

# Joint Inspection Team (JIT) Report of National Horticulture Mission Scheme for Karnataka State

## Karnataka State



## INDEX

Sl.No	Topic	Page No.
1.	General Observation of JIT	3
2.	Introduction	4
3.	Field Visits	
(i)	Visit to Bangalore Urban District	7
(ii)	Visit to Kolar District	9
(iii)	Visit to Hassan District	20
(iv)	Visit to Mandya District	32
(v)	Visit to Ramanagara District	38

### Team members:-

1. Dr. H.V.L. Bathla, Chief Consultant (NHM), DAC, MOA, GOI, New Delhi
2. Dr. Krishna Manohar, Principal Investigator PFDC, GKVK Bangalore
3. Dr. C Somashekar, Chief Scientific Officer, UAS, GKVK, Bangalore
4. Representative, SHM, Department of Horticulture, Bangalore

### Dates of Visit:-

07.02.2014 to 13.02.2014

## General observations

- The Tissue Culture Labs established in private sector in Bangalore Urban district are doing good work and producing G-9 Banana planting material. The owner of these labs are technically qualified. The Bio control lab is also doing very good work and the production is being marketed without any problem.
- Department officers in Bangalore Urban district informed that seven ratoon crops of G-9 banana has been taken by some farmers. The JIT suggested to bring out success story in such cases giving relevant data, photographs and cultivation practices adopted by these farmers.
- Departmental officers need to be deputed for exposure visit to Centre of Excellence for vegetables, Gharaunda (Haryana).
- Rejuvenation of senile mango orchards need to be taken up on priority basis
- Beneficiaries need to be trained in pruning and training of mango plants / trees.
- Sign board with details of activity and NHM logo need to be displayed, wherever, not available.
- Success stories for Coconut Frond Chopper and Bio digester need to be prepared.
- Refresher courses need to be arranged for implementing officers.

## Introduction

### Geography

Karnataka is located in the western half of the Deccan plateau. The State extends to about 750 km from north to south and about 400 km from east to west. It has four physiographic regions viz., Northern Karnataka Plateau (largely includes the Deccan Trap covering districts of Bidar, Belgaum, Gulbarga and Bijapur with elevation ranging between 300 to 600 meters), Central Karnataka Plateau (covers districts of Chitradurga, Raichur, Chikmagalur, Dharwad, Shimoga and Bellary i.e., Tungabadra region with an elevation between 450 to 700 meters), Southern Karnataka Plateau (includes districts of Bangalore, Hassan, Kodagu, Bangalore Rural, Mandya, Mysore, Kolar and Tumkur with elevation of the region is estimated to be 600 to 900 meters) and Karnataka Coastal Region (Western Ghats, edges of the Karnataka Plateau, covering Uttara Kannada and Dakshina Kannadadistricts).

### Geographical details:

- **Area:** 190.50lakh ha.
- **Gross Cropped area:** 125.63 lakh ha.
- **Net cropped area:** 98.466 lakh ha.
- **Irrigated area:** 12.82lakh ha.
- **Area under Horticulture:** 19.82lakh ha.
- **Location:** 74° to 78° East longitude and 11° to 18° Northlatitude,
- **Boundaries:** Arabian sea to the West, Goa and Maharashtra in the North, Tamil Nadu and Kerala in the South and Andhra Pradesh to the East,
- **Population:** 6.10cores and with density of 275 per km<sup>2</sup> (2011 census),
- **Rate of Literacy:** 75%,
- **Number of Districts:** 30.

## **Climate**

Karnataka state enjoys a salubrious climate throughout the year. Weather in the state is however dynamic and changes from place to place owing to its altitude, topography and its distance from the sea. It will be influenced by four major seasons such as winter season (December to February), the summer season (March to May), monsoon season (June to September), and post-monsoon season (October to November).

The southwest monsoon accounts for almost 80% of the rainfall the state receives. The annual rainfall across the state ranges from 50 to 250 cm. The districts of Bijapur, Raichur, Bellary and Southern half of Gulbarga experience the lowest rainfall ranging from 50 to 60 cm, while the west coast region and Malnad enjoy the highest rainfall.

## **Soil and irrigation facility**

Depending on the agricultural capability of the soil, the soil types in the state are divided into six types viz., red, lateritic, black, alluvial, forest and coastal soils.

Karnataka accounts for about 6% of the country's surface water resources. Around 60% of this is provided by the west flowing rivers, while the remaining comes from the east flowing rivers. There are 7 river basins all formed by the Godavari, Cauvery, Krishna, west-flowing rivers, South Pennar, and Palar.

