CAPSTONE PROJECT

(A Project Work of Business Decision Making Course)

MSc Economics and Management

EXECUTIVE SUMMARY FOR NARESH KUMAR'S BUSINESS OF FARMING

This project is all about analysis done on data collected from a farmer of Uttar Pradesh, Naresh Kumar, who have 20acre of land. He cultivates mainly paddy and wheat. When I thought of working on BDM course, I wanted to work on analysis of economic activity of an average farmer, how they earn money and what difficulties they face. I didn't find any difficulty in taking data from Naresh as he is our family friend and I easily convinced him stating that i will help him in increasing profit. I have contacted him over call for several times for collecting data from him, I also visited his farm house, his field, and noted down all the data about the raw materials purchased by him. I collected all the data about the raw materials purchased by him. I formulated all those data in the several tab of excel spreadsheet. I used all the methods like pivot table, bar graphs, pie charts etc, to analyze the data and to arrive at a conclusion. This project contains all the analysis done by me over the collected data. I have used several graphs, including bar graph and pie chart to demonstrate the insight extracted from the data. I have tried my best to answer all the problems suggested by Naresh Kumar to work upon I have also included my recommendation for him to increase his profit

DETAILED EXPLANATION OF ANALYSIS PROCESS

Paddy Data (June to December)

Raw Materials	Cost per kg in Rs
Seeds	₹ 70.00
Urea	₹ 7.22
DAP	₹ 31.60
Pesticide	₹ 550.00
Manure	₹ 0.00

The above table has list of all the raw materials used by Naresh Kumar during June to December when he cultivates paddy. The above table also shows the cost per kg of all the raw materials

NOTE: Manure is available at no extra as Naresh Kumar have source for more than enough cow dung which is eventually serve as manure. Hence, he does not have to purchase it

Raw Materials	Amount in kg in 1 acre land	Total amount in kg in 20acre	Total cost in 20acre
Seeds	6	120	₹ 8,400.00
Urea	100	2000	₹ 14,440.00
DAP	60	1200	₹ 37,920.00
Pesticide	0.5	10	₹ 5,500.00
Manure	1500	30000	₹ 0.00

The above table shows all the raw materials along with amount in which they are used in Naresh Kumar's 20acres of land. A total of **Rs 66,260** is being spend on purchasing raw materials for cultivation of paddy by Naresh Kumar.

Analysis Process for above calculations: Here, **VLOOKUP**, formulas have been used for finding the cost of different raw materials

Reason for the analysis: As, we have to find how much this crop is generating revenue for Naresh Kumar, so will have to first find out the total spending on purchasing raw materials, which is

Work	Cost per acre in Rs	Total cost
Tillage	₹ 2,360.00	₹ 47,200.00
Planting	₹ 2,500.00	₹ 50,000.00
Grass Removal	₹ 1,700.00	₹ 34,000.00
L.C in Fert.	₹ 850.00	₹ 17,000.00
Manual Harves*	₹ 4,800.00	₹ 48,000.00
Harvester*	₹ 2,300.00	₹ 23,000.00
Irrigation	₹ 875.00	₹ 17,500.00
	Total cost =	₹ 236,700.00

Note: manual harvesting is done in only 10 acres of land. In remaining 10 acres of land, harvester is used

L.C in Fert. Stand for labor charge in fertilization

Grass removal in above table refers to labor change in removing grass from crops

Irrigation cost covers the electric bill charged by government for electric motor which is used for irrigation

The above table shows the different works required in cultivation of paddy along with their cost. The above clearly gives the total money spend on different types of works which estimates to

Total spends = spends on raw materials + spends on diff work

= Rs 66,260 + Rs 2,36,700

= Rs 3,02,960

Hence a total of **Rs 3,02,960** is needed for cultivation of paddy

Revenue generated by paddy (June to December)

Total amount of paddy grains from 1 acre of land = 2,000 kg

Total amount of paddy grains from 20 acre of land = **40,000 kg**

Selling price of 1 kg of paddy grains = Rs 22

Total revenue from paddy grains (20 acres land) = **Rs 8,80,000**

Naresh harvested his crop using harvester in only10 acres of land so, in there10 of land, there is no husk (by product of paddy crop, which can be used as folder for animals). But he also harvested paddy in 10 acres of his land using manual labor in which husk can be sold at good price

Total selling price of husk from 1 acre of paddy field = 4000(as conveyed by Naresh)

