REPORT ON RURAL AGRICULTURAL WORK EXPERIENCE (RAWE) PROGRAMME
IN
RAMLA VILLAGE (GODDA DISTRICT, JHARKHAND) AND GODDA KVK (GODDA DISTRICT, JHARKHAND)

A
Report Submitted to the Birsa Agricultural University, Ranchi
in Partial Fulfillment of the
Requirements for the Award of the Degree of
Bachelor of Science (Agriculture)

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CERTIFICATE

This is to certify that

MISS ANAMIKA PANDEY with the registration number AGTG021967 of B.Sc (Hons) Agriculture, Tilka Manjhi Agriculture College, Godda (B.A.U. Ranchi) has successfully completed the RAWE Programme in Ramla (Naukhil) Village, Godda District, Jharkhand and KVK (Godda), Godda District, Jharkhand

RAWE Chairman **RAWE Co-Ordinator**

Date: **Date:**

Department of Agronomy **Department of Soil Science**

Department of Horticulture **Department of Ag. Extension**

Department of Ag. Economics **Department of Ag. Engineering**

Department of Plant Pathology **Department of Entomology**

ACKNOWLEDGEMENT

I'm Anamika Pandey, student of 4th year BSc. (Hons Area. Feel highly delighted after the accomplishment of my assigned RAWE based on PRA tools & technique. My journey towards the accomplishment wouldn't have been possible without the support & guidance of my teachers & groupmates.

I express my heartiest gratitude to our honourable Associate Dean Sir Dr. Amrit Kumar Jha, who gave us this great opportunity to take part in the RAWE Programme and endeavoured to make this course successful.

I am also very grateful to our professor Dr.Abhijeet Satpathy (Coordinator of RAWE Programme) for continuously guiding , motivating, encouraging us to explore various aspects of this course and organising this course in such a manner that we can take maximum academic benefit out of it.

To this, I add my sincere gratitude and heartily thanks to all the professors of different disciplines of our college for their precious time and guidance and for sharing their own experiences during this RAWE .

It was a great privilege to work under the loving and caring guidance of our instructors at allotted village in RAWE. I give my special thanks to all the villagers who accompanied us during RAWE programme.

I would also like to thank my batch mates and my seniors for their pretty involvement and suggestions and for their continuous cooperation.I will always be thankful to those who have helped me directly or indirectly in successfully completing this course.

Anamika Pandey

Roll no. :- 67

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INTRODUCTION

"If agriculture goes wrong, nothing else will have a chance to go right".

~ M.S. Swaminathan

Agriculture is the art and science of cultivating the soil, growing crops and raising livestock for consumption and benefit of mankind.

Agriculture in India is a major economic sector and it is the backbone of the Indian economy.It creates plenty of employment opportunities as well. About 65% of the Indian population depends directly on agriculture.

What is RAWE?

The Rural Agricultural Work Experience Programme (RAWE) provides a unique opportunity to the students of agriculture to work with the farmers at their farms and homes and get exposed to the real field problems and extension methods with sound basic knowledge.

The Rural Agricultural Work Experience programme (RAWE) is being conducted in the 7th semester (20 credit hours) . In this programme, all students are allotted different villages,are assigned to carry out different data collection activities under the proper guidance from our respected Professors.

History

In India, the Randhawa Committee (1992) recommended the rural agricultural work experience (RAWE) program for imparting quality, practical and production oriented education for agriculture degree programs. Therefore, the agenda for the 21st century in agricultural education should be drawn on the basis of challenges it has to meet in the near future. RAWE program provides significant hands-on experience in acquiring knowledge and skill.

Here participatory rural appraisal (PRA) technique is conducted to gain experience. So, we were required to carry out the exercise in the assigned village with the help of the villagers and submit our report. During visiting villages and doing PRA exercise, we were exposed to village situations and we got a basic understanding of various on-farm activities. We develop communication skills with farmers during interaction regularly under this programme. Various exercises under this project developed this knowledge of the student

and revised all the courses that we studied for the last 3 years. We are now comfortable while communicating with the villagers.

This RAWE programme has been very effectively programmed and is of most importance for agricultural graduates as they have to work “with the people, by the people and for the people” at the grass root level in the near future, to take our country in the line of a developed Nation.

COMPONENTS COVERED:-

- Rural Agricultural Work Experience
- In-Plant Training / Agro Industrial attachment

Component I: Rural Agricultural Work Experience

The Rural Agricultural Work Experience (RAWE) helps the students primarily to understand the rural situations, status of agricultural technologies adopted by farmers, prioritize the farmers' problems and to develop skills and attitude of working with farm families for overall development in rural areas. The students may be placed in the villages adjacent to the University establishments like College, Krishi Vigyan Kendra, Regional Research Station, Regional Research Sub-Station etc. under its jurisdiction.

Component-II: In-Plant Training / Agro Industrial Attachment (AIA)

Technology and globalization are ushering an era of unprecedented change. The need and pressure for change and innovation is immense. To enrich the practical knowledge of the students, in-plant training shall be mandatory for a period of up to 3 weeks. In this training, students will have to study a problem from an industrial perspective and submit the report. Such in-plant training will provide an industrial exposure to the students as well as to develop their career in the high tech industrial requirements. The students may be placed in Agro-and Cottage industries including Seed / Sapling production, Pesticides-insecticides, Post-harvest-processing-value addition, Agri-finance institutions, etc. and Commodities Boards for 3 weeks.

OBJECTIVES OF RAWE:-

- To provide an opportunity to the B.Sc.(Ag.)Hons. students for reorienting their subject matters knowledge through work experiences in local situations.
- To know the socio-economic status of the rural people in the particular area.
- To enumerate the local livelihood status of the people by the students for getting information regarding people's farm experiences.
- To emphasize the communication linkage between the organization, agricultural university and local people.
- To develop confidence and competence of the students and local people for solving the problems related to farm enterprises with the help of local resources.

LIMITATIONS of the study:-

- Inadequate time limit.
- Small size of target respondents.
- Homogeneity of target people or farm entrepreneurs.
- Very little fund allotment of the course.

- Information of crops only from a single season.

PARTICIPATORY RURAL APPRAISAL (PRA)

PRA is both an attitude and methodology. It is one of the tools of surveying that helps outsiders to understand the village symbols, systems, dynamics and politics by using various techniques as well as by methods of direct observation and discussion. It can be defined as, "A growing family of approaches and methods that enable local people to share, enhance and analyze their knowledge of life and condition to plan and act."

Father of PRA : Robert Chambers

OBJECTIVE OF PRA

- To generate information and collection of data for immediate or future use.
- For greater and better involvement of villages by learning about their perception, experiences and capabilities.
- For learning about the impacts of earlier or ongoing policies and programmes and to frame new ones.
- For training of different categories of persons involved in the development process, whether from Govt., NGOs, Banks, Researchers, Extension Agents, Scientists etc.
- For validation and cross-checking of data collected from other sources.

PURPOSE OF PRA

- To use farmer's criteria, choices and understand the local environment with clear priorities.
- To learn farmer's indigenous technologies.
- To achieve triangulation using different methods & involving various people to check and recheck the findings.
- To develop self critical analysis and direct contact with local needs and communities.

JHARKHAND:-

About:-

Jharkhand is 'the land of forests' - endowed with rich flora and fauna. To have a complete panoramic view of nature and beauty, one can visit the zoological gardens and national parks. The state is situated in the eastern part of India. In the year 2000, it was split from southern Bihar and was formed into another State. Jharkhand is encircled by the Indian states of West Bengal(east), Uttar Pradesh (west), Chhattisgarh (west), Bihar (north) and Odisha (south). The state is spread out across 30,778 miles. Ranchi is the state's prime capital, whereas the largest city for industrial purposes is Jamshedpur. The sub-capital of the state is Dumka

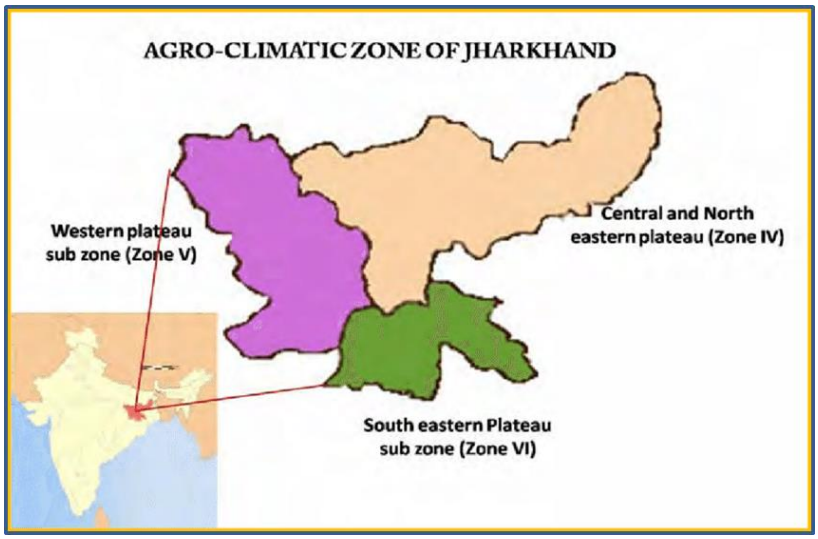

Fig. 1

FACTS ABOUT JHARKHAND:-

Date of formation	15, Nov ,2000
Area	79,714sq km
Density	414/km²
Population (2011)	3,29,88,134
Males population	1,69,57,819
Female population	1,60,57,819
No. Of District	24
Capital	Ranchi
Forests and National Parks	Betla National Park (231.67 sq km), Hazaribagh Sanctuary (186.25 sq. km), Palamu WS (794.33sq. Km)
State Animal	Elephant

State bird	Asian koel
State Tree	Sal
State Flower	Palash
Literacy Rate	67.60
Females per 1000 Males	947

ABOUT THE DISTRICT GODDA

Godda was a part of undivided Santhal Pargana district until the 1981 census. Later, the old Godda sub-division of Santhal Pargana was separated and formed as a new district. The district of Godda was created on 17 May 1983 out of old Santhal Pargana district which was upgraded to the level of division. Godda(M), the only one town of the district, is the headquarters of Godda district, Godda subdivision and Godda block.

The area of the district is 2110 km², with a population of around 1313551. The Godda district is connected with a rail link. The nearest railway station is Godda. The main economic activity of the people is agriculture, and major crops are paddy, wheat and maize. For administrative purposes the district has been divided into 2 sub-division – Godda & Mahagama and 9 nos. of Blocks.

Fig. 2

DISTRICT AT A GLANCE:

Area : 2,110 sq km
Language : Hindi
Population : 1,313,551
Males : 6,77,927
Females : 6,35,624
Village : 1634

1) **VILLAGE PROFILE**:

Naukhil is a small Village in Godda Block in Godda District of Jharkhand State, India. It is located 2 KM towards East from District head quarters Godda. 298 KM from State capital Ranchi

Village Attachment

1)RAPPORT BUILDING :-

Rapport building is the process of creating rapport and building trusting relationships between two or more people. Rapport building is the first step of PRA.

एग्रीकल्चर कॉलेज के स्टूडेंट्स पहुंचे गांव, कहा, नई तकनीक अपनाएं

नगपोरा रिपोर्टर

मोहड़ा: किताबों से बाहर ये एग्रीकल्चर स्टूडेंट गांव की मेड़ पर पहुंचे तो इनमें बहुत कुछ नया सीखा और सिखाया। शिवा मंडी कृषि महाविद्यालय पूर्णिया मोहड़ा के सातवें सेमस्टर के छात्र- छात्राओं ने शुक्रवार को मोहड़ा प्रखंड के रामला(सीतल) गांव में जाकर कृषि से संबंधित कार्य अनुभव प्राप्त किया। सातवें सेमस्टर के विमल, आदिति, अंबा कुमारी, सचिन कुमार वर्मा, प्रेमलता किस्कु, उर्वशी अस्था, शिवेश योगमणी, शुभम कुंडा, प्रभाकरजीत कर्मकार, बासवी मिथि, पल्लवी कुमारी, हिमी सोरेन, अमन मिश्रा, निधि मानझार, सोनाली शिवतारिणी, कृति चाटुवाल, रुना सिरिन, कुमार आर्यन, संतोष कुमार यादव, कार्तिक जॉय, आदिति कुमारी, दीपिका शिखा टोप्पो, श्यामल कुमार मालो, रोजी किस्कु, गौव कुमार किस्कु, निता पात्र, शिल्पा कुमारी, प्रीति टोप्पो, मुन्ने सोरेन, सोनम सर्मा, अंशु आनंद, सैजल सिंह, अमरदीप मुर्मू, शिवांका घोष, कुमारी कबु प्रिया, शिवांका कुमारी, सौरभी कुमारी साव, विकास कुमार, सोनाली कुमारी, प्रतिभा, अनामिका पाण्डेय, कौशिक कुमार, अमृतेश आनंद, सलुता प्रवीण, स्वाती कुमारी, शुभम कुमार मिश्रा, रितु कुमारी, रौनक राजवर ने गांव के किसानों के साथ बातचीत की। उनके लगाए फसल का खेत पर जाकर निरीक्षण किया। किसान के सामने आई कठिनाई को समझा। कृषि वैज्ञानिकों ने भी किया मदद मौके पर ई. कुणाल प्रसाद, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि अभियंत्रकी विभाग, डॉ अभिजीत सारथी, सहायक प्राध्यापक, संयोजक सह कनीय वैज्ञानिक कृषि विस्तार, डॉ अरुंधती कुमार सहायक प्राध्यापक सह कनीय वैज्ञानिक सस्य विज्ञान, डॉ कमण्या ठाकर, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि उद्यान, डॉ निर्मिता कुमारी, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि विज्ञान ने सभी छात्र- छात्राओं से प्रायोगों से मिली समस्याओं को सुना और उनका निदान भी बताया। वैज्ञानिकों ने खेत में लगी फसल का कोट द्वारा पहुंच रहे क्षति पर भी छात्र- छात्राओं को अवगत कराया। वैज्ञानिकों ने कृषि में जुड़े किसानों से कहा कि आप खेती वैज्ञानिक तरीके से कीजिए। इससे पैदावार भी अधिक होगा और आपको फोलाने भी कम होंगे। आज मिट्टी में तरह- तरह के तकनीक उपलब्ध है। इससे कम पानी में ही किसान अधिक मिट्टी कर सकते है। होटरी पंचायत के मुखिया मनोहर प्रसाद वैद्य ने भी सातवें सेमस्टर के छात्र- छात्राओं के साथ इलाके में कृषि के क्षेत्र में आ रही कठिनाई को सामने रखा। वैद्य ने कहा कि इस इलाके में केवल चार- पांच ट्रीन बोरिंग की व्यवस्था करा दी जाय तो इस इलाके से प्रतिदिन टुकी में भरकर सब्जी बाहर जा सकता है। आज कृषि को उद्योग के रूप में अपनाने की जरूरत है। बीज पर लगा गांव के सैकड़ों ग्रामीणों ने अपनी समस्या इस कनीय वैज्ञानिकों तथा छात्र-छात्राओं के सामने रखा। सातवें सेमस्टर के सभी छात्र-छात्राओं ने कहा कि किसानों ने कृषि और उसकी समस्या पर रोज पहुंचे होती है, पर जब खेती करने को खेत पर जाकर देखा और उसे जो अनुभव प्राप्त किया। वह सही मायने में हमारे लिए काफी उपयोगी है। किसानों की समस्या यह थी कि आज तक उसके खेतों की मिट्टी की जांच नहीं हो पाई है।

We reached Ramla village on 18th of Nov 2022 for the 1st time . We were welcomed warmly by Manohar Prashad Vadhya the sarpanch of the village and the other villagers. We all gathered in the "Satsang Bhawan" were the people of the village has arranged mattresses and Audio Amplifier Systems for our convenience. This made our way much easier to reach each and every villager. They served us tea, biscuit , water and all of this was really very overwhelming. We all started interacting with them and this went too far. We (Us and the villagers) broke our barriers and all preconceived notion, our conversation became informal. Gradually the villagers started sharing their problems, we heard it all and discussed the possible ways to solve them. Then we were allotted with our respective host farmers and we left Satang Bhawan with them. We visited their field, also collected necessary data. At 4 pm we gathered again near the Satsang Bhawan again and left for our college.

Name of the farmers:-

Sintu Kumar
Bhawani Devi
Hardev Mandal
Shrikant Mandal
Dhananjay Vaidh
Basant Mandal
Shri Sitaram Vaidh
Chandan Kumar Vaid
Chakardhar Manjhi

Rapport building is an important task for the team for collecting reliable information. It is usually done to develop communications and to establish working relationships with the local people. Generally, rapport building is initiated immediately as the team enters a village. This may help the team to get closer to the village people.

- Start talking to the rural people saying "local Hello" whenever you meet them, for example, on the trail, agricultural fields, tea shops, homes etc.
- Treat and respect rural people as per their local custom.
- Ask the knowledgeable people about a subject or area in a village .
- Clearly explain reasons for coming to the area.
- Show genuine interest in the local issues .
- Choose a time and venue that are convenient for the local people.

