

# Manual for the use of BFMe(Builder of Farming Model)

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## Chapter 1. Main procedures of operation

The BFMe is a program for clarifying the best combination of crops and their cultivated areas that maximize the total agricultural income, based on the data on available labor, farmland, cropping technologies, and sale prices of crops under cultivation. This chapter describes the operation procedures of BFM installation, data inputs regarding farming conditions and indexes, and the creation of farming plan, etc.

### 1) Installation

You can download the program of BFMe on the following webpage.

[http://39you.net/xlp/bfm\\_e.html](http://39you.net/xlp/bfm_e.html)

Please save the downloaded file "bfm\_e\_100.exe" in a folder, for example, on desktop. You may find a set of the files regarding BFM in this folder. Please double-click this file. The folder "BFMe\_100" is then created, and all the files regarding BFMe is restored in the folder.

### 2) Start-up

Please move to the folder BFMe\_200 on desktop. If you double-click the file BFMe.xla <sup>1)</sup>, Excel starts up and then BFMe starts up with the menu appeared (Figure 1). The next procedures are the registration of farming indexes regarding crops to be used for creating a farming plan, data input regarding farming conditions, and the creation of a farming plan. These can be operated by choosing the corresponding option in the start-up menu or in the menu shown in Figure 2.

Note 1) The extension ".xla" may not appear with some settings of the computer.

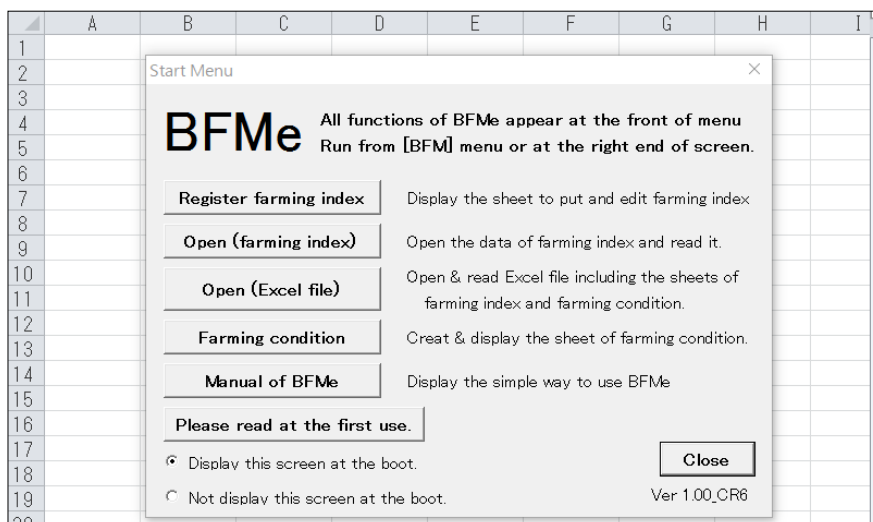


Figure 1 Start-up menu

### 3) Position of BFM menu.

Figure 2 shows three BFM menus that cover almost the same submenus.

- ① On the left side of the tab "Add-in", you can find "Menu command", where BFM menu is set.
- ② On the right of BFM menu, you can find [toolbar of user settings], where the BFM submenus are set covering [iData], [fCondition], [Create a farming plan], [Help].
- ③ In the middle of the screen, BFM menu is on the top of [Right-click menu] (Context menu) which appears after right-clicking a cell.

By clicking the BFM menu in ① or ③, BFM submenus in ② will appear.

You can select the menus of operation in the [BFM] submenus (Figure 2).

