

Enterprise Allocation and Analysis

With this program, the user can allocate whole-farm revenues and costs to various farm enterprises, such as crops (e.g., corn, soybeans, wheat, specialty crops), custom farming and custom work, livestock, and other activities (e.g., trucking, custom feeding).



The Enterprise Allocation and Analysis program, referred to as “E-allocate” in this text, automatically does the extensive math calculations necessary to produce enterprise reports. Guidance, structure, and procedures for allocating indirect and overhead costs are provided. Parts of the program are designed specifically for use with field staff and cooperators of the Illinois Farm Business Farm Management (FBFM) record-keeping and business-analysis organization. However, the E-allocate program is not intended to be limited in its use.

With this program, the user can produce reports that list revenues and costs for various farm enterprises, which are useful for:

- Evaluating the profitability for segments of a business. For example, a cash-grain farmer may wish to compare the profitability of growing corn versus soybeans.
- Closing the control loop. Many farmers prepare budgets before planting to help plan production. Determining how close actual costs come to budgeted costs provides feedback for planning and indicates how well the planning process works.
- Assisting in planning cash-flow requirements. Many farmers prepare projected cash flows for the coming year. Almost always, projecting cash flows requires estimates of per-unit production (e.g., per-acre costs for fertilizer, seed, etc.).

- Per-unit costs vary among operations. Good gauges of the next year's production costs are actual costs from previous years.
- Determining break-even prices. Determining how much it costs to produce crops or livestock may provide guidelines for setting marketing objectives.

E-allocate is flexible in the number and type of enterprises that can be included, the way in which farm expenses are allocated to enterprises, and the methods used to allocate expenses to enterprises.

The E-allocate program is designed to allocate a total year's costs. This can be done at the end of the year, when actual costs are known, or during the year based on actual and projected costs. With E-allocate, costs can be allocated to enterprises and business activities in two ways. The first is a direct method in which the user specifies the actual dollar amounts attributable to each enterprise. Any amounts not directly allocated to individual enterprises are then allocated using an indirect allocation method, which is the second way of allocating costs to enterprises.

The indirect method has several choices for allocating costs. For crops, indirect methods include:

- Allocations based on budgets
- Operator, tillable or total acres for all crops
- Percent of revenue received from a crop
- User-defined percent allocation

For livestock, indirect methods include:

- User-defined percent allocation
- Percent allocation based on total revenue of an enterprise
- Percent allocation based on direct expenses of an enterprise

An index at the end of this documentation is available to assist the user in finding specific sections of this documentation.

Navigation

A four-step process is used to enter data in E-allocate, generally in shaded (yellow) cells. The steps include:

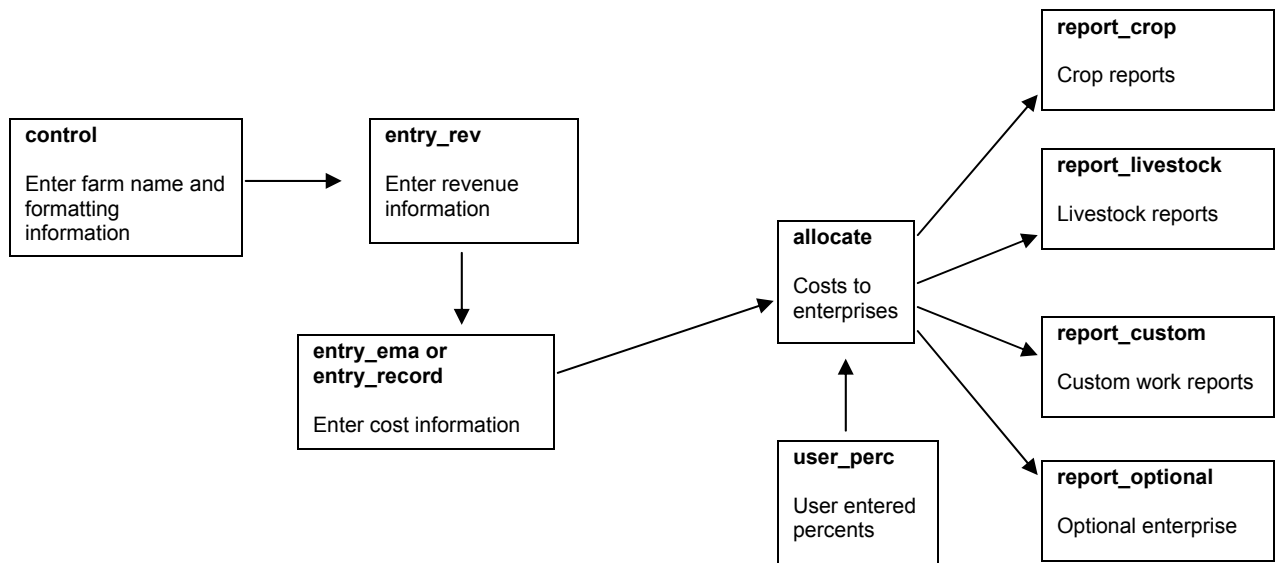
Control Input Details the number, types and formats of reports produced by the E-allocate program. Entries include the number and types of enterprises and activities, way in which cost information will be entered, and types of expense categories to include on reports. This step is represented by the box labeled "control" in the diagram.

Revenue Input Details yearly total revenue and production by enterprise and activity. This step is represented by the box labeled “entry_rev” in the diagram.


Cost Input Details yearly total costs by expense category. This step is represented by the boxes labeled “entry_record” and “entry_ema” in the diagram. Only one of these two sections will be displayed at a time.

Allocate Costs Details how yearly total costs are allocated to specific enterprises and activities. This step is represented by the boxes labeled “allocate” and “user_perc” in the diagram.

The diagram below shows how navigation flows in the program. Each box is labeled with the corresponding “worksheet name”, or tab, as seen at the bottom of the Excel spreadsheet.



Main Menu

Using the Main Menu, the user can go to different parts of the E-allocate program. To access the Main Menu while using the E-allocate program, click the  button.



The buttons on the left side accomplish the following tasks:

Control Input	Displays the sheet where control inputs are entered.
Revenue Input	Displays the sheet where revenue inputs are entered.
Cost Input	Displays the sheet where cost inputs are entered.
Allocate Costs	Displays the sheet where costs are allocated to enterprises.
Print All Reports	Prints the reports produced by E-allocate.

The buttons on the right-hand side of the menu display the reports included in the analysis. Only reports that the user specifies in the “Control Input” section appear on the E-allocate menu. Hence, buttons on the right-hand side will vary for different farms. As shown on the Main Menu above, five reports are available: ALLOCATION REPORT, CROP REPORTS, LIVESTOCK REPORTS, CUSTOM FARMING/CUSTOM WORK REPORT and OPTIONAL ENTERPRISE REPORT.

At the very bottom of the menu, the user also has the option to

Reset All Entries to Zero

. Clicking on this button will clear all entries from the worksheet. **Data cannot be recovered once this option is selected.**

Another method for navigating in E-allocate is to use the sheet tabs listed at the bottom of the Excel screen. These tabs automatically display the selected input sections and reports:

control Displays the “Control Input” worksheet.

entry_rev Displays the “Revenue Input” worksheet.

entry_ema Displays the “EMA Entry” worksheet if the “EMA Report” is selected as the data entry method in the “Control Input” worksheet. The “EMA (Economic Management Analysis) report” is a report that farmers enrolled in FBFM can use to enter costs. This worksheet is used for entering yearly costs. This tab will not appear if the “FBFM Record Book” is selected as the data entry method in the “Control Input” worksheet.

entry_record Displays the “Record Book Entry” worksheet if the “FBFM Record Book” is selected as the data entry method in the “Control Input” worksheet. This worksheet is used for entering yearly costs. This tab will not appear if the “EMA Report” is selected as the data entry method in the “Control Input” worksheet.

allocate Displays the worksheet used to detail how costs are allocated to enterprises.

user_perc Displays the “User Defined Percent Allocation” worksheet, which is one of the options for indirect allocation of expenses to crop and custom farming/work enterprises.

report_allocation Displays the report that provides a summary of the allocated costs by enterprise and activity.

report_crop Displays crop reports.

report_livestock Displays livestock reports.

report_custom Displays custom farming/custom work reports.

report_optional Displays the optional enterprise report.

Example

An example of John and Sally Smith's farming operation has been created and entered into the E-allocate program. This example will be used to discuss each component of the program.

John and Sally Smith raise corn and soybeans on 850 share-rent acres and 450 cash-rent acres for a total of 1,300 tillable acres. They also custom farm 100 acres. On these 100 acres, they perform all tillage, planting, and harvesting operations for which they receive \$6,700. They would like enterprise reports for corn, soybeans, and custom farming.

Control Input

The "Control Input" section should be the first section completed when using this program. The entries made in this section generate which worksheets/sections are to be completed for the analysis. The "Control Input" section contains six input boxes: Farm Information, Data Entry, Enterprise Numbers, Expense Category BreakDowns, Data Entry from FBFM record book, and Leasing Arrangements.

Farm Information

This section lists items that appear on reports and includes four entries:

FARM INFORMATION

Name:	John and Sally Smith
I.D.:	111-111-111
Year:	2003
Date run:	July 23, 2003

Name The name of the user or client.

I.D. Generally applies to the FBFM identification number for a specific farm.