2) VILLAGE PROFILE STUDY :-

Table no. 2.1) Village Population:-

Category	**Numbers**	**Percentage**
Male	538	29.88%
Female	535	29.72%
Children	727	40.38%
Total Population	1800	100%

Table no. 2.2) HOUSING TYPE:

Type	Numbers	Percentage
a) Kachha	50/500	10%
b) Pucca	450/500	90%

Table 2.3) EDUCATION:

Category	Numbers	Percentage
Illiterate	180	10%
Primary education	1620	90%
Middle school	1480	82.22%
High school	1245	69.16%
Intermediate	891	49.5%
Graduation and above	540	30%

Table no. 2.4) OCCUPATION:

Occupation	Numbers	Percentage
Professional	05	0.68 %
Teacher and Managers	12	1.64 %
Farmer	514	70.6 %
Skilled laborer	118	16.2 %
Unskilled laborer	79	10.8 %

Table no. 2.5) <u>LAND USE PATTERN OF VILLAGE :</u>

Sl. No.	Item	Area in hectares	% of total geographical area
1	Total Geographical area of village	220 ha	100%
2	Area under forest	2 ha	0.9%
3	Barren and uncultivable land	5 ha	2.27%
4	Cultivable land	82 ha	37.27%
5	Total fallow land	7 ha	3.18%
6	Net sown area	82 ha	37.27%
7	Net irrigated area	26 ha	11.81%
8	Area sown more than once	26 ha	11.81%
9	Gross cropped area	82 ha	37.27%

Table 2.6) SOURCES OF IRRIGATION FOR VILLAGE:

Sources	Area irrigated (Ha.)	Percentage
Channel	3 ha	11.5 %
Tank	0 ha	0 %
Open well	15.6 ha	60 %
Bore well	0.4 ha	1.54 %
Others	7 ha	26.9 %

Table 2.7) FARMERS PROFILE:

Category	Numbers	Percentage
Marginal farmers	416	52.79 %
Small farmers	60	7.61 %
Medium farmers	38	4.82 %
Agricultural labourers	79	10 %
Rural artisans	118	15 %
Others	77	10 %
Total	788	100 %

Table 2.8) AVERAGE ANNUAL INCOME:

Rupees/year	No. of households	Percentage
Up to 10000	150	30%
10000-50000	250	50%
50000-100000	75	15%
>100000	25	5%

Table 2.9) CREDIT FACILITY:

Sources	No. of people preferred	Percentage
Landlords	5	12.5%
Friends	5	12.5%
SHGs	20	50%
Bank	10	25%
Cooperative societies	nil	-

Table 2.10) COMMUNICATION NETWORK

Sources	No. of people preferred	Percentage
Newspaper	200	40 %
Radio	30	6 %
Television	240	48%

Extension agent	nil	-
Local leaders	60	3.33 %
Input dealer/NGOs	10	1.67 %
ICT(Mobile/Internet)	1200	66.67 %

Table 2.11) INSTITUTIONAL NETWORK (Access to Institution)

Sources	No. of people preferred	Percentage
Agril. Dept.	5	
KVK	3	
Block Office	2	
Educational Inst.	---	---
Panchayat	10	
NGOs	5	

Table 2.12) AVAILING MARKETING FACILITIES:

Sources	**No. of people preferred**	**Percentage(%)**
Local Markets	700	63.64%
Mandi	300	27.27%
Regional	100	9.09%
National	0	0
International	0	0

Table 2.13) EXTENSION PARTICIPATION :

Sl. No.	Extension activities	No. of people preferred	Percentage
1.	Training	05	14.28%
2.	Demonstrations	10	28.57%
3.	Exhibition	nil	-
4.	Exposure Visits	nil	-
5.	Awareness Campaign	20	57.14%
6.	Farmers' fair	nil	

Table 2.14) ALLIED ENTERPRISES IN THE VILLAGE

Enterprises	**No. of Families**	**Percentage to total**
Dairy	30	27.27%
Goatery	20	18.18%
Poultry	20	18.18%
Piggery	2	1.81
Others	38(buffalo)	34.54%
Total	110	100%

Table 2.15) TECHNOLOGICAL ACCESS:

Techniques	No. of farmers adopted	Percentage(%)
Soil testing	--	---
Line sowing / transplanting	225	22.5%
Nutrient management	250	25%
System of Rice Intensification	NIL	NIL
Weed management	112	11.2%
Use of machineries	84	8.4%
Integrated Farming Approach	86	8.6%
Integrated Pest and disease management	28	2.8%
Cash Crops	---	--
Climate smart agriculture	NIL	NIL
ICTs use	NIL	NIL
HYVs	85	8.5%
Hybrids	100	10%
GM crops	NIL	---
Organic farming	20	2%
Micronutrients (Zn, B) application	NIL	---

Conservation agriculture	NIL	---
Seed treatment	10	1%
Drip Irrigation	NIL	---

Table 2.16) CROP PROFILE:

Sl.	Name of Crops	Land types (up/mid/low)	Area under cultivation	Average Yield	Profit
Cereals					
1	Paddy	Low	57ha	102.6 ton	
2	Wheat	Low	50ha	75.4 ton	
Pulses					
	Pigeonpea	Upland	25 ha	388.5 q	
	Chickpea	Medium	30 ha	216 q	
Oilseeds					
	Mustard	Low	53 ha	54 ton	
Vegetables					

	Potato	Low	57	1020 ton	
	Tomato	Low	40.32	241ton	
Fruits					
	Mango	Low,medium	10.8	86.4	

3) AGRONOMICAL INTERVENTION:-

Learning objectives

- To study the existing cropping system, constraints and possible recommendations.
- To analyze the production practices of existing major field crops and technological gaps.
- To assess the weed infestation and their management.

3.1.1) MUSTARD:-

1)Land preparation:-

Farmer's practice: ploughing using cultivator followed by 2 cross harrowing using Rotavator

Recommended practice: Fine seed beds are required for good germination of crops. Ploughing of soil should be done for two to three times followed by two harrowing. Planking should be done after every ploughing. Firm, moist and uniform seed bed as it will help in uniform germination of seed.

2)Variety used:-

Farmer's practice: indigenous variety, local hybrid variety.

Recommended practice: Pusa Mustard 30, Pusa bold, kranti, Pusa jai kisan.

Technology Gap: All the farmers are not aware about the new varieties which is suitable for this village.

Suggestion: since the land is irritated by the farmer before sowing so irrigated suitable variety is Pusa Mustard 30, kranti and or late sown irrigated variety Pusa bold is used.

3) Seed Rate

Farmer's seed rate: 23 kg/ha

Recommended seed rate: 10-12 kg/ha (Broadcasting)

Technology Gap: farmers lack information about seed rate.

Suggestion: They may use line sowing methods to reduce seed cost.

4) Time of Sowing

Farmer's practice: 1st fortnight of Oct to 1st week of Nov.

Recommended practice: 1st fortnight of October.

Suggestion: Farmers may be advised for timely sowing practice to get high yield and less disease pest infestation.

5) Method of Sowing

Farmer's practice: Broadcasting

Recommended practice: Line sowing with spacing 30×15 cm.

Technology Gap: Inadequate knowledge about proper method of sowing**.**

Suggestion: Farmer's may be advised to use an improved method of sowing for lowering seed rate and getting optimum yield. Proper spacing decreases competition and increases yeild

6) Manure and Fertilizer Application

Farmer's practice: Urea thrice the area of field in kattha, DAP twice the field area in kattha and no MOP.

Technology Gap: Improper use of fertilizer and no use of manure

Recommendation of Fertilizer For Mustard Field to the host farmer :-

Mustard was sown in 2.8 kattha i.e. 0.043 ha by my host farmer

80:60:40 Fertilizer dose is required for 1ha

3.4 : 2.6 : 1.72 Fertilizer dosage is req for 0.043 ha.

Calculation for DAP :-

46 kg of p2o5 get from 100 kg of DAP

100/46= 2.17

2.17×2.6 = 5.6 KG OF DAP

FROM DAP we get nitrogen as well

From 100 kg of DAP we get 18 kg of N2

So, 5.6 kg of DAP gives N = 18/100* 5.6

= 1 kg (approx)

Calculation for Urea :-

Net nitrogen required= 3.4kg

Nitrogen from DAP. = 1kg

Remaining nitrogen required from urea = 3.4kg- 1 kg =2.4 kg

From 100 of urea we get 46 lg of nitrogen

100/46 = 2.17 × 2.4 = 5.2 kg urea

Calculation for potash :-

From 100 kg of potash we get 60 kg of K_2O

100/60

0.6× 1.7 = 2.8 kg MOP

= 3 kg approx.

FYM @ 15-20 t/ha

Technology Gap: Improper use of fertilizer and manure

Suggestion: Farmers are requested to follow proper doses of FYM and fertilizer.

7) Irrigation Scheduling

Farmer's practice: Pre irrigation - 9 October
2nd irrigation - 5 November
3rd irrigation - 25 November (at the time of flowering)
Recommended practice: Two irrigations at pre bloom and pod filling stages
Technology Gap: Lack of proper information about irrigation scheduling.
Suggestion: Farmers may follow recommended irrigation scheduling which is more beneficial for the crop

8) Plant Protection Scheduling
Farmer's practice: Rogor 2 ml/l of water only once.
Recommended practice: Apply copper oxychloride (Blitox) @ 4g/lit of water and difenoconazole (Score) @ 1 ml/litre of water at 7 days interval for 2-3 times
Technology Gap: Lack of awareness about plant protection measures.
Suggestion: Farmers may use resistant varieties, follow proper protection measures, burn the affected plant part after harvest.

9) Yield
Farmer's practice: 12 -12.5 q/ha
Recommended practice: 20-25 q/ha
Technology Gap: Present yield is below the expected yield due to lack of awareness and insufficient knowledge about the package of practices .
Suggestion: They may follow proper scientific technique of cultivation, use of high yielding variety suitable for this particular village situation.

3.1.2) Wheat :-

1) **Land Preparation**

Farmer's Practice: One ploughing using cultivator and two harrowing by using rotavator.
Recommended Practice: wheat grows well and gives uniform germination in a pulverized but compact seed bed. In case of irrigated wheat, pre-sowing irrigation should be given after harvesting of the kharif crop and field should be prepared by carrying out one deep ploughing to uproot the weed and stubbles followed by two harrowings and planking is desirable.
Suggestion: proper leveling of fields.If fields are not properly leveled it leads to poor performance of the crop, because part of the area suffers due to water stress and the other parts due to excess of water which further leads to yield loss.

2) **Seed and sowing**

Farmer's Practice: Farmer's seed (indigenous variety)
Recommended Practice: HD2967, HD3171, K1317.
Technology Gap: All the farmers are not aware about the new varieties and quality seed.

Suggestion: farmers should use the variety that is well suited for irrigated conditions.
Good quality seeds have following advantages:

- Gives desired plant population
- Capacity to withstand the adverse conditions
- Seedlings produced will be more vigorous, fast growing and can resist pest and disease incidence to certain extent
- Ensures uniform growth and maturity
- Development of the root system will be more efficient that aids absorption of nutrients efficiently and result in higher yield.
- It will respond well to added fertilizer and other inputs.
- Good quality seeds of improved varieties ensures higher yield at least 10 – 12 %.

3) **Seed Rate:**

Total Area of Farmer's field : 0.0642 had (4.2kattha)
Farmer's Practice: @3 Kg per kattha (for broadcasting)
For 4.2 Kattha 13-13 kg fertilizer is being used by the farmer.
Optimum Seed Rate: 125 kg/ha (broadcasting)
For 0.064 ha 8.6 kg seeds are required
Technology Gap: Lack of knowledge about optimum seed rate.
Suggestion: Optimum seed rate is most important for maximum yield of crop. If more seed rate is used,

- Plant population will be more and there will be competition among plants for water, nutrients and sunlight resulting in low quality and low yield.
- Intercultural operations will be more difficult.

4) **Optimum time of Sowing**:

Recommended practice: 1st fortnight of November is the best time of sowing wheat.

5) **Method of Sowing**

Farmer's Practice : Broadcasting
Recommended Practice : Line Sowing
Line Sowing:- means sowing of seed in a fixed geometry pattern along horizontal or vertical line.
Technology Gap: Inadequate knowledge about proper method of sowing**.**
Suggestion: Farmers are advised to use improved method of sowing i.e, line sowing because of the following reasons:

- Line sowing provides sufficient space for growth of each plant.
- Seed used and seed cost is less than Broadcasting.
- Along the rows, interculturing can be done. Proper utilization of water and nutrients.

- Proper plant growth and good yield.

6) Manure and Fertilizer Application

Fertilizer dose recommendation for wheat field:-

√The recommended those of fertilizer is 100:40:40 for 1 hectare (For irrigated conditions)

√ DAP contains 18% N and 46% P2O5.

√ urea contains 46% N.

√ MOP contains 60% of k2O

Calculation:-

√Total land area of the farmer is 7 Katha i.e. 0.109 hectares.

√ wheat is sown in 4.2 kattha i.e. 0.0642 ha.

√ Fertilizer dosage for 0.0642ha is 6.4 : 2.6 : 2.6

DAP calculation:-

40 kg of P2 O5 is provided by 100 kg of DAP

So, 3.6 kg of P2O5 will be provided by = 100/46* 2.6 kg DAP

=2.17* 2.6

= 5.6kg

Now, as we know that 100 kg of DAP provides 18 kg nitrogen.

100 kg of Urea provides 18 kg nitrogen.

So, 5.6 kg of Urea will provide 18/100* 5.6 kg of Nitrogen.

= 1 kg N

Urea calculation :-

Net Nitrogen required. = 5.6 Kg

N from DAP = 1 kg

Total N req. now. = 5.6kg - 1 kg

= 4.6 kg

46 kg of nitrogen is provided by 100 kg of urea

So 4.6 kg of Nitrogen will be given by = 100/46 * 4.6 kg urea

= 9.99 kg urea = 10 kg

Calculation for MOP

60 kg K2O is provided by 100 kg of MOP

2.6 kg will be provided by = 100/60 * 2.6

= 4.33Kg

Technology Gap: Improper use of fertilizer and manure
Suggestion:

- Farmers are advised to follow the recommended dose of FYM and Fertilizers.
- Half dose of N and full dose of P and K applied as basal and remaining half dose of Nitrogen applied as top dressing at 1st irrigation.

7) **Irrigation Stages:-**

Farmers Practice:

- 1st irrigation- Before Sowing
- 2nd irrigation- 21 DAS
- 3rd irrigation- 42-45 DAS

Recommended Practice: Wheat requires 4-6 irrigation for optimum yield and total water requirement is 450-650 mm. Irrigation should be given at the following critical growth stages.

S. no.	Critical growth stage	DAS	Reduction in yield if not irrigated (%)
1)	CRI (Crown Root initiation)	21 DAS	35
2)	Tillering	40-45 DAS	20
3)	Flowering (booting)	80-85 DAS	25
5)	Milking	100-105 DAS	17

- If one irrigation is possible then it should be given at 21 DAS (CRI).
- If two irrigations are possible, they should be given, first at 21 DAS (CRI) and second at 65-70 DAS (Flowering stage).
- If three irrigations are possible, they should be given at CRI, Jointing and Flowering stages.

Technology Gap: Lack of proper information about irrigation scheduling
Suggestion: Farmers are suggested to follow recommended irrigation scheduling which is more beneficial for the crop.

8) **Harvesting -**

Farmer's Practice: Farmer harvested wheat in the month of March.
Recommended Practice: The crop is harvested when grains become hard, straw become golden yellow, dry and brittle. The plants are harvested manually with the help of sickle early in the morning. Harvested plants are tied into bundles and then carried to the threshing floor.

Response of farmers :-:

They were amazed by knowing that a huge amount of money that they spend on fertilizer, seeds every year can be reduced without any negative effect on fields and crops. They were willing to adopt the new Suggestion.

3.2) Recommendation Of Line Sowing Over Broadcasting In Farmers Field :-

Introduction:-

In Ramla village farmers generally adopted broadcasting methods for sowing crops. So we recommended them to adopt line sowing because of its many advantages.

First of all , we told them what line sowing is and their benefits.

Seeds are sown in the main field in lines.The seeds are dropped into furrow lines in a continuous flow and are then covered with soil. This is done either mechanically or manually. The proper amount of seeds are sown at proper depths and proper spaces. It helps in good germination of seeds, easy pest management, nutrient management, application of plant protection chemicals, intercultural practices like weeding, hoeing, etc.

- The line sowing method has been found economical over that of broadcasting owing to less per hectare seed requirement and cost of weed management.
- The increase in productivity could be attributed to increased Nutrient use Efficiency (NuE) under Line sowing method owing to proper placement of seeds and fertilizers and reduced competition amongst weeds and crops.

Farmer's practice

Broadcasting:- Broadcast sowing method is a traditional method of sowing seeds. In this method, farmers sow the seeds by randomly scattering them on the land while walking around the field.

Recommended practice:-

Line Sowing:- means sowing of seed in a fixed geometry pattern along horizontal or vertical line.

Advantages of Line sowing over Broadcasting

- Line sowing provides sufficient space for growth of each plant.
- Seed used and seed cost is 30% less than broadcasting.
- No problem with thinning.
- Proper utilization of water and nutrients.
- Proper plant growth and good yield.
- The weed management can be done properly under line sowing as compared to broadcasting method.
- Easy to operate intercultural operation

Disadvantages of Broadcasting:-

- The requirement of seed per area is more.
- The cost of weeding and thinning in broadcast crop is more
- The intercultural operations such as earthing up, manuring, irrigation, etc., cannot be carried out with ease.
- Broadcast crops do not grow uniformly, and the desired yield is not possible.

Technology lag:- farmers are unaware about the benefits of line sowing.

Farmers Response:-

The response was different from different farmers. Some farmers were ready to adapt these methods while some denied this by comparing the labour and time requirement of both methods. However, we persuaded them by giving different examples.

3.3) WEED MANAGEMENT:-

3.3.1)Introduction:-

WEED : Weeds are unwanted and undesirable plants that interact with utilization of land and water resources and thus adversely affect crop production and human welfare.
Weed control and weed management are the two terms used in weed science.

Importance of weed management :-

- Weeds have serious impacts on agricultural production.
- Weeds compete with crops for water, soil, nutrients, light, and space, and thus reduce the crop yields.
- Weeds also act as alternate hosts that harbor insects, pests and diseases and other microorganisms. Alternate hosts of some of the pests and diseases.
- Some weeds release into the soil poisonous substances that may be harmful to the crop plants, human beings and livestock. Health problems caused by weeds to humans,Health .
- Weeds not only reduce yield but also interfere with agricultural operations.

3.3.2) A CRITICAL PERIOD OF WEED COMPETITION

Critical period of weed competition is defined as the shortest time of crop growth when weeding results in higher economic Returns. The crop yield level obtained by weeding during this period is almost similar to that obtained by full season weed free conditions.

Factors Influencing Critical Period Of Weed Competition:-

Nature of crop:- Faster growing crops have shorter critical periods of weed competition while slow growing crops have longer critical periods of weed competition.

Varieties:- tall growing traditional varieties suppress the weeds effectively while the dwarf varieties the critical period of weed competition is longer.

Growing conditions:- It also affects the critical period of competition. Ex - upland rice suffers for this competition throughout the life time while in transplanted rice this competition period is Short.

Period of weed growth:- weeds that germinate along with the crops are more competitive. They require very less time for germination as compared to the main crops.

Weed crop density:- The relationship between yield and weed competition is inversely proportional.

Plant species:- Weeds differ in their ability to compete with the crops at similar density levels this is because of the differences in the growth habit and to some extent due to allelopathic effects.

3.3.3)Weed management in farmers field :-

In Ramla village, the growth of weeds is one of the most neglected issues. Farmers lack the awareness and means to tackle this problem. We told them that weeds deplete crops' environment of nutrition, water and light. Crop yields are reduced considerably. In addition, weeds interfere and cause inconvenience in agriculture operations. Not only quantity, but also the quality of the produce is reduced by weeds infestation.

Farmer's practice:- hand weeding (occasionally)

Recommended practice:- Methods suggested by us for weed management:-

1. **Cultural method**: It includes field preparation, planting methods, planting density, varieties, fertilizer application, irrigation and drainage etc to check the growth of weeds.
2. **Physical method:** Physical methods such as hand weeding, hand hoeing, digging, mulching, cutting, burning and flaming, inter-cultivation are important.
3. **Biological weed control**: Bio-agents like insects, pathogens, and other animals are used to control weeds. Insects and pathogens infest weeds and either reduce their growth or kill them. Bio-agent should affect only one host and it should not affect any other useful plants. Feasible examples of biological weed control –
    a. Insects - In Australia, *Lantana camara* was controlled by two beetles *Octotoma scabripennis* and *Uroplata giraldi*.

b. Fish - Common crap and chinese crap control aquatic weeds.
c. Fungi - Water hyacinth can be controlled by *Rhizoctonia* blight.

4. **Chemical weed control**: For the efficient and effective control of weeds, herbicides are important.
   a. **Fallow application** –
      i. Application of herbicide in advance of sowing, more than 10 days before sowing, is called as Fallow application.
      ii. It control weeds like *Cynodon dactylon.*
   b. **Pre-plant application** –
      i. Application of herbicides 2 to 10 days before sowing.
   c. **Pre-emergence herbicides application** –
      i. Application of herbicides after the sowing of crops but before its emergence.
      ii. It is done 1 to 4 days after sowing.
      iii. Highly soluble herbicides are not advisable as they may leach and affect the plant if heavy rain occurs after the plantation.
   d. **Post emergence herbicide application–**
      i. Applied after the emergence of the crop.
      ii. It is generally resorted to when the crop has grown sufficiently to tolerate herbicides.
      iii. Generally applied when crop has grown sufficiently to tolerate herbicide. This is done after 30-40 DAYS after sowing.

Technology Gap:

- Inadequate knowledge about the intensity of yield loss caused weed infestation.
- Lack of knowledge about the pre and post emergence application of herbicides.

Suggestion:-

- Awareness of crop damage by weeds: One estimate suggests that weed causes 37% yield loss.
- Alternate utilization and commercialization of weed sp: Compost preparation by weed biomass,. Biogas production from weed sp.
- Use a proper dose of herbicide. Consult with experts regarding selection and recommendation of herbicides.

Farmer's response:- They were highly interested in the chemical methods of weed control.

