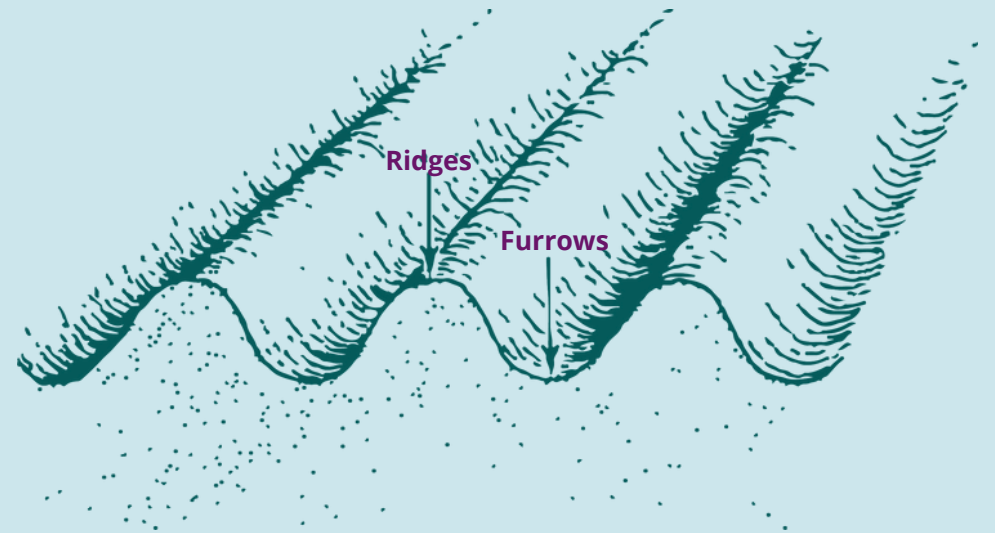


**Climate Smart  
Agriculture (CSA)  
Technology**

**Farmer's Guide**



# Mechanical Bed Planting System





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### **About the project**

<https://cop.sac.org.bd/about-c-suces/>

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### **Cover Image Source**

Title: Illustration for Ridges and Furrows  
Source/credit: Shivi Kapil

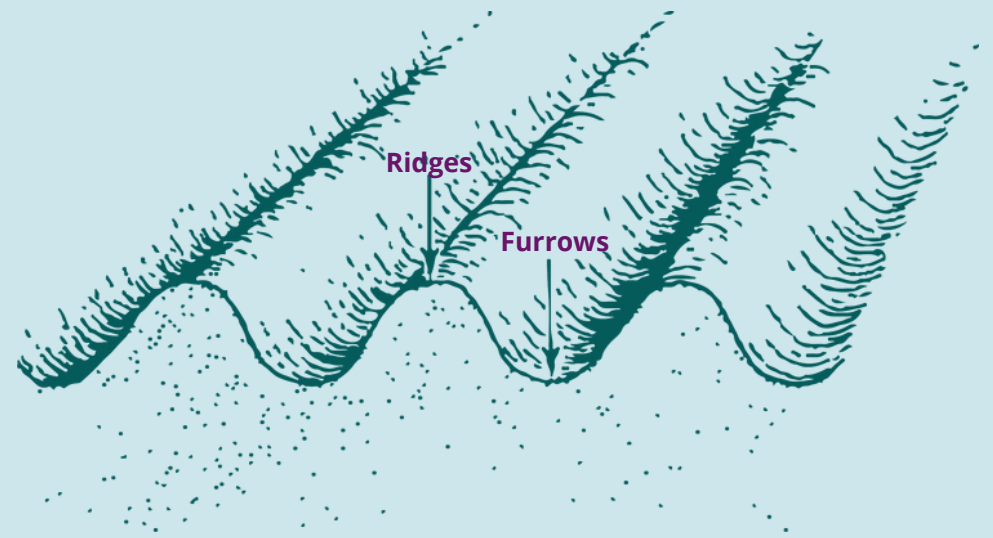
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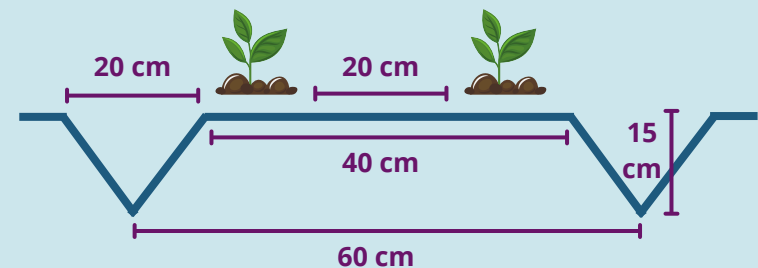
## What?

