

Sowing the Oil: A Little-known Venezuelan Oil-industry Initiative*

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Introductory Statement

Ever since the 1940s, the stated objective of the Venezuelan government was to use oil revenues to diversify the economy and reduce the grinding poverty of a large segment of the population. But, successive governments made relatively little progress. In fact, the opposite occurred: explosive population growth, decline of the agricultural sector and increasing availability of public-sector jobs in the major cities triggered a massive urban migration and a corresponding growth of urban slums. This set the stage for the so-called “Bolivarian Revolution” in the late 1990s, the principal achievement of which was to reduce income disparities by making everyone equally poor.

In contrast, a rather unique socioeconomic development emerged within the oil industry itself during the 1980s, based on notions of “appropriate” technology, energy efficiency, and donor/recipient collaboration. Although it was carried out on a relatively modest scale, it won a number of national prizes for technological development and conservation. Ironically, this experiment evolved, not primarily in response to the broader mandate to “sow the oil,” but rather in answer to the practical needs of the now government-owned industry, to peacefully and responsibly integrate with its new immediate neighbors in the Orinoco Heavy Oil Belt. As far back as the 1950s, the enormous deposits of heavy oil beneath the southern plains of Venezuela were detected and partially explored, but not exploited. However, rapid global oil price increases in the 1970s and new techniques for extracting and processing heavy oil, coupled with Venezuela’s declining conventional reserves, gave the Oil Belt a new lease on life.

This created a dilemma. In the traditional areas around Lake Maracaibo, oil company employees lived in privileged camps with independent housing, schools, health care, and recreational facilities. Early in their history, these camps became surrounded by ugly shanty towns whose leaders incessantly nagged the largely foreign companies with seemingly insatiable demands. However, following nationalization in 1975, it was forbidden by the Venezuelan government to construct any new oil camps and the existing camps were instructed – like it or not – to integrate with surrounding communities. Still, until the Oil Belt opened up, this new policy was honored more in the breach than in the observance.

The New Social Strategy

In the face of the new integration mandate, the ex-Shell affiliate, Maraven, decided to take the social and economic development of its neighbors seriously. Accordingly I, an employee of Maraven, was assigned the task of heading up a new Department of Integral Development.

While a brand new company headquarters was under construction in the small (30,000 population) town of Pariaguan, on the northern border of the block ([Figure 1](#)), without the usual barbed wire fences or restricted entry, we undertook an extensive diagnosis of the town's basic public services, such as potable water, waste-water treatment, health care facilities, housing, and local government. Based on this, the task force planned and, over the course of the ensuing years, undertook many collaborative works to upgrade basic public services in partnership with the responsible government agencies at the local, state, and national levels.

Some critics in the company feared that this new aggressive social outreach might elicit resentment from the responsible government agencies and the political parties, which might see this as an unwarranted intrusion into their traditional areas of responsibility. Others feared the opposite – that bureaucrats and politicians would simply try to foist most of the burden of social programs on the company.

In practice, however, the reaction was quite the contrary. Government leaders at all levels welcomed a new, objective evaluation of community needs, untainted by narrow partisan bias. Furthermore, the task force offered logistical and technical support, which greatly facilitated government activities in the zone, often enabling responsible officials the opportunity to carry out their duties, in some cases for the first time, in this remote area.

Maraven's reputation of proposing solutions, not just identifying problems, assured that government doors were always open. In this way, a mutually beneficial alliance was forged which resulted in many innovative projects and substantial improvements in the efficiency of public investments with minimal cash outlays by the oil sector. One of the outstanding examples was the design and construction of an oxidation pond system, using only solar energy and gravity flow, for the processing of Pariaguan's sewage. Heretofore, this had been dumped, raw, into the headwaters of one of the principal rivers supplying drinking water to a large, coastal city. This project was awarded the "Enrique Tejera" National Conservation Prize at the Fifth National Conservation Congress in 1989.

Maraven faced a difficult dilemma in securing adequate schooling for its employees' children. The initial intent was to send them to the public schools, but we soon learned that the local school system was broken, almost beyond repair, reflecting the broader, national crisis in public education. So Maraven ended up constructing a new private school, primarily for the children of the oil workers, but also open to deserving local students. Attention was also focused on rural schools resulting in the creation of a number of "energy-independent" units ([Figure 2](#)), featuring passive solar cooling, lighting and fans powered by solar panels, with rainwater collection systems and VIP (ventilated, improved pit latrines which eliminated foul odors without the use of water, using only solar and wind power) ([Figure 3](#)). A comfortable apartment for the rural teacher was also included. This model school later received a national prize for technology development awarded by the National Scientific and Technological Research Council in 1987.