Year The year for which the report is prepared. Reports in E-allocate have the label "For the year ending xxxx" printed on the top of each report where the "xxxx" is supplied by the "Year" input. The above example has "2003" entered as the year, so all reports will show the label "For the year ending 2003." A more specific date can be entered into the year input. For example, if "December 31, 2003" is entered; the reports will show the label "For the year ending December 31, 2003."

Date run The date on which the report is prepared.

Data Entry

This section allows the user to choose the method for entering data. The user's selection causes the program to require a specific sheet to be completed for the analysis. The two sheets are described below.

DATA ENTRY

Enter data from:

FBFM record book

EMA report

The “FBFM record book” option provides a sheet with a list of expense categories that matches the FBFM record book. This option also can be used to enter expenses from a Schedule F, other farm accounting system, or record book. Farmers not enrolled in FBFM should choose the “FBFM record book” option. This selection automatically requires the completion of the “entry_record” worksheet. This worksheet may be found by clicking the **Cost Input** button on the Main Menu.

The “EMA (Economic Management Analysis) report” option allows farmers enrolled in FBFM to enter costs directly from the EMA report. Farmers enrolled in FBFM likely will prefer the “EMA report” option for entering expenses because accruing expense adjustments already are reflected in the EMA report. Farmers using the “FBFM record book” option will have to make these accruing adjustments themselves. Entries for the “EMA report” section, or “entry_ema” worksheet, are illustrated in Appendix 6.

In E-allocate, the current choice is indicated by the solid dot in the middle of the circle next to the option. For John and Sally Smith, data will be entered using the “FBFM record book” option.

ENTERPRISE NUMBERS

Crop enterprises	2
Livestock enterprises	0
Do you want a custom farming enterprise? (e.g., all operations)	
<input checked="" type="checkbox"/> Yes	
<input type="checkbox"/> No	
Do you want a custom work enterprise? (e.g., selected operations)	
<input type="checkbox"/> Yes	
<input checked="" type="checkbox"/> No	
Do you want an optional enterprise (e.g., trucking, custom feeding)?	
<input checked="" type="checkbox"/> Yes	
<input type="checkbox"/> No	

Enterprise Numbers

This section allows the user to describe the number and types of enterprises to include in the analysis. This section generates the appropriate worksheets to be completed and which reports are displayed.

The entries for the example are shown to the left and in the other pictures in this section.

Crop enterprises Indicates the number of crop enterprises in the analysis. With E-allocate, up to 10 crop enterprises can be entered. An entry of “0” means that no crop enterprise is included in the analysis, thus no crop enterprise reports are made available. As shown above, the John and Sally Smith example has two crop enterprises.

Livestock enterprises Indicates the number of livestock enterprises in the analysis. With E-allocate, up to 3 livestock enterprises can be entered. An entry of “0” means that no livestock enterprise is included in the analysis, thus no livestock enterprise reports are made available. In the John and Sally Smith example, no livestock enterprises are included.

Custom farming Refers to the performance of managing all aspects of tillage, planting, and/or harvesting for pay. Clicking on “yes” means that a custom-farming enterprise will be included in the analysis.

Custom work Refers to the performance of specific duties for pay. Examples of custom work include combining, planting, and anhydrous-ammonia

application. Clicking on “Yes” means that a custom-work enterprise will be included in the analysis.

Optional enterprise Refers to other activities for which an enterprise report is desired. Examples include seed dealerships, custom feeding of livestock, and trucking. Clicking on “Yes” means that an optional enterprise will be included in the analysis.

Expense Category Break Downs

With E-allocate, certain cost categories can be broken down into more detailed categories. For example, pesticides can be shown as either “pesticides” or as “herbicides” and “insecticides”. Clicking “Yes” under the question “Split pesticides into herbicide and insecticide categories?” means that herbicides and insecticides appear as categories on the “Cost Input” worksheet and reports. Clicking “No” means that the pesticide category appears on the “Cost Input” worksheet.

EXPENSE CATEGORY BREAK DOWNS

Split pesticides into herbicides and insecticides categories?

Yes

No

Split interest into operating, intermediate- and long-term categories?

Yes

No

Split insurance into crop and general categories?

Yes

No

Split fertilizer into nitrogen and other categories?

Yes

No

In the John and Sally Smith example, as shown to the left, pesticide costs appear on reports rather than individually reporting herbicide and insecticide costs. Interest is shown as one category rather than being broken down into operating, intermediate- and long-term categories and insurance and fertilizer costs are both shown as one category.

Data Entry from FBFM Record Book

When the “FBFM record book” option is chosen, the user has additional ways of entering yearly costs on the entry form. A choice of “No” in the box shown below means that expenses will be entered as yearly totals.

DATA ENTRY FROM FBFM RECORD BOOK

crop enterprise?

No

Yes, which categories

<input type="checkbox"/> Pesticide	<input type="checkbox"/> Machine hire
<input type="checkbox"/> Fertilizer	<input type="checkbox"/> Drying
<input type="checkbox"/> Seed	<input type="checkbox"/> Storage

An entry of “Yes” allows yearly totals to be entered by enterprise, which is especially helpful if the user’s accounting system produces cost totals by enterprise. This may be common for direct expenses. For example, a user may have set up his accounting system to produce pesticide expenses for both corn and soybeans. The “Yes” option allows these pesticide costs to be entered for each enterprise rather than a total pesticide expense for corn and soybeans combined.

When the “Yes” option is chosen, six expense categories can be entered per crop enterprise: pesticides, fertilizer, seed, machine hire, drying and storage. A checkmark in front of the expense category means that it will be entered for each crop enterprise.

Leasing Arrangements

With E-Allocate, there are two ways to allocate operator-paid landlord expenses reimbursable by the landlord. One method of recording these costs without showing them as the operator’s costs is to make a selection in the box shown below.

A “Yes” selection means that the landlord will reimburse the operator. This selection also triggers a box to appear in the “Enterprise Definitions and Revenue” worksheet as discussed in the “Revenue Input” section of this documentation. Here, the expenses are recorded and distributed accordingly.

LEASING ARRANGEMENTS

Does the operator pay direct crop costs that will be reimbursed by the landlord?

Yes

No

A “No” selection means that the farmer does not pay any landlord expenses and/or does not want E-Allocate to automatically distribute them in the program. Another method exists for recording landlord reimbursements and is found in the “Record Book Entry” worksheet in the “Cost Input” section. Here, landlord reimbursements are recorded as *cash settlements*. In the example the Smith’s do not pay direct crop costs that are reimbursed by their landlord.

Revenue Input

The “Revenue Input” section is the second section completed when using this program. This worksheet, called “Enterprise Definitions and Revenue,” may be accessed by either clicking the **Revenue Input** button on the Main Menu or selecting the “entry_rev” sheet tab located at the bottom of the Excel screen. The “Revenue Input” section is where revenue and other production information are entered for all enterprises selected in the “Control Input” section. For John and Sally Smith, two enterprises were selected (crop enterprise and custom-farming) and the revenue inputs for each are completed in this section.

Crop Enterprises

The crop enterprise “revenue inputs” screen is shown below. For each crop enterprise, the user must input the following:

Crop enterprises

No.	Name	Type	Tillable Acres	Operator Acres	Units	Unit Price	Gov't Payments	Other Revenue	Total Revenue
					Produced/ Operator				
1	Corn	Corn	650	438	70,000	2.00	16,500		\$156,500
2	Soybeans	Soybeans	650	438	21,000	5.40	16,500		\$129,900
		Total	1,300	875			\$33,000	\$0	\$286,400

Name This is the name of the crop enterprise as it will appear on reports. Names should be descriptive of the enterprise. As shown above, John and Sally Smith have two crop enterprises named “Corn” and “Soybeans.” If, for example, a user divides crop enterprises by farms, the enterprise name can indicate the farm as well as the crop. For example, Smith-Corn, Smith-SB, Jones-Corn and Jones-SB all represent the farm location and the crop grown there. Another user could divide a crop by type. For example, corn could be divided into conventional and high-oil corn. In this case, names could be Conv. Corn and High-Oil Corn.

Type Indicates the type of crop. E-allocate allows six options: corn, soybeans, wheat, double-crop soybeans, alfalfa, and other. Options are selected by using a drop-down box that appears when the user clicks on the cell. “Type” is only used in allocating costs for the “budget” indirect-allocation method (see the allocation section and Appendix 4 of this documentation for more detail).

Tillable acres The total tillable acres for each enterprise regardless of the tenure, or ownership, of the acres.

Operator acres The acres from which an operator receives crop revenue. For owned and cash-rented acres, this totals 100%. For crop-share leases, this will depend on the lease arrangement. For example, an operator will record 50 operator acres for a 100-acre tract that is rented with a 50/50 crop-share lease (see Appendix 1 for a more complete discussion).

Units produced/Operator The operator’s share of the total units produced or expected to be produced.

Unit price The actual or estimated price to be received on a per-unit basis.

Government payments The amount of government payments to be allocated to each enterprise. It is suggested that direct and counter cyclical payments be allocated to each crop based on operator acres. Loan deficiency payments should be included in the “Unit Price” figure.

Other Revenue This reflects any additional revenue received for an enterprise that is not included as crop revenue or government payments.

Total Revenue This figure is automatically calculated when inputs are entered.

Custom Farming The custom farming “Revenue Input” screen is shown below.

Custom farming (tillage, planting, harvesting)

Revenue	\$6,700.00 total
Acres custom farmed	100 acres

The revenue input for the custom-farming activity consists of total custom-farming revenue received and the number of acres that were custom farmed. The revenue figure is used for the custom-farming report. Acres custom farmed may be used for allocating expenses. Allocation methods are further described in Appendix 5.