## **Potential of Horticulture in Karnataka:**

Karnataka is regarded as the “Cafeteria of Horticultural Crops” given the suitability for cultivation of various horticultural crops. The current area and production of horticulture crops is estimated to be around 19.82 lakh hectares and 158.53 lakh tons respectively, with an average productivity of about 7.99 tons per hectare. There is a big scope to promote area under Horticulture crops and output mainly focusing on yield levels. Though the horticulture sector in the state has witnessed a phenomenal growth in the last five decades, there are abundant opportunities for further growth, especially in areas like productivity improvement, quality enhancement, hi-tech horticulture, protected cultivation, precision farming, etc. Horticulture sector is an important source of livelihood for as many as 12 lakh farming households in the state.

## Area and production of major horticultural crops in Karnataka

(Area in '000 ha & Production in MT)

Year	Fruits		Vegetables		Spices		Plantation crops		Flowers		Aromatic plants	
	Area	Prodn	Area	Prodn	Area	Prodn	Area	Prodn	Area	Prodn	Area	Prodn
<b>2004-05</b>	230.8	3339.9	234.0	2466.3	216.3	458.5	759	495.0	16.9	138.7	1.2	4.8
<b>2005-06</b>	233.4	3515.6	267.4	4638.0	196.9	472.4	698	407.0	19.0	115.5	1.2	14.7
<b>2006-07</b>	252.2	3786.6	263.9	4719.2	210.5	461.2	724	450.0	21.4	182.2	0.8	8.3
<b>2007-08</b>	259.8	3975.9	271.8	4955.2	216.8	453.7	746	425.0	22.0	191.3	0.9	8.7
<b>2008-09</b>	289.5	4482.0	257.6	4098.1	207.3	517.0	721	412.0	27.0	199.8	1.7	15.0
<b>2009-10</b>	360.2	5962.7	436.9	7063.0	266.4	1097.1	805	442.0	26.83	195.5	0.2	16.2
<b>2010-11</b>	353.7	6133.4	437.9	7379.7	257.2	999.1	820.7	477.3	27.9	196.4	1.7	17.8
<b>2011-12</b>	371.8	6428.1	454.7	7662.5	268.6	1039.4	855.3	498.6	28.8	201.6	1.8	18.0

### Source: Department of Horticulture – GOK

Karnataka state has an equal distribution of key horticultural crops such as major Fruits in about 3.71 lakh ha and Vegetables in 4.55 lakh ha. The area under major Spices is also significant at about 2.69 lakhs ha followed by flowers and Aromatic crops with about 0.29 and 0.018 lakh ha respectively. In terms of output, major Fruits & Vegetables accounts to 64.28 and 76.62 lakh tons, respectively.

Total income generation from horticulture sector is estimated at around Rs. 24,000 crores (40% of the combined agricultural income with only about 15% of area, which indicates the highly remunerative nature of hort crops). This can further be increased to about Rs. 30,000 crores per annum (the most “likely scenario 2” at constant price).

## Bangalore Urban District



### Field Visit

#### 1. BIG BANIAN BIOTECH PVT LTD:

The tissue culture lab is in operation and has produced 6 lakh G-9 variety banana having a proposal to produce 14-15 lakh G-9 Banana plants per year.

- Technical person is also in position
- In view of lot of demand in the area the TC lab has also started production of Teak and ornamental plants viz *Phyllodendron zandu*
- Some plants of Banana lying there had calcium deficiency and the owner told JIT that these have been purchased by some farmer but he has not lifted the plants for last two weeks. The owner was advised by JIT to tell the farmer to lift the plants immediately and until that time proper care should be taken by the owner.
- DG set need to be installed immediately.

## **2. METABOLITES TECHNOLOGIES PVT. LTD**

- TC lab has started producing the planting material of G-9 banana, 6 types of ornamental plants , papaya and beans
- The owner is a technical person with Ph.D. in Biotechnology.
- The TC lab has reduced the target for G-9 banana because of lesser demand.

## **3. BIOCONTROL LAB**

- This lab is producing TRICHODERMA, PSEUDOMONAS, POSPHORUS and METABOLIZING BACTERIA. Total production is about 7100 kg per month with no marketing problem.
- The lab is well maintained.

## **4. NOVEL BIOTECH LAB**

Owner of this laboratory is herself a graduate and worked in similar biotech lab viz- SPIC.

- This lab is approved and registered with DBT.
- Production started from July 2013 and so far has produced 2.5 lakh plants which have been sold at the rate of Rs 11/- per plant including transportation.
- Hardening structure is also well maintained.
- Has future plan for production of turmeric and pomegranate plants and also ornamental plants with export potential.

