

Perennial Crop Resources	C8.77
Buildings or Improvements Resources	C8.78
Irrigation Equipment	C8.79
Machinery Cost Report	C8.81
Budget Parameters Report	C8.84
CENTRAL TEXAS DISTRICT	L8.1
Cow-Calf Production	L8.1
Dairy Production, Lactating Cow (with Silage)	L8.3
Dairy Production, Lactating Cow (without Silage)	L8.5
Dairy Production, Lactating Cow*	L8.7
Dairy Production, Lactating Cow (without Silage)	L8.9
Dairy Production, Dry Cow	L8.11
Farrow to Finishing Hog Production	L8.13
Feeder Pig Production	L8.15
Market Hogs	L8.17
Goat Production	L8.19
Sheep Production	L8.21
Stocker Calf Production	L8.23
Stocker Calf Production	L8.25
Livestock Products Report	L8.27
EAST TEXAS DISTRICT	C9.1
Corn, Dryland	C9.1
Coastal Bermuda Establishment	C9.3
Coastal Bermudagrass Hay	C9.5
Coastal Bermuda Pasture, Maintenance	C9.7
Cstl Bermuda Pasture, Overseeded Clover & Ryegrass	C9.9
Small Grains - Ryegrass Winter Pasture	C9.11
Christmas Tree Production (Wholesale)	C9.13

Christmas Tree Production (Choose & Cut)	C9.17
Peaches, First Year	C9.21
Peaches, Second Year	C9.23
Peaches, Third Year	C9.25
Peaches, Fourth Year	C9.27
Peaches, Fifth Year	C9.29
Peaches, Sixth through Twelfth Years	C9.31
Crop Products Report	C9.33
Tractors, Implements and Equipment	C9.34
Operating Input Resources	C9.38
Auto or Truck Resources	C9.40
Custom Operation Resources	C9.41
Labor Resources	C9.42
Livestock Resources	C9.43
Land Resources	C9.44
Perennial Crop Resources	C9.45
Buildings or Improvements Resources	C9.46
Irrigation Equipment	C9.47
Machinery Cost Report	C9.48
Budget Parameters Report	C9.51
EAST TEXAS DISTRICT	L9.1
Cow-Calf Production with Winter Pasture	L9.1
Stocker Production - Winter Pasture	L9.3
Livestock Products Report	L9.5
SOUTH CENTRAL TEXAS DISTRICT	C10.1
Coastal Bermudagrass Establishment, Dryland	C10.1
Coastal Bermudagrass Hay, Dryland	C10.3
Coastal Bermudagrass Pasture, Dryland	C10.5

Corn, Dryland	C10.7
Cotton, Dryland	C10.9
Cotton, Brazos Valley	C10.11
Sorghum, Dryland	C10.13
Sorghum Hay, Dryland	C10.15
Sorghum Pasture, Dryland	C10.17
Wheat, Dryland	C10.19
Winter Pasture, Dryland	C10.21
Crop Products Report	C10.23
Tractors, Implements and Equipment	C10.24
Operating Input Resources	C10.29
Auto or Truck Resources	C10.31
Custom Operation Resources	C10.32
Labor Resources	C10.33
Livestock Resources	C10.34
Land Resources	C10.35
Perennial Crop Resources	C10.36
Buildings or Improvements Resources	C10.37
Management Resource	C10.38
Irrigation Equipment	C10.39
Machinery Cost Report	C10.40
Budget Parameters Report	C10.43
SOUTH CENTRAL TEXAS DISTRICT	L10.1
Cow-Calf Production	L10.1
Feeder Pig Production	L10.3
Finishing Hogs	L10.5
Stocker Steer Production	L10.7
Livestock Products Report	L10.9