Other Types of Revenue Input The John and Sally Smith example demonstrates only two types of revenue input. Other revenue input will appear if additional enterprises are selected in the “Control Input” section. These include:

Custom work input See Appendix 5 for a description of this input.


Livestock input See Appendix 7 for a description of this input.

Optional enterprise input See Appendix 8 for a description of this input.

Cost Input

The “Cost Input” section is the third section completed when using this program. Here, the user enters costs in one of two ways. When completing the first section of this program, the user was able to choose between “FBFM Record Book” or “EMA Report”. By choosing the “FBFM Record Book” selection, the “Record Book Entry” worksheet appears when the  is selected on the Main Menu. The other input method, “EMA report”, is described in Appendix 6, and is only enabled if the “EMA Report” selection is chosen.

Record Book Entry

The “Record Book Entry” worksheet is used when “FBFM record book” is selected as the data entry method. In addition to accessing the “Record Book Entry” worksheet via the  from the Main Menu, it may be accessed by clicking the “entry_record” sheet tab located at the bottom of the Excel screen.

Accrual accounting matches expenses with revenue for a given year regardless of which year the revenue was actually received in and what year expenses were paid in. Accrued expense data should be used to generate a correct analysis (see Appendix 1 for a more complete discussion). The “Cost Input” section includes columns that are useful in making accrual adjustments.

The “Record Book Entry” worksheet includes a list of expenses. Expense categories depend on the entries made in the “Control Input” section. Additional lines will appear on the “Record Book Entry” worksheet if the user elected to split pesticides into herbicides and insecticides, fertilizer into nitrogen and other fertilizer, or enter direct cropping expenses by crop enterprise.

RECORD BOOK ENTRY

Item	Cash Operating Expense	B.O.Y. Ac Pay.	E.O.Y. Ac Pay.	B.O.Y. Prepaid	E.O.Y. Prepaid	Cash Settle- ments	Landlord Costs	Expense
Interest	10,800	1,200	1,400					11,000
Labor	4,600							4,600
Pesticides	32,680						0	32,680
Fertilizer	23,680			4,500	5,500		0	22,680
Seed	21,320			3,000	2,000	1,000	0	21,320
Machine hire/lease	6,300							6,300
Drying	6,560							6,560
Storage	16,260							16,260
Machine repair	21,420							21,420
Fuel	8,560							8,560
Light vehicle	4,040							4,040
Utilities	4,100							4,100
Soil & water conservation	0							0
Building repair	1,640							1,640
Insurance	8,200							8,200
Misc	4,920							4,920
Taxes								0
Building rent								0
Privilege rent								0
Land rent	67,500							67,500
Livestock expense								0
Vet and medicine								0
TOTAL	242,580	1,200	1,400	7,500	7,500	1,000	0	241,780

There are six columns for cost inputs:

Cash Operating Expense In this column enter cash operating expenses from a cash-accounting system or a Schedule F tax form. If the user has accrued expense data, input these figures in the first column and leave the remainder of the columns blank.

B.O.Y. Ac Pay. Enter the amount of beginning-of-the-year accounts payable. In the John and Sally Smith example, the interest expense is considered an accounts payable because it is accrued interest which has not been paid yet. At the beginning of the year, John and Sally owed \$1,200 of accrued interest.

E.O.Y. Ac Pay. Enter the amount of end-of-the-year accounts payable. As with the beginning-of-the-year accounts payable, any accrued interest should be recorded here. In the example, John and Sally Smith owe \$1,400 at the end of the year.

B.O.Y. Prepaid Enter the amount of prepaid expenses at the beginning of the year. John and Sally Smith have two prepaid expense adjustments as they usually apply some nitrogen fertilizer in the fall for the next year's crop production and purchase seed ahead of time. For example, in 2002, they prepaid \$4,500 for nitrogen and prepaid \$3,000 for seed for 2003 production. The program adds these values to the "Cash Operating Expense" found in the first column to adjust

for actual expenses related to the 2003 crop production, which is given in the last column called “Expenses”.

E.O.Y. Prepaid Enter the amount of prepaid expenses at the end of the year. John and Sally Smith have two end-of-the-year prepaid expense adjustments. They prepaid the nitrogen expense of \$5,500 and the seed expense of \$2,000 at the end of 2003 for the 2004 production. These values are subtracted from the “Cash Operating Expense” found in the first column because they are not related to the 2003 crop production.

Cash settlements Enter cash items for which reimbursements were received. Cash settlements often relate to share-rental arrangements. Farmers often pay all of the input costs, such as seed, fertilizer, and pesticides, and then receive reimbursements from share-rent landlords. In 2003, John and Sally Smith received a reimbursement of \$1,000 for seed expense.

Based on the above input, total expenses are calculated and shown in the right-most column of the “Cost Input” section. These amounts automatically transfer to the “Allocate Costs” section, which is described in the next section.

Additional information may be entered at the bottom of the “Record Book Entry” worksheet. This input section includes machinery and building depreciation, family living and income-tax information, intermediate- and long-term principal payments, un-financed capital purchases and landlord’s share of crops, etc.

Other Items

Machinery depreciation	22,680
Building depreciation	1,640
Family living & tax	
Intermediate principal pmts.	
Long-term principal pmts.	10,000
Unfinanced capital purchases	
Ldrd share -- crop	
-- other	

Additional input sections are shown if the user indicated that interest and insurance should be split into additional categories when in the “Control Input” section. For example, if interest was to be split, the input box is labeled “Split Interest.”

Allocation Of Costs To Enterprises

The “Allocate Costs” input section is the heart of the E-allocate program. Here the user allocates costs to the different enterprises that have been selected in the “Control Input” section. The user has two general methods of allocating costs: direct and indirect. Within the indirect method there are a number of additional options for allocating costs. The indirect method has a set of options for the livestock enterprises and a set of options for the crop, custom-farming and custom-work enterprises.

The “allocate” spreadsheet for the example is shown below:

ENTERPRISE ALLOCATIONS	Direct Allocation					Expense Yet to be Allocated	Method Defaults	Unallocated Expense to:			Total Expense To:			Expense Not Allocated
	Expense to be Allocated	Corn	Soybeans	Custom Farming	Expense Not to be Allocated			Corn	Soybeans	Custom Farming	Corn	Soybeans	Custom Farming	
Interest	11,000					11,000	Operator Acre	5,500	5,500	0	5,500	5,500	0	0
Hired labor	4,600					4,600	Tillable Acre	2,136	2,136	329	2,136	2,136	329	0
Pesticides	32,680		0	xxx		32,680	Operator Acre	16,340	16,340	0	16,340	16,340	0	0
Fertilizer	22,680	14,904	7,776			0	Budget	0	0	0	14,904	7,776		0
Seed	21,320	13,325	7,995	xxx		0	Budget	0	0	0	13,325	7,995		0
Machine hire/lease	6,300					6,300	Tillable Acre	2,925	2,925	450	2,925	2,925	450	0
Drying	6,560	4,811	1,749	xxx		0	Budget	0	0	0	4,811	1,749		0
Storage	16,260	12,837	3,423	xxx		0	Budget	0	0	0	12,837	3,423		0
Machine repair	21,420					21,420	Tillable Acre	9,945	9,945	1,530	9,945	9,945	1,530	0
Fuel & oil	8,560					8,560	Tillable Acre	3,974	3,974	611	3,974	3,974	611	0
Light vehicle	4,040					4,040	Tillable Acre	1,876	1,876	289	1,876	1,876	289	0
Utilities	4,100					4,100	Operator Acre	2,050	2,050	0	2,050	2,050	0	0
Soil and water conservation	0					0	Operator Acre	0	0	0	0	0	0	0
Building repair	1,640					1,640	Operator Acre	820	820	0	820	820	0	0
Insurance	8,200					8,200	Operator Acre	4,100	4,100	0	4,100	4,100	0	0
Misc	4,920					4,920	Operator Acre	2,460	2,460	0	2,460	2,460	0	0
Taxes	0					0	Operator Acre	0	0	0	0	0	0	0
Building rent	0					0	Operator Acre	0	0	0	0	0	0	0
Privilege rent	0					0	Operator Acre	0	0	0	0	0	0	0
Land rent	67,500					67,500	Operator Acre	33,750	33,750	0	33,750	33,750	0	0
Livestock supplies	0	xxx	xxx	xxx		0	xxxx							0
Vet & medicine	0	xxx	xxx	xxx		0	xxxx							0
Cost of landlord acres	0	xxx	xxx	xxx	xxx	0	xxxx							0
- crop expense	0	0	0	xxx		0	Budget	0	0	0	0	0	0	0
- other	0			xxx		0	Budget	0	0	0	0	0	0	0
Family living & tax	0					0	Operator Acre	0	0	0	0	0	0	0
Depreciation -- machinery	22,680					22,680	Tillable Acre	10,530	10,530	1,620	10,530	10,530	1,620	0
Depreciation -- building	1,640					1,640	Tillable Acre	820	820	0	820	820	0	0
Intermediate principal pmts.	0					0	Operator Acre	0	0	0	0	0	0	0
Long-term principal pmts.	10,000					10,000	Operator Acre	5,000	5,000	0	5,000	5,000	0	0
Unfinanced capital purchases	0			xxx		0	Operator Acre	0	0	0	0	0	0	0
Unpaid labor charge	0			xxx		0	Operator Acre	0	0	0	0	0	0	0
Interest charge -- economic	0			xxx		0	Operator Acre	0	0	0	0	0	0	0


The first column on the “Allocate” worksheet lists the enterprise expense categories. The second column lists the expense amount available to be allocated to enterprises. These expenses result from the entries made in the “Cost Input” section. John and Sally Smith have \$11,000 of interest expense, \$4,600 of hired-labor expense and several other expenses to allocate.

