African Farmer

A Farming Simulation

MULTIPLAYER GUIDE
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1. Game Overview

In *African Farmer* players are responsible for managing a household and small farm in an African village. Players must feed their household and manage the plots of land to which they have access.

Between one and three players are assigned to each household which consists of a number of adult, child and infant non-playing characters. At the outset each household will have several fields and some starting cash, the number of fields and amount of cash varying between households.

Players can trade food, crops, inputs, land and other goods and services at the market or with other players. Players must manage labour to ensure that domestic and farming tasks are carried out and must decide whether to send children to school. On the farm players must choose which crops to plant, when to plant them and decide on weeding and the use of fertilizers. They must be prepared for adverse weather and be ready to respond to crop diseases and pests. Household members need balanced diets if they are to remain healthy - individuals given poor diets are more likely to become ill and may die. The game incorporates various elements on which players must take a position, presenting them with a range of goals to be balanced:

- Agricultural - successfully manage and develop the farm.
- Health and education - provide household members with balanced diets and ensure children are educated.
- Social – increase social standing by diligently carrying out duties and helping neighbours.
- Financial – increase the net worth of your household by farming or trading.

The unpredictability of the weather, the capriciousness of crop hazards and other disruptive events conspire to create a complex environment of risk and uncertainty within which players must make both ethical and practical decisions.

2. Game Play

Game flow is built around the farming year which is divided into four seasons – Early Rains, Main Rains, Early Harvest and Late Harvest (Fig 2.1). Clicking on any game stage above will navigate to detailed information on the game stage.

![Game Flow Diagram](image-url)
Each game cycle begins with a Market Trading stage, though the market remains open throughout the game. The Game Manager then moves through the season processes. After the farming work is finished for the year, food is allocated to household members and health hazards may occur, depending on the quality of diet given to household members. All characters age one year and new births may occur, ending the cycle.

2.1 Market Trading
At the market maize (local, high-yield and drought tolerant varieties), beans and mixed horticulture crops can be purchased. Drought tolerant and high yield maize varieties will produce a "local maize" harvest. Manure, NPK fertilizer, herbicide and pesticide can be bought or sold. Spray kits, which are needed to apply sprays, are also available. Land can be bought, sold or rented. School vouchers, which are needed for children attending school, can be purchased.

After Market Trading, the stage is advanced, mandatory tasks are created and a stage notification is sent to all players.

2.2 Season Processes
Players must make farm management decisions, the outcome of which will shape the fortunes of the household for the coming year. Labour must be allocated to cover domestic chores and decisions made on how to allocate labour and resources to the farm. Crops can be planted in Early Rains (early planting) or Main Rains (late planting). This can help spread the risks of adverse weather and crop diseases & pests and enable players to better manage labour resources.

2.2.1 Task Allocation
Task Allocation is a key element in the game. Here players must choose how to allocate the available labour and farming resources for the coming season. The season’s weather will not be known until after these decisions have been made. Table 2.1 lists tasks by season.

Children can perform one domestic task each season or go to school; adults can complete two tasks. All domestic and most farming work equates to one task, with the exception of crop spraying which does not require labour to be allocated.

Mandatory household tasks (cooking and babysitting, if babies are in the household) are automatically created with labour assigned, though it pays to review the labour assignment as it may not be optimal for your situation. If labour is not assigned to mandatory tasks the household will incur a financial penalty.

Resource requirements are task dependent – domestic chores, weeding and crop harvesting do not require resources, but for all other tasks appropriate resources must be selected or the task will not be completed successfully.

Labour must be assigned for all tasks other than crop spraying. Persons in hospital or allocated to other tasks that expend their work capacity are not available for selection. If necessary, additional labour can be obtained by arrangement with other households. Labour is assigned to another household by selecting the “Farm for Someone Else” task.

Task Management can be accessed by clicking the TASKS button in either the Home or Farm screens. See Section 3.7 for details of the task management screens.

After Task Allocation, the stage is advanced, the season’s weather is checked, crop hazards calculated and mandatory tasks created. A stage notification with information on the weather, crop hazards, task completion and any financial penalties incurred is sent to all players.

2.2.2 Weather Report
The season’s weather is checked after tasks have been allocated. Poor weather will adversely affect crop yields. The season’s weather is indicated by a weather icon for the season in calendar panel and included in the stage notification.

