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# Ponni Plantation

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This is a project very close to my heart , my family's estate was struggling financially and something had to be done. This project is a deeply researched ( mostly primary research ) compilation of all the problems facing the estate that stands in the path of success as well as the myriad of solutions that could be employed , with theoretical and practical realities of the mentioned solutions.

Along with the list of problems and solutions I have employed many of my solutions , such as a revised data management system , a new budgeting system as well as a few accounting instruments , all of which I have presented in my project.

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## Why Did I Take Up This Project ? History



The plantation was originally started by Mohammed Ali Khan in the 1920's and was eventually passed onto Mr. Ramesh Rai, the head of Mysore Plantations (our neighbouring plantation) who sold it to my grandfather, K. Satishchandra Hegde in the late 1970's. It has since been with our family.

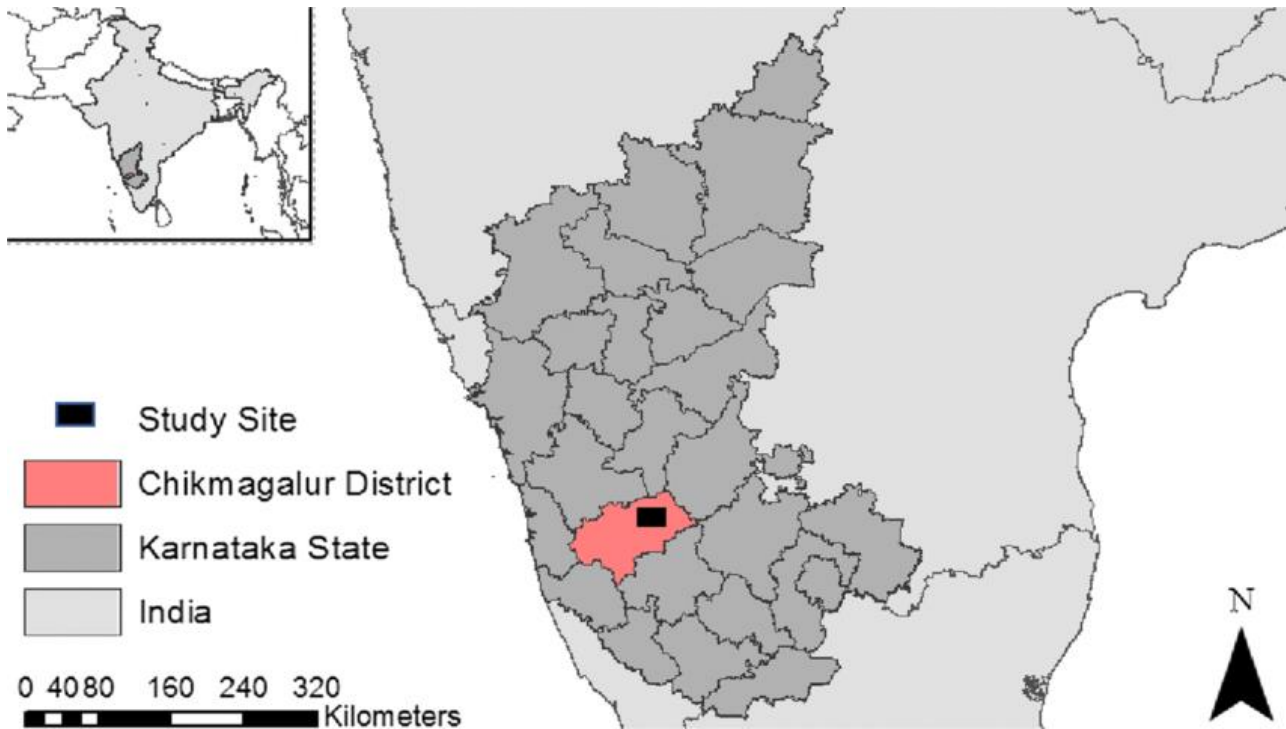
To reach our estate, one must traverse the steep "ghats" and reach the coffee growing town of Chikmagalur, from Chikmagalur, it's a one and a half car ride through foggy, sleepy hill towns surrounded by lush foggy and after navigating through the misty and narrow bends, you'll reach the paradise that is Koppa, finally reaching the estate.

This estate will always hold a special place in my heart, it was the place I'd spend every Summer, winter or Dusshera holidays, I've spent birthdays, it was the place I picked up sports, the first time I drove and most importantly collected innumerable unforgettable memories with family.

