

De Agricultura Prototype (A3.3.2): The Universal Abstract Overly-Simplified Pre-Modern Peasant Agriculture Game

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Designer Note

De Agricultura is a working prototype, suitable for classroom use, of a game about peasant agriculture in a wheat and barley based subsistence farming community in an agrarian society. It has proven an effective way to think about the problem space of subsistence farming for a peasant family in a community of peasants. One can theoretically play it with very large class sizes, but I have found it best to groups students in groups of 6 players or so, so that each player can see how the others are doing in the game (social interactions are an important part of this game.) Play can be done entirely through the record sheets and some dice if desired, or cubes can be used as indicated to represent wheat and barley.

Please remember, educator friends, that this game is a tool to spark critical discussion, not a lecture on peasant economics and agriculture. Critique the game, break the game. As you do, discuss with students what the game does and does not suggest about peasant communities and whether and how that fits and does not fit the historical evidence

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I would be grateful for any and all feedback from your gameplay, so if you have time, reach out and let me know how the game went. I am also happy to answer any gameplay questions.

--Jeremiah

Development Log

Prototype A3.3.2 (9/23—9/24) To do list?

- When a player's family dies of malnutrition there is no mechanism to keep playing. Need to work the "Big People" large local landowners into the system. Loan of wheat and barley to survive and plant set of five fields. Player has to get a "Big person" (local magnate) loan card. The loan cards come in installments of 4; 2 wheat 2 barley. They may be paid off with 3 wheat and 3 barley.

Prototype A3.2 (7/28/23) To do list?

- When a player's family dies of malnutrition there is no mechanism to keep playing. Need to work the "Big People" large local landowners into the system. Loan of wheat and barley to survive and plant set of five fields
- Need each microclimate to have a chance of disaster just hitting any player's field in that microclimate (the "Weird Little Valley" rule)?

- Aging household perhaps with a counter child, Adult1, Adult2, Elder where it affects food and labor?
- Possibly a labor system where Big Person can offer sharecropping possibilities to anyone for 50% take. Maybe so Big Person gets fields ploughed first before sharecroppers can borrow plow team? And somehow the optimal plowing time gets a die roll bonus? (Could have a labor queue worker placement thing)
- Make sure it's playable on a single sheet but also have possibility of cards for fields and household members – that would be 11 cards per player though
- Could be ability to plant more than one cube in a field either of same or different type, but that might lead

Prototype A3.2 (7/28/23) Improvements

- Cut cube economy by half to make quality of life improvements for players moving cubes around
- Clarified rules for intentionally not feeding children (<- this is a good reason to have aging families; starve your children = no one to take care of adults when they age)
- Made a first pass at money. Food costs the most in the seasons of scarcity so Late Summer / Autumn – when a household is most likely malnourished. Food costs the least the rest of the year.
- Taxation of 1 cube roughly 10% or so off of the current average harvest numbers (1/8 precisely). May need to be tweaked. Probably need means of resistance/deception of tax officials
- Dice rolls made more “gamey” interesting with a little more press-your-luck.
- Each field has a microclimate (no “weird little valley” micro-climate rules yet)

Prototype A2 (9/2/22) To do list

- Legumes not implemented
- ~~Goals not tweaked nor are the misfortune and prestige metrics tweaked yet~~
- The money system is underdeveloped – only allows food purchases at rates depending on season. Nothing else to purchase for convenience or luxury. Needs chance of being stolen or overtaxed.
- Multiple victory conditions and multiple winners: survival victory; prestige victory
- Later - labor system be implemented using meeples where health/food affects labor?
- Please send comments and questions to jmc.hst@gmail.com or @gamingthepast on Twitter.

De Agricultura – Rules and Record Sheet

Sources

- Bret Devereaux's ACOUP Blog Series on Farmers <https://acoup.blog/2020/07/24/collections-bread-how-did-they-make-it-part-i-farmers/> And <https://acoup.blog/2020/08/06/collections-bread-how-did-they-make-it-part-iii-actually-farming/>
- Peter Garnsey, *Famine and Food Supply in the Graeco Roman World*
- Helpful conversations with historian Neville Morley

Set up

- Use colored cubes or pieces of paper to represent Wheat, Barley, and Bronze Bits. Or just record on the record sheet. I recommend cubes for the tactility of it for students. I like large cubes (10 MM) to count as full units and small cubes (8mm) to count as ¼ units
- Each player represents a subsistence farmer (peasant) in an ancient agrarian society
- Give each player a record sheet for households and fields
- Family:
 - Each player starts with 6 family members: 2 adults, 1 elderly, 3 children (experiment)
 - Adults: ½ food unit; 1 labor
 - Elderly: ¼ food unit; ¼ labor
 - Children: ¼ food unit; ½ labor
 - Each player names their family members (tip: use names from the period and place you are studying)
- Starting food:
 - 12 cubes, 6 barley and 6 wheat. Either record on record sheet or place different colored cubes on the record sheet in the storage space to represent Barley and Wheat

Goal

For as much of your family to survive as possible and to gain as much prestige (and prestige levels) as possible and experience as little misfortune as possible compared to the other players in your group at the end of 3-6 turns.