Total revenue generated by selling husk = 40,000

Total revenue generated from paddy cultivation

= Rs 8,80,000 + Rs 40,000

= Rs 9,20,000

Total profit from paddy cultivation = revenue generated – invested

= Rs 9,20,000 – Rs 3,02,960

= **Rs 6,17,040**

Analysis process for above calculation: here, simply unitary method calculations have been used for finding profit of Naresh

Reason for this analysis: we have to figure how much profit, Naresh is making from this crop, that's why these calculations have been made

Wheat (December to April)

Raw Materials	Cost per kg in Rs
Seeds	₹ 100.00
Urea	₹ 7.22
DAP	₹ 31.60
Pesticide	₹ 550.00

The above table shows the list of raw materials needed for cultivation of wheat crop by Naresh along with their cost per kg. **manure is not needed here because manure is needed once in a year only and Naresh has used manure during paddy season**

Raw Materials	Amount in kg in 1 acre land	Total amount in kg in 20acre	Total cost in 20acre
Seeds	70	1400	₹ 140,000.00
Urea	75	1500	₹ 10,830.00
DAP	60	1200	₹ 37,920.00
Pesticide	0.5	10	₹ 5,500.00
		Total cost =	₹ 194,250.00

The above table shows all the raw material along with the amount in which they are used in Naresh's 20 acre of land. A total of **Rs 1,94,250** being spend on purchasing raw materials for cultivation of wheat crop by Naresh

Analysis Process for Calculation: Here, VLOOKUP formula has been used for finding the cost of different material

Reason for the analysis: As, we have to find how much this crop is generating revenue for Naresh, so we will have to find out the total spending on purchasing raw materials, which is Rs 1,94,250

Work	Cost per acre in Rs	Total cost
Tillage	₹ 1,800.00	₹ 36,000.00
Planting	₹ 500.00	₹ 10,000.00
L.C in Fert.	₹ 850.00	₹ 17,000.00
Harvester	₹ 2,000.00	₹ 40,000.00
Irrigation	₹ 400.00	₹ 8,000.00
	Total cost =	₹ 111,000.00

L.C in Fert stands for labor charge in fertilization.

Irrigation cost covers the electric bill charged by government for electric motor which is used for irrigation

The above table shows the different works required in cultivation of wheat crop along with their cost. The above table clearly gives the total money spend on different types of work which estimates to Rs 1,11,000.

Total spends = spends of Raw materials + spends on diff work.

= Rs 1,94,250 + Rs 1,11,000

Hence a total of **Rs 3,05,250** is needed for cultivation of Wheat

Revenue generated by Wheat (December to April)

