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Erasmusland

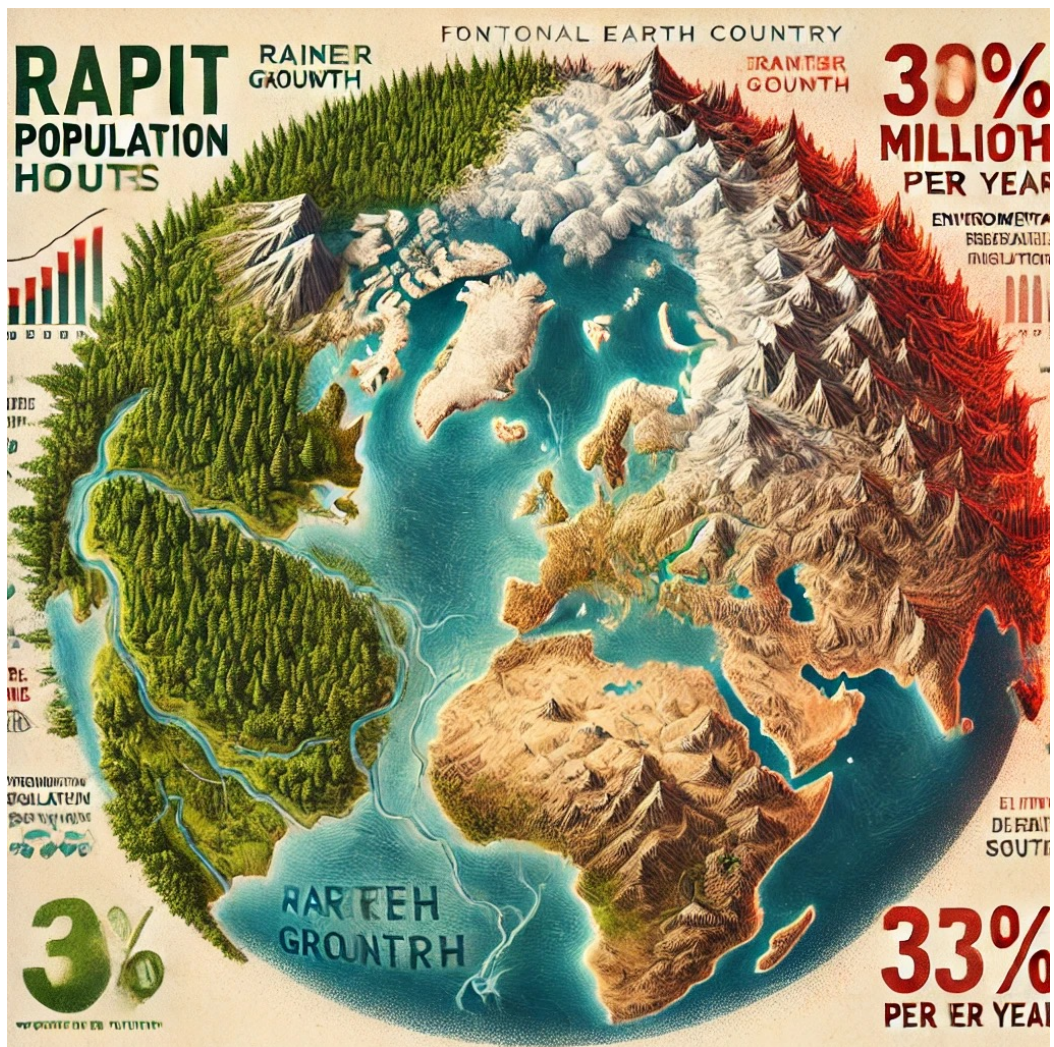
An Action for Environment and Climate

www.makerasmus.eu



Erasmusland

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- Fictional Earth Country
- 70 million hectares
- Rainier north, drier south
- Population of 30 million
- Growing at average of 3%/year
- Facing many related issues climate and environment

Agenda

1. Introduction

2. Individual Ministry Caucuses

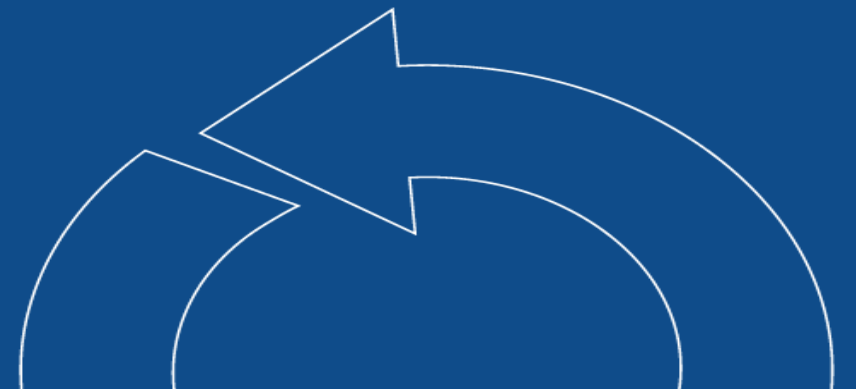
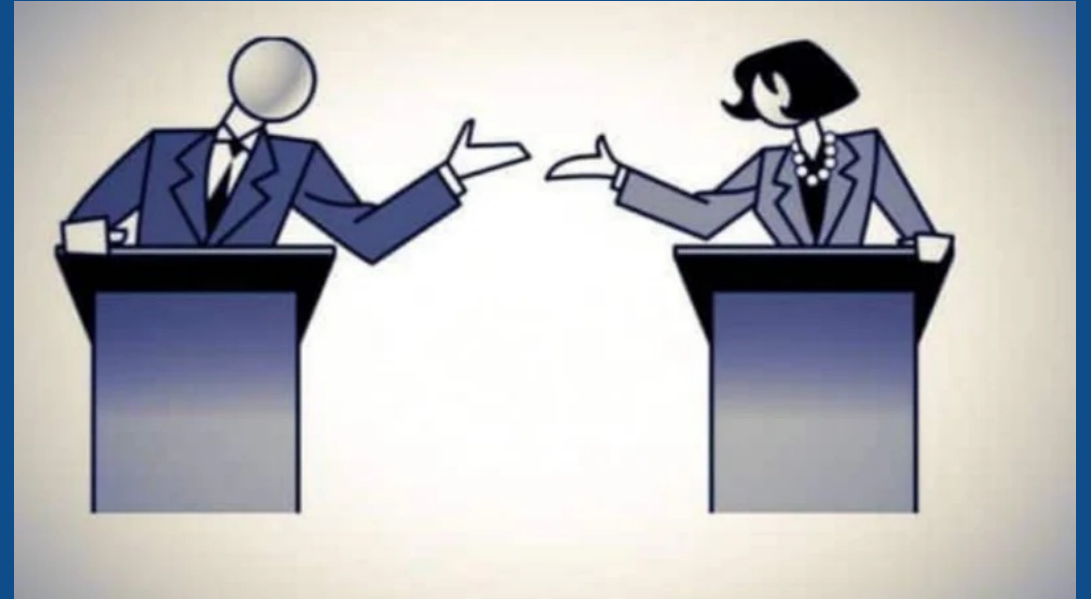
3. Negotiations Round 1

4. Negotiations Round 2

5. Debrief

You will represent one of five delegations...