Hence, when my father mentioned that "at its current state it would only make to sell the place", my heart fell almost dropped out of my mouth, it was only natural. But, the fact of the matter was that the estate was truly suffering, gasping for breath and looked like it was breathing its last. Year of neglect,



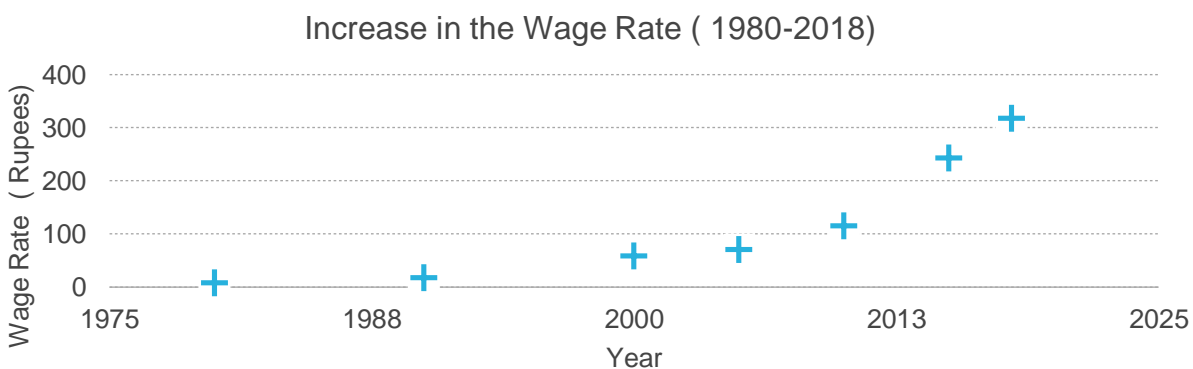
poor management and oversight and other external factors had been killing my paradise on earth. I decided that losing the estate was not a viable option for me , the very next day I passionately spoke to my father and argued the case that however bad the estate was , it



is never to late and to my surprise , he concurred.

Since then we have been working together to identify the problems and their myriad of solutions. I can unequivocally say that it has been one of the most gratifying experiences of my life. It availed the chance to go on field visits , visit customers and factories while also getting first hand experience in the operations of a real business , being that business been a lifelong interest of mine.

I was also able to interact with someone who has been a godsend to our family and de-facto mentor , Namitha Rao , granddaughter of Mr. Ramesh Rao. She is a very interesting lady who is part running Mysore Plantation , one of the biggest and most efficient estates in the area.



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## Key Problems Identified

**Water :** At this stage of the project it is important to prioritise the order of works based on its importance . However a main problem with the agriculture business is its reliance on water. In this business water comes before anything else and as mentioned in the first report the current climatic situation refuses to help our case. The rain levels have decreased approximately 45 % in the last fifty years. This statistic is an alarming cause for concern and it also means that new methods of water management must be implemented , and this is what is trying to be done in our estate. Not just our estate but all the estates in the surrounding area are going through the same problem. After a serious discussion with my grandmom who has been running the estate, my parents and MR. PK our general manager we came to a conclusion that our first and utmost priority right now should be on water.

After extensive talks with our manager and neighbouring owners during my visit I have understood that the rainfall boils down to three question , these three questions are : 1) How much water is needed ? , 2) When are the main times that they are needed ? and the most important question which is 3) How can this be done ?

My in depth report will entail cost effective ways to collect water such as localised irrigation which is the building of small but numerous tanks all over the estate rather than the existing method in which we have built a few large tanks. These tanks have numerous problems so I will look at ways to solve those problems. Other methods such as pipelines and technology will also be looked at. I will be giving a brief report on the costs of these new methods and its payback along with the possible budget.

**Labour/Manpower :** After water the next problem to be addressed would be the problem of labour and manpower. This remains a large problem in this business so we must analyse what the root of this problem to see where money can be saved and how it can be implemented. The problems to solve in this scenario are 1) How to get more workers ? , 2) how to save money on wages ? And 3) how many workers are really needed ? The answers to some questions may conflict with the answers to other questions but what is important is which option benefits us in the best way possible. Along with this a small part of mechanisation could be introduced to look at ways to save labour costs and increase efficiency . The graph below shows the rise in labour rates , the sudden rise from the early 2000's was due to the rapid industrialisation policies set in place post 1991, this resulted in rapid inflations in the late 2000's reaching double digits. The problem we face is that the commodities we grow have not risen as fast as the labour rates have risen , hence it is important to shift our production methods to more capital intensive methods rather than staying labour intensive.



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**Erratic prices of commodities :** This is a problem which is seemingly impossible to contain but there are solutions to decrease the effect of it when the prices are extremely low. The way to overcome this would be through supplementary income. By relying solely on coffee and tea for income would be highly risky due to high level of losses incurred during periods of low rates offered for these two commodities , to tackle this more patches of pepper and Areca nut could be grown. This would be helpful due to their prices remaining high enough to make profits due to Areca nut being an addictive good also making its price inelastic pepper continues to fetch a good enough price in the global market but its skyrocketing prices of the last 15 years continues to slow down. The value and demand for timber continues to be there and the estate has been planting silver oak trees and this tree manages to fetch a reasonable price. Additional to silver oak trees the neighbouring estate owner Ms. Namitha Rao spoke about planting mahogany trees which fetch incredible prices in the world market and also add more fertility to the soil which the silver oak trees haven't been doing as well. The introduction of tourism is an option with more city dwellers looking for a haven in rural India ideas such as home-stays remain as an option.

**Management practices :** this seems to be a very important part of the project because this helps decide the future of the estate and the way its run. The main problems that my parents and I have discussed lead us to the problem of the current accounting practices and how it could be improved to provide more clarity. The use of technology could greatly help help us owners who do not live in the estate but need to understand what is happening on a daily basis, to solve this we have looked into a software company called “ Ethota “ which will help us keep track of what is happening , this is part of the digitisation that needs to be done in the estate. However , in the short term we plan to implement basic software and technology such as computers to centralise our data management.

