

Pastoralism Game Practitioner's Manual



Suggested citation: Games for Sustainability (2017) Pastoralism Game Practitioner's Manual, www.gamesforsustainability.org, accessed date

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Acknowledgements

Funding: This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). Funding support for this study was provided by the National Science Foundation and the CGIAR Research Program on Policies, Institutions, and Markets.

Original Game Design

Sebastian Prediger, Björn Vollan and Markus Frölich, based on the fishery games design of François Bousquet, Juan-Camilo Cardenas and Marco A. Janssen

Manual Compilation and Design

Rebecca Shelton

Rationale for Pastoralism Game

Common pool resources, such as livestock grazing land, are difficult to manage given that they are shared. Each resource user, or farmer/herder, decides individually where to graze their livestock, but uncoordinated, individual decisions aggregate to affect the shared resources. Though many grazing lands around the world are degrading due to management challenges, in others, resource users have found ways to collectively manage the resource.

For long-term sustainability, the livestock grazing the land must not exceed the forage's natural rate of regrowth. This game highlights the dilemma that farmers/herders face in deciding where to graze their livestock and how many livestock to graze. Uncoordinated selfish behavior could lead to depletion of common resources in contrast to a more coordinated spread of a limited grazing effort that sustains forage resources.

This manual is intended to provide step-by-step instructions for those who would like to facilitate this game; an interventional learning tool to be used in contexts where the shared resource or resource users are at risk of experiencing diminishing quality or quantity of a resource due to collective management challenges.



Why play a game?

Traditionally, field games have been used as experimental tools to understand human behavior. However, recently, games have shown promise as tools for learning among participants. Games are powerful learning tools because they simulate change over time and thus give participants the opportunity to experience what is in reality a long-term change over a span of a few hours. There are multiple reports of anecdotal evidence that suggest that games focused on resource management strategies are used as reference points for determining management decisions in reality.

However, the game itself is, perhaps, less important than the discussions that follow. Important for facilitators to understand is that these games are not meant to teach people what to do, but meant to stimulate conversation about issues at the community level.

This foraging game is one in which players make individual management choices regarding the area in which they fish and how much to fish, but they experience the impact of uncoordinated decision-making because each individual decision impacts the state of the resource. Thus far, this game has been used in Namibia and South Africa.



Using this Manual

This manual is for NGOs, trainers who are involved in community grazing or livestock projects, and government employees who work with communities.

This manual includes:

1. **A game kit checklist:** provides a brief description and visuals of each item that needs to be gathered to play the game
2. **The Game Roles:** Facilitator and Record Keeper
3. **Preparation for the Game:** instructions for preparing facilitators and communities
4. **Instructions for Play:** step-by-step instructions for how to play the game
5. **Game variations**
6. **Suggestions for a post-game discussion**

7. Contribute to the game's evolution!

8. Appendix with printable materials

Materials Needed

Pastoralism Game Hang-ups: Payoff Table (can be made using pictures or numbers) and grazing land zone status. These can be posters or whiteboard.

Payoff table			
Grazing quality in location	Grazing Intensity		
	0	1	2
High	0	7	8
Low	0	2	3

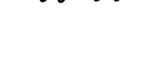
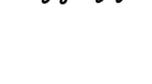
An erasable marker: used to designate the state (high or low payoff) of each of the grazing zones.