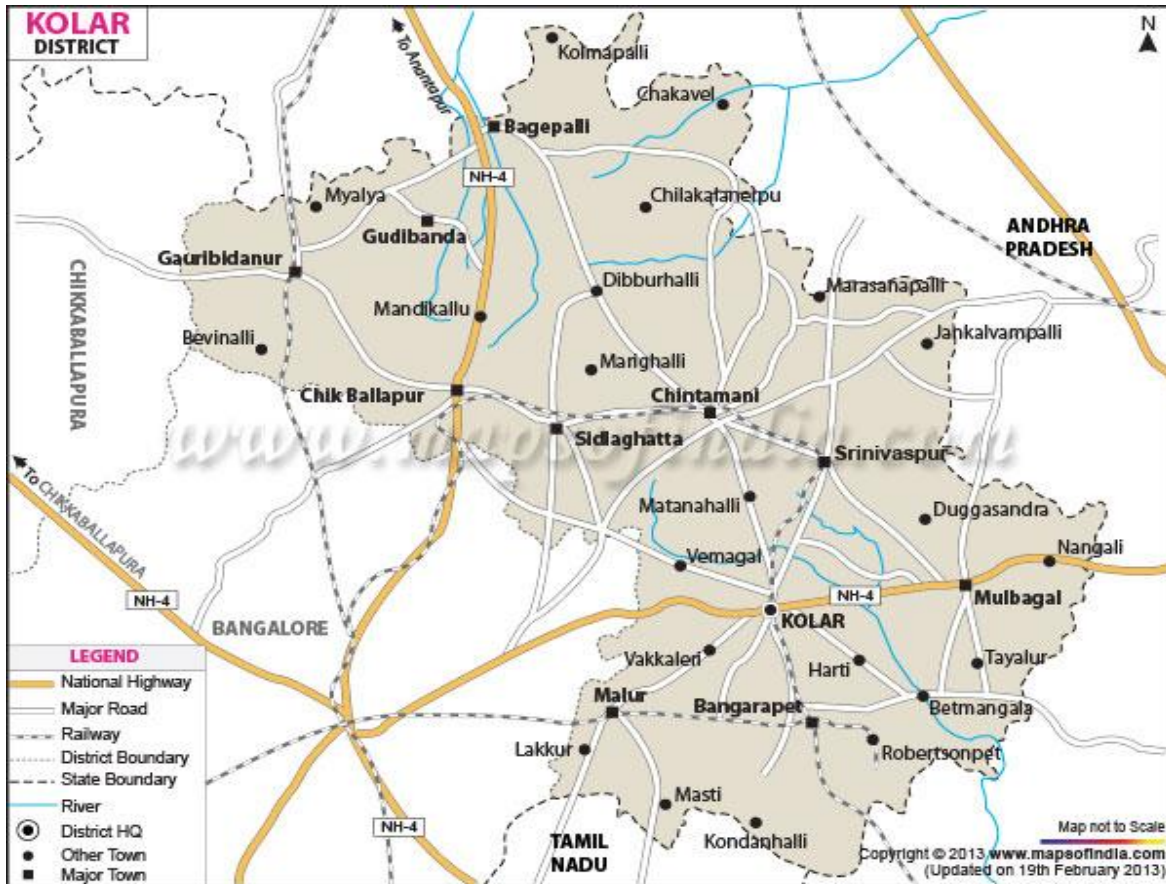
## **5. HINDUSTHAN MUKTHA CASHEW PROCESSING UNIT**

The capacity of the plant is 60 ton per month.

- They are selling the cashew kernels in different forms like granules and bitts as per demand from companies viz ITC,BRITANNIA, AMUL and others.



## District Kolar



### Introduction

Kolar district though termed as backward industrial district, has made considerable progress in horticulture. District comprising of 5 taluks namely, Bangarpet, Kolar, Malur, Mulbagal and Srinivasapura. The total horticulture area is 106262 hectares which comprises 46.07 of the total cultivable area of district.

Kolar district comes under Eastern dry zone of Karnataka and covers total geographical area of 230635 hectares, among these cultivable area covers about 194619 hectares. Among cultivable area Horticulture crops grown in an area of 106262 hectares.

Agro climatic condition of the district is highly suitable for cultivation of most of the horticulture crops and district receives an average rainfall of 734 mm, maximum rainfall receives in the month of June and July. Major Horticulture crops grown in the district are fruit crops like Mango, Papaya, Guava Sapota and Banana Carrot, Radish, Tomato, Cabbage and Cauliflower. Spices like Tamrind, Coriander and Drychillies. Plantation crops like Coconut, Cashew nut and Betel vine and Flower crops like Aster, Crossandra, Jasmine, Marry Gold, Rose, Chrysanthemum, other crops.