3.4) Agronomical Interventions (Individual activities)

A. Plot wise history of Host Farmers including Cropping Scheme

1. Name of the Student : Anamika Pandey
2. Registration No: AGTG021967
3. Two major field crops cultivated in the village : 1)..Wheat.. 2)...Paddy.....
4. Name of the Host Farmer: Shintu Kumar
5. Name the field crops cultivated by the host farmer: wheat, mustard.
6. Total area under field crops with host farmer (ha.) …0.107 ha…. (Irrigated/Rainfed)

   6.1. Area under crop 1: .....0.0642(wheat)..... ha, Area irrigated….0.0642….ha

   6.2. Area under crop 2: .....0.043(Mustard).....ha, Area irrigated….0.043…ha.

   6.3. Source of Irrigation .....Well.....

7. Soil properties-

   8.1. Soil Type: .....Sandy loam and sandy clay.....

   8.2. Soil Texture: .....

   8.3. Soil pH: .....6-7.....

   8.4. Soil Organic Carbon (%): .....< 0.5 %.....

   8.5. Available nutrients (Kg/ha): N.....140-160....., P_2O_5.....8-9....., K_2O.....70-80.....

8. Previous Cropping History: 1.1 Kharif: .....wheat, mustard.....

   1.2 Rabi: .....wheat, mustard.....

   1.3 Zaid: .....fallow.....

10. Cropping Intensity (%): .....100 %..... & Rotational Intensity (%): .....100 %.....

B. Cropping Scheme (Previous Year)

Table 3.1: Details of cropping scheme of previous year and inputs and output

Plot no.	Area (ha)	Crops & varieties	Field preparation	Manure & fertilizer	Irrigation & plant protection	Yield obtained (q/ha)	Value of produce (Rs/ha)	Cost of cultivation (Rs/ha)	Net profit (Rs/ha)
1	0.0642	Wheat	2-ploughing 1- harrowing	Urea- 12.6 Kg DAP- 8.4 Kg	3 irrigation Insecticide- Rogor	23.36 q/ha	₹4,96,630/ ha	₹1,32,512 /ha	₹3,65,118/ ha
2	0.043	Mustard indigenous (black mustard)	3 – ploughing	Urea - 9.4 Kg DAP - 3.6 Kg	3 – irrigation	18.57 q/ha	₹1,11,420/ha	₹1,75, 539/ha	Loss of ₹ 64,119

C. Calendar of operations (Major Field crops):

Table 3.2: Details of calendar of operations of major field crops

Name of crop	Date and Month	Name of the operation to be performed
Wheat	5 – 13 November 5 November- ploughing 8 & 13 November – harrowing	**Field Preparation –** 3 tillage in 2 to 3 days
	15 November	**Sowing**
	6 December – Urea application 14 November – DAP	**Manure and fertilizer**
	14 November – Pre-irrigation 6 December – 2nd irrigation 28 December – 3rd irrigation (at the time of flowering)	**Irrigation**
	2nd week of march	**Harvesting**
Mustard	2 – 9 October 2 October- ploughing 6&9 October- harrowing	**Field Preparation –** 3 times in interval of 2-3 days
	10 October	**Sowing**

	25 October and 5 November – Urea application 9 October – DAP	**Manure and fertilizers**
	9 October – Pre-irrigation 5 November – 2nd irrigation 25 November – 3rd irrigation (Flowering time)	**Irrigation**
	March	**Harvesting**

D. Cost of cultivation per unit area:

Table 3.3.1: Cost of cultivation of (Name of the crop .....Wheat.....) @ Area 0.0642 (ha)

	Name of operation	**Inputs used**			**F. Labours**		**H. Labours**		**Total**		**Labour costs (Rs/ha)**			**Grand Total**
		Name	**Qty**	**Value**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**Machine**	
5-15 November	Field Preparation	Tractor	1	Rs. 600	0	0	Nil	Nil	0	0	Nil	Nil	Rs. 600	Rs. 600
15 November	Sowing	-	-	-	2	0	-	-	2	0	Rs. 600	0	0	Rs. 600
14 November – 28 December	Irrigation	Motor	1	Rs. 1440(12 hours)	2	0	-	-	2	0	Rs. 1800	0	Rs. 1440	Rs. 3240
6 December	Fertilizer application	Urea	12.6 kg	Rs. 113.4	2	-	Nil	Nil	2	-	Rs. 600	0	-	Rs. 713.5
14 November	Fertilizer application	DAP	8.4 kg	Rs. 285.6	2	0	0	0	2	0	Rs. 600	0	-	Rs. 885.6
2nd week of march	Harvesting	Sickle	4	-	2	2	0	0	2	2	Rs. 1200	Rs. 1000	0	Rs. 2200
	Misc. Cost													
	Total cost													Rs. 8239

Daily wage of Male labour: 300 (Rs/ Man day)
Daily wage of Female labour: 250 (Rs/ Man day)

Table 3.3.2: Cost of cultivation of (Name of the crop .....Mustard.....) @ Area 0.043 (ha)

Date	Name of operation	Inputs used			F. Labours		H. Labours		Total		Labour costs (Rs/ha)			Grand Total
		Name	Qty	Value	M	F	M	F	M	F	M	F	Machine	
2 October	Field Preparation	Tractor	1	Rs. 400	0	0	0	0	1	0	0	0	Rs. 400	Rs. 400
10 October	Sowing	-	-	-	1	0	0	0	1	0	Rs. 300	0	0	Rs. 300
9 – 25 October	Irrigation	Motor	1	Rs. 720(6hrs)	2	0	0	0	2	0	Rs. 1800	0	Rs. 720	Rs. 2520
5 and 15 November	Fertilizer application	Urea	8.4 kg	Rs. 75.6	1	0	0	0	1	0	Rs. 600	0	Rs. 75.6	Rs. 675.6
9 October	Fertilizer application	DAP	5.6 kg	Rs. 190.4	1	0	0	0	1	0	Rs. 300	0	Rs. 190.4	Rs. 490.4
March	Harvesting	Sickle	4	Rs. 0	2	2	0	0	2	2	Rs. 1200	Rs. 1000	Rs. 0	Rs. 2200
	Total Cost													Rs. 6586

Daily wage of Male labour 300 (Rs/ Man day)
Daily wage of Female labour: 250 (Rs/ Man day)

E. Estimated Cost of cultivation:

Table 3.4.1 Cost of cultivation of (Name of the crop - Wheat) @ Area 0.0642 (ha)

Sl.no	Items	Unit	Inputs per unit area	Input in 0.0642 (ha)	Total cost(Rs.) per (ha)
1	Hired male labourers	Man days - 0	0	0	0
2	Hired female labourers	Man days – 0	0	0	0
3	Bullocks	Hrs – 0	0	0	0
4	Machinery charges				
4.1	Machine 1(Tractor)	Hrs – 36 mins	Rs. 1/metre-square	Rs. 600	Rs. 9346
4.2	Machine 2	Hrs – NA	-	-	-
5	Seed	Kg – 7 kgs	Rs. 0.0105x22=0.23	Rs. 7x22=154	*Rs. 109x22=2399
6	Manure	Tonnes – 0.1	-	-	-

		tonnes			
7	Fertilizers				
7.1	Fertilizer 1 (Urea)	Kg – 12.6 kgs	0.17 Rs/metre-square	Rs. 655x.17=111	Rs1728
7.2	Fertilizer 2 (DAP)	Kg – 8.4 kgs	0.44 Rs/metre-square	Rs. 655x.44=288	Rs.4436
7.3	Fertilizer 3	Kg			
8	Irrigations	Hrs – 12 hours	2.2 Rs/metre-square	Rs. 1440	Rs. 22430
9	Crop protection	-	-	-	-
9.1	Insecticides	2 ml/l	0.12Rs/metre-square	Rs 79	Rs. 1230
9.2	Fungicides	ml/g	-	-	-
9.3	Herbicides	ml/g	-	-	-
10	Land revenue/cess & taxes	5Rs/kattha/yr	-	Rs. 10.5	Rs. 163.6
11	Depreciations on implements & farm buildings	Rs 13000-10590 =2410	-	-	Rs. 2410
12	Expenses on acquisition on inputs and misc	Rs	7.7 Rs/metre-square	Rs. 5003+79+10.5= Rs. 5082.5	Rs. 42749 + 1230 + 163 = Rs 44,142
13	Interest on working capital	Per cent	-	-	-
14	Rental value of land	Rs	-	-	-
15	Family male labourers	5 Man days	5.95 Rs/metre-square	Rs. 3900	*Rs. 60,747
16	Family female labourers	3 Man days	1.5 Rs/metre-square	Rs. 1000	*Rs. 15,576
17	Total	Rs	15.24 Rs/metre-square	Rs. 9,982.5	Rs. 1,20,465
18	Supervision charges 10% of total cost	Rs	1.52Rs/metre-square	Rs. 998.25	Rs. 12,046.5

19. Total cost of cultivation: (Row no. 17 + Row no. 18) =Rs. 1,32,512

20. Yield Grain.....23.36...q/ha Straw=32.7q/ha

21. Price Grain @ Rs …….20000……. per quintal, Straw @900 per quintal

22. Gross return = Rs 496630

23. Net Profit Rs = (Row no. 22 - Row No. 19) = Rs. 3,65,118

Table 3.4.2 Estimated cost of cultivation of (Name of the crop - Mustard)

Sl.no	Items	Unit	Inputs per unit area	Inputs in 0.043 hectare	Total cost per (Rs/ha)
1	Hired male labourers	Man days	-	-	-
2	Hired female labourers	Man days	-	-	-
3	Bullocks	Hrs	-	-	-
4	Machinery charges				
4.1	Machine 1 (tractor)	24 mins	0.91Rs/metre square	Rs 400	Rs. 9302
4.2	Machine 2	Hrs			
5	Seed	1Kg	0	Rs60	Rs1395
6	Manure	Tonnes	0	0	0
7	Fertilizers				
7.1	Fertilizer 1 (urea)	8.4Kg	RS 0.2/sqm	Rs.75.6	Rs.1758
7.2	Fertilizer 2 (DAP)	5.6Kg	Rs 0.054/sq m	Rs190.4	Rs. 4428
7.3	Fertilizer 3	Kg	0	0	0
8	Irrigations (motor)	6Hrs	Rs. 1.6/sqm	Rs720	Rs. 16744
9	Crop protection				
9.1	Insecticides (rogor)	2 ml/l	Rs. 0.12/sqm	Rs. 79	Rs.1230
9.2	Fungicides (saaf)	ml/g	Rs0.12/sqm	Rs. 52.5	Rs, 1,221
9.3	Herbicides	ml/g	0	0	0
10	Land revenue/cess & taxes	5Rs/kattha/yr	Rs 0.016 /sqm	Rs.7	Rs162.8
11	Depreciations on implements & farm buildings	Rs. 13000-10590 =2410		Rs. 2410	Rs2410
12	Expenses on acquisition on inputs and miscellaneous	Rs	Rs9.08/sqm	Rs. 3994.5	Rs. 38,650.8
13	Interest on working capital	Per cent			

14	Rental value of land	Rs			
15	Family male labourers	Man days	Rs. 9.5/sqm	Rs. 4200	Rs. 97,674
16	Family female labourers	Man days	Rs. 2.27/sqm	Rs. 1000	Rs. 23,256
17	Total	Rs	Rs. 20.9/sqm	Rs. 9194.5	Rs. 1,59,581
18	Supervision charges 10% of total cost	Rs	Rs. 2.09/sqm	Rs. 919.45	Rs. 15958.1

NOTE (Calculating cost of cultivation for Ramla Naukhil):

1. Tractor - Rs. 1000/hr
2. Motor (Honda 1 HP diesel engine) - Rs. 13000(approx.)
3. Diesel - Rs. 120/litre
4. Urea - Rs. 9/kg
5. DAP - Rs. 34/kg
6. Rogor - Rs. 198/100 ml
7. Saaf - Rs. 105/100 g
8. Land taxes - Rs. 5-10/kattha/year
9. Depreciation on implements - 5 % per year

19. Total cost of cultivation: (Row no. 17 + Row no. 18) = 175539

20. Yield per ha Grain..18.57...q/ha Straw q/ha

21 Price Grain @ Rs ,,6000 ,,per quintal, Straw @ per quintal

22 Gross return Rs/ha 1,11,420

23 Net Profit Rs/ha= (Row no. 22 - Row No. 19) = -64119 (loss)

F. Cropping Scheme (Current Year)

Table 3.5 Details of cropping scheme of current year

Plot no.	Area (ha)	Crops & varieties	Field preparation	Manure & fertilizer	Irrigation & plant protection	Estimate of Yield obtained (q)	Value of produce (Rs)	Estimated Cost of cultivation (Rs)	Net profit (Rs)
1	0.0642	Wheat varity - Indigenous	1 ploughing 2 harrowing	DAP and Urea	3 irrigation Fungicide-SAAF Insecticide-ROGOR	1.5	3000	10980.7	Loss of 7980
2	0.043	Mustard varity - indigenous	1 ploughing 2 harrowing	DAP and Urea	3 irrigation Fungicide-SAAF Insecticide-ROGOR	0.8	4800	10113.95	Loss of 5303.95

4) HORTICULTURAL INTERVENTION:-

4.1) Canopy Management:-

Introduction:-

Canopy management is the manipulation of tree canopies to optimize the production of quality fruits. The canopy management, particularly its components like tree training and pruning, affects the quantity of sunlight intercepted by trees, as tree shape determines the presentation of leaf area to incoming radiation.

Some of the basic principles in canopy management are:

- maximum utilization of light
- avoidance of built-up microclimate congenial for diseases and pest infestation
- convenience in carrying out the cultural practices
- maximizing productivity with quality fruit production
- economy in obtaining the required canopy architecture

Objective of Canopy Management:-

- Formation of strong frame work having branches on all directions with near equidistance between branches.The crotch angle should be strong(45 degree to 60 degree) and not narrow.
- Developing the canopy with centre opened so that it gets better exposure to sun light.
- Controlling the stature/size of the plant to harness the maximum productivity
- Regulate the number and location of main scaffold limbs and remove crossing and interfering branches and also remove water sprouts.
- Regulate growth , vigour , direction of roots.

4.1.1CANOPY MANAGEMENT IN MANGO

(a) New Orchard:-

- Heading back of plants when they attain the age of 1 year, done in October to December, at the height of 60 to 70 cm above the ground
- Heading back results in emergence of new shoot during march -april (spring season)
- Thinning of excessive shoot is done during May.lt should be done in such a manner as to retain for well distributed shoot in all directions these shoot developed as primary branches
- If the crotch angle of retained shoot a smaller than bending should be done at this stage to increase the crochea angle of newly developed shoots.
- 2nd cutting is done when they shoots accquire maturity which which is determined by the change in colour of the shoots from yellow to brown
- Second cutting of primary branches in is done in october-november this cutting also induces new growth during spring season again thinning of excessive should be done to ensure 2 to 3 shoots per primary branch.

(b) Bearing Mango Orchard:-

- Identify a uprightly growing branches in each tree and thin them out for increasing the productivity
- Remove only 1-2 uprightly growing branches during October to December from the base of their origin, from the centre of the tree to reduce the tree height and increase the sunlight availability inside the canopy.
- Protect the branches with wide crotch angle as they are more productive.
- In bearing mangoes not more than 25% should be removed at the time of better canopy management otherwise it results in excessive vegetative growth.
- In high density planting system remove 10 to 15% of biomass annually during October to December.

(c) Rejuvenation Of Senile Orchard:-

- Select unproductive branches and mark them to cut.
- Mark those branches from height 2.0-2.5 m from the ground to be kept for future canopy development.
- Heading back should be done in nov - dec, to avoid bark splitting, in long branches, it can be done in two or more splits.
- Cut should be sharp and slant. It is important.
- In February, Application of 2.5 kg urea, 3 kg single superphosphate and 1.5 kg muriate of potash along with 120 kg FYM is recommended for each pruned tree.
- Basin irrigation is followed at an interval of 15 days from April to onset of monsoon.
- New shoot initiation on rejuvenated trees on April onwards.
- Thinning operation is followed in June, if required.
- If there are any symptoms of stem borer, grub, leaf cutting weevil, its management is required immediately.
- Unwanted emerging shoots are regularly removed to maintain the tree canopy and avoid overcrowding of the branches.
- Flowers (marigold, tuberose, gladiolus, etc.), vegetables (cucurbits, lobia etc. during kharif season and potato, pea, cauliflower, cabbage etc. during rabi season) and spices (ginger and turmeric) are ideal intercrops for mango orchards

- After two years of pruning new shoots come into bearing and the yield of fruit increases gradually.
- Thus, old and unproductive trees are converted in to productive ones.

4.2) ALTERNATE BEARING AND MANAGEMENT

Mango producing a good crop one year and no crop or fewer crops in the next year is known as biennial bearing or alternate bearing.
This is genetic and inherent in mango varieties.

Causes for Alternate Bearing:

1. Climatological factors: Rain, high humidity, low temperature making on to off year
2. Age and size of shoots: Shoots of 8-10 months maturity will be product
3. Carbon/Nitrogen ratio: High carbon/moderate N encourages flower bud formation (30-40)
4. Hormonal balance: Higher levels of auxin and inhibitor-like substances and lower levels of gibberellins like substances were found to be vital for a flowering shoot.
5. Management:
    a. Proper upkeep and maintenance of orchards
    b. Deblossoming in one year (NAA)
    c. Smudging and chemical regulation like application of paclobutrazol (10gm/tree), spraying 1-2% KNO_3, 6-8% calcium nitrate, etc.
6. Pruning: Pruning the fruited shoots and opening tree top properly
7. Growing regular bearing cultivars: Bangalore, Rumani, Neelum and almost all hybrids.
   By managing the above cultural operations alternate bearing can be managed in mango.

4.3) HORTICULTURAL INTERVENTION (GROUP INTERVENTION)

1. Name of the Student : Anamika Pandey
2. Name of Host farmer : Manohar Baidhya
3. Name of Village & district: Ramla Naukhil, Godda
4. Major horticultural crops of the village: Fruit- Mango; Vegetables- Potato
5. Land type : Upper land
6. Total area : 0.73 ha
7. Total area under Hort. Crops (in ha.) : 0.23 ha (Mango Orchard), 0.08 ha (Potato)
8. Soil type : Sandy loam
9. Crops information: Mango variety- Malda, Potato variety- Kufri Jyoti
10. **Irrigation:**
    - Sources- Deep well
    - Irrigated area (in ha.) – 0.73 ha
    - Non- irrigated area (in ha.) – Nil

Table: 4.1) Information on system of irrigation

System of irrigation	Area (In ha.)	Crop	Time of irrigation	Number of irrigation
Flood irrigation				
Ridge and furrow	0.08 ha	Potato	7-10 days interval	4-5 times
Ring basin	0.23 ha	Mango	Initial year- 15-20 days interval in winter 10 days interval in summer season	5-10 times

11. **Seed treatment**
    - Seed treatment adopted: No
12. **Field Preparation**
    - Layout and time of planting (month): Mango- July- August; Potato- October

Table 4.2: Information on Field Preparation

Systems of planting	Crop	Spacing	Population
Square system	Mango	10 x 10 cm	40
Rectangular system			
Hexagonal system			
Contour farming			

Table 4.3 : Information on problem identified on field preparation

SI. No.	Problem identified	Farmers practices in field	Recommended Suggestion to farmer
1.	Presence of weeds in field	Remove weeds where required	Use of pre-emergence weedicides to overcome the problem of weeds.
2.	Mango cultivar- Malda	Use same old variety of mango, alternate bearing variety	Use of regular bearing mango variety such as Neelam.
3.	Spacing in mango plantation	Traditional practice- use of 10 x10 spacing	Modern spacing of 5 x 5 cm in mango plantation
4.	Occurrence of soil borne pathogen	Use of chemical spray and uprooting of potato before maturity	Proper cultural practices should be done before field practices
5.	Monocropping	Use of single variety of crop and single crop in a year	Use of crop rotation and change of cultivar

13. **Protected Cultivation:**

- Any protected structure is adopted : NO
- Area under protected cultivation (in ha.) : NA
- Protected cultivation : NA
- Cost of protected structure (Rs.) : NA
- Subsidy provided by Govt. (Rs.) : NA
- Crop taken in pc (season wise) : NA
- Having knowledge on Fertigation : **No**
- Is it profitable??? : NA
- If its yes mention the sum : NA

14. **Nutrient management**

- Soil testing is done? No, due to lack of proper knowledge regarding soil testing.