-  Ministry of Health
-  Ministry of Agriculture
-  Ministry of Climate
-  Forest Ministry
-  Water Ministry



12
POLICIES

60
TOKENS

2
ROUNDS

ALPS Policy Levers

POLICY LEVER	LEVER SETTING			DESCRIPTION
	-10 tokens	Current	+10 tokens	
Crop Land Growth	0%	3%	6%	Annual rate of expansion of land for growing crops, currently at 3% per year. There is potential to increase the cropland conversion rate of forests to cropland to as high as 6% or reduce it to as low as a total moratorium. Converting land to farm use requires clearing of forests and typically requires burning which contributes to greenhouse gas emissions.
Marginal Land Return	n/a	0%	15%	Percent of crop land that is abandoned and allowed to convert back to forest. 15% of crop land is marginal and ripe for abandonment. Because the land is lower yield, abandonment lead to a 5% increase in the average yield on the remaining crop land.
Livestock Growth	0%	3%	6%	Annual rate of growth in livestock, currently 3% per year. Livestock growth can be increased to as high as 6% or reduced to as low as a full halt. Livestock is raised primarily for status rather than food. While livestock do not require additional land, they do require more resources than crops and result in higher greenhouse gas emissions due to the cows' biological methane emissions.
Fertilizer Growth	0%	3%	6%	Annual rate of growth in fertilizer use per hectare, currently 3% a year. You can increase the fertilizer growth rate to up to 6% or place limitations on its use that reduce the growth rate to as low as 0%. While use of fertilizer increases crop yield, it creates N ₂ O which is a greenhouse gas.
Crop Yield Improvement	n/a	0%	25%	Increase in productivity per hectare from crops through means other than irrigation and fertilizer, like technology and practices (i.e., new seeds). There is potential to dramatically improve base crop yield and input effectiveness by up to 25%.
Livestock Yield Improvement	n/a	0%	25%	Annual increase in the food produced per head of livestock. There is potential to dramatically improve livestock yield by up to 25% through new technology and practices including new breeds, better livestock health, and better milk and egg practices.
Reservoir Expansion	n/a	0%	25%	Building of dams to expand water reservoirs. There is the potential to expand reservoir capacity by up to 25%, thereby increasing the availability of water for farming and other purposes.
Irrigation Expansion	n/a	0%	25%	Installation of irrigation systems to provide water to croplands. There is the potential to expand irrigation by up to 25%, thereby increasing the likelihood of successful harvest of croplands.
Irrigation Improvement	n/a	0%	50%	Improvements to technology and practices (i.e. drip irrigation) that result in more efficient water use for agricultural purposes. There is potential to facilitate adoption of best practices by up to 50% more farmers.
Export Crop Expansion	n/a	0%	10%	Shifting from traditional crops to those that have a higher value (i.e. tomatoes), usually through export to other countries. The value of crops can be increased by up to 10% by shifting a portion of production to higher value crops. These crops tend to require more water than traditional crops.
Greenhouse Gas Reduction	n/a	0%	25%	Reduction in greenhouse gas emissions (i.e. methane and nitrogen) that are produced by agricultural activities. Policies to encourage sound manure management and nitrogen runoff reduction can reduce greenhouse gas emissions from crops and livestock by up to 25%.
Food Waste Reduction	n/a	0%	20%	Percent reduction in food waste as it moves from the farm and the consumer. Policies to improve transportation, storage, and markets can reduce post-harvest losses by up to 20%.

12 tokens per interest group
Each represents
10% of possible policy impact

12
POLICIES

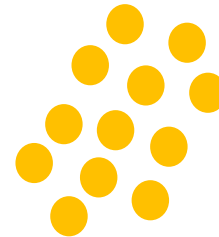
60
TOKENS

2
ROUNDS

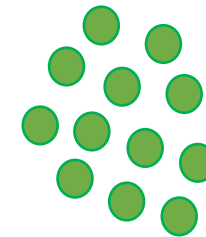
**Food
Security**



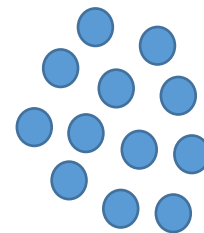
**Economic
Growth**



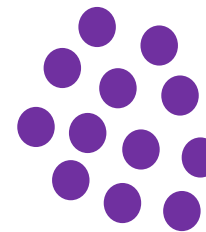
Forest



Water



Climate



12
POLICIES

60
TOKENS

2
ROUNDS



Agritopia Strategy Proposal

Reduce



Notes

Place tokens to increase or reduce policy impact. Ten tokens for full impact. See handout for policy definitions.

Policy

Crop Land Growth

Marginal Land Return

Livestock Growth

Fertilizer Growth

Crop Yield Improvement

Livestock Yield Improvement

Reservoir Expansion

Irrigation Expansion

Irrigation Improvement

Export Crop Expansion

Greenhouse Gas Reduction

Food Waste Reduction

Increase



Round

1 2

- 1 token = 10% effort
- 5 tokens = half effort
- Add tokens from center outward
- 10 tokens = full effort
- On the left DECREASES
- On the right INCREASES
- Some levers can be increased or decreased
 - *Tokens cancel each other*



12
POLICIES

60
TOKENS

2
ROUNDS

Caucus Proposals

- Review briefing sheets
 - Formulate your negotiation strategy
 - Select one policy to test in the simulation tool
 - Share your policy and reason for it.
- Formulate your negotiation strategy (spread 10 tokens across the 12 policies)
 - Talk to other teams and negotiate for the best possible outcome for your group.

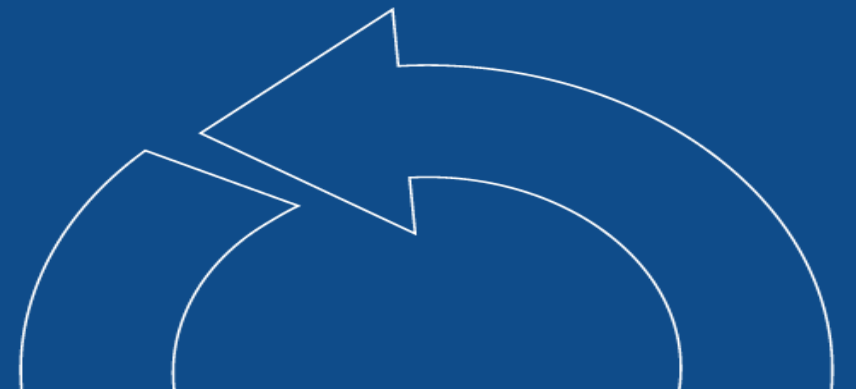


We Will Test Pledges in ALPS

(Agriculture and Land Policy Simulator)

This simulation:

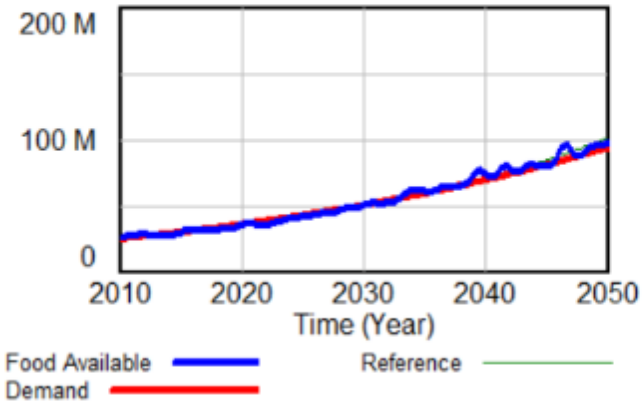
- Represents an average the country and is based on reasonable, but not real data.