2.2.3 Crop Hazards
Crop hazards may occur in Main Rains for early planted crops and Early Harvest for late planted crops. Hazards are crop and planting specific so there can be an advantage in diversifying crops or planting time to spread risk. Some hazards can be mitigated to an extent by spraying with pesticide, though for others there is no treatment. Information on the potential crop loss, possible mitigation and mitigated loss is available in the Farm screen.
<table>
<thead>
<tr>
<th>Season</th>
<th>Task</th>
<th>Labour</th>
<th>Resources</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Rains</strong></td>
<td>Household Chores</td>
<td>1 task</td>
<td>N/A</td>
<td>Mandatory; child or adult labour.</td>
</tr>
<tr>
<td></td>
<td>Babysit</td>
<td>1 task</td>
<td>N/A</td>
<td>Mandatory if babies in household; child or adult labour.</td>
</tr>
<tr>
<td></td>
<td>Attend School</td>
<td>1 Child</td>
<td>School Vouchers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sow Crop</td>
<td>1 Adult</td>
<td>Crop</td>
<td>Early planted crops.</td>
</tr>
<tr>
<td></td>
<td>Farm for Someone Else</td>
<td>1 Adult</td>
<td>N/A</td>
<td>Choose other household from dropdown list</td>
</tr>
<tr>
<td><strong>Main Rains</strong></td>
<td>Household Chores</td>
<td>1 task</td>
<td>N/A</td>
<td>Mandatory; child or adult labour.</td>
</tr>
<tr>
<td></td>
<td>Babysit</td>
<td>1 task</td>
<td>N/A</td>
<td>Mandatory if babies in household; child or adult labour.</td>
</tr>
<tr>
<td></td>
<td>Attend School</td>
<td>1 Child</td>
<td>School Vouchers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weed field</td>
<td>1 Adult</td>
<td>N/A</td>
<td>Early planted crops – alternatively spray with herbicide.</td>
</tr>
<tr>
<td></td>
<td>Fertilize crop</td>
<td>1 Adult</td>
<td>Manure/NPK Fertilizer</td>
<td>Early planted crops.</td>
</tr>
<tr>
<td></td>
<td>Spray crop</td>
<td>N/A</td>
<td>Pesticide/Herbicide</td>
<td>Early planted crops.</td>
</tr>
<tr>
<td></td>
<td>Sow Crop</td>
<td>1 Adult</td>
<td>Crop</td>
<td>Late planted crops.</td>
</tr>
<tr>
<td></td>
<td>Farm for Someone Else</td>
<td>1 Adult</td>
<td>N/A</td>
<td>Choose other household from dropdown list</td>
</tr>
<tr>
<td><strong>Early Harvest</strong></td>
<td>Household Chores</td>
<td>1 task</td>
<td>N/A</td>
<td>Mandatory; child or adult labour.</td>
</tr>
<tr>
<td></td>
<td>Babysit</td>
<td>1 task</td>
<td>N/A</td>
<td>Mandatory if babies in household; child or adult labour.</td>
</tr>
<tr>
<td></td>
<td>Attend School</td>
<td>1 Child</td>
<td>School Vouchers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Harvest crop</td>
<td>1 Adult</td>
<td>N/A</td>
<td>Early planted crops.</td>
</tr>
<tr>
<td></td>
<td>Weed field</td>
<td>1 Adult</td>
<td>N/A</td>
<td>Late planted crops – alternatively spray with herbicide.</td>
</tr>
<tr>
<td></td>
<td>Fertilize crop</td>
<td>1 Adult</td>
<td>Manure/NPK Fertilizer</td>
<td>Late planted crops.</td>
</tr>
<tr>
<td></td>
<td>Spray crop</td>
<td>N/A</td>
<td>Pesticide/Herbicide</td>
<td>Late planted crops.</td>
</tr>
<tr>
<td></td>
<td>Farm for Someone Else</td>
<td>1 Adult</td>
<td>N/A</td>
<td>Choose other household from dropdown list</td>
</tr>
<tr>
<td><strong>Late Harvest</strong></td>
<td>Household Chores</td>
<td>1 task</td>
<td>N/A</td>
<td>Mandatory; child or adult labour.</td>
</tr>
<tr>
<td></td>
<td>Babysit</td>
<td>1 task</td>
<td>N/A</td>
<td>Mandatory if babies in household; child or adult labour.</td>
</tr>
<tr>
<td></td>
<td>Attend School</td>
<td>1 Child</td>
<td>School Vouchers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Harvest crop</td>
<td>1 Adult</td>
<td>N/A</td>
<td>Late planted crops.</td>
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<tr>
<td></td>
<td>Farm for Someone Else</td>
<td>1 Adult</td>
<td>N/A</td>
<td>Choose other household from dropdown list</td>
</tr>
</tbody>
</table>