- Green manuring is practiced? If No, then specify the reason : No, due to lack of knowledge about the incorporation of green manuring and its benefit.
- If yes, the name the green manuring crops: NA

Table 4.4): Information on problem identified on nutrient management

SI. No.	Problem identified	Farmers Dosage to crop	Recommended Suggestion to Farmer
1.	Presence of weeds lead to nutrient loss while application		Removal of weeds under the canopy of tree and then apply nutrient

15. Weed control

- Weeds known to farmer (Local name) : motha
- Number of manual weeding done : 1-2 times
- Time of weeding : After 15-20 days after sowing
- Tools used in weeding (if any local tools) : Hand weeding
- Weedicides used? : No
- Doses of weedicides : NA
- Purchased from (Govt./Private) : NA

Vegetables:

Name of the crop: Potato
Total area cultivated: 0.08 ha
Status of production technology: Self- consumption
Irrigated area: 0.08 ha

Crop Profile:

Table no. 4.5

Sl.	Name of Vegetables	Varieties	Area under cultivation	Fertilizer dose	Yield	Normal yield	Yield gap (%)

1.	Potato	Kufri Jyoti	0.08 ha	DAP- 2.5 kg Urea- 5 kg	600-800 kg	20,000 kg	62.5%

Problems

Table no. :- 4.6

Sl.	Crops	Problem identification	Solution available	Solution Recommended	Activities Proposed/Ext teaching method
1.	Potato	Greening of potato tuber	------	Proper earthing up	On-farm problem identification
2.	Potato	Common scab	Early harvesting	Use of disease free seed tuber and crop rotation	On- farm problem identification and solution recommended
3.	Potato	Use of monocropping	---------	Crop rotation	Awareness

Fruits:

Name of the crops: Mango

Total area cultivated: 0.23 ha
Status of Production technology: Self- consumption
Irrigated area: 0.23 ha
Cropping Pattern: NA

Crop Profile:

Table no. 4.7

SI.no.	Name of Fruit	Varieties	Area under cultivation	Fertilizer dose	Yield	Normal yield	Yield Gap(%)
1.	Mango	Malda	0.23 ha				

Problems

Table no 4.8

S.No.	Problem Identification	Solution Available	Solution Recommended	Activities Proposed/ Ext. Teaching Method

1.	Falling of flower and fruits	Use of water	Use of fertilizer along with water	On- field problem identification and solution suggested
2.	Falling of trees due to strong wind	No practice		

16. Market Situation

- Whether he/ she sells their own produce in the market: No.
- Distance of nearby vegetable market: 3 km
- Number of market/weeks: 1
- Position of the market: Outskirt of village, Godda
- Price of commodities are decided by (local union/ RMC/ Govt./ as per the demand in market or any other reason, specify) : Rs. 40-50/ kg during season
- Having knowledge on MSP (Yes/ No): No

5) SOIL INTERVENTIONS

5.1) SOIL TESTING

a) Soil Testing Procedure:-

- It's an essential procedure to know the nutrient content of the soil.
- We can calculate primary nutrients- N,P,K secondary nutrients like Ca, Mg, some ultra micronutrients Mo, B, soil moisture content, pH ,electrical conductivity.
- By knowing the actual nutrient content of soil we get to know how much fertilizer should be added to soil to make it easily available to plant .
- Number of samples depends upon the size of the farm.
- Generally we have to collect 5-6 samples for an area of 1 acre.

b) Material Requirements

- Spade
- Khurpi
- Chart paper
- Polybag
- Marker
- Rubber
- Soil

c) PROCEDURE

- Divide the field into small units based on visual experience (We took 3 units from 1 kattha to make one composite sample)
- Remove the surface litter at the sampling spot
- Drive the hoe to a plough depth of 15 cm.
- Make a ‘V’ shaped cut to a depth of 15 cm in the sampling spot using hoe.
- Remove thick slices (approx. 1 inch) of soil from top to bottom of the exposed face of the ‘V’ shaped cut and place on clean white chat please.
- Collect the soil sample after mixing it with the hoe in the pit itself.
- Collect at least 3-4 samples from 1 kattha land to make one composite sample.6
- Repeat this process in different units and collect all the soil.
- Remove pebble stone, weed and other things.
- Mixing the soil throughout and spread on paper evenly
- Then divide the soil into 4 paths and remove the soil on the opposite side.
- Then mix the remaining soil then repeat the process again but this time discard the soil of alternate side and repeat this process until we get desirable amount of soil(500- 600 gms)

d) Tagging:-

Take polybag and write detail of farmer

- Sample no.
- Name of farmer
- Date of collection
- Mobile no
- Name of crop
- Previous crop

put all the soil in bag and tie up with rubber band

e) Precautions

- Collect the soil in zig- zag manner to maintain homogeneity
- Do not collect the soil sample from bund or area nearby by bunds.
- Take sample 30 cm away from bunds
- Do not collect soil samples under stagnant water.
- Do not collect soil samples from the area where fertilizer application is done within 30 days .
- Avoid sampling in dead furrows, wet spots, areas near main bund, trees, manure heaps and irrigation channels.

f) Point To Remember:-

For shallow rooted crops, collect samples up to 15 cm depth. For deep rooted crops, collect samples up to 30 cm depth. For tree crops, collect profile samples from 3 points at 30cm, 60cm, 90cm .

g) Processing And Storage

- Collected soil taken out from the polybag and spent on cardboard to dry the soil.
- Remove all the roots , stones, pebbles, foreign material.
- Grind for further use by using a wooden container.
- If it is used to know soil nutrients content sieve it with 2mm sieve or if we use the soil to know organic matter it should be sieved with 0.2 mm sieve
- If we use soil to know content of N either in form of NO3, ,NH4 or bacteria count we should avoid Air drying
- If we use soil to know soil moisture of the soil then there must be estimated in un-dried sample or to be preserved in a sealed polythene bag immediately after collection.

अनुरंजन। कस्पाट्टा, एसपी, साहिबगंज।

छात्र-छात्राओं ने सीखा मिट्टी जांच का नया तरीका

गोड्डा, प्रतिनिधि। तिलका मांझी कृषि महाविद्यालय पुनसिया गोड्डा के सातवीं सेमस्टर के छात्र- छात्राओं ने शुक्रवार को गोड्डा प्रखंड के रमला (नौखिल) गांव में जाकर (राबे) कृषि से संबंधित मिट्टी जांच करने के लिए किसी तरह खेत से मिट्टी के नमूने को लिया जाता है। इसके तरीके को सीखा और गांव के किसानों को भी इसके बारे में प्राध्यापकों ने बताया। सातवीं सेमस्टर के प्रतीक्षा कुमारी, सिमरन, आदिति, श्रेया कुमारी, सचिन कुमार वर्मा, प्रेमलता किस्कु, उदित अरूण, प्रियंका गोस्वामी, शुभम मुंडा, प्रसन्नजीत कर्मकार, मानसी निर्धा, पायल कुमारी, हिसी सोरेन, अमन मिश्रा, निधि नागद्वार, सोनाली प्रियदर्शनी, श्रुति भारद्वाज, राना सिरीन, कुमार आर्यन, संतोष कुमार यादव, कार्तिक उरांव, आदिति कुमारी, दीप्ति शिखा टोप्पो, श्यामल कुमार महतो, रोजी किस्कु, रवि कुमार किस्कु, निशा पाल, शिल्पा कुमारी, प्रीति टोप्पो, मुनी सोरेन, सोनम रानी, अंशु आनंद, सैजल सिंह, अमनदीप मुर्मू, रितिका घोष, कुमारी कन्नु प्रिया, सिवाका कुमारी, मौसमी कुमारी साव, विकास कुमार, सोनाली कुमारी, प्रतीक्षा, अनामिका पाण्डेय, कौशिक कुमार, अमृतेश आनंद, सगुप्ता प्रवीण, स्वाती कुमारी, शुभम कुमार मिश्रा, रेणु कुमारी, रीना रजवार ने गांव के किसानों के खेत में जाकर मिट्टी का नमुना इकट्ठा किया और ग्रामीण किसानों को भी इसके बारे में बताया।

मिट्टी का नमूना लेने का तरीका बताते वैज्ञानिक।

मौके पर मौजूद छात्र-छात्राएं एवं किसान।

कृषि वैज्ञानिकों ने की मदद: मौके पर ढ़ोढ़री पंचायत के मुखिया मनोहर प्रसाद वैद्य, डॉ निर्मला कुमारी, सहायक प्राध्यापक सह कनीय वैज्ञानिक मृदा विज्ञान विभाग, ई. कुणाल प्रसाद, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि अभियंत्रिकी विभाग, डॉ अभिजीत सतपथी, सहायक प्राध्यापक आदि थे।

क्या कहा ढोढ़री पंचायत के मुखिया ने

ढोढरी पंचायत के मुखिया मनोहर प्रसाद वैद्य ने भी सातवीं सेमस्टर के छात्र-छात्राओं के साथ इलाके में कृषि के क्षेत्र में आ रही कठिनाई को सामने रखा। वैद्य ने कहा कि इस इलाके में केवल चार- पांच डीप बोरिंग की व्यवस्था करा दी जाय तो इस इलाके से प्रतिदिन ट्रकों में भरकर सब्जी बाहर जा सकता है। मिट्टी जांच होने से अम्लीय और क्षारीय मिट्टी का भी पता लगाया जा सकता है। आज कृषि को उद्योग के रूप में अपनाने की जरूरत है। मौके पर रमला गांव के सैकड़ों ग्रामीणों ने अपनी समस्या इस कनीय वैज्ञानिकों तथा छात्र-छात्राओं के सामने रखा। मौके पर रमला उच्च विद्यालय के छात्र- छात्राओं ने भी इनसे जाना कि किस तरह महाविद्यालय में छात्र नामांकन ले सकते हैं।

6) PLANT PROTECTION INTERVENTION:-

6.A) Department of Entomology:-

6.A.1) Demonstration of Yellow Sticky trap:-

a) How does the sticky trap work?

Introduction:-

Sticky traps are essential in the detection and partial elimination of many species of flying pests in greenhouses. Sticky traps make it possible to detect pests at an early stage and then use biological measures to combat them. This prevents unnecessary applications of chemicals. Moreover, counting the captured insects on the sticky traps on a regular basis makes clear when pests are present in the greenhouse, how fast their population is developing, and when their population is likely to reach its peak. In this way growers are much better prepared for potential threats.

b) Materials required:

- Plywood board or card board (1.5 ft X 1.0 ft size) or used empty oil tin (1 or 2 litre size)
- Yellow colour oil paint
- Glue or white grease
- Bamboo poles
- Wire or rope

c) Procedure:

- Take a new or used sheet of plywood board or hardboard or card board or empty oil tin (1 or 2 litre size).
- Paint it with Yellow colour oil paint.
- Allow it for drying. Apply grease or glue on the painted board.
- Erect these traps above crop canopy with the help of bamboo poles.

d) Cleaning of traps:

Clean the tin or plywood or hardwood traps by dipping into the hot water for couple of minutes to soften the sticky coating. Discard dead insects by using brush or duster. Dry the traps completely and recoat with similar glue for reinstallation. Cardbord traps should be discarded after use.
Benefits: Highly effective, non-toxic and easy to use.
Farmers practice :- Some farmers didn't do anything about the insects saying,they are not such a big problem while some farmers used Rogor without knowing the proper concentration to be used.

e) Farmer's response on yellow sticky trap demonstration:-

They were very happy to know that insects can be minimized without using any toxic chemicals.

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6.A.2) Pheromone Trap:

a) Materials required:

- Rubber septa (Pheromone lures), traps and pouches
- Polythene bags/ sheets
- Small piece of wire for suspending the lures
- Knife for opening the bottom
- Insect brush and scissor

b) Methodology:

- Cut the polythene sheets into required size (2ft. length X 4 inch wide) and make a polythene arm.
- Close the bottom end of the arm with a rubber band to prevent the escaping of trapped insects and to flush out them.
- Wrap and fit the other end of the polythene arm with the wider end of the funnel with the help of rubber band/wire.
- Keep the lid of the funnel one inch above the mouth of the funnel.
- Make a small hole to place septa/ lure.
- Fix the trap containing lure in the field with the help of bamboo sticks keeping the lure nearly one foot above the crop canopy.

c) Field application:

Lures containing sex pheromones are placed into insect trap and erected in the field at a recommended spacing. The lure will release the sex pheromone at a constant rate over a period of 2-4 weeks. Male moths are attracted and while attempting for mating, fall into a container having pesticide. Thus the female moths in the field are deprived of successful mates and fail to reproduce or lay viable eggs.

d) Precautions while using pheromone trap:

- Always label the trap with detailed information of the species to be trapped and the date of fixing the lure
- Change lure once in 15-20 days
- Dispose properly the lure wrappers/covers
- Wash hands before/after handling baits
- Remove all captured adults during each visit. Put live ones into a bucket with soap solution to drown.

6.A.3) LIGHT TRAPS:-

Pest attracted

Armyworm, bugs, cutworm, flies, gnats, bollworm, leafhoppers, planthoppers, stem borers

a) Materials required:-

Light trap, Plastic buckets 5-10 lts., Metal light shade (2 nos.), Fluorescent light with holder, Electrical wires Coated metal rods (4 nos.), Tin sheets, String/ flexible wire, Nut bolts & Screws, Rubber plug for drainage hole, Soap water or Kerosinized water.

b) Methodology:-

Take a bucket and make 4 holes at the top rim and one larger hole at the bottom rim. Adjust a small sized light shade on the bucket in the inverse direction. Fix four rods with screws/nuts with the bucket for holding up the large sized light shade. Fix the light source as shown in the figure. Hang the light trap on the large sized light shade. Drainage hole on the bucket should be kept closed by the rubber plug while filling it with soap water/kerosinized water. Collect/drain out trapped insects periodically.

c) Procedure for installation

- Install the light trap near or within the field where you want to trap the flying insects/
- Secure the poles firmly on the ground.
- Mount the lamp or the bulb on the frame, five meters from the ground-
- When using an electric bulb, make sure that the bulb and wiring are not in contact with water to avoid electric conduction.
- Place the shallow basin with soapy water or the jute sack underneath the light.
- Put the light trap from early evening 6:00 PM to 10:00 PM
- Collect the trapped insects daily and dispose of them properly.

d) Precautions:-

- don't place the trap too high above the floor (higher than 6 feet).
- don't mount units where natural light from outside can compete with the light from the insect light trap.

6.A.4) Crop wise information:

1. Name of Crop: Mustard
Table no.:- 6.A.1

SI.	Common Name of Pests	Local Name	Scientific Name	Stage of damage	Intensity of pest damage (%)
1	Mustard Aphid		*Lipaphis erysimi*	Nymphs & Adults	

Control measures adopted:

Table no.:-6.A.2

SI.	Name of insects	Damage symptoms	Traditional practices (ITK)	Modern practices (Cultural/Mechanical/Chemical)	Recommended practices
1	Mustard Aphid	Nymphs & adults feed on flower buds, shoots, pods. Flowers don't form pods.	Use of Kerosene oil.	Cultural control- early sowing; apply recommended dose of fertilizer. Mechanical control- Use of Pheromonetraps , yellow sticky traps. Chemical control- spray 1L Dimethoate per ha.	Use of Neem oil. Early sowing escapes the attack. Set up a yellow sticky trap. Use of natural enemies like ladybird beetles (*Coccinella septempunctata).*

(i) Commonly available insecticides in the village / local market (Trade and chemical name):
Trade name- Rogor
Chemical name- Dimethoate

(ii) Precautions observed while using insecticides :
Avoid direct contact with hands.
Always apply insecticide in the recommended dose.

(iii) Method of calibration of machines (sprayer / duster): Knapsack Sprayer

Suggestion for proper storage of food grains

Table no. :- 6.A.3

SL.	Name of Food grain	Storage structure	Moisture content	Fungicide/fumigant treatment with dose
1	Rice	Bamboo matting, Wooden crates	14%	Fumigation with aluminum phosphide @ 3 tablets/ tonne
2	Mustard	Plastic sac	9%	Minifume (Ethylene dibromide tablet) @ 1 tablet/ q

Problems in storage of food grains and recommendations:

Problems-

- New stocks are stored with old stocks.
- Improper ventilation.

Recommendations –

- Material should be clean & dried.
- Sun drying & cleaning.
- Provide dunnage of bamboo poles or bamboo matting or wooden crates to make bags damp proof.

6.B) Department of Plant Pathology :-

6.B.1) SEED TREATMENT:-

a) Introduction

Seed treatment refers to the application of fungicide, insecticide, or a combination of both, to seeds so as to disinfect and disinfect them from seed-borne or soil-borne pathogenic organisms and storage insects. It also refers to the subjecting of seeds to solar energy exposure, immersion in conditioned water, etc. The seed treatment is done to achieve the following benefits.

b) Benefits of Seed Treatment:

1) Prevents spread of plant diseases
2) Protects seed from seed rot and seedling blights
3) Improves germination
4) Provides protection from storage insects
5) Controls soil insects.

c) Chemical method of seed treatment;-

Using fungicides on seed is one of the most efficient and economical methods of chemical disease control.

Now, the systemic fungicides are impregnated into the seeds to eliminate the deep seated infection in the seeds. The seed dressing chemicals may be applied by (i) Dry treatment (ii) Wet treatment and (iii) Slurry.

(c.i) Dry Seed Treatment:-

In this method, the fungicide adheres in a fine form on the surface of the seeds. A calculated quantity of fungicide is applied and mixed with seed. The fungicides may be treated with the seeds of small lots using a simple rotary seed dresser (seed treating drum) or of large seed lots at seed processing plants using Grain treating machines. The dry dressing method is also used in pulses, cotton and oil seeds with the antagonistic fungus like *Trichoderma viridae by* mixing the formulation at the rate of 4 g/kg of the seed e.g. dry seed treatment in paddy. Mix a required amount of fungicide with required quantity of seeds in a seed treating drum, lined with gunny bags, so as to provide uniform coating of the fungicide over the seeds. Treat the seeds at least 24 hours prior to soaking for sprouting. Any one of the following chemical may be used for treatment at the rate of 2 g/kg Thiram or Captan

Tricyclazole

a) **The demonstration:-**

10 kg of linseed was taken in 10 different bags containing 1 kg of linseed each. One bag was picked and 2 g of thiram was added into the bag using gloves. The bag was shaken well so that it could get mixed thoroughly and a thin layer of fungicide was formed around the seeds. While shaking, the mouth of bags must be held tightly so that the chemicals do not escape. Then the bags were handed over to the farmers. We told them to leave it for 24 hours and then sow it immediately in the fields.

b) **Farmer's response :-** they did not follow any such activities so, after hearing this they were quite willing to adapt to this method. Also, some farmers started writing down the name of the chemicals used in seed treatment along with the dosage.