Name of the District : Kolar  
 Geographical Area : 3749661 hectares  
 No. of Blocks/ Taluks : 5 Namely  
 Bangarpet, Kolar, Malur, Mulbagal, and  
 Srinivasapur.  
 No. of Villages : 1797  
 Total Population : 1387062  
 Normal average Rain Fall in : 734 mms

### Size of Holdings

Sl.	Size of Holdings	No.	Area
A	Marginal farmers (Below 1 ha)	122723	56619
B	Small farmers (Between 1 & 2 ha)	47455	66493
C	Semi Medium farmers (Between 2 & 4 ha)	22901	60285
D	Medium farmers (Between 4 & 10 ha)	7632	42921
E	Large farmers (More than 10 ha)	789	11395

### Field Visit Beneficiary No.1

Sr. No.	Details	Remarks
1	Name & address of Beneficiary whose field visited.	G Papareddy S/O Chikkagangappa, Nadupalli (Vi), Kolar (Ta & Dist)
2	total land available with the beneficiary (ha).	1.20
3	Crop Cluster under which covered.	3920 m <sup>2</sup> Poly house, PCFV RKVY
4	Name & variety of crop planted.	Rizwan Colour Capsicum
5	Source of planting material.	By own nursery
6	Number of planting material.	(16000 ready to plant)
7	Number of plants planted/ rejuvenated.	NA
8	Date of plants which survived (also indicate percentage survival).	NA
9	Total amount of subsidy assistance due	Rs1832000/-

	to the beneficiary as (Rs.)	
10	Amount paid and date of payment.	Rs 1832000/- & 08-02-2014
11	Mode of payment.	Ac Pay Cheque
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Borewell
13.	Whether Drip/ Sprinkle System in use.	Drip
14.	Other inputs provided.	Nil
15.	Whether assistance available for Organic Farming	No
16	If so, area covered	2013-2014, PCFV RKVY
17.	Assistance available	Chennai koyambedu, Kolar APMC
18.	Available marketing facility for the crop.	Chennai koyambedu, Kolar APMC
19.	Other infrastructure available in the vicinity.	Nil
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	Good
21.	Any other relevant observation by the JIT.	Informed on proper closing of insect entry holes

## Observations

- Poly house of 3920 sq. m
- The financial support is provided under RKVY. Construction is complete with installation of drip irrigation also.
- The farmer is planning to go for capsicum cultivation.
- Observed about 2-3 inches of gap below the entrance door and also on sides of door which needs to be rectified.
- The plastic film used for structure covering has to be patched up where ever it is torn.

## Beneficiary No.2

### Vegetable seedlings raising shade net house (JIT)

**Farmer name & Address: Papired dy S/O Chikkagangappa, Nadupalli Village, Kolar taluk and District**

Sr. No.	Details	Remarks
1.	Name of the project:	Vegetable seedling nursery
2.	Year of Implementation :	2009 – 2010

3.	Project Period:	2009 – 2010
4.	Name of Implementing Agency:	NHM
5.	Location of project:	Nadupalli (Vi), Kolar (Ta)
6.	Total project cost:	Rs 120000/-
7.	Amount Released by DAC:	50000/- (1000 m2)
8.	Expenditure incurred:	118000/-
9.	Status of project:	
	• Name of Nursery and crops for which plants are produced:	Sri Sai Venkateshwara nursey, Vegetable seedlings
	• Name of the crops for which seeds produced:	Tomato, Cabbage, Cauliflower etc.,
	• Quantity produced:	1010000 per anum
	• Quantity sold:	1000000 per anum
	• Rate:	0.50 paise (avg)
	• Amount realizes through sale:	Rs 150000/-
	• Whether NHM logo displayed:	NO

### Observations

- This is Shade net house for raising nursery of different vegetables.
- .Sign board is not displayed.

### Beneficiary No.3

Sr. No.	Details	Remarks
1	Name & address of Beneficiary whose field visited.	A P Narayanaswamy S/o Papanna, Abbani (Vi), Kolar (Ta & Dist)
2	total land available with the beneficiary (ha).	3.2 hec
3	Crop Cluster under which covered.	4000 m <sup>2</sup> Poly house, PCFV RKVY
4	Name & variety of crop planted.	Rizwan Colour Capsicum
5	Source of planting material.	By own nursery
6	Number of planting material.	12000

7	Number of plants planted/ rejuvenated.	8.9.2013
8	Date of plants which survived (also indicate percentage survival).	11000
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	Rs1600000/-
10	Amount paid and date of payment.	Rs 1600000 & 22-12-2013
11	Mode of payment.	Ac Pay Cheque
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Borewell
13.	Whether Drip/ Sprinkle System in use.	Drip
14.	Other inputs provided.	Nil
15.	Whether assistance available for Organic Farming	No
16	If so, area covered	2013-2014, PCFV RKVY
17.	Assistance available	Chennai koyambedu, Kolar APMC
18.	Available marketing facility for the crop.	Chennai koyambedu, Kolar APMC
19.	Other infrastructure available in the vicinity.	Nil
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	Good
21.	Any other relevant observation by the JIT.	Informed on proper closing of insect entry holes

## Observations

- The poly house of 4000 sq. m area with 6 month old colored capsicum crop. Growth is satisfactory. The beneficiary informed that the crop will continue for another 3 months.
- Produce is being sold at Rs 30-40 per kg at the farm itself. The beneficiary is satisfied with the rate and also technical support by the Department of Horticulture.
- Sign board including NHM logo not displayed.
- The gap below the door and sides has to be covered up.