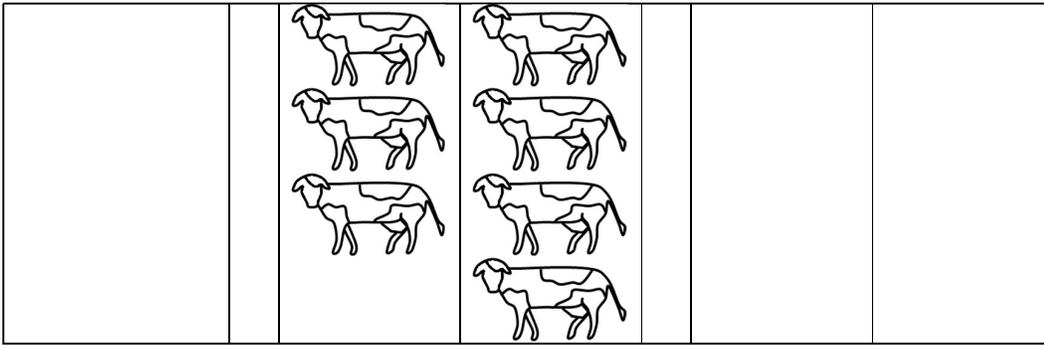
Supplies to hang up the posters: tape, string, etc.

Pens or pencils

Numeric payoff table that can be printed on a poster or drawn on

Payoff table made with pictures of livestock.

Grazing Quality	High			Low		
	0	1	2	0	1	2
Grazing Intensity (stocking rate/effort level)						
						
						
						



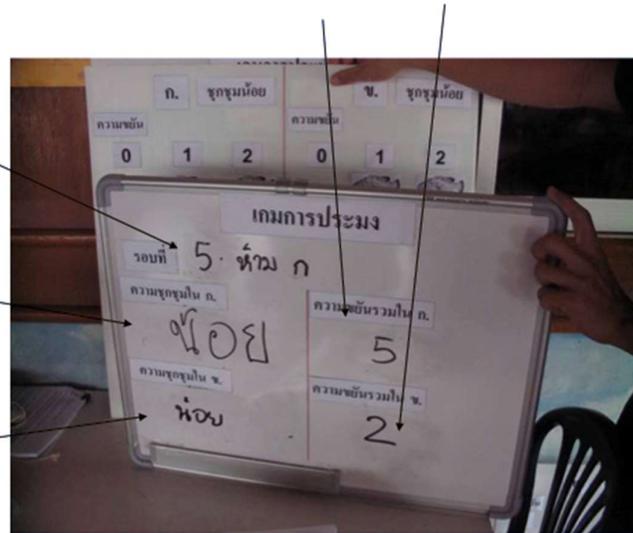
Whiteboard with zone status and total grazing effort made in each zone that can be modified each round. Round number is displayed as “time step.”

Effort zone A effort zone B

Time step

State zone A

State Zone B



Player Calculation/Decision Sheets: should have enough spaces for 10 years plus the additional three practice years

Player calculation sheet			
Player no:		Time:	
		Place:	
		Date:	
Round	A	B	C
	My Decisions		My points
	Place (A/B)	Effort (0,1,2)	
Practice 1			
Practice 2			
Practice 3			
1			
2			
3			



Decision Monitor Card:
 should have enough spaces for 10 years plus the additional three practice years.

Monitor calculation sheet							
monitor:							
Time:							
Place:							
Date:							
Round	Decisions (Place / Effort)					group effort	
	1	2	3	4	5	A	B
1	/	/	/	/	/		
2	/	/	/	/	/		
3	/	/	/	/	/		
4	/	/	/	/	/		
5	/	/	/	/	/		
6	/	/	/	/	/		

Pastoralism Game Roles

FACILITATOR	RECORD KEEPER
SKILLS NEEDED	
<ul style="list-style-type: none"> - Respect everyone – women, children, different castes, religions, etc. - Include all players (give everyone a voice, chance to speak) - Facilitate instead of lecture 	
INDIVIDUAL SKILLS	
<ul style="list-style-type: none"> - Knowledge of factors influencing livestock - Listen to community members and Respond appropriately - Encourage participation and discussion, avoid lecturing 	<ul style="list-style-type: none"> - Legible handwriting - Record keeping
RESPONSIBILITIES	
PREPARATION	
<ul style="list-style-type: none"> - Work with local staff and the village institution to set a date and time to play the games - Prepare the Game Kit, ensure all pieces are present -Lead practice game sessions prior to playing with a community 	<ul style="list-style-type: none"> - In charge of tracking zone status during the game using the monitor card, take notes during discussion - Consider the best locations for everyone to see the game and props
GAME PLAY	