(c.ii) Wet seed treatment:

- **Rhizome dip:**The rhizomes of cardamom, ginger and turmeric are treated with 0.1% emisan solution for 20 minutes to eliminate rot causing pathogen present in the soil.
- **Set dip/Sucker dip:**The sets of sugarcane are dipped in 0.1% emisan solution for 30 minutes. The suckers of pineapple may also be treated by this method to protect from soil borne diseases.

c. iii) Slurry treatment (Seed pelleting):

In this method, chemical is applied in the form of a thin paste (active material is dissolved in small quantity of water). The required quantity of the fungicide slurry is mixed with the specified

quantity of the seed so that during the process of treatment slurry gets deposited on the surface of seeds in the form of a thin paste which later dries up Mix 2.5 g of carbendazim in 40 ml of water and add 0.5 g of gum to the fungicidal solution. Add 2 kg of seeds to this solution and mix thoroughly to ensure uniform coating of the fungicide over the seed. Dry the seeds under the shade.Treat the seeds 24 hrs prior to sowing

Farmers Response:- Farmers were mostly interested in dry seed treatment and the response was lukewarm towards these methods.

6.B.2) FUNGICIDE:-

a) Introduction:-

The word "fungicide" originated from two latin words, viz., "fungus" and "caedo".

The word "caedo" means to kill. Thus the fungicide is any agency/chemical which has the ability to kill the fungus.

b) **Based On Mode Of Action** 1) Protectant 2) Therapeutant 3) Eradicant

1) Protectant :-

- Protectant fungicides are prophylactic in their behaviour.
- Fungicide which is effective only if applied prior to fungal infection is called a protectant.
- eg., Zineb, Sulphur.

2) Therapeutant :-

- Fungicide which is capable of eradicating a fungus after it has caused infection and thereby curing the plant is called chemotherapeutant.
- eg. Carboxin, Oxycarboxin, antibiotics like Aureofungin. Usually chemo therapeutant are systemic in their action and affect the deep-seated infection.

3) Eradicant :-

- those which remove pathogenic fungi from an infection court (area of the host around a propagating unit of a fungus in which infection could possibly occur).
- E.g. Organic mercurials, lime sulphur, dodine etc. These chemicals eradicate the dormant or active pathogen from the host. They can remain effective on or in the host for some time.

c) Based on general uses:-

The fungicides can also be classified based on the nature of their use in managing the diseases.

1. Seed protectants : Eg. Captan, thiram, organomercuries, carbendazim, carboxin etc.
2. Soil fungicides (preplant) : Eg. Bordeaux mixture, copper oxychloride, Chloropicrin, Formaldehyde Vapam, etc.
3. Soil fungicides : Eg. Bordeaux mixture, copper oxy (for growing plants) chloride, Capton, PCNB, thiram etc.

4. Foliage and blossom : Eg. Capton, ferbam, zineb, protectants mancozeb, chlorothalonil etc.
5. Fruit protectants : Eg. Captan, maneb, carbendazim, mancozeb etc.
6. Eradicants : Eg, lime sulphur, etc.
7. Tree wound dressers : Eg. Bordeaux paste, etc.
8. Antibiotics : Eg. Actidione, Griseofulvin, Streptomycin, Streptocycline, etc.,
9. General purpose spray and dust formulations.

d) Fungicides and its mode of application, its uses, precautions, and calculation of dose:-

SAAF FUNGICIDE (CARBENDAZIM 12% + MANCOZEB 63% WP), CONTROLS ANTHRACNOSE, POWDERY MILDEW AND RUST DISEASE

Saaf is a fungicide with systemic & contact action. It is very effective in controlling fungus in plants as it contains Mancozeb which is contact fungicide and it also contains Carbendazim which is systemic fungicide.

Application Method - UPL Saaf Fungicide can be used in Foliar spray and also in Seed treatment.

e) Precaution:

- Always use clean water.
- Use protective clothings viz., hand gloves, face masks, cap, apron, full trouser, etc. to cover the whole body.
- Always protect your nose, eyes, ears, hands, etc. …
- Read instructions on pesticide container label carefully before use.

f) Calculation of dose:-

300-400 gm/0.4ha

Thus For 0.0642 ha=350×0.0642/0.4=56.18gm for 4.2 katha land.

For 0.043 ha= 350*0.043/0 .4 =37.6gm for 2.8 kattha land

FARMER RESPONSE: Farmer were so enthusiastic to see that they don't have to spend so much to buy fungicides.

g) PRECAUTIONS WHILE USING FUNGICIDES:-

- Treated seed should be clearly labelled as being dangerous, if consumed.
- Care must also be taken to treat seed at the correct dosage rate; applying too much or too little material can be as damaging as never treating at all.
- Seed with a very high moisture content is very susceptible to injury when treated with some of the concentrated liquid products.
- Apply fungicides prior to the development of disease

- Follow label directions carefully. Avoid splashing, spilling, leaks, spray drift, and contamination of clothing. NEVER eat, smoke, drink, or chew while using pesticides

6.B.3) **Crop Disease Profile**

Table 6.B.1

Sl	Crop	Disease	Symptoms	Farmers Practice	Recommendations	IDM
1.	**Mustard**	**Alternaria blight**	**-Small circular brown necrotic spots at lower surface of older leaves. -Sposts enlarge & forms concentric rings, coalesce to cover large patches giving blighted appearance.**	**- 10 ml of SAAF in 20 litre of water.**	**- early sowing and deep ploughing. -Weeding and maintenance of opt. plant population.**	**Cultural: -Avoid irrigation at flowering & pod formation stages. -Deep summer ploughing to expose microsclerotia & chlamydospore. -collect and burn the infected plant after harvesting. Physical: Hot water treatment at 50˚c for 20 min. Chemical: -Seed treatment with Captan /Thiram @2g/kg seed. -Zineb/COC @2.5g/lit water as soon as symptoms appear.**
2.	**Wheat**		**-in affected spikelets ears transformed into black powdery masses consisting of smut pores, packed under a thin membrane. -infected heads are shorter, the rest plant is slightly taller than healthy plant.**	**-Nothing**	**-hot water treatment- soaking the seed in cold water for 4 hrs followed by dipping in hot water at 54-56˚c for 10 min**	**Cultural: -roguing of infected plant - Resistant variety Kalyan sona, PV18 Physical: -Hot water treatment at 50˚c for 20 min. -solar heat treatment - seeds are soaked in water for 4 hrs & then spread in thin layer under blazing sun,when temp.**

						rises 50˚c . Chemical: -Seed treatment with vitavax or benlate @2-2.5 g/kg seed.
3.	**Potato**	**Common scab**	**-small brownish, slightly raised spots on tuber coalesce & become corky. -raised margin & slightly depressed centre.**	**-Nothing**	**-crop rotation with non host plant (for 4 years) -use acidic fertilizer like Calcium ammonium nitrate**	**-Cultural: crop rotation with non host plant (wheat,legumes) -crop manuring with green gram or sunhemp in kharif. -Chemical: use acidic fertilizer like CAN -hold PH at about 5.3 by adding sulphur**

Common Scab of Potato

Recommendation

7) AGRICULTURAL ENGINEERING

ASSESSMENT OF FARM MECHANIZATION STATUS IN INDIA

Farmers Information

Name of the surveying Institute/ Agricultural University/Station

Table 7.1)

1	**General Information**						
i)	Name of Village, Block, District		Ramla Naukhil, Dondhri, Godda				
ii)	Name of farmer		Sintu Kumar				
iii)	Mobile No./E-mail		9297803039				
iv)	Number of family members (Male + Female)		4				
v)	Number of agricultural workers in family	Male	2				
		Female	2				
vi)	Land holding, ha		Owned	0.107	Leased		
vii)	Crops grown		Wheat, Mustard				
viii)	Income, Rs						

Table 7.2)

2	**Farm tools and equipment in use**						
S.N.	**Operation**	**Name of equipment in use**	**Owned / leased**	**Power source and size**	**Cost Rs.**	**Custom hiring rates (Rs/h)**	**Field capacity ha/h or kg/h**
A	**Crop (** Wheat **)**						
1.	**Tillage/ seedbed preparation**	i)Tractor	Leased	Diesel, 30hp	Rs. 600	Rs. 1000	0.312
		ii)					

2.	**Sowing/Planting / Transplanting**	i)Manual	-	-	-	-	-
		ii)manual	-	-	-	-	-
3.	**Interculture**	i)manual	-	-	-	-	-
		ii)manual	-	-	-	-	-
4.	**Plant protection**	i)manual	-	-	-	-	-
		ii)manual	-	-	-	-	-
5.	**Harvesting**	i)manual	-	-	-	-	-
		ii)manual	-	-	-	-	-
6.	**Threshing**	i)Theresher	Leased	Diesel	Rs. 462	15kg/q	300.4 kg/b
		ii)					

Table no.:- 7.3)

B	**Crop (** Mustard **)**						
1.	**Tillage/ seedbed preparation**	i)Tractor	Leased	Diesel, 30hp	Rs. 400	Rs. 1000	0.323ha/hr
		ii)					
2.	**Sowing/Planting/ Transplanting**	i)					
		ii)-	-	-	-	-	-
3.	**Interculture**	i)-	-	-	-	-	-
		ii)-	-	-	-	-	-
4.	**Plant protection**	i)-	-	-	-	-	-
		ii)-	-	-	-	-	-
5.	**Harvesting**	i)-	-	-	-	-	-
		ii)-	-	-	-	-	-
6.	**Threshing**	i)manually	-	-	-	-	-
		ii)-	-	-	-	-	-

--- --- ---

Name date (name, designation, mobile no., sign of surveyor)

8. Animal Husbandry Intervention

a) INTRODUCTION

Livestock plays an important role in the village economy. Livestock contributed 16% to the income of small farm households. Livestock provides not only food for their producers,but also a range of other products which could be sold or consumed by the livestock owner to provide income, nutrition and fuel. The major products of livestock include meat , milk ,egg, manure which is used as fertilizer or fuel ,fiber .In addition to these products livestock serve as an asset and may provide a reserve that can be converted to cash in times of need.

b) Objective:-

- Information on available LIVESTOCK & POULTRY resources ,their role in AGRICULTURE(IFS) economic importance including women empowerment.
- To be acquainted with the available animal feed resources (conventional & unconventional), fodder production ,availability of grass and grassland ,existing farmers' practices of feeding to animals & poultry.

Schedule for collection of Basic Data on Livestock

General Information

To be collected from knowledgeable person i.e. village/ward head man/local school teachers, Veterinary Doctors, AI workers etc. (secondary data)

Name of Student :- Anamika Pandey. Date of Survey :-

i) Block Name:- Godda. ii) District :- Godda

iii) Name of respondent :-

iv) Village :- Ramla Nokhil

Particulars of the selected village

i) Total number of households as per the latest Population Census:- 500

ii) Total human population:- 1800

iii) Net geographical area of the village (hectares):- 220 hectare

iv) Total cultivated area (hectares):- 82 hectare

Table no. :- 8.1

	Cultivated area	**Current year**	**Last year**
(a)	Irrigated	**26**	**26**
(b)	Unirrigated	**56**	

v) Area under fodder crops (hectares):- 0.75 hectare

vi) Average production of Fodder per Hectare (In Tons):- 37.5 tonn/hectare

vii) Area under permanent pasture and other grazing land (hectares):- 4 hectare

viii) Location and distance to the nearest veterinary services facilities:- 1 km from Ramla Nokhil

Table no. -8.2

	Veterinary/Animal Husbandry Services		**Location**	**Distance from Village/Town (km)**
(a)	A.I. Centre /Semen Collection centre		**NIL**	**NIL**
(b)	Veterinary Hospital /Dispensary		**Ramla**	**1km**
(c)	Markets for			
	(i)	Purchase of Cattle feed / Poultry feed	**Godda**	

	(ii)	Sale and purchase of livestock products	**Godda**	

ix) Is the village/Urban ward covered under any of the following development programme:

Table no. - 8.3

Sl. No.	**Name of the Development Programme**	**Yes/No**
(a)	National Project for Bovine Breeding and Dairy Development (NPBBDD)	**No**
(b)	Poultry Development Project	**No**
(c)	Piggery Development	**No**
(d)	Sheep and Wool Extension Centre	**No**
(e)	Milk Collection Centre	**No**
(f)	Feed and Fodder Development	**No**
(g)	Special Livestock Breeding Project	**No**
(h)	Any Other Development Program (specify)	**No**

x) Any outbreak of disease of Livestock / Poultry during the last five years

Table no.:- 8.4

Name of the disease	**Particulars**	**Cattle** FMD	**Buffalo** Anthrax	**Shee p**	**Goat** Pox	**Pig**	**Poultry** Ranikhet
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	a. Number of animals affected	20	12	0	15	0	250
	b. Number of animals died	8	2	0	5	0	50
	Number of prophylactic vaccinations made*	1	0	0	0	0	

Table no. - 8.5 **Livestock and Poultry population**

Classification	**As per Census/ Breed Survey**	**As per Survey present**	**Classification**	**As per Census /Breed Survey**	**As per Survey present**
1	**2**	**3**	**1**	**2**	**3**
CATTLE			**BUFFALOES**		
A. Exotic Cattle*	5		**A. Indigenous Buffaloes**	80	
B. Crossbred Cattle	10		**B. Non-Descript Buffaloes**	_	
C. Indigenous Cattle	40		**Total Buffaloes**	80	
SHEEP			**A. Exotic/ Crossbred Sheep**		
			B. Indigenous/Non-Descript Sheep		
D. Non-Descript Cattle			**Total Sheep**		
GOAT	50		**Total Goat**	50	

Total Cattles		55		**PIGS**			
HORSES/ PONIES				**Total Pigs**			
BACKYARD POULTRY				**OTHER LIVESTOCK (Specify)**			
A. Fowls							
i)	Desi						
ii)	improved						
iii)	**Total Fowls**						
B. Ducks							
i)	Desi						
ii)	improved						
iii)	**Total Fowls**	200					
Total Poultry							

c) Economic Benefits Of Livestock

- Income generation-Livestock rearing not only provide nutritional household security to rural families but extra family income also.
- Cattle dung which is widely used as organic manure which is environmentally safe for cultivation.
- Can be used as draught animal in carrying out farm operations such as ploughing and harrowing.

d) Constraints Faced By Farmers

- Lack of improved livestock population.
- Poor care and management
- Improper and unbalanced feeding
- Poor marketing facilities.
- Less facility of training.
- It was observed that in most part of the study area ,veterinary doctors were not available when needed by the farmers

e) Suggestion

- Farmers are suggested to:
- Proper live stock management
- Keep animals healthy.
- Follow proper vaccination
- Provide pasture for grazing
- Feed quality food not quantity.

9. Agricultural Economics Intervention

Agricultural/Rural Economics

A. Transport, Education & Health Services

(i) Bus Stand : 10 km
(ii) Railway Station : 8 km
(iii) Post Office : 4 km
(iv) Condition of Road: Good
(v) School : 0.5 km (Primary/Middle/Higher secondary)
(vi) College : 13 km
(vii) Primary Health Centre : 3 km
(viii) Private Dispensary : 1.5 km
(ix) Aaganbadis/Baalbadis : 0.5 km

B. Population (Village Demography)

Table 9.1 Classification of families

Sl. No.	Occupation	No. of Families
1	Agriculturists	179
2	Landless farmers/Agri.Labourers	27
3	Village Artisans	31
4	Industry/Factory Workers	nil
5	Self Employed (Business)	18
6	Teachers	8
7	Private Sector Employee	23
8	Other Govt.Sector	9
	Total	295

Table 9.2 Population

Sex	Category	Literate	Illiterate	Total No.	Total Population (in Percentage)
Male	(i)Adults (above 35 yrs)	139	40	179	9.94%
	(ii) Youth (18-35 yrs)	342	17	359	19.94%
	(iii) Children (Below 18 yrs)	365	9	374	20.78%
Female	(i)Adults (above 35 yrs)	103	75	178	9.89%
	(ii) Youth (18 -35 yrs)	331	26	357	19.83%
	(iii) Children (Below 18 yrs)	340	13	353	19.61%
	Total (Male + Female)	1620	180	1800	100%

Table 9.3 Level of literacy

Sl. No.	Types of Literary	Number		Total
		Male	Female	
1	Illiterate	66	114	1
2	Studied up to V	78	62	2
3	Studied up to VIII Class	92	143	3
4	Studied Up to Xth Class	137	217	4
5	Studied up to XIth Class	178	173	5
6	Above XIIth	361	179	6

Table 9.4 Drinking Water Facilities:

Sl. No.	Source	sources
1	Well	yes
2	Tube wells	yes
3	Pond	no
4	Hand pump	yes
5	Tap water	yes

Table 9.5 Marketing Facilities

Sl. No.	Type	Available within village	Nearest Place tothe village	Distance in Km
1	Weekly Haat	Yes	yes	1km
2	Regulated Market	No	yes	9km
3	Daily need/Kirana	Yes	yes	0.5km
4	Veg & Fruit stall	Yes	yes	1km
5	Fair price (Ration) shop	Yes	no	0.5km
6	Any other			

Table 9.6 Livestock Population (As per the Gram Panchayat Records)

Class	Type of livestock	Number
A	Draft animal	70
	Bullocks	38
	He buffaloes	80
	Total	188
B	Milch animals	72
	Local/Desi breed cows	56
	Crossbred cows	16
	Buffaloes	28
	Total	100
C	Calves (below 3 years)	28
	Local breed cows	13
	Crossbreed cows	7
	Buffaloes	8
	Total	
D	Goats/Sheep	50
	Poultry	160
E	Others	

Table 9.7 Veterinary Aid available for Livestock

		Available in village/town

Sl. No.	Particular	Village	At nearby	Distance (in Km)
1	Veterinary Dispensary	No	1	Veterinary Dispensary
2	Artificial Insemination Centre	No	2	Artificial Insemination Centre
3	Dairy Cooperative Society	No	3	Dairy Cooperative Society
Sl. No.	**Particular**	**Available in village/town**	**Sl. No.**	**Particular**

Table 9.8 Land utilization pattern

Sl. No.	Particulars	Area (in ha)
1	Total geographical area	220
2	Forest area	2
3	Grazing and pasture land	0.5
4	Land put to non-agril use	42
5	Total cultivable area	82
6	Area under rainfed agri.	56
7	Area under irrigation	26
8	Net sown area	82
9	Area sown more than once	26

Table 9.9 Structural distribution of land holdings

Sr. No.	Farm size (ha)	No. of Holdings	Total (in Percentage)	Area (ha)	Total (in Percentage)
1	Upto 1.00	208	87.39%	43	52.43%
2	1.01-2.00	24	10.08%	26	31.70%
3	2.01-4.00	6	2.52%	13	15.85%
4	4.01-6.00				

5	6.01-above				

Table 9.10 Source of irrigation

Sl. No.	Source	Number	Area Covered (ha.)		
			4monthly	8monthly	Perennial
1	Canal	0		1	Canal
2	Tube wells	18	8	2	Tube wells
3	Tanks	0		3	Tanks
4	Private Lifts	0		4	Private Lifts
5	Other(Co operative lifts)	0		5	Other(Co operative lifts)
	Total	18			Total

Table 9.11 Availability of agricultural labourers

Sl. No.	Type of Labour	Adequate/Inadequate	Wages paid (Rs/day)
1	Male	Adequate	300
2	Female	Adequate	300
3	Bullock pairs	inadequate	

Table 9.12 Agro-Based Industries in the village or nearby area

Sl. No.	Agro-based industry	No. of families engaged	Number	
			In the Village	Nearby area
1	Rice mill	1	3	1
2	Daal/Oil mill	2	7	2
3	Floor mill	2	7	3
4	Jaggery making	0		4
5	Others	0		5

Table 9.13 Subsidiary Enterprises

Sl. No.	Enterprise	No. of families engaged
1	Dairy	30
2	Poultry	20
3	Goat/sheet rearing	20
4	Piggery	2
5	Huller	0

Table 9.14 Other village institutions

Sl. No.	Institute	Yes/No
1	Gram Panchyat	yes
2	Mandi	yes
3	Cooperative Society	yes
4	Kisan Club	no
5	Youth Club	no
6	Mahila Club	no
7	BhajanMandali	yes
8	Sports Club	no
9	Others	

Table 9.15 Transportation means available in the village

Sl. No.	Type	Number
1	Cycles	450
2	Cartload	3
3	Motor Cycles	100
4	Car/Jeeps	10
5	Others(Bus)	2

Total number of houses:

a. Electrified - 500
b. Pucca - 450
c. Kachha - 50

Recreational facilities available in the village:

	Items	Number
1.	Television (B/W)	
2.	Television (Colour)	100
3.	Radio	3
4.	Cinema	0
5.	Nachha Party	0
6.	Bhajan Mandali	1

Table 9.16 Farm Machinery and Equipments available in the village

Sl. No.	Machinery/Equipment	Number
1	Tractor	7
2	Power Tiller	2
3	Combine	0
4	Seed drill	0
5	Thresher	4
6	Sprayer	30
8	Duster	0
9	Ridger and leveler	0
10	Sprinkler irrigation sets	0
11	Drip irrigation sets	0
12	Others	

Table 9.17 Facilities for repair of machinery like Tractor/Electric motor etc.