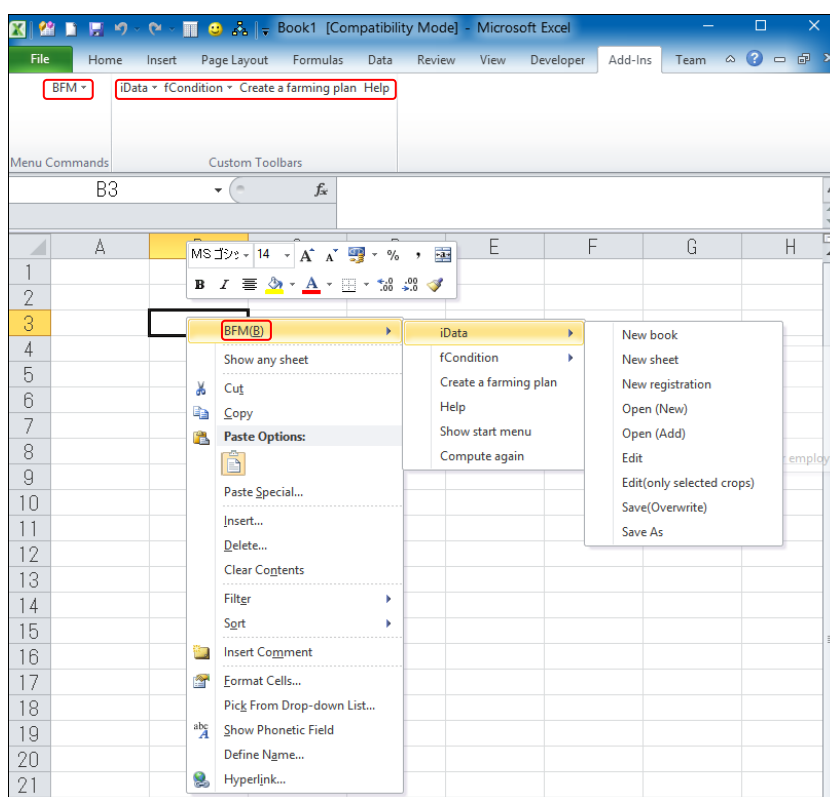


Figure 2 Position of BFM menu

### 4) Registration and edit of farming indexes

The first step is to input farming indexes of crops to be used for creating a farming plan. This step requires the data including yield per ha, unit price of sale, farming costs, and labor hours per period.

The iEdit sheet for editing the farming indexes (Figure 3) appears by clicking [Farming index]-[New] in the BFM submenu. You should input all the data of a crop in this sheet. The menu of farming indexes is shown in the [Add-in] tab of the ribbon on the screen, indicating [Add], [Previous], [Next], [Copy], [Delete], [Close], etc. By using these options, you can create/ modify/ add farming indexes.

Please click [Close] after putting data regarding all the crops. Then, you can find the iData sheet (Figure 4), in which the data of a crop are shown in a row.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	[E]												
2		<b>Summary of farming indexes</b>											
3		No.	1										
4		Area											
5		Crop											
6		Cropping system, Variety, etc.											
7													
8													
9													
10		<b>Gross income/ha (\$, kg)</b>				<b>Working hour/ha</b>				<b>Land use</b>			
11		Yield			Jan.Bgn			July.Bgn			Land category		
12		Unit price			Mid			Mid			Rice as staple food		
13		Other incomes			End			End			Cultivation/Begin		
14		Total	0		Feb.Bgn			Aug.Bgn			Cultivation/End		
15		<b>Variable cost/ha (\$)</b>											
16		Cost of seeds			Mid			Mid			Lowest limit of cu		
17		Cost of fertilizer			End			End			Upper limit of cult		
18		Cost of agrichemicals			Mar.Bgn			Sept.Bgn					
19		Cost of energy and power			Mid			Mid					
20		Cost of other materials			End			End					
21		Land improvement and water use			Apr.Bgn			Oct.Bgn					
22		Rental cost			Mid			Mid					
23		Transportation charge			End			End					
24		Other costs			May.Bgn			Nov.Bgn					
25		Total	0		Mid			Mid					
26					End			End					
27		Proportional profit (Profit coefficient)	0		June.Bgn			Dec.Bgn					
28					Mid			Mid					
29					End			End					

Figure 3 iEdit sheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	Y
1	[M]																			
2		No.	Area	Crop	Cropping system			Yield	Unit price	Gross income	Cost of seeds	Cost of fertilizer	Cost of herbicide and pesticide, etc.	Cost of utility and power	Cost of other materials	Cost of land improvement and water fee	Rental cost	Transportation charge	Other costs	Variable cost
3	<input type="checkbox"/>	1	Japan	Rice	paddy field acreage size is small(about2~3ha)			496	270	133920	2720	3000	4933			30000	4024	2750	1700	49127
4	<input type="checkbox"/>	2	Japan	Wheat	paddy field, drill sowing acreage size(about0.5~1.0ha)			450	162	72900	2028	8206	1669				2381		11160	25444
5	<input type="checkbox"/>	3	Japan	Soybean	paddy field foe rice conversion			240	237	56880	948	5610	4204	800	833		4070		2149	18614
6	<input type="checkbox"/>	4	Japan	Melon	paddy field for rice conversion forcing culture			2902	433	1256566	40360	52320	21578		119300		23700	1364	229420	488042
7	<input type="checkbox"/>	5	Japan	Soybean	field			240	237	56880	948	5610	4204	800	833		4070		2149	18614
8	<input type="checkbox"/>	6	Japan	Melon	field forcing culture			2902	433	1256566	40360	52320	21578		119300		23700	1364	229420	488042
9																				
10																				

Figure 4 iData sheet

If you want to see how BFMe makes a farming plan, you can also use the data provided by BFM from the submenu [Farming index]-[Open].