TEXAS UPPER COAST DISTRICT	C11.1
Cotton, Dryland	C11.1
Rice, First Crop	C11.3
Rice, First and Second Crop	C11.5
Sorghum, Dryland	C11.7
Soybeans, Dryland	C11.9
Crop Products Report	C11.11
Tractors, Implements and Equipment	C11.12
Operating Input Resources	C11.15
Auto or Truck Resources	C11.16
Custom Operation Resources	C11.17
Labor Resources	C11.18
Livestock Resources	C11.19
Land Resources	C11.20
Buildings or Improvements Resources	C11.21
Irrigation Equipment	C11.22
Machinery Cost Report	C11.23
Budget Parameters Report	C11.25
TEXAS UPPER COAST DISTRICT	L11.1
Cow-Calf Production	L11.1
Livestock Products Report	L11.3
SOUTH TEXAS DISTRICT	C12.1
Corn, Irrigated	C12.1
Cotton, Dryland	C12.3
Cotton, Irrigated	C12.5
Forage Sorghum Hay, Dryland	C12.7
Sorghum, Dryland	C12.9
Sorghum, Irrigated	C12.11

Sorghum, Dryland, Conservation Tillage	C12.13
Soybeans, Irrigated	C12.15
Peanuts, Spanish, Dryland	C12.17
Peanuts, Spanish, Irrigated	C12.19
Broccoli, Irrigated	C12.21
Cabbage, Irrigated	C12.23
Cantaloupes, Irrigated	C12.25
Carrots, Irrigated	C12.27
Cucumbers, Irrigated	C12.29
Honeydews, Irrigated	C12.31
Lettuce, Irrigated	C12.33
Yellow Onions, Irrigated	C12.35
Bell Peppers, Irrigated	C12.37
Jalapeno Peppers, Irrigated	C12.39
Fresh Spring Tomatoes, Irrigated	C12.41
Watermelons, Dryland	C12.43
Watermelons, Irrigated	C12.45
Grapefruit Establishment - Year 1 (145 trees/acre)	C12.47
Grapefruit Establishment - Year 2 (145 trees/acre)	C12.49
Grapefruit Establishment - Year 3 (145 trees/acre)	C12.51
Grapefruit Establishment - Year 4 (145 trees/acre)	C12.53
Grapefruit, Mature Grove (145 trees/acre)	C12.55
Oranges Establishment - Year 1 (200 trees/acre)	C12.57
Oranges Establishment - Year 2 (200 trees/acre)	C12.59
Oranges Establishment - Year 3 (200 trees/acre)	C12.61
Oranges Establishment - Year 4 (200 trees/acre)	C12.63
Oranges - Mature Grove (200 trees/acre)	C12.65

Plant Cane	C12.67
Ratoon Cane, Irrigated	C12.69
Bermuda Type Grasses, Establishment, Irrigated	C12.71
Bermuda Grass Hay, Irrigated	C12.73
Bermuda Pasture, Irrigated	C12.75
Buffle Grass Establishment, Dryland	C12.77
Bufflegrass, Dryland	C12.79
Kleingrass Establishment, Dryland	C12.81
Kleingrass Pasture, Dryland	C12.83
Crop Products Report	C12.85
Tractors, Implements and Equipment	C12.86
Operating Input Resources	C12.90
Auto or Truck Resources	C12.93
Custom Operation Resources	C12.94
Labor Resources	C12.96
Livestock Resources	C12.97
Land Resources	C12.98
Perennial Crop Resources	C12.99
Buildings or Improvements Resources	C12.100
Irrigation Equipment	C12.101
Machinery Cost Report	C12.102
Budget Parameters Report	C12.105
SOUTH TEXAS DISTRICT	L12.1
Cow-Calf Production, Unimproved Brush Country	L12.1
Cow-Calf Production, 1/3 Improved Pasture	L12.3
Cow-Calf Production, Improved Pasture	L12.5
Livestock Products Report	L12.7
SOUTHWEST TEXAS DISTRICT	C13.1

