SCIENCE AND TECHONOLOGY: THE UNREACHABLE INDEPENDENCE

The world is made up of a series of countries supposedly independent according to a territorial demarcation, but really dependent upon an empire of transnational enterprises that promote competitiveness, among many other things, in science and technology, constituting true markets of product research and process design.

In fact, to talk about competitiveness in matters of science and technology in countries like Venezuela is similar to pretend that a school sports team compete with a major league team. Most likely, the good players will be engaged as prospects by the major league scouts. The fact that an underdeveloped country becomes involved in matters that can lead to requests of patents of technological know-how is to encourage the exploitation of human talent. If the know-how were available, there would be no need for the patent, which would become an advertisement disguised as technology, needing to be backed by enough capital investment in order to become productive.

In the case of Venezuela, for example, any research regarding new catalysts for oil refining and petrochemistry would be firstly exploited by known transnationals that produce catalysts. The patent for 'Orimulsion', developed for the transportation of heavy oil, is an eloquent case of a financial wager, given the greediness of markets for light oils. Another example is that of the diamond knife for ultrafine microtome sections, backed by a patent that is half a century old; anyone in need of such a knife for his laboratory can search catalogues but the knives made in Venezuela do not appear anymore.

In matters of the oil industry, the most convenient strategy for countries like Venezuela is to keep personnel with enough experience on the existing processes so as to be able to apply the axiom that suggests that it is better to gain little because you pay more than to end up earning less since what you bought does not work, or takes longer to work. A clear example of the application of this axiom is that Russia, a country that is technologically advanced and is apparently not aligned with dominant countries, associates itself with the transnational Shell in order to exploit the enormous reserves of natural gas in Siberia.

One can ask with whom should we associate to exploit the enormous reserves of heavy oil of the Venezuelan Orinoquia? A similar setting is represented by the Cuban potential reserves of deep oil offshore, very difficult to tap. Granting exploitation rights to enterprises of countries such as Brazil, China, Spain, Norway, Malasia, etc. follows the above mentioned axiom, since the costliest work would be carried out by the transnational companies engaged, to whom the rights were conceded. However, apparently the transnational enterprises are employing ever more the tactics of leaving the investment risks in matters of exploitation to the developing countries.

In a not so distant future, the largest oil producers could be Norway and Denmark, together with Canada, USA and Russia, exploiting that which will remain at the North Pole. Paradoxically, the melting of the sea glaciers at the North Pole, contrary to the melting of land glaciers, would not lead to a rise in sea level and would suit the endeavor, as it would facilitate the establishment of perforation platforms. However, the worst expectation as a consequence of such an operation is that the methane hydrates that abound in the terrestrial permafrost and marine sediments can escape to the atmosphere, accelerating global warming. In fact, the atmospheric methane concentration increase has been five times that of CO_2 over the last 100 years.

The expectation of the proximity of the next Glacier Age, which experts are yet debating, contrasts with global warming. Whatever the climate change, and in view of the antagonism between the population increase and the saving of energy, the globalization of science and technology should focus upon the establishment of the needed mitigations, amongst which are the artificially habitable environments that began to develop millennia ago, using hand held fans for cooling and chimneys for heating.

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