### 5) Input of farming conditions

Next, you should input data regarding farming conditions. Please click the forth button in the start-up menu. The fCondition sheet will then appear (Figure 5). Please input available farmland area, family labor, rented land use, hired labor use, land rent, labor hour per day, and wage for hired labor, etc.

After inputting all these data, you can proceed to the creation of a farming plan.

	A	B	D	E	F	H	I	J	L	M	N	P
1	[FC	Farming condition										
2												
3			Number of person	Working hour	Annual wage		Number of workable days and hiring days					
4		Full-time labor	2.0 people	8 hour/day	-		[Full-time]: Per capita workable days of full-timer					
5		1) Family labor	2.0 people	-	-		[Part-time]: Hireable days of part-timer					
6		2) Hired labor	0.0 people	-	30,000 \$			Full-time	Part-time	Full-time	Part-time	
7						Jan.Bgn	10.0 days	15.0 days	July.Bgn	10.0 days	15.0 days	
8			Daily wage	Working hour	-	.Mid	10.0 days	15.0 days	.Mid	10.0 days	15.0 days	
9		Part-time labor	60.0 \$	8 hour/day	-	.End	10.0 days	15.0 days	.End	10.0 days	15.0 days	
10						Feb.Bgn	10.0 days	15.0 days	Aug.Bgn	10.0 days	15.0 days	
11		Farmland category	Owned land	Rentable land	Rent per ha	.Mid	10.0 days	15.0 days	.Mid	10.0 days	15.0 days	
12		1) Paddy	2.0 ha	0.0 ha	20.0 \$	.End	10.0 days	15.0 days	.End	10.0 days	15.0 days	
13		2) Field	2.0 ha	0.0 ha	20.0 \$	Mar.Bgn	10.0 days	15.0 days	Sept.Bgn	10.0 days	15.0 days	
14		3) Pasture	0.0 ha	0.0 ha	20.0 \$	.Mid	10.0 days	15.0 days	.Mid	10.0 days	15.0 days	
15		4) Orchard	0.0 ha	0.0 ha	20.0 \$	.End	10.0 days	15.0 days	.End	10.0 days	15.0 days	
16		5) Greenhouse	0.0 ha	0.0 ha	30.0 \$	Apr.Bgn	10.0 days	15.0 days	Oct.Bgn	10.0 days	15.0 days	
17		6) Other	0.0 ha	0.0 ha	20.0 \$	.Mid	10.0 days	15.0 days	.Mid	10.0 days	15.0 days	
18						.End	10.0 days	15.0 days	.End	10.0 days	15.0 days	
19		Use of Part-time la	No			May.Bgn	10.0 days	15.0 days	Nov.Bgn	10.0 days	15.0 days	
20		Use of rented land	No			.Mid	10.0 days	15.0 days	.Mid	10.0 days	15.0 days	
21						.End	10.0 days	15.0 days	.End	10.0 days	15.0 days	
22		Adjustment of rice	No			June.Bgn	10.0 days	15.0 days	Dec.Bgn	10.0 days	15.0 days	
23		Rate of crop chang	0.0 %			.Mid	10.0 days	15.0 days	.Mid	10.0 days	15.0 days	
24						.End	10.0 days	15.0 days	.End	10.0 days	15.0 days	
25		Fixed cost	0 \$									
26		1) Machinery										
27		2) Building										
28		3) Others										

Figure 5 fCondition Sheet

## 6) Creation of a farming plan

It is now ready to create a farming plan. In the iData sheet, you can choose the crops to be used for creating a farming plan, by clicking the check-boxes on the left side (A column) of the columns with indexes. For example, if you click all the check-boxes of 6 crops and click the menu [Create a farming plan], the fPlan sheet is created, and you can find such a table and figures as shown in Figure 6 and Figure 7.