Coastal Bermuda Pasture Establishment, Dryland	C13.1
Coastal Bermuda Pasture, Dryland	C13.3
Coastal Bermuda Pasture, Establishment, Irrigated	C13.5
Coastal Bermuda Pasture, Irrigated	C13.7
Coastal Bermuda Hay, Establishment, Irrigated	C13.9
Coastal Bermuda Hay, Irrigated	C13.11
Forage Sorghum For Grazing, Irrigated	C13.13
Oats For Grazing, Irrigated	C13.15
Forage Sorghum Hay, Dryland	C13.17
Forage Sorghum Hay, Irrigated	C13.19
Corn for Silage, Irrigated	C13.21
Corn, Dryland	C13.23
Corn for Food, Irrigated	C13.25
Cotton, Irrigated, Long Season Varieties	C13.27
Cotton, Irrigated, Extra Long Staple Varieties	C13.29
Cotton, Irrigated, Short Season Varieties	C13.31
Cotton, Dryland, Short Season Varieties	C13.33
Sorghum, Dryland	C13.35
Sorghum, Irrigated	C13.37
Guar, Dryland	C13.39
Guar, Irrigated	C13.41
Peanuts, Runner, Irrigated	C13.43
Peanuts, Spanish, Dryland	C13.45
Sesame, Irrigated	C13.47
Soybeans, Irrigated	C13.49
Winter Wheat, Irrigated	C13.51
Winter Wheat, Dryland	C13.53

Spring Wheat, Irrigated	C13.55
Spring Wheat, Dryland	C13.57
Processed Beets, Irrigated	C13.59
Cabbage, Irrigated	C13.61
Cantaloupes, Irrigated	C13.63
Carrots, Irrigated	C13.65
Processed Carrots, Irrigated	C13.67
Cucumbers, Irrigated	C13.69
Cucumbers (Pickles), Irrigated	C13.71
Lettuce, Irrigated	C13.73
Onions, Irrigated	C13.75
Fresh Market Spinach, Irrigated	C13.77
Processed Spinach, Irrigated	C13.79
Pecan Orchard, Establishment Phase	C13.81
Pecan Orchard, Pre-Production Phase (Years 1-4)	C13.83
Pecan Orchard, Early Production Phase (Years 5-9)	C13.85
Pecan Orchard, Operational Phase (Years 10-20)	C13.87
Pecan Orchard, Early Production Phase (Years 5-9)	C13.89
Pecan Orchard, Operational Phase (Years 10-20)	C13.91
Crop Products Report	C13.93
Tractors, Implements and Equipment	C13.94
Operating Input Resources	C13.98
Auto or Truck Resources	C13.100
Custom Operation Resources	C13.101
Labor Resources	C13.102
Livestock Resources	C13.103
Land Resources	C13.104

Perennial Crop Resources	C13.105
Buildings or Improvements Resources	C13.106
Management Resources	C13.107
Irrigation Equipment	C13.108
Machinery Cost Report	C13.110
Budget Parameters Report	C13.113
SOUTHWEST TEXAS DISTRICT	L13.1
Cow-Calf Production, Unimproved Brush Country	L13.1
Cow-Calf Production, 1/3 Improved Pasture	L13.3
Cow-Calf Production, Improved Pasture	L13.5
Sheep Production	L13.7
Goat Production	L13.9
Livestock Products Report	L13.11
TEXAS COASTAL BEND DISTRICT	C14.1
Corn, Coastal Plain	C14.1
Cotton, Picker, Dryland, Coastal Plain	C14.3
Cotton, Stripper, Dryland, Coastal Plain	C14.5
Sorghum, Coastal Plain	C14.7
Soybeans	C14.9
Bufflegrass Estab., Dryland, Rio Grande Plain	C14.11
Bufflegrass Pasture, Dryland - Rio Grande Plain	C14.13
Coastal Bermudagrass Estab. - Claypan/Blackland	C14.15
Coastal Bermuda Pasture, Dryland-Claypan/Blackland	C14.17
Kleingrass Establishmt., Dryland-Claypan/Blackland	C14.19
Kleingrass Pasture, Dryland	C14.21
Crop Products Report	C14.23
Tractors, Implements and Equipment	C14.24
Operating Input Resources	C14.30