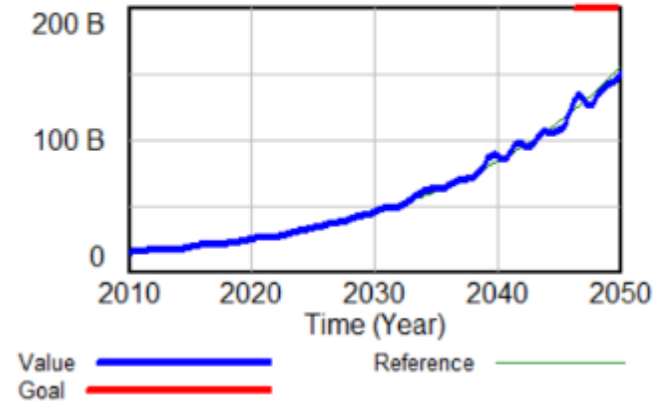
Erasmusland

Agritopia

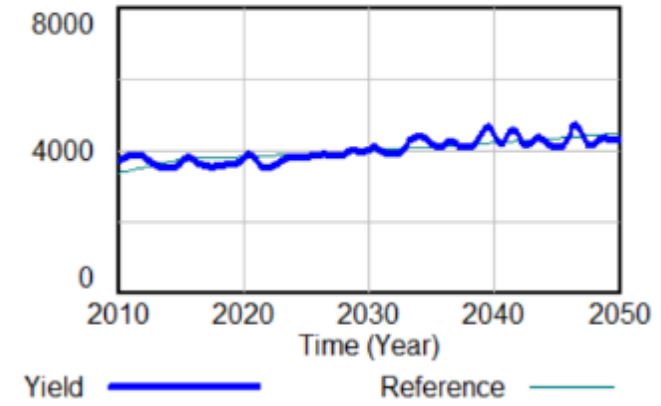
Food Available (Mt/year)



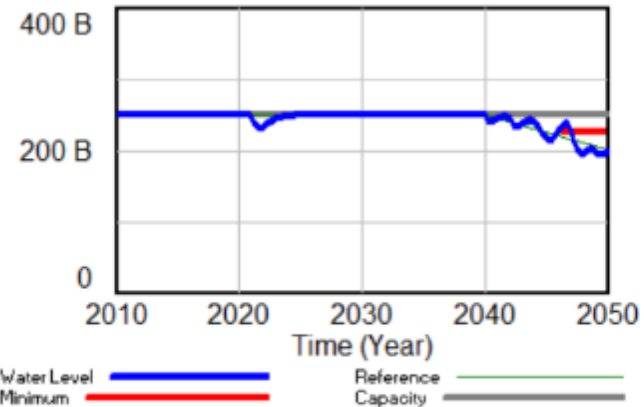
Economic Value (\$/year)



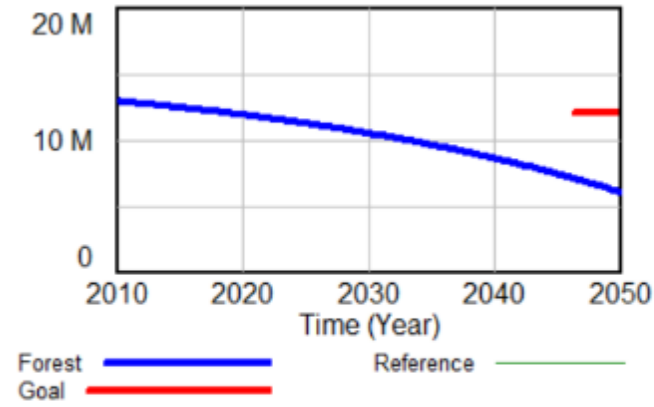
Crop Yield (kg/ Ha /year)



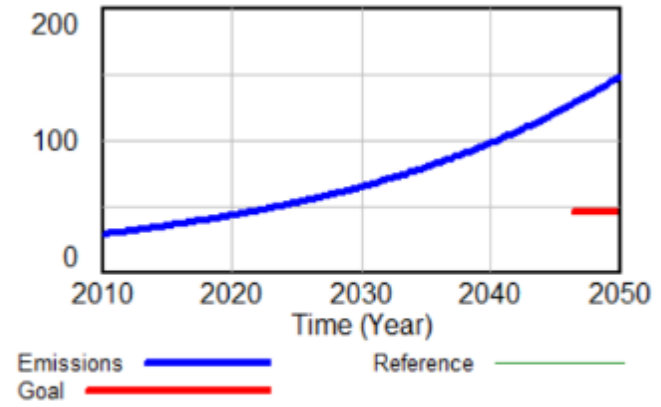
Water Levels (m3)



Forests (Ha)



Climate Emissions (Mt CO2eq/year)



Cover

Facilitator

Summary

Food Security

Economic Growth

Crop Yield

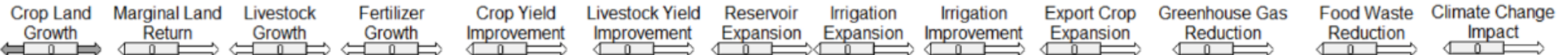
Water

Forests

Climate

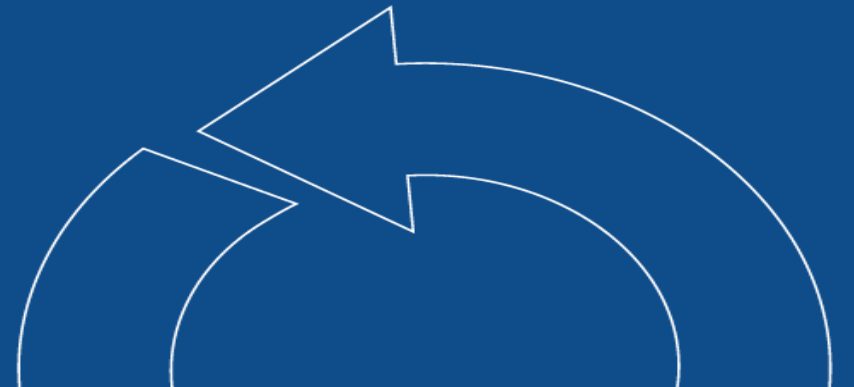
Demand

Assumptions



Please Take 5 Minutes

- Introduce yourselves
- Read your briefing sheet
- Determine who will act as the Minister
 - Minister should wear name tag
 - Others affix colored dot to shirt
- Minister should be prepared to share groups interests



Welcome



Erasmusland is poised for economic growth...

GDP = \$ 15.000/person
3% growth per year



The Population is growing...



3% per year

Food Supply is just keeping up with demand...some go hungry.

