CHAPTER XIII - GLOSSARY

INTRODUCTION

This glossary contains a list of terms and formulas commonly used in economic evaluations. Feel free to add to the list.

TERMS

Alternative cost. Expenditures for achieving a like goal or objective by some other means.

Amortization. Converting capital or initial cost to annual cost by determining the size of annual payments needed to pay off a debt over a given time period at a given interest rate.

Formula: $\frac{i(1 + i)^n}{(1 + i)^n - 1}$ or $\frac{i}{1 - \frac{1}{(1 + i)^n}}$

Amount of an annuity of 1 per year. How much an annuity invested each year will grow over a period of years.

Formula: $\frac{(1 + i)^n - 1}{i}$

Annuity. A series of equal payment made at equal intervals of time. An annuity may be a benefit or a cost.

Assessed valuation. The estimated worth of property for general property tax purposes.

Average annual cost. Annual equivalent cost of conservation measure(s) plus necessary operation, maintenance and replacement costs.

Average annual equivalent. A uniform yearly sum of money, i.e., costs, spread over the life of a facility so it is equal to its initial cost plus interest (see also amortization).

Average product. The ratio of total output (a total product) to the quantity of input used in producing that amount.

Base period. The point in time with which other index numbers are compared.

Benefit-cost ratio. A mathematical computation whereby benefits accruing from some alternative action are divided by the costs of installing such an alternative.

Breakeven point. Where the proceeds from total output of an alternative plan equals the costs of all inputs associated with that alternative.

Capital. All resources except land and labor which contribute toward the production of goods and services.

Capital-investment. Monetary expenditures for initial installation of a practice or system.

Capital-recovery period (see also evaluation period). The length of time an individual or group may chose to retire a debt.

Cash-outlay. Direct expenditures for purchase of farm supplies, hired labor, services, etc., during the growing season.

Competitive enterprise. An activity which decreases the production of another as its own production increases.

Complementarity. Where an increase in the production of one activity will cause an increase in production in another.

Composite acre. A weighted unit showing the percentage or proportion that each crop is of the total cropland acreage.

Compound interest. Interest that is earned for one period and immediately added to the principal, thus resulting in a larger principal on which interest is computed for the following period.

Formula: $(1 + i)^n$

Compound interest and annuity tables. A collection of factors used to express the functions of interest rate and time.

Cost and return estimator (CARE). A software program designed for use on a microcomputer to create and adjust cost and return estimates (crop budgets).

Crop budget. A systematic listing of resources used, their cost for specified yield levels, and the value of the output by individual crops or enterprise.

Crop budget system. A computerized system designed to create and adjust cost and return estimates.

Custom rate. The usual fee for farm services rendered, generally for machine hire.

Demand. The quantity of a good (or service) which consumers will buy at a certain price.

Depreciation. A decrease in the value of property through wear, deterioration or obsolescence.

Diminishing returns. A condition where each successive unit of input adds less to total output than the previous unit.

Economics. Allocation of limited resources among unlimited human wants.

Economies of scale. Ability of business firms to spread their fixed costs over larger quantities of output.

Effective economic life. The point in time where the present worth of expenditures for extending the life of a facility or replacing it exceed the present worth of the benefits.

Efficiency. Provides a "measuring stick" for evaluating choices. In general, efficiency refers to the ratio of output to input.

Evaluation period. Beginning at the end of the installation period with the time period based on the expected useful economic life of the facility.

Factors of production. Resources, either human (labor) or nonhuman (capital) used for producing goods which in turn are used to satisfy wants. The four factors of production commonly identified are land, labor, capital, and management.

Fair market value. The price at which an owner would sell to a willing buyer.

Family labor. Non-hired manpower inputs from an individual or from his household.

Fixed costs. Expenditures which would be incurred even if no output were produced.

Gross returns. Total production in units multiplied by the price per unit.

Interactive Conservation Evaluation (ICE). A software program designed for use on a microcomputer to make economic analyses of the costs and benefits of conservation.

Interest. The earning power of money or the price for the use of money.

Interest rate. The cost of using borrowed capital or the value placed on using owned capital, either determined by demand, time or risk.

Internal rate of return. The interest rate money will earn as the total investment is repaid by its revenues.

Lagged. A value which takes place sometime in the future is referred to as lagged.

Land voiding. A stage of land deterioration, generally through gully erosion, where the remaining productive capacity of the land is almost zero.

Least costly alternative. The lowest expenditure for installing, operating, and maintaining a system or systems of conservation measures to achieve a specified objective.

Linear programming. A technique to predict an optimum level of production or the best combination of production activities, given specific linear relationships and mathematical inequalities.

Management. A decisionmaking process of determining how land, labor, and capital will be combined into an enterprise or organization for the purpose of obtaining one's objective.

Marginal analysis. Determining the level of production where marginal costs are equal to marginal benefits and net benefits are maximized.