In order to assess the health status and further needs of the youth in the community, we conducted a survey and physical examination of school-aged children. Overall, nutritional status turned out to be relatively normal but we were surprised to find that not even one child had ever seen a dentist, although a high incidence of dental caries was nearly universal. The closest the children ever got was a visit to the local “tooth-puller.” This spurred us to create one of our most successful programs involving an alliance with the dental school of the Venezuelan Central University in Caracas to provide final-year dental students the opportunity to staff rural dental clinics and receive academic credit. These we built using passive, solar-cooling architecture ([Figure 4](#)), and the same basic services package we supplied to rural schools. Thus, for the first time, the population of the zone had access to this vital service, and the young, largely female dental students had the opportunity to complete their rural training in a comfortable, secure and well maintained setting.

This program received the “Research Initiatives” prize from the Venezuelan National Dental Association in 1993. As a follow-up to this project, we designed and built a complete dental clinic, including a high-speed, pneumatic dental drill, lighting and dental suction equipment, powered exclusively by solar panels, which could be mounted on the backs of two mules for use in remote areas that were inaccessible by road ([Figure 5](#)).

Other Rural Development Projects

An even more ambitious effort to strengthen and diversify the local economy and improve basic services was undertaken in the same 3600 square mile exploration block, which consisted of a large tract of semiarid and largely undeveloped plains between a major east-west highway on the north and the Orinoco River on the south.

The seat of local government was in the town of Mapire ([Figure 1](#)), on the banks of the Orinoco River. Although its economy depended almost entirely on fishing and cotton-growing on the alluvial islands of the river, the town had no port facilities. Accordingly, Maraven designed and constructed a concrete ramp providing a year-round road link to the river, which enabled cargos from the launches and barges to be unloaded directly onto trucks rather than carried by hand up the steep bank.

Mapire was also home to one of the last surviving of a series of farm schools built and run by the Ministry of Education. But, the school was run down; the livestock was nearly all gone, and the farm machinery was mostly broken. Thus, the technical side of the curriculum was almost entirely defunct.

To rescue this important initiative, we provided a full-time resident manager for the farm under whose supervision the cattle nutrition and breeding programs were reinstated and a fish-culture project was added to supplement the fish supply during the annual off-season. The poultry program was also renewed, and fresh milk, eggs and poultry were marketed locally on a commercial scale for the first time.

To assist the cotton growers of the zone, we partnered with the National Cotton Growers Association and the farmers themselves to provide technical and marketing assistance, which ended up producing some of the finest cotton in the world, largely for export.

The other mainstay of the local economy was extensive cattle ranching, using the most rudimentary technology of the “Turn ‘em loose on the vast plains, and round up the survivors”-variety. With relatively little effort, the productivity of the typical cattle ranch was substantially improved simply by greater attention to animal sanitation and pasture improvement.

As You Do Not Sow, Nor Shall You Reap

The discovery of commercially exploitable oil in Venezuela in the 1920s enabled the country to transform itself from a society based largely on rudimentary agriculture, with a poorly educated, largely rural population plagued by poor health into a largely urban, relatively healthy population, including a large and prosperous, highly skilled middle class.

However, many were left behind and the dependency of the economy on oil rents grew rather than shrank over time. The famous call to “sow the oil,” although accorded universal lip service, was never effectively achieved on a national scale.

The 1980s, however, produced an interesting and innovative experiment by one segment of the oil industry, which showed that oil could be effectively and sustainably “sowed” within the existing socio-political framework during the more than 15 years of the program’s existence from the 1980s to the 1990s.

But the eventual bitter clash in 1999 between the Venezuelan government and the state-owned oil company, *Petróleos de Venezuela, S.A.* (PDVSA) meant that the benefits to the poor majority of the population from greater access to oil revenues proved unsustainable. The conflict resulted in the mass firing of a large number of key oil workers and the diversion of a disproportionate share of oil revenues to support the political aims of the Bolivarian Revolution. Furthermore, rather than diversifying the economy, the redistribution of oil rents through “give-away” welfare schemes only increased dependency on this one revenue source with eventually devastating consequences for the Venezuelan economy as a whole.

