Protocol and Script: Experimental Game – "Extent and Canal Cleaning"

This document provides the script detailing how the experimental games will be played during each session. In addition to the lead researcher, there will be one lead facilitator, who will conduct all games, and two facilitators, who will record participants' decisions, distribute earnings, and conduct a brief exit survey. Each session will involve eighteen participants – three groups of six – and last approximately two and a half hours. Prior to participants' arrival, the research team will set up chairs, privacy folds, visual aids, players' sheets, and payment forms.

Welcoming Participants – 15 minutes

Once a participant arrives, a facilitator will greet them and read the verbal consent script. If the participant does not agree, they will be thanked for their time and asked to leave. If the participant agrees, they will be seated and welcomed as follows:

Hello. My name is [Facilitator's Name] and I am part of a research team from the University of New South Wales. You were randomly selected to take part in a study that helps us understand how farmers make land and water decisions during a cultivation season. If you agree to participate, we will begin with a series of activities and then invite you to complete a short survey at the end. As a thank you, you will receive two hundred rupees at the start and may earn up to thousand rupees more depending on your decisions in the game today. All your answers will remain confidential. Would you like to participate?

If they agree, the facilitator fills the consent form and guides them to their seat.

Introduction – 10 minutes

The lead researcher introduces the session

Good morning! And thank you for coming today. My name is [Lead Researcher's Name], and I am part of a research team studying collective action and irrigation management in Sri Lankan farming communities. This session is part of a project to understand how farmers make cultivation decisions and how they allocate their time on farming and other activities. Since the decision-making on the extent and canal cleaning are interconnected, we are interested in studying that combined behaviour. We hope this exercise feels familiar but simple. From now on, [Lead Facilitator's Name] will conduct the rest of the session. Thank you again for participating.

The lead facilitator continues

Good morning! My name is [Lead Facilitator's Name]. Now that everyone is seated and introduced, we will begin today's activity. You will be making decisions about land cultivation and canal cleaning, just like what happens in real life before the start of a farming season. These choices will affect how much income you earn. Everything you do is private. You will not

know what others choose, and they will not know what you choose. Now, please introduce yourself to the group by saying your name and village

Introduction to everyone. Then the facilitator sets the context:

Each of you has a five-acre plot of land, located in different areas of the field. Some are at the head end, some in the middle, and some at the tail end.

There are two types of seasons: Good and Bad.

In a good season, the water in the tank is enough to cultivate all your land. The Farmers' Organisation allows you to plant all the land. Here, your harvest depends only on whether the canals are cleaned. If canals are clean, every acre you cultivate gives you the full harvest. If canals are not cleaned, water is blocked, and yields are lower for everyone.

In a bad season, the water in the tank is not enough to cultivate all the land. So, the Farmers' Organisation recommends planting only three acres of your land. However, the amount of water you get for each of your plots depends on two things.

First, the cultivated extent of the plots above your plot. If any of the plots above your plot are over-cultivated more than the Farmers' Organisation recommends, they take extra water. As a result, you will receive less water, which is not enough to cultivate three acres as advised. You will get the most revenue if your cultivated extent matches the water you receive. For example, if the water you receive is only enough for two acres, but you cultivate three acres, your revenue will be lower than if you only cultivated two acres.

Second, canal cleaning. If farmers do not put in enough hours, canals get blocked and water cannot flow properly. So, in bad years, both how much land others cultivate and how many hours are put into canal cleaning determine how much water you receive. If you cultivate more than the recommended acres in a bad year, the water you receive is spread thin across your land, and your yield per acre will fall.

You also have ten labour hours each season. You can use these hours either for canal cleaning or for selling vegetables. Selling vegetables pays six hundred rupees per hour. If you are the only one cleaning the canal, then canal cleaning is costly to you, but it benefits everyone because it keeps water flowing.

At the end of each round, you will earn money from both your paddy and selling vegetables. The money from paddy depends on the acres you cultivate, the season type, the canal cleaning effort, and what others decide to do. The money from selling vegetables depends only on the hours you allocate.

We will play several rounds. At the start of each round, we will announce whether it is a good year or a bad year. Based on that, you will know how many acres you can cultivate, and you will decide how many hours you want to contribute to canal cleaning.

All your choices are private, and no one else in the group will see what you decide. Your earnings are also private.

Do you have any questions before we begin practice rounds?

Practice Rounds Script – 60 Minutes

Before we begin the first paid round, we will do some practice rounds. These practice rounds will help everyone understand how to play the game.

In the practice rounds, I will show you different examples and explain how much a farmer can earn in each situation. After we finish the examples, we will play one round together. Then, we will move to the real paid rounds.

(Show Visual Aid I)

Look at this picture. You can see a tank and the paddy lands that receive water from it. On the left side of the tank, there are three plots. On the right side, there are another three plots. The plots closest to the tank are called head-end plots, and the plots farthest away are called tail-end plots.

In this picture:

- Plots one and two are head-end plots.
- Plots three and four are middle-end plots.
- Plots five and six are tail-end plots.

Each farmer owns a plot of land with five acres. At the beginning of each season, the farmers look at the water level in the tank and decide how much land can be cultivated. The Farmers' Organisation discusses and recommends how many acres each farmer should cultivate, just like in a kanna meeting. After that, each farmer decides how many acres they will actually cultivate on their own plots. In this game, we will follow the same process.

(Show Visual Aid II)

Now, look at this photo. Here is how the water flows. The numbers in the picture show the order in which water will be distributed. Water first goes to the plots near the tank — starting from Plot one and Plot two — and then flows down from head to tail. It travels through irrigation canals, and the used water drains into the drainage canal.

If it is a good season, there is enough water for all lands. If it is a bad season, there will not be enough water to irrigate all the land. Now let's talk about canal cleaning.

As you likely know, when the canals are full of weeds, it is difficult to get water to your field. It is the farmers' responsibility to maintain the canals. The canals are shared. For today's

exercise, you have been organised into a group of six other farmers with plots nearby yours, and with whom you share a canal. Each farmer has ten labour hours. You can decide how to use these hours. You can spend some or all of your hours cleaning the canals, or you can spend some or all of your hours working outside the farm (selling vegetables).

If you sell vegetables, you can earn six hundred rupees an hour. However, for each hour you spend cleaning the canal, you lose that six hundred rupees, but you increase your paddy harvest by four rupees per acre. So, if you cultivate five acres, one hour of canal cleaning contribution will increase your harvest from those five acres by twenty rupees. Plus, you earn an extra four rupees per acre for every hour other farmers spend cleaning the same canal. This means your effort in canal cleaning only increases your income if others also put in the time. If others do not clean, then selling vegetables remains the better option.

(Show Visual Aid III)

Let's look at this with a few examples. Imagine a farmer with ten hours and five acres to cultivate. He chooses to spend five hours selling vegetables and five hours cleaning the canal. The other farmers sharing his canal spend no time on cleaning. Now, consider his earnings: from selling vegetables, he earns five hours multiplied by six hundred rupees, which equals three thousand rupees. He spent five hours on canal cleaning, and each hour increases his harvest by four rupees. Therefore, in one acre, his harvest increases by twenty rupees. Since he cultivated five acres, his earnings from his own canal cleaning amount to five times twenty, which is one hundred rupees. From the work of others on the canal, he earns nothing because none of the other villagers spends time on canal cleaning. In total, he earns three thousand and one hundred rupees.

Now imagine the same farmer again spends all ten hours selling vegetables and does not clean the canal at all, while the others spend thirty hours cleaning. From selling vegetables, he earns ten hours times six hundred rupees, which totals six thousand rupees. From others' canal cleaning, he earns an extra four rupees per acre for each additional hour. There are thirty extra hours, and he has cultivated five acres. So, in total, from others' canal cleaning, he earns four rupees per acre for each of the thirty hours, multiplied by five acres, which amounts to six hundred rupees. Altogether, he earns six thousand six hundred rupees.

As you can see, your effort influences your earnings, and others' effort also matters. If everybody wanted to sell vegetables and earn more, then the canal would not be cleaned, so the water would be blocked, and continuous ignorance of canal cleaning would lead to the abandonment of the whole tank system. So, choose wisely based on what you think others will do.

How much time you spend cleaning and selling vegetables is a private decision. No one will know how many hours you cleaned or worked. You also will not know who cleaned or how many hours they worked. You will only see your total earnings, which include the benefit from the cleaning done by others.

Now we move to how much profit a farmer can make from paddy cultivation. Each acre gives eight hundred rupees worth of paddy if the land receives enough water. But if there is not enough water, then there will be a loss from those acres.

In a good season, everyone has enough water, so what others cultivate does not affect your water. But in a bad season, how much land others cultivate will decide how much water reaches your field. The Farmers' Organisation recommends that everyone cultivate three acres during a bad season. Some farmers follow this recommendation, but others do not, because the organisation cannot monitor how much land each person actually cultivates.

(Show Visual Aid II)

Please look at this picture again. Plots one and two are at the head-end. They always receive enough water to cultivate all five acres. They can easily cultivate all five acres, and the Farmers' Organisation will not know exactly how much they cultivate. But when they do this, less water reaches the middle and tail plots, that is, plots three, four, five, and six. For each plot, the amount of water available depends on how much the plots above it are cultivated. Plot three's water depends on plot one. Plot four's water depends on plot two. Plot five's water depends on plots one and three. Plot six's water depends on plots two and four.

