• Origins of the game.
• Simulation games and the *African Farmer* design.
• Living with uncertainty – rural livelihood trajectories.
• Game overview and run-through.
• Shifting the game focus to nutrition.
• The importance of debriefing.
• Final reflections.
• Questions and discussion.
**ANTECEDENTS**

**African Farmer** develops ideas from a number of pioneering educational board simulation games:

- **Green Revolution**, developed in the 1970s by Graham Chapman and Liz Dowler simulated the experience of rice growers in Bihar.

- **Exaction**, which extended Green Revolution to include international trade, was developed in the 1980s by Graham Chapman and Isabelle Tsakok.

- **Africulture**, which explored intra-household dynamics and rural-urban interactions in Zambia, was developed in the 1990s by Graham Chapman, Janice Jiggins and Henk de Zeeuw.
SIMULATION GAMES

• Engage us emotionally, bringing our hidden assumptions and attitudes into play (c.f. book learning)

• Experiential learning - making meaning from direct experience.

• Help participants see the lives of others from the inside – offer an opportunity to step into the shoes of another person.

• Encourage experimentation - players can try out alternative courses of action and experience a range of different outcomes.

• Create a safe environment where our values and attitudes can be tested.
ANATOMY OF A SIMULATION

- Learner’s Mental Model
- Gameplay
- Simulation Engine
- User Interface
ANATOMY OF A SIMULATION

Learner’s Mental Model

What people learn from playing the game

Gameplay

How can it be used: learner goals; teacher goals

Simulation Engine

Database, calculations going on behind the scenes, outputs

User Interface

What the learner sees, graphics, communication options, etc.
LIVING WITH UNCERTAINTY

- The life of a small-scale farmer in Sub-Saharan Africa is characterised by uncertainty.
- The vagaries of weather, crop pests and diseases and other chance events, coupled with unpredictability in market supplies and prices, create an environment in which decision-making is complex and challenging.
Agro-Ecological Zones in Africa

Complex decisions about the allocation of land, labour, capital and technology must be made with limited information.
Multiple varieties of maize (and other crops) for home consumption and market – each with its own set of benefits and costs
Input Markets – for seeds, fertilizer, agrochemicals, agricultural implements...

Output Markets – from traditional ‘wet markets’ to vertically integrated ‘value chains’
Postharvest storage – for consumption and market
Domestic Tasks – fetching water and fuelwood, and cooking and cleaning are required daily
Nutritional Security –
A crucial part of household decision-making

Photo: One Acre Fund
RURAL LIVELIHOODS

Rural livelihood trajectories through agriculture:

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

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- Environmental, economic and social shocks and stresses can undermine livelihood strategies
RURAL LIVELIHOODS

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➤ Improvements through intensification, commercialisation, diversification…
The goal of the *African Farmer Game* is 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.
The **goal of the African Farmer Game** is 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.

- **developing strategies for survival, investment and accumulation**
  - *learner level* → intellectual *and* emotional response (*‘the head and the heart’*)

- **understanding of risks and trade-offs**
  - *instructor level* → debriefing; integrating; including a reflective component
You are responsible for an African smallholder farming household. With limited resources you must care for your household and manage the farm. You must:

• Buy crops, other goods and services at the market.
• Choose crops, decide on weeding, fertilizers; respond to crop hazards.
• Manage labour; decide on children’s education.
• Provide household members with balanced diets.
• Domestic chores are mandatory – if labour is not assigned it will be taken from farming tasks.
• Children can be assigned 1 domestic task or attend school.
• Adults can carry out any 2 tasks.
• Manual weeding requires 2 adult tasks.
TASKS SCREEN

FARM TASKS

- HOUSEHOLD
- FARM
- VILLAGE
- TOWN
- LIST

ASSETS
- 6A Cash
- 1.0 x Cotton Seed
- 2 x Fertilizer (0)
- 1 x Manure
- 2 x Herbicide (0)
- 1 x Pesticide

DASHBOARD

SET MAIN RAINS TASKS

ACTIVITY LOG
- YEAR 1: EARLY RAINS
  - Season’s tasks set
  - Running household tasks... COMPLETED.
  - Running optional tasks... COMPLETED.
  - Generating weather report... STORMS.
- YEAR 1: MAIN RAINS
  - Checking Crop Hazards... NO HAZARDS.
FARMING

• Available crops: beans, cotton, mixed horticulture, local maize, high-yield maize, drought-tolerant maize.

• Other inputs: manure, NPK fertilizer, herbicide, pesticide, fungicide.

• Manure is applied to unplanted fields; fertilizer and sprays used only on planted fields.

• Spray kits are required for spraying.