Marginal benefits. The additional benefit of producing one more unit of output.

Marginal costs. The additional cost of producing one more unit of output.

Marginal rate of substitution. The amount of one commodity or product a consumer is just willing to give up in order to get an additional unit of another commodity or product.

Maximum net benefit. The level of development where the value of total output minus the value of total required input is the greatest.

Mean. Mathematical average, obtained by dividing the sum of two or more quantities by the number of these quantities.

Median. Designating the middle number or the middle between two numbers in a long series of ordered numbers or values.

Net returns. The residual value of production after total costs of production are subtracted from the gross returns.

Number of years (or periods) hence. Number of years (or periods) into the future for which the calculations are being made.

Objective. Qualified goals or achievements to answer or solve projected needs as expressed by a person or group of persons.

Off-site benefits. Benefits accruing to areas or person outside the problem-controlled area.

On-site benefits. Benefits accruing at the general location of the control measure.

Operating cost. Expenditures for machine operation which generally include lubrication, repairs, and fuel (not applicable to all machines).

Operation, maintenance, and replacement. Actual expenditures and donated services to insure proper functioning of the facility or measure throughout its intended life.

Opportunity costs. The earning capabilities of money for use in alternative investments having similar risk and time frames.

Overhead costs. Expenditures associated with the farm organization, not generally influenced by levels of production or kinds of crops grown. Examples include most utilities, machine shop and related shop tools, accountant or management fees, etc.

Ownership costs. Costs unrelated to rate of annual use, such as expenditures for depreciation, taxes, interest on investment, insurance and housing.

Partial budgeting. A technique where only the relevant changes in income and production costs are identified, listed, and used in the analysis.

Perennial crops. Those having a life cycle of more than two years.

Performance rate. Rate of accomplishment based on machine width, tractor speed and the percent efficiency.

Perpetuity. An indefinite or extremely long period of time.

Planning horizon. The time period within which a businessman, farmer, or rancher formulates his activities.

Present value (or present worth). Future costs or benefits discounted or lagged to show their current value.

Present value of a decreasing annuity. Today's value of an annuity that is not constant but decreases uniformly over a period of time.

Formula: $\frac{n(i)-1 + \frac{1}{(1 + i)^n}}{(i)^2}$

Present value of an annuity of one per year. The discounted or lagged value of a series of equal payments to be covered over a period of years.

Formula: $\frac{(1 + i)^n - 1}{i(1 + i)^n}$

Present value of an increasing annuity. Today's value of an annuity that is not constant but increases uniformly over a period of time.

Formula: $\frac{(1 + i)^{n+1} - (1 + i) - n(i)}{(1 + i)^{n}(i)^{2}}$

Present value of one. The amount that must be invested now at compound interest to have a value of 1 in a given length of time or what one dollar due in the future is worth today. Also known as the discount factor or the reciprocal of the compound interest factor.

Formula: $\frac{1}{(1 + i)^{n}}$

Price. The exchange value for commodities usually determined through the market system.

Price base. A common level of prices generally adjusted through the use of price indexes.

Price base. A procedure to reflect changes in prices relative to prices in some base period.

Principal. The initial investment exclusive of interest.

Production costs. Expenditures, both fixed and variable, for all items required for specified levels of crop or livestock production.

Projections. Best estimates of future development, based upon historical trends, analysis of current relationships and an evaluation of foreseeable conditions.

Quality differential. Changes achieved through resource improvement in quality of harvested crop which affects per unit prices received.

Rent (pure economic). The price paid for the use of land and other natural resources which are completely fixed in total supply.

Salvage value. The monetary value of an investment at the end of its economic life, usually the trade-in value as new equipment is purchased.

Simple interest. Money earned on the principal only and not on accumulated interest.

Formula: $i = (p)(r)(n)$

i = interest
p = principal
r = interest rate
n = number of periods (years)

Sinking fund. A program for capital accumulation over a period of years. The factor indicates how much needs to be invested annually to accumulate a given amount over a given number of years at a specified compound interest rate (reciprocal of the amount of an annuity of 1 per year).

Standard of living. The necessities of personal consumption which can be provided by current disposable family income.

Substitution of capital. The continuing application of new technological innovations to improve production efficiencies over what could previously be provided.

Supplementary enterprise. Production from one enterprise is increased without increasing or decreasing production of another enterprise.

Supply. The quantity of a good or service a firm is willing to produce to sell at a given price.

Value added. The increase in value resulting from doing something to or with the product.

Variable costs. Costs relevant to production or those occurring only as production takes place.

Unit cost. Monetary value or charge per unit, e.g., cost per cubic yard of concrete, cost per acre of owning an 18-foot self-propelled combine, etc.

With condition. The anticipated situation which is projected to occur in the future if the proposed conservation measures are installed.

Without condition. The anticipated situation which is projected to occur in the future, if the proposed conservation measures are not installed.