When the farmers near the tank cultivate more land, less water reaches the plots that are far from the tank. The total amount of water you get is fixed, no matter how many acres you plant. If you try to spread that limited water across many acres, each acre gets less water, and your total harvest becomes smaller. But if you cultivate fewer acres, each acre receives more water, and your total harvest increases. So when water is limited, reducing the cultivated area gives you a higher total income.

(Show Visual Aid III).

Now, let us look at this simple rule for water reduction. For each extra acre cultivated by the farmers above you, the water available to you is reduced by zero point two five acres. If the plots above you cultivate one extra acre, you will have water for only two point five acres. If they cultivate two extra acres, you will have water for only two acres. If they cultivate three extra acres, you will have water for only one and a half acres. If they cultivate four extra acres, you will have water again, only for one and a half acres.

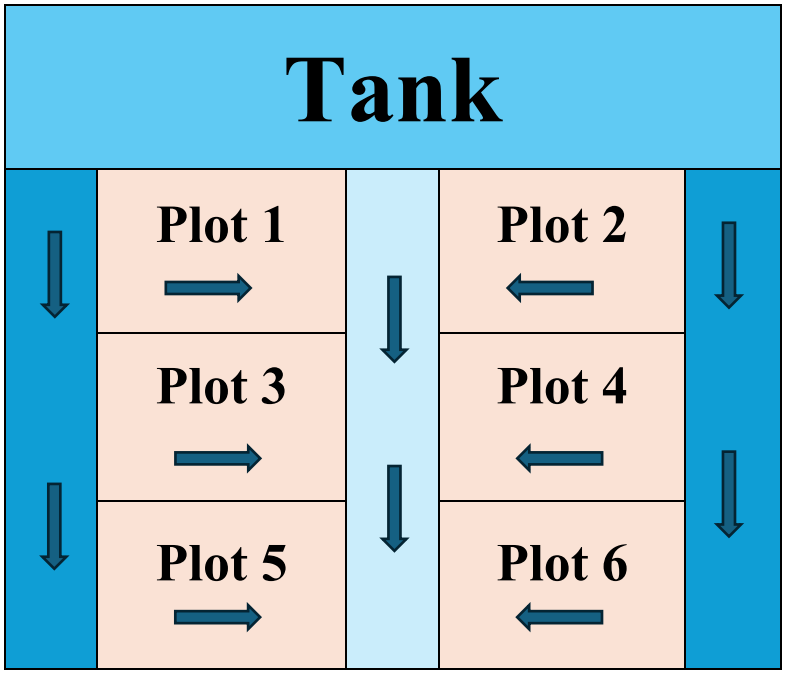
If you plant more than the water available to you, your harvest will fall because the water is spread too thin. So, now, compared to eight hundred rupees for each acre in the enough water scenario, for each acre you will earn two hundred rupees.

So, remember this. When the farmers above you cultivate more land, you will receive less water. If you continue to cultivate many acres, your total earnings will fall. But if you reduce your cultivated area, you can use the limited water efficiently and earn more from the acres you plant.

Visual Aid I – Setting

Plot No	Tank					Plot No
1	Irrigation Canal	Head	Draingae Canal	Head	Irrigation Canal	2
3		Middle		Middle		4
5		Tail		Tail		6

Visual Aid II – Water Flow



Visual Aid III – Canal cleaning

- Total hours: **10**
- Selling vegetables: **Rs. 600 per hour**
- Improvement in harvest from **one hour** of canal cleaning: **Rs. 4 per acre**

Example 1:

- Selling vegetables: 5 hours × Rs. 600 per hour = Rs. 3000
- Canal cleaning: 5 hours × Rs. 4 per acre × 5 acres = Rs. 100
- Total: **Rs. 3100**

Example 2:

- Selling vegetables: 10 hours × Rs. 600 per hour = Rs. 6000
- Canal cleaning: 30 hours × Rs. 4 per acre × 5 acres = Rs. 600
- Total: **Rs. 6600**

Earnings from Paddy in Bad Season

- Everyone cultivated 3 acres → **Rs. 800 per acre**
- **1** extra acres by above plots → **2.5** acres
- **2** extra acres by above plots → **2.0** acres
- **3** extra acres by above plots → **1.5** acres
- **4** extra acres by above plots → **1.5** acres

If you cultivate more than this, then earning with less water is Rs. 200 per acre

Now, let us take a look at two examples of farmers.

(Show Visual Aid 1)

Farmer Senevirathne owns Plot one and Plot four, each plot is five acres. He also has ten hours that he can spend either on canal cleaning or on selling vegetables.

Farmer Somawathi owns Plot two and Plot five, each plot is also five acres, and she also has ten hours to divide between canal cleaning and selling vegetables.

Let's start by looking at the water level in the tank. At the beginning of this season, the tank is full. There is enough water to irrigate all the plots. That means all farmers can cultivate the full five acres in their plots.

After this decision is made, just like during a "kanna" meeting when farmers decide which plots can be cultivated in a season, each farmer then decides how many acres to cultivate and how to use their labour hours.

(Show Visual Aid 2)

Somawathi decides to cultivate all of her Plot two and Plot five, since this is a good season. After deciding the land extent, she decides how to divide her ten hours of labour. She spends three hours cleaning the canal for Plot five and another three hours for Plot two. Altogether, she spends six hours on canal cleaning. The remaining four hours she spends on selling vegetables.

(Show Visual Aid 3)

Now let's look at what Farmer Senevirathne did. He also decides to cultivate all of his Plot one and Plot four, since this is a good season. He spends all ten hours selling vegetables and does not do any canal cleaning for either plot.

At the end of land preparation, both Somawathi and Senevirathne are told how many total hours were spent by all the farmers in the village on canal cleaning. Remember, they will not know how many hours each farmer worked. They will only know the total number of canal cleaning hours done by everyone together.

Now, both of them receive the information that all the other farmers in the village together have spent twenty hours cleaning the canal.

Let's calculate their earnings in this good season based on that information.

(Show Visual Aids 2 and 3)

Both farmers cultivated ten acres in total, and since this is a good season, there is no water shortage. Everyone receives eight hundred rupees from one acre from their paddy harvest. That

means both Somawathi and Senevirathne earn four thousand rupees each from their paddy harvest.

Now let’s calculate what they earned from their labour hours.

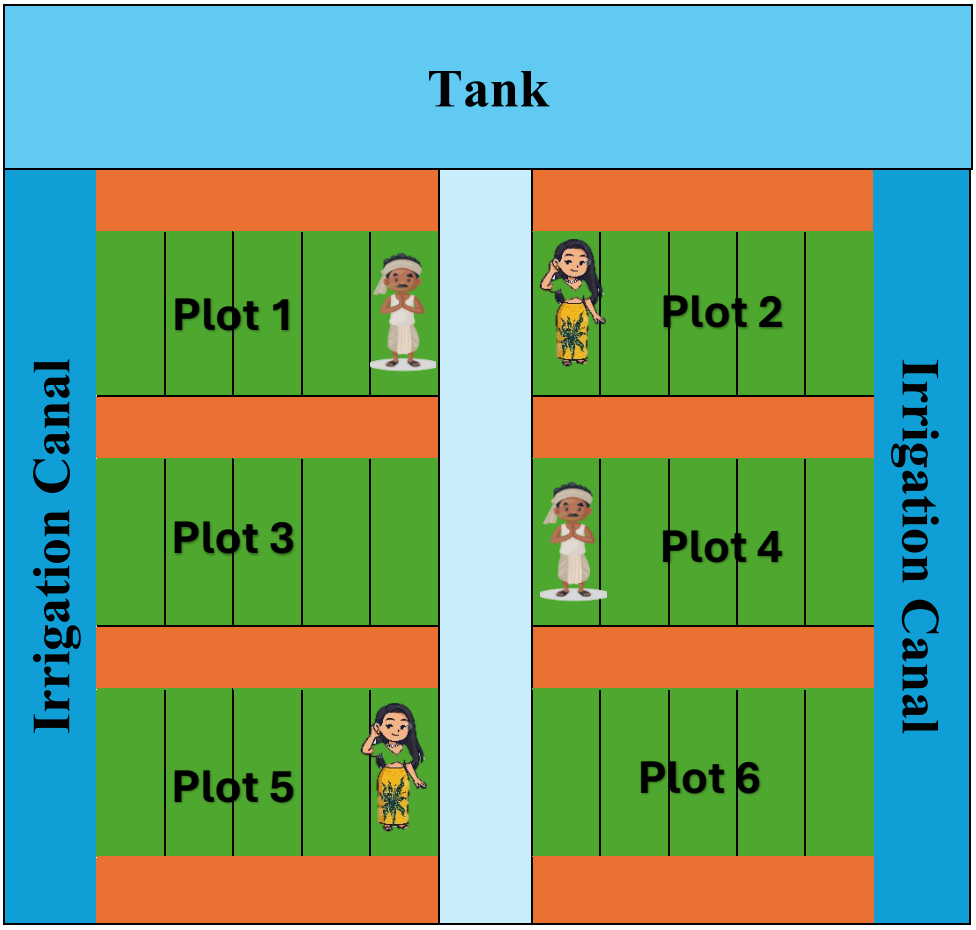
Somawathi spent four hours selling vegetables. That earned her four times six hundred, which equals two thousand four hundred rupees. She also worked six hours cleaning the canal. From her effort on the canal cleaning, her harvest from one acre increases by four times six rupees, totalling twenty-four rupees, and she cultivated ten acres, so the increase is two hundred and forty rupees.

