

Long-run continued success of New Mexico's commercial chile crop will, as always, depend upon the profitability of the crop in any or all of its various forms. Table 1 presents typical costs and returns of producing chile in the primary producing areas of New Mexico. These estimates provide comparisons that can be used by current and prospective chile producers and processors to assess the profitability of chile production.

Chile is widely recognized throughout New Mexico and the Southwest as a diverse commodity. Not only is there the obvious red vs. green distinction, there are also clear differences among forms of sales: farmers' markets, roadside stands, or wholesale for further processing; fresh, canned, chopped or processed for salsa and enchilada sauce. Red chile is used for food and dyes, made into ristras, and sold whole, chopped, or ground. Regardless of the end use of the chile, the crop must provide an adequate return to cover the producer's costs.

Obtaining a higher price or reducing costs can generate increased profit. The cost-return relationship must be examined carefully by every producer of every commodity, whether in agriculture, manufacturing, or service business. Because of the economic structure of agriculture markets, cost and return relationships are particularly important. The basic building blocks of cost and return analysis are enterprise budgets, which are later organized and compiled into other budgets, including whole farm, partial, and cash flow budgets. An enterprise budget includes all costs and returns associated with producing an enterprise in some particular manner. Enterprise budgets are constructed on a per-unit basis, such as per acre, to make a workable com-

parison among alternative enterprises. An enterprise is any activity that results in a product used on the farm or sold in the market, and a farm is made up of any one or many enterprises. Each enterprise requires a certain combination of resources, such as land, labor, machinery, capital, and purchased inputs.

Enterprise budgets can estimate costs and returns on enterprises currently in the farm plan, as well as for new enterprises being considered. Most enterprise budgets also list physical resources needed for production, which is useful information for prospective new producers of a commodity. In addition to producers, many other professionals in agriculture find enterprise budgets valuable information sources. These include lenders, assessors and appraisers, consultants, and lawyers. The New Mexico State University Cooperative Extension Service publishes representative budgets for various regions of the state annually. These enterprise budgets represent typical costs and returns for a given size and method of production, in a particular region of the state. The budgets are not averages, but represent typical situations.

NMSU budgets represent current conditions for farming situations where management is above average. Adjusting these budgets for prices and yields expected in the future would increase their value as decision-making tools. Projections based upon the unique set of conditions on each farm would be of most value. Some items can be modified easily to build more personalized budgets. Quantities and prices of purchased inputs, yields and prices of crops, the cost of fuel, and labor costs may be readily adapted to individual farms. Another example

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of a modification to these budgets is to analyze each operation performed on each crop. If these operations are performed in a different pattern, the budgets should be changed. Yields and prices of the crops are highly variable from year to year. In analyzing historical budgets for use in forward planning, the astute manager will decide how much risk can be absorbed and select cropping patterns accordingly. In forward planning, the manager should consider both optimistic and pessimistic price-and-yield combinations to account for risk, and should consider crop rotation plans.

The effect of the various costs on planning decisions and business analysis is very important. These estimates present a full cost approach to enterprise analysis. Many of the costs are opportunity costs, that is, they are real costs of doing business but may not be cash expenditures. For example, if all labor is provided by the operator, then the entire amount listed in these estimates is money that can be kept by the operator—it represents a return to operator from family labor. Similarly, all land and all capital is charged at competitive rates regardless of whether land is rented or owned or whether capital is borrowed or owned.

The key to interpreting the bottom-line figure calculated in these estimates lies in the type of decision at hand. For next year's crop, the important point is the level of gross margins, the returns minus all cash expenses. Can enough cash be generated to meet reasonable family living needs and to cover all financial debt commitments? In the long run, all expenses must be covered (of particular importance when trying to determine whether to buy a farm). In the short run, though a negative net income is not desirable it will not necessarily cause business failure. For a short while, depreciation and other non-cash costs can provide a cushion to allow producers additional financial flexibility.

Budgets like these are updated annually. More detailed estimates and a guide to using the budgets can be obtained from the author. NMSU Extension publication 400-Z-32, "Understanding and Using NMSU Crop Enterprise Budgets", is also in circulation at the NMSU library.