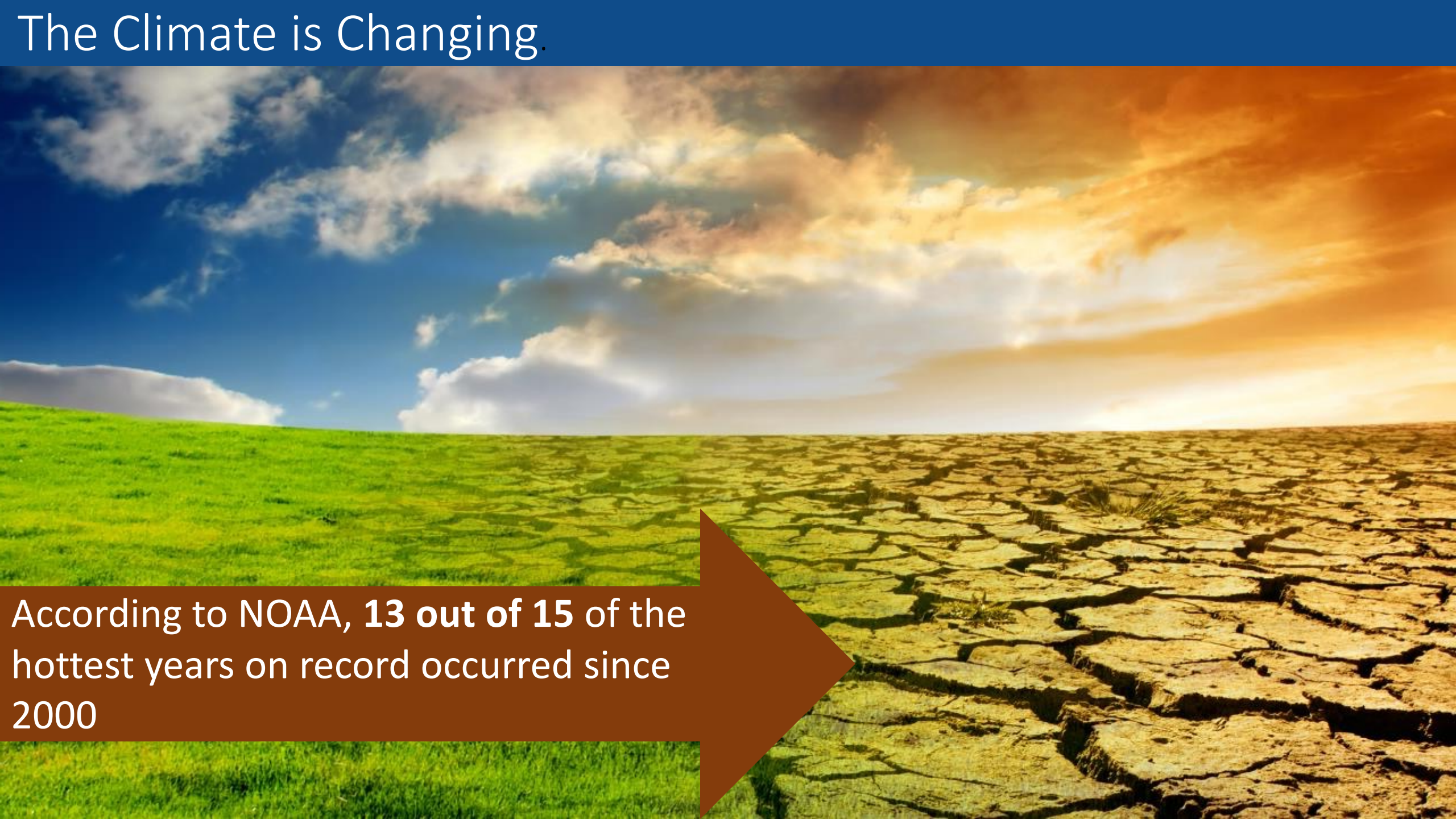


We are cutting down precious forests to feed people...



3% lost per year

The Climate is Changing.

The image is a horizontal composite. The left half shows a vibrant green field under a blue sky with white clouds. The right half shows a parched, cracked earth under a hazy, orange-tinted sky. A large brown arrow points from the green field towards the cracked earth. A text box is overlaid on the bottom left of the green field.

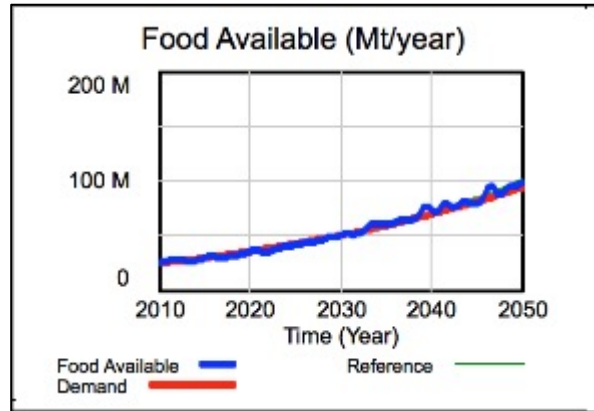
According to NOAA, **13 out of 15** of the hottest years on record occurred since 2000

