



# Agricultural Engineering Department



## End to End Mechanization in Cultivation of Crops





# End to End Mechanization in Cultivation of Crops

## Overview

G.O.(Ms) No.159 Agriculture – Farmers Welfare (AP3) Department Dated : 06.06.2025



Announcement made by Honourable Minister of Agriculture – Farmers Welfare during the Budget Speech for the year 2025-26 held on 15.03.2025. (Announcement No.44)



Mechanization is adopted only in a few farming operations. Traditional farming practices increases the cost of cultivation and the time required to complete the operations also increases.



Increasing the income of the farmers by adopting 'End to End mechanization' by engaging farm machinery in all farming operations such as land preparation, sowing, weeding, plant protection, harvesting, crop residue management etc.,



Demonstration of 'End to End mechanization' in predominantly grown crops viz., Paddy, Maize, Banana, Groundnut and Blackgram to an extent of 1,550 acres **through 'Agri-Tech Entrepreneurs'**

# Block Level Committee

- ❖ Assistant Executive Engineer (AE), Agricultural Engineering Department (AED) – Chairman
- ❖ Assistant Director of Agriculture (ADA) – Member
- ❖ Assistant Director of Horticulture (ADH) – Member
- ❖ Assistant Engineer (AE) / Junior Engineer (AE), AED – Member Secretary
- ❖ Block Technology Manager (BTM), Agricultural Technology Management Agency (ATMA) – Member
- ❖ Co-operative Sub Registrar / Secretary of Primary Agricultural Cooperative Credit Societies (PACCS) – Member
- ❖ Block level progressive farmers (2 Members) - Members



# District Level Committee

- ❖ **Joint Director of Agriculture (JDA) – Chairman**
- ❖ **Executive Engineer (AE), AED - Member Secretary**
- ❖ **Deputy Director of Agriculture (DDA), Farmer Training Centre (FTC) – Member**
- ❖ **Deputy Director of Horticulture (DDH) – Member**
- ❖ **Professor & Head, Krishi Vigyan Kendra (KVK) – Member**
- ❖ **Joint Registrar of Co-operative Department (or) nominated officer – Member**
- ❖ **Assistant Executive Engineer (AE)s of all the sub divisions in the District, AED - Member**
- ❖ **Progressive farmers (2 Members) nominated by JDA and EE(AE) of AED - Members**



# Agricultural Technology Management Agency (ATMA) - Activities



**To conduct meeting with farmers at block level to explain scheme activities**



**The Executive Engineer (AE)s to ensure the inclusion of demonstration of all the operations in end to end mechanization scheme for all the crops in ATMA Action plan.**



**The Assistant Executive Engineer (AE) & Assistant Engineer (AE) / Junior Engineer (AE) should coordinate with ATMA staff to confirm the date, time & place of operations, etc., to conduct demonstrations of each and every operations of end to end mechanization for all the crops.**



# Programme

Sl. No.	Name of the Crop	Area taken up for Demonstration (in Acres)	Hire charges for engagement of Machinery in Farming Operations per acre (Subsidy in Rupees per Acre)	Total Cost for the Demonstration (Rs.in Lakhs)
(1)	(2)	(3)	(4)	(5=3*4)
1	Paddy	500	27,600	138.00
2	Maize	500	20,400	102.00
3	Banana	150	45,800	68.70
4	Groundnut	200	23,750	47.50
5	Blackgram	200	13,700	27.40
	Total	1550		383.60
				(or) 385.00





# Paddy – Details of Operations

## Ploughing



1

Name of Implement: Tractor Operated 9 Tyne Cultivator

No. of Passes: One

No. of hours – One hour per Acre

Max. Eligible Subsidy – Rs.1000/Acre



2

Name of Implement: Tractor Operated Rotavator

No. of Passes: One

No. of hours – 1.5 hours per Acre

Max. Eligible Subsidy – Rs.1800/Acre



# Paddy – Details of Operations

## Ploughing - Levelling



Name of Implement: Tractor Operated Laser Leveler  
No. of Times: One  
**3** No. of hours – 1.5 Hours per Acre  
Max. Eligible Subsidy – Rs.3000/Acre

## Ploughing - Puddling



Name of Implement: Tractor operated Roto Puddler / Rotavator along with cage wheel  
**4** No. of Passes: One (Before Ridge moulding)  
No. of hours – One hour per Acre  
Max. Eligible Subsidy – Rs.1500/Acre



# Paddy – Details of Operations

## Ploughing – Ridge Plastering



5

Name of Implement: Tractor Operated Ridge Moulder  
No. of Passes: One time  
No. of hours: 0.5 Hour per Acre (for four sides)  
Max. Eligible Subsidy – Rs.1000/Acre

