

Using the Machinery Cooperative Template to Investigate the Feasibility of a Machinery Cooperative

Introduction

A feasibility study can be defined many different ways. In general, a feasibility study is an examination of the production and marketing processes on an enterprise or project to determine the likelihood of success. Basically, it is answering the question, "Should I do this?" The purpose of this template is to determine the feasibility of a machinery cooperative. A machinery cooperative consists of a group of member producers who collectively purchase equipment through a cooperative entity. Members make an initial equity investment and pay the cooperative an acreage fee for the use of the equipment. This fee is based on the projected costs of operating the equipment.

The template allows a group of producers to enter information on their existing compliment of equipment and a compliment of equipment capable of performing operations for the entire group. The template analyzes the cost of machinery ownership and operation for both the individual and cooperative operations. The projected cost savings are summarized along with information on required equity investment and fee structure.

The template assumes a 5 year cycle of equipment replacement and allows the user to define whether the cooperative issues additional stock to reflect the member's share of this increased book value or holds the reserves in a general reserve account. Tax implications of these options are reflected.

The template analyzes the required operating days for each machinery compliment and acreage. Users can analyze historical field day availability to determine the impact of the cooperative structure on their ability to complete operations within available time windows. The template also provides inputs for the projected labor supplied by each member. Labor transferred between members is reflected in the member's cost analysis. Labor needs in excess of the total member labor supply is assumed to be hired. Users are provided inputs for the internal and external wage rates.

Using the Feasibility Template

The following feasibility template is designed to allow producers to machinery related information and receive a comparison of individual and cooperative machinery ownership. All cells for which an input is required are shaded in **BLUE**. Cells that are not inputs are currently protected; however, if you would like to modify the sheet to better meet your situation, you can do so by turning off the protection. If you choose to modify the template, we strongly encourage you to save the modifications under another name and retain the original for reference. Input values are required on three pages, *Inputs page*, *IndividualEquip*, *CoopEquip* and *Tables* page.

Inputs Page

The *Inputs page* contains inputs for general producer information. This information includes items such as producer acreages, capital structure finance rates, input costs, tax information and profit allocation. This information is used to determine the costs of individual producers as well as a producer's share of cost in the machinery cooperative.