In this context, the social investment experiment by Maraven was not meant to be a recipe for macroeconomic diversification or redistribution of income on a national level. Yet it did serve to demonstrate how the oil industry, or any large company, could work together more effectively with government and with its neighbors to improve basic living conditions and opportunities and thereby set the stage for bottom-up as well as top-down development initiatives. Collaborative programs of this nature will be an essential element in any successful scheme to achieve a lasting and more just distribution of the nation’s wealth.

Author

David Holmes ([Figure 6](#)) is a retired, Harvard-trained economist and engineer. His doctoral dissertation was on “Rural Credit in the Andes Region of Venezuela.” For 40 years he was resident in the country where he worked for the Harvard Institute for International Development and for PDVSA affiliate Maraven. He currently divides his time between Florida and West Virginia.

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Figure 1. Maraven’s local headquarters was directly south of the small Venezuelan town of Pariaguan, which benefited from the oil company’s generous social outreach.



Figure 2. Model rural solar-powered school at El Manguito showing the slanted roof for rainwater collection, the gutter, and the tanks.



Figure 3. Community members helping to construct the VIP latrine under the direction of a Maraven technician.



Figure 4. The author in front of the fully portable dental clinic set up in conjunction with the dental school of the Venezuelan Central University.

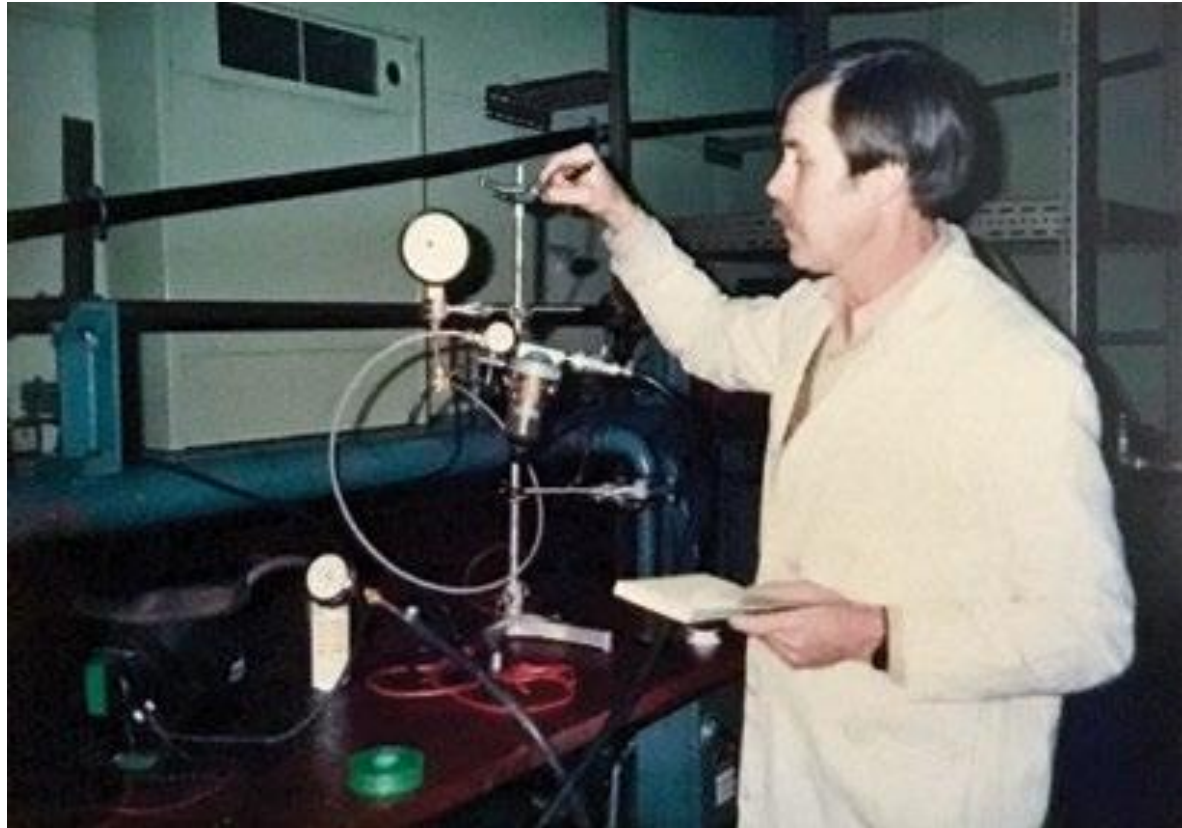


Figure 5. The author working on the design of the solar-powered dental drill that was later put to use among the tribal people in the mountains between Venezuela and Colombia.



Figure 6. David Holmes.