Table 2.1 Tasks by Season

### 2.3 Food Allocation

After the late harvest has been gathered, players must allocate food for the household. Household members require a balanced diet of protein, carbohydrate and vitamins to remain healthy and individuals given poor diets are more likely to become ill and may die. Household members who become ill are sent to hospital and will remain there until medical fees are paid at the bank. While in hospital they cannot do any work but must still be allocated food.

An A-level diet requires the highest quantities of carbohydrate, protein and vitamins; B and C-level diets can be produced with smaller quantities.

All food varieties provide some amount of carbohydrate, protein and vitamins though maize is the richest source of carbohydrates, beans of protein and mixed horticulture of vitamins. Food portion sizes for women and children are double that of babies and triple the size of baby portions for adult males.

Section 3.8 describes the Nutrition Management screens and gives instructions for food allocation.

After Food Allocation, the stage is advanced. Food allocations are applied (using available food stocks), household health checked, all characters age one year and a check is made for new births. A stage notification with information on household diet levels, illness and death, new births and any financial penalties incurred is sent to all players.
2.4 Health Hazards

The health of all household members is checked after food allocation.

Susceptibility to illness and disease varies with diet levels:

- Characters on an A-level diet are not susceptible to nutrition-related illness.
- Characters on a B-level diet have some risk of nutrition-related illness.
- Characters on a C-level diet are at significant risk of succumbing to nutrition-related illness.
- Characters on an X-level diet will die from malnutrition.

Any household illnesses or deaths are indicated in the end of cycle stage notification.

2.5 Births and Ageing

At the end of the cycle all characters age by 1 year. Infants become children at age seven and can take on domestic chores or go to school. Children become adults at thirteen and can work in the fields. All healthy females above 13 years of age have the possibility of having a child.

2.6 Farming

Drought tolerant and high yield maize varieties will produce a “local maize” harvest. Crops can be planted in Early Rains (early planting) or Main Rains (late planting). Early planted crops (planted in Early Rains) typically produce higher yields than late planted crops (planted in Main Rains).

Applying manure or NPK Fertilizer in the middle growth season (in Main Rains for early planted crops and Early Harvest for late planted crops) will improve crop yields; NPK fertilizer will give a greater improvement than using manure. Hybrid crop varieties, when used with fertilizers can give the highest yields.

Poor rains or drought will significantly reduce yields.

Failure to weed fields (manually or by spraying with herbicide) will reduce yields by 40%.

Crop hazards also reduce yields.

2.7 Finance

Each household begins the game with some starting cash which can be used to buy goods at the market. A financial penalty of 10A will be incurred for each mandatory task which is not completed. If the penalty is not paid immediately, cash or goods to the value of the penalty +50% will be seized by the bank at the start of the following season. First household cash will be seized to the value of the debt. If this does not cover the full amount, household assets, then finally land will be sold to the market to cover the debt.

Characters who are will remain in hospital until medical expenses are paid. However players can choose not to pay medical expenses, though the characters will be unable to work but must still be allocated food.

Funeral costs of 20A are incurred when a household member dies. These costs must be paid within 1 year or goods will be seized.
3. User Interface

The user interface is built around the key locations in the farmers’ lives – home, farm, village, market and bank. Function buttons in each screen give the player access to relevant functionality and information.

3.1 Launching the User Interface

The multiplayer game can be played in any web browser with the Flash Player plugin installed. The Game Manager will give you the URL of the server to type into your web browser (e.g. 192.168.0.200/AfricanFarmer/index.html) with your login name and password. When you enter the URL into your web browser you the login screen will be displayed (Fig 3.1.).

![Login screen](image1.png)

Fig. 3.1 Login screen

Enter you login name and password and click LOGIN. If logging in for the first time you will be presented with the Game Selection screen (Fig 3.2), unless the Game Manager has previously selected a game on your behalf.

![Game Selection screen](image2.png)

Fig. 3.2 Game Selection screen
When you select your game you will be taken to the Home screen which is shown in Fig 3.3 with the key UI elements labelled.

