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NATURAL RESOURCES AND INDUSTRIALIZATION

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That industrialization pulls the development of a country or a region is empirical evidence and also backed economic literature. The question is: what kinds of industrialization should be handled to meet the development aspirations of a particular society.

On the other hand, argues in favor of an emphasis on industrial sectors-based manufactured products such as electronics, automobile, etc., considered "high technology" and "knowledge intensive" and offer real opportunities for innovation and competitiveness. Exemplifies this attitude with the experience of Southeast Asia, especially South Korea, Taiwan and Singapore, whose industrial growth, from the Decade of 1980, has been strongly driven by such industrial sectors. It is natural to recommend that Brazil if gets inspiration in the example of those countries.

On the other hand, occurs as the economic relevance and perspective overshadows market and the opportunities for technological innovations stemming from industrial sectors based on natural resources such as forestry, pulp and paper, steel, mining, food, agriculture, agro-energy, fishing, among others. Ways in which Brazil presents itself with comparative advantages.

However, there are different views on the relevance of industrial sectors to the natural resource base for economic and industrial progress. Some argue that such industries and their companies as being "low tech" and/or mere commodity producers, and that offer few opportunities for technological innovation and poor contribution to industrial development and international competitiveness. This view argues that these industries have low rates of industrial growth and economic development, in addition to serious social conflicts, and little or no environmental preservation.

Others argue that a combination between the abundance of natural resources and systematic efforts and responsible innovation can result in business and technology leadership at the international level. The Brazil has a nice example in that respect. This is the Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA) that put the country as a world leader in tropical agronomic research and gives significant support to the expansion and international leadership to agribusiness.

Outside of Brazil have the economies of Sweden, Norway and Finland who have developed large innovative technological capabilities in sectors related to natural resources, such as: mining, forestry, pulp and paper, oil and gas, and fishing. Well diversified its industrial base, contributing to the progress and strengthen their economies.

These countries are not basically maintained their farm cycle extraction of its natural resources. The Sweden no longer conducts mining activities itself, however, is one of the world leaders in providing mining technology, Norway is one of the leaders in the export of technologies and engineering services in the oil and gas industry. The Finland took advantage of their innovative capacity accumulated in forests for pulp and paper, and obtained, in the last 30 years, global leadership in capital goods, technologies, processes and engineering services and consultancy for such sectors. It is also what already has been doing the State of São Paulo with his production of eucalyptus. These examples demonstrate the ability to export of knowledge, an intangible asset related to natural resource.

Obviously that Brazil won't let, also take advantage of its ability to industrialization of manufactured goods, including whether to mirror in the victorious experience of Southeast Asia, nor if unilateral return for holdings of its abundant natural resources. What should be taken into consideration for national development is the need for expansion of different alternatives for industrial development, and it is here, which is part of the modernization of the industrial base of natural resources. To do this, you need to understand the real nature of technological innovations, their opportunities and their role in industrial growth and economic development of Brazil. Was this vision, put into practice by Scandinavian countries for 40 years, which made them industrialized today.

Brazil already has academic sectors who study these possibilities. The programme on management of Technological Learning and Industrial innovation in Brazil, Escola Brasileira de Administração Pública e de Empresas of Fundação Getúlio Vargas (EBAPE/FGV), created in 1999, started in 2005, search with goal of generating new evidence about the process of innovation in companies and industries based on natural resources, aimed at their participation in the Brazilian industrial development. Another institution that funds studies with the goal of adding value to natural resource is the Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP) through universities and research institutes paulistas. Three examples illustrate well this participation: ethanol the orange juice, pulp and paper. Specifically in the area of pulp and paper, São Paulo also counts with the support of the Instituto de Pesquisas e

Estudos Florestais (IPEF) that works in partnership with the Department of forest science of the Escola Superior de Agricultura "Luiz de Queiroz (ESALQ), University of São Paulo (USP).

It is this search infrastructure that gives Brazil productivity levels of eucalyptus forests of 41m³/hectare/year, making Brazil the world reference point in eucaliptocultura. In the industrial sector, from 2000 to 2009, there have been significant improvements in operational indicators in the production of pulp and paper, as well as similar position on environmental indicators for fluent liquid, solid and air. In 1970 the commercial performance of 2009, pulp and paper exports grew 14.2% and 22.3% respectively per year on average. This would not have been possible without the accumulation of innovative capabilities, in terms of engineering and research on the part of companies and its partners.

This international reality and also existing in Brazil can and must be internalized in the industrial base of natural resources in the Amazon. It is urgent that the existing practice and the culture in the region to exploit natural resources *in natura* will do only part of the regional economic history. Add value to products is just one of the stages of the modernization of the sector. Generate innovations, increase environmental preservation and social responsibility are other agendas to be persecuted. The export of knowledge, technologies and processes of the natural resources industry make the Amazon in the position of modernity in relation to the exploitation of those resources.