Total amount of wheat from 1 acre of land = 1300 kg

Total amount of wheat from 20 acre of land = 26,000 kg

Selling price of 1 kg of wheat = Rs 20.5

Total revenue from wheat (20 acres of land) = Rs20.5 x 26,000 kg

= **Rs 5,33,000**

Total profit from wheat cultivation = Revenue - Investment

= Rs 5,33,000 – Rs 3,05,250

= **Rs 2,27,750**

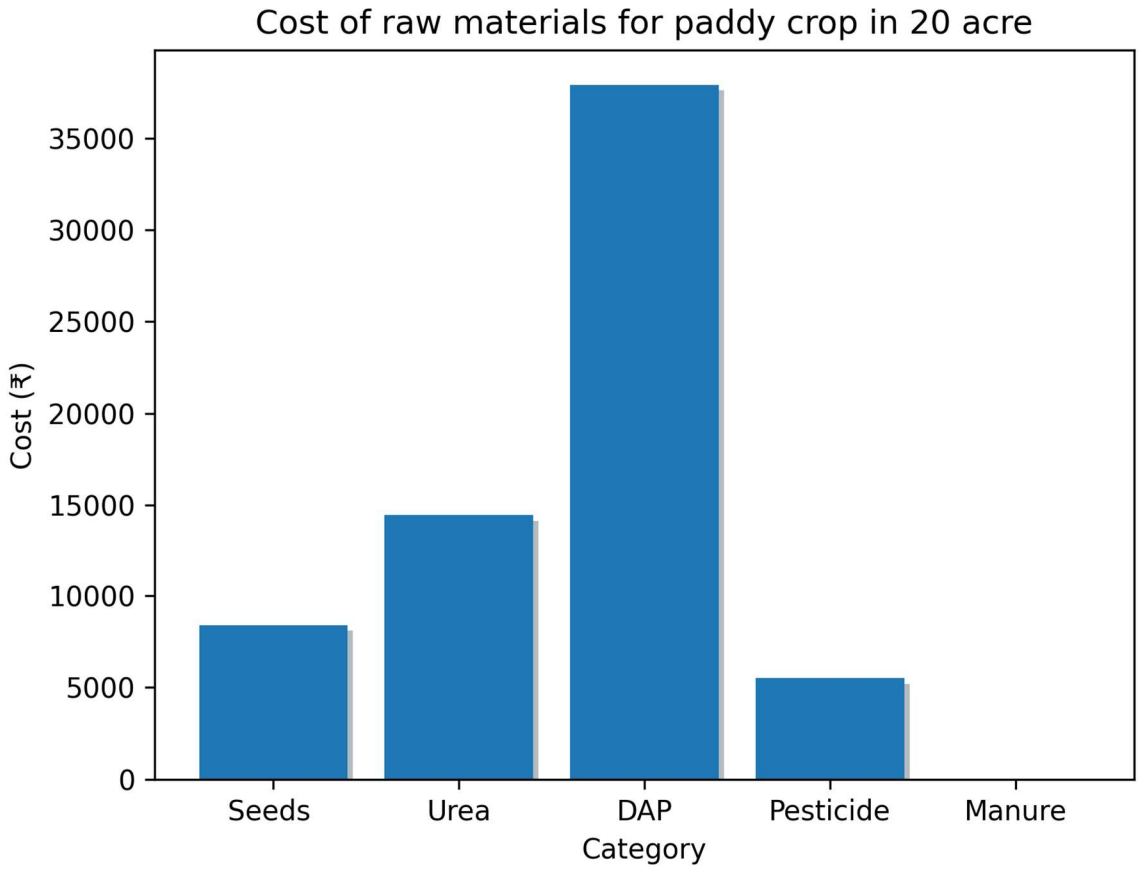
Analysis process for above calculation: Here, simply unitary method calculations have been used for finding out profit made by Naresh

Reason for this analysis: We have to figure out how much profit, Naresh is making from this crop. That's why these calculations have been made

Result And Findings

Graphical Representation for Paddy Crop

the below chart shows the cost of different raw materials which is being used by Naresh in cultivation of paddy crop