### Beneficiary No.4

#### Vegetable seedlings raising shade net house (JIT)

**Farmer name & Address: A P Narayanaswamy S/o M Papanna, Village,  
Kolar taluk and District**

Sr. No.	Details	Remarks
1.	Name of the project:	Vegetable seedling nursery
2.	Year of Implementation :	2011-12
3.	Project Period:	2011 – 12
4.	Name of Implementing Agency:	NHM
5.	Location of project:	Abbani (Vi), Kolar (Ta & Di)
6.	Total project cost:	Rs 125000/-
7.	Amount Released by DAC:	57500/- (1000 m <sup>2</sup> )
8.	Expenditure incurred:	120000/-
9.	Status of project:	
	• Name of Nursery and crops for which plants are produced:	Papanna Nursery, Vegetable seedlings
	• Name of the crops for which seeds produced:	Tomato, Cabbage, Cauliflower etc.,
	• Quantity produced:	1210000 per anum
	• Quantity sold:	1200000 per anum
	• Rate:	0.50 paise (avg)
	• Amount realizes through sale:	Rs 170000/-
	• Whether NHM logo displayed:	NO

#### Observations

- This is Shade net house for raising of nursery for different vegetable crops.
- Sign board is not displayed.

### Beneficiary No.5

Sr. No.	Details	Remarks
1	Name & address of Beneficiary whose field visited.	Narayanappa S/o Krishnappa, Kodiramasandra / Kallipura (Vi), Kolar ( Ta & Dist)
2	total land available with the beneficiary (ha).	2.00 hec
3	Crop Cluster under which covered.	Papaya Area Expansion Programme
4	Name & variety of crop planted.	0.72 hectare, Papaya (Red lady)
5	Source of planting material.	Ananthapura
6	Number of planting material.	2000
7	Number of plants planted/ rejuvenated.	05-08-2013
8	Date of plants which survived (also indicate percentage survival).	1650
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	16200/-
10	Amount paid and date of payment.	16200/-
11	Mode of payment.	Ac Pay Cheque
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Borewell
13.	Whether Drip/ Sprinkle System in use.	Drip
14.	Other inputs provided.	Nil
15.	Whether assistance available for Organic Farming	No
16	If so, area covered	No
17.	Assistance available	NHM AEP
18.	Available marketing facility for the crop.	Buyers from North India Local markets
19.	Other infrastructure available in the vicinity.	No
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	Average
21.	Any other relevant observation by the JIT.	Diseases and Nutrition management aspects

### Beneficiary No.6

Sr. No.	Details	Remarks
1	Name & address of Beneficiary whose field visited.	Narayanappa S/o Krishnappa, Kodiramasandra / Kallipura (Vi), Kolar ( Ta & Dist)
2	total land available with the beneficiary (ha).	2.00 hec
3	Crop Cluster under which covered.	Drip for Papaya crop
4	Name & variety of crop planted.	0.72 hectare, Papaya (Red lady)
5	Source of planting material.	Ananthapura, Andra Pradesh
6	Number of planting material.	2000
7	Number of plants planted/ rejuvenated.	02-08-2013
8	Date of plants which survived (also indicate percentage survival).	1650
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	50802/-
10	Amount paid and date of payment.	50802/-
11	Mode of payment.	Ac Pay Cheque
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Borewell
13.	Whether Drip/ Sprinkle System in use.	Drip
14.	Other inputs provided.	Nil
15.	Whether assistance available for Organic Farming	No
16	If so, area covered	No
17.	Assistance available	Micro Irrigation System
18.	Available marketing facility for the crop.	Buyers from North India & Local markets
19.	Other infrastructure available in the vicinity.	No
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	Good
21.	Any other relevant observation by the JIT.	Diseases and Nutrition management aspects



## Observations

- Eight months old red lady papaya in 0.72 ha with drip irrigation supported under NHM. The crop is good.
- JIT advised the farmer to provide nutrients since some deficiency symptoms were observed.
- Beneficiary was advised to keep the plot free from weeds.
- Advised to keep eco friendly atmosphere by removing plastic waste like broken crates etc. from the field.