- Lead introductions
- Explain how to play the game and answer questions
- Ask questions as needed to facilitate group discussion
- Decide when to change rounds
- prompt players to talk in discussion

- Record the decisions for each player by marking the decision monitor card
- Announce zone status at the beginning of each round after decisions are made and modify the hang-ups accordingly
- Enforce the rules - keep decision making time and talking to 1 minute
- Take notes of anything new or interesting players say or do during the game if it supports your project

DEBRIEF

- Introduce the debrief
- Facilitate players explaining the game
- Guide the community discussion to link the game with real life

- Take notes of what the community is saying when useful to the project
- Support the Facilitator by providing alternative explanations to the community to improve understanding

Preparation and Play

Pre-Game Day Preparation

1. **Practice the game:** Practice the protocol a number of times with volunteers. You need to get used to the logistics of the instructions, paperwork and calculating the payments. You may also adjust the protocols better fit your local conditions.

2. **Community Preparation:**

- ❖ Coordinate with the village and/or field staff to select a good date and time of day for the game(s) and debrief when most people can attend.
- ❖ Determine how many games will be played and where they will be played (site selection)

TIP!

When you start using experimental games, use them initially with communities with whom you have a good relationship and where there are no serious conflicts within the community.

- ❖ Find participants! Best to consult with village leaders of field staff to determine how best to reach out to community members
- ❖ Gather all of the needed materials

TIP!

When choosing a game site, ask yourself the following questions:

- Distance from village?
- Will everyone feel welcome?
- How many people can sit in the area? Is it big enough?
- Is there space to hang up the posters?
- Time of day:
In the evening, will there be enough light? A lantern or more central location to the village may be best
In the morning or early day, find a spot that will remain shaded, especially when it is hot



Game Day

1. Welcome Everyone!

- ❖ Introduce yourself and the topic of the game
Good day. My name is _____ and I work with _____ (name of organization) in _____ (location). We came here to play the pastoralism game.
- ❖ Ask the participants about themselves.
What is your name? What do you do?
- ❖ If possible, personalize the game for the group
Where do you graze your livestock? What kind of livestock do you have? How many livestock do you have?

2. Explain How to Play

1. In this game you are a herder that grazes livestock in two different locations- zones A and B [point to poster that displays the two zones]. In each round of the game you have to make two decisions. First, you decide in which location to graze livestock. Second, you decide how your stocking rate/how many livestock you have, which is represented by three effort levels: 0,1, and 2. The game is played for ten rounds and each round represents a year. The decisions you make affect how many livestock you have in each round as well as the state of the resource, the shared grazing zones, for the next round.



2. As you can see here [point to poster or payoff table], the resource, or zone, can have a low or high quality of forage depending on how many livestock have been grazed there previously. The game begins with each zone having a high payoff, but this changes during the game. When five or more units of effort are placed in one zone, it depletes to a low payoff. When no more than one unit of effort is located into a low payoff zone for two successive years, it changes back to a high payoff. The state of the resources will be announced at the beginning of each round. Any questions so far?

3. Each of you will make decisions individually. In front of you there is a player decision sheet. In each round, you record your decisions here and then the record keeper [introduce who that is] will come around and collect these sheets. They will record how many livestock you graze (effort level) as well as calculate the state of the resource (low or high payoff) based on the group's aggregated decisions for the next round. Then, they will announce the state of the resource at the beginning of the next round and record it here [point to visuals].



4. The game will be played for ten rounds but we will begin with a few practice rounds. The objective of the game is to make decision that allows you to graze as many livestock as you can during the ten rounds. Any questions?

TIP!

Remind players that:

- All decisions should be made individually
- They should inform you if they have difficulty reading or writing and, if so, one of the monitors will assist them.
- They may have heard others in the community talk about the game but those comments don't necessarily apply to this exercise.