Order of Play

The game is played in turns that are divided into 4 seasonal turns, starting with the (Late Summer)/Autumn.

(Late Summer) / Autumn Turn

1. Banquets / Festivals (none on round 1)
 - a. Any player who can and wishes to contribute 2 wheat to the Harvest Festival may do so and receive +2 prestige. Doing so provides a 1/4 "food credit" to the rest of the village that is deducted from their eating needs this Fall. The food credit may never be more than 1 full cube.
2. Plowing (not represented by any actions in game currently)
3. Eating Food
4. Determine nutrition and family status; calculate misfortune
 - a. Eat food: Adult household members consume ½ cube of food each; elderly and child household members each consume ¼ cube. Remove the required total of cubes from the granary and place in the general game supply pile.
 - i. If the number of barley cubes eaten in a season > number of wheat cubes, +1 misfortune for being reduced to poverty food. If the number of wheat cubes eaten in a season > number of barley, gain +1 prestige. This reflects a prejudice/preference in many ancient societies that some crops provided food more fit for the lower classes, the desperate, and livestock (in the Mediterranean, wheat was generally preferred to barley)

- b. Insufficient food and malnourished family members: If there are an insufficient number of food cubes to feed everyone, household members who go without food must have their “malnourished” box checked (+1 **misfortune** for each household member who is malnourished in a season). If a member of the household already has their “malnourished” box checked, check their “Sick/Inured box” (+1 **misfortune** for each household member who is sick/injured in a season). If both of these boxes are already checked for a household member, that household member dies and is removed from play (crossed off the sheet). 1 dead household Adult = +3 misfortune. 1 dead Child = +1 misfortune in the turn during which they died
5. Sowing winter wheat as desired/able. The player may decide to plant wheat in their fields. 1 whole cube of wheat is needed for each field. Take wheat cubes from storage and place one in each field planted.
New family members: If household is < 6, add 1 new household member to the family as a child.

Winter Turn

1. Eat food: see rules for eating in Late Summer / Autumn turn
 - a. Calculate malnutrition/sickness/death
2. Wheat grow roll:
 - a. Roll a number of six-sided dice according to the total number of fields currently planted

1 field	=	1 dice
2 fields	=	2 dice;
3 fields	=	3 dice;
4 fields	=	4 dice;
5 fields	=	5 dice
 - b. The player may reroll a group of one or more dice up to a maximum of 2 total rolls. The only exception is that any roll of 1 (a season of harmful weather, blight, etc.) **cannot be re-rolled and must be applied to a field**
 - c. At the end of three rolls the player assigns one die to each of the planted fields and puts the number in the current season and year. Any rolls of “1” must be assigned before other rolls.

Spring Turn

1. Eat food: see rules for eating in Late Summer /Autumn turn
 - a. Calculate malnutrition/sickness/death and add misfortune as needed
2. Plant barley as desired/able: Follow the rules for planting wheat. No more than one cube per field. The player, if they choose, may replace wheat planted in a field with barley, in which case the winter die roll for the growing wheat is erased/ignored. Place the cube of replaced wheat in the cube discard
3. Wheat and Barley grow roll in fields with wheat or barley planted – record in spring space (barley has no grow roll in the winter turn since it is not planted until the spring turn)

Summer Turn

1. Eat – see rules above. This is the time, right before harvest, when supplies will likely be the lowest
 - a. Determine malnutrition/sickness/death and add misfortune as needed
2. Wheat and Barley grow roll in fields with wheat or barley planted – record in summer spot for current year
3. Spoilage roll – roll one die for each full unit of food (ignore fractions) in the Larder/Storage. 1-3: The cube has spoiled and must be removed (placed in the game supply). 4-6: The food is not spoiled.

1. Note: the assumption is that older food will be eaten first which is why spoilage is only checked once per year.
4. Harvest wheat and barley crops (Late Summer): **For each field with a cube planted in it**
 1. Place the crop cube that was marking the crop planted in the field back into the general game supply pile
 2. add up the growth die rolls for the crop in that field. Wheat, planted in Fall, will have 3 dice rolls in total: winter, spring, summer. Barley will have two dice rolls in total, spring and summer.
 3. Consult the following chart using the growth dice total to determine the harvest of that field. The player places that number of cubes into their larder **including the one they planted**. (Figures roughed out from Garnsey, *Famine and Food Supply in the Graeco Roman World*, pp. 10-17 so that Wheat fails 38% of the time (a little high) Barley fails 8% of the time (just a little bit low)