Bed Planting System is an innovative farming method that involves creating raised beds of soil, typically in rows, where crops are planted. Bed planting controls erosion and conserves soil moisture and also prevents waterlogging during heavy rainfall days. It is suitable for the areas where the slope of the land is less.

- **Raised Bed:** Raised beds are like long, low mounds of soil where the crops are grown. They are higher than the ground around them. Raised beds help plants grow better by giving them more space for their roots and better drainage for water. They can be created by piling soil into long rows, either by hand or using special machines. They should not get too flat over time.
- **Furrows:** Furrows are like shallow trenches between our raised beds. They help water reach the plants and drain excess water. Furrows help water get right to the roots of our plants and stop the soil from getting too soggy. One can dig furrows using simple tools to create channels for water to flow through. It is important to keep furrows clean and clear so water can flow freely.



**Ridges and Furrows**



**Bed Diagram**



## Why?

- **Enhanced Water Efficiency:** It uses water more efficiently, which is crucial in areas with water scarcity.
- **Improved Soil Health:** Helps in maintaining soil structure and fertility.
- **Increased Yield:** Often leads to higher crop yields compared to traditional flat planting.
- **Pest and Disease Control:** Can help in reducing the incidence of certain pests and diseases.
- **Climate Resilience:** Makes the crops more resilient to climate variations like irregular rainfall.
- **Time-saving:** Bed formation, fertilization, seeding and seed covering can be done in a single operation
- **Adjustable:** Line spacing, depth of seeding and seed rate are adjustable
- **Reduces turnaround time:** It helps in increasing cropping intensity
- **Reduce rat attack**

**Suitable for Diverse Environments:** Effective in various climatic conditions, especially in drought-prone areas.

**Adaptable to Different Land Types:** Can be tried on different types of land, though flat or gently sloping lands are more suitable.



**Title:** Furrows and Ridges

**Source/credit:** Anisha Mohan/IFPRI

**Location:** Bangladesh





**2-Wheel Bed Planter**



## Main requirements

- **Irrigation System:** Drip hoses or sprinklers to give plants just the right amount of water. This system helps us save water by giving it directly to the plant's roots, where they need it most. Drip hoses slowly release water near the plants, while sprinklers spray water over the whole field. Check the irrigation system regularly to make sure that it is working well and not wasting water.
- **Soil Preparation Equipment:** This equipment includes machines for making raised beds and tools for keeping them in good shape. Machines help to shape our beds and cultivators help to loosen the soil and get rid of weeds. It is important to keep these tools and machines clean and working smoothly.





## Suitable Crop

The bed planting system is ideal for a diverse range of crops, particularly cereals like wheat, maize, and various vegetables. Its adaptable nature allows for the successful cultivation of a wide variety of crops, promoting healthy growth and optimal yields. Row-to-row adjustments of beds need to be made in the case of intercropping. Width of bed and spacing depends on soil type.

## Suitable Slopes

This planting system is best suited for flat or gently sloping lands. Such terrain facilitates the creation and maintenance of raised beds and furrows, ensuring efficient water distribution and drainage throughout the field.

## Suitable Soil

The bed planting system can effectively operate in various soil types. However, it thrives in well-drained soils, which prevent waterlogging and provide an optimal growing environment for crops. Soil with good drainage capabilities enhances overall productivity and plant health.