Auto or Truck Resources	C14.32
Custom Operation Resources	C14.33
Labor Resources	C14.34
Livestock Resources	C14.35
Land Resources	C14.36
Perennial Crop Resources	C14.37
Buildings or Improvements Resources	C14.38
Irrigation Equipment	C14.39
Machinery Cost Report	C14.40
Budget Parameters Report	C14.44
TEXAS COASTAL BEND DISTRICT	L14.1
Cow-Calf Production, Partially Improved Pasture	L14.1
Livestock Products Report	L14.3
Budget Index	I1

AN INTRODUCTION TO THE TEXAS CROP AND LIVESTOCK BUDGETS*

Estimating the production costs and returns of farm enterprises for planning purposes is a difficult, but important, task. Timely and accurate cost of production estimates are necessary: (a) to make input use decisions, and to arrange for operating capital requirements, (b) for enterprise selection, (c) to estimate the potential profitability of capital investment decisions, and (d) to develop marketing strategies and assess their impact on costs and returns.

Budgeting is a deceptively simple tool which can be used for analysis of problems ranging from day-to-day detailed choices to major questions about the size and type of farm business. Budgeting, as a management tool, is the testing and estimation of likely outcomes from decisions before they are implemented. Enterprise budgets are both a product of and the basic building block for the planning process.

The Texas Crop and Livestock Budgets are projected enterprise budgets jointly prepared by the Texas Agricultural Extension Service (TAEX) and the Texas Agricultural Experiment Station (TAES) to assist farmers and ranchers in estimating "real" economic costs and returns of production, in current dollars.¹ The information presented in the budgets is prepared as a management planning guideline and therefore is not intended to recognize or predict the costs and returns from any particular farm or ranch operation. It is suggested that users modify the budgets to fit their individual situations by making changes in yields, input levels, prices and other factors. A column titled "Your Estimate" is provided on each budget to make modifications convenient. Furthermore, the expiration date on each budget indicates updating is necessary.

* Prepared by Robert H. Jenson, Assistant for Management Analysis, Department of Agricultural Economics, Texas A&M University, College Station, February, 1986. This paper is designed to accompany the distribution of the Texas Crop and Livestock Budgets (TAEX) and is reviewed and updated annually.

1 Alternative procedures are mixed in their method of handling the impact of inflation on costs, or attempt to estimate nominal cash costs of production either before or after relevant taxes. In fact, most budgets are a mixed bag of nominal, real, before-tax, after-tax, cash and non-cash concepts and procedures.

The 1993 Crop Budgets include the anticipated government deficiency payments for cotton, corn, sorghum, barley, oats and wheat. To qualify for these payments producers must be in compliance with the government program for the respective crops. In evaluating the whole farm situation proper acreage adjustments and fallow acreage costs must be included when determining costs and returns per acre. Budgets for "set aside" land are included in several of the districts. Some of the crop budgets include the cost from the "set aside" budgets. In using budgets for crops that are in the government program, care must be taken to correctly account for "set aside" land.

The budgets also include several enterprises that require an establishment that may include one or more years of providing inputs before realizing any income. Enterprises that require this type of establishment include pasture and hay enterprises and orchards or groves. Budgets for these enterprises generally include a *Perennial Crop* line listed in the fixed cost section and are usually preceded by an establishment budget. The cost of establishment is amortized at an interest rate and number of years defined in the *Perennial Crop*. This works well for enterprises like hay and pastures where a single year of establishment is required. Enterprises with several years preceding production followed by some years of increasing production before reaching a mature production level require budgeting techniques beyond the capabilities of most enterprise budgeting analysis. *Perennial crop* values may provide an estimate of amortized costs, but capital budgeting analysis using net present value or internal rate of return as well as cash flow analysis would be required to adequately determine the profitability of these types of enterprises.

