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MANAGEMENT”**

***SYNOPSIS OF THE STUDY OF THE INSERTION OF ENVIRONMENTAL  
MANAGEMENT IN SECTORIAL POLICIES: The energy and industry case in  
Bolivia***

***WORKING PAPER***

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*(Original document in Spanish )*

## **Introduction**

This document summarizes the results of a study on insertion of environmental policies in sectoral activities in Bolivia, prepared for the IDB by the Center for Development Studies of the University of Los Andes. The analysis focuses on the industrial, mining and energy sectors in Bolivia. It is almost a decade since Bolivia established an institutional framework for environmental protection, which, among other things, promotes the internalization of environmental controls within sectoral activities. The implementation of the environmental policy has been problematic in Bolivia thanks to its complex regulation, in many cases moved away from the reality of the country and the regulated sectors, and the deficiency of institutional, economic and human resources. It is now worthwhile stopping to evaluate the results of this process, identify strengths and weaknesses, and suggest corrective measures that could improve environmental management in the short, medium and long terms.

The study starts with a description of the main environmental problems caused by the industry and energy sectors. It then continues with a review of Colombia's legal and institutional framework underlying environmental management activities within the sectors. Finally, it presents the results of implementing environmental policy and channeling environmental investment within the industry and energy sectors over the last few years. The main outcome of this exercise is a series of proposals for environmental actions which address simultaneously environmental management improvement needs, economic efficiency in the sectors and overall national socio-economic objectives.

## **The Industrial Sector**

Apart from petroleum refinery, manufacturing activities in Bolivia are carried out by small and medium sized businesses, most of them concentrated in the city of La Paz. Given its relatively small size, industrial and energy activities do not appear to generate environmental impacts that go beyond their area of close influence. Nevertheless, these two sectors have had a growing tendency during the last years. This flags an alert regarding the importance of developing strategies centered on the modernization of productive processes and on the prevention of new environmental problems that may arise as a consequence of that growth.

In spite of advancements in environmental legislation and institutional organization, Bolivia has very little information on atmospheric industrial emissions, water discharges and solid and hazardous waste generation. The lack of information affects the identification of strategies and action plans and the application of measures against pollution through economic incentives or other instruments.

Small and large industries are located in urban areas, which makes it difficult to identify their environmental impacts, because the solid waste collection and sewer systems are the same ones used in residential areas and there is no differentiated regulation. A large part of the industry uses obsolete technology, with the corresponding inappropriate use of resources, energy and materials. A minimal amount of industries has undergone the process to acquire Environmental Licenses and a smaller number still is implementing the measures

proposed in their plans. The reasons range from ignorance of the obligations and the complexity of procedures to technical and economic incapacity to meet these demands.

The case of the mining industry is different. Many rivers in the high areas of the Bolivian plateau have been severely polluted by heavy metals and the negative environmental externalities of the mining activity extend great distances. Many negative effects come from environmental liabilities generated a long time ago, which for the most part are not being corrected. As in the manufacturing industry, in the case of mining the lack of systematic environmental monitoring prevents a precise diagnostic on the pollution the sector generates.

### **The Energy Sector**

The Hydrocarbons sector (oil and gas) is important to the Bolivian economy, however of modest physical dimensions, and it is not a sector associated to particularly severe environmental problems. The government advances environmental control activities and the multinational companies that are in charge of the sector operate according to their international standards. The energy sector is also not associated to particularly severe environmental problems.

### **Regulatory Instruments**

In Bolivia there is a great distance between legislation and environmental regulations and the country's social, economic, technologic and institutional realities. The Bolivian environmental legislation does not recognize these realities, which makes it an inadequate and inoperative legislation. It is an inflexible legislation concentrated on "command and control" instruments, which does not clearly define the jurisdictional limits of the various instances, leaves opportunities for discretion by Government officials, sets complex and imprecise procedures for obtaining environmental licenses and permits, it requires compliance with requirements and standards that the Government has no capacity of verifying, and it is not easy to interpret even by the officials in charge of carrying it out. Of course, all of this negatively affects the credibility and legality of the regulatory system and the environmental authorities.

### **Economic Instruments**

Even though the legislation supposes the development of economic incentives and agreements between the environmental authorities and the regulated sectors, in Bolivia this type of instruments has not been implemented. The only exception is a joint initiative of the Vice-ministry of Energy and Hydrocarbons and the National Chamber of Industries, directed at improving energy efficiency in industrial processes. The initiative is supported by international donors and, even though environmental authorities have no direct participation in it, may generate clear environmental benefits as it promotes the adoption of clean and efficient productive processes in the use of water, energy and industrial materials.

## **Conclusions**

Bolivia faces the challenge of developing and consolidating an environmental regulation system adapted to the country's realities and needs. That is, as system that consults, recognizes and attends to the country's needs and its productive sectors' economic, social and technologic realities, and that effectively contributes to improvements in the productive sectors' environmental performance, profitability and competitiveness. The Bolivian environmental law, included in Law 1333 and previous others, as well as its regulatory norms, must be wholly revised and evaluated according to its institutional and technological feasibility.

Likewise, Bolivia must strengthen its institution system and the coordination relationships between them, so that the Government may effectively assume the functions assigned to it by law. Bolivia needs an institutional arrangement that recognizes the actual institutional realities of municipalities, prefectures and the national government's sectoral entities.

Another challenge faced by the government is to seek agreements with the various productive sectors that may pursue the simultaneous improvement of the sectors' environmental performance and competitiveness, and arrange joint work agendas directed to internalizing the governments environmental policies and goals in the sectors' planning and management processes. The Government must facilitate access for the industrial and mining sectors to technologies that are clean and efficient in their use of materials, natural resources and energy.

Finally the Government must promote citizen participation in every region and city regarding the environmental control and follow-up of productive activities, as a strategy to reinforce environmental control efforts. As long as the Government effectively attains community participation in the control of productive processes, it will be able to broaden its range of influence and reach its environmental goals at lower costs. To the same end, the Government must encourage and facilitate social participation in regional and sectoral planning processes when they can affect environmental quality and the offering of natural resources.