GHANA COCOA GAME

MAXIMIZE PROFITS FROM LAND USE CHOICES WHILE MEETING HOUSEHOLD NEEDS AND SURVIVING CLIMATE DISASTERS.

Each team/player is a small-scale *abunu* cocoa farmer in Ghana making land use and land management decisions. Teams/players start out with a set of 5 identical land use and land management types that can be strategically altered during each round to maximize profits.

LAND USES

COCOA
- **Profit:** 5 tokens for peak (2 rounds), followed by 3 tokens for old
- **Disaster Impacts:**
  Flood: -2 | Drought: -2 | Extreme Heat -3
  *Cocoa may be Abunu **with** documentation or Abunu **without** documentation.*

REHABILITATED COCOA
- **Cost to rehabilitate:** 2 tokens (3 if tenure documentation is needed)
- **Profit:** 4 tokens for young (1 rounds, followed by 8 tokens for peak (2 rounds), and 5 tokens for old (final round)
- **Disaster Impacts:**
  Flood: -1 | Drought: -1 | Extreme Heat: -2

MFOFO - SECONDARY FOREST
- **Cost:** 0 tokens
- **Profit:** 1 token each round
- **Disaster Impacts:**
  Flood: 0 | Drought: 0 | Extreme Heat: +2

MANAGED (ENRICHED/PROTECTED) MFOFO - SECONDARY FOREST
- **Cost:** 1 token to plant timber trees
- **Profit:** 2 tokens each round
- **Disaster Impacts:**
  Flood: 0 | Drought: 0 | Extreme Heat: +2

SWAMPY/RIPARIAN FOREST LANDS
- **Cost:** 0
- **Profit:** 1 token each round
- **Disaster Impacts:**
  Flood: +2 | Drought: 0 | Extreme Heat: 0

MANAGED (ENRICHED/PROTECTED) SWAMPY FOREST LANDS
- **Cost:** 1 token to plant timber trees
- **Profit:** 2 tokens each round
- **Disaster Impacts:**
  Flood: +2 | Drought: +1 | Extreme Heat: +1

FOOD CROPS
- **Cost:** 1
- **Profit:** 4 tokens each round
- **Disaster Impacts:**
  Flood: -3 | Drought: -3 | Extreme Heat: -3

GALAMSEY - GOLD MINING
- **Cost:** 0 (1 if tenure documentation is needed)
- **Profit:** 10
  No profit is made in subsequent rounds and the land may not be converted to other land uses in the future.
- **Disaster Impacts:**
  Flood: -6 | Drought: -4 | Extreme Heat: -4

TENURE CONSIDERATIONS

Players may only switch land uses on lands for which they either have usufruct rights (Asideɛ) or have secure documentation. **To switch land uses on Abunu**, teams/players must roll the dice to determine if the landlord permits this action (even number = yes / odd number = no). If yes, teams/players must pay an additional 1 token for documentation. If no, no action can be taken.

Players can also choose to secure their land rights to their cocoa farms by purchasing land tenure documentation for 1 token at the beginning of each round. Secure land rights can provide benefits through certain chance cards

CHANCE CARDS

Each round, each team/player must select a chance card which have resource implications based on land use and land management practices.

CLIMATE DISASTERS

Each round, teams/players must roll the dice to determine if and what climate disaster will hit. Climate disasters impact all teams/players. Over the course of the game, chances of getting hit with a disaster increase. In rounds 1 & 2, roll the dice once; in round 3, roll the dice twice; and in round 4, roll the dice three times. Dice roll outcomes and their associated climate disaster are as follows:

- **1 = Flood**
- **2 = No disaster**
- **3 = Drought**
- **4 = No Disaster**
- **5 = Extreme heat**
- **6 = No Disaster**

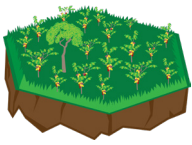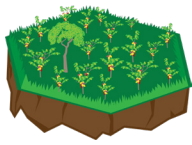The impact of the disasters vary depending on land use, and are described on the cards.

ROUND 1:

Each team/player is provided with a standard land use profile, reflecting a common abunu farming scenario:
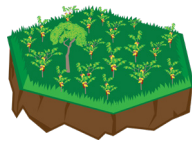
LAND USE 1:
OLD COCOA FARM

Asideɛ / usufruct

LAND USE 2:
OLD COCOA FARM

Abunu without secure documentation

LAND USE 3:
PEAK COCOA FARM

Abunu without secure documentation

LAND USE 4:
MFOFO - SECONDARY FOREST

Asideɛ / usufruct

LAND USE 5:
SWAMPY FOREST LANDS

Asideɛ / usufruct

1. Teams/players receive 10 cedis (revenue from previous years).

2. Teams/players then receive revenue from their land uses.

3. Teams/players must then pay 10 cedis to meet basic household needs.

4. Roll the dice to determine if a disaster hits (see 'Climate Disaster' section above).

5. Each team/player then draws a chance card and follows the instructions to pay or receive money accordingly.

6. At the end of the round, teams/players can make land use changes and exchange their land use cards (maintaining a total of 5 land uses). Options include:

   a. **Rehabilitate cocoa farms.** This can be done only on abunu land with secure documentation or asideɛ / usufruct lands. Where there is a desire to rehabilitate cocoa on lands that are abunu without secure documentation, players must roll the dice to see if the landlord allows this transition (see Tenure Considerations section above).

   b. Change land use to **gold mining (galamsey)**. Where there is a desire to undertake gold mining on lands that are abunu players must give 3 out of their 10 token profit to their land owner. The gold is only profitable once and there can be no other land use changes after an area is mined.

   c. Change land use to **Food Crops**.

   d. **Enrich forests**. Additional timber trees can be planted on secondary forest (mfofo) or swampy forest land for additional disaster resilience, fuelwood, and timber. In addition to an additional 1 token of profit from fuelwood, enriched forests accrue value which can be claimed at the end of the game. Each round, a distinct token (i.e., different color from the other tokens) is issued to enriched forest lands which goes toward final profit at the end of the game, representing the harvest of mature timber trees.

7. Repeat steps 2-6 for another 3 rounds, and money from previous rounds can be banked and used in subsequent rounds.

8. The player at the end of the 4 rounds with the most tokens is the winner.