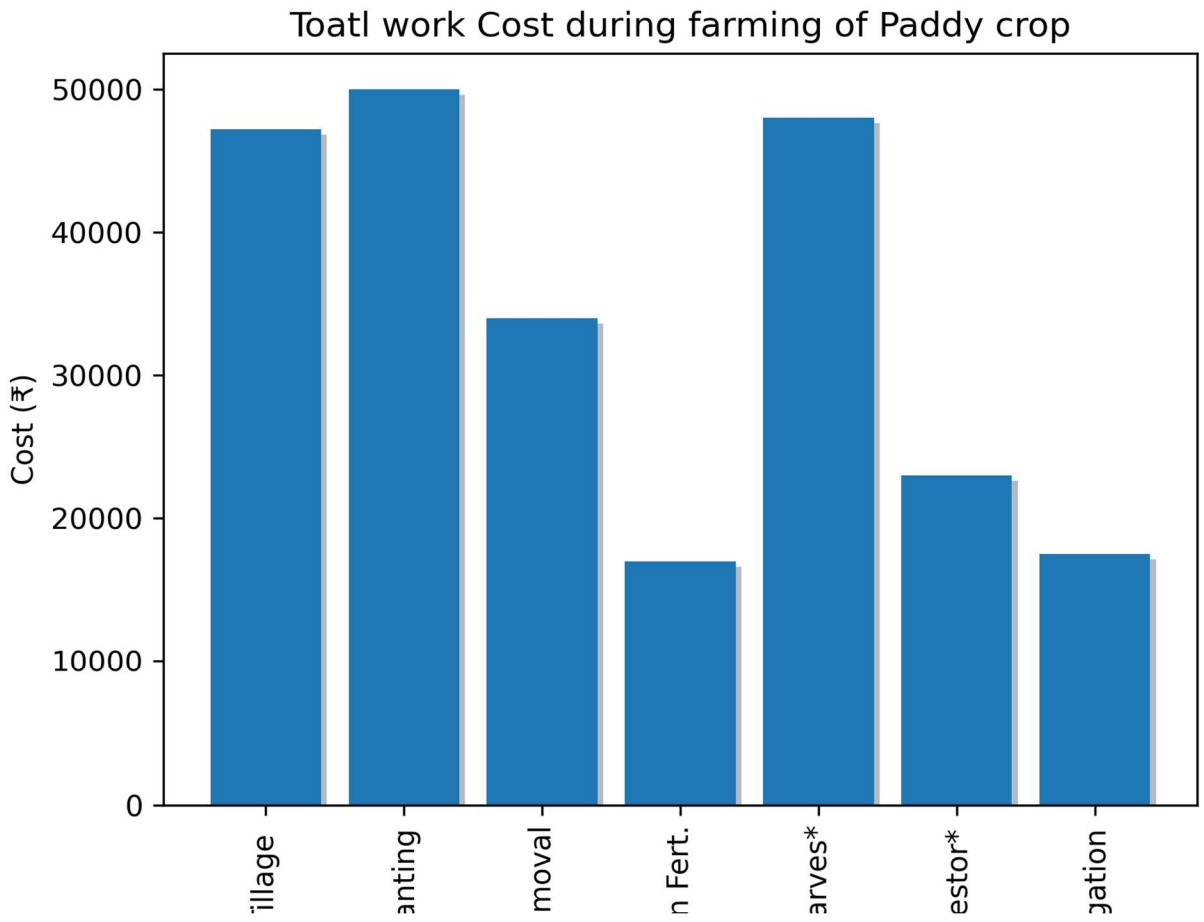


It can be seen clearly that cost of purchasing DAP is the highest one

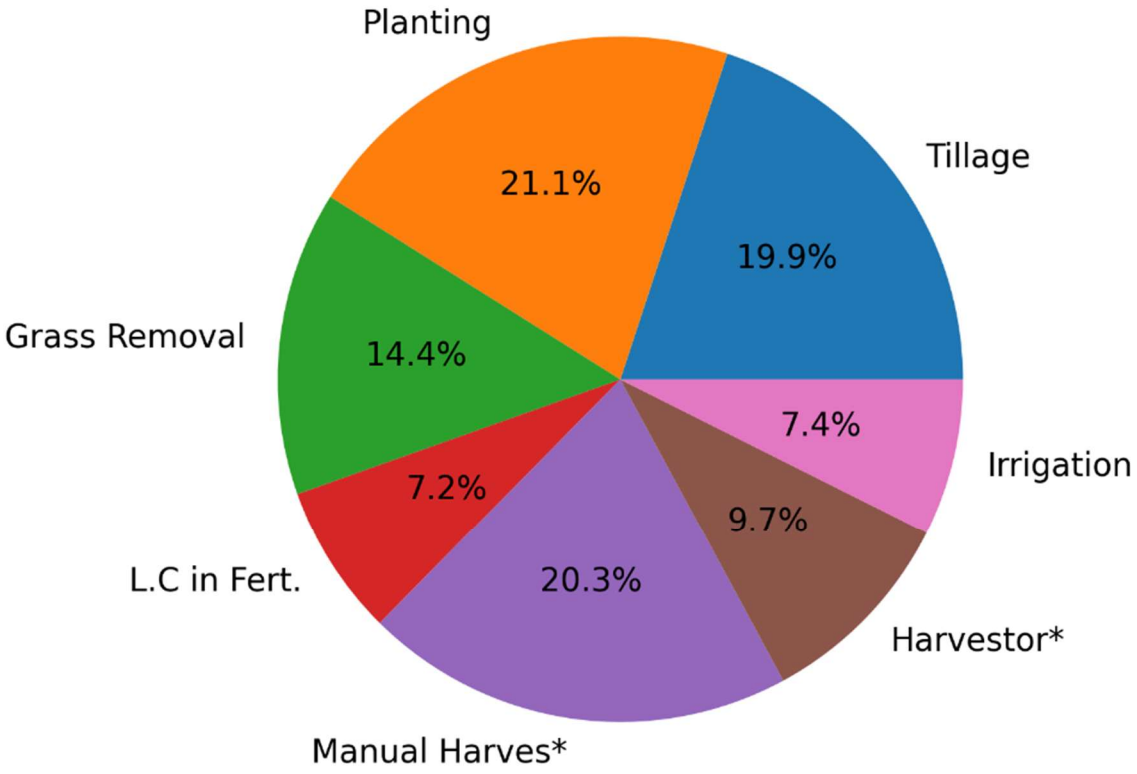
The cost of urea, seeds and pesticide is more or less same and far less than that of DAP

Hence from this graph, we can conclude that Naresh has to spend more on purchasing DAP

The below graph shows the total cost for different types of work needed for cultivation of paddy crop



From below pie-chart, we can clearly see the distribution of cost of different words which is done during paddy season.