The other farmers together spent twenty hours on canal cleaning. When we subtract her own six hours from that, the others contributed fourteen hours. From those fourteen hours, her harvest increases by fourteen times four, which is fifty-six rupees per acre, and for her ten acres, she earned five hundred and sixty rupees. So, in total, from selling vegetables, her own cleaning, and the others’ cleaning effort, she earns two thousand four hundred rupees plus two hundred and forty rupees plus five hundred and sixty rupees, which sums up to three thousand two hundred rupees. Adding her paddy harvest of eight thousand rupees, Somawathi’s total earnings are eleven thousand three hundred and forty rupees in this good season.

Now let’s look at Senevirathne. He spent all ten hours selling vegetables. From that, he earns ten times six hundred rupees, which totals six thousand rupees. He did not clean the canal, but he still benefits from others’ canal cleaning efforts. The total canal cleaning by others is twenty hours, so his harvest increases by twenty times four rupees per acre, which adds up to eighty rupees. From his ten acres, he earns eight hundred rupees. So, from selling vegetables and others’ cleaning efforts, he earns six thousand eight hundred rupees in total. Adding his paddy harvest of eight thousand rupees, his total earnings come to fourteen thousand eight hundred rupees.

Now that we have seen the first situation, do you have any questions before we look at another one?

Visual Aid 1 – Example 1



Visual Aid 2 – Example 1 – Somawathi's sheet

1. Name: **Somawathi**

2. Lands Owned:

Tail - **Plot 5**	Area: **5 acres**
Head - **Plot 2**	Area: **5 acres**

3. Water Availability in the tank: **Enough to irrigate all lands**

Tail - **Plot 5**	✓
Head - **Plot 2**	✓

4. Lands cultivated:

Tail - **Plot 5**	**5 acres**
Head - **Plot 2**	**5 acres**

5. Labour hours Owned: **10 hours**

Hours spent on canal cleaning – **Plot 5**	**3 hours**
Hours spent on canal cleaning – **Plot 2**	**3 hours**
Hours spent on selling vegetables	**4 hours**

6. Others contribution to canal cleaning:
   20 – 6 = 14 hours

7. Earnings:

Selling vegetables	600 × 4 hours	**2400**
Earnings from her canal cleaning	10 × 4 × 6 hours	**240**
Earnings from others canal cleaning	10 × 4 × 14 hours	**560**
Paddy profit - Plot 5	800 × 5 acres	**4000**
Paddy profit - Plot 2	800 × 5 acres	**4000**
Total earnings		**11340**

Visual Aid 3 – Example 1 – Senevirathne 's sheet

1. Name: **Senevirathne**

2. Lands Owned:

Head: **Plot 1**	Area: **5 acres**
Middle: **Plot 4**	Area: 5 **acres**

3. Water Availability in the tank: **Enough to irrigate all lands**

Head: **Plot 1**	✓
Middle: **Plot 4**	✓

4. Lands cultivated:

Head: **Plot 1**	**5 acres**
Middle: **Plot 4**	**5 acres**

5. Labour hours Owned: **10 hours**

Hours spent on canal cleaning – **Plot 1**	**0**
Hours spent on canal cleaning – **Plot 4**	**0**
Hours spent on selling vegetables	**10 hours**

6. Others' contribution to canal cleaning:
   20 – 0 = 20 hours

7. Earnings:

Selling vegetables	600 × 10 hours	**6000**
Earnings from his canal cleaning	-	**0**
Earnings from others' canal cleaning	10 × 4 × 20 hours	**800**
Paddy profit - Plot 1	800 × 5 acres	**4000**
Paddy profit - Plot 4	800 × 5 acres	**4000**
Total earnings		**14800**

Now let us move to the next season. This is a bad season.

(Show Visual Aid 4)

This time, the water in the tank is not enough to irrigate all the plots. When there is not much water, the Farmers' Organization asks everyone to plant only three acres of land. But the farmers at the head-end always get water first, because the water passes through their fields. Even if they plant more than three acres of land, they can still take water for all five acres, and others will not know.

For farmers in the middle and tail-end, it is different. They often get less water than the amount promised. This happens when the head-end farmers take more water or when the canals are not cleaned properly. This problem is very common in bad seasons.

This season, the Farmers' Organization again recommends cultivating three acres. However, they cannot see how much Somawathi and Senevirathne actually cultivate. Also, Somawathi will not know how much Senevirathne cultivates, and Senevirathne will not know how much Somawathi cultivates.

Now let us look at what Somawathi decided to do.

Somawathi decides to cultivate the full extent of her Plot two, because this is a head-end land, and she can get enough water for all of it. She also cultivates three acres of Plot five, which is in the tail-end. She believes she will receive enough water for those three acres as the Farmers' Organisation promised.

Somawathi spends seven hours selling vegetables. Then she spends the remaining three hours cleaning the canals. She spends two hours on Plot two and one hour on Plot five.

When the water is released, Plot five does not receive enough water for the full three acres. It could be because someone above her, maybe in Plot one or three, cultivated more than three acres. She only knows that her plot is dry.

At the end of land preparation, she receives information that the total canal cleaning done by all farmers is ten hours.

(Show Visual Aid 5)

Now, let us calculate Somawathi's earnings.

Somawathi spent seven hours selling vegetables, making four thousand two hundred rupees from that at six hundred rupees for each hour. She also put in three hours cleaning the canal and managed to improve her harvest by twelve rupees per acre, which adds up to ninety-six rupees across her eight acres.

All the farmers combined put in ten hours of cleaning. After taking out her three hours, that leaves seven hours from the others. From others' efforts, her harvest increased by twenty-eight rupees per acre from those seven hours, resulting in a total increase of two hundred twenty-four rupees for her eight acres.

Adding it all up, Somawathi's earning from her labor comes to four thousand five hundred twenty rupees.

Now for her paddy harvest, Plot two had enough water for all five acres since it's a head-end plot. She makes eight hundred rupees per acre there, which brings her to four thousand rupees from Plot two. But Plot five did not get enough water, so she only gets two hundred rupees per acre, totaling six hundred rupees from that plot.

Putting her paddy earnings together, she has four thousand plus six hundred, which makes four thousand six hundred rupees.

All in all, when you combine her paddy and labor income, Somawathi's total earnings for the season are nine thousand one hundred twenty rupees.

(Show Visual Aid 6)

Now let us look at what Senevirathne did.

Senevirathne also decides to cultivate the full extent of his Plot one, which is a head-end land. However, he expects that his middle-end Plot four will receive less water than promised by the Farmers' Organization. So, he decides to use the available water efficiently. He cultivates only two acres in Plot four.

He spends two hours cleaning the canal for Plot one and one hour cleaning the canal for Plot four. Then he spends the remaining seven hours selling vegetables.

When the water is released, he sees that Plot four did not receive enough water for three acres, but because he cultivated only two acres, the water he received is enough for those two acres to get a good harvest.

At the end of land preparation, he also gets the information that the total cleaning done by all farmers is ten hours.

Now, let us calculate his earnings.

He earned seven times six hundred rupees, which totals four thousand two hundred rupees, from selling vegetables. By cleaning the canal for three hours, he increased his harvest by twelve rupees per acre, amounting to eighty-four rupees across his seven acres.

All the farmers combined spent ten hours on cleaning; after subtracting his three hours, the remaining seven hours are from others. From others' efforts, his harvest increased by twenty-eight rupees per acre from those seven hours, resulting in a total increase of one hundred ninety-six rupees for his seven acres.

Summing everything up, Senevirathne earns four thousand four hundred and eighty rupees in labour-related income.

Now, let's look at his paddy harvest. He cultivated all five acres of his head-end Plot one, earning five times eight hundred rupees- equal to four thousand rupees.

His Plot five did not receive enough water for three acres, but since he cultivated only two acres, he used the limited water efficiently and earned two times eight hundred rupees, totalling one thousand six hundred rupees from that plot. From paddy, he earned five thousand six hundred rupees.

Combining his paddy harvest and labour income, Senevirathne's total earnings for this season amount to ten thousand eighty rupees.

As you can see, the only difference between Somawathi and Senevirathne is that Senevirathne anticipated that his middle-end plot would receive less water, and he used the limited water efficiently by reducing the cultivated extent. That is why he could earn about one thousand rupees more than Somawathi.

Do you have any questions before we take a short break?