Sl. No.	Type of machinery	Repairs in Village	Facilities available at nearby village	Distance fromthe village
1	Tractor	No	yes	10
2	Electric motor	No	yes	10
3	Oil engine	No	yes	10
4	Implements	No	yes	10

Table 9.18 Availability of agro-inputs

Sl. No.	Agro-inputs	Available		Distance
		In village	At nearest village	
1	Implements	No	yes	1
2	Seed	No	yes	2
3	Fertilizers	No	Yes	3
4	Insecticides/Fungicides	No	Yes	4
5	Herbicides	No	Yes	5

V. Credit Institutions in the village

(i) Banks : State Bank Of India

(ii) Cooperative Societies : Available but not functional

(iii) Others : no

10) Agricultural Extension Interventions

Table 10.1 – Common details of farmer

S.no	Name	Age	Area {hectare}	Gender	Educational qualification	Caste
1.	Sintu Kumar	27	0.107	male	matriculation	OBC
2.	Bhawani Devi	40	0.144	Female	Can read and write only	OBC
3.	Hardev Mandal	55	0.92	Male	8th pass	OBC
4.	Shrikant Mandal	58	0.28	Male	8th Pass	OBC
5.	Dhananjay Vaidh	56	0.46	Male	Can read and write only	OBC
6.	Basant Mandal	60	0.20	Male	Can read and write only	OBC
7.	Shri Sitaram Vaidh	47	0.46	Male	Graduate	OBC
8.	Chandan Kumar Vaid	28	0.46	Male	Intermediate	OBC
9.	Chakardhar Manjhi	60	0.23	Male	5th Pass	OBC

SURVEY OF 9 FARMERS

Table 10.2:- Age classification

S.no	Age group	Frequency(n)	%
1.	Young (<35)	2	22.22%
2.	Middle (35-55)	3	33.33%
3.	Old (>55)	4	44.44%
Total		9	

Table 10.3:- Land holding classification

S.no	Type of farmers	Frequency (n)	%
1.	Marginal farmers (<1ha)	9	100%
2.	Small farmers (1-2ha)	-	-
3.	Semi-medium(2-4ha)	-	-
4.	Medium (4-10ha)	-	-
5.	Large (>10ha)	-	-
	TOTAL	9	

Table 10.4:- Educational qualification

S.no	**Educational qualification**	**Frequency (n)**	**%**
1.	Can read and write only	3	33.33%
2.	Primary school	1	11.11%
3.	Middle school	2	22.22%
4.	High/Secondary school	1	11.11%
5.	Senior Secondary	1	11.11%
6.	Graduate	1	11.11%
	TOTAL	9	

Table 10.5:- Gender

S.no	**Gender**	**Frequency (n)**	**%**
1	Male	8	88.88%
2	Female	1	11.11%
	Total	9	

Table 10.6:- caste

S.no	Caste	Number	Frequency (%)
1	General	-	-
2	OBC	5	55.55%
3	SC	-	-
4	ST	4	44.44%
TOTAL		9	

SCHOOL SURVEY

GENERAL PROFILE OF SCHOOL:

Ø **Name of school** : Utkramit +2 high school, Ramla

Ø **P.O.** : Ramla

Ø **District** : Godda

Ø **Established on** : 1967

Ø **Area** : 0.025 hectare

Table 10.7 No. of students:

Class	**Section**	**Male**	**Female**	**Total**
9th	3	73	71	144
10th	2	62	61	123
Science				
11th	1	20	13	33
12th	1	3	6	9
Arts student				

11th	1	21	40	61
12th	1	27	31	58

IT (Vocational)

Class	**Male**	**Female**	**Total**
9th	4	64	68
10th	0	49	49
11th	2	44	46
12th	4	29	33

Electronics

9th	63	0	63
10th	47	0	47
11th	46	6	52
12th	27	5	32

Table 10.8 Teachers list:

Name	**Subject**	**Class**
Ram Pratap pandey (principal) (PGT)	Commerce	10-12
Premlal pandey (PGT)	History	10-12
Yudhisthir sharma (TGT)	Hindi	9-10
Sanjay kumar (TGT)	Biology , Chemistry	9-10
Md. Shail Ahmed (TGT)	Maths	9-12
Subhash das (TGT)	Geography	9-12
Shivnandan prasad (TGT)	English	9-12
Neeraj Kr. Singh		
Kr. Yaduvansh mani (TGT)	History	9-12
Md. Manohar Alam	IT	9-12
Gopal Mandal		
Md. Shahil Iqual	Electronics , hardware	9-12

Total no. of staff: 14 (no female)

PRIMARY AND MIDDLE SCHOOL:

Ø **Total students** : 275

Ø **Total girls** : 147

Ø **Total boys** : 132

Ø **Total class** : 1 to 8

Ø **Total teachers** : 3 (1 female, 2 male)

Ø **Head teacher** : Dilip Kr. Sah

Ø **Teacher** : Sobha Kumari, Aditya Kumar Anand (1 to 5), Dilip kr. Sah (Head Master)

Ø **School established** : 1955

Ø **Washroom** : 2-6

Ø **Handpump**

Ø **Attendance good (75%-80%)**

Ø **Smart class**

Ø **Gyan setu karyakarm (Program)**

Ø **Area 5 kattha (8000 sq. feet)**

AANGANBADI SURVEY

Established	**:**	22 Sept. 2009
Head	**:**	Giriwala Kumari
Staff	**:**	2
Food Source	**:**	Own (Money from Government)
Area	**:**	1 hectare
Study Material	**:**	Pencil, Slate (given by Government)
Office	**:**	Godda Block

Table 10.9 Students:

Age	No. of Students
0-3 yrs	69

3-6 yrs	40
Total	109

Camp held by Anganbadi in recent Times:-

Sarkar Apke Dawar :- The government of Jharkhand has announced the launch of the "Aapki Yojana Aapki Sarkar Aapke Dwar Program 2022" on 4th October Tuesday, in the context of the completion of 3 years of the Hemant Soren government. The scheme was launched with the aim to ensure that citizens, especially those living in rural and remote areas, have easy access to government services. The employees are trained to use the equipment and software necessary to provide services, and they are also trained to assist citizens in filling out forms and providing the necessary documents for the services.

Features and Objectives:-

- One of the main objectives of the Jharkhand Aapki Yojana Aapki Sarkar Aapke scheme is to reduce the need for citizens to travel long distances to government offices. With the scheme, citizens can access services from the comfort of their homes, without having to go through the hassle and expense of traveling to government offices.
- This is especially beneficial for elderly citizens and those with disabilities, who may find it difficult to travel to government offices.

- The scheme also aims to reduce corruption and improve transparency in the delivery of government services.

SCHEMES

- PMMVY (Pradhan Mantri Matritva Vandana Yojana)
- Savitribai Phule Kishori Samriddhi Yojana

PMMVY (PRADHAN MANTRI MATRITVA VANDANA YOJANA)

Previously known as the Indira Gandhi Matritva Sahyog Yojana, is a maternity benefit program run by the government of India. It was originally launched in 2010 and renamed in 2017. The scheme is implemented by the Ministry of Women and Child Development. It is a conditional cash transfer scheme for pregnant and lactating women of 19 years of age or above for the first live birth. It provides a partial wage compensation to women for wage-loss during childbirth and childcare and to provide conditions for safe delivery and good nutrition and feeding practices.

Objectives:

- Promoting appropriate practice, care and institutional service utilization during pregnancy, delivery and lactation
- Encouraging the women to follow (optimal) nutrition and feeding practices, including early and Exclusive breastfeeding for the first six months; and
- Providing cash incentives for improved health and nutrition to pregnant and lactating mothers.

Eligibility conditions and conditionalities:

Originally, the scheme was brought under the National Food Security Act, 2013 to implement the provision of cash maternity benefit of ₹6,000 stated in the Act. Then, all pregnant women of 19 years of age and above were eligible for conditional cash transfer benefits of ₹5,000 to paid in three installments, except those who receive paid maternity leave. After the implementation of

National Food Security Act the amount has been revised to ₹6,000 (US$75) to be paid in two installments of ₹3,000 (US$38) each.

SAVITRIBAI PHULE KISHORI SAMRIDDHI YOJANA

The Jharkhand government on Tuesday said it aims at facilitating the education of nine lakh adolescent girls in the state under the Savitribai Phule Kishori Samriddhi Yojana (SPKSY). The welfare programme was launched by Chief Minister Hemant Soren in October 2022 from Giridih. "The Savitribai Phule Kishori Samriddhi Yojana is an effort of the state government to facilitate the education of adolescent girls and a step towards women empowerment and gender justice...Nine lakh adolescent girls of the state shall be covered by this scheme," a statement issued by the government said.

Objective:

- The objective of the scheme is not only providing financial assistance to adolescent girls for education, but also ensuring that the girls don't drop out from school, and preventing child marriage.
- This scheme will also provide assistance for the health and personal hygiene of girls

WHAT IS PRA?

Participatory methods and tools are mainly used for agro eco system analysis. PRA is one of that.
Participatory -Means that people are involved in the process - a "bottom-up" approach that requires good communication, skills and attitude of project staff.
Rural - The techniques can be used in any situation, urban or rural, with both literate and illiterate people.
Appraisal - The finding out of information about problems, needs, and potential in a village. It is the first stage in any project.
PRA is a methodology for interacting with villagers and seeking their participation in putting forward their point of views about problem analysing and equalizing the information to acquire learning.

Aims of PRA:

- To build up a permanent “people first” attitudes in the minds of the participants. To show that “people are capable agents to change their own lives” but require limited outside assistance.
- To establish a notion of “respect” to the people’s knowledge in the life of professionals and their institutions.
- To provide simple analytical tools to analyze rural situations.
- To show some of the analytical tools to the community in the field setting and understand their suitability to farmer situation.
- To enhance participant’s ability to plan with the community.

AREAS OF APPLICATION:-

- Natural resource management
- Agriculture
- Poverty alleviation/women in development programmes
- Health and nutrition
- Preliminary and primary education
- Village and district-level planning
- Institutional and policy analysis

DIFFERENT PRINCIPLES THAT FORM THE BASIS OF ANY PRA ACTIVITY:-

1) Participation- It is important for local communities to participate in PRA to make it successful as they are not only a source of information but indispensable partners in the PRA team in gathering and analyzing information.

2) Listening and learning- Listening to the local communities not only help us understand their history and culture, but also opens up a whole new world view which generally remains dormant and unrevealed to the outside world.

3) Offsetting Biases- While listening and learning, it is important that the preconceived notions of individuals are cast aside. PRA promotes relaxed but active listening and learning, seeking participation from people who are relatively worse off. Thus, letting a group of people find their voice who rarely get a chance to speak.

4) Seeking Diversity- PRA entails listening to and learning from a diverse community of people. Rather than looking for representatives of each group, it seeks to understand different perspectives within the same community. This helps in portraying a better view of the "reality".

5) Triangulation/Cross checking- Triangulation is a technique used to improve the reliability of the collected data. It is performed by changing the team composition, the sources of information and the techniques applied to gather the information. After collecting the data with this technique, midway corrections are done to minimize errors.

6) Optimal Ignorance- As the term suggests, PRA work attempts to be more focused on the relevant information to make the necessary recommendations and decisions. This means knowing only what is worth the time and effort and ignoring the unnecessary information.

7) Multi-disciplinary Team- The scientific team conducting PRA should have fairly broad base, thereby including scientists of all important disciplines relevant to the area of study. Not only that, but the team should also include female scientists so that the rural women can be easily involved in the process. There should be at least 3 representatives chosen from the team, each performing a specific job. First is Team Leader/Facilitator, another is Process Recorder or Content Recorder and third one is Environment Controller .The job of the Environment Controller is to develop rapport with the rural people before jumping on to the objective of the study.

8) Flexibility- The size and skills of the PRA team, the available time and other resources and the topic and location of work determines the techniques appropriate in a particular study

9) Teamwork- The team of scientists generally works with a local team, speaking the local languages, to successfully conduct the PRA.

10) Empowerment- The authority to local people through decentralization and confidence building.

11) Self-critical awareness- Mistakes are also an important part of the whole program. They help in making individuals better, but one needs self-critical awareness for that.

TOOLS OF PRA:-

Social Map:

This map is a graphic representation of the cognitive (perceived) image that depicts the whole picture pertaining to a certain place or location. Therefore, proportions, scales and dimensions tend to distort but with a high level of detailing and accuracy can be obtained

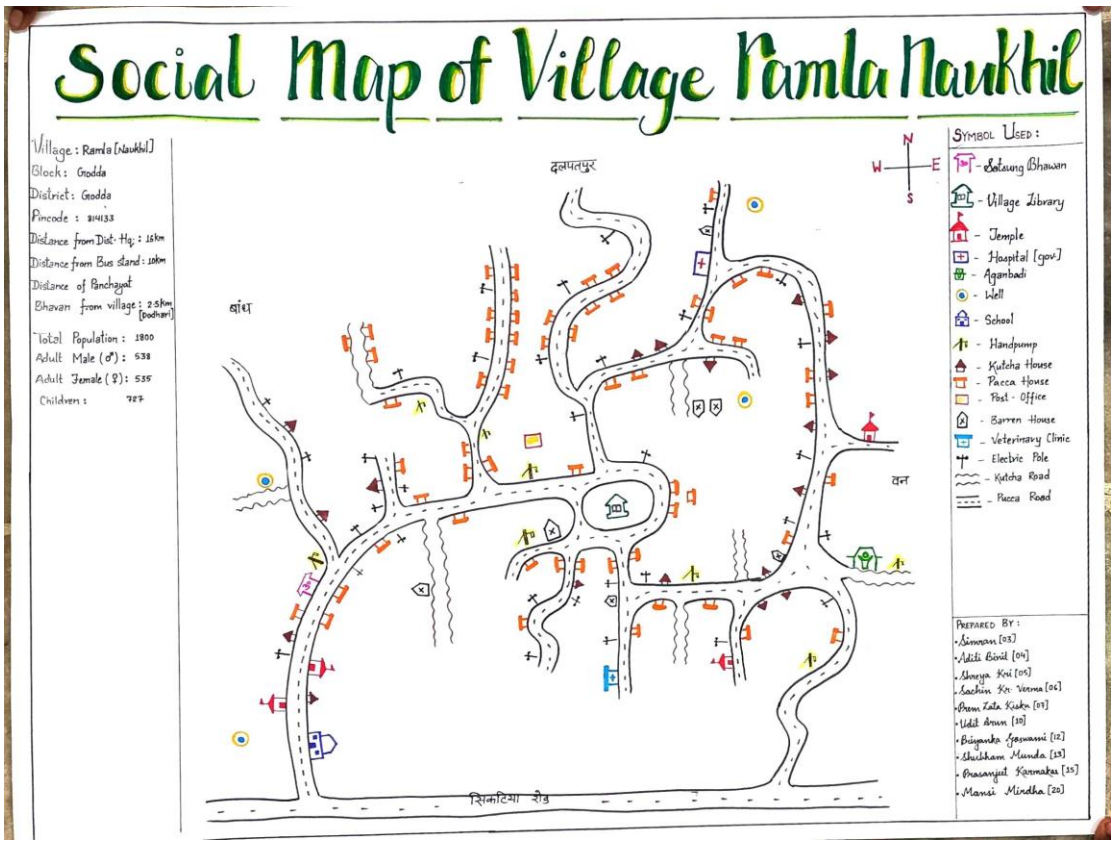
Learning objectives of social map are :

- To get an overview of the villagers' perception about all their social resources and micro environment
- To gain insight from the villagers about their practice of resource utilization spatially.

Components

Road.
Household.
Village institution.
Occupation.
Religion distribution.
Rural leaders.
Any other important rural features.

Fig. 3



Resource Map:-

This map in a graphic representation of the cognitive (perceived) image depicts the whole picture pertaining to a certain place or location with major components like Land type (topography), soil types, enterprises, water resources, cropping sequence, pasture land, problematic area (if any) and other related items.

Learning objectives:-

- To have an overview of the villagers' perception about all their natural resources and micro-environment.
- To gain insight from the villager about their practice of resource utilization spatially.

Method:- The people who know the area and topic of the natural resource map exercise and are willing to share their knowledge had been chosen for the work.

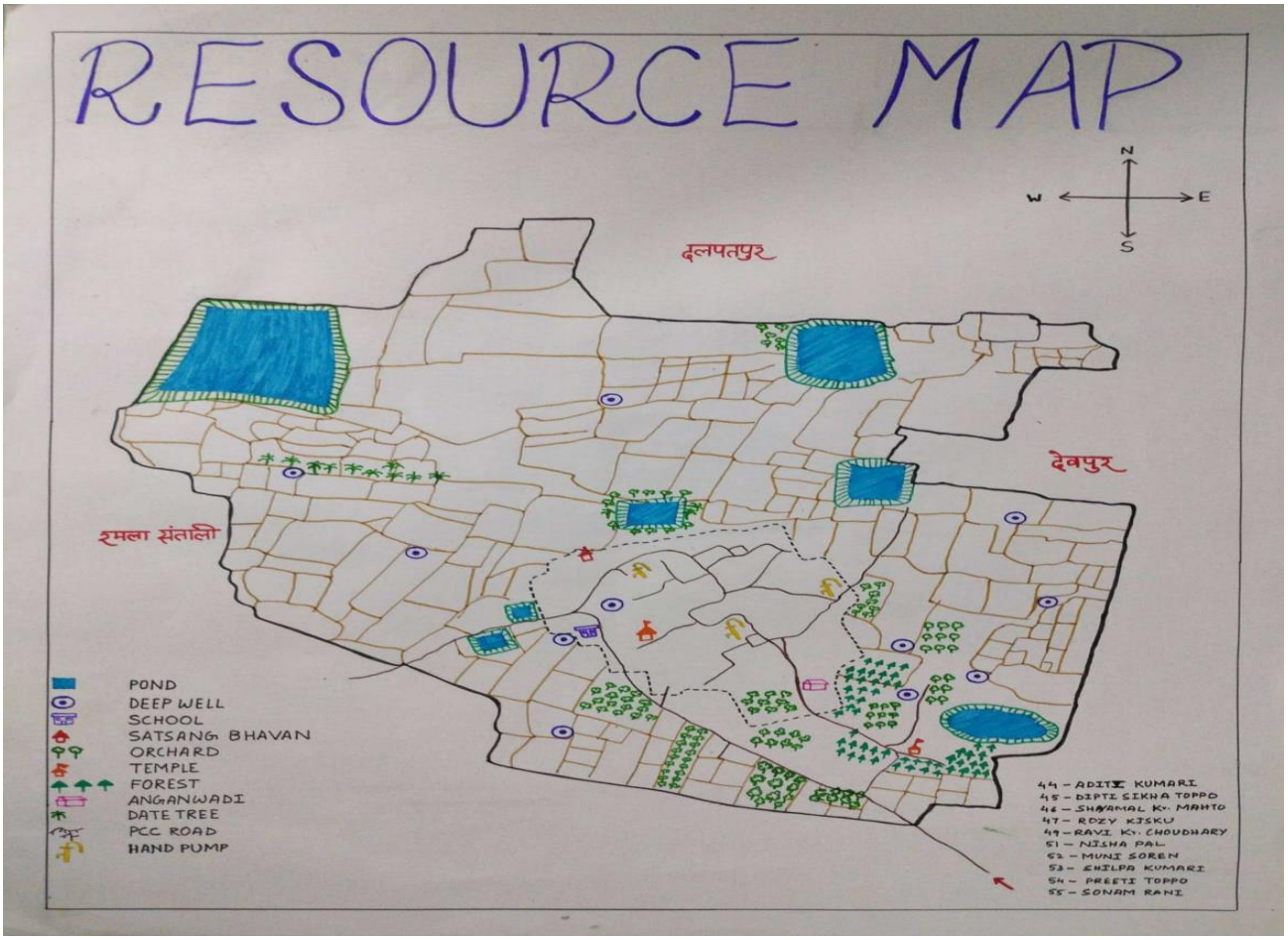


Fig. 4

Timeline Map

The facilitators meet small groups of villagers and discuss with them the most important events in the community's past and prepare with the information a historical timeline which serves as the base for further work. It is important to involve different groups of the communities to get their usually different perspectives. The timeline with basic events can be used to focus discussions on problems, social and technological innovations or on communities history of co operations and activities which helped them to solve in past problems successfully.