Total per acre profit if harvesting is done using Manual Labor:

= (per acre profit from selling rice + per acre profit from selling husk) – per acre manual labor charge for harvesting

= (Rs 30,000 + Rs 4000) – Rs 4800

= **Rs 29,200**

Total per acre profit if harvesting using harvester:

= (per acre profit from selling rice + per acre profit from selling husk) – per acre manual labor charge for harvesting

= (Rs 30,000 +0) – Rs 4800 …… [no husk because of use of harvester]

= **Rs 25,200**

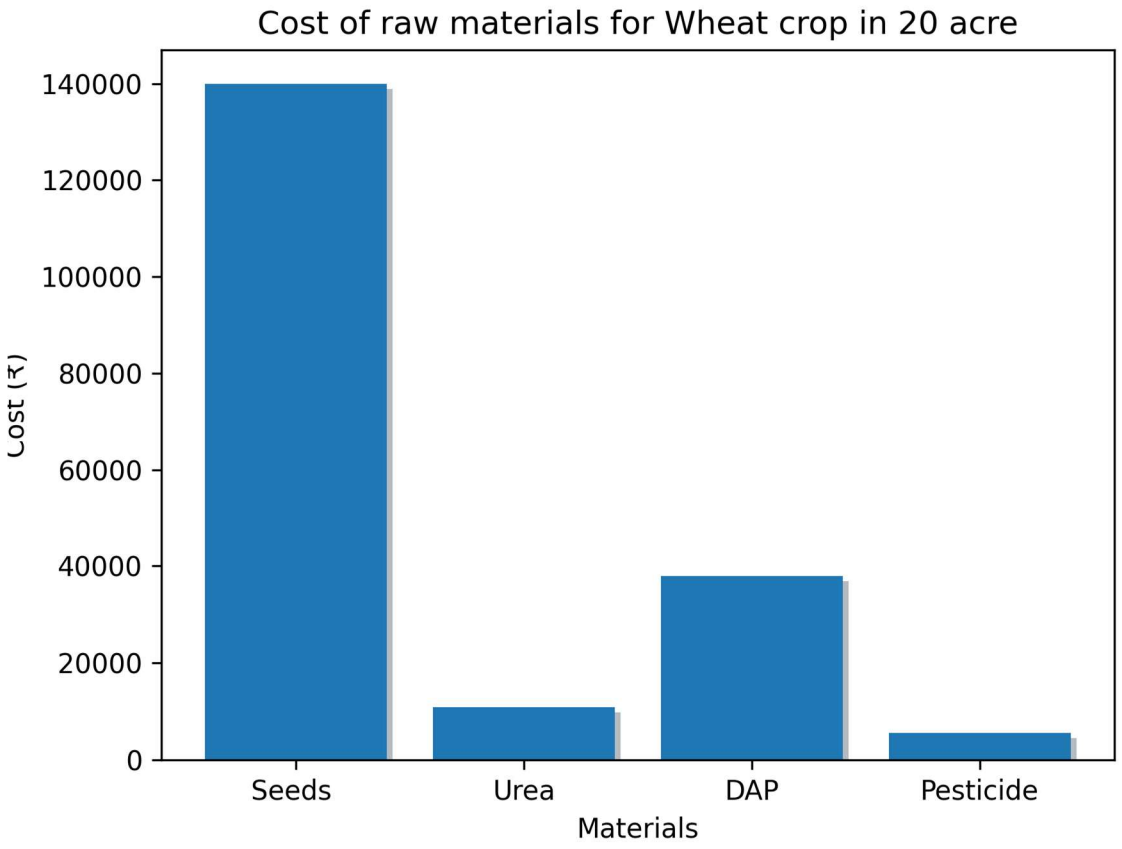
Analysis process for above calculation: Here, simple mathematical calculations have been used for finding per acre profit when harvesting is done using harvester/ manual labor

Reason for the analysis: We have to figure how much profit which method of harvesting (either modern technology lie harvester or traditional manual way) is profitable for Naresh. Here, we can see that manual harvesting is more profitable for Naresh