## Suitable Irrigation

Efficiency in water usage is a hallmark of the CSA technology bed planting system, making it suitable for areas with limited water resources. Suitable irrigation system is recommended for bed planting system to ensure optimal water use, delivering water directly to the plant roots and minimizing wastage. This approach promotes water conservation while maintaining crop health and yield.



**Title:** Furrows and Ridges  
**Source/credit:** Anisha Mohan/IFPRI  
**Location:** Bangladesh





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## Remember

- **Regular Maintenance:** Keep the beds and furrows in good shape.
- **Water Management:** Ensure efficient and even irrigation.
- **Soil Health:** Regularly check and maintain soil fertility and structure.
- **Pest and Disease Monitoring:** Keep an eye on potential pest and disease outbreaks.
- **Crop Rotation:** Practice crop rotation to prevent soil nutrient depletion and reduce disease risks.



# Activity Time

## Activity 01 : Picture your farm

- Try drawing your farm (Need not be perfect) using simple lines, Curves or shapes.
- Try giving a name to your farm as you recognise it based on its size, location or may be based on directions it is facing.
- Write or draw crop names as plan.
- Try pasting a picture/photo if you are not willing to draw at all.

## Activity 03 : Evaluate CSA methods

- Try evaluating adopted CSA methods and keep a track over the year.
- Try keeping as per your real experience.
- Ask Facilitator to guide if you are not able to see significant impact on your farming practice.

**All activities would be performed with the help of facilitators.**

## Activity 02 : Create your farm profile

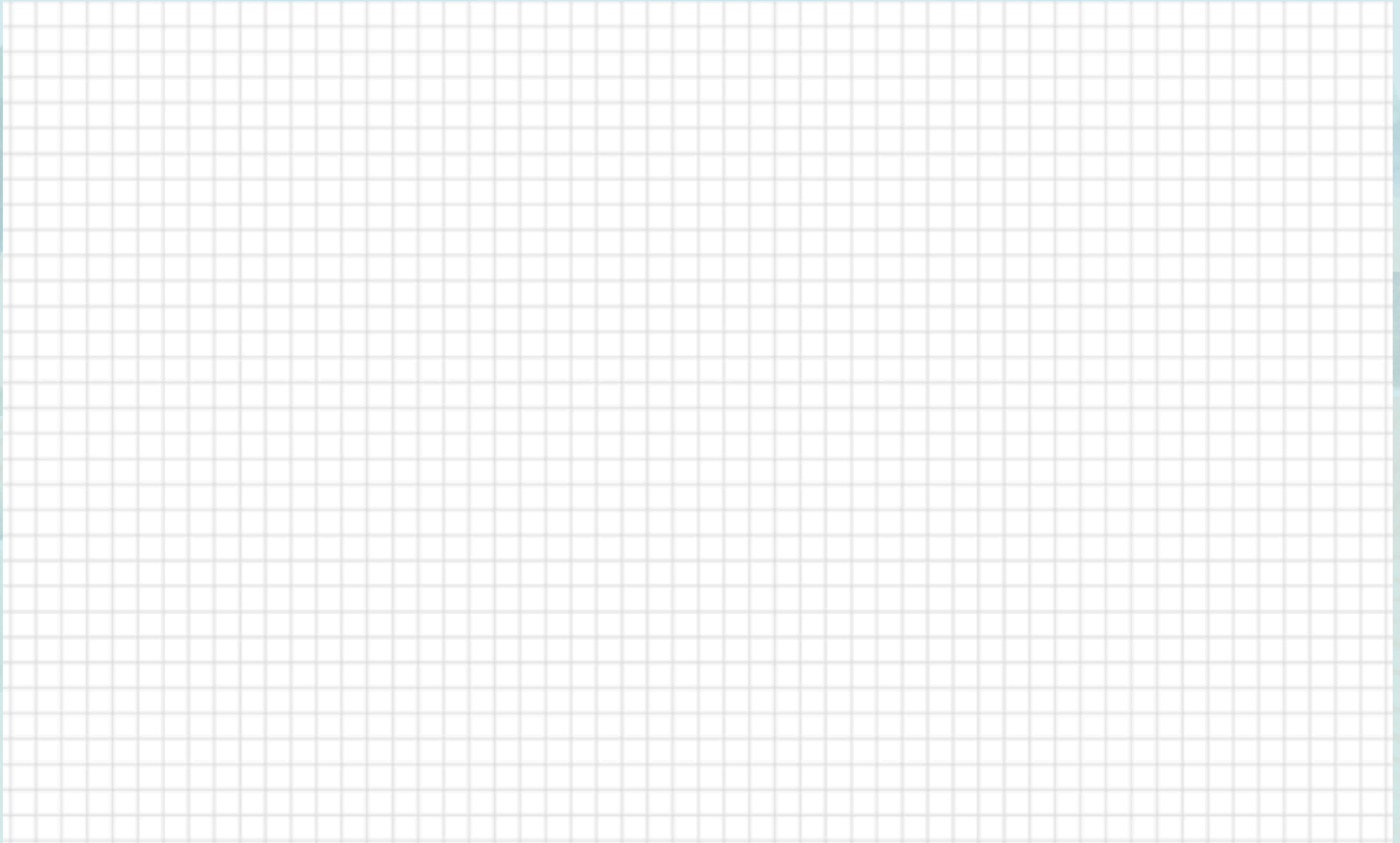
- Try Filling information of your farm.
- Take help of your facilitator if you can not fill it on your own.
- Try discussing it with other farmers in farmer group.
- Try to learn more about farm profile.