Leading to expectations for reduced rainfall

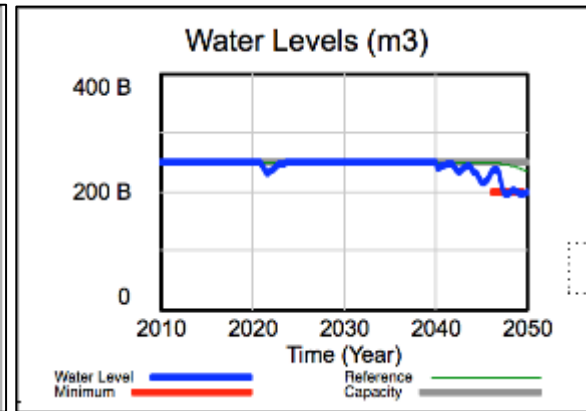


5-15% lower by 2050

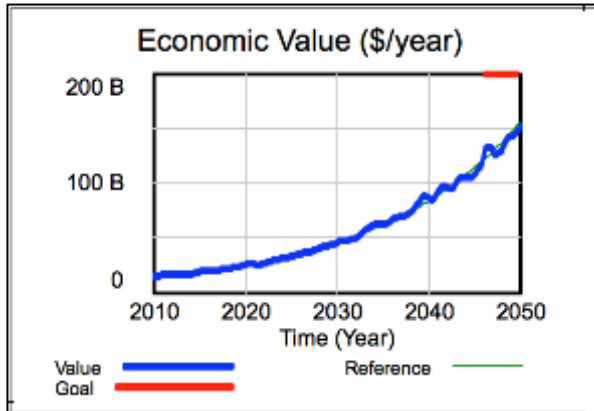
Food Security



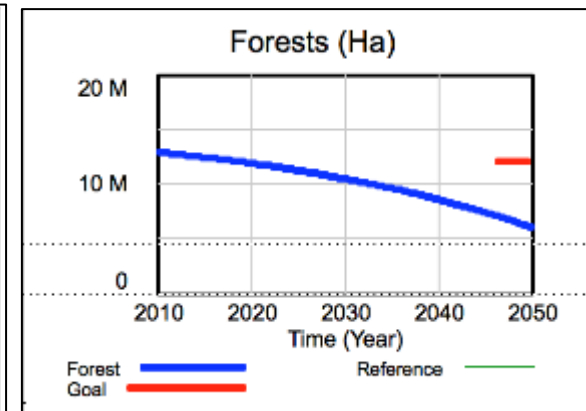
Water



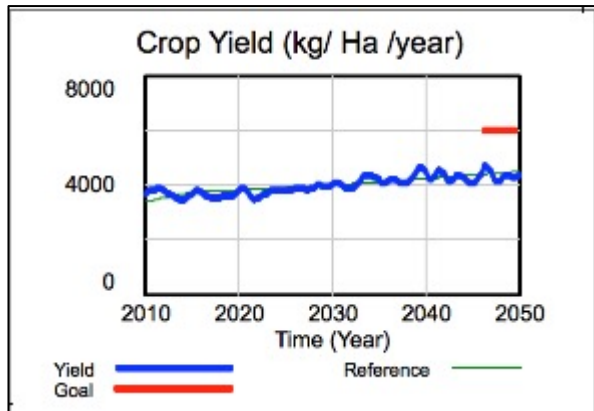
Economic Growth



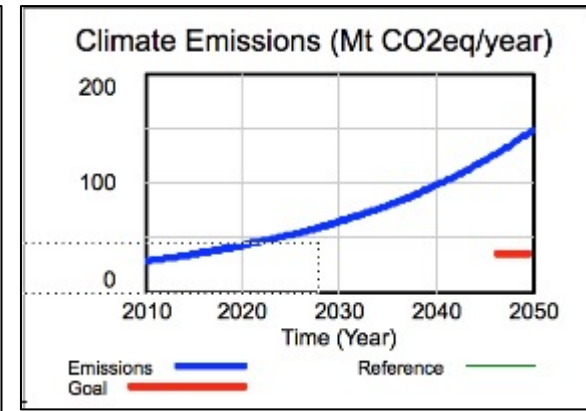
Forest



Crop Yield



Climate



Ministry of Health

Your primary interest is meeting United Nations Development Goals to satisfy the nutritional needs of the population.



Ministry of Agriculture

Along with:

- Parts of Finance Ministry
- Industry Advocates
- Chambers of Commerce

Your primary interest is growth of the national economy through agriculture production.



Ministry of Climate

Along with:

- Climate team on Foreign Ministry
- Climate Advocacy Organizations
- Environmental Organizations

Your primary interest is maintaining greenhouse gas emissions at a level consistent with country's obligation to Paris Climate Agreement.



Forest Ministry

Along with:

- Wildlife and Tourism
- Erosion programmes
- Land conservation groups

Your primary interest is maintaining forests at their current levels.



Water Ministry

Along with:

- Irrigation at Agriculture Ministry
- Water Control Boards

Your primary interest is ensuring adequate water supplies to meet the needs of people, industry, and agriculture





Welcome

YOUR CHALLENGE

Create a national plan that adequately addresses your ministry's goals while ensuring food security.

Caucus Proposals

- Interest Groups caucus to determine their favorite intervention.
- Minister makes a case for the favorite intervention to convince other Ministers
- ALPS model is used to test the intervention

ROUND 1

- Interest Groups caucus to determine where to invest effort (12 chips)
- Chips are placed on board at front of room
- Interest groups negotiation
- Round 1 proposal is tested in ALPS

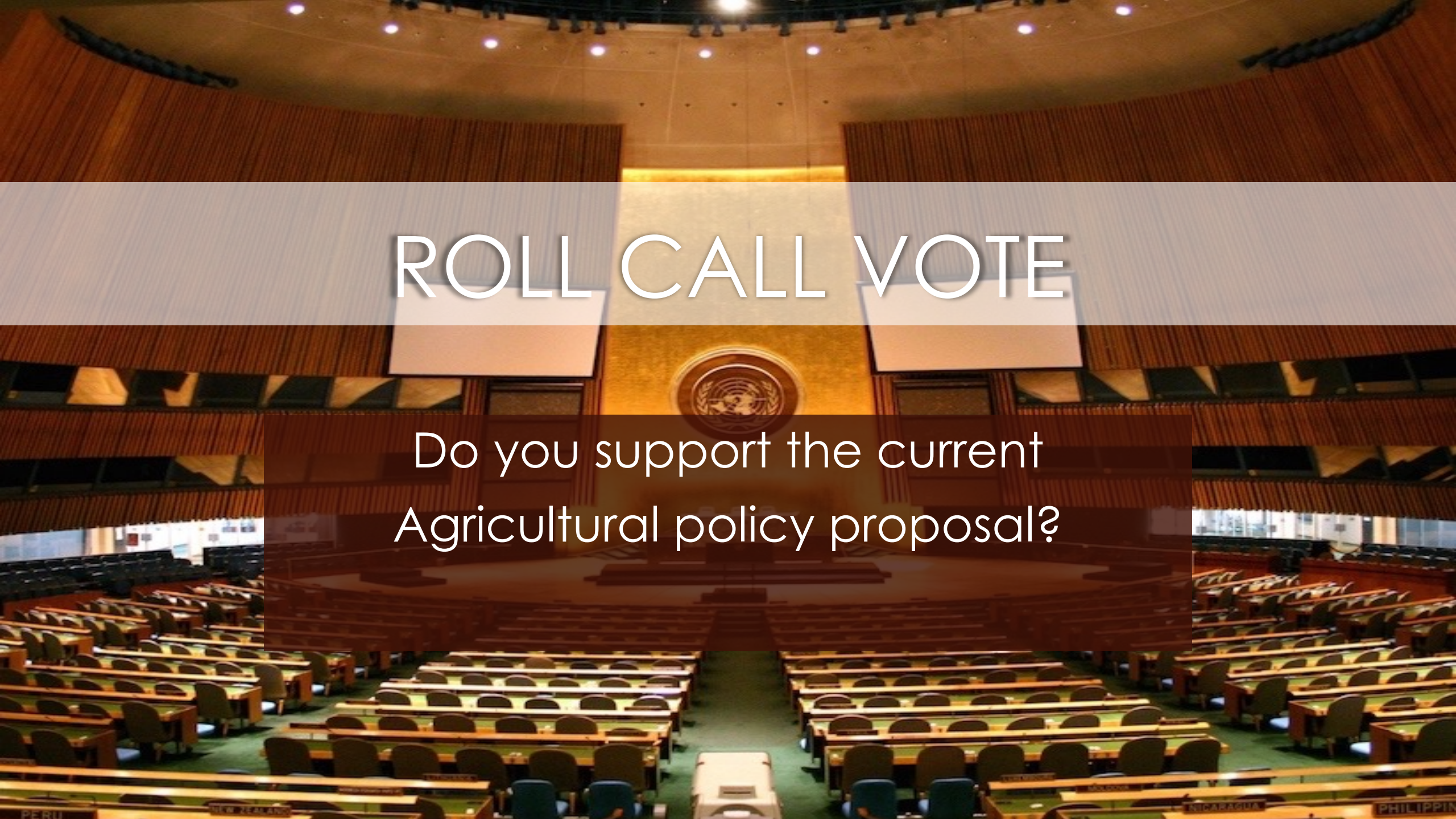
ROUND 2

- Interest Groups caucus to determine where to invest effort (12 chips)
- Chips are placed on board at front of room
- Interest groups negotiation
- Round 2 proposal is tested in ALPS

FINAL ROUND

MINISTERS

- Are you satisfied with this outcome?
- Are there any adjustments you would like to make to improve the outcome prior to a vote?