GLOSSARY

Depreciation expense: Annual allowance for the deterioration of an asset whose productive life is more than one year. Depreciation is not paid in cash, but it is an expense to the business since the purchase price of a long-lived asset cannot and should not be deducted in any one year.

Enterprise budget: A detailed full-cost listing of all returns and cost (whether paid or unpaid) associated with a particular crop or livestock enterprise.

Fixed costs: Expenses that do not vary with the level of production, such as depreciation and personal property taxes. For example, personal property taxes are the same on a tractor regardless of whether that tractor is used on one acre or on 300 acres. (Line E)

Gross returns: Total cash receipts from a crop, i.e., total yield times price. (Line A)

Interest on operating capital and equipment investment: A calculated cost, or opportunity cost, on the use of capital in the farm business. For some farmers, interest cost will be an outlay, while for others it will be an imputed cost. (Lines I and J)

Net farm income: Returns to labor management, capital, land and risk, i.e., gross returns minus purchased inputs, fuel, oil, lubricants, repairs, and fixed costs. (Line F)

Net operating profit: Gross returns minus total operating expenses. (Line H)

Operating capital: Operating expenses minus fixed costs, i.e. the amount of cash required for all purchased inputs (including labor, fuel, oil and repairs) to produce a crop, without regard to machinery, equipment and land investments.

Operating expenses: The total of all costs of producing a crop, except interest.

Opportunity cost: The cost of using a resource in one enterprise when it could be used in alternative enterprises or investment opportunities measured by the return that could be obtained from using the resource in an alternative investment. For example, if cash used in crop production could be placed in the bank at a 10% rate of interest, the opportunity cost of cash to the crop would be 10%.

Overhead expenses: Expenses not directly associated with production, such as insurance, employee benefits, land taxes, and utilities. These costs occur without regard to level of production or

Table 1. Costs and returns for producing chile in New Mexico for 2007.