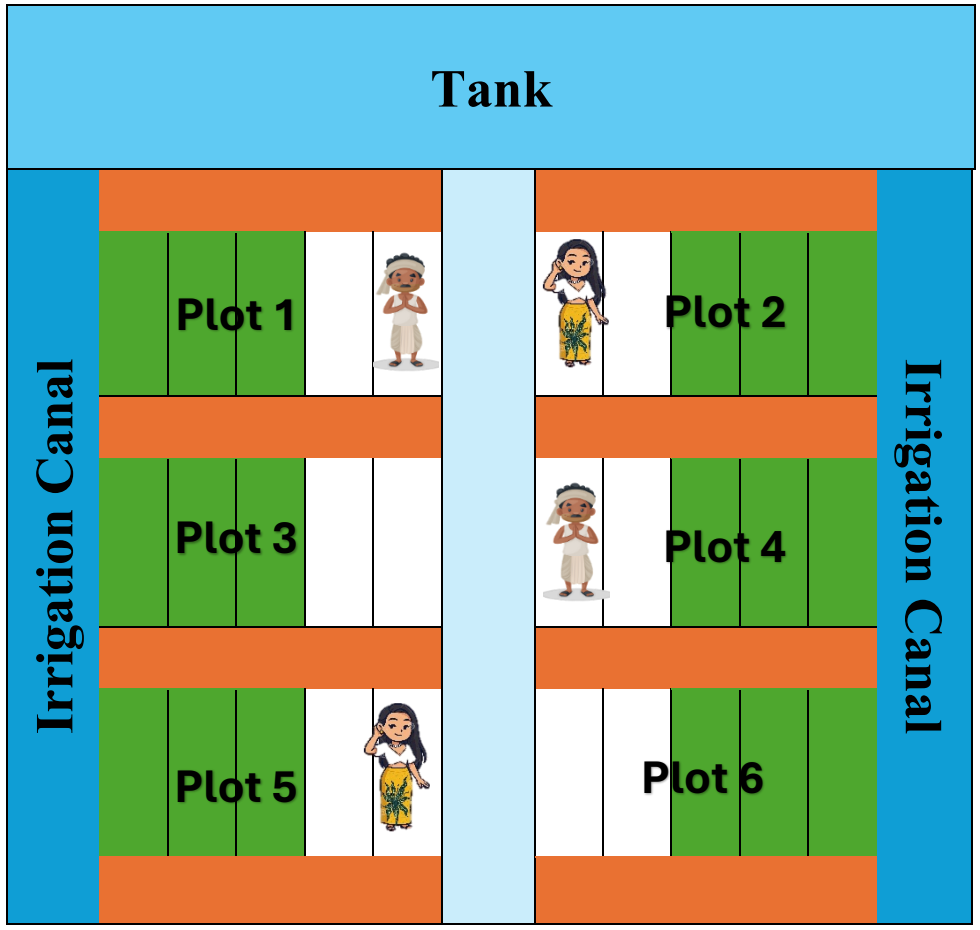
Okay, let's take a fifteen-minute break and meet again after that.

……Break…….. 15Minutes

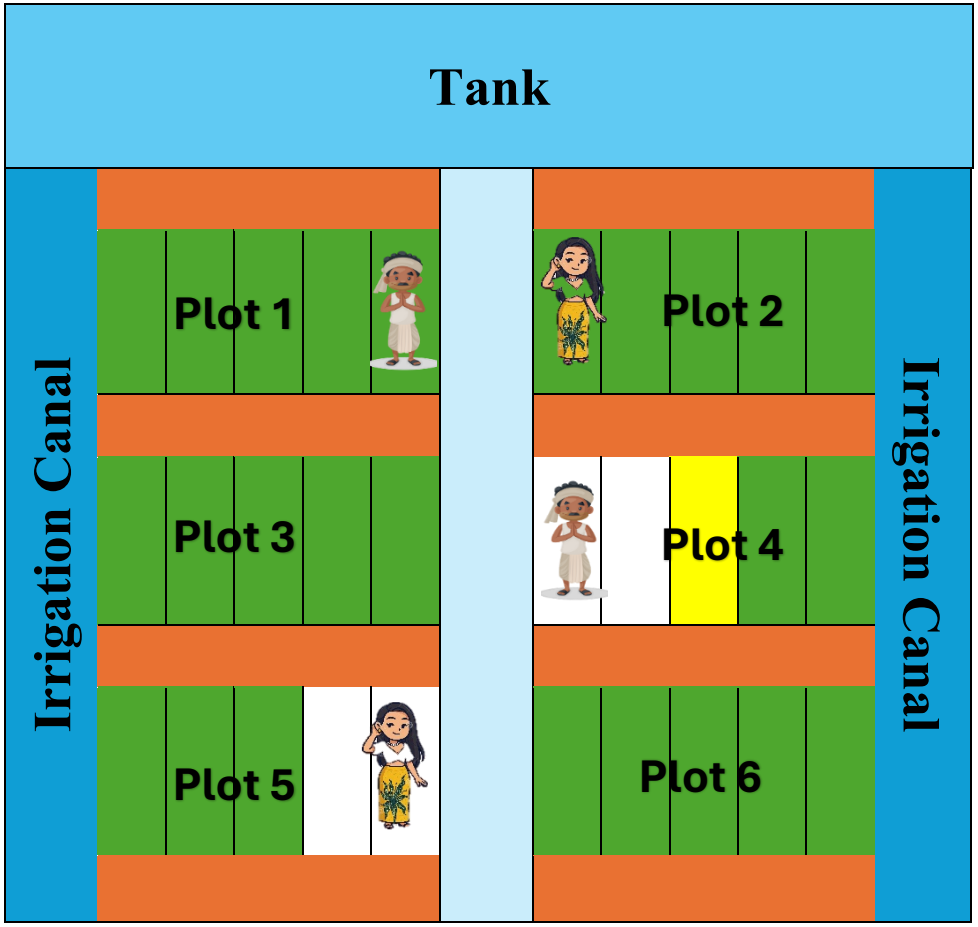
(Facilitators: Distribute the practice game cover to the farmers and clarify any questions they have.)

Visual Aid 4 – Example 3

Recommendation



Cultivated



Visual Aid 5 – Example 3 – Somawathi's sheet

1. Name: **Somawathi**

2. Lands Owned:

Head - **Plot 2**	Area: **5 acres**
Tail - **Plot 5**	Area: **5 acres**

3. Water Availability in the tank: **Recommended 3 acres**

Head - **Plot 2**	**5 acres**
Tail - **Plot 5**	**3 acres**

4. Lands cultivated:

Head - **Plot 2**	**5 acres**
Tail - **Plot 5**	**3 acres**

5. Labour hours Owned: **10 hours**

Hours spent on canal cleaning – **Plot 2**	**2 hour**
Hours spent on canal cleaning – **Plot 5**	**1 hours**
Hours spent on selling vegetables	**7 hours**

6. Others' contribution to canal cleaning:

   10 – 3 = 7 hours

7. Earnings:

Selling vegetables	600 × 7 hours	**4200**
Earnings from her canal cleaning	8 × 4 × 3 hours	**96**
Earnings from others canal cleaning	8 × 4 × 7 hours	**224**
Paddy profit - Plot 2	800 × 5 acres	**4000**
Paddy profit - Plot 5	200 × 3 acres	**600**
Total earnings		**9120**

Visual Aid 6 – Example 3 – Senevirathne 's sheet

1. Name: **Senevirathne**

2. Lands Owned:

Head: **Plot 1**	Area: 5 **acres**
Middle: **Plot 4**	Area: 5 **acres**

3. Water Availability in the tank: **Recommended three acres**

Head: **Plot 1**	**5 acres**
Middle: **Plot 4**	**3 acres**

4. Lands cultivated:

Head: **Plot 1**	**5 acres**
Middle: **Plot 4**	**2 acres**

5. Labour hours Owned: **10 hours**

Hours spent on canal cleaning – **Plot 1**	**2 hours**
Hours spent on canal cleaning – **Plot 4**	**1 hour**
Hours spent on selling vegetables	**7 hours**

6. Others' contribution to canal cleaning:
   10 – 3 = 7 hours

7. Earnings:

Selling vegetables	600 × 7 hours	**4200**
Earnings from his canal cleaning	7 × 4 × 3 hours	**84**
Earnings from others canal cleaning	7 × 4 × 7 hours	**196**
Paddy profit - Plot 1	800 × 5 acres	**4000**
Paddy profit - Plot 4	800 × 2 acres	**1600**
Total earnings		**10080**

Now we are going to do one more practice game together. This round is only for learning. It will not decide how much money you will earn today.

In this game, you will not decide how many acres to cultivate. We already have that information from earlier rounds.

At the beginning of each round, I will tell you how many extra acres were cultivated by the farmers above your plots. Based on that, you will know how much water is available for your plots. Your only task is to decide how many labour hours you want to spend cleaning the canals for each of your plots, and how many labour hours you want to spend selling vegetables.

Please open the cover handed to you by the facilitators. Inside, you will find two sheets.

The first sheet looks like the picture you see here. **(Show Visual Aid 1)**

On this sheet, your plot is marked with a red circle. The direction of water flow to your plot is shown by blue arrows. Each plot is five acres. There are plots above your plots and plots below your plots. The plots above you decide how much water you receive. The amount of water you use will decide how much the plots below you will receive. For example, the water for Plot four depends on how much Plot two cultivates. The water for Plot six depends on how much Plots two and four cultivate.