TIP!

It is likely that community members may come and go as the game is played. Some will see the game being played and want to join. Others may have something to do and need to leave. The game is flexible and seeks to include as many community members as possible. They are free to come and go as they would like.

3. Communication Rounds

Explain that: until now, you played the game without talking. You played like this was your herding livelihood. Without discussing anyone else's decision, you grazed livestock. But is that happening in real life? [Open the conversation to briefly discuss if knowledge about where and how many livestock to graze is discussed among the community]

Whether or not your decisions are affected by the decisions of others in real life, we are going to play the next ten rounds of the game as though you do share information about the land zones and your grazing decisions with others before making a final decision about where to graze livestock for the day. So now all 5 of you can sit together and discuss what are good strategies for distributing grazing

effort evenly across the two zones.

In the first game, you did not share your decisions with others. This round, you can. No problem.

Now you have 1 minute to decide together where each of you will graze and how much effort/how many livestock you will have so that everyone can share their voice and make decisions cooperatively.

Play for 10 more rounds with the new rule!



4. Other Variations of the Game

- Multiple livestock species variation: One might design a version of the game in which there are two different livestock species. Instead of different efforts the player chooses between two kinds of livestock, one is more profitable than the other but the more profitable livestock species also requires more forage.
- Coping with external shocks variation: In this version, in each round there is a chance that something external to the group of resource users will affect the state of the grazing land. These shocks might come in the form of droughts that affect forage quality, large agriculture corporations that co-opt part of the shared land, or locust swarms. These shocks can be modified and specified to fit the specific context in which the game is

played. To implement this, one can use a dice to define whether an external event happens. For example, one throw of the dice for each location, and if a six is thrown, an extra effort equivalent of two is added to the location.

- A variation for play that does not require literacy: Instead of using player decision cards and a monitor card, the game will be played with tokens. The Record Keeper will have two bags, A and B, and each will have different colored tokens. In total, at the beginning of the game, each bag will have 40 tokens. The monitor will go around to each participant and the participant will choose which bag to graze livestock on (drawing the amount of livestock that corresponds with the effort table). High quality forage zones switch to low quality zones when there are 17 or fewer livestock still in the bag. Low forage zones replenish back to 40 if no more than 2 are taken out of the bag for two successive rounds. The taken tokens will correspond to a visual board (see materials section) that is modified accordingly during each round by the facilitator or record keeper.

Post-Game Discussion

For the discussion, invite a broader sample of the community, beyond those who participated in the game. There are different ways to organize the post-game discussion. Below are some suggestions:

- **Trend Line Analysis:** In a discussion with the community a history for the last 30 years or so is created. Make it visual and do not ask just **what** changes have occurred but **why** certain changes occurred.

Pastoralism TREND LINE EXERCISE

SUPPLIES		WHY???
ON THE GROUND (under a tree, on a mat...)	ON FLOOR (house, school, local	The trend line exercise is a

- Large sheet of paper with a straight line across the page
- Markers

- hall...)
- Chalk

method to have the community discuss the history of their grazing practices and forage resource. The Questions help illustrate how changes in farming and in the community have influenced forage availability. This helps link the game to their real life experience.

ROLES

FACILITATOR

- Guide the exercise by questions
- Write the community's simple responses on the paper (number of grazing spots, kind of livestock, how often they move their herd)

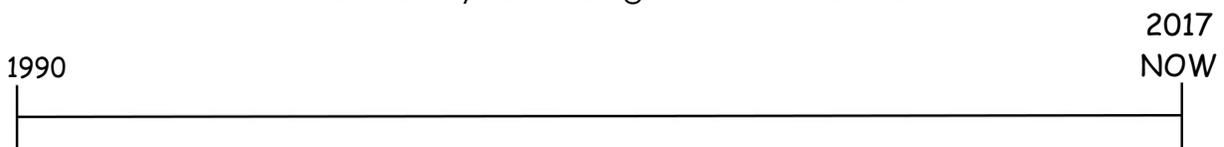
NOTE TAKER

(Optional)
 explanations to why changes occurred. This learning document can help understand the community situation

When mobilizing the community, request elders who have a good knowledge of the village's history.