<table>
<thead>
<tr>
<th>Screen</th>
<th>Functions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household</td>
<td>OVERVIEW</td>
<td>Displays summary information on household</td>
</tr>
<tr>
<td></td>
<td>Avatars</td>
<td>Click avatars to display information on household members</td>
</tr>
<tr>
<td></td>
<td>FOOD</td>
<td>Access nutrition management screens to create diets and food allocations</td>
</tr>
<tr>
<td></td>
<td>TASKS</td>
<td>Create, edit, delete and list tasks</td>
</tr>
<tr>
<td></td>
<td>ASSETS</td>
<td>List household assets</td>
</tr>
<tr>
<td>Farm</td>
<td>SUMMARY</td>
<td>Displays summary information on farm</td>
</tr>
<tr>
<td></td>
<td>Fields</td>
<td>Click fields to display information on crop and hazards</td>
</tr>
<tr>
<td></td>
<td>TASKS</td>
<td>Create, edit, delete and list tasks</td>
</tr>
<tr>
<td></td>
<td>STOCKS</td>
<td>List household assets</td>
</tr>
<tr>
<td>Village</td>
<td>General</td>
<td>View information on village and households (click huts)</td>
</tr>
<tr>
<td></td>
<td>OVERVIEW</td>
<td>Displays summary information on village</td>
</tr>
<tr>
<td></td>
<td>GIVE</td>
<td>Transfer assets to other households</td>
</tr>
<tr>
<td>Market</td>
<td>BUY/SELL</td>
<td>Buy/Sell Goods and Services</td>
</tr>
<tr>
<td></td>
<td>MARKET</td>
<td>List Market Stocks</td>
</tr>
<tr>
<td></td>
<td>ASSETS</td>
<td>List household assets</td>
</tr>
<tr>
<td>Bank</td>
<td>OVERVIEW</td>
<td>Pay hospital fees, fines and funeral costs</td>
</tr>
</tbody>
</table>

Table 3.1 Game screen Functions
The Calendar, positioned across the top of the screen, indicates the year, season and weather. The game stage bar shows the current stage in the game cycle.

The Screen Title displays the screen name.

The Navigation Buttons move the player between the top-level screens: Home, Farm, Village, Market and Bank.

The Function Buttons enable you to complete screen-specific functions.

The Information Panel displays data relevant to your current location and activity.

The Comms Panel allows communication with other players (not functional until agent interaction is implemented).

The News Ticker displays market and other community news.

Table 3.1 lists the functions and information accessible from the various game screens.

### 3.2 Home Screen

This screen represents the household where players can view household information, allocate tasks, manage household nutrition and set first names and avatars for household members (Fig. 3.4).

When the screen is opened, the Information Panel displays summary information on the household – household composition and the names of any deceased members. Clicking on an avatar will display information on the household member: age, gender, education, diet, health, education and current location. Location icons are displayed at the base of the avatars of characters in town or in hospital.

Clicking the TASKS button will open the Task Management screen (Section 3.7).

Clicking the FOOD button will open the Nutrition Management screen (Section 3.8).

![Home Screen](image1.png)

**Fig 3.4 Home screen**

### 3.3 Farm Screen

This screen represents the farm and also gives access to task management functions (Fig. 3.5).

The field grid shows all fields available for use by the household (owned or rented) with field status icons giving information on planted crops, applied inputs and crop hazards. Mouseover text on the icons gives additional information. Clicking on the field graphic and field icons will display additional data on crops health, inputs, weeding, weather and hazard losses in the Information Panel. Fig 3.6 shows the Farm Screen displaying a crop hazard alert.
More information on farming issues can be found in Section 2.6.
3.4 Village Screen

This screen shows all households in the village. Household names are displayed below each hut - the player's household name is coloured yellow and the houses of any relative mauve (Fig. 3.7).

![Village screen](image)

Clicking on a hut will show public information on the household, including household size and number of fields.

3.5 Market Screen

The Market screen displays the Market Stocks Panel containing icons of goods available for trade (Fig. 3.8).

![Market screen](image)
Clicking on an icon in the Selection Panel will show the current market selling and buying prices, available stocks and give basic information on the product. Basic yield information on crops will also be displayed.

The BUY button is used when purchasing goods from the market. Click the required item from the selection panel which populates the GOODS and PRICE fields. Entering the required quantity will update the TOTAL field. Press CONFIRM to complete the transaction. The rental period for land is one year.

