

African Farmer is a simulation game designed to give players an experience of the complex and uncertain environment in which smallholder farmers try to make a living. Its simplified model of an agricultural life demonstrates the complexity of decision-making and helps sensitise players to the realities of agrarian life from the farmer's point of view.

The initial target audiences for *African Farmer* were Food & Agricultural Policy students and professionals working in universities, institutes, NGOs, Development Organisations, and other International Agencies, though the game can be usefully played by non-specialists.

This document is written for educators to help them decide whether the game is suitable for their learning situations and also to give some guidance on running an *African Farmer* workshop. The *Single Player Guide* provides more detailed information on the game and the video tutorials (accessible online or as part of the game installation) give a flavour of the playing experience.

1. The *African Farmer* Game

1.1 Game Overview

In *African Farmer* players are responsible for managing a growing household and small farm in an African village. Players start the game with some land and starting cash and must manage the farm and feed and educate their household. As in real life, players do not start the game on an equal footing – one player may be given charge of a wealthy household with many fields and plenty labour, whereas another may start the game responsible for a poor household with few fields.

Labour must be managed to ensure that domestic and farming tasks are carried out and decisions made on children's education. Adult household members can be sent to seek work in town. On the farm players must choose which crops to plant, when to plant them and decide on weeding and the use of fertilizers. The possibility of adverse weather and crop diseases and pests are ever-present. Chance events* - both good and bad - may occur at any time in the game cycle, which may disrupt plans and confound strategies. Players can trade food, inputs, land and other goods and services at the market and can take out bank loans. Household members must be given balanced diets if they are to remain healthy - individuals on poor diets are more likely to become ill and may die.

The game incorporates various elements on which players must take a position, giving a range of goals that must be balanced:

- Agricultural - successfully manage and develop the farm.
- Health and education - provide household members with balanced diets and ensure children are educated.
- Financial – increase the net worth of the household by farming or trading.

The unpredictability of the weather, 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.

1.2 A Simulation Game

Traditional teaching methods can often bypass our cultural and social biases, leaving our prejudices and emotional responses to issues dormant. On the other hand, a well-designed simulation can be a powerful learning tool that introduces participants to new knowledge *experientially* and challenges previously unquestioned attitudes. Simulations engage us emotionally, bringing our hidden assumptions and attitudes into play (c.f. book learning). They can help us see the lives of others *from the inside* – giving us an opportunity to step into the shoes

* If selected in Game Settings

of another person. They can create a safe environment where our values and attitudes can be tested - players can try out alternative courses of action and experience a range of different outcomes.

A simulation attempts to replicate *particular* aspects of reality in a sufficiently credible manner to achieve specific outcomes – the aim is not to produce a carbon copy of that reality. *African Farmer* is designed to create a simulation that encourages players to experience and internalise the reality of what it means to be a small-scale farmer living in a complex, risk-prone environment. It is not designed to impart detailed knowledge of agronomy, so (for example) the game crops are *stylized* versions of maize, beans, cotton etc. rather than representing specific varieties currently used in sub-Saharan Africa. However, we've tried to ensure that the characteristics of these stylized crops are typical of crops used in the region.

Simulation games also place demands on participants. Each participant is asked to function in a *bona fide* role and experience the consequences of actions made in performing that role. The participants must address the issues seriously and conscientiously – attitude and intent are important. This is often the key difference between a simulation and a game played purely for entertainment.

African Farmer takes players on journey. They might start the game with clear ideas about the best farming strategy and a commitment to educating their children but then find themselves confounded by circumstances. Can they afford to send children to school when labour is so scarce? Should they allocate healthy diets to everyone, or only to productive household members? The risk calculus and ethical landscape is often significantly different from what they imagined. The game aims to help players experience things from the inside, to understand that what may seem obvious or right from the outside, may not actually be the best option, or indeed possible, for those living within the constraints of the situation.

1.3 Customization

African Farmer has been designed with a series of options that can be selected to tailor the game to the particular needs of the students and constraints of the learning situation e.g. the complexity of decision-making can be calibrated by the inclusion or exclusion of options such as one or two planting seasons, mechanised and animal traction, chance events, the selection of different nutrition models etc. A full listing of game options is provided in [Section 5](#).