## Activity 04: Feedback form

- Give feedback as it will help your facilitator to help and improve your learning.
- Discuss it with other farmers and learn about their experience as well.
- Ask questions and take help of your facilitator, when you need.



## Activity 01 : Picture your farm (Current conditions)



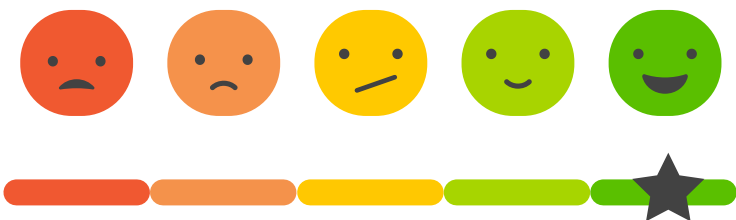
## Activity 02: Create your farm profile

• Farm type	
• Terrain	
• Area	
• Aspect (Farm facing direction)	
• Physical features	
• Soil Type	
• Inputs needed <ul style="list-style-type: none"><li>◦ Labor</li><li>◦ Machinery</li><li>◦ Water</li><li>◦ electricity</li><li>◦ fertilizer</li><li>◦ pumps</li></ul>	
• Temperature Range (By month)	
• Precipitation Range (By month)	
• Commonly grown crops	
• Natural challenges (climate, pests, invasive species-weeds)	
• Any CSA methods in use	





## Activity 04 : Feedback form



Experience scale

Do you have any question/Suggestion?

Fill the feedback form below at end of your training by marking it like this. 😊👍 that is closer to your experience.

1. What do you like the most about this guide?

2. Is there anything that you want to suggest for improvement?

3. Do you have any suggestions for facilitator?

4. How useful are these sessions for you for your farm?



5. How engaging are these sessions?



6. How likely are you to recommend CSA methods to other farmers?



This image shows a single page from a notebook or ledger. The page has rounded corners and a light gray background. At the top center, there is a dark blue header area containing the word "Notes" in a bold, white, sans-serif font. Below the header, the page is filled with horizontal ruling lines. These lines are evenly spaced and extend across the width of the page. The lines alternate between a very light blue color and a slightly darker shade of light blue, creating a subtle striped effect. There are approximately 20 such lines visible on the page.



Notes







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