The background image shows the interior of the United Nations General Assembly hall. It is a large, semi-circular room with a high, curved wooden ceiling and walls. The floor is covered in green carpet. Rows of wooden desks and chairs are arranged in a semi-circle, facing a central stage area. On the stage, there is a large, circular emblem of the United Nations. The text "ROLL CALL VOTE" is overlaid in white, bold, sans-serif capital letters on a semi-transparent grey rectangular background.

ROLL CALL VOTE

Do you support the current
Agricultural policy proposal?

OVERALL DEBRIEF

What and why did the strategy change?

Are you satisfied with this outcome?

Which interventions were win-wins?

Which interventions were the most controversial?

What did you learn?

Discussion Points



1. Some interventions are “win-wins”: green house gas and food waste reduction
2. There are many interdependencies and tradeoffs, so some interventions are contentious: crop land growth, fertilizer growth
3. While there are many solutions that produce winners and losers, it is possible for everyone to win.
4. Actions that oppose each other are counterproductive and it would be parties to work together beyond silos to find the “win-wins”
5. Growth maximization is not sustainable.
6. You can't just efficiency yourself out of the problem.
7. Land use is a leverage point, you must use land more efficiently to achieve all goals.
8. Growing agricultural sector to improve economy, this is going to cause trouble with water and emissions. Are there other ways to grow?

FEEDBACK

What did you like most about this experience?
What opportunities exist to improve this experience?

Briefing Materials

Presentation

Interface

Facilitation

Model

Props

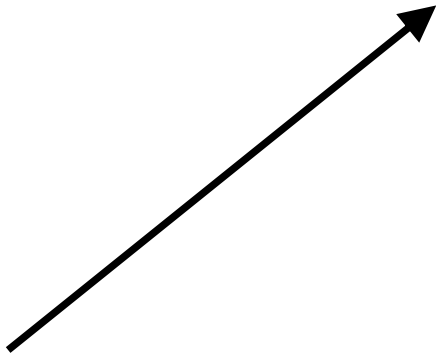
Gameboard



Calculations (if asked)

$$\text{Demand} = \text{Population} \times \text{Demand per Person}$$

(GDP) Sensitivity

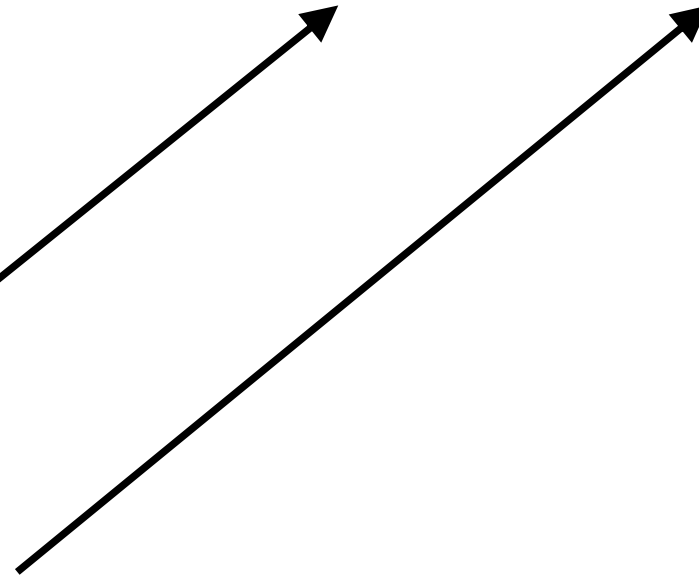
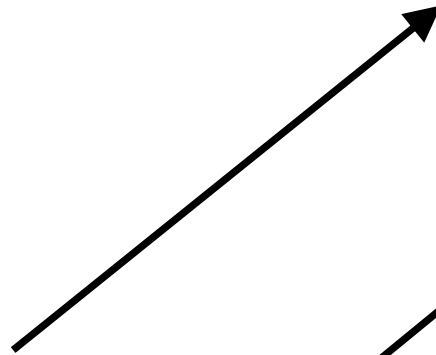
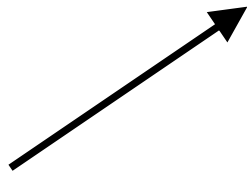