Graphical Representation of Wheat Crop

The below bar chart shows the cost of different raw materials which

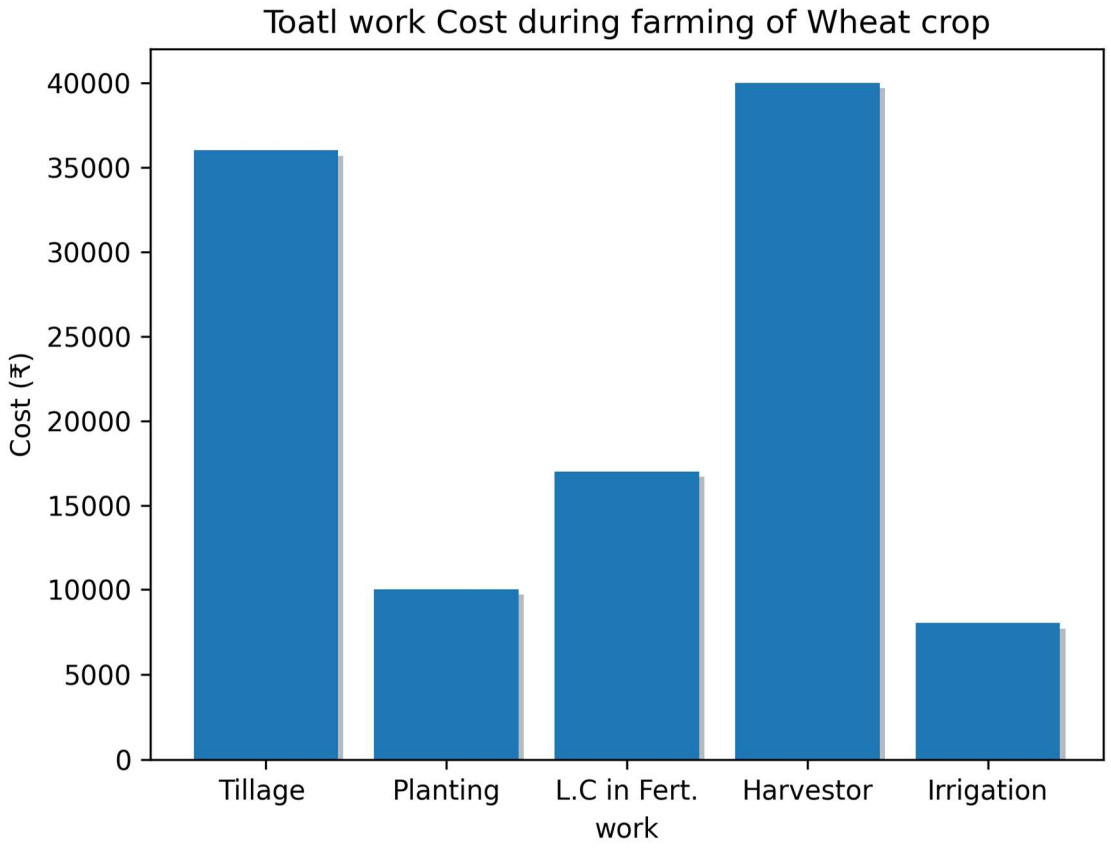
Is being used by Naresh in cultivation of paddy crop