	A	B	C	D	E	F	G	H	I	J	K	L
1	This is a copy	[Memo space] This table is an optimal plan which is calculated using the data of sheet "fCondition" and sheet "iData". You can get the new plan by modifying the numerical values (crop acreage, income, cost etc.) in the cream-colored cells.										
2	Copy											
3												
4												
5												
6			whole management	Rice paddy field acreage size is small (about 2~3ha)	Wheat paddy field, drill sowing acreage size (about 0.5~1.0ha)	Soybean paddy field foe rice conversion	Melon paddy field for rice conversion forcing culture	Soybean field	Melon field forcing culture		Rented land acreage Part time days	Land rent Part time Unit price
7		Crop acreage (unit: ha)	5.0 ha									
8		Paddy ( // )	4.0 ha	2.0	2.0	0.0	0.0	-	-		0 ha	20.0 \$
9		Field ( // )	1.0 ha	-	-	-	-	0.3	0.7		0 ha	20.0 \$
15		Yield (kg/ha)		496	450	240	2,902	240	2,902			
16		Unit cost (\$/kg)		270	162	237	433	237	433			
17		Other incomes (\$/ha)										
18		Gross income total ( // )		133,920	72,900	56,880	1,256,566	56,880	1,256,566			
19		Cost of seeds ( // )		2,720	2,028	948	40,360	948	40,360			
20		Cost of fertilizer ( // )		3,000	8,206	5,610	52,320	5,610	52,320			
21		Agro-chemicals and sanitation ( // )		4,933	1,669	4,204	21,578	4,204	21,578			
22		Cost of energy and power ( // )				800	800	800				
23		Cost of other materials ( // )				833	119,300	833	119,300			
24		Land improvement and water use ( // )		30,000								
25		Rental cost ( // )		4,024	2,381	4,070	23,700	4,070	23,700			
26		Transportation charge ( // )		2,750			1,364		1,364			
27		Other costs ( // )		1,700	11,160	2,149	229,420	2,149	229,420			
28		Total variable costs ( // )		49,127	25,444	18,614	488,042	18,614	488,042			
29		Profit coefficient ( // )		84,793	47,456	38,266	768,524	38,266	768,524			
30		Proportional profit (\$)		803,721 \$	169,586	94,912	0	12,016	527,207			
31		Fixed costs (depreciation etc.) ( // )		414,000 \$								
32		Land rent ( // )		0 \$								
33		Full-time hired labor costs ( // )		0 \$								
34		Part-time hired labor costs ( // )		1 \$							0.0 day	60.0 \$
35		Agricultural income ( // )		389,720 \$								

Figure 6 fPlan sheet (Top on the screen)

The farming plan in Figure 6 indicates that 4 ha of paddy field should be used for 2ha of rice and 2 ha of wheat, and 1ha of field should be used for 0.3 ha of soybean and 0.7ha of melon to attain the maximal agricultural income of 389,720 dollars. You can put any comments regarding the farming plan on the first 4 lines between B to G columns.

In Figure 7, the cultivated area and proportional profit per crop are shown in the figure above. In the other figure, the upper limits of full-time (family) labor hours are shown by a line graph while the bar one indicates required labor hours per crop per period.