Food Available = Production - Loss - Exports

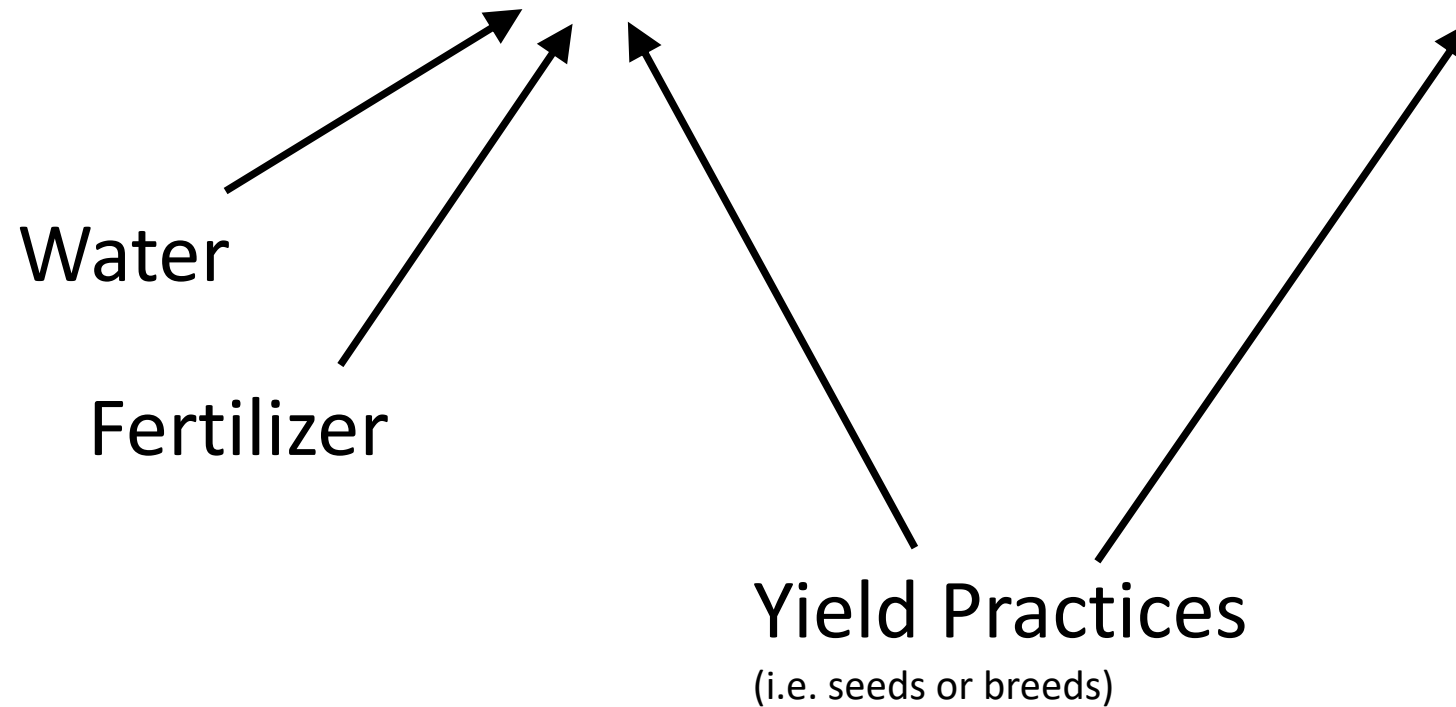
Land, Livestock, Yield

Infrastructure

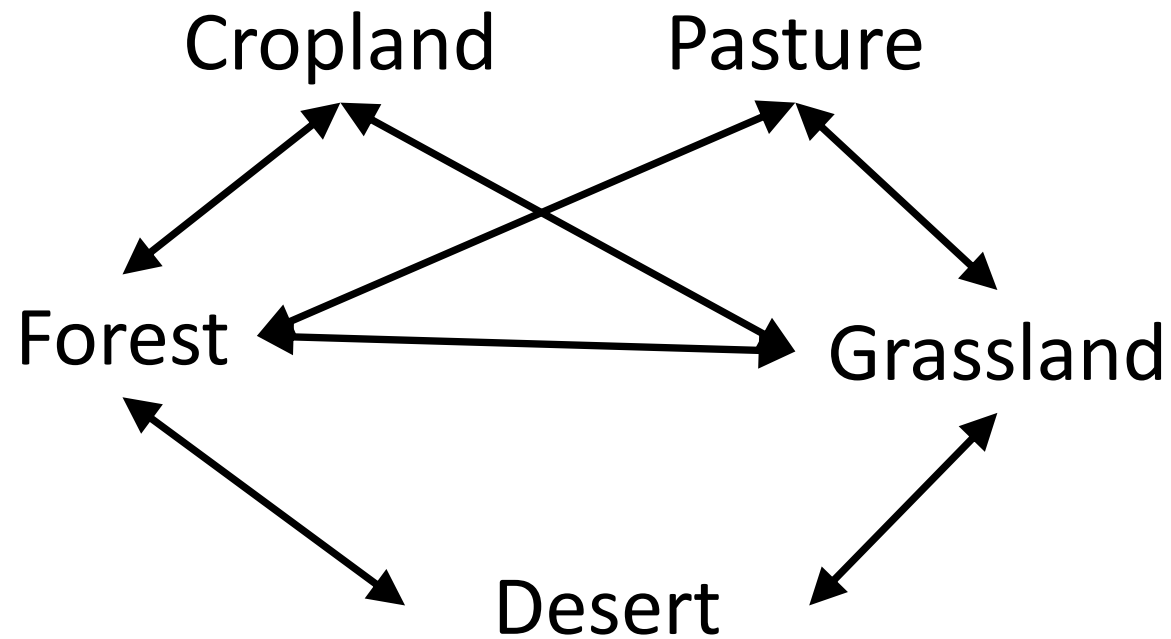
Crop Choices



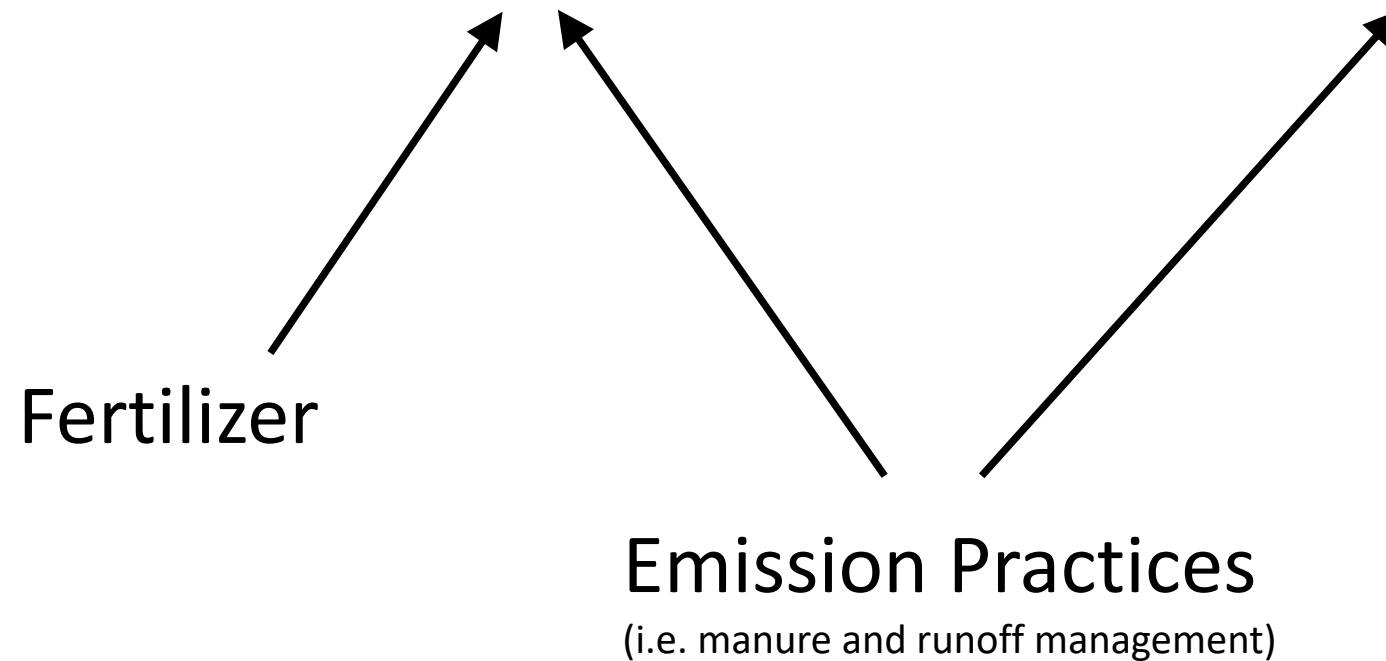
$$\text{Production} = \text{Land} \times \text{Yield} + \text{Livestock} \times \text{LS Yield}$$