Let's discuss your real life situation. We will go back over the past 30 years.

Point to the Trend line on the sheet of paper. Write "30 years" on the left end of the line. Write "Now" or "Today" on the right end of the line.



Ask the community for 3-5 key milestones in the community's history that highlight major events over the past 30 years. This helps with memory recall throughout the game. For example:

- When was the school built?
- When was the village electrified?



Ask a series of questions and write the response on the trend line. Start with the 1st fueled boat in 1990, ~30 years ago:

-How was the forage? Which spots did you graze livestock in?

-How many livestock could you graze? How often did you move them?

Grazing was good
in "x, y, and z"
spots



There were a lot
of grasses...now
there are more
shrubs...

Go to the next milestone, 2000, ~20 years ago. Ask the set of 3 questions again. If there are any changes from the previous points, ask: **Why?**

Grazing Locations

Why did you stop grazing here?

Available Forage

Why do you think there became fewer grasses?

Why do you have to move your livestock more often?

- Another element for the debriefing is to ask the participants in the game to explain to others what the game was like and how it was played. What were some choices you made in the game and what were the consequences? Was the game realistic, why or why not? What did you learn? Was the game

useful? Discuss the trend line....does that which was learned support or go against the current trend of the resources?

- If available, present any site-specific data that you have regarding their resource
- Finally, ask: What could be done to change/improve resource dynamics/trends here?

Contribute to the Game's Evolution!

Though this manual provides a game protocol, we encourage users to use this as a starting point. Many of the variations listed in this manual have been developed so that the game better fits their specific contexts and we encourage all users to do the same!

Please contribute to building and evolving this resource! **Connect with us via the contact page on our website or by Facebook** to share reflections and thoughts from your experience implementing the game and to share any variations that you create. We can add this information to and credit your work in the manual.

Facebook Group: [Games for Sustainability](#)

Website: www.gamesforsustainability.org

Materials Appendix

Player calculation sheet			
Player no:		Time:	
		Place:	
		Date:	
Round	A	B	C
	My Decisions		My points
	Place (A/B)	Effort (0,1,2)	
Pract 1			
Pract 2			
Pract 3			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Player calculation sheet			
Player no:		Time:	
		Place:	
		Date:	
Round	A	B	C
	My Decisions		My points
	Place (A/B)	Effort (0,1,2)	
Pract 1			
Pract 2			
Pract 3			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Player calculation sheet			
Player no:		Time:	
		Place:	
		Date:	
Round	A	B	C
	My Decisions		My points
	Place (A/B)	Effort (0,1,2)	
Pract 1			
Pract 2			
Pract 3			
1			
2			
3			
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5			
6			
7			
8			
9			
10			

Player calculation sheet			
Player no:		Time:	
		Place:	
		Date:	
Round	A	B	C
	My Decisions		My points
	Place (A/B)	Effort (0,1,2)	
Pract 1			
Pract 2			
Pract 3			
1			
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3			
4			
5			
6			
7			
8			
9			
10			

Player calculation sheet			
Player no:		Time:	
		Place:	
		Date:	
Round	A	B	C
	My Decisions		My points
	Place (A/B)	Effort (0,1,2)	
Pract 1			
Pract 2			
Pract 3			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Player calculation sheet			
Player no:		Time:	
		Place:	
		Date:	
Round	A	B	C
	My Decisions		My points
	Place (A/B)	Effort (0,1,2)	
Pract 1			
Pract 2			
Pract 3			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Monitor calculation sheet

monitor:

Time:

Place:

Date:

Round	Decisions (Place / Effort)					group effort	
	1	2	3	4	5	A	B
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