The next set of columns allows direct allocation of expenses to enterprises. One column exists for each enterprise. John and Sally Smith have three columns: one for the corn enterprise, one for the soybean enterprise, and one for the custom-farming enterprise. They directly allocate some costs. For example, they allocated \$14,904 of fertilizer expense to the corn enterprise and \$7,776 of fertilizer expense to the soybean enterprise.

Following the direct-allocation columns is a column labeled “Expense Not to be Allocated.” In this column, a user can enter expense amounts that should not be allocated to any enterprise.

The figures in the next column, “Expense Yet to be Allocated”, are calculated by E-allocate. These entries equal “Expense to be Allocated” minus direct allocations to enterprises minus “Expense Not to be Allocated.” John and Sally Smith have \$11,000 of interest expense yet to be allocated. They have already allocated all of the fertilizer expense to enterprises. Totals in this column are allocated using indirect allocation methods.

Indirect allocation methods are selected in the “Method” column by clicking in the appropriate line item and using the drop-down box. For crops, six indirect allocation methods exist:

- **Budget** Expenses are allocated based on the crop budgets of the University of Illinois. Budgets exist for corn, soybeans, wheat, double-crop soybeans and alfalfa. The user should not use the budget options for crop enterprises that are not similar to these.
- **Operator acres** Expenses are allocated based on the enterprise’s operator acres as compared to the total operator acres of all crop enterprises.
- **Tillable acres** Expenses are allocated based on the enterprise’s tillable acres as compared to the total tillable acres of all crop enterprises.
- **Revenue** Expenses are allocated based on the crop enterprise or revenue from custom farming/work activity as compared to the total revenue from the farm.
- **User Defined** Expenses are allocated based on the percentages input in the user-defined screen. The user-defined screen is accessed by clicking on  at the top of the “Method” column.
- **No Allocation** None of the expense is allocated to any enterprise.

Clicking on **Defaults** at the top of the “Method” column allows the user to change all of the indirect allocation methods for expense categories to one of the options listed on the previous page. More detail on each allocation method is given in Appendix 4.

Following the “Method” column is a set of columns labeled “Unallocated Expense to” that give the amount of expenses indirectly allocated to each enterprise based on the selection made in the “Method” column. Following these columns is a set of columns that list “Total Expense to” each enterprise. The final column in the “Allocate” worksheet is titled “Expense Not Allocated.” It serves as a double check to be sure that all expenses have been allocated to an enterprise, activity or input in the “Expense to be Allocated” column. This last column normally contains all zeros.

Reports

Five reports summarize the revenue and expenses for the different enterprises. Reports can be accessed in two ways. From the Main Menu, a user can click a button labeled with each report name. Alternatively, a user can click on sheet tabs located at the bottom of the Excel screen. The report sheet tabs begin with the prefix “report.” The name of the report then is listed following the prefix. For example, report_crop.

Three reports are available for John and Sally Smith:

ALLOCATION REPORT (report_allocation) Provides a summary listing of the total expenses allocated to each enterprise and business activity by expense category. This report is primarily designed for use by FBFM field staff in entering the total expense information into the FBFM “year-end analysis” program. The ALLOCATION REPORT for John and Sally Smith is shown in Figure 1.

Figure 1. Allocation Report for John and Sally Smith**OPERATOR'S EXPENSE ALLOCATION**

John and Sally Smith

I.D.: 111-111-111

Year: 2003

Date: July 23, 2003

Enterprise Enterprise no.	Corn	Soybeans	Custom Farming	Custom Work	_____
Interest	5,500	5,500	0	0	0
Labor	2,136	2,136	329	0	0
Pesticides	16,340	16,340	0	0	0
Fertilizer	14,904	7,776	0	0	0
Seed	13,325	7,995	0	0	0
Machine Hire	2,925	2,925	450	0	0
Drying	4,811	1,749	0	0	0
Storage	12,837	3,423	0	0	0
Machinery Repairs	9,945	9,945	1,530	0	0
Farm Fuel	3,974	3,974	611	0	0
Light Vehicle Expense	1,876	1,876	289	0	0
Utilities	2,050	2,050	0	0	0
Building Repair and Rent	820	820	0	0	0
Soil + Water Conserv.	0	0	0	0	0
Insurance	4,100	4,100	0	0	0
Miscellaneous Exp.	2,460	2,460	0	0	0
Real Estate Tax	0	0	0	0	0
Land & Privilege Rent	33,750	33,750	0	0	0
Livestock Exp	0	0	0	0	0
Vet & Medicine	0	0	0	0	0
Irrigation Repair	0	0	0	0	0
Irrigation Fuel	0	0	0	0	0
Water Rights	0	0	0	0	0
Insecticides	0	0	0	0	0
Machinery Depreciation	10,530	10,530	1,620	0	0
Building Depreciation	820	820	0	0	0
Crop Exp. - Landlord Acres	0	0	0	0	0
Other Exp. - Landlord Acres	0	0	0	0	0
Farm Living & Taxes	0	0	0	0	0
Long Term Principal	5,000	5,000	0	0	0
Total	148,103	123,169	4,829	0	0

Crop Report (report_crop) A two-page report with a summary of the income and expenses allocated to the crop enterprises. The first page summarizes the income and expenses. The first four lines of the report provide a summary of acres and production. John and Sally Smith's corn enterprise has 650 tillable acres, 438 operator acres, 70,000 bu. of production, and a 160 bu. yield per operator acre (see Figure 2).

Following this section, the income and expenses are listed. Each crop enterprise has three columns. These columns contain the total dollars, dollars per operator acre and dollars per bushel of income and revenue. John and Sally Smith's total income from corn is \$156,500 (see "Total Income" line on Figure 2). Total income equals \$358 per operator acre and \$2.24 per bu.

Next, operating expenses are listed. These include categories for direct, power, overhead, and land expenses. "Total Operating Expense" for the Smith's corn enterprise is \$131,753. The next line provides "Income Less Operating Expense." The Smith's "Income Less Operating Expense" for corn totals \$24,747.

Next, the report lists "Depreciation" from machinery, buildings, and machinery depreciation from landlord acres. The "Depreciation from Landlord Acres" relates to machinery expenses associated with farming landlord acres (see Appendix 3 for a more detailed description). "Total Depreciation" for the Smith's corn enterprise is \$11,350.

The "Operating Expense and Depreciation" line provides a measure of total expenses accrued for each enterprise. The Smith's "Operating Expense and Depreciation", or total expenses accrued, is \$143,103 for corn. Total expenses equal \$327 per operator acre and \$2.04 per bu.

"Net Operating Income" is a measure of financial performance. It is similar to net income for the total operation except that it is broken down by enterprise. The Smith's corn enterprise has \$13,397 of "Net Operating Income, which breaks down to \$31 per operator acre and \$0.19 per bu.

Figure 2. Crop Report Summary for John and Sally Smith

CROP ENTERPRISE ANALYSIS						
John and Sally Smith			Date run: 23-Jul-03			
For year ending 2003			ID: 111-111-111			
	Corn			Soybeans		
Tillable Acres	650			650		
Operator Acres	438			438		
Units Produced - Operator	70,000			21,000		
Yield per operator acre	160			48		
	Opr. Share	\$/Opr. Acre	\$/ bu.	Opr. Share	\$/Opr. Acre	\$/ bu.
Income						
Production	\$140,000	\$320	\$2.00	\$113,400	\$259	\$5.40
Gov't Payments	16,500	38	\$0.24	16,500	38	\$0.79
Other	0	0	\$0.00	0	0	\$0.00
Total Income	\$156,500	\$358	\$2.24	\$129,900	\$297	\$6.19
Operating Expenses						
Direct Expense	\$64,186	\$147	\$0.92	\$39,252	\$90	\$1.87
Power Expense	13,294	30	0.19	13,294	30	0.63
Overhead Expense	14,318	33	0.20	14,318	33	0.68
Land Expense	39,955	91	0.57	39,955	91	1.90
Total Operating Expense	\$131,753	\$301	\$1.88	\$106,819	\$244	\$5.09
Income Less Opr. Expense	\$24,747	\$57	\$0.35	\$23,081	\$53	\$1.10
Depreciation						
Machinery	\$7,088	\$16	\$0.10	\$7,088	\$16	\$0.34
Buildings	820	2	0.01	820	2	0.04
-Mach. Dep on Lld. Acres	3,443	8	0.05	3,443	8	0.16
Total Depreciation	\$11,350	\$26	\$0.16	\$11,350	\$26	\$0.54
Operating Expense & Depr.	\$143,103	\$327	\$2.04	\$118,169	\$270	\$5.63
Net Operating Income	\$13,397	\$31	\$0.19	\$11,731	\$27	\$0.56
Cash Flow Break-Even						
Total Operating Expense	\$131,753	\$301	\$1.88	\$106,819	\$244	\$5.09
Family Living & Income Tax	0	0	0.00	0	0	0.00
IT and LT Principal Paymts	5,000	11	0.07	5,000	11	0.24
Unfinanced Capital Purchases	0	0	0.00	0	0	0.00
Total Cash Flow Requirements	\$136,753	\$313	\$1.95	\$111,819	\$256	\$5.32
Surplus or Deficit	\$19,747	\$45	\$0.28	\$18,081	\$41	\$0.86

The final section of the report provides a cash-flow measure of performance for each crop enterprise. This is calculated by adding total operating expense (the same items appearing in the first section of the report), family living and income tax, intermediate- and long-term principal payments, and un-financed capital purchases to arrive at "Total Cash Flow Requirements." "Surplus or Deficit" equals "Total Income" less "Total Cash Flow Requirements."