## Ploughing - Puddling



6

Name of Implement: Tractor Operated Roto Puddler /  
Rotavator along with cage wheel  
No. of Passes: Two (After ridge moulding)  
No. of hours : One hour per Acre per pass  
Max. Eligible Subsidy – Rs.3000/Acre



# Paddy – Details of Operations

## Ploughing – Puddling cum levelling



Name of Implement: Tractor Operated Roto Puddler with cage wheel

No. of Passes: One (Before planting)

No. of hours: One hour per Acre

Max. Eligible Subsidy – Rs.1500/Acre

7





# Paddy – Details of Operations

## Planting - Transplanting



**8** Name of Machinery: Self Propelled Paddy Transplanter  
Max. Eligible Subsidy for Transplanter – Rs.4300/Acre (Including nursery preparation excluding cost of seed)

## Planting – Direct sowing



Name of Machinery: Tractor Operated Seed Drill / Drum Seeder  
**8** No. of Passes: One  
No. of hours : 1.5 hours per Acre  
Max. Eligible Subsidy – Rs.2250/Acre



# Paddy – Details of Operations

## Intercultural Operation - Weeding



9

Name of Machinery: Paddy Power Weeder

No. of Times: One

Max. Eligible Subsidy – Rs.2000/Acre

## Spraying



(Or)



10

Name of Machinery: Drone / Power sprayer

No. of Times: 4 times (Rs.1000/- per time)

Max. Eligible Subsidy – Rs.4000/Acre



# Paddy – Details of Operations

## Harvesting



11

Name of Machinery: Paddy Combine Harvester

No. of Passes: One

No. of hours : One hour per Acre

Max. Eligible Subsidy – Rs.2500/Acre

## Post Harvest Management - Baling



12

Name of Implement: Tractor Operated Baler

No. of Passes: One

Max. Eligible Subsidy – Rs.2000/Acre



# Maize – Details of Operations

## Ploughing



Name of Implement: Tractor Operated Disc Plough / Mould Board Plough

1

No. of Passes: One

No. of hours: 2 Hours per Acre

Max. Eligible Subsidy – Rs.2200/Acre



Name of Implement: Tractor Operated Cultivator

No. of Passes: Two

2

No. of hours: 1 Hour per Acre per pass

Max. Eligible Subsidy – Rs.2200/Acre



# Maize – Details of Operations

## Ploughing



**3** Name of Implement: Tractor Operated Rotavator  
No. of Passes: One  
No. of hours: 1.5 Hours per Acre  
Max. Eligible Subsidy – Rs.1800/Acre

## Sowing



**4** Name of Implement: Tractor operated Seed Drill /  
Pneumatic Planter  
No. of Passes: One  
No. of hours: 1 Hour per Acre  
Max. Eligible Subsidy – Rs.1100/Acre



# Maize – Details of Operations

## Intercultural Operation - Weeding



5

Name of Machinery: Power Weeder

No. of Times: 2 Times (4 Hours)

No. of hours: 2 Hours per Acre per pass (Rs.1000/- per hour)

Max. Eligible Subsidy – Rs.4000/Acre

## Spraying



6

Name of Machinery: Drone / Power Sprayer

No. of Times: Three times (Rs.1000/- per time)

Max. Eligible Subsidy – Rs.3000/Acre



# Maize – Details of Operations

## Harvesting



7

Name of Machinery: Maize Combine Harvester

No. of Times: 1 Time

No. of hours: 1.5 Hours per Acre

Max. Eligible Subsidy – Rs.2700/Acre

## Residue Management - Mulching



8

Name of Implement: Tractor Operated Rotary Mulcher

No. of Times: 1 Time

No. of hours: 2 Hours per Acre

Max. Eligible Subsidy – Rs.3400/Acre



# Banana – Details of Operations

## Ploughing



1

Name of Implement: Tractor Drawn Cultivator

No. of Passes: Two

No. of hours: 1 Hour per Acre per pass

Max. Eligible Subsidy – Rs.2000/Acre



2

Name of Implement: Tractor Operated Rotavator

No. of Passes: One

No. of hours: 1 Hour per Acre

Max. Eligible Subsidy – Rs.1500/Acre



# Banana – Details of Operations

## Ridge Forming



3

Name of Implement: Tractor Operated Ridger  
No. of Passes: One time  
No. of hours: 2 Hours per Acre  
Max. Eligible Subsidy – Rs.3000/Acre

## Planting



4

Name of Machinery: Hand Operated Auger  
(1200 Plants / Acre)  
Max. Eligible Subsidy – Rs.6000/Acre