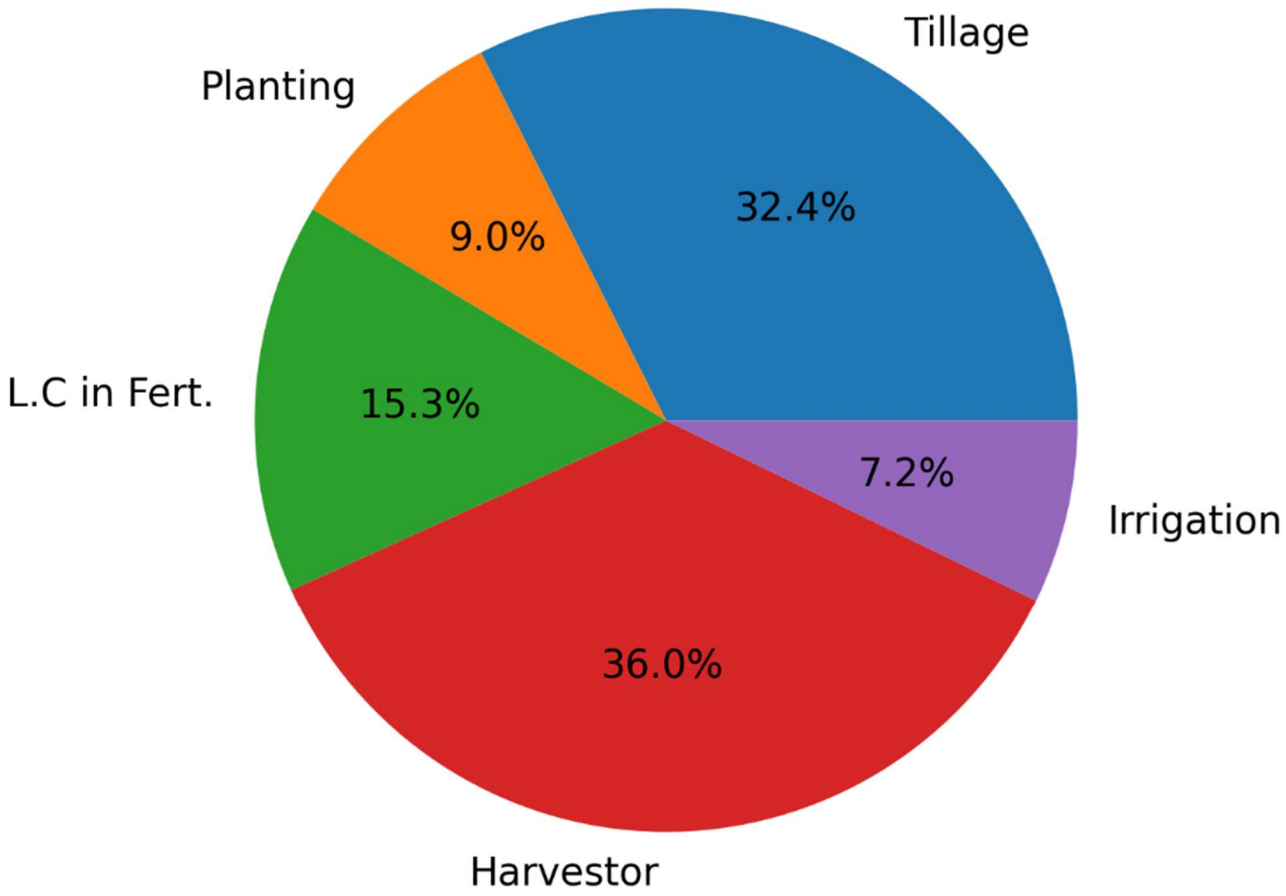
The cost of purchasing seeds is much higher than other raw material here

The cost of purchasing urea and pesticides is more or less same

The graph shows the total cost for different types of work needed for cultivation of wheat crop