1.4 Embedding in a Learning Process

It is important to remember that *African Farmer* is one element in a learning process. The learning experience of the game must be grounded and deepened in activities and study outside the game.

- Educators can prime players on key issues in the pre-game introduction.
- The post-game debriefing, where players' experiences are explored and issues encountered in the game discussed, is an essential part of the learning process.
- Follow-on work can link the players' game experience with the actual lived reality of small-scale African farmers.

The African Farmer Walkthrough PowerPoint show gives further information that may help you decide on the suitability of the game for your teaching requirements.

2. Running a Game Workshop

A workshop can be run with any number of players, though the practicalities of physical space, co-ordination and involving everyone in the debrief session will set an upper limit on the numbers. A typical workshop will run for 2 - 3 hours.

2.1 Planning

Find a suitable venue:

- The room should be large enough to comfortably accommodate participants.
- A projector and screen will be required for presenting.
- A whiteboard could be helpful during the debriefing.
- Ensure that there are adequate power outlets for your needs. In addition to power for the presentation computer, power may be required for the players' laptops as they will be running for two hours or more.

Ensure you have access to the required equipment:

- PC or laptop to run the presentation.
- As required - extension cables, power strips and gaffer tape to secure loose cables.
- Copies of the *Getting Started* Guide for all participants.
- If available, several spare laptops with power cables. These can be useful if any participants have trouble with their own equipment.

2.2 Preparation

Beforehand:

- Decide the appropriate game settings for your learning requirements ([Section 5](#)). Always keep in mind your learning goals when choosing game options. Consider whether the inclusion or exclusion of particular game features will help achieve your aims – too much complexity might overwhelm students new to the game and undermine engagement.
If available time is particularly short, the *One Planting Season* and *Basic Nutrition* options should be considered, unless these choices conflict with your learning goals.
It is recommended that you save your chosen settings to a file which can be distributed to the workshop participants. This will save time and help avoid mistakes when setting up the game at the workshop.
- To save time, you can ask participants to download the game from the African Farmer website and install it on their computers before the workshop – they can install either the 'game-only' installation (3MB) or the 'game + video tutorials' installation (60MB). The video tutorials can also be accessed online.
- Prepare the introductory presentation – you can edit the *Presentation Template* PowerPoint slideshow which can be downloaded from africanfarmergame.org.
- Give participants details of the venue, date, and time. Tell them to bring a laptop and remind them to also bring power adaptors (two participants will share a laptop, so it's OK if not everyone can bring one).

On the day of the workshop, allow 10 minutes or so to set things up:

- Hook up the presentation computer to the projector.
- (Loosely) arrange the tables and chairs facing the screen. Put copies of the *Getting Started* Guide on each table.

2.3 The Game Workshop

A. SETUP

Arrange the participants in twos –having two people run each household encourages participants to discuss and justify decisions, promoting deeper engagement and improving learning. It may be better to avoid pairing individuals with people they know well.

B. INTRODUCTION [20 – 30 minutes]

- If appropriate, introduce yourself and give participants health and safety information.
- If appropriate, ask participants to introduce themselves.
- Give participants an overview of the game, quickly running through a game cycle.
- If the participants have not already done so, ask them to install the game on their computers.
- If you have prepared a settings file, ask participants to load game settings from this file (using the LOAD button in the Settings Screen). Otherwise, you can talk them through selecting your chosen game options.

C. GAMEPLAY SESSION [1 – 1½ hours]

You should aim to play three or more cycles as it is important to allow time for players' initial strategies to be tested within the game environment and modified strategies to be adopted. However, it is important that adequate time remains for the debriefing session.

The first cycle will take longer than subsequent cycles, as everything is new for the players. Give them the time and help they need. Once players are familiar with the interface and game cycle, pressure can be increased by limiting the time available for each game stage.

While the game is running move among players, checking progress, and giving help when needed. Be on the lookout for issues that might usefully be discussed in the debriefing session.

D. THE DEBRIEFING SESSION [40 minutes – 1 hour]

The debriefing session is an essential element of the game workshop - it is here that experience can become learning. The principal aim of the *African Farmer Game* is to bring alive to participants the reality of life for small scale farmers living in a complex and risk-prone environment. The role of the facilitator is to help participants share and reflect on the game experience and to make links to other knowledge and the reality of African farmers' lives. Reviewing the game statistics data (see [Section 4](#)) may be of help to participants in this session.