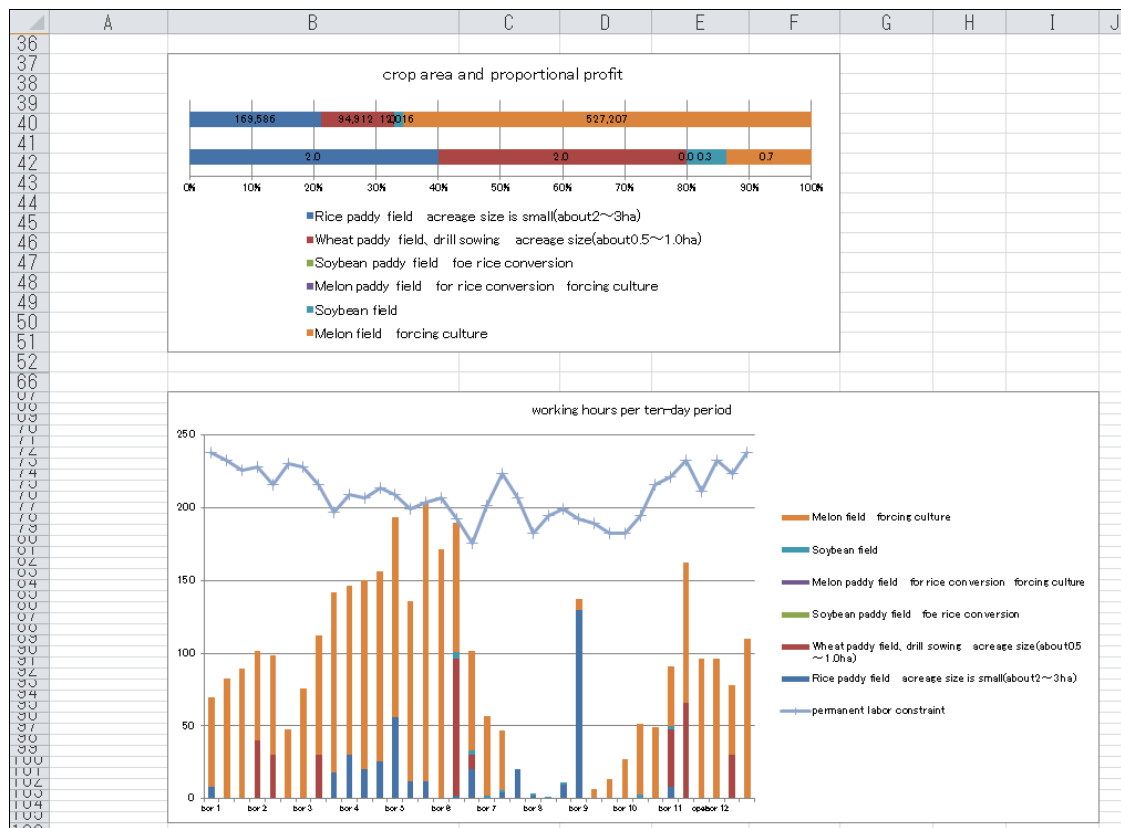


Figure 7 fPlan sheet (in the middle of screen)

### 7) Creation of a farming plan under different farming conditions

Three persons are used as family labor in the farming plan of Figure 6, but the farmland is not fully used due to lack of family labor. You may then examine to what extent the agricultural income would increase by adding human resources. In the bar graph of Figure 7, there are 2 periods when labor is fully used. Part-time labor may then be used to overcome labor shortage. In the fCondition sheet (Figure 5), you may set 「Use of Part-time labor」 as 「Yes」, and set 「Part-time」 (Hirable days of part-timer) as 「20」, and set 20 as the maximal number of part-timers × days per 10 days-period, for example. Then, you can get the farming plan of Figure 8 by clicking the menu [Create a farming plan]. In this plan, part-time labor is

added to increase the total area of farmland uses, including the cultivation of melon which is labor-intensive. The total agricultural income then increases by approximately 404,200 dollars (from 389,720 dollars to 793,920 dollars).

You can also examine the farming plan with borrowing farmlands. Likewise the case of part-time labor, in the fCondition sheet, please set 「Use of rented land」 as 「Yes」, and set 「Rentable land」 of 「Paddy」 as 「2」, and 「Rentable land」 of 「Field」 as 「1」 such that 2ha of paddy field and 1ha of field can be rented. You can then make a farming plan by clicking [Create a farming plan] (Figure 9). Because this plan enables to use the larger area of farmland (rented land) compared to the plan with use of part-time labor (Figure 8), it allows the expansion of the area for all crops. The total income is 1,060,694 dollars, increased by 266,774 dollars as compared to the farming plan with use of hired labor. It follows that the introduction of hired labor gives greater impact than that of rented land on farm outputs.

Since the fPlan sheet is overwritten by clicking the menu [Create a farming plan], you may double-click the button 「Copy」 on the cell [A2] to make a sheet and to copy the created farming plan in the new sheet.

	A	B	C	D	E	F	G	H	I	J	K	L
1	This is a copy	Use of employee										
2	Copy											
3												
4												
5												
6			whole management	Rice paddy field acreage size is small(about 2~3ha)	Wheat paddy field, drill sowing acreage size(about0.5~1.0ha)	Soybean paddy field foe rice conversion	Melon paddy field for rice conversion forcing culture	Soybean field	Melon field forcing culture		Rented land acreage Part time days	Land rent Part time Unit price
7		Crop acreage (unit:ha)	5.0 ha									
8		Paddy ( / )	4.0 ha	1.7	2.0	0.0	0.3	-	-		0 ha	20 \$
9		Field ( / )	1.0 ha	-	-	-	-	0.0	1.0		0 ha	20 \$
15		Yield (kg/ha)		496	450	240	2,902	240	2,902			
16		Unit cost (\$/kg)		270	162	237	433	237	433			
17		Other incomes (\$/ha)										
18		Gross income total ( / )		133,920	72,900	56,880	1,256,566	56,880	1,256,566			
19		Cost of seeds ( / )		2,720	2,028	948	40,360	948	40,360			
20		Cost of fertilizer ( / )		3,000	8,206	5,610	52,320	5,610	52,320			
21		Agro-chemicals and sanitation ( / )		4,933	1,669	4,204	21,578	4,204	21,578			
22		Cost of energy and power ( / )				800	800	800				
23		Cost of other materials ( / )				833	119,300	833	119,300			
24		Land improvement and water use ( / )		30,000								
25		Rental cost ( / )		4,024	2,381	4,070	23,700	4,070	23,700			
26		Transportation charge ( / )		2,750			1,364		1,364			
27		Other costs ( / )		1,700	11,160	2,149	229,420	2,149	229,420			
28		Total variable costs ( / )		49,127	25,444	18,614	488,042	18,614	488,042			
29		Profit coefficient ( / )		84,793	47,456	38,266	768,524	38,266	768,524			
30		Proportional profit (\$)	1,212,843 \$	147,285	84,912	0	202,122	0	768,524			
31		Fixed costs(depreciation etc.) ( / )	414,000 \$									
32		Land rent ( / )	0 \$									
33		Full-time hired labor costs ( / )	0 \$									
34		Part-time hired labor costs ( / )	4,923 \$							82.0 day	60 \$	
35		Agricultural income ( / )	793,920 \$									