• If fields are not weeded, crop yields are halved.
FARM SCREEN

FUSARIUM WILT
Fusarium Wilt is a fungus that grows in the vascular system causing the plant to wilt. It begins as a yellowing and wilting of the lower leaves. The infection progresses up the plant until the entire plant turns yellow. Plants become stunted when infected at a younger age.

Loss: 30%
Mitigated Loss: 10%
Mitigation: Pesticide

SET MAIN RAINS TASKS
Click when tasks allocated.

Year 1: Early Rains
Season's tasks set
Running household tasks... COMPLETED.
Running optional tasks... COMPLETED.
Generating weather report... STORMS.
Year 1: Main Rains
Checking Crop Hazards... HAZARDS.
NUTRITION AND HEALTH

- Persons given poor diets are more likely to become ill and may die.
- An “A-level” diet fully protects against nutrition-related illness; persons given “X-level” diets will die from malnutrition.
- Persons who become ill cannot do any work and will remain in hospital until medical fees are paid.
- Persons who contract HIV incur medical expenses each year.
- When a person dies, funeral expenses must be paid, which increase with the age of the deceased.
NUTRITION OPTIONS

• With the BASIC nutrition option, players choose a diet level for each household member and the cost is deducted from their saved cash.

• For the STANDARD and ADVANCED options, players must think about the food content of diets:
  ▪ Diets are created by selecting food portions that provide carbohydrate, protein and vitamins.
  ▪ Diets are then allocated to household members.
  ▪ The household must grow or purchase sufficient food to cover the allocation.
FINANCE

• You start the game with a randomly allocated amount of cash.

• You can apply for loans at the bank – these will be granted on the basis of a credit check.

• If debts are not paid they will be recovered with penalties – if you have insufficient cash, assets will be seized.

• The game will end if you are declared bankrupt.
**BANK SCREEN**

### Payments

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<th>NO</th>
<th>Type</th>
<th>Description</th>
<th>Due Date</th>
<th>AMT</th>
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<td>Main Rains, Year 2</td>
<td>11</td>
<td>PAID</td>
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<tr>
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<tr>
<td>13</td>
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<td>Kennedy: Stomach Problem</td>
<td>N/A</td>
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<tr>
<td>14</td>
<td>Medical Expenses</td>
<td>Kennedy: Dysentery</td>
<td>N/A</td>
<td>25</td>
<td>PAID</td>
</tr>
</tbody>
</table>

### ASSETS
- 89A Cash
- 0.6 x Maize (0)
- 1 x School Voucher (0)

### Dashboard

**SET LATE HARVEST TASKS**

Click when tasks allocated.

### Activity Log

- Running special task: COMPLETED.
- Generating weather report: POOR RAINS.
- YEAR 3: EARLY HARVEST: NO HAZARDS.
- Checking Crop Hazards: COMPLETED.
- Season's tasks set: COMPLETED.
- Running household tasks: PROBLEMS! YEAR 3: LATE HARVEST.
Nutritional messages:

- Nutrition is important - poor nutrition has serious consequences for farming households.
- Good nutrition is more than just calories.

Within the game context, the impact of players’ nutrition choices needed to be *specific* and *proximate*, which required simplifications:

- Poor nutrition linked to specific diseases.
- The effects of poor nutrition are seen almost immediately (in the following year).
SHIFT FOCUS TO NUTRITION

- Dominant player activity is nutrition management, allowing for more sophisticated nutrition models.
- Broader selection of food crops.
- Chance events (local and global) affect food availability and prices.
- The farm is the arena where the impact of nutrition choices are seen:
  - Good household nutrition safeguards farm labour, securing food production and increasing income.
  - Poor household nutrition results in illness or death, reducing available farm labour, which in turn reduces food production and cash available to buy food.
PLAYING AFRICAN FARMER
PLAYING AFRICAN FARMER
DEBRIEFING

- *African Farmer* is one element in a learning process.
- The debriefing, where players’ experiences are explored and issues discussed, is an essential part of this learning process.
- The learning experience of the game can be further grounded and deepened in activities and study outside the game.
- Follow-on work can link the players’ game experience with the actual lived reality of small-scale African farmers.
The *African Farmer Game* was developed by:

- **John Thompson**: Project Coordinator – [j.thompson@ids.ac.uk](mailto:j.thompson@ids.ac.uk)
- **Jim Jackson**: Single Player Game – [jimjackson10@gmail.com](mailto:jimjackson10@gmail.com)
- **Judith Good**: Technical Advisor – [j.good@sussex.ac.uk](mailto:j.good@sussex.ac.uk)
- **Ellie Martin & Jim Jackson**: Multiplayer Game
- **Nathan Oxley**: Communications & Networking – [n.oxley@ids.ac.uk](mailto:n.oxley@ids.ac.uk)

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THANK YOU

African Farmer: Play the Game
www.africanfarmergame.org