Wheat Harvest

Grow Rolls Total (3 dice)	Amount of Wheat Harvested
< 12	0 cubes (crop failure)
12-15	2 cubes (normal harvest)
16-17	4 Cubes
18	6 cubes (spectacular harvest)

Barley Harvest

Grow Rolls Total (2 dice)	Amount of Barley Harvested
< 5	0 cubes (crop failure)
5-9	2 cubes (normal harvest)
10-11	4 Cubes
12	6 cubes (spectacular harvest)

5. Taxes: The state's soldiers take 1 cube from each player's harvest, wheat instead barley whenever possible.
6. Community Festivals: Each willing player-family may, if they choose to do so and are able may contribute 1 wheat cube to a village festival or banquet
 1. The family contributing to the festival gains +2 prestige

Each contribution to a festival counts as $\frac{1}{4}$ cube of eating food for all families for the Late Summer – Autumn eating turn. That food may only be consumed: it may not be stored in the granary or planted.
The names of those who contribute the festivals are announced to all the community.

Selling or Buying Food

- During the Late Summer – Autumn turn: (the time of greatest food scarcity) a player may buy or sell wheat from/to the general market (general cube supply) for 2 bronze (cubes) for 1 wheat cube. In the Late Summer – Autumn turn a player may purchase or 1 bronze for 2 barley (barley cannot be sold).
During any other turn wheat can be bought or sold at a rate of 1 bronze for 1 wheat or 1 bronze for 2 barley
- Players buy and sell from the general market. They may not buy and sell grain of any kind directly to each other.

Helping Neighbors

- At any point during the eating phase of any turn any player-family with sufficient grain may give grain to another player-family **if and only if** that family has insufficient grain to feed their family that season or plant crops in their fields that season. No one is required to give grain to others, ever. The player-family gifting grain receives +1 prestige for giving barley; +2 prestige for giving wheat for that season. The player giving food may only gain prestige once per season and cannot gain more than +2 prestige from gifts in a season.

De Agricultura Record Sheet

Household

<p>Misfortune (subtracts from score)</p> <div style="display: flex; justify-content: space-around;"> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> </div> <div style="display: flex; justify-content: space-around;"> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> </div> <div style="display: flex; justify-content: space-around;"> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> </div> <p>Prestige (start at top)</p> <p>Good Neighbor (lvl. 1) ... <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p>Person of Influence (lvl. 2) ... <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p>Aldersperson (lvl. 3) ... <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p>Big Person (lvl. 4) ... <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p>Village Chief (lvl. 5) ... <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p>Help Received</p> <div style="display: flex; justify-content: space-around;"> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> </div>	<p>House</p> <p>Garden and Trees</p> <p>Saved Coins</p>	<p>Granary (max 20 food)</p>			
<p>Household Members (Total food req _____)</p>					
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p>Child/Adult/Elder</p> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Food req.</div> </div> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Labor</div> </div> <div style="display: flex; flex-direction: column; gap: 2px;"> <input type="checkbox"/> Malnourished <input type="checkbox"/> Sick / Injured <input type="checkbox"/> Dead </div> </div>	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p>Child/Adult/Elder</p> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Food req.</div> </div> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Labor</div> </div> <div style="display: flex; flex-direction: column; gap: 2px;"> <input type="checkbox"/> Malnourished <input type="checkbox"/> Sick / Injured <input type="checkbox"/> Dead </div> </div>	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p>Child/Adult/Elder</p> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Food req.</div> </div> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Labor</div> </div> <div style="display: flex; flex-direction: column; gap: 2px;"> <input type="checkbox"/> Malnourished <input type="checkbox"/> Sick / Injured <input type="checkbox"/> Dead </div> </div>	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p>Child/Adult/Elder</p> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Food req.</div> </div> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Labor</div> </div> <div style="display: flex; flex-direction: column; gap: 2px;"> <input type="checkbox"/> Malnourished <input type="checkbox"/> Sick / Injured <input type="checkbox"/> Dead </div> </div>	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p>Child/Adult/Elder</p> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Food req.</div> </div> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Labor</div> </div> <div style="display: flex; flex-direction: column; gap: 2px;"> <input type="checkbox"/> Malnourished <input type="checkbox"/> Sick / Injured <input type="checkbox"/> Dead </div> </div>	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p>Child/Adult/Elder</p> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Food req.</div> </div> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <div>Labor</div> </div> <div style="display: flex; flex-direction: column; gap: 2px;"> <input type="checkbox"/> Malnourished <input type="checkbox"/> Sick / Injured <input type="checkbox"/> Dead </div> </div>