The second page of the report provides more detail about the operating expense categories. Direct expenses, for example, are broken down into fertilizer, pesticides, seed, drying, storage and machine hire/lease categories (see Figure 3).

Custom Farming/Custom Work Report (report_custom) A one-page report of the revenue and expenses allocated to the custom farming/custom work activities is shown below. John and Sally Smith have \$6,700 of revenue from custom farming, \$4,829 of expenses, and a net operating income of \$1,871.

CUSTOM FARMING/WORK ANALYSIS

John and Sally Smith
For year ending 2003

	Total
Revenue	\$6,700
Expenses	
Machine Hire/Lease	\$450
Machine Repair	1,530
Fuel & Oil	611
Light Vehicle	289
Hired Labor	329
Depreciation	1,620
Total Expenses	\$4,829
Net Operating Income	\$1,871
Family Living & Tax	0
Principal Payments	0
Surplus/Deficit	\$1,871

Figure 3. Operating Cost Break Down for John and Sally Smith

CROP ENTERPRISE ANALYSIS -- OPERATING COST BREAK DOWN						
John and Sally Smith			Date run: 23-Jul-03			
For year ending 2003			ID: 111-111-111			
	Opr. Share	\$/Opr. Acre	\$/ bu.	Opr. Share	\$/Opr. Acre	\$/ bu.
Operating Expenses						
Fertilizer	\$14,904	\$34	\$0.21	\$7,776	\$18	\$0.37
Pesticides	16,340	37	0.23	16,340	37	0.78
Seed	13,325	30	0.19	7,995	18	0.38
Drying	4,811	11	0.07	1,749	4	0.08
Storage	12,837	29	0.18	3,423	8	0.16
Machine hire/lease	1,969	5	0.03	1,969	5	0.09
Direct Expense	\$64,186	\$147	\$0.92	\$39,252	\$90	\$1.87
Utilities	\$2,050	\$5	\$0.03	\$2,050	\$5	\$0.10
Machine repair	6,694	15	0.10	6,694	15	0.32
Fuel & oil	2,675	6	0.04	2,675	6	0.13
Light vehicle	1,876	4	0.03	1,876	4	0.09
Power Expense	\$13,294	\$30	\$0.19	\$13,294	\$30	\$0.63
Hired labor	\$1,438	\$3	\$0.02	\$1,438	\$3	\$0.07
Bld repair and rent	820	2	0.01	820	2	0.04
Insurance	4,100	9	0.06	4,100	9	0.20
Misc	2,460	6	0.04	2,460	6	0.12
Interest	5,500	13	0.08	5,500	13	0.26
Overhead Expense	\$14,318	\$33	\$0.20	\$14,318	\$33	\$0.68
Taxes	\$0	\$0	\$0.00	\$0	\$0	\$0.00
Cash rent	33,750	77	0.48	33,750	77	1.61
Cost of landlord acres						
- crop expense	0	0	0.00	0	0	0.00
- power & equipment	5,507	13	0.08	5,507	13	0.26
- hired labor	698	2	0.01	698	2	0.03
- other	0	0	0.00	0	0	0.00
Land Expense	\$39,955	\$91	\$0.57	\$39,955	\$91	\$1.90
Total Operating Expense	\$131,753	\$301	\$1.88	\$106,819	\$244	\$5.09

Other reports available from E-Allocate are:

Livestock Report (report_livestock) A one-page report of returns and expenses allocated to the livestock enterprise. The report contains three columns per enterprise. The first column provides the total dollars of returns and expenses. The second and third columns provide the dollars per unit. The unit used matches the unit selected by the user on the “Revenue Input” worksheet. This could be per cwt., per pig, per litter, per cow, etc. More detail is provided in Appendix 7.

Optional Enterprise Report (report_optional) A one-page report of the revenue and expenses allocated to an optional enterprise. It has two columns. The first column provides the total dollars of revenue and expenses. The second column provides the dollars per unit. The unit used matches the unit selected by the user on the “Revenue Input” worksheet. Only those expense categories that had expenses allocated to them will be listed on the report. More detail is provided in Appendix 8.

APPENDIX 1. ACCOUNTING PRINCIPLES USED

Period E-allocate assumes that revenue and costs are stated for a year. Most farms use a calendar year (January through December). Returns and costs can be entered as easily for a fiscal year that is not a calendar year (e.g. December through November). Note: some reports have the sub-title: “For the year ending 2003.” The date denoting the end of the period is entered in the “Farm Information” section of the “Control Input” section. If the fiscal year differs from the calendar year, an entry indicating the end of the fiscal year should be made in farm information. If, for example, the end of the fiscal year occurs on Nov 30th, the following entry in “Farm Information” is appropriate:

FARM INFORMATION

Name:	John and Sally Smith
I.D.:	111-111-111
Year:	Nov. 30, 2003
Date run:	July 23, 2003

The sub-title on the reports now reads “For the year ending Nov. 30, 2003.”

There is no conceptual difficulty in having a period shorter or longer than a year. The sub-title on reports, however, cannot be changed.

The remainder of this appendix assumes that the accounting period is a calendar year.

Revenue Recognition In the E-allocate program, revenue is recognized at the completion of production. This means that revenue should be only attached to production that is completed during the calendar year. Revenue from the sale of grain produced in previous years should not be included in revenue.

For grain production, prices in the revenue section should reflect new-crop sales and the inventory value of crops held for sale in the next year. For John and Sally Smith, the unit price associated with corn is \$2 per bushel; for soybeans it is \$5.40 per bushel (see input screen below from the revenue-input section).

Crop enterprises

No.	Name	Type	Tillable Acres	Operator Acres	Units Produced/ Operator	Unit Price	Gov't Payments	Other Revenue	Total Revenue
1	Corn	Corn	650	438	70,000	2.00	16,500		\$156,500
2	Soybeans	Soybeans	650	438	21,000	5.40	16,500		\$129,900
		Total	1,300	875			\$33,000	\$0	\$286,400

These prices reflect the sale of a new crop, loan deficiency payments, marketing-loan gains on new grain and ending-inventory values of grain.

This method of revenue recognition is not in accordance with Generally Accepted Accounting Principles (GAAP). However, it is consistent with income statements produced using accruing entries, a procedure that is pervasive in agriculture.

Cost Matching Given that revenue is recognized for this year's production, costs should be matched against the current year's production. In most cases this requires making prepaid and accounts-payable expense adjustments, as shown in the "Cost Input" section of the program (e.g., entry_record sheet).

APPENDIX 2. OPERATOR ACRES

One column on the CROP ENTERPRISE REPORT states revenue and costs based on a per-operator-acre basis. Operator acres are used to make comparisons rather than tillable acres. Use of operator acres allows comparisons across farms with different percentages of their farmland share-rented. Tillable-acre comparisons do not allow these comparisons.

An operator acre equals a tillable acre from which revenue is received. Tillable acres equal operator acres when farmland is owned or cash rented. Operator acres differ from tillable acres when land is share rented. For example, 100 tillable acres rented using a 50% share-rent agreement will have 50 operator acres because the farmer receives revenue from an equivalent of 50 acres. As another example, 100 tillable acres rented using a 2/3-1/3 share-rent agreement (i.e., the farmer receives 67% of the revenue from each acre) will have 67 operator acres because the farmer receives revenue from an equivalent of 67 acres.

Operator Acre vs. Tillable Acre Examples

- 1. A farmer farms 1,000 tillable acres. All of the acreage is owned. Operator acres equal 1,000 operator acres.**
- 2. A farmer farms 1,000 tillable acres. Of the total, 500 tillable acres are owned and 500 are cash rented. Operator acres equal 1,000.**
- 3. A farmer farms 1,000 tillable acres. All acres are share rented using a 50-50 share-rental arrangement. Operator acres equal 500.**
- 4. A farmer farms 1,000 tillable acres. Of the total, 500 acres are cash rented and 500 acres are share rented (50-50 share-rent arrangement). Operator acres equal 750 (500 acres cash rent x 1 + 500 acres share rent x .5)**

To illustrate the impact of the operator comparisons, consider two farming operations: One cash-rents all of its farmland while the other share rents all of its farmland using a typical 50-50 share-rent arrangement (i.e., all revenue and all direct expenses are shared equally). Each farming operation uses the same seed at a cost of \$24 per acre. The farming operation that cash-rents land will have seed expense equal to \$24 per tillable acre and \$24 per operator acre. The farming operation that share rents will only have \$12 of seed expense per tillable acre. However, seed expense will equal \$24 per operator acre since operator acres are one-half of tillable acres. This calculation is seed expense for tillable

acres divided by operator acres, or $\$12 / 0.5 = 24$). The operator-acre comparison allows these two farming operations to be compared equally. Similarly, a farm with share-rent, cash-rent, and owned land can compare across these tenure arrangements in a comparable fashion.