**Mechanisation /Technology:** the use of Technology/mechanisation in the estate is endless and could be applied to solve most of the problems mentioned in the above hence I do not feel the need to address mechanisation as another problem by itself as I feel that it serves as a solution to the other problems.

**Benchmark best in class practices :** This is nit a problem but more of a solution to the estate in general. By comparing our estates with the best estates in the area , state , country and internationally respectively we can see where our estates stand and if it is low it shows that there is scope for improvement.

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# Solutions

## Mechanisation

Using technology can be a huge advantage because it can increase productivity and efficiency and at the same time solve the problem of the diminishing workforce involved in agriculture but like everything that has its advantages will also have disadvantages. I have researched numerous tools that are used in agriculture all around the world but the tools that can be practically implemented are a few and this is an evaluation of all the tools I have researched.

These are the tools I have researched :

- Shearers
- Harvesters
- Power Sprayer
- Hedge Trimmer

### **Shearers :**

A shearer is a mechanical instrument which works like a scissor to cut the tea leaves.

**Cost :** 650 INR

### **Advantages**

- With the mechanical shearer a worker can cut upto 45 - 100 kg of tea leaves compared to the average of 40 - 50 kgs done manually.
- The cost of the machine is low compared to the time period in which the original costs can be covered.
- The maintenance costs are little to none.

### **Disadvantages**

- It has bad durability
- Lifespan of only 1-2 years
- We can only use it for upto 7-8 months in a year because excessive use results in a disease in plants called DieBack which can make the plant unviable for plucking.

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The disadvantages of the shearers are its low lifespan , poor quality and the fact that it can be safely used for 7-8 months a year however in this case the advantages of this are its considerably higher productivity , almost negligible maintenance cost and in the end the cost of the shearer is covered in two days time thus making it extremely profitable.

Using the shearer is highly profitable as seen in the cost data analysis however a problem that arises is the production . Using a shearer is productive compared to hand plucking but it is shadowed compared to the productivity of the harvesters.

## **Harvester :**

A harvester is another type of a machine that aids in cutting tea leaves.

### **Types of Harvesters :**

- Single Man Harvester
- Double Man Harvester



### **Single Man Harvester :**

Cost : Kissan Kraft ( Indian ) = 25,000 INR

Ochiai ( Japanese ) = 19,000 INR

Can also go upto 40,000 based on the company

Productivity :

- 300 - 500 kgs a day
- 2.5 workers per harvester



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- 0.25-0.35 ha per day
  - Per worker 120-160 kg a day ( avg )
  - 1.2 - 1.5 rounds of harvesting each month.

Cost data analysis :

By using three workers for each single man harvester the productivity comes up to 300 kgs a day on an average and when sold at 16 rupees per kg leads to a daily revenue of 4800 rupees , this leads to a monthly revenue of 1.2 million and an annual revenue of 3.6 million as the single man harvester can only be used for 3 months in a year. From this 3.6 million , 90,000 rupees gets deducted as the workers wages and the maintenance costs being negligible leads to us ending up with a profit of 2.5 million in a year and we will end up breaking even on this product in

Advantages :

- Machines such as the Japanese make Ochiai serves quite well without giving any problems and is better than its Indian and Taiwanese counterparts.
- Machines are not too heavy so they can be worked with by women as well , this does nit restrict us to the limited workers who are men.
- Can cover 0.25 - 0.35 ha in a day.
- Can pluck upto 300 - 600 kgs a day with three workers.
- If the workers pluck more than 300 kgs the average will be above 100 kgs per worker which is considerably larger than the shearers which have an average of 45 kgs a worker.

Disadvantages :

- Large initial investment of 60,000 rupees.
- The plucking interval in the machine harvested fields range from 18 - 22 days.
- Limited use of only 3 months a year is allowed.

Table - 2 Cost of harvesting with single man Vs. Shear harvesting

Harvesting	Plucking average	COP / kg Rs. No fringe	COP / kg Rs. With fringe
Shear harvesting	45 kg	31.01 (7.44)	48.04 (11.53)
Machine harvesting (8 - 9 months)	70% crop with MH @ 125 kg and 30% crop with shears @35 kg	24.36 (5.85)	34.58 (8.30)
Savings per kg of made tea / green leaf		6.65 (1.59)	13.46 (3.23)

Figures in parenthesis indicate the cost in green leaf per kg

- One harvester is needed for every 5 - 6 ha .

After conducting a cost analysis of the two methods it is evident that the surplus made using the automated method of tea plucking is considerably higher than the manual method.

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## High Volume Sprayer



A power sprayer is a tool which can spray fertilisers in a more rapid and efficient manner compared to a regular sprayer.

Advantages :

- It can spray fertilisers such as Blister spray , Mite spray and Zinc spray which are all pivotal in keeping the crops healthy.
- With the sprayer each worker can cover double the current the acreage they are covering with the sprayer. Thus the area that can be sprayed faster will increase.
- One machine can cover 8 times more area than a power sprayer.

