

Poultry: high technology winner for entrepreneurs and the developing sector

A recent study made available to *Executive Intelligence Review* by a private consulting firm reviews the near- and longer-term prospects of one of the most dynamic industries in the advanced sector, and concludes that poultry production may be one of the keys to unlocking the frustrated potential of developing sector agriculture for high-technology vectored development. We present here the major conclusions of the report.

The fact that it will take at least three more years before adequate beef supplies to satisfy U.S. protein demand are forthcoming after the unprecedented herd liquidation of recent years, will act as a prolonged spur to the poultry industry. But the real ticket to success for the industry, and the bench mark of its growth and development to date, is found in the comparative cost of poultry as a protein source (see Chart 1). Next to the less nutritious vegetable protein sources, lacking in the vital amino acid component of complete protein, the cheapest source of animal protein is eggs, followed by beef liver, and then whole chickens—one-third to one-half less expensive per gram than the next lowest, canned tuna.

These remarkable figures, reflecting as they do the industry's tremendous productivity gains over the past two decades, immediately suggest the longer-range prospect for the poultry industry—it could become the core of a crash program of protein production for consumption in the developing sector.

Over the past 20 years there has been a six-fold increase in output per worker for the industry as a whole (Chart 2), the result of the introduction of new technologies that have led to a significant degree of automation of broiler production—especially the processing phase—and egg production. This and the application of scientific advances in the efficiency of food conversion and longevity (see Chart 3) enabled the industry to keep ahead of secular and other increases in input costs. As a result—and despite the fact that feed costs, about 60 percent of total poultry production costs, have increased by more than 85 percent over the past 10 years—production costs for eggs and broilers have risen by only 45 percent and 47 percent respectively, while retail prices for eggs and broilers have only risen by 30 percent and 55 percent respectively!

Even computed on the basis of the industry as a

whole—that is, without reflecting the even greater returns realized by the more advanced, least labor-intensive parts of the industry—the figures show a handsome rate of return over the long term. The cost of producing a broiler today is approximately 44 cents per pound, dress weight. In the U.S., the nine-city weighted average price for these birds as of March 25, 1979 was 49.1 cents per pound, dress weight. (Approx-

Chart 1
Relative protein costs

Food	Cost for 20 grams of protein (June '78) (dollars)
Dry beans	.13
peanut butter	.17
Eggs, large	.18
Beef liver	.21
Chicken, whole	.26
Tuna, canned	.36
Chuck roast	.44
Pork loin roast	.53
Ocean perch	.67
Lamb chops, loin	1.17

Chart 2
Productivity in the poultry industry

Year	Output/hour (1967=100)
1955	32
1965	87
1975	175
1976	196

imately 72 percent of a live bird is realized as dress weight.) The return is 15 cents per broiler, without considering the contribution to profits from various usually contracted services such as growers or the hatcheries. If wholly integrated, it is estimated that these sectors contribute between 5 and 7 cents per pound, dress weight, to the total profit picture. For a wholly integrated 500,000 broiler per week facility, a profit of \$6.63 million per year can be realized—a return of 18.9 percent on a typical initial investment of \$35 million.

Egg production is similarly attractive as a productive investment. Here an initial investment of a mere \$1.5 billion to construct a facility that handles 100,000 hens laying 65-70,000 eggs daily realizes a profit of 10 cents per dozen or \$200,000 per year—a return of 13 percent on initial investment.

An approach for the developing sector

A more modest approach for investment in less developed areas is understandable, given the limitations of overall population and infrastructural development. An investment of \$2-3 million, for example, is sufficient to set up an integrated breeder and hatchery facility, processing plant and feed mill complex to produce 30,000 broilers per week.

Such an investment is self-expanding. First, the investment will necessarily encourage local upgrading of agricultural and poultry production, stimulate the development of the work force through this production (skilled labor is required to run the automated equipment and carry out animal-care functions), and at the same time allow the producer to select his markets, thereby ensuring a reasonable profit margin. With this surrounding development, the industry itself can further expand.

More broadly, the establishment of a viable poultry industry in a developing sector nation could provoke a healthy crisis for any forward-looking Third World government. While these industries would initially depend on imported grain supplies—a prospect the American grain belt ought to consider—competitive forces often demand that a domestic supply be

forthcoming. Further, the type of capital-intensive agricultural industry represented by the poultry industry requires an adequate supply of cheap energy to operate machinery and maintain specified environmental conditions for the temperature, light, and air-sensitive chicks. It will require developing infrastructure of roads, railroads, housing, educational and experimental facilities, etc.

—Susan Cohen

Chart 3 Efficiencies

	Broilers		Eggs		
	Feed*	Mortality	Feed*	Eggs/yr	Mortality
1955	2.85	15%	5.50	192	15%
1965	2.28	—	4.95	218	15%
1975	2.10	—	4.25	233	14%
1977	2.05	4%	4.25	236	12%

* Feed = the amount of grain necessary to yield one pound of broiler growth or one dozen eggs.

Chart 4 Return on investment

	Eggs (%)	Broilers (%)	Long-term bond yield (%)
1955-59	6.3	6.4	3.7
1965-69	6.4	8.3	5.7
1974-77	7.9	9.3	8.2