### Beneficiary No. 7

Sr. No.	Details	Remarks
1.	Name of the project:	"MG-6 FRUITS and VEGETABLE WHOLE SALE MARKET (INDIA) Pvt. Ltd.,"
2.	Year of Implementation :	2013-14
3.	Project Period:	2012-13 & 2013-14
4.	Name of Implementing Agency:	"MG-6 FRUITS and VEGETABLE WHOLE SALE MARKET (INDIA) Pvt. Ltd.,"
5.	Location of project:	Kappalamadagu village & post, Kasaba (Hobli), Mulbagal taluk, Kolar Dist., Karnataka State.
6.	Total project cost:	20 Crores
7.	Amount Released by DAC:	
8.	Expenditure incurred:	15 Crores
9.	Status of project:	Market started functioning from 19 <sup>th</sup> July, 2013
	<ul style="list-style-type: none"> <li>• Size of market in terms of Area</li> </ul>	5 Acres (Wear House-1,08,000 Sq.ft., 24-Mandies and 24-Godowns)
	<ul style="list-style-type: none"> <li>• Facilities created</li> </ul>	Wear House, Cold storage, Mandies, Godowns, Administrative block, Canteen, Electronic weighing system, Bank building, Farmers guesthouse, Retail outlet-sale/display, CC cameras, Rain water harvesting structures (5 lakh ltrs.), Information center, Public address system- market information, pesticide shop sale point, Grading

		yard..... etc.,
	• Commodities sold	Mainly Tomato, followed by Beans, Cabbage, Cauliflowers, Cucumbers, Chilies..... etc.,
	• Approachability	6 K.M. from Mulbagal taluk/town, located near to NH-4 (Bangalore-Chennai Highway )
	• Condition of market	In-working condition with daily arrivals of around 300MT of vegetables
	• Whether funds disbursed to Agency	

### Observations:

- MG-6 Farm fresh whole sale market Pvt. Ltd for fruits and vegetables
- The market has started functioning with 24 agents but bank branch, fertilizer shop, retail fruit shops yet to be made functional. There is provision for farmers stay also.
- JIT suggested to have provision for electronic auctioning. It was informed that presently there is no provision for electronic auctioning of the produce.

### Photographs



**JIT inspecting Mr G Papareddy S/O Chikkagangappa' Poly house at Nadupalli Village, Kolar taluk & District on 10-02-2014**



**JIT inspecting Mr. G Papareddy S/O Chikkagangappa' Vegetables seedlings raising shade net house at Nadupalli Village, Kolar taluk and District on 10-02-2014**



**JIT inspecting Mr A P Narayanaswamy S/o Papanna' Poly house at Abbani Village, Kolar taluk & District on 10-02-2014**



**JIT inspecting Mr. Narayanappa S/o Krishnappa's Papaya AEP & Drip at Kodiramasandra Village, Kolar taluk & District on 10-02-2014**

## District Hassan



### Introduction

Latitude : Between	: 12° 13' and 13° 33' North
Longitude : Between	: 75° 33' and 76° 38' East
Longest length from South to North	: 129 kilometers
Longest breadth from East to West	: 116 kilometers
Number of Taluks	: 8
Number of Hoblies	: 38
Number of Villages	: 2369 villages
Geographical Area	: 6,62,602 Hectares
Population	: 17.76 lakhs
Total Horticulture Area	: 1,73,474 Hectares
Average Rainfall	: 1014 mm

**Area of horticulture crops grown in Hassan district**

<b>CROP</b>	<b>AREA (Ha)</b>
COCONUT	63055
ARECANUT	4598
OTHER PLANTATION CROPS (Excluding Coconut, Arecanut, Coffee & Tea)	421
FRUITS CROPS	9312
VEGETABLE CORPS	28115
FLOWER CROPS	681
SPICES CROPS	27303
SUB TOTAL OF HORTICULTURE CROPS (Excluding Coffee & Tea)	133485
COFFEE	38760
TEA	1229
<b>TOTAL OF HORTICULTURE CROPS</b>	<b>173474</b>

**Field Visit**

**Beneficiary No.1**

**Protected Cultivation under NHM Taluk: Channarayapattna**

<b>Sl. No</b>	<b>Details</b>	<b>Remarks</b>
1.	Name of the project	Development of Hi Tech Vegetable Seedling nursery unit
2.	Year of Implementation	2011-12
3.	Name of Beneficiary	C.A. Parvathi W/o Shri. C.S. Adishesha Kumar



4.	Location of Project	Baragur, CR Pattna.
5.	Total Project Cost	12.89 Lakhs
6.	Subsidy Given	4.22 Lakhs
7.	<b>Status of Project</b>	
	• Name of Nursery and crop for which plants are produced	Hi Tech Vegetable Seedling nursery unit
	• Quantity produced	8 Lakhs Seedlings per Year
	• Quantity sold	7 to 8 Lakhs Seedlings
	• Rate	@ Rupees 0.5 to 1.25
	• Amount realized through sale	8 to 10 lakhs
	• Whether NHM logo displayed	Yes

