

inadequate resources to conduct agricultural research and to disseminate information to farmers. The *Secretaría de Agricultura, Ganadería y Desarrollo Rural (Sagar)*, Secretariat of Agriculture, Livestock and Rural Development, operates almost 1,000 support centres throughout the country. But budgets have been cut as a result of the economic crisis, and new cost-effective approaches are needed.

There is no reliable data on domestic production of specific types of agricultural equipment. Industry observers maintain that tractor sales provide a good indication of the overall state of the market. Farmers are believed to eventually purchase implements worth about 40 percent of the value of their tractors. Tractors are also used by livestock producers, especially since most of them also grow feed.

Tractors are used to cultivate only about half of all sown land in Mexico. Experts say that Mexico requires a minimum of 60,000 tractors to replace obsolete machines and double that number to become fully mechanized. And 20,000 units per year would be needed for normal replacements. Actual sales, however, were only 10,000 units in 1994, falling to 3,800 the following year, in response to the economic crisis.

## FOREIGN TRADE

Mexico's imports of agricultural equipment increased by 57 percent to reach US \$201 million in 1994, the first year of the North American Free Trade Agreement (NAFTA). The gain was broadly based but the largest increases were for cultivation equipment, harvesting equipment, and for dairy and poultry production. Reductions were posted for equipment related to primary food processing.

The economic crisis of 1995 had a devastating effect on the market. Imports fell to US \$90 million, almost 30 percent lower than the pre-NAFTA level of 1993. Products that escaped the crisis were mainly those used for primary processing. This reflects the fact that the products that benefitted most from the devaluation generally require some form of cleaning, sorting or processing.

The United States accounted for about three-quarters of the import market in 1994. Canada's share is very small, but gradually improving. The overall market share for Canada more than doubled from about half of one percent in 1993 to about 1.2 percent in 1994, the first year of NAFTA.

## CUSTOMERS

The vast majority of Mexican farmers operates at a subsistence level, using labour-intensive techniques, and are not considered good prospects for sales of imported equipment and services. The larger corporate farms are the principal customers for advanced technologies. Corporations have traditionally been the main vehicle for avoiding the 100-hectare constitutional limit on the size of private land holdings. They include some large Mexican companies, but many large agricultural operations are tied to multinational enterprises with locked-in lines of supply.

The most promising customers, for suppliers that are new to the Mexican market, are operators of newly assembled larger farms. This category is expected to grow gradually as land holdings are aggregated under Mexico's land reforms. Modernization is typically part of such projects. Among existing operations, livestock and poultry producers are considered better prospects than crop producers.

The constitutional amendment that enabled the assembly of larger farms became effective in late 1991, but most observers believe that real change will take many years. Access to capital has long been the most serious obstacle to farm mechanization. The new law allows *ejidos*, communal properties, to "associate" with private investors, including foreign investors. The government is supporting the creation of *agrosociaciones*, agricultural joint ventures, through the *Fondo de Capitalización e Inversión del Sector Rural (Focir)*, Rural Capitalization and Investment Fund.

## COMPETITORS

Domestic manufacturers of machinery for crop production concentrate mainly on tractors and basic implements. They supply about half the market. Mexican companies also claim about half the market for equipment for raising livestock. Multinational enterprises dominate local production, and they import more sophisticated equipment.

## DOMESTIC COMPETITORS

The two most important manufacturers are New Holland and John Deere, each of which controls roughly 40 percent of the agricultural equipment market. Massey-Ferguson produces in Mexico through a joint venture with the state-owned company *Tractores Sidená*, which operates under the Massey-Ferguson name. The remaining domestic producer is *Universal Tractores de México*.

Many foreign companies have subsidiaries or joint ventures in Mexico to manufacture or distribute equipment for raising livestock, producing milk and eggs, and for primary food processing.

54084798