Figure 8. fPlan sheet (with use of hired labor)

	A	B	C	D	E	F	G	H	I	J	K	L
1	This is a copy	Use of employee and rented land										
2	Copy											
3												
4												
5												
6			whole management	Rice paddy field acreage size is small (about 2~3ha)	Wheat paddy field, drill sowing acreage size (about 0.5~1.0ha)	Soybean paddy field for rice conversion	Melon paddy field for rice conversion forcing culture	Soybean field	Melon field forcing culture		Rented land acreage Part time days	Land rent Part time Unit price
7		Crop acreage (unit: ha)	9.8 ha									
8		Paddy (＃)	7.8 ha	4.0	3.8	0.0	0.0	-	-		2 ha	20 \$
9		Field (＃)	2.0 ha	-	-	-	-	0.8	1.2		1 ha	20 \$
15		Yield (kg/ha)		496	450	240	2,902	240	2,902			
16		Unit cost (\$/kg)		270	162	237	433	237	433			
17		Other incomes (\$/ha)										
18		Gross income total (＃)		133,920	72,900	56,880	1,256,566	56,880	1,256,566			
19		Cost of seeds (＃)		2,720	2,028	948	40,360	948	40,360			
20		Cost of fertilizer (＃)		3,000	8,206	5,610	52,320	5,610	52,320			
21		Agro-chemicals and sanitation (＃)		4,933	1,669	4,204	21,578	4,204	21,578			
22		Cost of energy and power (＃)				800		800				
23		Cost of other materials (＃)				833	119,300	833	119,300			
24		Land improvement and water use (＃)		30,000								
25		Rental cost (＃)		4,024	2,381	4,070	23,700	4,070	23,700			
26		Transportation charge (＃)		2,750			1,364		1,364			
27		Other costs (＃)		1,700	11,160	2,149	229,420	2,149	229,420			
28		Total variable costs (＃)		49,127	25,444	18,614	488,042	18,614	488,042			
29		Profit coefficient (＃)		84,793	47,456	38,266	768,524	38,266	768,524			
30		Proportional profit (\$)	1,482,333 \$	339,172	180,096	0	0	30,077	932,988			
31		Fixed costs (depreciation etc.) (＃)		414,000								
32		Land rent (＃)		60								
33		Full-time hired labor costs (＃)		0								
34		Part-time hired labor costs (＃)		7,579							126.3 day	60 \$
35		Agricultural income (＃)		1,060,694								

Figure.9 fPlan sheet (with use of hired labor and rented land)

### 8) Simulation of a farming plan

As mentioned-above, you can easily create not only the plan under actual farming conditions but also the one under different conditions regarding farmland- and labor availability. Besides, you can simulate the plan with different farm area, crop yield, its sale price, and so on by changing figures in the yellow cells shown in Figure 6 to 9. In this case as well, you may copy the fPlan sheet before simulation to save the original farming plan.

### 9) Saving the input data and the result of calculation

You can save all the data on farming conditions and farming indexes as well as the created fPlan sheet with the Excel menu[File]-[Save]. You can also save the data on farming conditions and farming indexes respectively. Because the menu [Farming condition] and the menu [Farming index] contain the submenu[Overwrite] and the submenu [Save as], you can renew the data saved before or save the data after modification as a new file.

### 10) Use of the saved data

You can read the Excel file in which all the data on farming conditions, farming indexes and the created farming plan are saved with the Excel menu[File]-[Open]. You can also read the respective data on farming conditions and indexes from the submenu[Open] in the menu[Farming condition] and the menu[Farming index].



## Chapter 2. Details in the menus

Chapter 1 describes the procedures to create a farming plan under actual conditions as well as the one under different conditions on farm area and labor use. With use of BFM, you can also add/modify the farming indexes of a new crop or technology to calculate farm outputs by creating/simulating a farming plan and evaluate its economic viability.

This chapter describes all the menus of BFM, including those described in Chapter 1. The menus are shown in different styles on the screen (Figure 2). Though the style changed since Excel(2007), this manual gives explanation according to the style applied in Excel(2010). The style until Excel(2003) is shown in the Appendix.