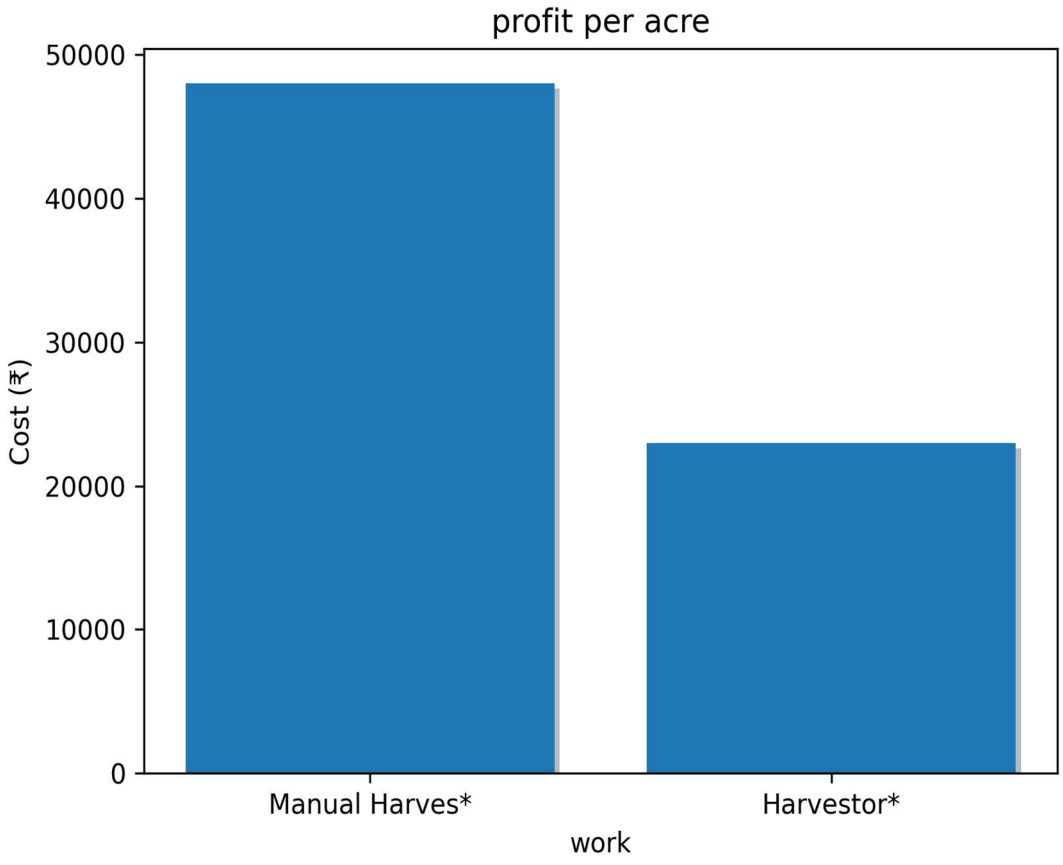


From below graph, we can easily see that, Naresh has to spend a large amount of money on harvesting and tillage during wheat cultivation period



Interpretation of Result and Recommendation

From the above analysis, we found that user of harvester for harvesting paddy crops is not useful / helpful for Naresh. This is clear from below graph too



Recommendation: Naresh should not use harvester, he should go with manual labor for harvesting his paddy crop

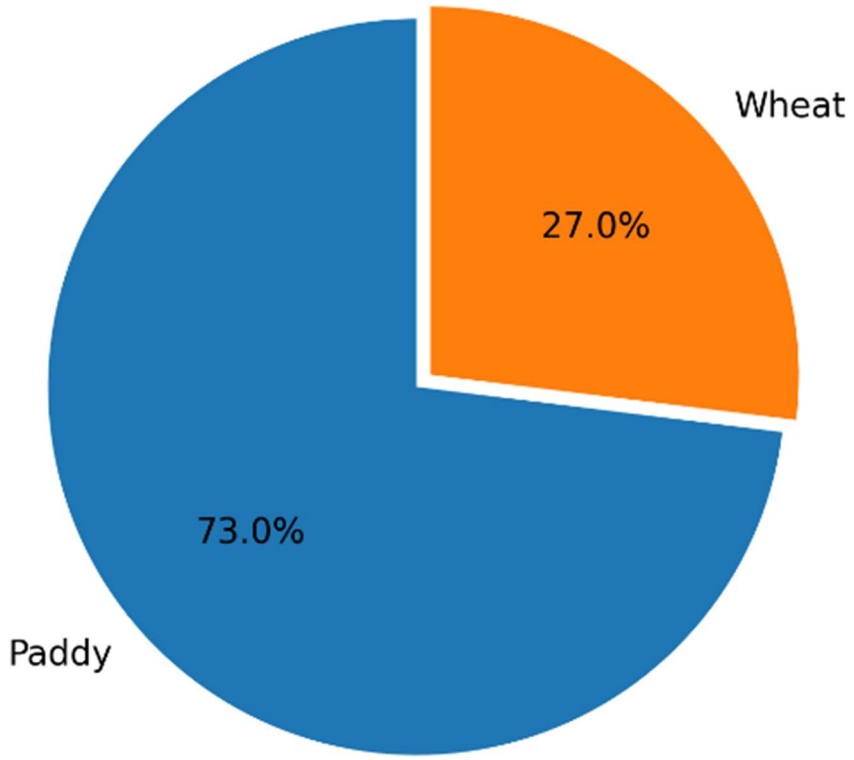
Recommendation: Naresh can also purchase his own tractor. This will help him in reducing the cost of tilling his field.

He can also earn money using tractors by tilling other's field

Other Question from Naresh's side

1. Which crop is generating more profit

- From below graph, it is clear that paddy is generating more profit than wheat



Other Actionables:

After analysis, we saw that a large amount of money has been spend by Naresh on labor charges for planting crops. There has been recent advancement in new technology in which the crops get planted at time of tilling the filled. So, he can save a large amount of money which he spends on labor charges

Naresh should also remain in touch with various distributors of fertilizers and pesticide and other medicine. Use of good fertilizers and pesticide can help him in increasing yield of his crops