Here are some ideas to guide the discussion:

1) Start with overall impressions of the experience:

- Did they enjoy the experience?
- What were the stand-out moments or aspects of the game?
- Any difficulties or confusions (user interface, gameflow...)?

2) Focus on priorities and strategies:

- What were their priorities – education, nutrition, finance? How did they decide?
- Were there disagreements between group members about decisions? What was the source of disagreements?
- Did priorities conflict with one another?
- What farming strategies did players adopt at the start of the game – diversification (growing a wide range of crops, some for home-consumption, some for market), intensification (using 'Green Revolution' technologies – hybrid seeds, inorganic fertilisers etc.), commercialisation (growing crops for the market and buying in food from other sources), other? Why did they choose these?
- What was driving their decision making – strategy or crisis management?

- Explore the differences between the strategies sought by different household members. Was there a gender-dimension to these differences (e.g. did the male and female heads of household agree or disagree at the start)? Whose strategy was pursued in the end – and why was this chosen?
- Explore the differences between the strategies adopted by different households. What was the result of these differences – in terms of income, agricultural performance, nutritional status, health, and well-being? Was there any difference in approach between female-headed households vs. male-headed households?
- Did the strategies change as game progressed? If so, why were these changes made and what was the outcome?
- Did they think they played well? By what criteria did they judge their performance?
- If playing the game again, what might players do differently?

[It might be helpful to frame the above discussion in terms of rural livelihood trajectories through agriculture:

- *'dropping out'* - moving away or slipping into destitution
- *'hanging in'* - maintaining a 'survival' level existence
- *'stepping up'* - investing in existing activities
- *'stepping out'* - accumulating, diversifying, and creating alternative, non-farm economic activity¹

Strategies of intensification, commercialisation and diversification can help farmers move forward. On the other hand, environmental, economic, and social shocks and stresses can undermine livelihood strategies dragging households and communities further back.]

3) Focus on difficulties:

- Were there particular pressures to be overcome – labour, land, cash, time shortages or environmental stresses (e.g. drought, debilitating illness)?
- Did they encounter any particular shocks – pest infestation, sudden loss of household member, flood etc.?
- What approaches did players take to deal with these problems? Were these approaches successful?

4) Focus on learning:

- What surprised you?
- What do you think you've learned from the experience?
- Has playing the game changed your views in any way?
- How does this tie in with coursework/what we've been studying?

5) Focus on the game play experience:

- What was most helpful or least helpful?
- What could be improved?
- Are there additional features that you would like to see added to the game?

¹ Dorward, A. (2009) Integrating Contested Aspirations, Processes and Policy: Development as Hanging In, Stepping Up & Stepping Out. Development Policy Review 27 (2): 131-146.