The second sheet looks like this one. **(Show Visual Aid 2)**

This is the game sheet you will use to write down your decisions. It shows your name, the plot number you own, the size of the plot, and their location.

(Facilitators, please help each farmer find their plots and make sure they are looking at the correct sheet.)

Are there any questions so far?

Okay. Now I will tell you about the water availability in the tank. This season is a bad season. That means there is not enough water to cultivate all the land. So, the Farmers' Organisation recommends cultivating three acres in each plot.

Now you have to make a decision.

On average, guess how many extra acres will be cultivated by the farmers who own the plots above your plots. The recommended amount is three acres. Each plot is five acres. If your plot has only one plot above it, then the extra acres will be between one and two. So, make a guess between one and two. If your plot has two plots above it, then the extra acres can range between one and four. So, make a guess between one and four.

If you guess correctly what others do, you will receive an extra payment. Please make this guess based on what you think other farmers usually do.

After you decide your guess, write the number in the Section three in the given space next to "Guess on Land.". Now, write down the guess.

(Facilitators, please walk around and help each farmer record their guess.)

Okay. Now the facilitators will tell you the actual information about how many extra acres were cultivated by the farmers above you, and based on that, how many acres you can cultivate in each of your plots. These cultivation levels are based on what other farmers did in previous sessions of this same game. This means you are now playing under real conditions created by farmers who played before you. Please write this information in the section four in the given space next to "Water received to the plot".

(Facilitators, please tell each farmer privately how many acres that they can cultivate.

> *For Plots one and two: "Your plot is at the head-end, and there is enough water for you to cultivate all **five acres**."*
>
> *For Plots three and four: "This season there is very little water reaching your plot. The farmers above your land cultivated more than the recommended three acres, so most of the water was already used before it reached you. You now have enough water to cultivate **only two acres**."*
>
> *For Plots five and six: "This season there is very little water reaching your plot. The farmers above your land cultivated more than the recommended three acres, so most of the water was already used before it reached you. You now have enough water to cultivate **only one acre**.")*

Okay. After you know how much water your plot received, now you have to decide how to spend your ten labour hours. You can decide how many hours to spend selling vegetables and how many hours to spend cleaning the canals for each plot.

This information is private. No one else will know your decision.

Remember, each of you has ten labour hours in total. Out of these ten hours, choose how many you want to spend selling vegetables, and how many you want to spend cleaning canals. Look at the table to see how much you can earn for selling vegetables.

(Show Payoff Visual Aid)

If you spend one hour selling vegetables, you earn six hundred rupees. If you spend two hours, you earn one thousand two hundred rupees. If you spend ten hours, you earn six thousand rupees. However, if everyone in your group spends all their hours selling vegetables, no one will be there to maintain the canal, which can lead to blockage from overgrowing weeds. Ongoing neglect can result in the abandonment of the entire tank system.

You can also spend your time cleaning canals. Each hour farmers spend on canal cleaning increases the harvest by four rupees per acre. Consequently, the more hours other farmers invest, the larger your harvest will be. Likewise, the more hours you dedicate to canal cleaning, the higher your own and others' harvests will be, but you will lose the income from selling vegetables.

Now, please decide how to divide your ten hours between selling vegetables and cleaning canals, and write your choices in the game sheet.

This is your own decision. Do not discuss your choice with anyone else. You will never know what other farmers chose, and they will never know what you chose. The only information you will receive later is how much water your plot received.

Are there any questions? If you need help filling out your sheet or making a decision, please raise your hand. A facilitator will come to you. Please do not ask your neighbours for help.

(Facilitators, please walk around to help farmers record their decisions.)

After you have made your choice, please write these numbers in Section Five, titled “Labour Hours Owned.”

Again, if you need help, raise your hand and a facilitator will come to you. Please do not talk to others while making your decision.

(Facilitators, please go around and help farmers record their decisions.)

Now, before we move on, please also write down your guess about how many hours, on average, other farmers will spend cleaning canals in both of their plots. Everyone owns ten hours. So, make a guess between the numbers one to ten. This is your personal estimate. This will not decide the actual hours spent by other farmers. Write the number you believe is correct in section six in the space next to “Guess on Canal Cleaning.” Later, you will receive an extra payment if your guess is close to the actual average.

(Facilitators, please go around and help record the guesses.)

Now the facilitators will collect your game sheets. After that, we will show you your earnings based on your choices and on what other farmers did. We will not tell anyone else what you chose, including how many hours you or anyone else spent cleaning canals or selling vegetables.

The facilitators will show you your earnings privately.

You will see five numbers: how much you earned from selling vegetables, how much you earned from your own canal cleaning effort, how much you earned from others’ canal cleaning effort, how much you earned from your paddy harvest, and your total earnings.

This information is private. No one else will see your earnings. Now we will show you your earnings and explain how we calculated them.

(Facilitators, please show the earnings to each farmer and help them record the numbers.

> *"You have earned ……. rupees from paddy harvest. This round, the canal was cleaned for …..... total hours. You have increased the paddy harvest by ……. Rupees from your own effort on cleaning the canal. From the hours you spend on selling vegetables, you have earned ……. Rupees. From others' cleaning effort, you have increased the paddy harvest by ……. Rupees. Your total earnings are……..... rupees. The Farmers' Organisation thanks those who put a strong effort into canal cleaning this round.")*

Are there any questions about how the game works? This is your last chance to ask. After this, your decisions will affect how much money you make.

Now we will move on to the real game. It will be exactly the same as the practice round, except that this time you are playing for real money. We are now ready to start the first real game.

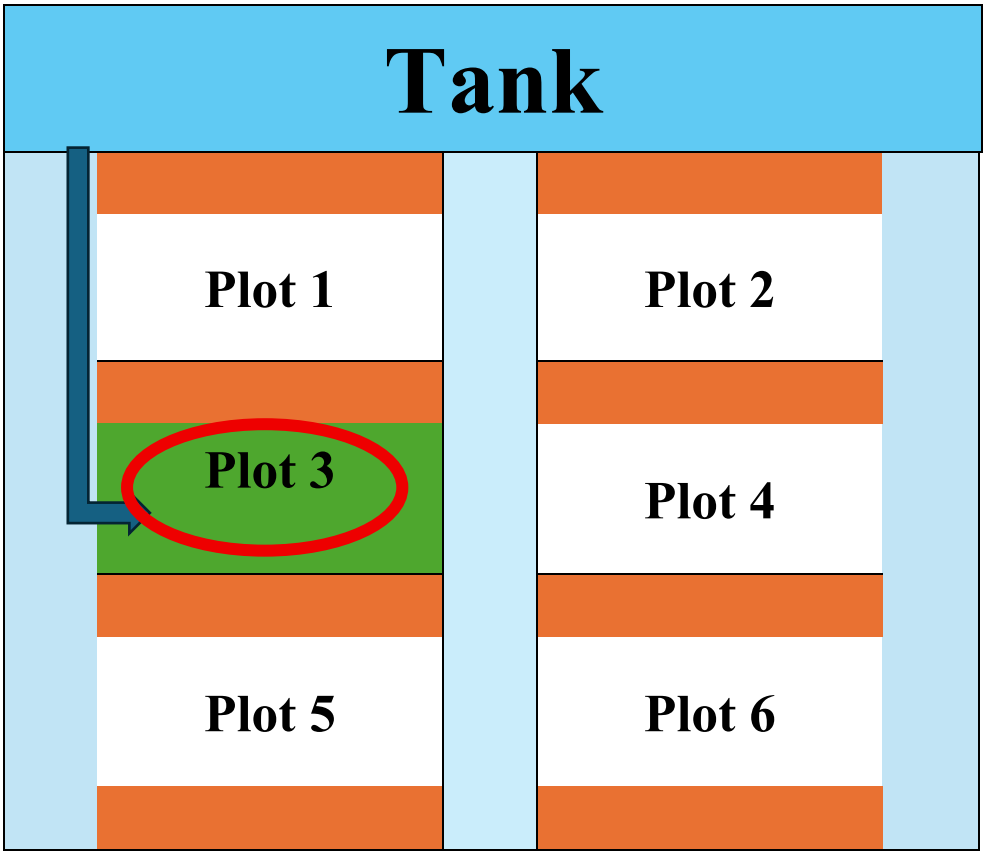
(Facilitators, please distribute the Game One covers.)

Payoffs

Hours spend	Selling vegetables	Hours spend	Selling vegetables
1	600	6	3600
2	1200	7	4200
3	1800	8	4800
4	2400	9	5400
5	3000	10	6000

- Total hours: **10**
- Selling vegetables: **Rs. 600 for each hour**
- Improvement in harvest from **one hour** of canal cleaning: **Rs. 4 in each acre**

Practice Round



PRACTICE ROUND GAME SHEET

1. Name:

2. Land owned:

Middle: **Plot 3**	Area: **5 acres**

3. Guess the average extra extent cultivated by other farmers above your plot:

Middle: **Plot 3**	(Out of 2)

4. Water received to the plot:

Middle: **Plot 3**	

5. Labour hours owned: **10 hours**

Hours spent on canal cleaning	
Hours spent selling vegetables	

6. Guess the average contribution of other farmers to the canal cleaning: out of 10

7. Earnings:

Selling vegetables	Rs. 600 ×	
Earnings from his canal cleaning	Rs. 4 ×	
Earnings from others canal cleaning	Rs. 4 ×	
Paddy profit	Rs. 800 ×	
Total earnings		

Game with only negative deviation – 60 Minutes

We are now beginning the first real game. This will be exactly like the practice game, but this time it is for real money. There will be several rounds, so you will have many opportunities to earn the highest possible amount.