Procedure

One of the major problems involved in enterprise budgeting is the lack of information concerning the amount of production which will result from a particular combination of inputs. Information for the Texas Crop and Livestock budgets is assembled from published and unpublished sources. The data are obtained and continually revised with the cooperation of farmers, ranchers, and agribusiness firms through informal surveys and personal contacts. Data

supplied by these sources are confidential and provide average values which are used in developing and revising budgets. Scientific sampling techniques required to produce statistically reliable estimates, however, are not used due to time and cost limitations. When possible, published information from the Texas Statistical Reporting Service and published research from the Texas Agricultural Experiment Station (TAES) are used in preparation of the budgets. Regionally based agricultural economists provide leadership in assembling the data and constructing the budgets.

The input levels used, the combination of inputs and machinery operations, and the type and length of ownership of machinery and equipment are *not* necessarily profit-maximizing. They are only believed to be representative or typical for the specified geographic area.

Budget preparation is a time consuming task involving numerous data and mathematical calculations. A computer program has been developed to aid in budget preparation. The TAEX budgets are prepared using the Microcomputer Budget Management System (MBMS).² This computerized tool stores and retrieves base data, prices, and other factors; calculates machinery, capital, and labor costs; organizes the costs and returns in a variety of formats; and performs a number of budgeting analyses.

Terminology Used in Budgets

An *enterprise budget* is an economic recipe for the production of a commodity usually expressed in terms of the production unit (e.g., per bushel, per head, etc.) or by a common resource (e.g., per acre of cropland). It is a statement of all expected revenues and expenses, both actual and imputed.

There are three general types of costs that make up the total economic cost of producing any farm commodity. These are variable costs, fixed costs, and overhead costs.

Variable costs (sometimes referred to as operating costs) are those short-run costs that may

² McGrann, James, M., Kent D. Olson, Timothy A. Powell and Ted R. Nelson, "Microcomputer Budget Management System User Manual." Dept. of Agricultural Economics, Texas A&M University, College Station, February 11, 1986.

change with changes in level of production and/or are controlled by the manager. They are generally the cost of items that will be used up during one production cycle. If the manager decided to cease the production activity, these costs are avoidable. Examples are such operating inputs as fuel, fertilizer, chemicals and some hired labor costs. In the long run, all production costs are variable.

In the TAEX published budgets, variable costs are further divided into *pre-harvest* and *harvest* costs where applicable. This separation is particularly useful for decisionmaking in which crop abandonment or graze-out are common practices. Once variable costs are incurred (e.g., seed after planting), they have the characteristics of fixed costs and are referred to as "sunk" costs.

Income above variable costs serves to guide most farm management decisions, particularly in the short run. If income over variable costs is negative, and since variable costs are by definition avoidable, a producer will minimize his losses by ceasing production. Selecting enterprises which maximize income over variable costs will lead to greater short-run profit.

Fixed costs may be defined as those costs that either do not change with the level of production or cannot be controlled or avoided. Examples are items such as property taxes, insurance, depreciation, and interest on investment. Cash or fixed dollar land rents and owner-operator labor may also be considered fixed costs.

Fixed and variable cost analysis is a useful tool in determining profitability of an investment (e.g., machinery) based on its life or ownership period. It can aid in determining the best replacement policies, whether to own or custom-hire services, and a host of other decisions. However, fixed and variable cost analysis does not adequately explain the cash flow and income tax effects of an investment. Cash flow analysis is directed more to the question of fiscal feasibility, or the ability to meet the financial obligations of the investment, than to the question of profitability. Consequently, the two types of analysis must be used together in order to present a clear and total picture of investment alternatives.

Overhead costs are costs of machinery, equipment, buildings, and management that cannot