The operator-acre comparison has the additional advantage of allowing results to be compared more directly to the usual budgets shown in the popular press and in research articles. Most of these sources state costs as if the farmer receives all revenue and all costs from production. Given its adjustments for revenue, the comparison based on operator acres results in revenue and cost figures.

Comparisons made on the basis of operator-acres require two adjustments to costs.

- Crop costs must be adjusted when the share-rental arrangement shares costs differently than revenue. For example, many 2/3-1/3 lease arrangements have farmers receiving 2/3 of all revenue and all costs, except for seed. The farmer pays for all of the seed expense. In this case, 2/3 of the seed expense should be reported as seed expense while the remaining 1/3 is a landlord-acre expense.
- Power & equipment and labor costs should be adjusted. For share-rent farmland, the farmer pays all power & equipment and labor expenses. Some of these expenses should be moved to a landlord-acre expense to insure comparability of results.

The manner in which these two issues are handled is discussed in the next appendix, "Cost of Landlord Acres."

APPENDIX 3. COST OF LANDLORD ACRES

For all crop enterprises, the OPERATING COST BREAKDOWN report (found in bottom half of report_crop) shows four categories for “Cost of Landlord Acres” expenses (found under the “Land Expense” category): crop expense, power & equipment, hired labor and other. John and Sally Smith have \$5,507 of power & equipment costs and \$698 of hired-labor costs allocated to the landlord acres for the corn enterprise (see Appendix Figure 3-1). These are costs associated with share-rent farmland acres. Landlord-acre costs are taken from other cost categories so that valid cost comparisons can be made across farms with different tenure arrangements.

Crop Expense These expenses associated with landlord acres occur when rental agreements share expenses differently than revenue. For example, a farmer may have an agreement in which he receives two-thirds of crop revenue but pays all seed expense. If seed expense equals \$75 per acre, \$50 of the seed expense is reported as seed expense on the “Cost Input” section. The other \$25 of seed expense is reported as *crop expense* for landlord acres.

When expenses are entered using the “Record Book Entry” option – a choice in the “Control Input” section – landlord-acre crop expenses are entered as “Ldrd share – crop” expense. This entry is in the “Other Items” section of the “entry_record” worksheet. When cost entries are made using the “EMA Report” option, landlord-acre crop expense equals the sum of non-revenue acre costs in the soil fertility, pesticide, and seed categories.

Power & Equipment Costs Costs associated with landlord acres that are automatically calculated by E-allocate. A portion of the expenses for machine hire, machine repair, fuel and oil, light vehicle, and machinery depreciation are taken from the “Allocate” worksheet and placed in the “Cost of landlord acres – power and equipment” category. These costs are allocated based on the ratio of operator acres to tillable acres.

For example, John and Sally Smith had \$9,945 of total “Machinery Repairs” allocated to the corn enterprise in the “Allocation Report.” This farm has 875 operator acres and 1,300 acres of tillable acres in corn, so the ratio of operator acres to tillable acres is 0.673 (875 / 1300). The corn enterprise will have \$6,694 of “Machinery Repairs” expense appear on the corn OPERATING EXPENSE

Appendix Figure 3-1. Landlord Costs for John and Sally Farmer.

CROP ENTERPRISE ANALYSIS -- OPERATING COST BREAK DOWN

John and Sally Smith
For year ending 2003Date run: 23-Jul-03
ID: 111-111-111

	Opr. Share	\$/Opr. Acre	\$/ bu.	Opr. Share	\$/Opr. Acre	\$/ bu.
Operating Expenses						
Fertilizer	\$14,904	\$34	\$0.21	\$7,776	\$18	\$0.37
Pesticides	16,340	37	0.23	16,340	37	0.78
Seed	13,325	30	0.19	7,995	18	0.38
Drying	4,811	11	0.07	1,749	4	0.08
Storage	12,837	29	0.18	3,423	8	0.16
Machine hire/lease	1,969	5	0.03	1,969	5	0.09
Direct Expense	\$64,186	\$147	\$0.92	\$39,252	\$90	\$1.87
Utilities	\$2,050	\$5	\$0.03	\$2,050	\$5	\$0.10
Machine repair	6,694	15	0.10	6,694	15	0.32
Fuel & oil	2,675	6	0.04	2,675	6	0.13
Light vehicle	1,876	4	0.03	1,876	4	0.09
Power Expense	\$13,294	\$30	\$0.19	\$13,294	\$30	\$0.63
Hired labor	\$1,438	\$3	\$0.02	\$1,438	\$3	\$0.07
Bld repair and rent	820	2	0.01	820	2	0.04
Insurance	4,100	9	0.06	4,100	9	0.20
Misc	2,460	6	0.04	2,460	6	0.12
Interest	5,500	13	0.08	5,500	13	0.26
Overhead Expense	\$14,318	\$33	\$0.20	\$14,318	\$33	\$0.68
Taxes	\$0	\$0	\$0.00	\$0	\$0	\$0.00
Cash rent	33,750	77	0.48	33,750	77	1.61
Cost of landlord acres						
- crop expense	0	0	0.00	0	0	0.00
- power & equipment	5,507	13	0.08	5,507	13	0.26
- hired labor	698	2	0.01	698	2	0.03
- other	0	0	0.00	0	0	0.00
Land Expense	\$39,955	\$91	\$0.57	\$39,955	\$91	\$1.90
Total Operating Expense	\$131,753	\$301	\$1.88	\$106,819	\$244	\$5.09

BREAK DOWN REPORT (\$6,694 = \$9,945 total expense x .673). The other \$3,251 of repair expense appears in the “Costs of landlord acres – power & equipment” category.

Hired labor costs Costs associated with landlord acres that are automatically calculated in a manner similar to power & equipment costs. Hired labor is pro-rated to the “hired labor” and “Cost of landlord acres – hired labor” based on the ratio of operator acres to tillable acres.

Other costs Costs associated with landlord acres when rental arrangements share expenses differently than revenue. When cost entries are made using the “Record Book Entry” method – a choice in the “Control Input” section – landlord acre other expense is entered as “Ldrd share – other” expenses. This entry is in the “other items” section of the “entry_record” worksheet. When cost entries are made using the “EMA Report” method, landlord-acre other expense equals the sum of non-revenue-acre costs in the drying, building repair and rent, and miscellaneous categories.

APPENDIX 4. INDIRECT ALLOCATION METHODS

The “Allocation” worksheet contains a column listing “Expense Yet to be Allocated” (see below).

Expense Yet to be Allocated	Method Defaults	Unallocated Expense to:		
		Corn	Soybeans	Custom Farming
11,000	Operator Acre	5,500	5,500	0
4,600	Tillable Acre	2,136	2,136	329
32,680	Operator Acre	16,340	16,340	0
0	Budget	0	0	0

Totals in this column equal total expenses minus expenses directly allocated to specific enterprises. John and Sally Smith have \$11,000 of interest, \$4,600 of hired labor, \$32,680 of pesticide, and \$0 of fertilizer expenses remaining to be allocated equally to crop- and custom-farming enterprises.

Five different methods exist for indirectly allocating expenses to enterprises. Different methods can be used for each expense category. In the above example, the first and third categories are allocated using the “Operator Acre” method, and the second category the “Tillable Acre” method. The fourth category has already been directly allocated to each crop. Entering the cell associated with a category will bring up a menu of indirect allocation methods. Clicking **Defaults** at the top of the column will change all categories to the same method. The five different methods of allocating expenses are:

Budget This method allocates costs to different enterprises based on weighting factors and operator acres. Appendix Table 4-1 shows the weighting factors which are based on the “Estimated Costs of Crop Production in Illinois, 2000” (see www.farmdoc.uiuc.edu). All weighting factors are stated relative to the costs of growing an acre of corn. For example, soybeans have a 0.67 factor for operating interest. In the budgets, per-acre operating interest cost for soybeans is 67% of the per-acre cost for corn.

Appendix Table 4-1. Budget Weights by Crop.

	Corn	Soybeans	Wheat	Double-Crop Soybeans	Alfalfa
Operating interest	1.00	0.67	0.67	0.17	0.83
Interest	1.00	0.67	0.71	0.29	1.29
LT interest	1.00	1.00	1.00	1.00	1.00
Hired labor	1.00	0.88	0.80	0.40	1.40
Pesticides	1.00	1.13	0.00	0.00	1.50
Herbicides	1.00	1.36	0.00	0.00	1.20
Insecticides	1.00	0.00	0.00	0.00	2.57
Fertilizer	1.00	0.52	0.78	0.00	0.96
Fertilizer (nitrogen)	1.00	0.00	0.52	0.00	0.00
Fertilizer (other)	1.00	0.96	1.00	0.00	1.76
Seed	1.00	0.60	0.50	0.50	0.40
Machine hire/lease	1.00	0.67	0.73	0.27	1.27
Drying	1.00	0.36	0.18	0.18	0.00
Storage	1.00	0.27	0.13	0.13	0.00
Machine repair	1.00	0.67	0.73	0.27	1.27
Fuel & oil	1.00	0.63	0.63	0.25	1.38
Light vehicle	1.00	1.00	1.00	1.00	1.00
Utilities	1.00	1.00	1.00	1.00	1.00
Soil and water conservation	1.00	1.00	1.00	1.00	1.00
Building repair	1.00	1.00	1.00	1.00	1.00
Crop insurance	1.00	0.67	0.67	0.17	0.83
Insurance	1.00	1.00	1.00	1.00	1.00
Misc	1.00	1.00	1.00	0.00	1.00
Taxes	1.00	1.00	1.00	1.00	1.00
Building rent	1.00	1.00	1.00	1.00	1.00
Privilege rent	1.00	1.00	1.00	1.00	1.00
Cash rent	1.00	1.00	1.00	1.00	1.00
Livestock supplies	1.00	1.00	1.00	1.00	1.00
Vet & medicine	1.00	1.00	1.00	1.00	1.00
Cost of landlord acres					
- crop expense	1.00	0.64	0.42	0.22	0.67
- other	1.00	1.00	1.00	1.00	1.00
Family living & tax	1.00	1.00	1.00	1.00	1.00
Depreciation -- machinery	1.00	1.00	1.00	1.00	1.00
Depreciation -- building	1.00	1.00	1.00	1.00	1.00
Intermediate principal pmts.	1.00	1.00	1.00	1.00	1.00
Long-term principal pmts.	1.00	1.00	1.00	1.00	1.00
Unfinanced capital purchases	1.00	1.00	1.00	1.00	1.00
Unpaid labor charge	1.00	0.88	0.80	0.40	1.40
Interest charge -- economic	1.00	1.00	1.00	1.00	1.00