Is everyone ready?

Let's start our first game.

In this game, we will play multiple rounds. At the end of the session, we will randomly pick one round to decide your final payment, which will be based on that round. Your payment is the amount you earn in that round divided by ten. If you earn ten thousand rupees in the game, your actual earnings are one thousand rupees. You will not know ahead of time how many rounds there will be, so you should assume the game will continue.

This setup simulates how farming decisions repeat season after season, and how your experience in one season may affect your behaviour in the next. Each of you will make your decisions privately, just like before.

Any questions before we begin?

Please open the cover that was handed to you by the facilitators after the break. Inside the cover, you will find two sheets. The first sheet is similar to what you saw during the practice round. It shows your plot, marked with a red rectangle. The water flow to your plot is indicated by the blue arrow marks starting from the tank. The second sheet is the game sheet, where you will record your decisions. It includes the details of your plots.

(Facilitators: please help them understand their plots)

Please make all decisions privately. Do not talk to others or look at their choices. Always remember: your choices affect others, and others' choices affect you**.**

Round 1 – "Good" Year

Now, just like in the practice round, we are going to reveal whether this is a good or bad season. For each group, the facilitators will come to your group and reveal whether this is a good or bad season.

(Facilitators: Please visit each group. For this round, inform them that this year is a good year, so the Farmers' Organisation said that they can get water for all of their 5 acres.)

> *Group 1 – 3: "The Farmers' Organisation recommends cultivating all five acres of your plot this season, as water availability is good."*

Now you have to make a guess on the extra extent cultivated by other farmers who own the plots above your plot. The Farmers' Organisation's recommendation on cultivatable acres changes depending on the season.

If it is a good season, there is enough water for everyone. Each farmer can cultivate all five acres of their land. In that case, there is no extra cultivated extent.

If it is a bad season, the recommended extent is three acres. This means that if some farmers plant more than three acres, that extra land is called the extra cultivated extent.

Based on the information shared by the facilitator about the season, you now have to guess how many extra acres are cultivated by the farmers who own the plots above your plots.

If it is a good season, the extra acres are zero. If it is a bad season, the recommended amount is three acres, and each plot is five acres. If your plot has only one plot above it, then the extra acres can be between one and two. So, make a guess between one and two. If your plot has two plots above it, then the extra acres can be between one and four. So, make a guess between one and four.

If you guess correctly what others do, you will receive an extra payment of one hundred rupees. Please make this guess based on what you think other farmers usually do.

After you decide your guess, write the number in Section Three in the given space next to "Guess on Land". Write down the guess for your plot.

(Facilitators, please walk around and help each farmer record their guess.)

Okay. Now the facilitators will tell you the actual information about how many extra acres were cultivated by the farmers above you, and based on that, how many acres you can cultivate in each of your plots. These cultivation levels are based on what other farmers did in previous sessions of this same game. This means you are now playing under real conditions created by farmers who played before you. Please write this information in section four in the given space next to "Water received to the plot".

(Facilitators, please tell each farmer privately how many acres they can cultivate to receive the highest revenue from all of their acres.)

> *Group 1- 3: "This is a good season. There is enough water in the tank. Your plot has enough water to cultivate all* ***five acres***."

Okay. After you know how much water your plots receive, you have to decide how to spend your ten labour hours. You can decide how many hours to spend selling vegetables and how many hours to spend cleaning the canals.

This information is private. No one else will know your decision.

Remember, each of you has ten labour hours in total. Out of these ten hours, choose how many you want to spend selling vegetables, and how many you want to spend cleaning canals in your two plots. Look at the table to see how much you can earn for selling vegetables.

(Show Payoff Visual Aid)

If you spend one hour selling vegetables, you earn six hundred rupees. If you spend two hours, you earn one thousand two hundred rupees. If you spend ten hours, you earn six thousand rupees.

However, if everyone in your group spends all their hours selling vegetables, no one will be there to maintain the canal, which can lead to blockage from overgrowing weeds. Ongoing neglect can result in the abandonment of the entire tank system.

So, you can also spend your time cleaning canals. Each hour farmers spend on canal cleaning increases the harvest by four rupees per acre. Consequently, the more hours other farmers invest, the larger your harvest will be. Likewise, the more hours you dedicate to canal cleaning, the higher your own and others' harvests will be, but you will lose the income from selling vegetables.

Now, please decide how to divide your ten hours between selling vegetables and cleaning the canals, and write your choices in the game sheet.

This is your own decision. Do not discuss your choice with anyone else. You will never know what other farmers chose, and they will never know what you chose. The only information you will receive later is how much water your plot received.

Are there any questions? If you need help filling out your sheet or making a decision, please raise your hand. A facilitator will come to you. Please do not ask your neighbours for help.

(Facilitators, please walk around to help farmers record their decisions.)

After you have made your choice, please write these numbers in Section Five, titled “Labour Hours Owned.”

Again, if you need help, raise your hand and a facilitator will come to you. Please do not talk to others while making your decision.

(Facilitators, please go around and help farmers record their decisions.)

Now, before we move on, please also write down your guess about how many hours, on average, other farmers will spend on cleaning the canals. Everyone owns ten hours. So, make a guess between the numbers one to ten. This is your personal estimate. This will not decide the actual hours spent by other farmers. Write the number you believe is correct in section six in the space next to “Guess on Canal Cleaning.” Later, you will receive an extra payment of one hundred rupees if your guess is close to the actual average.

(Facilitators, please go around and help record the guesses.)

Now the facilitators will collect your game sheets. After that, we will show you your earnings based on your choices and on what other farmers did. We will not tell anyone else what you chose, including how many hours you or anyone else spent cleaning canals or selling vegetables.

The facilitators will show you your earnings privately.

You will see five numbers: how much you earned from selling vegetables, how much you earned from your own canal cleaning effort, how much you earned from others' canal cleaning effort, how much you earned from your paddy harvest, and your total earnings.

This information is private. No one else will see your earnings.

Now we will show you your earnings and explain how we calculated them.

(Facilitators: Collect the game sheets. Use the Round 1 code sheet to record the total canal cleaning hours spent by the group. Then, calculate the earnings for their selling vegetables, their own effort and others' effort. Paddy harvest is Rs . 800 per acre. Sum up all the earnings and inform the farmers privately how much in total they earned.)

> *Group 1- 3: "You have earned ……. rupees from paddy harvest. This round, the canal was cleaned for ……. total hours. You have increased the paddy harvest by ……. Rupees from your own effort on cleaning the canal. From the hours you spend on selling vegetables, you have earned ……. Rupees. From others' cleaning effort, you have increased the paddy harvest by ……. Rupees. Your total earnings are……. rupees. The Farmers' Organisation thanks those who put in a strong effort into canal cleaning this round."*

Okay, that is the end of Round 1. Now I will inform you whether we should continue or not.

Okay, now we will move on to Round 2.

(Facilitators hand over the game sheet for round 2)

Round 2 – 3: "Good" Year

Same procedure again. Again, the facilitator will come and tell you whether this is a good or bad season.

(Facilitators: Please visit each group. For this round, inform them that this year is a good year, so the Farmers' Organisation said that they can get water for all of their 5 acres.)

> *Group 1 – 4: "The Farmers' Organisation recommends cultivating all five acres of your plot this season, as water availability is good."*

Now you have to make a guess on the extra extent cultivated by other farmers who own the plots above your plot. The Farmers' Organisation's recommendation on cultivatable acres changes depending on the season.

If it is a good season, the extra acres are zero. If it is a bad season, the recommended amount is three acres. So, make a guess between one and two if your plot is in the middle. If your plot has two plots above it, then the extra acres can be between one and four. So, make a guess between one and four.

If you guess correctly what others do, you will receive an extra payment of one hundred rupees. Please make this guess based on what you think other farmers usually do.

After you decide your guess, write the number in Section Three in the given space next to "Guess on Land". Now, write down the guess.

(Facilitators, please walk around and help each farmer record their guess.)

Okay. Now the facilitators will tell you the actual information about how many extra acres were cultivated by the farmers above you, and based on that, how many acres you can cultivate in each of your plots.

(Facilitators, please tell each farmer privately how many acres they can cultivate to receive highest revenue from all of their acres.)

> *Group 1 - 4: "This is a good season. There is enough water in the tank. Your plot has enough water to cultivate all* ***five acres***."

Okay. After you know how much water your plots receive, now you have to decide how to spend your ten labour hours. Remember, each of you has ten labour hours in total. Out of these ten hours, choose how many you want to spend selling vegetables, and how many you want to spend cleaning canals. Look at the table to see how much you can earn for selling vegetables.