Disadvantages :

- If the adjustable lance is kept loose it will discharge coarser droplets and will have a poorer efficiency of chemicals.
- The disc plate has to be replaced at least once a month.
- The engine and pump can support 4 lances but for practicality purposes most places use 2 lances.
- The Total costs can come upto 6.5 million including a tanker and tractor for two high volume

Economics of cost of spraying for high volume machine and motor blow is presented in Table-5. Initial investment for high volume sprayer inclusive of 6 rolls of hose, lances costs around Rs. 54,000, tanker with 3000 l capacity will be Rs. 1.20 lakh and LCV tractor which could be used for two high volume sprayers costing around Rs. 6.5 lakh. The saving achieved for red spider mite control per ha when compared to conventional motor blow is around Rs.663 per round. Considering the saving achieved when pest control is taken up with high volume sprayer the payback period for HVS with accessories will be when 80 ha of area covered. It works out to be 275 hectare when investment on high volume sprayer and tanker were considered.

Table-5 Cost of spraying per ha for high volume sprayer and conventional motor blow

Items of expenditure	Motor blow	HVS	Motor blow	HVS	HVS	Motor blow	
	Foliar application		RSM Control		Blister blight control		
Spray volume litre per ha	200	300	400	500	200	70	90
Task : 1.5 workers/PS and 2 worker per lance -HVS + one mixing worker (l)	300	3000	300	3000	1800	300	300
Area covered by a machine (ha)	1.0	10.0	0.8	6.0	9.0	3.1	2.8
No. of labour required per ha	1.07	0.60	1.87	1.00	0.60	0.45	0.58
Labour wage -inclusive of fringe benefits (Rs.)	536	301	938	501	301	225	289
Supervisor charges (Rs.)	67	60	117	100	60	28	36
Cost of fuel (Rs.)	169	39	296	65	39	68	91
Oil (Rs.)	20	17	35	29	17	9	11
Maintenance cost of sprayers (Rs.)	14	31	24	50	9	8	7
Total cost per ha excluding PP chemicals or foliar nutrients (Rs.)	805	448	1409	745	426	337	435

Type  
HVS  
Motor  
HVS  
Hand  
oper  
spray

sprayers , only the pump will cost 54,000 INR.



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## Hedge Trimmer :

Hedge trimmers could be used to enlarge plucking lanes which will make the pluckers job considerably easier and more efficient.



### Advantages :

- 1 acre with Hedge trimmer = 1 day , 1 acre manually = 2.5 - 3 days.
- Highly useful where machine harvesting is in practice since the lanes need to opened up twice a year.
- Approximately 30 % could be saved using a hedge trimmer compared to a manual trimmer.

### Disadvantges :

- Can cost between 8 - 15,000 thousand depending on quality.

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## HR Practices

1. **Management Changes** : The HR department is the backbone of any business and certainly played an integral role on the plantation. We were absolutely distraught by the death of Mr. Periyakaruppan , who passed away due to covid based complications but we had to move on. The immediate priority was to appoint a new manager , someone who aligned with our beliefs and plans for the plantation.

We interviewed three possible prospects for the job , the best prospect was Mr. Shivkumar. The characteristics that stood out in him were : drive , honesty and experience. He has more than 25 years of experience in the plantation business. He like ourselves believed in a complete but smooth revival and rejuvenation of the plantation. He was quick to suggest possible changes , such as - shade lopping , conversion of existing forest area into arable land , planting a larger amount of timber and improving the overall efficiency of the organisation.

2. **Incentives** : We used to rely on a fixed wage rate , the wages are around 350 - 450 rupees a day , it fluctuates based on season and level of labour , a labourer with machine experience would get paid higher than on without. To improve efficiency and productivity , we have implemented a mix of daily and output based wage system. We have set a base level expected from each labourer and any additional output would be accordingly rewarded.

3. **Data Management** : One of the key drawbacks of our plantation is that in the last decade or so we have lagged technologically , both in terms of machinery meant for field work , as well as office technology. Our reports would be conceived on paper and mailed on a periodic basis to counter this sluggish method , we have acquired a computers for the office in the plantation to prevent improve data collection and efficiency.

The excel sheet below is the new method we have employed. , the other photo is of the paper based method that has now been discontinued in favour of the excel sheet.