If the SELL button is clicked, the selection panel displays household assets available for sale. Select the required asset, enter the quantity and press CONFIRM to complete the sale. Household land can be sold to the market but cannot be rented.

Click MARKET to display all market goods and current stock levels.

Click ASSETS to list all household assets.

See Section 2.1 for more details on the market.

### 3.6 Bank Screen

At the bank players can pay bills and fines.

Selecting the BILLS button displays a list of payments (Fig 3.9). To make a payment select the bill from the list and click CONFIRM. More information on finance can be found in Section 2.7.

![Fig 3.9 Bank screen (payments list)](image)

### 3.7 Task Management Screens

To create a new task, click NEW and then select a task from the task drop down menu (Fig 3.10). Note that only tasks that are appropriate for the season will be available for selection.

When a task has been selected, the location, resources and labour information can be selected. The location is automatically set for Attend School tasks; for other tasks the location (field number) must be selected.

The selection panel will display possible resources for the selected task from your household assets – if appropriate resources are not available the selection panel will be blank. Note that it is possible to over allocate resources – the task creation process does not check resource quantities, so you must ensure that you have sufficient resources for all pending tasks.

Finally labour must be assigned for the task. The drop down menu will show only labour that is age appropriate and available for the task (taking account of assignments to other saved tasks). Labour hired at the market or made available from another household will be included in the dropdown list.
Note that you can save tasks without completing all fields and finish the task setup later.

Tasks can be edited by clicking the EDIT button and selecting the task in the task list (Fig 3.11).
3.8 Nutrition Management Screens

The nutrition management screens are used to create diets and food allocations for your household. Food can be allocated by using the ‘default’ allocation that is automatically created for each household as a starting point.

Fig 3.12 Food and Nutrition screen

Alternatively players can create a new allocation by first creating diets and then applying the diets to household members to form an allocation or by directly allocating food portions to household members.

To allocate food using the default allocation, select the FOOD button in the Home screen which will open the Food and Nutrition screen (Fig 3.12). Next select the ALLOCATION button which will open the Food Allocation screen (Fig 3.13); click EDIT and select the default allocation from the panel.

Fig 3.13 Food Allocation screen (overview)
Food portions can now be dragged to individual plates to update the allocation. Food portions are removed from the allocation by dragging them away from the plates. Food portions can also be dragged between plates. As changes are made to the allocation, information on the updated allocation and a tally of the remaining food stocks is displayed in the Information Panel. When the allocation is complete click the SAVE button, or cancel to discard changes if editing an allocation. Players can switch between the overview (Fig 3.13) which shows plates and current diet levels for all household members and a detailed view (Fig 3.14) which provides additional information on the carbohydrate, protein and vitamin levels of each diet.

Players can also allocate food by creating a new allocation, and then adding diets or food portions to the allocation.

A diet is created by clicking the DIET button in the Food and Nutrition screen and then selecting DIET to open the Diet Creation screen (Fig 3.15).

The diet type (man, woman, child or baby) is selected using the labelled radio buttons. Drag food items from the panel to the plate – the diet contents and diet level information is updated as portions are added to the plate and the carbohydrate, protein and vitamin content of the diet shown on the graph. To remove food portions from the diet simply drag them from the plate. When the diet is complete, give it a name and click SAVE. Diets can be edited or deleted by selecting the appropriate function buttons. To discard changes select the CANCEL button.

To create a new allocation select the FOOD button in the Home screen which will open the Food and Nutrition screen (Fig 3.12). Next select the ALLOCATION button which will open the Food Allocation screen (Fig 3.13); click NEW and then drag saved diets or food portions to individual plates to update the allocation. When the allocation is complete click the SAVE button. If an allocation other than the default is used, it must be explicitly selected by clicking the SELECT button in the Food and Nutrition screen, selecting the desired allocation from the panel and clicking SAVE. If an allocation is not selected, the default allocation will be used.

Note that an allocation will be saved even if there are insufficient food stocks to cover it. Players can buy additional food at the market to make up the shortfall. If a shortfall in food stocks remains at the end of the food allocation stage, the allocation will be applied using the existing food stock, starting with the adult members of the household.
Create Diet

1. Give your diet a name and select the target diet type.
2. Then drag the required food icons to the plate until the diet is complete.
3. Click 'save' when finished.

Fig 3.15 Diet Management screen (Diet Creation)