# Banana – Details of Operations involved

## Intercultural Operation - Weeding



**5(i)**

Name of Machinery: Power Weeder  
No. of Times: 2 Times  
No. of hours: 4 Hours per Acre per time  
Max. Eligible Subsidy – Rs.8000/Acre



**5(ii)**

Name of Implement: Mini Tractor operated Rotavator  
No. of Times: 2 Times  
No. of hours: 2 Hours per Acre per time  
Max. Eligible Subsidy – Rs.4800/Acre



# Banana – Details of Operations

## Fertilizer Applicator



Name of Equipment: Banana Pseudo Stem Injector with labour  
No. of Times: Three times (1200 plants per Acre)  
**6** Rs.3,500/- per time  
Max. Eligible Subsidy – Rs.10,500/Acre

## Residue Management - Chopping



Name of Implement: Tractor Operated Banana Stem Chopper  
No. of Times: 1 Time  
**7** No. of hours: 5 Hours per Acre  
Max. Eligible Subsidy – Rs.10000/Acre



# Groundnut – Details of Operations

## Ploughing



**1**

Name of Implement: Tractor Drawn Cultivator

No. of Passes: Two

No. of hours: One hour per Acre per pass

Max. Eligible Subsidy – Rs.2000/Acre



**2**

Name of Implement: Tractor Operated Rotavator

No. of Passes: One

No. of hours: One hour per Acre

Max. Eligible Subsidy – Rs.1500/Acre



# Groundnut – Details of Operations

## Sowing



Name of Implement: Tractor drawn Raised Bed Seed Drill /  
Seed Drill

3

No.of time: One

No.of hours: 1.5 Hours per Acre

Max. Eligible Subsidy – Rs.2250/Acre

## Intercultural Operation - Weeding



Name of Machinery: Power weeder

4

No. of times: One

No.of hours: 4 Hours per Acre

Max. Eligible Subsidy – Rs.4000/Acre



# Groundnut – Details of Operations

## Spraying



**5** Name of Machinery: Drone/Power sprayer  
No. of Times: Two (Rs.1000/- per Acre per time)  
Max. Eligible Subsidy – Rs.2000/Acre

## Harvest - Stripping

**7** Name of Implement: Tractor Operated Groundnut Stripper  
No. of times: One Time  
Max. Eligible Subsidy – Rs.9000/Acre (including Labour for stripping)

## Harvest - Digging



Name of Implement: Tractor Operated Groundnut Digger  
**6** No. of times: One  
No. of hours: 2 Hours per Acre  
Max. Eligible Subsidy – Rs.3000/Acre





# Black Gram– Details of Operations

## Ploughing



1

Name of Implement: Tractor Drawn Cultivator

No. of Passes: Two

No. of hours: 1 Hour per Acre per pass

Max. Eligible Subsidy – Rs.2000/Acre



2

Name of Implement: Tractor Operated Rotavator

No. of Passes: One

No. of hours: 1 Hour per Acre

Max. Eligible Subsidy – Rs.1500/Acre



# Blackgram – Details of Operations

## Sowing



Name of Implement: Tractor drawn Raised Bed Seed Drill /  
Seed Drill

3

No.of times: One time  
No.of hours: 1 Hour per Acre  
Max. Eligible Subsidy – Rs.1500/Acre

## Intercultural Operation - Weeding



Name of Machinery: Power Weeder

No. of Times: One

4

No.of hours: 4 Hours per Acre  
Max. Eligible Subsidy – Rs.4000/Acre



# Blackgram – Details of Operations

## Plant Protection - Spraying



5

Name of Machinery: Drone/Power Sprayer  
No. of Times: Two (Rs.1000/- per time)  
Max. Eligible Subsidy – Rs.2000/Acre

## Harvesting



6

Name of Machinery: Wheel type Combine Harvester  
No. of time: One  
No. of hours: 1.5 Hours per Acre  
Max. Eligible Subsidy – Rs.2700/Acre



- ❖ All the above said mechanized farming operations to be done **through 'Agri-Tech Entrepreneurs'** with 100% subsidy assistance.
- ❖ Maximum extent to be demonstrated – One Acre in one village
- ❖ 70% of selected Beneficiary farmers should be Small/Marginal farmers.
- ❖ No cluster approach
- ❖ All the farmers in the village should be invited for the Demonstration for all farming operations of a particular crop.
- ❖ Seeds, Fertilizers, Pesticides, etc., and additional labour/operations required if any to be borne by the farmers who have given the land for Demonstration.





# Thank you



## Agricultural Engineering Department