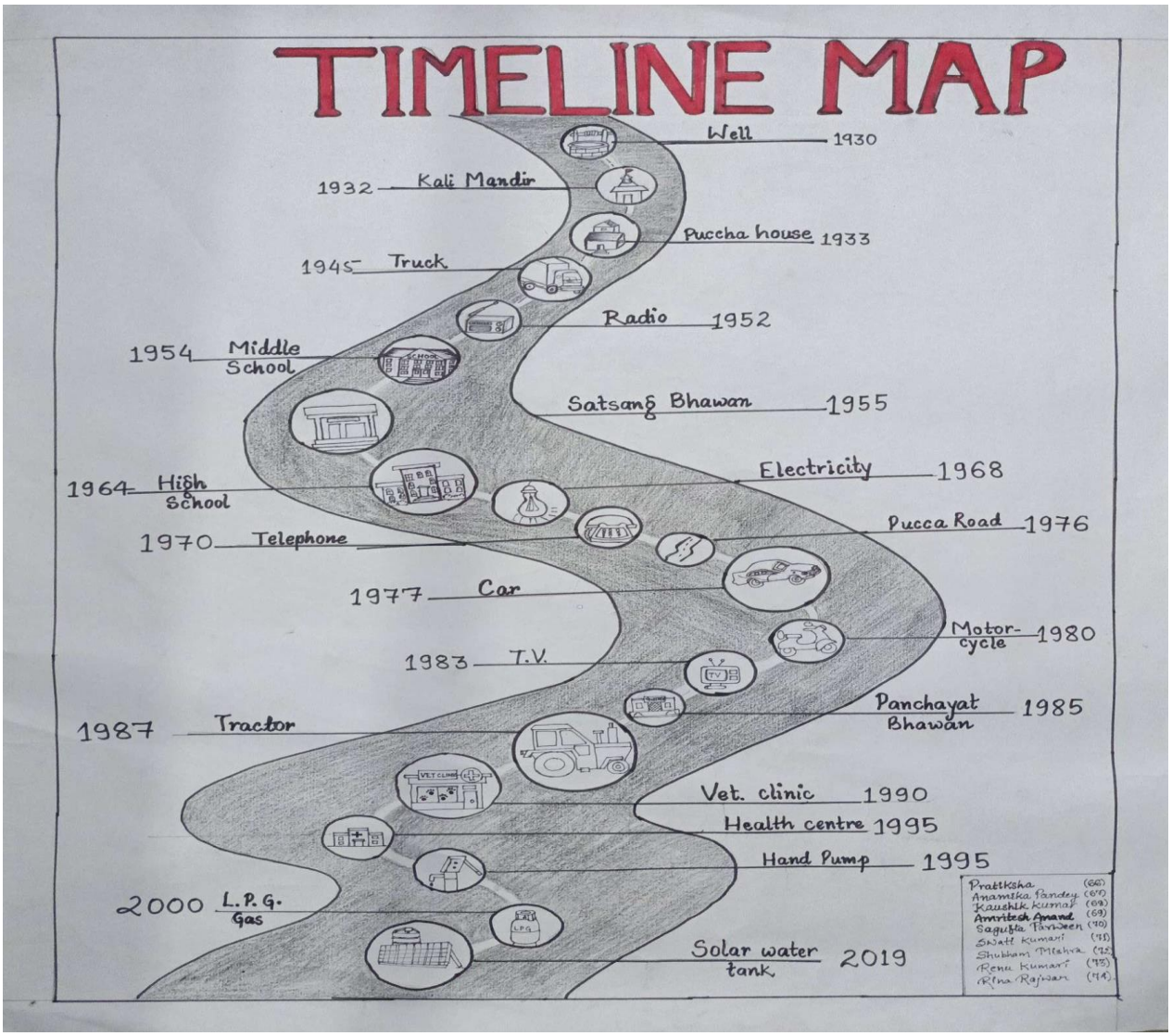


Fig. 5

Trend Analysis

Time trend designs are a form of longitudinal ecological study and can provide a dynamic view of populations' health status. Like other ecological studies the data are collected at a population level and can be used to generate hypothesis for further research,rather than demonstrating causality

.

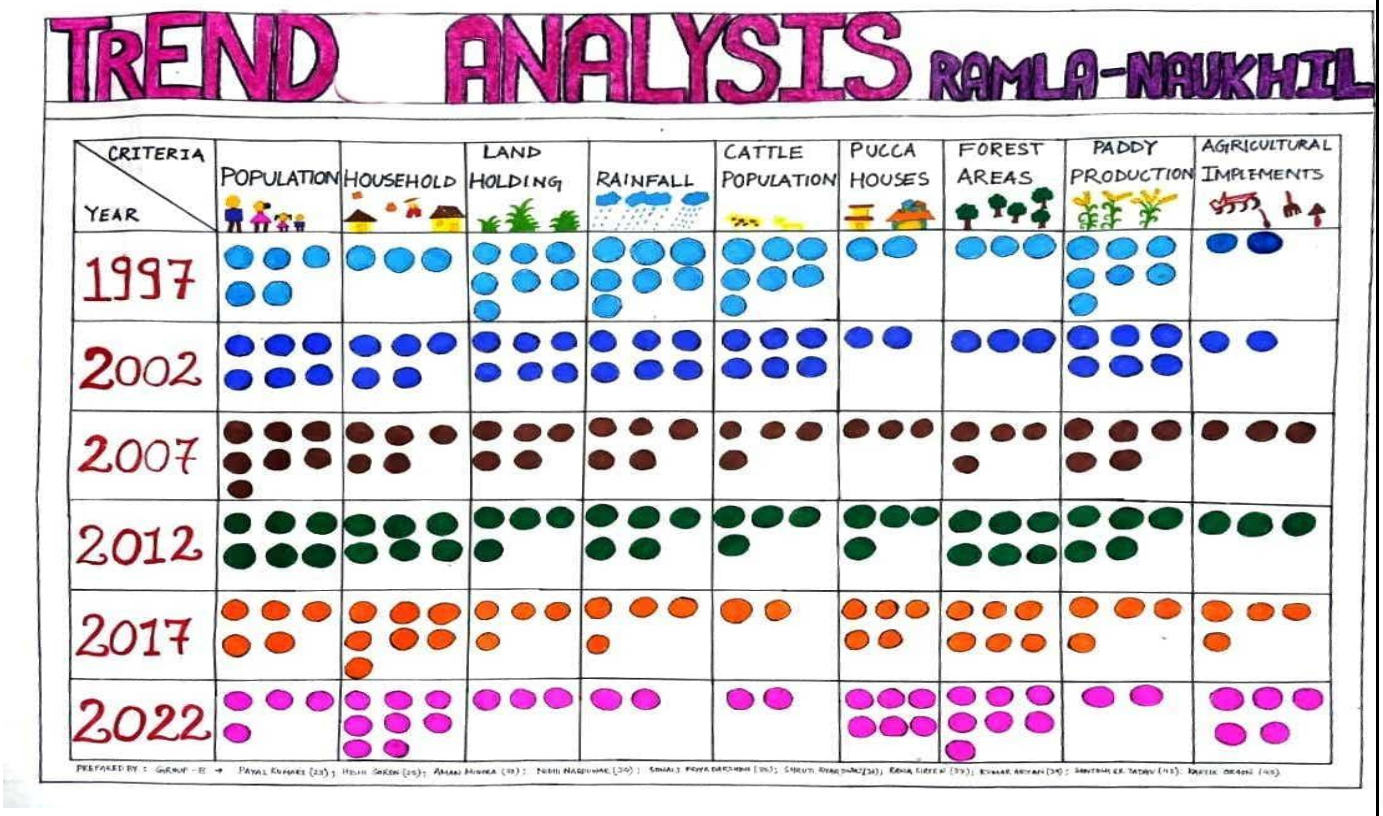


Fig. 6

Venn Diagram

The Venn Diagram on Institutions shows institutions, organizations, groups and important individuals found in the village, as well as the villagers view of their importance in the community.

Additionally the Diagram explains who participates in these groups in terms of gender and pollution.

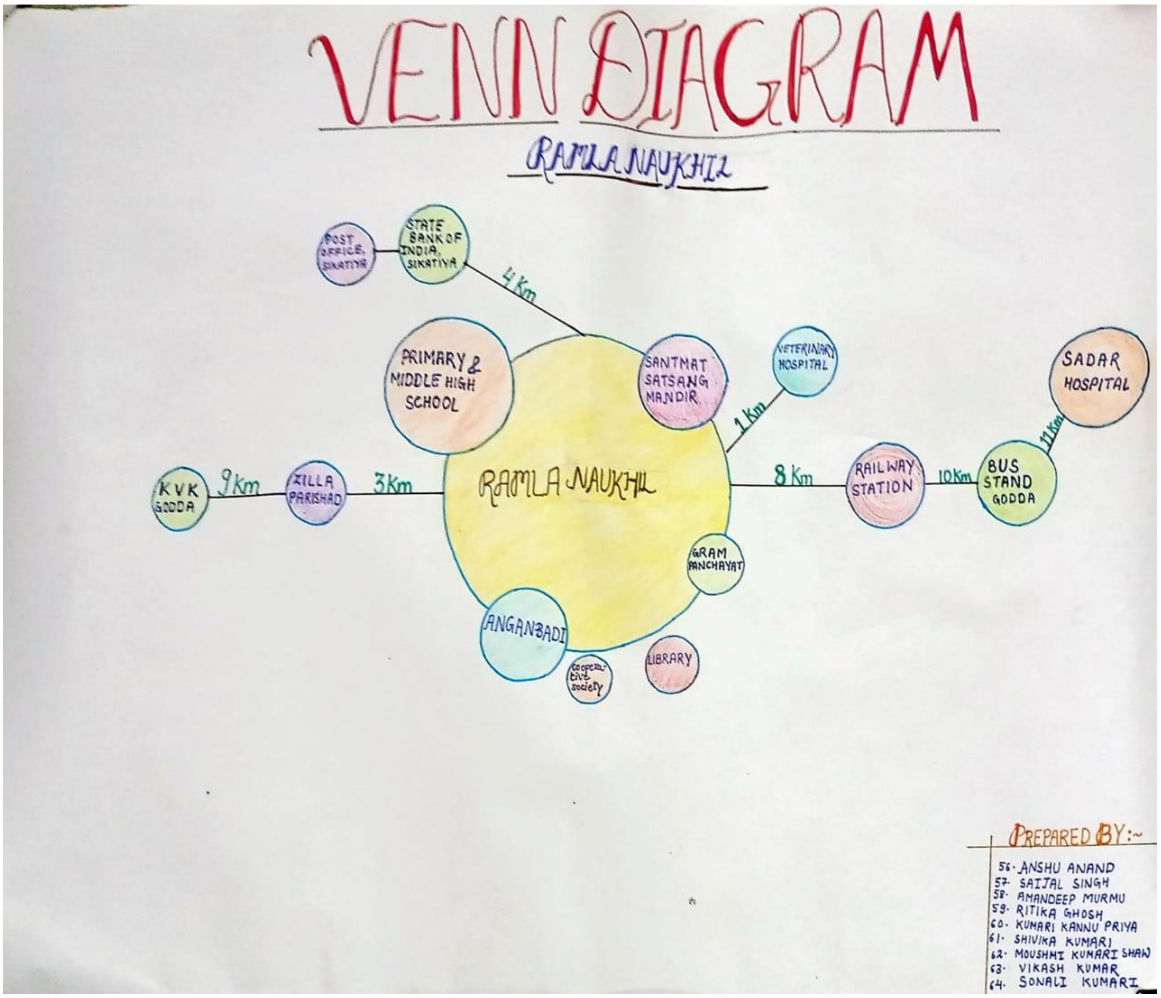


Fig. 7

11. ITK (Indigenous Technical Knowledge)

1. PARBOILING

Parboiling is a hydrothermal treatment followed by drying before milling for the production of milled parboiled grain. Parboiling of paddy has been known in the orient for centuries. Nearly 50 per cent of the paddy produced in India at present is parboiled.

In general, the three major steps in parboiling, i.e. soaking, steaming and drying and have a great influence on the final characteristics and quality of parboiled rice

Earthen stove used for parboiling

2. INDIGENOUS PLOUGH / WOODEN PLOUGH

Indigenous plough is an implement which is made of wood with an iron share point. It consists of body, shaft pole, share and handle. It is drawn with bullocks. It cuts a V shaped furrow and opens the soil but there is no inversion. Ploughing operation is also not perfect because some unploughed strip is always left between furrows. This is reduced by cross ploughing, but even then small squares remain unploughed

Wooden Plough

12.) ACTION PLAN DEVELOPMENT FOR THE VILLAGE

For the unemployed youth :-

- Government has launched many skill development programs, like Skill India mission, to provide training to inculcate vocational skills in the unemployed youth. E.g. carpentry, electroplating, fashion-designing, marketing for managers, financial statement analysis, etc.
- Unemployed youth can get training from KVKs to get themselves self-employed with bee-keeping, animal husbandry and mushroom cultivation.

For farm women :-

- Women can also get training under skill development programs like Skill India mission for skills for fashion designing and entrepreneurship
- Earning income from mushroom cultivation

In livestock sector :-

- Proper vaccination of the cattle to save them from dying due to local disease (very common in goats) and increase milk production
- Provide 20 kg of green fodder, 10 kg dry fodder, 4 kg concentrate feed and 30 litres of fresh water everyday

To mitigate water scarcity :-

- Rain water harvesting in their house by building small structures and then using the stored water for irrigation
- Growing crop that grows well in rain fed conditions like groundnut, sorghum and millet
- Growing varieties that grow well in minimum water

Instructions for less cost of cultivation and high output :-

- Seed treatment before sowing to increase the yield.
- Using the proper amount of fertilizer to minimize soil pollution and water pollution
- Integrated disease and pest management
- Using improved hybrid varieties suitable for the region
- About the loss caused by weed, pathogens and pests and using proper techniques and chemicals to control them

II. KRISHI VIGYAN KENDRA ATTACHMENT

II.1 INTRODUCTION

Krishi Vigyan Kendra Krishi Vigyan Kendra is a frontline extension programme and innovative institutional model of the Indian Council of Agricultural Research. It is devoted to undertaking the activities of technology assessment, refinement and dissemination through on-farm testing, frontline demonstration, vocational training of farmers, rural youth, farm women and extension functionaries.

II.2 OBJECTIVE

- To test and verify the technology on farmers' fields through on-farm adaptive research and frontline demonstration to develop location-specific technologies
- To demonstrate the latest agricultural technologies at the instructional farm with a view to reduce the technology dissemination losses
- To impart training to practicing farmers, farm women and rural youth by following the method of "teaching by doing" and "learning by doing"
- To organize vocational training programmes and income generation activities for rural youth and school dropouts by imparting skills.
- To organize skill and production-oriented short and long term training programmes' both on and off-campus
- To organize training for extension functionaries in the area of frontier technology.
- To organize kisan melas, field days and farmer-scientist interface programmes
- To bring out literature, radio and TV programmes on modern technologies

II.3 MANDATES

- Conduct "On-farm testing" for identifying technologies in terms of location-specific sustainable land use systems through technology assessment and refinement.
- Organize frontline demonstrations on various crops to generate production data and feedback information.
- Organize short and long term vocational training courses in agriculture and allied vocations for the farmer and rural youth with emphasis on "learning by doing" for higher production on farms and generation of self employment.
- Organize training to update the extension personnel with emerging advances in. agricultural research on a regular basis.
- Act as a knowledge and resource centre for advancement of agriculture in the district

KRISHI VIGYAN KENDRA GODDA

GVT - Krishi Vigyan Kendra (KVK), Godda in Jharkhand was established at the Sub-divisional Agriculture farm near Rautara chowk in the year 2006. GVT - Krishi Vigyan Kendra (KVK), Godda is managed by Gramin Vikas Trust and funded by Indian Council of Agricultural Research, ICAR, New Delhi.

For the farming community KVK has organized various types of training, kisan mela, exposure visits, and exhibition for rural farmers on one hand and on the other hand, it is also facilitated by Govt. for technology assessment, refinement and its dissemination to suit location specific requirements for the practicing farmers.

I. GENERAL INFORMATION

Name of the KVK : GVT-KVK, Godda
Name of the Head of KVK : Dr. Ravishankar
Geographic location of KVK :North Latitude Between 240.47 to 250.23' East Longitude between 870.08' to 870.48'
Nature of Activities : Agriculture, Animal Husbandry, Home science
Year of Establishment : 2006
Organization owned by : NGO

II. Organizational Structure

Under this the student will know the employee strength, their training needs, organization behavior, employee recruitment policies and methods etc.

