental issues.

### **4. Priority Environmental Issues and Linkages with the Reform Program**

In Pakistan, the environmental issues most closely linked to the reform program were: outdoor air pollution, noise pollution, road safety, hazardous waste transportation, climate change, and habitat fragmentation and natural resource degradation.<sup>5</sup> Outdoor air pollution resulted in more than 22,600 annual deaths nationwide and, in Sindh province, had a cost that was equivalent to 0.9 – 2.2% of GDP (World Bank, 2006; Sánchez-Triana et al, 2014). Noise was also severe, resulting in damages of Rs. 8 billion and Rs. 25.8 billion in the provinces of Punjab and Sindh, respectively. In addition, Pakistan had a road rate of 25.3 deaths per 100,000 inhabitants (compared with rates of 12.6 – 18.3 in the rest of South Asia). The cost stemming from these accidents in Sindh was equal 1.4% of the province's GDP.

In Piauí, the P-SEA estimated that environmental health risks (household air pollution; lead exposure; water supply, sanitation and hygiene; and outdoor air pollution) had an annual cost of 2.28% of the state's GDP in 2012. In addition, deforestation and desertification in the Cerrado and Caatinga regions were equivalent to 2.31-3.21% of the state's GDP, and were likely to grow fivefold by 2040 in the absence of decided actions to address them.

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<sup>5</sup> Not all these issues are discussed in this paper due to space limitations.

## 5. The Effect of Proposed Policy Reforms on Priority Poverty and Social Issues

In order to estimate the poverty and distributional effects of the reforms proposed by the GoP, the P-SEA used the SAM to simulate a 10% increase in Total Factor Productivity (TFP).<sup>6</sup> The P-SEA found that such increase would result in higher incomes for all households, with rural agricultural laborers and the urban non-poor realizing the largest benefits. However, an increase in the TFP in rail or road could affect an estimated 40,000 households in the rural non-farm non-poor sector, 12,500 households in the rural non-farm poor category, and 42,000 households in the urban poor category.

In Piaui, the P-SEA analyzed the consequences of alternative policy interventions on the main economic sectors and on income distribution across different groups in rural and urban settings. Assessed interventions included: (1) direct income transfers to low-income households; (2) investments in public services such as education and health; (3) investments in the provision of these services by private firms but financed by a reallocation of public spending; and (4) the reallocation of government spending into a combination of public and private services. The analysis found that high-income urban households would stand to benefit in all cases, either directly or indirectly, because they have more linkages with other sectors of the economy than other households. Among the different interventions assessed, direct income transfers to low-income households would have the greatest positive impact on income distribution and the least impact on CO<sub>2</sub> emissions.

In addition, the SAM supported an understanding of the tradeoffs of alternative interventions. While investments in the large-holding agriculture sector (e.g. mechanized soybean production for the export market) would result in the largest impact on wholesale and retail trade, return to capital, and spillover effects into small-holding agriculture, they also have the least impact on income redistribution. These investments may also be undermined by their dependence on exports and environmental unsustainability, especially in the Cerrado biome. Finally, the SAM suggested that a policy of income redistribution in favor of the rural poor may have important payoffs in increasing aggregate social welfare and reducing potential social conflicts.

## 6. Policy Recommendations

In Pakistan, the P-SEA provided policy recommendations to address the environmental priorities and distributional issues discussed above. In order to meet the GoP's goal of enhancing the competitiveness of the trade and transport sector, and simultaneously address poverty, social and environmental priorities in an integrated manner, the assessment recommended that Pakistan's freight transport system shift towards one based on the integration and complementarities of rail and trucking. By promoting the integration of different modes of transportation and giving preference to railways over long distances, where it was more efficient and sustainable than road transport, the transport sector would not only become more competitive, but would also reduce its emissions of air pollutants and greenhouse gases, the number of road accidents, urban noise levels, and natural habitat fragmentation. However, based on the SAM, the P-SEA recommended developing mitigation measures for those groups that would be made worse off by increasing rail productivity, mainly rural non-farm and urban poor households.

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<sup>6</sup> Total Factor Productivity refers to the portion of output that is not explained by the *amount* of inputs used in production, but rather, by the efficiency and intensity with which such inputs are utilized in production.

In Piauí, policies in the GoPi reform package were analyzed one by one. The P-SEA found that these policies would not negatively affect the environmental priorities identified in Piauí. Thus, based on the SAM's findings, the GoPi designed policy reforms that would both enhance positive environmental effects and result in the most significant poverty reduction and income distribution effects. These included: (i) incentives for subsistence and small-scale farmers to adopt environmentally sustainable practices; (ii) land-tenure regularization,<sup>1</sup> (iii) institutional strengthening for water resources management and deforestation control actions; and (iv) conditional direct transfers in rural development and education policies targeting low income groups.

In both cases, in addition to informing the development of the reform agenda, the P-SEA looked at the technical capabilities of government agencies to implement proposed reforms. In this regard, the analysis identified two main challenges: (i) the multi-sectoral scope of several reforms would call for strengthened coordination and improved communications among different organizations; and (ii) institutional strengthening would be needed to help state organizations to implement the supported reforms. Interviews and discussions carried out during the preparation of the assessments identified chronic shortages in the government bodies with responsibilities for environmental management, as well as those in charge of sectoral policies. Institutional strengthening efforts were thus coupled with reforms to institutionalize results-based monitoring frameworks, so that strengthened institutions would be held accountable for implementing improved policy reforms. In addition, the P-SEA recommended engaging stakeholders to periodically assess progress in policy implementation and identify opportunities for improvement, thus enabling of social learning.

## **7. Conclusions**

This paper reviews the P-SEAs prepared to enhance the sustainability of reforms in Pakistan's transport sector and in Piauí's development agenda. The GoP and GoPI, with World Bank support, prepared P-SEAs that integrated environmental, poverty and social assessments to inform the design of their policy reforms. This paper argues that addressing poverty and distributional impacts related to the key issues identified in an SEA should be an explicit goal in all policy SEAs.

In the case of Pakistan, the integrated approach helped to identify sectoral reforms that could be pursued to meet the GoP's goal of enhancing the competitiveness of the trade and transport sector, while simultaneously addressing the potential linkages of the sector with environmental, poverty and social priority issues. In Piauí, the integrated approach helped to inform policies that would lead to a more equitable access to income and assets in rural areas. These reforms were important to address growing inequality and lack of opportunities for economic advancement for vulnerable groups, and the unsustainability of an agricultural sector increasingly focused on large scale, mechanized production associated with environmental degradation.

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<sup>i</sup> Land-ownership regularization is key for deforestation control by allowing the demarcation of legal reserves and permanent protection areas and enabling the identification of the persons accountable for illegal deforestation activities.