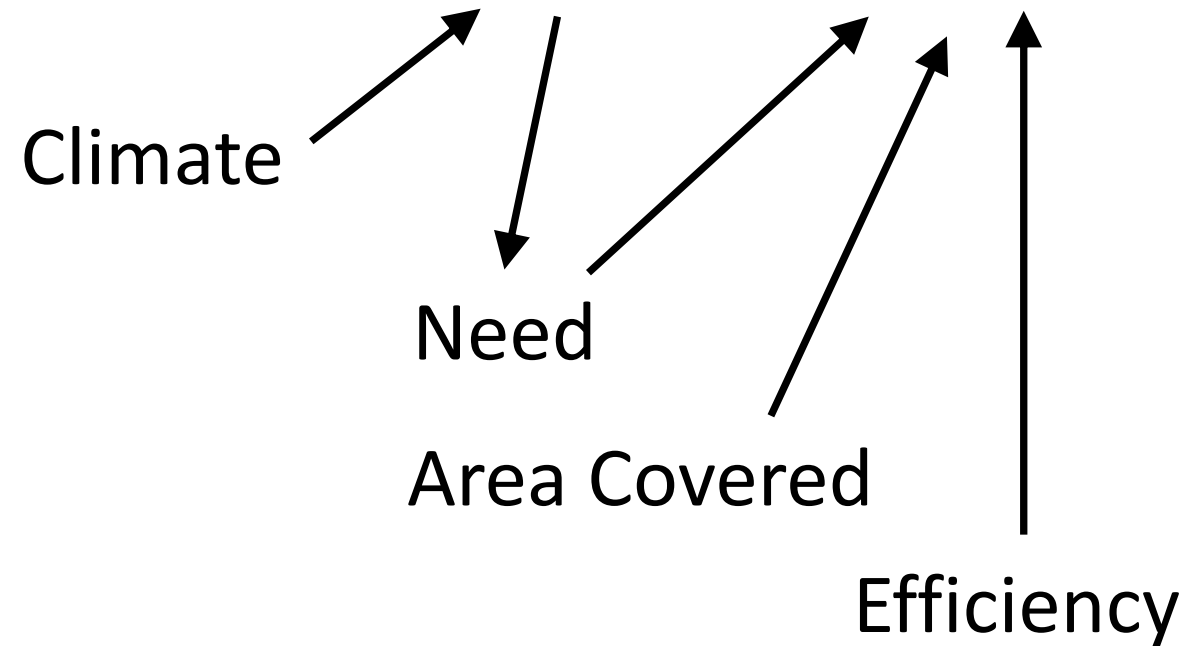
Five Land Uses



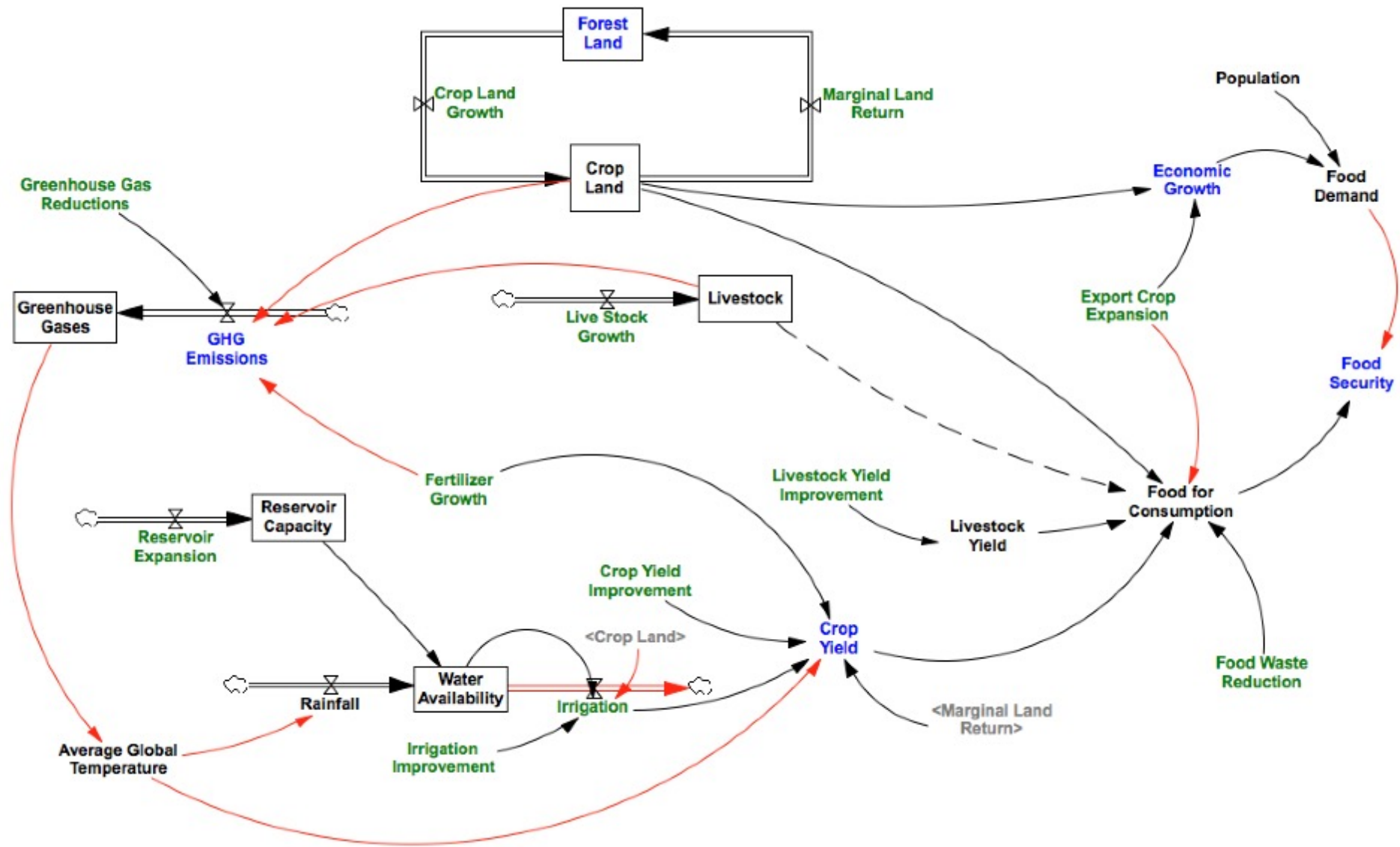
$$\text{Emissions} = \text{Land} \times \text{Factor} + \text{Livestock} \times \text{Factor}$$



Change in Water Level = Rain - Irrigation



ALPS Stock and Flow Diagram



ALPS Strategy Summary

ALPS (Agriculture and Land Policy Simulator)

Strategy Summary

		LOBBYING EFFORT OUT OF 10		
POLICY LEVER		ROUND 1	ROUND 2	FINAL
OPTIONS	Crop Land Growth			
	Marginal Land Return			
	Livestock Growth			
	Fertilizer Growth			
	Crop Yield Improvement			
	Livestock Yield Improvement			
	Reservoir Expansion			
	Irrigation Expansion			
	Irrigation Improvement			
	Export Crop Expansion			
	Greenhouse Gas Reduction			
	Food Waste Reduction			

ALPS Intervention Effectiveness

CHANGE FROM BASELINE (2050 or Cumulative)

INPUTS	OUTPUTS					
	Water	Forest	Emissions	Crop Yield	Food Security	Economic Growth
BASELINE	199.3	6.029	3189	4326	1565	2.39
Crop Land Growth (+/-)	-12.9	-3.229	826	-421	286	0.522
Marginal Land Return	10.7	1.712	-248	501	-57	-0.083
Livestock Growth (+/-).	0	0	323	0	146	0.133
Crop Yield Growth	0	0	0	1654	553	0.661
Fertilizer Growth (+/-)	0	0	530	1194	400	0.307
Livestock Yield Growth	0	0	0	0	33	0.056
Reservoir Expansion	60.6	0	0	90	30	0
Irrigation Expansion	-33.6	0	0	165	55	0.195
Irrigation Improvement	33.2	0	0	90	30	0
Export Crop Expansion	0	0	0	0	-300	0.338
Greenhouse Gas Reduction	0	0	-358	0	0	0
Food Waste Reduction	0	0	0	0	346	0