### (1) 4 types of menus

- ① Start-up menu : By double-clicking the file “BFMe.xla” in the folder where BFM is installed, Excel starts up followed by BFM, and the start-up menu appears on the middle of screen, where you can find the message and menus for beginners
- ② Ribbon Menu[BFM] : After BFM starts up, the ribbon menu[BFM] is set on [Menu command] on the ribbon[Add-in].
- ③ Ribbon Submenu[BFM] : After BFM starts up, the ribbon submenus [BFM] including [Farming index], [Farming condition] appear on the space[Tool bar of user’s option] on the ribbon[Add-in].
- ④ Right-click menu[BFM] (Context menu) : When more than one workbook is opened after BFM starts up, the short-cut menu appears with a right-click. On the top of the short-cut menu, you can find the [BFM] menu (called Right-click menu [BFM]). Note that if there is no need to specify the above 4 types of menu, the menu[BFM] is referred in this manual.
- ⑤ iEdit menu : When you open iEdit sheet to edit farming indexes, the iEdit menus including [Add], [Previous], [Next], [Copy], [Delete], and [Close] appear on the space [Tool bar of user’s options] .

### (2) Start-up menu

Please refer to Figure 1. There is the explanation next to [Menu button].

You can find the brief procedures of using BFM by clicking [Please read if you are a beginner].

### (3) Ribbon Menu[BFM] and Right-click menu[BFM]

The same menu bar and the shortcut menu appears in all the sheets. The submenus of these 2 menus are common except the eighth submenu[Compute again].

- ① [Farming index] is composed of the following submenus.

- [New book] This creates a new workbook along with a worksheet with farming indexes shown in the second row.
  - [New sheet] This creates a work sheet with farming indexes shown in the second row in the workbook. If there is no workbook, it becomes created.
  - [New registration] This activates the menu[New sheet] followed by the aforementioned menu[Edit]. The iEdit sheet will then open and the screen of index registration appears.
  - [Open] This reads a file of farming indexes created by the aforementioned menu [Save]. Note the following points. If you click [Open] in the iData sheet with the data registered, the indexes of the file to be read with [Open] will be added in that sheet. On the other hand, if you click [Open] outside the iData sheet with the data registered, these data will be deleted and only the indexes of the file to be read with [Open] will be set in that sheet.
  - [Edit] This is used to add/modify/delete the data in the iData sheet. The iEdit sheet appears by clicking [Edit]. It has the same function as the menu[New registration] if no iData sheet has been set.
  - [Edit(only the selected crops)] By clicking this, you can edit only the farming indexes selected for creating a farming plan. You can select the indexes by checking the boxes on the A column in the iData sheet.
  - [Overwrite] This saves the registered farming indexes in a text file with the extension 「bfm」 .
  - [Save as] This saves the registered farming indexes in a text file with the extension 「bfm」 .
- ②[Farming condition] is composed of the following submenus
- [New] This creates a fCondition sheet with the defaults
  - [Open] This activates the menu[New] and reads the file of farming conditions which was saved with the aforementioned menu[Save].
  - [Overwrite] This saves the registered farming conditions in a text file with the extension 「bfc」 .
  - [Save as] This saves the registered farming conditions in a text file with the extension 「bfc」 .
  - [Change the condition of labor employment] This gets BFM translate the figure in the space of 「Part-timer」 in the space of 「Working days・Hiring days」 as 「Upper limit of hiring days」 or 「Absolute hiring days」 .
- ③[Create a farming plan] This calculates an optimal farming plan using linear programming by creating a model of farming plan based on the crops you checked in the iData sheet together with the conditions you set in the fCondition sheet.
- ⑥[Help] This shows the main procedures of BFM use, which are same as the contents red by [Start-up menu]-[Please read if you are the beginners].
- ⑦[Displaying the start-up menu] This does not appear in the ribbon menu [BFM]

but enables to display the [Start-up menu].

⑧ [Compute again] This is for the users who have created a linear programming model. You can create a new farming plan with this menu after applying any additional conditions into the linear programming model established by BFM. For more details, please refer to the Appendix「Method to modify the linear programming model to create a new farming plan」.

#### (4) Details of the ribbon submenu [BFM]

① When iData sheet and fCondition sheet are shown, the same submenu as the above-mentioned ribbon menu [BFM] or right-click menu [BFM] will appear.

② The following menus will appear in iEdit sheet.

[Add] It adds the new index with a new number.

[Previous] It shows the previous index.

[Next] It shows the next index.

[Copy] It copies the index which is displayed and put it after the index.

[Working time forward] It moves forward the data of working time by 10 days.

[Working time backward] It moves backward the data of working time by 10 days.

[Close] It closes the iEdit sheet and moves to the iData sheet.