3. Game Flow

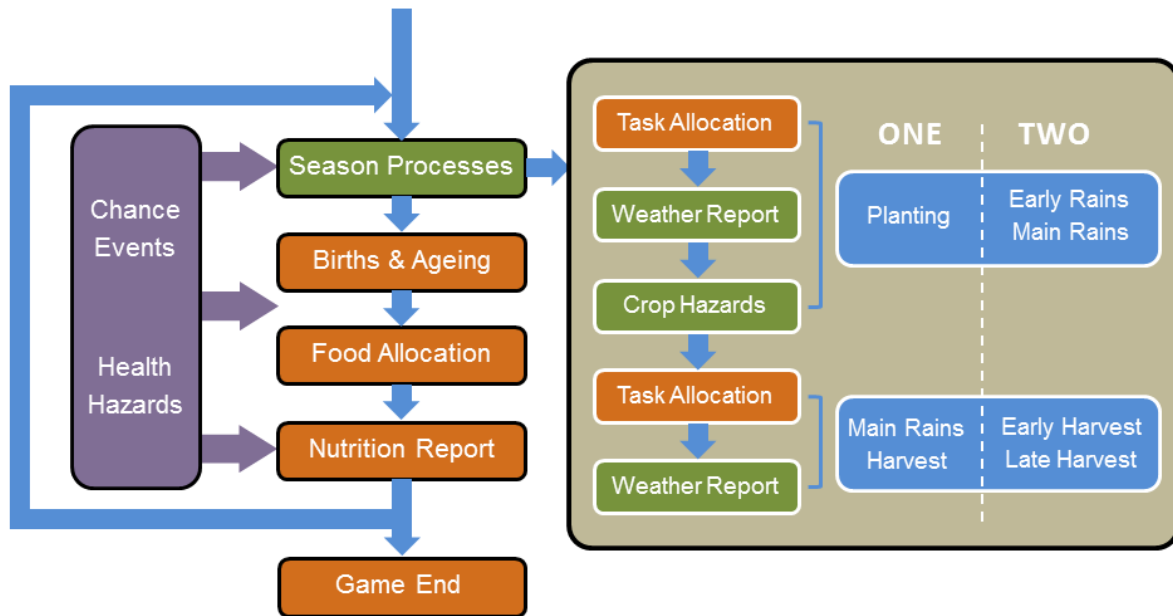


Fig. 2 Game Flow (One & Two Planting Seasons)

4. Game Statistics

Statistical data on players' performance and the performance of the agents running the other nine households can be reviewed in the Game Statistics screen.

The following data is available to view:

- FARM: yearly data on field usage (crops, hazards, fertilizer and spray use, harvest yields).
- NON-FARM: yearly data on education and town work income.
- LABOUR: seasonal labour allocation (adult, child, hired) by category (household, school, farm, town), labour lost through illness, and unused labour.
- HEALTH: yearly data on household composition, diet levels and health plus statistical data on illness by diet level.
- FINANCE: yearly summary financial data including cash, fields owned and rented, total and net assets, assets/person, debts, loans, and repayments (loan, medical fees and funeral costs).
- TRANS: Financial transaction data covering all income and expenditure (with total yearly profit/loss)
- MKT PRICES: yearly data on farm produce prices.
- HAZARDS: statistical village crop hazards data by planting.
- WEATHER: yearly and cumulative statistical weather data by season.
- SETTINGS: the game options set for the current gameplay session.

Pairs of households have each been given one of five starting configurations of household members, land and starting cash so you can track your performance in relation to a similar household. The pairings are as follows: Nyanya/Ndizi, Mahindi/Nanasi, Matango/Embe, Mboga/Kabechi, and Tikiti/Chungwa.

The statistical data (for the player's household or the entire village) can be saved as a text file for analysis to assist post-game reflection.

5. Game Settings

In the *Game Settings* screen game features can be selected and the level of challenge adjusted to match the player's experience. Help and alert options can also be set.

Prior to the workshop you can select the options you wish to be used for the game and save them to a file by clicking the SAVE button. This can be emailed to the participants for loading before play begins (using the LOAD button).