Fields

<p>1. Hill</p> <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 5px auto; width: 40px;"> sow seed </div>	<p>2. Dale</p> <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 5px auto; width: 40px;"> sow seed </div>	<p>3. Glen</p> <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 5px auto; width: 40px;"> sow seed </div>	<p>4. Meadow</p> <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 5px auto; width: 40px;"> sow seed </div>	<p>5. Scrub</p> <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 5px auto; width: 40px;"> sow seed </div>																																																																																																																																																																																																																												
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De Agricultura Quick Reference Sheet

Actions Each Turn

Fall	Winter	Spring	Summer
<ol style="list-style-type: none"> 1. Contribute to Festivals 2. Eat (+ festival credit) 3. Determine nutrition and family status; calculate misfortune 4. Plant wheat 	<ol style="list-style-type: none"> 1. Eat 2. Determine nutrition and family status; calculate misfortune 3. Crop grow roll (wheat) 	<ol style="list-style-type: none"> 1. Eat 2. Determine nutrition and family status; calculate misfortune 3. Plant barley (optional) 4. Crop grow roll (wheat and barley) 	<ol style="list-style-type: none"> 1. Eat 2. Determine nutrition and family status; calculate misfortune 3. Storage spoilage roll (for each cube in granary; 1-3 = spoiled, 4-6 not spoiled) 4. Crop grow roll (wheat and barley) 5. Harvest 6. State collects taxes ≤ 13 tax 1 wheat 13+ tax 2 wheat

Wheat Harvest

Grow Rolls Total (3 dice)	Amount of Wheat Harvested
< 12	0 cubes (crop failure)
12-15	2 cubes (normal harvest)
16-17	4 Cubes
18	6 cubes (spectacular harvest)

Barley Harvest

Grow Rolls Total (2 dice)	Amount of Barley Harvested
< 5	0 cubes (crop failure)
5-9	2 cubes (normal harvest)
10-11	4 Cubes
12	6 cubes (spectacular harvest)

Determine malnourishment -> sickness -> death

Gain 1 misfortune for each malnourished or sick family member

Gain 3 misfortune for a dead adult (happens only once per deceased family member)

Gain 1 misfortune for a dead child or elder (happens only once per deceased family member)

Helping others

A player may give food to another player in need (which means they do not have enough food to feed their family and/or plant their fields that season) and gain prestige at this rate:
+1 / 1 wheat +1 / 2 barley

A player may contribute 1 wheat to the fall harvest festival and gain +2 prestige
For each cube donated, every player receives a ¼ food credit for the fall eating season

PnP Debt Cards

<p>DEBT</p> <p>A local wealthy magnate has loaned you 2 wheat and 2 barley. At a cost</p> <p>3 wheat and 3 barley needed to repay debt</p>	<p>DEBT</p> <p>A local wealthy magnate has loaned you 2 wheat and 2 barley. At a cost</p> <p>3 wheat and 3 barley needed to repay debt</p>	<p>DEBT</p> <p>A local wealthy magnate has loaned you 2 wheat and 2 barley. At a cost</p> <p>3 wheat and 3 barley needed to repay debt</p>	<p>DEBT</p> <p>A local wealthy magnate has loaned you 2 wheat and 2 barley. At a cost</p> <p>3 wheat and 3 barley needed to repay debt</p>
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Debriefing Questions and Guide for Notes

Teacher Notes

- Have students keep a seasonal record of their family and food
 - We mostly ate
 - This season is the (name the agricultural labor)
 - Our food supply was:
 - Insufficient food etc.
- Question throughout during play: what risk did you take and how did it turn out
- Extension questions
 - Why might sacrifices to the gods seem an important thing to do
 - How important were good and supportive community bonds?

Play Notes: The Family Journal

- Record each month and what happened that month according to the chart and your decisions
- After each harvest, record the amount of wheat, barley, and bronze bits your family has
- Note if you sell any wheat or purchase any
- Record if anyone is sick or injured or malnourished

Debriefing and Reflection Notes

Note: This game is a highly simplified interpretation with a point of view. Respond to the questions below from the point of view of the game, but do not assume the game is accurate.

What aspects of farming life does this game focus on?

What aspects of farming life does this game ignore

What assumptions about farming life does this game make?

What kinds of agency did a peasant family have? What sorts of choices and actions could they make to survive? What factors were beyond their control? To put it slightly differently, what were the “rules” of their world and nature that they could not change.

What strategies for survival are shown in the game? What might some other strategies have been?

Why do ancient law codes like Hammurabi’s Law code (18th century BCE Babylonia) have so many laws punishing those who harmed others’ fields

In this society, which asset would be more valuable: money or farmable land?

Outside the household:

How important were connections with the community for individual households?

What positive and negative roles could wealthier (= more farmland and available labor) people in the community play?

What was the household's main interaction(s) with the state?

Why might a peasant community facing the situation your fellow players and you faced want to sacrifice to the gods of sun, wind, rain, and harvest regularly?

How might "Big People" local landowners with more land than needed for subsistence and insufficient labor to work all the land might have fit in?