

TABLE 11.3. Annual costs of the operation of the Puebla Project and each of its five programs*.

Year	Agronomic research	Genetic improvement	Coordination	Technical assistance	Evaluation	Total
1967	18,294	8,826	8,201	—	—	35,321
1968	25,512	24,918	11,964	18,337	19,315	100,046
1969	28,945	29,079	11,144	46,891	15,401	131,460
1970	38,167	37,852	18,036	51,666	10,851	156,572
1971	40,049	33,209	17,930	58,874	29,880	179,942
1972	45,204	22,935	19,349	64,221	18,648	170,357
1973	45,339	7,973	21,351	59,070	17,614	151,347
Total	241,510	164,792	107,975	299,059	111,709	925,045

* Including goods and services not paid by CIMMYT.

cost of operating expenses and consulting services was increased by 18 percent to cover overhead administrative expenses.⁶

Adjustment of Costs and Benefits

The general index of wholesale prices for Mexico City was used to deflate the nominal costs and benefits, taking 1967 as a base period.⁷ (See Table A.2 in the Appendix.) This adjustment was made because as average prices of other goods increase while the price of maize remains constant—the exchange value of the farmer's maize decreases, even though he continues to produce the same amount and continues to receive the same nominal value. The price index serves to indicate how much the exchange value of maize decreases in relation to other goods under

these circumstances.

To compare costs and benefits corresponding to different years, it is necessary to take into account the added benefits that may be derived from reinvesting capital. The costs and benefits in this analysis were adjusted for added benefits from reinvestment, using a discount rate of 14 percent. The present value of the net benefits and project costs were calculated using the formula on page 95 and are shown in Tables 11.1 and 11.2.

Benefit-Cost Ratios

The present value of net benefits and project costs, calculated in Table 11.1 under the assumption of excess labor, were summed for the seven years, 1967-1973. The present value of the stream of net benefits was divided by the present value of the stream of project costs to obtain a benefit-cost ratio of 2.54 for the Project when only direct benefits are taken into account. Under alternative assumptions (Table 11.5), the benefit-cost ratios were: Alternative 2, 2.20; Alternative 3, 2.15; and Alternative 4, 1.77. The ratio of 2.20, corresponding to seasonal unemployment,

6. The normal overhead charge made by CIMMYT is 18 percent.

7. Indicadores Económicos, Gerencia de Investigaciones Económicas, Banco de México, S.A., Vol. 1, No. 6 (May 1973).

TABLE 11.4. Estimation of the costs of the consulting services provided for the five programs of the Puebla Project.

Year	Agronomic research	Genetic improvement	Coordination	Technical assistance	Evaluation	Total
1967	6,245	1,299	--	599	1,399	9,542
1968	5,601	749	--	1,169	2,728	10,247
1969	9,293	--	--	809	1,888	11,990
1970	8,172	--	1,165	1,490	1,567	12,394
1971	4,909	--	6,028	1,664	839	13,440
1972	6,515	--	7,815	1,101	--	15,431
1973	6,838	--	6,715	569	--	14,122
Total	47,573	2,048	21,723	7,401	8,421	87,166