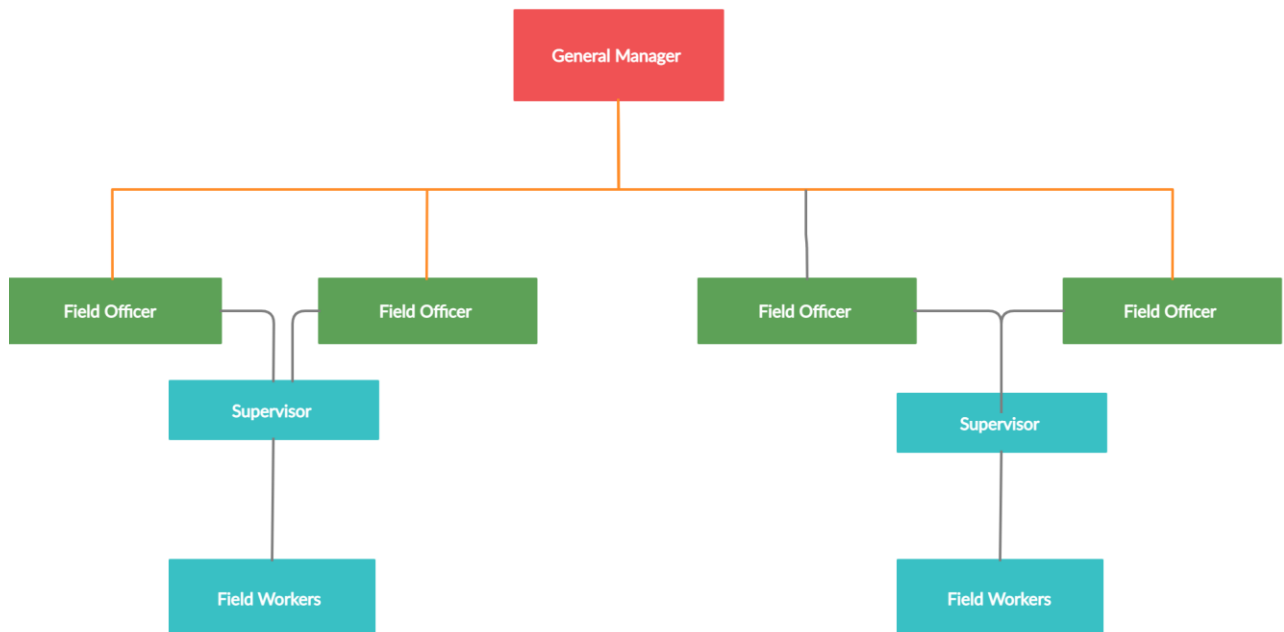
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#### 4. Organisational Structure :

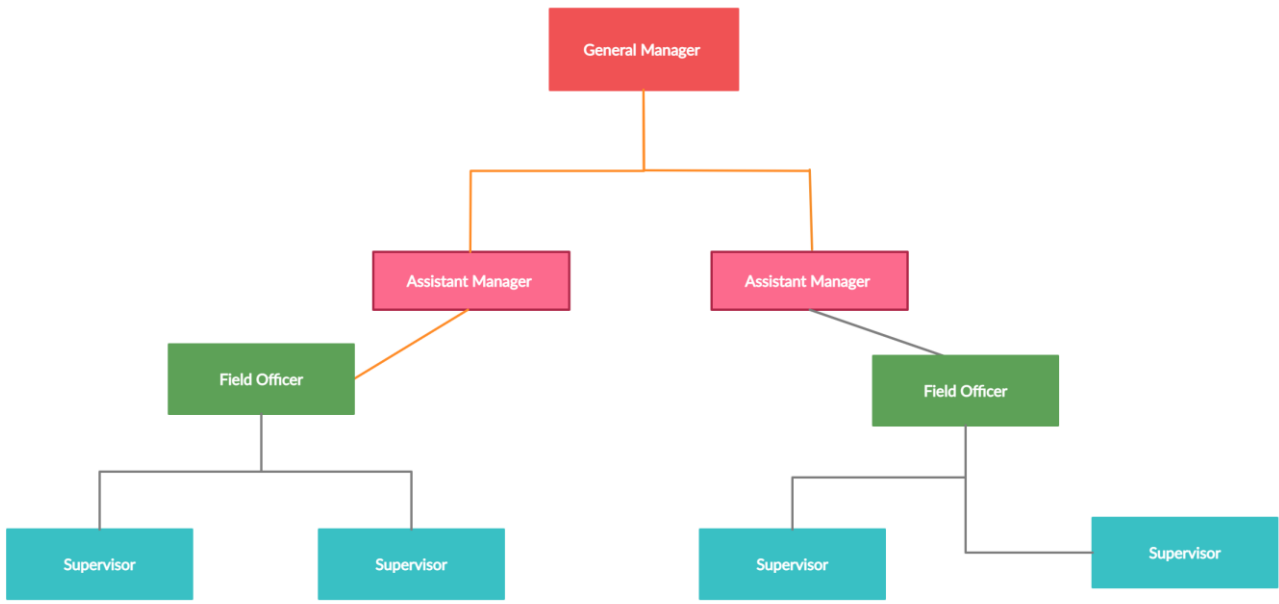
We implemented a management change , the past model ( fig.1 ) seemed to lack liability , the four field officers who rank just below the general manager , the level of accountability was low , this resulted in a sluggish administrative department.

The new model ( fig.2 ) was implemented to improve the otherwise low morale of our employees. Two field officers were promoted to the position of assistant manager and the new vertical hierarchy centralises responsibility which we hope will improve efficiency and accountability.

**Fig.1**



**Fig.2**





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## Water

### Background

In our estate we have recently built one main tank ( fig.3 ) which can hold upto 250 inches of rainfall , this can irrigate upto 250 acres of water using the estimate that one inch of rain can irrigate 1 acre of land. The dimensions of this tank is 160 x 200 x 38 ft.