If everyone in your group spends all their hours selling vegetables, no one will be there to maintain the canal, which can lead to blockage from overgrowing weeds. Ongoing neglect can result in the abandonment of the entire tank system.

Each hour farmers spend on canal cleaning increases the harvest by four rupees per acre. Consequently, the more hours other farmers invest, the larger your harvest will be. Likewise, the more hours you dedicate to canal cleaning, the higher your own and others' harvests will be, but you will lose the income from selling vegetables.

This is your own decision. Do not discuss your choice with anyone else. You will never know what other farmers chose, and they will never know what you chose. The only information you will receive later is how much water your plot received.

(Facilitators, please walk around to help farmers record their decisions.)

After you have made your choice, please write these numbers in Section Five, titled “Labour Hours Owned.”

Again, if you need help, raise your hand and a facilitator will come to you. Please do not talk to others while making your decision.

(Facilitators, please go around and help farmers record their decisions.)

Now, please also write down your guess about how many hours, on average, other farmers will spend cleaning canals in both of their plots. Write the number you believe is correct in section six in the space next to “Guess on Canal Cleaning.”

Later, you will receive an extra payment of one hundred rupees if your guess is close to the actual average.

(Facilitators, please go around and help record the guesses.)

Now the facilitators will collect your game sheets. After that, facilitators will show you your earnings privately.

This information is private. No one else will see your earnings.

Now we will show you your earnings and explain how we calculated them.

(Facilitators: Collect the game sheets. Use the Round 2/3 code sheet to record the total canal cleaning hours spent by the group. Then, calculate the earnings for their selling vegetables, their own effort and others' effort. Paddy harvest is Rs . 800 per acre. Sum up all the earnings and inform the farmers privately how much in total they earned.)

> *Group 1 - 3: “You have earned ……. rupees from paddy harvest. This round, the canal was cleaned for ……. total hours. You have increased the paddy harvest by ……. Rupees from your own effort on cleaning the canal. From the hours you spend on selling vegetables, you have earned ……. Rupees. From others’ cleaning effort, you have increased the paddy harvest by ……. Rupees. Your total earnings are ……. rupees. The Farmers’ Organisation thanks those who put in a strong effort into canal cleaning this round.”*

That is the end of Round 2/3.

Now, I will decide whether we should continue.

Okay, we will continue to Round 3/4.

(Facilitators hand over the game sheet for round 3/4)

Round 4: Drought Year

Okay, same procedure again. The facilitator will come to your table and inform you about the season.

(Facilitators: Please visit each group. For this round, inform Groups 1-2 that it is a bad season, so the Farmers' Organisation recommends that they grow only 3 acres. However, they might receive less water, which may not be enough to cultivate 3 acres, or they might receive enough water for 3 acres. Inform Group 3 that this is a good season.)

> *Groups 1 - 2: "The Farmers' Organisation recommends cultivating only three acres this season because water availability is low. You may receive less water than required for three acres, or you may receive just enough for three acres."*
>
> *Group 3: "The Farmers' Organisation recommends cultivating all five acres of your plot this season, as water availability is good."*

Now you have to make a guess on the extra extent cultivated by other farmers who own the plots above your plot. The Farmers' Organisation's recommendation on cultivatable acres changes depending on the season.

If it is a bad season, the recommended extent is three acres. This means that if some farmers plant more than three acres, that extra land is called the extra cultivated extent.

Based on the information shared by the facilitator about the season, you now have to guess how many extra acres are cultivated by the farmers who own the plots above your plots.

If it is a good season, the extra acres are zero. If it is a bad season, the recommended amount is three acres, and each plot is five acres. So, make a guess between one and four based on your location of the plot. If your plot is in the middle, then make a guess between one and two. If your plot is in the tail, then make a guess between one and four.

If you guess correctly what others do, you will receive an extra payment of one hundred rupees. Please make this guess based on what you think other farmers usually do.

After you decide your guess, write the number in Section three in the given space next to "Guess on Land". Now, write down the guess.

(Facilitators, please walk around and help each farmer record their guess.)

Okay. Now the facilitators will tell you the actual information about how many extra acres were cultivated by the farmers above you, and based on that, how many acres you can cultivate in each of your plots. These cultivation levels are based on what other farmers did in previous sessions of this same game. Please write this information in section four in the given space next to "Water received to the plot".

(Facilitators, please tell each farmer privately how many acres they can cultivate to receive the highest revenue from all of their acres.)

Group 1:

> *Plot 1 and 2: "Your plot is at the head-end, and there is enough water for you to cultivate all **five acres**."*
>
> *Plot 3 and 4: "This season there is less water in the tank. The farmers above your plot have cultivated more than three acres, so they used a larger share of water. Because of that, only a limited amount of water has reached your plot. You now have enough water to cultivate **only two acres**."*
>
> *Plot 5 and 6: "This season there is less water in the tank. The farmers above your plot have cultivated more than three acres, so they used a larger share of water. Because of that, only a limited amount of water has reached your plot. You now have enough water to cultivate **only one acre**."*

Group 2:

> *Plot 1 and 2: "Your plot is at the head-end, and there is enough water for you to cultivate all **five acres**."*
>
> *Plot 3, 4, 5, 6: "This season, the water in the tank is limited. Both of your plots have enough water to cultivate **three acres**. The farmers above your plots followed the Farmers' Organisation's recommendation and cultivated only **three acres**, so you have just enough water for three acres."*

Group 3:

> *"This is a good season. There is enough water in the tank. Your plot has enough water to cultivate all **five acres**."*

Okay. After you know how much water your plots receive, now you have to decide how to spend your ten labour hours. You can decide how many hours to spend selling vegetables and how many hours to spend cleaning the canals.

If everyone in your group spends all their hours selling vegetables, no one will be there to maintain the canal, which can lead to blockage from overgrowing weeds. Ongoing neglect can result in the abandonment of the entire tank system.

Each hour farmers spend on canal cleaning increases the harvest by four rupees per acre. Consequently, the more hours other farmers invest, the larger your harvest will be. Likewise, the more hours you dedicate to canal cleaning, the higher your own and others' harvests will be, but you will lose the income from selling vegetables.

This information is private. No one else will know your decision.

Remember, each of you has ten labour hours in total. Now please decide how to divide your ten hours between selling vegetables, cleaning canals, and write your choices in the game sheet.

Are there any questions? If you need help filling out your sheet or making a decision, please raise your hand. A facilitator will come to you. Please do not ask your neighbours for help.

(Facilitators, please walk around to help farmers record their decisions.)

After you have made your choice, please write these numbers in Section Five, titled "Labour Hours Owned."

(Facilitators, please go around and help farmers record their decisions.)

Now, before we move on, please also write down your guess about how many hours, on average, other farmers will spend cleaning canals in both of their plots. Write the number you believe is correct in section six in the space next to "Guess on Canal Cleaning."

If you guess correctly what others do, you will receive an extra payment of one hundred rupees. Please make this guess based on what you think other farmers usually do.

(Facilitators, please go around and help record the guesses.)

Now the facilitators will collect your game sheets. After that, we will show you your earnings. The facilitators will show you your earnings privately.

Now we will show you your earnings and explain how we calculated them.

(Facilitators: Collect the game sheets. Use the Round 4 code sheet to record the total canal cleaning hours spent by the group. Then, calculate the earnings for their selling vegetables, their own effort and others' effort. Paddy harvest is Rs. 800 per acre. Sum up all the earnings and inform the farmers privately how much in total they earned.)

> *Group 1-3: "You have earned ……. rupees from paddy harvest. This round, the canal was cleaned for ……. total hours. You have increased the paddy harvest by ……. Rupees from your own effort on cleaning the canal. From the hours you spend on selling vegetables, you have earned ……. Rupees. From others' cleaning effort, you have increased the paddy harvest by ……. Rupees. Your total earnings are ……. rupees. The Farmers' Organisation thanks those who put in a strong effort into canal cleaning this round."*

That is the end of Round 4. Now I will again decide whether we should continue to the next round.

Okay, we will continue to Round 5.

(Facilitators hand over the game sheet for round 5)

Round 5 - 6: Drought Year

Okay, same procedure again. The facilitator will come to your table and inform you about the season.

(Facilitators: Please visit each group. For this round, inform Groups 1-2 that it is a bad season, so the Farmers' Organisation recommends that they grow only 3 acres. However, they might receive less water, which may not be enough to cultivate 3 acres, or they might receive enough water for 3 acres. Inform Group 3 that this is a good season.)

> *Groups 1 - 2: "The Farmers' Organisation recommends cultivating only three acres this season because water availability is low. You may receive less water than required for three acres, or you may receive just enough for three acres."*
>
> *Group 3: "The Farmers' Organisation recommends cultivating all five acres of your plot this season, as water availability is good."*

Now you have to make a guess on the extra extent cultivated by other farmers who own the plots above your plot. The Farmers' Organisation's recommendation on cultivatable acres changes depending on the season.

If it is a good season, the extra acres are zero. If it is a bad season, the recommended amount is three acres. So, make a guess between one and two if your plot is in the middle. If your plot has two plots above it, then the extra acres can be between one and four. So, make a guess between one and four.

If you guess correctly what others do, you will receive an extra payment of one hundred rupees. Please make this guess based on what you think other farmers usually do.