County Area	Luna	Dona Ana/Sierra	Hidalgo Cotton City	Socorro	Valencia	Dona Ana	Luna	Eddy Artesia	Hidalgo Cotton City	Eddy Carlsbad	Valencia
Color	Green	Green	Green	Green	Green/Red	Red	Red	Red	Red	Red	Jalapenos
Marketing System	Wholesale	Wholesale	Wholesale	Local	Local	Wholesale	Wholesale	Wholesale	Wholesale	Wholesale	Wholesale
Yield											
Green	11	11	12	12,000	275	3,500	4,000	3,200	3,500	3,200	11
Units	Tons	Tons	Tons	Lbs.	Bushels	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Tons
Red											
Units											
Price											
Green	335	335	335	\$0.15	\$7.50	\$0.79	\$0.79	\$0.79	\$0.68	\$0.72	
Price											
Red											
Jalapenos											
Other Income				500	600						300
Gross Returns	3,685	3,685	3,420	2,300	2,662.5	2,765	3,160	2,525	2,380	2,304	3,300
Cash Operating Expenses											
Seed	\$68.00	\$85.00	\$84.00	\$147.00	\$112.00	\$136.00	\$68.00	\$136.00	\$72.00	\$128.00	\$114.00
Fertilizer	\$169.95	\$184.00	\$114.90	\$61.55	\$52.00	\$154.00	\$151.58	\$90.40	\$122.85	\$98.60	\$83.25
Chemicals	\$31.08	\$165.80	\$25.13	\$19.05	\$54.71	\$165.80	\$31.08	\$75.47	\$28.32	\$75.56	\$54.71
Crop Insurance	\$72.58	\$40.00				\$40.00	\$76.22	\$20.00		\$40.00	
Other Purchased Inputs				\$115.50	\$67.50						\$10.00
Canal Water	\$52.36	\$106.33		\$25.00	\$28.00	\$113.00			\$51.28	\$43.00	\$28.00
Fuel & Lubricants-Equipment	\$149.93	\$56.93		\$149.92	\$291.77	\$56.93	\$56.34	\$49.43	\$105.79	\$45.43	\$97.02
Fuel Irrigation			\$116.68				\$130.89	\$30.16			
Repairs	\$28.65	\$2.66	\$40.96	\$38.61	\$18.91	\$89	\$14.33	\$3.60	\$33.51	\$15.92	\$11.44
Custom Charges	\$1,089.00	\$1,137.50	\$1,243.33	\$720.00	\$70.71	\$815.00	\$880.00	\$736.00	\$790.00	\$816.00	\$70.71
Land Taxes	\$1.76	\$9.65	\$2.96	\$1.62	\$5.33	\$9.65	\$1.76	\$1.98	\$2.96	\$1.46	\$5.33
Other Expenses	\$65.75	\$71.58	\$51.71	\$91.19	\$165.27	\$71.58	\$65.75	\$53.43	\$51.52	\$150.48	\$179.64
Total Cash Expenses (B)	\$1,729.06	\$1,859.45	\$1,754.90	\$1,369.43	\$866.20	\$1,562.85	\$1,475.95	\$1,196.47	\$1,258.23	\$1,414.45	\$654.10
Return Over Cash Expenses (C=A-B)	\$1,955.94	\$1,825.55	\$1,665.10	\$930.57	\$1,796.30	\$1,237.15	\$1,724.05	\$1,331.53	\$1,121.77	\$889.55	\$2645.90
Fixed Expenses (D)	\$110.39	\$59.53	\$87.06	\$130.83	\$191.99	\$50.09	\$89.72	\$52.81	\$77.40	\$99.96	\$171.54
Total Expenses (E=B+D)	\$1,839.45	\$1,918.98	\$1,841.95	\$1,500.26	\$1,058.19	\$1,612.94	\$1,565.67	\$1,249.28	\$1,335.63	\$1,514.41	\$825.64
Net Farm Income (F=A-E=C-D)	\$1,845.55	\$1,766.02	\$1,578.05	\$799.74	\$1,604.31	\$1,187.06	\$1,634.33	\$1,278.72	\$1,044.37	\$789.59	\$2474.36
Labor and Management Costs (G)	\$263.74	\$250.07	\$239.40	\$324.49	\$1,393.87	\$229.97	\$218.85	\$248.81	\$200.12	\$155.87	\$2889.67
Net Operating Profit (H=F-G)	\$1,581.81	\$1,515.95	\$1,338.65	\$475.26	\$210.44	\$957.09	\$1,415.48	\$1,029.91	\$844.25	\$633.72	(\$415.30)
Capital Costs											
Interest on Operating Capital (I)	\$26.16	\$37.06	\$22.32	\$16.27	\$13.35	\$35.91	\$23.48	\$14.14	\$19.01	\$18.81	\$11.58
Interest on Equipment Investment (J)	\$49.78	\$31.30	\$68.51	\$65.70	\$996.68	\$26.78	\$35.28	\$27.15	\$55.63	\$240.20	\$231.09
Total Capital Costs (K=I+J)	\$75.94	\$68.36	\$90.83	\$81.97	\$1010.03	\$62.69	\$58.76	\$41.29	\$74.63	\$259.01	\$242.67
Return to Land and Risk (L=H-K)	\$1,505.87	\$1,447.59	\$1,247.80	\$393.28	(\$799.59)	\$894.40	\$1,356.72	\$988.62	\$769.62	\$374.71	(\$657.98)

*(Letters in parentheses refer to definitions in the Glossary)

whether production exits at all.

Partial budgeting: A planning procedure that lists only items of receipt and expenses that are affected by a particular change in procedure or organization.

Rate of return on investment: Net operating profit divided by the total machinery, equipment, and land investment. A measure of profitability of assets in percentage terms.

Return over cash expense: Gross returns less all cash operating expenses. (Line C = A - B)

Return to land and risk: Net operating profit minus the interest charge on the use of machinery, equipment, and operating capital. This return figure shows the final return before a land charge is calculated. (Line L)

Return to risk: Return to land and risk minus a charge for land investment; the amount of gross returns left over after charges are made for every factor of production.

Variable cost: Expenses that vary with the level of production, such as labor, fuel, oil and repairs, fertilizer, and seed.

Gross margins: Returns minus variable costs; the most important short-run planning figure.

Return to capital, labor, land, and risk: Charges for the listed factors of capital, labor, and land have not yet been subtracted from gross returns. Typically, these three factors are owned.

Whole-farm budget: Projected crop mix revenues and expenses for a production year. A projected plan and income statement.