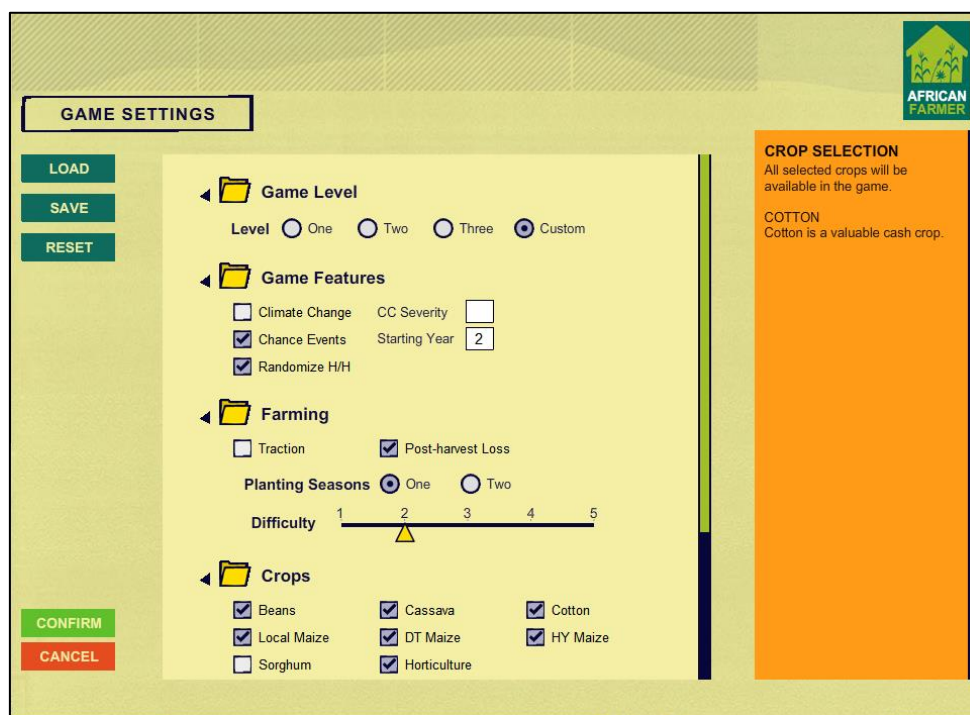


Fig. 2 Game Settings screen

Below is a summary of the available options.

Game Level

Three game level settings are available which select a range of game options and a *Difficulty* setting. These pre-sets can be used to quickly adjust the settings to match the learning context and players' experience. All settings can also be modified individually after a game level has been selected.

Game Features

- **CLIMATE CHANGE:** if selected, the probability of prolonged periods of drought and the occurrence of extreme weather increases with each passing year. The *severity setting* adjusts the magnitude of the annual increase (1 = low, 5 = high).
RANDOMIZE H/H: if selected, the player's household composition and assets are randomly assigned at the start of each game, with the proviso that they will be different from those set in the previously played game. If unselected, the starting household composition and assets will remain the same for each game.
- **CHANCE EVENTS:** events modifying the normal seasonal rhythm (e.g. a government subsidy on hybrid crops or a transport breakdown interrupting market supplies) may occur from the set starting year (1-5) onwards.

Farming

- **PLANTING SEASONS:** when set to one, there is a single planting season; seasons are *Planting, Main Rains, Harvest and Post Harvest*. When set to two, crops can be planted in both the first and second seasons and are harvested two seasons later; the seasons are *Early Rains, Main Rains, Early Harvest and Late Harvest*).
- **TRACTION:** animal or mechanised traction can be hired at the market to help in clearing fields for planting. Crop planting requires one adult task if traction is used, or two without traction.
- **POST-HARVEST LOSS:** starting in Year 2, 25% of all household crops and food will be lost at the end of the first season if a granary has not been purchased for the secure storage of these goods.
- **DIFFICULTY:** sets the level of difficulty between 1 [LOW] and 5 [HIGH]. This setting modifies the player's starting cash and the achievable crop yields.

Crops

Select the available crops for the game. Supported crops include beans, cassava, cotton, mixed horticulture, local maize, drought tolerant maize, high yield maize, and sorghum.

Market

Sets the number of fields available for purchase and rent.

Nutrition

- **BASIC:** the player selects a fixed A-, B-, C- or X-level diet for each household member. The cost of diets will vary with market prices.
- **STANDARD:** players create diets from food grown or purchased at the market. Balanced diets require a mix of food sources that provide carbohydrates, protein, and vitamins.
- **ADVANCED:** similar to the Standard option, but the minimum quantity of each food source for a given diet level is higher.

User Interface

Select between 'Click Select' and 'Drag and Drop' as the selection method for items in the market, task, and nutrition screens. Also set the keyboard key to be pressed when removing items with the 'Click Select' method.

Help

- **GAME INTRODUCTION:** an overview of the game is displayed at game start.
- **BUTTON MOUSEOVERS:** when selected, help text is displayed when the cursor is moved over navigation or function buttons.
- **STAGE ALERT:** when selected, alert is displayed if the player attempts to proceed to the next game stage without completing essential tasks (the alert can be ignored).
- **PAYMENT ALERT:** when selected, alert is displayed when a debt is due for payment at the bank.
- **AUTO-DISMISS:** when selected, alert windows are automatically removed at the next game stage.
- **MUTE SOUND:** mutes the soundtrack music on video tutorials (can be overridden in the video player screen).

Check for African Farmer Updates

If selected, a check is made for updates to *African Farmer*. If an update is available, a dialog window will offer to open the African Farmer download page in a browser window.

6. Feedback

Your feedback can help us make *African Farmer* a better educational tool. Please email your comments, suggestions, and feedback on any problems you encounter to africanfarmergame@gmail.com.