### Advantages

- 1) If the tank reaches its full capacity of 38ft high then it can end up irrigating upto 250 acres of land which can double our yield in 3-4 years time.
- 2) It also can be utilised well in the summer seasons in which we can a huge shortage of water , but if this tank reaches its full capacity it would keep us safe enough in times of low rainfall.

### Disadvantages

However we face two problems with this , 1)The first being the cost of it , this tank costed us 2.75 million and this tank was not laced with concrete and with concrete the cost could quite possibly reach 10 million INR.

2) The fact that it hasn't been laced with anything makes it prone to leakage. The main problem we are facing with our current tank is that we have had leakages in the last couple of years with water leaking in the 18-19 feet point. Which doesn't allow us to use the tank to its full potential.

### Solutions

To solve the problem of leaking we have come up with a few solutions.

1)Another solution that we have implemented is applying a leak sealing putty called "Dammit" which costed 5 -6 hundred thousand INR. An advantage of this method is that it is reasonably cheaper than the other methods that are mentioned costing 5 hundred thousand INR . However a disadvantage is that it is too early to say if this method has been successful as it has been applied this season hence we need to wait for the end of monsoon to truly asses this method.

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2) Another idea has been covering the tank with a tarp. An advantage of the tarp is that it is an easier and faster application process. However a disadvantage with the tarp is that it will cost between 1.8 - 2 million INR which is considerably more expensive.

3) Another solution is the application of concrete onto the tank. The advantage of the application of concrete is that it will last 25-30 years if built properly. However a disadvantage is that it will cost 20 million INR to build it.

4) Another solution is the phase by phase application of concrete. An advantage of this is that the initial cost decreases considerably as compared to the initial 20 million we can split the construction of the tank over 7 years and instead of two crores at once it could be paid by 3 million INR each year , this reduces the strain of the large cash needed. However a disadvantage is that it still may not stop the leaking for a while because at this moment we are uncertain of the point through which the water is leaking from the tank.

The leakage in the main tank has resulted in a tank that is big , costly but not effective enough to irrigate the whole plantation. To tackle this solution , we have thought of using smaller tanks such as fig.4 to our advantage and instead of pursuing colossal construction projects that require high levels of capital , smaller tanks with a significantly lower investment would deem to be more practical. We have started construction of these tanks , these tanks would be situated based on gradient , by using the slopes on which our plantation resides , we can avail the aid of gravity to help fill our tanks and also irrigate fields.

Fig.4 is one such example of the smaller tanks , we hope to construct many more smaller tanks to reach a point of complete water self sufficiency through tanks.

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**Fig.3**



**Fig.4**



## Financials and Budget

Until now , there did not exist a comprehensive budget or even a professional system for the documentation of financials , all of this were either conducted on paper or done in a very shoddy method. I have prepared receipts and payment summary

- a. for 2020-21
- b. current year 2021-22 for 6 months
- c. Budget expenses
- d. Reporting format for Quantity, Rate and the bank and cash balances.

### Ponni Plantation Income & Expenditure

Particulars	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Total
<b>Income From Sale of :</b>													
- Tea Leaves	2,07,795	2,00,000	3,93,044	3,69,421	4,48,421	3,27,172	6,57,435	6,66,355	6,27,836	5,22,633	4,01,075	5,26,465	53,47,652
- Coffee Beans		12,95,000	13,18,464										26,13,464
- Pepper	4,77,400	1,94,775			5,10,000				3,41,000		13,17,900		28,41,075
- Areca			21,525				5,10,050		15,00,000	5,00,000			25,31,575
- Silver								1,00,000					1,00,000
													-
<b>Total Revenue</b>	<b>6,85,195</b>	<b>16,89,775</b>	<b>17,33,033</b>	<b>3,69,421</b>	<b>9,58,421</b>	<b>3,27,172</b>	<b>11,67,485</b>	<b>7,66,355</b>	<b>24,68,836</b>	<b>10,22,633</b>	<b>17,18,975</b>	<b>5,26,465</b>	<b>1,34,33,766</b>
<b>Expenditure :</b>													
Salaries & wages	5,17,611	6,78,317	6,47,552	10,05,148	7,89,805	5,88,944	6,66,108	6,00,148	7,78,963	12,23,613	10,45,430	8,54,605	93,96,244
Leave Wages		1,47,081											1,47,081
Diesel & Petrol	49,808	16,967	26,910	26,303	30,653	40,041	19,587		40,655	51,225	2,650	98,034	4,02,833
PF		1,02,871	64,126	41,747	46,540	54,042	51,927	51,851	49,086	50,182	50,937	46,226	6,09,535
Copper Sulphate & Lime			58,400		55,000		11,750						1,25,150
Manure & Chemicals		2,37,360	30,232	2,27,000			2,00,762		3,93,740				10,89,094
Electricity Charges			39,628	12,591	7,226		18,332		81,319	34,646	1,55,030	24,760	3,73,532
Pick-up, Jeep									17,560		30,000		47,560
Tractor									6,110	1,902			8,012
Medical Bills		29,574							6,169				35,743
Tea Sheards & Bags			15,000	4,482			5,120						24,602
KPA & Upasi							80,158						80,158
Machine & Tools		36,800					24,290	5,612	19,257	7,798			93,757
Bonus								2,90,890	4,815				2,95,705
Bank Charges							5,119	1,239		295		445	7,098
<b>Total Expenditure</b>	<b>5,67,419</b>	<b>12,48,970</b>	<b>8,81,848</b>	<b>13,17,271</b>	<b>9,29,224</b>	<b>6,83,027</b>	<b>10,83,153</b>	<b>9,49,740</b>	<b>13,97,674</b>	<b>13,69,661</b>	<b>12,84,047</b>	<b>10,24,070</b>	<b>1,27,36,104</b>
<b>Net Surplus / (Deficit)</b>	<b>1,17,776</b>	<b>4,40,805</b>	<b>8,51,185</b>	<b>-9,47,850</b>	<b>29,197</b>	<b>-3,55,855</b>	<b>84,332</b>	<b>-1,83,385</b>	<b>10,71,162</b>	<b>-3,47,028</b>	<b>4,34,928</b>	<b>-4,97,605</b>	<b>6,97,662</b>