After you decide your guess, write the number in Section three in the given space next to "Guess on Land". Now, write down the guess.

(Facilitators, please walk around and help each farmer record their guess.)

Okay. Now the facilitators will tell you the actual information about how many extra acres were cultivated by the farmers above you, and based on that, how many acres you can cultivate in each of your plots.

(Facilitators, please tell each farmer privately how many acres they can cultivate to receive the highest revenue from all of their acres.)

> *Group 1:*
>
> > *Plot 1 and 2: "Your plot is at the head-end, and there is enough water for you to cultivate all **five acres**."*
> >
> > *Plot 3 and 4: "This season there is less water in the tank. The farmers above your plot have cultivated more than three acres, so they used a larger share of*

*water. Because of that, only a limited amount of water has reached your plot. You now have enough water to cultivate **only two acres**."*

*Plot 5 and 6: "This season there is less water in the tank. The farmers above your plot have cultivated more than three acres, so they used a larger share of water. Because of that, only a limited amount of water has reached your plot. You now have enough water to cultivate **only one acre**."*

Group 2:

*Plot 1 and 2: "Your plot is at the head-end, and there is enough water for you to cultivate all **five acres**."*

*Plot 3, 4, 5, 6: "This season, the water in the tank is limited. Both of your plots have enough water to cultivate **three acres**. The farmers above your plots followed the Farmers' Organisation's recommendation and cultivated only **three acres**, so you have just enough water for three acres."*

Group 3:

*"This is a good season. There is enough water in the tank. Your plot has enough water to cultivate all **five acres**."*

Okay. After you know how much water your plots receive, now you have to decide how to spend your ten labour hours. Remember, each of you has ten labour hours in total. Out of these ten hours, choose how many you want to spend selling vegetables, and how many you want to spend cleaning canals. Look at the table to see how much you can earn for selling vegetables.

If everyone in your group spends all their hours selling vegetables, no one will be there to maintain the canal, which can lead to blockage from overgrowing weeds. Ongoing neglect can result in the abandonment of the entire tank system.

Each hour farmers spend on canal cleaning increases the harvest by four rupees per acre. Consequently, the more hours other farmers invest, the larger your harvest will be. Likewise, the more hours you dedicate to canal cleaning, the higher your own and others' harvests will be, but you will lose the income from selling vegetables.

This is your own decision. Do not discuss your choice with anyone else. You will never know what other farmers chose, and they will never know what you chose. The only information you will receive later is how much water your plot received.

(Facilitators, please walk around to help farmers record their decisions.)

After you have made your choice, please write these numbers in Section Five, titled "Labour Hours Owned."

Again, if you need help, raise your hand and a facilitator will come to you. Please do not talk to others while making your decision.

(Facilitators, please go around and help farmers record their decisions.)

Now, please also write down your guess about how many hours, on average, other farmers will spend cleaning canals in both of their plots. Write the number you believe is correct in section six in the space next to "Guess on Canal Cleaning."

Later, you will receive an extra payment of one hundred rupees if your guess is close to the actual average.

(Facilitators, please go around and help record the guesses.)

Now the facilitators will collect your game sheets. After that, facilitators will show you your earnings privately. This information is private. No one else will see your earnings.

Now we will show you your earnings and explain how we calculated them.

(Facilitators: Collect the game sheets. Use the Round 5-6 code sheet to record the total canal cleaning hours spent by the group. Then, calculate the earnings for their selling vegetables, their own effort and others' effort. Paddy harvest is Rs. 800 per acre. Sum up all the earnings and inform the farmers privately how much in total they earned.)

> *Group 1- 3: "You have earned ……. rupees from paddy harvest. This round, the canal was cleaned for ……. total hours. You have increased the paddy harvest by ……. Rupees from your own effort on cleaning the canal. From the hours you spend on selling vegetables, you have earned ……. Rupees. From others' cleaning effort, you have increased the paddy harvest by ……. Rupees. The Farmers' Organisation thanks those who put in a strong effort into canal cleaning this round."*

That is the end of Round 5-6. Now I will again decide whether we should continue to the next round.

Okay, we will continue to Round 6-7.

(Facilitators hand over the game sheet for rounds 6-7)

Round 7-10 – "Good" Year

Same procedure again. Again, the facilitator will come and tell you whether this is a good or bad season.

(Facilitators: Please visit each group. For this round, inform them that this year is a good year, so the Farmers' Organisation said that they can get water for all of their 5 acres.)

Group 1 – 4: "The Farmers' Organisation recommends cultivating all five acres of your plot this season, as water availability is good."

Now you have to make a guess on the extra extent cultivated by other farmers who own the plots above your plot. The Farmers' Organisation's recommendation on cultivatable acres changes depending on the season.

If it is a good season, the extra acres are zero. If it is a bad season, the recommended amount is three acres. So, make a guess between one and two if your plot is in the middle. If your plot has two plots above it, then the extra acres can be between one and four. So, make a guess between one and four.

If you guess correctly what others do, you will receive an extra payment of one hundred rupees. Please make this guess based on what you think other farmers usually do.

After you decide your guess, write the number in Section Three in the given space next to "Guess on Land". Now, write down the guess.

(Facilitators, please walk around and help each farmer record their guess.)

Okay. Now the facilitators will tell you the actual information about how many extra acres were cultivated by the farmers above you, and based on that, how many acres you can cultivate in each of your plots.

(Facilitators, please tell each farmer privately how many acres they can cultivate to receive the highest revenue from all of their acres.)

Group 1 - 4: "This is a good season. There is enough water in the tank. Your plot has enough water to cultivate all ***five acres***."

Okay. After you know how much water your plots receive, now you have to decide how to spend your ten labour hours. Remember, each of you has ten labour hours in total. Out of these ten hours, choose how many you want to spend selling vegetables, and how many you want to spend cleaning canals. Look at the table to see how much you can earn for selling vegetables.

If everyone in your group spends all their hours selling vegetables, no one will be there to maintain the canal, which can lead to blockage from overgrowing weeds. Ongoing neglect can result in the abandonment of the entire tank system.

Each hour farmers spend on canal cleaning increases the harvest by four rupees per acre. Consequently, the more hours other farmers invest, the larger your harvest will be. Likewise, the more hours you dedicate to canal cleaning, the higher your own and others' harvests will be, but you will lose the income from selling vegetables.

This is your own decision. Do not discuss your choice with anyone else. You will never know what other farmers chose, and they will never know what you chose. The only information you will receive later is how much water your plot received.

(Facilitators, please walk around to help farmers record their decisions.)

After you have made your choice, please write these numbers in Section Five, titled "Labour Hours Owned."

Again, if you need help, raise your hand and a facilitator will come to you. Please do not talk to others while making your decision.

(Facilitators, please go around and help farmers record their decisions.)

Now, please also write down your guess about how many hours, on average, other farmers will spend cleaning canals in both of their plots. Write the number you believe is correct in section six in the space next to "Guess on Canal Cleaning."

Later, you will receive an extra payment of one hundred rupees if your guess is close to the actual average.

(Facilitators, please go around and help record the guesses.)

Now the facilitators will collect your game sheets. After that, facilitators will show you your earnings privately.

This information is private. No one else will see your earnings. Now we will show you your earnings and explain how we calculated them.

(Facilitators: Collect the game sheets. Use the Round 2/3 code sheet to record the total canal cleaning hours spent by the group. Then, calculate the earnings for their selling vegetables, their own effort and others' effort. Paddy harvest is Rs . 800 per acre. Sum up all the earnings and inform the farmers privately how much in total they earned.)

> *Group 1 - 3: "You have earned ……. rupees from paddy harvest. This round, the canal was cleaned for ……. total hours. You have increased the paddy harvest by ……. Rupees from your own effort on cleaning the canal. From the hours you spend on selling vegetables, you have earned ……. Rupees. From others' cleaning effort, you have increased the paddy harvest by ……. Rupees. Your total earnings are ……. rupees. The Farmers' Organisation thanks those who put in a strong effort into canal cleaning this round."*

That is the end of Round 7-10. Now, I will decide whether we should continue.

For rounds 7 – 9:

> Okay, we will continue to Round 8 - 10.

(Facilitators hand over the game sheet for rounds 8-10)

At Round 10: Okay, now we will end this game with Round 10.

Wrap-up Survey – 10 minutes for each farmer

We are now finished with the game. Thank you for participating and for making thoughtful decisions throughout. Before we proceed with payments, each of you will be asked to complete a short exit survey. This is to better understand your experiences during the activity and to learn how real-life irrigation decisions are made. Your answers will be kept strictly confidential. For your final payment, we will look at all of the rounds you played. From those, we will select the one round where you earned the highest amount. That round will be used to calculate your bonus payment. The amount you earn from the round will be divided by ten to calculate your real earnings. Your total payment will include: two hundred rupees for participating, the bonus payment you earned for correctly guessing, and the earnings from your best round, up to a thousand rupees or more. After your survey is complete, we will pay you privately. No one else will know how much you earned.

(Facilitators guide participants individually through the exit survey. Payments are distributed one-on-one.)

Thank you again for your time. Your participation today will help us understand how to better design policies and programs that support farmer cooperation and water access.