Table II.1

Sl. No.	Subject	Scientist(s)
1.	Horticulture(pomology)	Dr. Ravi Shankar
2.	Animal Husbandry	Dr. Satish Kumar
3.	Plant Protection	Dr.Surya Bhushan
4.	Plant Protection	Dr.Hemant Kumar Chourasiya
5.	Ag. Extension	Dr. Ritesh Dubey
6.	Farm manager	Rakesh Kr. Singh
7.	Home Science	Dr. Pragatika Mishra
8.	Agro meteorology	Rajnish Prasad Rajesh

III. Area of operation - KVK Godda

- Cultivated area of the area of operation (Districts) field and horticultural crops : 167400 ha
- Natural Resources –
  - Irrigated area : 7,530 ha
  - Forest area : 31,320 ha
  - Land under non-agricultural use : 18,080 ha
- Land use classification of the operational area
  - Net sown area : 78,200 ha
  - Area sown more than once : 6,300 ha
  - Gross cropped area : 84,500 ha
- Crops grown including field and horticultural crops

Field crops

Rice

Maize

Pigeon pea

Blackgram

Greengram

Groundnut

Wheat

Chickpea

Pea

Lentil

Mustard

Horticultural crops

Mango

guava

Litchi

Lemon

Banana

Cauliflower

Cabbage

Tomato

Brinjal

Chilli

Lady Finger

- Area of different Crops in different districts of operation of KVK / Research station;

Table II. 2 FIELD CROPS

crops	**Area(ha)**
Rice	30.2
Maize	6.8
Pigeon pea	3.1
Black gram	0.6
Green gram	0.4
Groundnut	0.1

Wheat	1.9
Chickpea	2.8
Pea	0.6
Lentil	0.05
Mustard	1.5

CROPS	**AREA(ha)**
Mango	0.4
Guava	0.2
Litchi	0.2
Lemon	0.2
Banana	0.2

CROPS	**AREA**
Cauliflower	0.8
Cabbage	0.3
Tomato	0.6
Brinjal	0.4
Chilli	0.3
Okra	0.4

- Crop varieties grown, Average yield of crops

● Rice	Sahbagi, Naveen, Sabour Anjali, Lalat, rajendra katarni
● Wheat	Sabour nirjal, Sabour shrestha
● Linseed	Sabour tisi1
● Horse gram	Birsa kurthi1,Birsa niger 1
● Lentil	IPL316
● Mustard	Pusa30, Pusa28
● Mango	Amrapali, Mallika, Malda, Pusa kesar
● Guava	Allahabadi safeda, Lalit,Lucknow49
● Lemon	Kagzi
● Tomato	Swarna kanchan
● Brinjal	Swarna pratibha

Important activities of the KVK during the past one year

On campus:

- 12 on farm trials
- Poultry, goatery, piggery Training
- Plant protection and plant propagation training
- Development of saplings and seedlings of horticultural crops.
- Entrepreneurship development.
- Preservation and value addition of fruits and vegetables
- Soil sample collection and testing
- Fishery training

Off campus:

- Frontline demonstration on farmer’s field on 1 acre of land
- Seed production (breeder to certified seeds) e.g.: Paddy, mung, brinjal, tomato, onion
- Formation of FPO and SHGs
- One day training on season and crop based

- Natural resource management
- Integrated nutrient management
- Various sponsored training like ASCH skill training

IV. Resources of the organization:

- Land -25 acres, 2 Ponds
- Building / Go downs- Administrative staff quarter, Training hostel, Laboratory, seed processing unit
- Equipment: pH meter, EC meter, BOD, Laminar air flow, Autoclave, Juicer, Oven, Microwave, Spectrophotometer, Atomic Absorption Spectroscopy
- Machinery- Land equipments: Tractors (2)
- Transport vehicles: TATA Sumo, Bicycles

V. Activities of KVK / Research Station:

Research:

- Agriculture - Breeder seed demonstration, Seed production (breeder to certified)
- Including horticulture - Development of seedlings and saplings, nursery development of various vegetable crops (brinjal, tomato, cauliflower, cabbage)
- Seed production of vegetable crops (brinjal, tomato, onion)
- Sapling development of guava, mango, drumstick
- Veterinary including poultry- Demonstration of feed conversion ratio of Jharsuk

Demonstrations

- Agriculture-7 demonstration and 40 awareness programme on Natural Farming
- Including horticulture- Demonstration of nutritional garden
- Veterinary including poultry, fisheries - Demonstration of feed conversion ratio of Jharsuk
- Fisheries: Composite Fish Farming

- Home science- Preservation and value addition of horticultural crops

Trainings

- Agriculture Including horticulture - Training on soil sample collection
- Veterinary including poultry-Poultry, goatery, piggery

VI. Achievements of KVK / Research Station:

- **NICRA** Project in 4 village
- Natural farming – use of Bijamrit, jivamrit
- Annual health worker

Glimpses of Media Coverage

एग्रीकल्चर कॉलेज के स्टूडेंट्स पहुंचे गांव, कहा, नई तकनीक अपनाएं

गणादेश रिपोर्टर

गोड्डाः किताबों से बाहर ये एग्रीकल्चर स्टूडेंट गांव की मेड़ पर पहुंचे, तो इन्होंने बहुत कुछ नया सीखा और सिखाया। तिलका मांझी कृषि महाविद्यालय पुनसिया गोड्डा के सातवीं सेमस्टर के छात्र- छात्राओं ने शुक्रवार को गोड्डा प्रखंड के रमला (नौखिल) गांव में जाकर कृषि से संबंधित कार्य अनुभव प्राप्त किया। सातवीं सेमस्टर के सिमरन, आदिति, श्रेया कुमारी, सचिन कुमार वर्मा, प्रेमलता किस्कु, उदित अरूण, प्रियंका गोस्वामी, शुभम मुंडा, प्रसन्नजीत कर्मकार, मानसी मिर्धा, पायल कुमारी, हिसी सोरेन, अमन मिश्रा, निधि नागद्वार, सोनाली प्रियदर्शनी, श्रुति भारद्वाज, राना सिरीन, कुमार आर्यन, संतोष कुमार यादव, कार्तिक उरांव, आदिति कुमारी, दीप्ति शिखा टोप्पो, श्यामल कुमार महतो, रोजी किस्कु, रवि कुमार किस्कु, निशा पाल, शिल्पा कुमारी, प्रीति टोप्पो, मुनी सोरेन, सोनम रानी, अंशु आनंद, सैजल सिंह,

अमनदीप मुर्मू, रितिका घोष, कुमारी कन्नु प्रिया, सिबाका कुमारी, मौसमी कुमारी साव, विकास कुमार, सोनाली कुमारी, प्रतीक्षा, अनामिका पाण्डेय, कौशिक कुमार, अमृतेश आनंद, सगुप्ता प्रवीण, स्वाती कुमारी, शुभम कुमार मिश्रा, रेणु कुमारी, रीना रजवार ने गांव के किसानों के साथ बातचीत की। उसके लगाए फसल का खेत पर जाकर निरीक्षण किया। किसान के सामने आई कठिनाई को समझा। कृषि वैज्ञानिकों ने भी किया मदद मौके पर ई. कुणाल प्रसाद, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि अभियंत्रिकी विभाग, डॉ अभिजीत सतपथी, सहायक प्राध्यापक, संयोजक रावे सह कनीय वैज्ञानिक कृषि विस्तार, डॉ अदयंत कुमार सहायक प्राध्यापक सह कनीय वैज्ञानिक सस्य विज्ञान, डॉ करूणा शंकर, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि उद्यान, डॉ निर्मला कुमारी, सहायक प्राध्यापक सह कनीय वैज्ञानिक मृदा विज्ञान ने सभी छात्र- छात्राओं से ग्रामीणों से मिली समस्याओं को सुना और उसका निदान भी बताया। वैज्ञानिकों ने खेत में लगी फसल का कीट द्वारा पहुचा रहे हानि पर भी छात्र- छात्राओं को अवगत कराया। वैज्ञानिकों ने कृषि से जुड़े किसानों से कहा कि आप खेती वैज्ञानिक तरीके से कीजिए। इससे पैदावार भी अधिक होगा और आपको परेशानी भी कम होगी। आज सिंचाई में तरह- तरह के तकनीक उपलब्ध है। इससे कम पानी में ही किसान अधिक सिंचाई कर सकते है। ढोढरी पंचायत के मुखिया मनोहर प्रसाद वैद्य ने भी सातवीं सेमस्टर के छात्र- छात्राओं के साथ इलाके में कृषि के क्षेत्र में आ रही कठिनाई को सामने रखा। वैद्य ने कहा कि इस इलाके में केवल चार- पांच डीप बोरिंग की व्यवस्था करा दी जाय तो इस इलाके से प्रतिदिन ट्रकों में भरकर सब्जी बाहर जा सकता है। आज कृषि को उद्योग के रुप में अपनाने की जरूरत है। मौके पर रमला गांव के सैकड़ों ग्रामीणों ने अपनी समस्या इस कनीय वैज्ञानिकों तथा छात्र-छात्राओं के सामने रखा। सातवीं सेमस्टर के सभी छात्र-छात्राओं ने कहा कि किताबों में कृषि और उसकी समस्या पर रोज पढ़ाई होती है, पर जब खेती कार्य को खेत पर जाकर देखा और उसमे जो अनुभव प्राप्त किया। वह सही मायने में हमारे लिए काफी उपयोगी है। किसानों की समस्या वह भी कि आज तक उसके खेती की मिट्टी की जांच नहीं हो पाई है।

जामताड़ा पुलआउट 19-11-2022

प्रशिक्षण • कृषि क्षेत्र में आ रही कठिनाई को जाना, पौधे में लग रहे बीमारी से प्राध्यापकों ने कराया अवगत

छात्र-छात्राओं ने लिया कृषि कार्य का अनुभव, नई तकनीक को अपनाने का किया गया आग्रह

भास्कर न्यूज़ | गोड्डा

तिलका मांझी कृषि महाविद्यालय पुनसिया गोड्डा के सातवीं सेमस्टर के छात्र- छात्राओं ने शुक्रवार को गोड्डा प्रखंड के रमला (नौखिल) गांव में जाकर (रावे) कृषि से संबंधित कार्य अनुभव प्राप्त किया। सातवीं सेमस्टर के सिमरन, आदिति, श्रेया कुमारी, सचिन कुमार वर्मा, प्रेमलता किस्कु, उदित अरूण, प्रियंका गोस्वामी, शुभम मुंडा, प्रसन्नजीत कर्मकार, मानसी मिर्धा, पायल कुमारी, हिसी सोरेन, अमन मिश्रा, निधि नागद्वार, सोनाली प्रियदर्शनी, श्रुति भारद्वाज, राना सिरीन, कुमार आर्यन, संतोष कुमार यादव, कार्तिक उरांव, आदिति कुमारी, दीप्ति शिखा टोप्पो, श्यामल कुमार महतो, रोजी किस्कु, रवि कुमार किस्कु, निशा पाल, शिल्पा कुमारी, प्रीति टोप्पो, मुनी सोरेन, सोनम रानी, अंशु आनंद, सैजल सिंह, अमनदीप मुर्मू, रितिका घोष, कुमारी कन्नु प्रिया, सिबाका कुमारी, मौसमी कुमारी साव, विकास कुमार, सोनाली कुमारी, प्रतीक्षा, अनामिका पाण्डेय, कौशिक कुमार, अमृतेश आनंद, सगुप्ता प्रवीण, स्वाती कुमारी, शुभम कुमार मिश्रा, रेणु कुमारी, रीना रजवार ने गांव के किसानों के साथ बातचीत किया।

फसल में लगी कीट को देखते कृषि वैज्ञानिक।

खेती की नई तकनीक को छात्रों ने जाना

कृषि अनुभव के लिए खेत की ओर जाते छात्र-छात्राएं।

गोड्डा। तिलका मांझी कृषि महाविद्यालय पुनसिया गोड्डा के सातवीं सेमस्टर के छात्र- छात्राओं ने शुक्रवार को गोड्डा प्रखंड के रमला(नौखिल) गांव में जाकर(रावे) कृषि से संबंधित कार्य अनुभव प्राप्त किया।

सातवीं सेमस्टर के सिमरन, आदिति, श्रेया कुमारी, सचिन कुमार वर्मा, प्रेमलता किस्कु, उदित अरूण, प्रियंका गोस्वामी, शुभम मुंडा, प्रसन्नजीत कर्मकार, मानसी मिर्धा, पायल कुमारी, हिसी सोरेन, अमन मिश्रा, निधि नागद्वार, सोनाली प्रियदर्शनी, श्रुति भारद्वाज, राना सिरीन, कुमार आर्यन, संतोष कुमार यादव, कार्तिक उरांव, आदिति कुमारी, दीप्ति शिखा टोप्पो, श्यामल कुमार महतो, रोजी किस्कु, रवि कुमार किस्कु, निशा पाल, शिल्पा कुमारी, प्रीति टोप्पो, मुनी सोरेन, सोनम रानी, अंशु आनंद, सैजल सिंह, अमनदीप मुर्मू, रितिका घोष, कुमारी कन्नु प्रिया, सिबाका कुमारी, मौसमी कुमारी साव, विकास कुमार, सोनाली कुमारी, प्रतीक्षा, अनामिका पाण्डेय, कौशिक कुमार, अमृतेश आनंद, सगुप्ता प्रवीण, स्वाती कुमारी, शुभम कुमार मिश्रा, रेणु कुमारी, रीना रजवार ने गांव के किसानों के साथ बातचीत किया। उसके लगाए फसल का खेत पर जाकर निरीक्षण किया। किसान के सामने आई कठिनाई को समझा।

मौके पर ई. कुणाल प्रसाद, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि अभियंत्रिकी विभाग, डॉ अभिजीत सतपथी, सहायक प्राध्यापक, संयोजक रावे सह कनीय वैज्ञानिक कृषि विस्तार, डॉ अदयंत कुमार सहायक प्राध्यापक सह कनीय वैज्ञानिक सस्य विज्ञान, डॉ करूणा शंकर, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि उद्यान, डॉ निर्मला कुमारी, सहायक प्राध्यापक सह कनीय वैज्ञानिक मृदा विज्ञान ने सभी छात्र- छात्राओं से ग्रामीणों से मिली समस्याओं को सुना और उसका निदान भी बताया। वैज्ञानिकों ने खेत में लगी फसल का कीट द्वारा पहुचा रहे हानि पर भी छात्र- छात्राओं को अवगत कराया। वैज्ञानिकों ने कृषि से जूड़े किसानों से कहा कि आप खेती वैज्ञानिक तरीके से कीजिए। इससे पैदावार भी अधिक होगा और आपको परेशानी भी कम होगी। आज सिंचाई में तरह- तरह के तकनीक उपलब्ध हैं।

छात्र-छात्राओं ने सीखा मिट्टी जांच का नया तरीका

अनुरंजन।कपाटा, एसपी. साहिबगंज।

गोड्डा, प्रतिनिधि। तिलका मांझी कृषि महाविद्यालय पुनसिया गोड्डा के सातवीं सेमस्टर के छात्र- छात्राओं ने शुक्रवार को गोड्डा प्रखंड के रमला (नौखिल) गांव में जाकर (रावे) कृषि से संबंधित मिट्टी जांच करने के लिए किसी तरह खेत से मिट्टी के नमूने को लिया जाता है। इसके तरीके को सीखा और गांव के किसानों को भी इसके बारे में प्राध्यापकों ने बताया। सातवीं सेमस्टर के प्रतीक्षा कुमारी, सिमरन, आदिति, श्रेया कुमारी, सचिन कुमार वर्मा, प्रेमलता किस्कु, उदित अरूण, प्रियंका गोस्वामी, शुभम मुंडा, प्रसन्नजीत कर्मकार, मानसी मिर्धा, पायल कुमारी, हिसी सोरेन, अमन मिश्रा, निधि नागद्वार, सोनाली प्रियदर्शनी, श्रुति भारद्वाज, राना सिरीन, कुमार आर्यन, संतोष कुमार यादव, कार्तिक उरांव, आदिति कुमारी, दीप्ति शिखा टोप्पो, श्यामल कुमार महतो, रोजी किस्कु, रवि कुमार किस्कु, निशा पाल, शिल्पा कुमारी, प्रीति टोप्पो, मुनी सोरेन, सोनम रानी, अंशु आनंद, सैजल सिंह, अमनदीप मुर्मू, रितिका घोष, कुमारी कन्नु प्रिया, सिबाका कुमारी, मौसमी कुमारी साव, विकास कुमार, सोनाली कुमारी, प्रतीक्षा, अनामिका पाण्डेय, कौशिक कुमार, अमृतेश आनंद, सगुप्ता प्रवीण, स्वाती कुमारी, शुभम कुमार मिश्रा, रेणु कुमारी, रीना रजवार ने गांव के किसानों के खेत में जाकर मिट्टी का नमूना इकट्ठा किया और ग्रामीण किसानों को भी इसके बारे में बताया।

मिट्टी का नमूना लेने का तरीका बताते वैज्ञानिक।

मौके पर मौजूद छात्र-छात्राएं एवं किसान।

कृषि वैज्ञानिकों ने की मदद : मौके पर ढोढरी पंचायत के मुखिया मनोहर प्रसाद वैद्य, डॉ निर्मला कुमारी, सहायक प्राध्यापक सह कनीय वैज्ञानिक मृदा विज्ञान विभाग, ई. कुणाल प्रसाद, सहायक प्राध्यापक सह कनीय वैज्ञानिक कृषि अभियंत्रिकी विभाग, डॉ अभिजीत सतपथी, सहायक प्राध्यापक आदि थे।

क्या कहा ढोढ़री पंचायत के मुखिया ने

ढोढरी पंचायत के मुखिया मनोहर प्रसाद वैद्य ने भी सातवीं सेमस्टर के छात्र-छात्राओं के साथ इलाके में कृषि के क्षेत्र में आ रही कठिनाई को सामने रखा। वैद्य ने कहा कि इस इलाके में केवल चार- पांच डीप बोरिंग की व्यवस्था करा दी जाय तो इस इलाके से प्रतिदिन ट्रकों में भरकर सब्जी बाहर जा सकता है। मिट्टी जांच होने से अम्लीय और क्षारीय मिट्टी का भी पता लगाया जा सकता है। आज कृषि को उद्योग के रूप में अपनाने की जरूरत है। मौके पर रमला गांव के सैकड़ों ग्रामीणों ने अपनी समस्या इस कनीय वैज्ञानिकों तथा छात्र-छात्राओं के सामने रखा। मौके पर रमला उच्च विद्यालय के छात्र- छात्राओं ने भी इनसे जाना कि किस तरह महाविद्यालय में छात्र नामांकन ले सकते हैं।

कृषि विज्ञान केंद्र के भ्रमण पर आए तिलकामांझी कृषि महाविद्यालय के अंतिम वर्ष के छात्र

साहिबगंज : तिलकामांझी कृषि महाविद्यालय गोड्डा के अंतिम वर्ष के छात्र छात्राएं एक दिवसीय प्रवास पर साहिबगंज पहुंचे। इस अवसर पर महाविद्यालय के प्राचार्य ने बताया कि कृषि महाविद्यालय गोड्डा के बीए अंतिम वर्ष के छात्र साहिबगंज स्थित कृषि विज्ञान केंद्र पहुंचकर यहां के कार्यकलापों के बारे में जानकारी हासिल की। उन्होंने बताया कि महाविद्यालय के छात्र छात्रा यह जानना चाहते थे कि आखिर कृषि विज्ञान केंद्र कैसे काम करता है। साथी कृषि का व्यवहारिक ज्ञान लेना भी इन छात्र-छात्राओं की शिक्षा का ही अंग है। महाविद्यालय की छात्रा श्रेया कुमारी ने बताया कि भारत कृषि प्रधान देश है। यहां आज भी कृषक को लोग भगवान के रूप में देखते हैं इसलिए उन्होंने अपनी पढ़ाई का क्षेत्र कृषि चुना है ताकि कृषि के क्षेत्र में वैज्ञानिक और तकनीक का प्रयोग कर अपने किसानों के जीवन को उन्नत बना सकें। महाविद्यालय के छात्र शुभम कुमार ने बताया कि जब देश लॉकडाउन जैसे आर्थिक विपत्ति से जूझ रहा था उस समय केवल और केवल कृषि ही एकमात्र ऐसा क्षेत्र था जहां सकारात्मक वृद्धि भी। भारत के किसान को खेती के उन्नत तरीके सीखने और उस पर अमल करते हुए अपने पैदावार बढ़ाने में मदद के उद्देश्य से शुभम ने भी कृषि को ही अपनी शिक्षा का क्षेत्र के रूप में चुना है। इस मौके पर महाविद्यालय के कोऑर्डिनेटर डॉ अभिजीत डॉ एम राज डॉ निर्मला सहित महाविद्यालय के छात्र भी उपस्थित थे।