[Confirm] It confirms the index data.

[Delete] It deletes the index and changes the numbers of the following indexes.

[Reduction] It reduces the sizes of characters and cells

[Expansion] It increases the sizes of characters and cells.

[Help] It shows the description of the above-mentioned side-menus in the iEdit sheet.

[Show/Hide land coefficients] It shows the land coefficient. You can change the default, which is 1. You may use this option when you are entrusted with farm works without use of your own farmland, or when you register the farming index regarding animal husbandry whose land coefficient is not 1.

#### (5) Details of the right-click menus except [BFM]

① [Show any sheet] This appears below the menu [BFM]. It shows the list of sheets including the hidid sheets.

### 3. Notes on use

#### 1) Index of Cultivation period

You should put the time when the plot is used for crop production from plowing to harvesting and processing. Please put the month and period (beginning/ middle/ end) in the space of 「Cultivation/Bgn」 and 「Cultivation/End」 (13-14 rows of L and M lines in the iEdit sheet of Figure 15). If you do not put the month, 「Cultivation/Bgn」 will be treated as January, and 「Cultivation/End」 will be treated as December. If you do not put the period, 「Cultivation/Bgn」 will be treated as Beginning, and 「Cultivation/End」 will be treated as End. If you do not put any of these information, the plot is supposed to be used from the beginning of January to the end of December. This sometimes makes it impossible to compute the farming plan for some reasons such as the difficulty in double cropping.

#### 2) Method to create a farming plan by modifying the model

This method is useful especially among those who have experienced the creation of linear programming models.

By clicking [Show any sheet] below the menu [BFM] in the right-click menu, you will find the list of sheets of the Excel book under operation. If you select the sheet 「Model」 and click 「Move」, the simplex table will appear and you can add any formulas at the end. For example, if you want to fix the area of the second crop into a half of the area of the first crop, please put 「 $X_2 = 0.5X_1$ 」. To create a farming plan by reflecting this formula into the model, please select [Compute again] which is shown in the add-in of ribbon or in the right-click menu [BFM]

#### 3) Method to modify the land coefficient

If you want to include livestock fattening, poultry grazing in the garden, life works, etc. in the model, please modify the land coefficient after clicking the [iEdit] menu [Show/Hide land coefficients]. This is because the land coefficient of those activities may be 0 or less than 0.

#### 4. Appendix

##### 1) Position of menu before Excel 2003.

(1) Menu bar, Side bar, Right-click menu

The BFM menu appears in the following positions after Excel 2007

- ① The menu appears in 「Menu command」 at the left side of the ribbon tab 「Add-in」
- ② At the right side of the above menu, there is a space of 「Toolbar of user settings」 in which you can find the BFM submenus including [Farming index], [Farming conditions], [Create a farming plan], [Help].
- ③ In the middle of screen, you can find the BFM menu at the top of the right-click menu.

On the other hand, the BFM menu appears at the menu bar, right side bar, and right-click menu before Excel 2003 (Figure 10). There is no difference in the operation of the right-click menus, though.

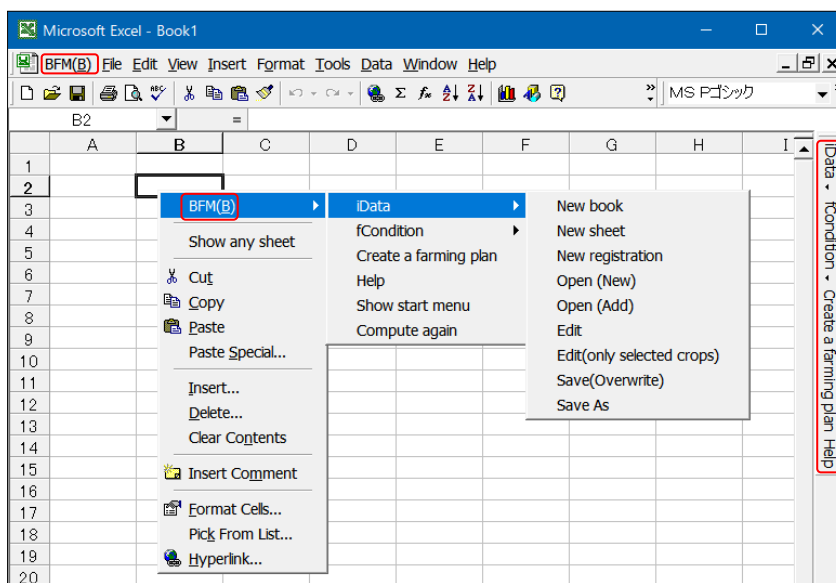


Figure 10 Position of menu (before Excel 2003)