As an example, suppose \$1,000 of fertilizer expense is to be allocated between 100 acres of corn and 100 acres of soybeans. The fertilizer weighting factors are 1.0 and 0.52. Fertilizer expense allocated to corn equals:

$$\begin{array}{r} (100 \text{ corn acres} \times 1 \text{ weighting factor}) \\ \$1,000 \times \frac{\text{-----}}{[(100 \text{ corn acres} \times 1.0) + (100 \text{ bean acres} \times 0.52)]} = \$657.89 \end{array}$$

This method allocates costs so that the amount allocated to each crop reflects the relative costs contained in Illinois budgets.

Operator Acre This method allocates costs to enterprises by the number of operator acres. If corn has 50% of the operator acres, the corn enterprise gets 50% of the costs.

Tillable Acre This method allocates costs to enterprises by the number of tillable acres. If corn has 50% of the tillable acres, the corn enterprise gets 50% of the costs.

Revenue This method allocates costs to enterprises by the amount of crop and custom farming/work revenue. If corn has 50% of the revenue, the corn enterprise gets 50% of the costs.

User Defined This method allocates costs to enterprises based on percents entered into the “user_perc” sheet.

APPENDIX 5. CUSTOM-FARMING/CUSTOM-WORK ENTERPRISES

E-allocate has two enterprises related to performing machinery operations for pay: custom farming and custom work. Custom farming should be used for acres in which all tillage, planting, and harvesting operations are performed. Custom work should be used when selected operations are performed for pay. For example, custom combining of soybeans should appear as custom work.

One enterprise report is produced for all custom enterprises, which combines revenues and costs from the custom-farming and custom-work enterprises. The difference between the custom-farming and custom-work enterprises is only important when costs are indirectly allocated to enterprises. When indirect allocation methods are used, expenses are automatically allocated to the custom-farming and custom-work enterprises for machine hire/lease, machinery repairs, fuel and oil, light vehicle, hired labor, and machinery depreciation. Indirect allocation methods differ slightly between the custom-farming and custom-work enterprises. These differences are illustrated below.

Custom Farming Input

When a custom-farming enterprise is selected, the input box shown below appears in the “Revenue Input” section (“entry_rev” sheet).

Custom farming (tillage, planting, harvesting)	
Revenue	\$6,700.00 total
Acres custom farmed	100 acres

Two inputs are required. “Revenue”, which equals the revenue from custom-farming operations, is \$6,700 and “Acres custom farmed”, is 100 in the above example.

Costs under indirect allocation methods are allocated using the “Acres custom farmed” input. When “Tillable Acre” is selected as the indirect allocation method, the acres-custom-farmed input is treated as a tillable acre. Take, for example, a farm that has \$20,000 of machinery depreciation to be indirectly allocated to crop and custom enterprises. This farm has 900 tillable acres of commercial production and 100 acres of custom farming. Ten percent of the machinery expenses – or \$2,000 – is allocated to the custom-farming enterprise. A 10% allocation is used because the number of acres custom farmed is 10% of the total tillable and custom-farmed acres.

When “Operator Acre” is selected as the indirect allocation method, the “Acres custom farmed” input is treated as an operator acre. Since operator acres are never greater than tillable acres, the “Operator Acre” indirect allocation method allocates more of the expenses to custom-farming activities. It is suggested that this method not be used because machinery-related costs flow more closely with tillable acres than with operator acres.

When “Budget” is selected as the indirect allocation method, the “Acres custom farmed” input is treated as one-half a corn acre and one-half a soybean acre. This allocation method is appropriate when custom farming is roughly divided equally between corn and soybeans.

Custom Work Input

When a custom-work enterprise is selected, the input box shown below appears in the “Revenue Input” worksheet (“entry_rev” sheet).

Custom work (select operations)	
Revenue	\$5,880.00 total
<u>Field operations</u>	<u>Acres</u>
Corn combine	150
N application	140
<hr/>	
"Weighted" acres	96

Three types of input are required. The first is revenue, which equals \$5,880 for the year in the above example. The second is field operations. Choose from the drop-down list of field operations (see the following table for the list of field operations). Acres are listed next to each field operation. In the example shown above, 150 acres of custom corn combining and 140 acres of custom nitrogen application are performed.

The third input involves “weighted” acres. The number of acres for each field operation is used to calculate the “weighted” acres that appear at the bottom of each input box. In the example shown above, the weighted acres are 96. Weighted acres are used to allocate costs using indirect allocation methods. The manner of allocation is the same as for custom-farmed acres in the custom-farming enterprise.

Custom Field Operations

Field Operation	Acre Weights
Moldboard plow	0.37
Chisel plow	0.19
Field cultivator	0.09
Tandem disk	0.12
Combination tool	0.17
Conventional planter	0.14
No-till planter	0.16
Drill	0.18
No-till drill	0.17
Rotary hoe	0.08
Row crop cultivator	0.15
Field spray	0.04
N application	0.14
Corn combine	0.51
Soybean combine	0.43
Mow/condition	0.23
Rake	0.06
Small square bale	0.29
Round bale	0.29
Forage harvester	0.84

Weighted acres are based on the acres of each field operation multiplied by “acres weights.” Acre weights for each field operation are listed in the table shown above. Corn combining has an acre weight of 0.51. This means that 150 acres of custom corn combining equals 76.5 weighted acres ($76.5 = 150 \text{ acres} \times .51 \text{ acre weight}$). Nitrogen application has an acre weight of 0.14. Custom nitrogen application on 140 acres results in 19.6 weighted acres. Given these two field operations, total weighted acres equal 96.1 acres.

Acre weights represent an estimate of each field operation’s contribution to the total machinery costs for an acre given a “typical” Illinois grain operation. The “Corn Combining” weight of 0.51 means that corn combining contributes 51% of the per-acre machinery-related costs associated with the typical crop operation. The typical operation is based on a 50% corn-50% soybeans operation. Corn-related field operations include chisel plowing, two types of field cultivation, nitrogen application, field spraying, planting and harvesting. Soybean-related field operations include two types of field cultivation, field spraying, planting and harvesting. Costs for each of these operations are taken from the University of Illinois estimates of each field operation cost. See the management section of the *farmdoc* website (www.farmdoc.uiuc.edu).

APPENDIX 6. COST INPUT - EMA ENTRY

When the “EMA report” selection is made in the “Cost Input” section the entry_ema worksheet is displayed. It is the second option for entering the total year’s cost data into E-allocate. This entry method is specifically designed for use by FBFM cooperators and field staff. The input worksheet, “entry_ema”, mirrors the report cooperators receive as part of the FBFM preliminary EMA (Economic Management Analysis) Report analysis set of reports. To use this method, the FBFM record book will need to have been checked-in, totaled and processed so the EMA report can be run. With the EMA report completed, cost data can simply be entered into “entry_ema” directly from the EMA report. All accrual adjustments are already included. Additional cost input will be required at the bottom of “entry_ema” worksheet similar to the “Record Book Entry” worksheet had it been selected as the data entry option on the “Control Input” section. **Since the EMA report contains certain “imputed charges” for labor and interest on capital, the crop report will contain an additional section with break-even prices based on total economic costs.**

EMA ENTRY

Item	Operator's Total	Non Revenue Acre Cost
Soil fertility	22,680	0
Pesticides	32,680	0
Seed	<u>21,320</u>	0
Crop Total	76,680	
Utilities	4,100	
Machinery repair	21,420	
Machine hire and lease	6,300	
Fuel & oil	8,560	
Light vehicle	4,040	
Machinery depreciation	<u>22,680</u>	
Power and Equipment Total	67,100	
Drying	6,560	0
Storage	16,260	
Building repair and rent	1,640	0
Building depreciation	<u>1,640</u>	
Building Total	26,100	
Labor unpaid	35,640	
Labor paid	<u>4,600</u>	
Labor Total	40,240	
Vet, medicine and livestock supplies		
Insurance	8,200	
Miscellaneous	4,920	0
Interest charge nonland	<u>30,340</u>	
Other Costs, Total	43,460	
Interest charge	0	
Taxes	0	
Cash rent	<u>67,500</u>	
Land Total	67,500	
TOTAL NON-FEED COSTS	<u>321,080</u>	
Other Items		
Accrued Interest expense	11,000	
Family living & tax	40,000	
Intermediate principal pmts.	0	
Long-term principal pmts.	10,000	
Unfinanced capital purchase	0	

APPENDIX 7. LIVESTOCK ENTERPRISES

Up to three livestock enterprises can be included in an analysis. The number of livestock enterprises is indicated on the “Control Input” section in the “Enterprise Numbers” input box, as shown below.