**Ponni Plantation  
Income & Expenditure**

Particulars	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Total April to Sep 2021	Estimate for Oct 21 to Mar 22	Total for FY 2021-22
<b>Income From Sale of :</b>									
- Tea Leaves	4,72,611	4,46,776	4,22,585	5,52,565	3,21,937	2,65,436	24,81,910	33,00,000	57,81,910
- Coffee Beans	12,30,000	12,30,000		14,30,000	20,55,067		59,45,067		59,45,067
- Pepper	7,90,000						7,90,000	22,00,000	29,90,000
- Areca		2,75,040					2,75,040	35,00,000	37,75,040
- Silver Oak							-	1,00,000	1,00,000
							-		-
<b>Total Revenue</b>	<b>24,92,611</b>	<b>19,51,816</b>	<b>4,22,585</b>	<b>19,82,565</b>	<b>23,77,004</b>	<b>2,65,436</b>	<b>94,92,017</b>	<b>91,00,000</b>	<b>1,85,92,017</b>
<b>Expenditure :</b>									
Salaries & wages	5,56,626	4,21,116	6,45,012	9,18,209	9,96,445	11,01,433	46,38,841	51,68,808	98,07,649
Leave Wages	1,63,347						1,63,347	-	1,63,347
Diesel & Petrol	69,753	77,496	28,973	71,583	80,499	40,338	3,68,642	4,00,000	7,68,642
PF	49,744	47,075	39,215	41,503	45,764	48,712	2,72,013	2,75,000	5,47,013
Copper Sulphate & Lime		1,72,218					1,72,218		1,72,218
Manure & Chemicals		1,57,283		2,34,730	49,636		4,41,649	4,82,797	9,24,446
Dolomite	41,600		28,605	29,019			99,224	50,000	1,49,224
Electricity Charges		21,465	4,202				25,667	50,000	75,667
Pick-up, Jeep		13,373	65,256		6,990		85,619	1,00,000	1,85,619
Tractor				44,405		41,605	86,010	1,00,000	1,86,010
Bungalow Repair		4,635			99,827		1,04,462	50,000	1,54,462
Medical Bills							-	-	-
Tea Sheards & Bags			23,486				23,486	-	23,486
KPA & Upasi							-	-	-
Machine & Tools					9,650		9,650	25,000	34,650
Bonus							-	3,00,000	3,00,000
Bank Charges							-		-
<b>Total Expenditure</b>	<b>8,81,070</b>	<b>9,14,661</b>	<b>8,34,749</b>	<b>13,39,449</b>	<b>12,88,811</b>	<b>12,32,088</b>	<b>64,90,828</b>	<b>70,01,605</b>	<b>1,34,92,433</b>
<b>Net Surplus / (Deficit)</b>	<b>16,11,541</b>	<b>10,37,155</b>	<b>-4,12,164</b>	<b>6,43,116</b>	<b>10,88,193</b>	<b>-9,66,652</b>	<b>30,01,189</b>	<b>20,98,395</b>	<b>50,99,584</b>