## Observations

- The area under vegetable cultivation is increasing in few taluks like Hassan, Chennarayapattana and Beluru and Arasikere Taluks of Hassan district. Also, as a result of which the farmers need quality seedlings of improved varieties / hybrids in time for planting to get a good crop.
- Some of the farmers are taking this benefit to supply quality planting material by raising them under protected condition of shade net houses by availing financial support under NHM.
- The Naturally ventilated polyhouse established by one of the beneficiaries as hi-tech vegetable seedling nursery unit of 2000 sq m size of which 1000 sq m. is by availing the subsidy and remaining 1000 sq m. from own funds is catering to the needs of the vegetable growers by way of raising and supplying the quality seedlings of vegetables like tomato, chillies, brinjal and capsicum and also cole crops like cabbage, cauliflower and knoll-khol at affordable prices by the farmers. The owner of the polyhouse informed that some of the farmers provide the seeds of their choice vegetable and variety themselves and take the seedlings after the required period of 25-30 days.

- It was informed that there are about 70 such nurseries in the district and meeting 90 per cent of the demand of vegetable seedlings by the farmers.
- The nursery is maintained very well by utilizing the skilled labour

### Beneficiary No.2

#### Area Expansion and MIS Taluk: Channarayapattna

Sl. No	Details	Remarks
1.	Name and address of Beneficiary whose field visited.	Puttaswamygouda S/o Kalegouda Kaggantikaval Hiresave Hobli
2.	Total land available with the beneficiary (ha)	7.00 Hectare
3.	Crop Cluster under which covered	Coconut
4.	Name & Variety of crop planted	Arasikere Tall
5.	Source of planting material.	02
6.	Number of planting material.	-
7.	Number of plants planted.	-
8.	Date of plants which survived (also indicate percentage survival)	-
9.	Total amount of subsidy assistance due to the beneficiary as (Rs)	31500-00
10.	Amount paid and date of payment	31500-00 CNo-023347 Date:17/01/2014
11.	Mode of payment	Directly credited to the beneficiary's account
12.	Source of Irrigation Water (Bore well/Tube well/Canel)	-
13.	Whether Drip/ Sprinkle System in use	Yes, Drip (Rs.31420/-)
14.	Other inputs Provided.	Coconut frond chopper
15.	Whether assistance available for organic forming	No

16.	If so, area covered	-
17.	Assistance available	-
18.	Available marketing facility for the crop	Local
19.	Other infrastructure available in the vicinity	APMC, CR Pattna, Road
20.	General upkeep of the plot / Machinery Very good/ Good/ Average/ Poor.	Good
21.	Any other relevant observation by the JIT	

### Beneficiary No.3

#### Area Expansion and MIS Taluk: Channarayapattna

Sl. No	Details	Remarks
1.	Name and address of Beneficiary whose field visited.	Thimmegouda S/o Rangegouda Kuruvanka, Kasaba Hobli.
2.	Total land available with the beneficiary (ha)	0.75 Hectare
3.	Crop Cluster under which covered	Banana
4.	Name & Variety of crop planted	Banana G-9
5.	Source of planting material.	Y and T Biotech Nursery. Ankenalli, Bangalore.
6.	Number of planting material.	2400
7.	Number of plants planted.	2400
8.	Date of plants which survived (also indicate percentage survival)	95%
9.	Total amount of subsidy assistance due to the beneficiary as (Rs)	23400
10.	Amount paid and date of payment	23400-00 CNo-071271 Date:17/12/2012
11.	Mode of payment	Directly credited to the beneficiary's account
12.	Source of Irrigation Water (Bore well/Tube well/Canel)	Bore well
13.	Whether Drip/ Sprinkle System in use	Yes, Drip (Rs. 35000/-)
14.	Other inputs Provided.	-



15.	Whether assistance available for organic forming	-
16.	If so, area covered	-
17.	Assistance available	-
18.	Available marketing facility for the crop	Local
19.	Other infrastructure available in the vicinity	-
20.	General upkeep of the plot; Very good/ Good/ Average/ Poor.	Good
21.	Any other relevant observation by the JIT	-