ENTERPRISE NUMBERS

Crop enterprises	2
Livestock enterprises	3
Do you want a custom farming enterprise?	

For each livestock enterprise, an input box appears in the “Revenue Input” section (“entry_rev” tab). Required input includes:

Livestock Enterprise -- 1

Name	Hogs	Cost Column -- 2	
Type	Hogs -- Farrow to finish	Units	Per Cwt
Total returns	\$105,707.00	CWTs produced	2302.2
Value of:			
grain	\$23,799.00	Cost Column -- 3	
supplement	\$32,010.00	Units	Per Litter
		Litters Farrows	103

Name Appears on the livestock enterprise report. It also will appear in the allocation section on the top of columns associated with this livestock enterprise. This name should be kept fairly short to prevent word-wrapping on the “Allocation” worksheet. “Hogs” is the name in the example shown above.

Type A longer description of the enterprise. A drop-down box offers potential types. “Hogs – Farrow to finish” is the type in the example shown above.

Total Returns Provides the enterprise’s total return, including cash receipts and inventory gains, for the year. Total returns are \$105,707 in the example shown above.

Value of Includes an entry for “grain” and “supplement”. These represent the livestock’s feed input for the year. The value of grain is \$23,799 and supplement is \$32,010 in the example shown above.

Cost Column Besides total revenue and costs, two cost columns are allowed on the enterprise report. For each cost column, the unit and production must be provided. In the example shown above, the first column will have cwt. units.

A total of 2,302.20 cwt. are produced for the enterprise. Units allowed by E-allocate are per cwt., per pig, per litter, per cow, and per 180 lbs.

Allocations to Livestock Enterprises

Costs can be allocated to livestock enterprises in two ways. The first method is direct allocation in which dollar amounts are directly allocated to livestock enterprises. In the following example, \$3,100 of interest is allocated to the “Hogs” enterprise, \$2,000 to the “Beef” enterprise and \$5,845 to the “Dairy” enterprise.

ENTERPRISE ALLOCATIONS Menu	Direct Allocation				Expense Yet to be Allocated	Defaults Percent to:			Total Percent to Livestock
	Hogs	Beef cow	Dairy	Expense Not to be Allocated		Hogs	Beef cow	Dairy	
Interest	3100	2000	5845		0				0
Hired labor	4100	1500	16000	0	6,214	15	20	40	75
Pesticides	xxx	xxx	xxx	1228	0	xxx	xxx	xxx	
Fertilizer	xxx	xxx	xxx	500	0	xxx	xxx	xxx	
Seed	xxx	xxx	xxx	1792	0	xxx	xxx	xxx	

Alternatively, expenses can be allocated on a percentage basis. In the example shown above, \$6,214 of hired-labor expense remains to be allocated after making direct allocations. Fifteen percent of the \$6,214 is allocated to the “Hogs” enterprise, 20% to the “Beef” enterprise and 40% to the “Dairy” enterprise. Different percentages can be allocated to each cost category.

Clicking Defaults at the top of the “Percent to” columns allows automatic entries to be placed in those columns. The two default options are:

Percent Based on Revenue Bases percent on the revenue the enterprise generates.

Percent Based on Direct Costs Bases percent on total expenses in the direct-allocation columns.

Livestock Enterprise Reports

An example of a LIVESTOCK ENTERPRISE REPORT is shown on the following page. This enterprise report is for hogs and has columns for total, per cwt., and per litter. The first line of the report gives total returns. From returns, value of feed is subtracted to arrive at return above feed costs. The report proceeds to list operating expenses. Operating expenses are subtracted from return above feed costs to give return above operating expenses. Next, depreciation amounts are listed. Depreciation is subtracted from returns above operating costs to give total-year operating income.

The bottom section gives a cash-flow performance (plus depreciation) perspective of the enterprise. Feed costs, operating expenses and depreciation, total family living and income tax, and principal payments are added together to arrive at total returns needed to cover cash requirements. The surplus or deficit equals total returns less total returns needed.

LIVESTOCK ENTERPRISE ANALYSIS

John and Sally Smith

For year ending 2003

Date run: 23-Jul-03

ID: 111-111-111

Hogs

	Total	Per Cwt	Per Litter
Total Returns	\$105,707	\$45.92	\$1,026.28
Value of Grain & Roughage Fed	23,799	\$10.34	\$231.06
Value of Supplement Fed	32,010	\$13.90	\$310.78
Return Above Feed Costs	\$49,898	\$21.67	\$484.45
Operating Expenses			
Livestock Supplies & Services	\$2,915	\$1.27	\$28.30
Vet & Medicine	800	0.35	7.77
Machine Hire	1,500	0.65	14.56
Utilities	2,370	1.03	23.01
Machine Repair	1,600	0.69	15.53
Fuel & Oil	1,500	0.65	14.56
Light Vehicle	670	0.29	6.50
Hired Labor	4,100	1.78	39.81
Building Repair and Rent	2,100	0.91	20.39
Insurance	600	0.26	5.83
Miscellaneous	200	0.09	1.94
Taxes	750	0.33	7.28
Cash Rent	0	0.00	0.00
Interest	3,100	1.35	30.10
Total Operating Expense	\$22,205	\$9.65	\$215.58
Returns Above Operating Expense	\$27,693	\$12.03	\$268.86
Depreciation - Machinery	3,100	1.35	30.10
Depreciation - Buildings	2,100	0.91	20.39
Total Year Operating Income	\$22,493	\$9.77	\$218.38
Feed Costs	\$55,809	\$24.24	\$541.83
Operating Expense & Depreciation	27,405	11.90	266.07
Total Family Living & Income Tax	0	0.00	0.00
Principal Payments	4,000	1.74	38.83
Total Returns Needed	\$87,214	\$37.88	\$846.74
Surplus or Deficit	\$18,493	\$8.03	\$179.54

APPENDIX 8. OPTIONAL ENTERPRISES

One optional enterprise can be entered that covers items not related to crop production, livestock production, and custom farming/custom work. Examples of potential optional enterprises include seed dealerships, trucking, and custom-feeding livestock enterprises. An optional enterprise must be indicated in the “Control Input” section by clicking “Yes” in the “Do you want an optional enterprise?” box.

ENTERPRISE NUMBERS

Crop enterprises	2
Livestock enterprises	0
Do you want a custom farming enterprise? (e.g., all operations)	
<input checked="" type="radio"/> Yes	
<input type="radio"/> No	
Do you want a custom work enterprise? (e.g., selected operations)	
<input type="radio"/> Yes	
<input checked="" type="radio"/> No	
Do you want an optional enterprise (e.g., trucking, custom feeding)?	
<input checked="" type="radio"/> Yes	
<input type="radio"/> No	

A revenue section will then include an input box asking about input from the optional enterprise.

Optional enterprise

Name	Custom Finishing Hogs
Revenue	\$32,500
No of units	2500
Unit name	Hog

Four inputs are required for optional enterprises:

Name Describes the enterprise. The name will appear on the optional enterprise report. The above example has a custom-finishing hog enterprise.

Revenue Indicates the revenue received from the optional enterprise for the year. In the above example, revenue is \$32,500.

No. of Units Indicates units of production from the enterprise. The above example has 2,500 hogs custom-fed per year. The optional enterprise report has a column that divides total yearly revenue and costs by units of production.

Units Gives the name of the unit. “Hogs” are the unit used in the above example.

In the allocation section, direct-dollar allocations of costs can be made to the optional enterprise. The optional enterprise will have a column headed by the name of the enterprise in the allocation section.

ENTERPRISE ALLOCATIONS		Expense		
	Menu	Custom Farming	Custom Finishing	Not to be Allocated
Interest			4,000	
Hired labor				
Pesticides		xxx		

In the above example, \$4,000 is allocated to the example optional enterprise named “Custom Finishing.”

An optional enterprise report is prepared and found by either clicking on the **Optional Enterprise Report** on the Main Menu or clicking on the sheet tab labeled “report optional.” The following page shows an example report for an optional enterprise.

OPTIONAL ENTERPRISE ANALYSIS

John and Sally Smith
 For year ending 2003
 Date run: July 23, 2003
 I.D.: 111-111-111

Custom Finishing Hogs	Total	Per Hog
Revenue	\$32,500	\$13.00
Expenses		
Interest	4,000	1.60
Depreciation -- Building	0	0.00
Total Expense	\$4,000	\$1.60
Operating Income	\$28,500	\$11.40
Family Living & Tax	0	0.00
Principal Paymts.	0	0.00
Surplus/Deficit	\$28,500	\$11.40

Index

Navigating in E-allocate	2
John and Sally Smith Example	6
Control Input	6
Revenue Input.....	11
Cost Input – Record Book Entry	13
Allocation of Costs to Enterprises	16
Reports	18
Appendix 1. Accounting Principles Used	25
Appendix 2. Operator Acres.....	27
Appendix 3. Cost of Landlord Acres	29
Appendix 4. Indirect Allocation Methods.....	32
Appendix 5. Custom Farming/Custom Work Enterprises	35
Appendix 6. Cost Input – EMA Entry	38
Appendix 7. Livestock Enterprises.....	40
Appendix 8. Optional Enterprises	44