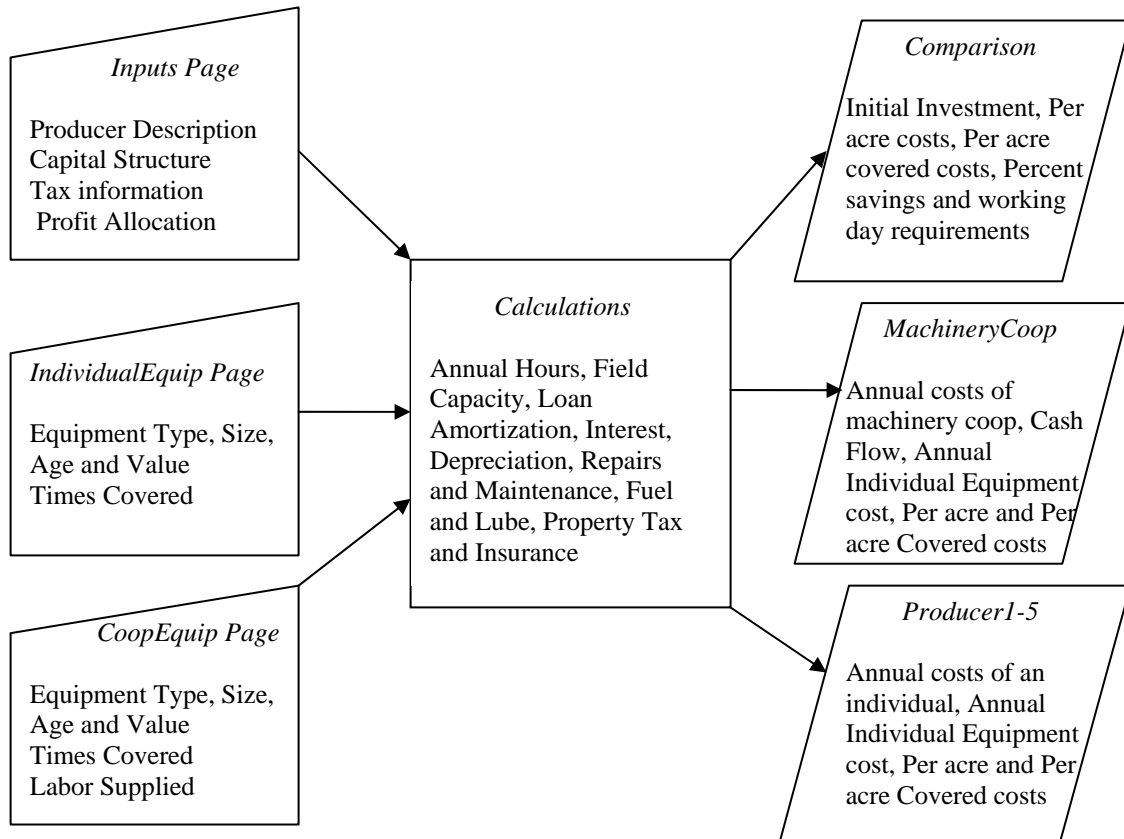
Equipment Pages

On the *IndividualEquip* and *CoopEquip* pages, producers input individual equipment complements and the equipment complement for the machinery cooperative respectively. Machinery is selected from drop down menus. Additional inputs are provided for the current value, age, effective width and operating speed. This information is used to calculate depreciation, repair costs, operating costs and operating time.

The *CoopEquip* page also contains inputs for labor supplied by each producer as a means for determining if there is a transfer of labor among the members or if additional outside labor is required.

Depreciation Rate

The only other input value is on the *Tables* page which provides an option to change the depreciation rate. The default rate is 10%, but may be change to a rate the user feels is more appropriate. The information contained on these pages is used to determine the costs of each individual producer's production as well as what a producer's share of cost would be in a machinery cooperative. For a more detailed description of the inputs as well as other information contained in the template please see the "Description of the inputs" section below.



Description of the Inputs

Inputs Page:

The first input cells on the inputs page are under the *Producer/Member* section, are inputs for acres per member. For these cells, input the number of acre that each member will have in production. Total acres covered will be calculated by using the Times over cell on the Individual Equipment and Cooperative Equipment pages. The sum of the acres per member cells determines the value in the machinery cooperative cell and also is used to determine the members' share of the machinery cooperative.

The *Capital Structure* section is for inputting the percent of financing that each producer would have if they were to purchase equipment as an individual and the percent that the coop would finance equipment. The interest rate and term of the loan are also for what would be used as an individual or under the machinery cooperative. The equipment replacement cycle is a fixed parameter and cannot be changed even by turning off the protection.

In the *Input Cost* section, Hired labor rate is the hourly rate for which outside labor may be hired and Member Transfer Labor is the hourly rate a member is paid(pays) for additional labor supplied(undersupplied). The per acre cooperative fee is determined by the member and is used to cover the operating cost and the repurchase of equipment at the end of year five.

The *Profit Allocation* section is used to determine how the the amount of the machinery cooperative's net income before taxes is returned to the members, what is not returned is assumed to be retained by the cooperative.

Individual Equip and Coop Equip Pages:

On the Individual Equipment page, each Producer selects the set of equipment that would be purchased if the producer was not a member of the machinery cooperative. There are separate sections for each producer and the producers should enter the information in the same order the acres are listed on the input page. The Cooperative Equipment page is for selecting the set of equipment that the cooperative would purchase and is the same as the Individual Equipment page except for the transfer of labor section at the bottom of the Cooperative Equipment page

There are three sections under each producer and the machinery cooperative. The sections are for entering information for tractors, self-propelled harvest equipment and other equipment.

The *annual hours* in the tractors section are determined from the percent of use that the equipment in the other equipment section uses a tractor. The annual hours in the other sections are calculated using a formula for field capacity (acres/hour) of a piece of equipment. Field capacity is calculated using the field efficiency factor that is found in the table on the Tables page.

The *times over* cells are for entering the number of total times a piece of machinery covers the total acres in production for an individual or the machinery cooperative. For the *% Tractor 1 through % Tractor 4* cells, users should enter the percent of the piece of equipment's total annual hours that will be done by the tractor listed in that column. The Repair factors and Depreciation rate cells are obtained from the table on the Tables page. The depreciation rate may be change from the 10% default value if the user feels another number is more appropriate. The replacement cost shown is the inflated repurchase price of that piece of machinery at the end of year five.

At the bottom of the Cooperative Equipment page, is a section for each producer to input the amount of labor that will be supplied by the member. If the labor supplied by the members is less than the labor required, then additional outside labor must be purchased. This also allows for one producer to perform more of the labor than the others and is accounted for in the transfer of labor portion on the comparison page. This additional supplied labor is paid by the members that undersupplied labor to the members that supply extra labor.

Is Your Machinery Cooperative Feasible

The *comparison* page of the template summarizes the investment and net fee structure for the machinery cooperative. It also compares the cost of individual and cooperative machinery ownership for each of the participants. The *machinery cooperative* page provides a summary of the income, expense and cash flow for the proposed cooperative. If the user desires the cooperative to replace machinery in year five (the base line assumption) they will want to check for a positive cash flow in the fifth year. If there is insufficient funds to generate a positive cash flow the acreage fee and/or the profit distribution variables may need to be adjusted.

More information about the steps in organizing a machinery cooperative is available in the OSU publication "Organizing a Machinery Cooperative"