## Ponni Plantation Expenditure Budget

Particulars	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22		Total
<b>Tea</b>								
- Leaf Shearing	550	585	750	450	500	550		3,385
- Wedicide Spray	47							47
- Blisten Spray	73	37						110
- Folier Spray		73	73	73	73	73		366
- Manuring	92							92
- Shade Regulation	155							155
-Irrigation				50	50			100
-Lane Cutting	50							50
								-
								-
<b>Total Man days</b>	<b>966</b>	<b>695</b>	<b>823</b>	<b>573</b>	<b>623</b>	<b>623</b>		<b>4,304</b>
Rate Per day	360	360	360	360	360	360		360
<b>Total Tea Cultivation Cost</b>	<b>3,47,832</b>	<b>2,50,128</b>	<b>2,96,352</b>	<b>2,06,352</b>	<b>2,24,352</b>	<b>2,24,352</b>		<b>15,49,368</b>
<b>Coffee :</b>								
- Slash Weeding	700							700
- Wedicide Spray	350	350						700
- Manuring	150							150
- D. Suckering								-
- Jungle Growth	200							200
- High Shade	1,250							1,250
- Creepr Removal								-
-Soil Sample Collect		50						50
- Miscellaneous	15	15	15	15	15	15		90
- Road & drains		100	100					200
- Crop Picking				1,200	2,400	1,200		4,800
- Drying Yard				175	350	175		700
- Irrigation				125	125			250
- Manager Bunglow	31	30	31	31	28	31		182
- MD Bunglow	31	30	31	31	28	31		182
								-
Pepper upkeep	50	50	55					155
Picking						445		445
Drying Yard								-
								-
Areca Planting								-
								-
<b>Total Man days</b>	<b>2,777</b>	<b>625</b>	<b>232</b>	<b>1,577</b>	<b>2,946</b>	<b>1,897</b>		<b>10,054</b>
Rate Per day	360	360	360	360	360	360		360
<b>Total Coffee Cultivation Cost</b>	<b>9,99,720</b>	<b>2,25,000</b>	<b>83,520</b>	<b>5,67,720</b>	<b>10,60,560</b>	<b>6,82,920</b>		<b>36,19,440</b>

Chemicals & Fertilisers	Urea	MOP	R.Phosphate	Glycel	Wetting Agen	Blister	DAP	
- Coffee	7,250	5,075	10,875	350	35			
- Tea	3,558	1,982	2,440	60	38	100	406	
<b>Total</b>	<b>10,808</b>	<b>7,057</b>	<b>13,315</b>	<b>410</b>	<b>73</b>	<b>100</b>	<b>406</b>	
<b>Rate Per Kg</b>	<b>6</b>	<b>20</b>	<b>8</b>	<b>280</b>	<b>186</b>	<b>290</b>	<b>30</b>	
<b>Total Chemicals &amp; Fertiliser Co</b>	<b>64,848</b>	<b>1,41,846</b>	<b>1,06,520</b>	<b>1,14,800</b>	<b>13,563</b>	<b>29,040</b>	<b>12,180</b>	<b>4,82,797</b>
<b>Total Cultivation Cost Budget</b>	<b>14,12,400</b>	<b>6,16,974</b>	<b>4,86,392</b>	<b>8,88,872</b>	<b>12,98,475</b>	<b>9,36,312</b>	<b>12,180</b>	<b>56,51,605</b>

64,90,828  
1,21,42,433

## New Data Management

**Data Management :** One of the key drawbacks of our plantation is that in the last decade or so we have lagged technologically , both in terms of machinery meant for field work , as well as office technology. Our reports would be conceived on paper and mailed on a periodic basis to counter this sluggish method , we have acquired a computers for the office in the plantation to prevent improve data collection and efficiency.

The excel sheet below is the new method we have employed. , the other photo is of the paper based method that has now been discontinued in favour of the excel sheet.

The overall benefits of the new data management system were :

1. It created a ready and easy dashboard for the management to review performance
2. Transparency , the digitalised system prevents malpractice and fudging of documents which could plague the plantation. This is especially important for us as we don't reside in the plantation.
3. Accountability , a more organised and categorised data system makes it easier to set targets and place accountability on employees.

### New System :

PONNI PLANTATIONS. SIDDARABAN ESTATE. Weekly progress report.					
From 22-10-21 To 28-10-21.					
WORK HEAD.	FIELD NO's	WORKER S	ACRES	QUANTUM	REMARKS
Bungalow's		13			Mgr & MD's
Creches		6			Assam gang
Lab line upkeep		6			
Road & Drain		4	19		
Miscellaneous		16			Fencing & Boundery
Manual weeding	6	10&	55	22.5	
Chemical weeding	1,6,2,4,B-4&5	102	69	74.5 Brls	
D-Suckering		13	34	9.5	
TEA shearing	Bbit,99,2000,KNR,HLN	174		7460kgs	Avg 42.87kgs
Folier spray	98, Bbit& Knr	7	9	3.5Brls	
Blister spray	93,Knr.	6	11	5Brls	
<b>TOTAL</b>		<b>438</b>			





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## Future

At this stage of my project , our goals , challenges and realities have become stark and are clear enough for me to list out our goals for the near future.

1. While our overall goal is to become the most efficient and profitable estate in Koppa , this is a dream that could possibly take a decade or more to materialise , but , at the same time the ultimate goal can only be accomplished by the completion of smaller goals.

Commodity	Current Production	2 Year Production Target
Coffee	50 - 60 Tonnes	100 Tonnes
Tea	220,000 Kilograms	1,000,000 Kilograms
Areca Nut	800 Quintals	1300 Quintals
Pepper	4 Tonnes	10 Tonnes

2. We would also want to shift our reliance on labour to more capital intensive methods , such as the possible use of drones , more harvesting machines for all our commodities , devices used to check soil water and chemical levels for a more frugal use of water and fertiliser among others.

3. In the near future , we would want to have a more advanced software reporting system that tracks absolutely everything onto a centralised software system. From detailed block wise reports on a daily basis , daily attendance , daily picking , drying and harvesting reports and many more , we believe that this system would improve transparency allowing us to highlight smaller but crucial problems.