#### Beneficiary No.4

#### Area Expansion and MIS Taluk: Channarayapattna

Sl. No	Details	Remarks
1.	Name and address of Beneficiary whose field visited.	K. P. Girish S/o Puttegouda Kuruvanka Kasaba Hobli
2.	Total land available with the beneficiary (ha)	0.90 Hectare
3.	Crop Cluster under which covered	Banana
4.	Name & Variety of crop planted	Banana G-9
5.	Source of planting material.	Y and T Biotech Nursery. Ankenalli, Bangalore.
6.	Number of planting material.	2800
7.	Number of plants planted.	2800
8.	Date of plants which survived (also indicate percentage survival)	95%
9.	Total amount of subsidy assistance due to the beneficiary as (Rs)	28080-00
10.	Amount paid and date of payment	28080-00 CNo-071269 Date:17/12/2012
11.	Mode of payment	Directly credited to the beneficiary's account
12.	Source of Irrigation Water (Bore well/Tube well/Canel)	Bore well

13.	Whether Drip/ Sprinkle System in use	Yes, Drip (RS. 45620/-)
14.	Other inputs Provided.	-
15.	Whether assistance available for organic forming	No
16.	If so, area covered	NA
17.	Assistance available	NA
18.	Available marketing facility for the crop	Local
19.	Other infrastructure available in the vicinity	Road, APMC Yard, CR Pattna.
20.	General upkeep of the plot; Very good/ Good/ Average/ Poor.	Good
21.	Any other relevant observation by the JIT	

### Beneficiary No.5

### RKVY MECHANIZATION (COCONUT FROND CHOPPER)

**District: Hassan Taluk: Channarayapattna**

Sl. No	Details	Remarks
1	Name and address of Beneficiary whose field visited.	Puttaswamygowda S/o Kalegowda Kaggantikaval Hiresave Hobli
2	Total land available with the beneficiary (ha)	7.00 Hectare
3	Crop Cluster under which covered	Coconut
4	Name & Variety of crop planted	Arasikere Tall
5	Number of trees	600
6	Total amount of subsidy assistance due to the beneficiary as (Rs)	31500-00
7	Amount paid and date of payment	31500-00 CNo-023347 Date:17/01/2014
8	Mode of payment	Directly credited to the beneficiary's account
9	Source of Irrigation Water (Bore well/Tube well/Canel)	Bore well
10	Whether Drip/ Sprinkle System in use	Yes, Drip (Rs.31420/-)
11	Other inputs Provided.	Coconut frond chopper

12	Whether assistance available for organic forming	No
13	If so, area covered	-
14	Assistance available	-
15	Available marketing facility for the crop	Local
16	Other infrastructure available in the vicinity	APMC, CR Pattna, Road
17	General upkeep of the plot / Machinery Very good/ Good/ Average/ Poor.	Good
18	Any other relevant observation by the JIT	

**Note:** Coconut trees on an average produces one leaf (frond) every month and drops a leaf (frond) every month, the fronds of coconut are very hard and difficult to decompose. Farmers casually use them as fuel or just throw away, recycling of nutrients is one of the important principles of sustained agriculture specially in dry areas. The department of horticulture is providing 50% of subsidy (up to Rs. 50,000/beneficiary) under RKVY mechanization for coconut frond chopper, which is a chopping machine with 5HP motor powered either by electricity or diesel the machine cuts the fronds in to small pieces of average one square inch, the chopped material can be used for composting or can also be used for vermi compost production. This can also be used as organic mulch for coconut or other crops which are grown as inter crops in the coconut garden, this helps in improving water conservation, reducing weed menace, soil erosion beside regulating soil temperature. In addition it provides nutrients after decomposition.

### Observations

- This is Coconut frond chopper (5 HP motor)
- Chennarayapattana, Arasikere and Hassan Taluks of Hassan district are under the traditional coconut cultivation belt. But the disposal of the fronds (leaves of coconut) and dried spathes (inflorescence) is posing a problem as the decomposition of these materials is very slow and difficult in their full natural form. Hence, farmers leave these dry materials in the field itself or collect and use for fuel purpose.
- In order to overcome this problem, machines to cut these leaves into small pieces and hasten the process of decomposition is essential. Under the mechanization component subsidy is provided for purchase of Coconut Frond Choppers.
- JIT found that the machine with 5 HP motor is ideal for the purpose of chopping the leaves into small pieces which can be used for compost making as well as for vermi

compost preparation and also used as a mulch material in the basin around the trunk of the coconut palms, thereby increasing the moisture holding capacity and addition of organic matter content to the soil as a result of quick decomposition of the material.

- The JIT suggested the concerned department officer to prepare a case study of this with all details and photographs to benefit the coconut growing farmers of the state and also other states.

### **Beneficiary No.6**

#### **BIO-DISESTER UNIT UNDER NHM**

**District: Hassan Taluk: hassan**

<b>Sl. No</b>	<b>Details</b>	<b>Remarks</b>
1.	Name of the project	Organic farming (Bio-digester)
2.	Year of Implementation	2013-14
3.	Project Period	1 Year
4.	Name of Implementing Agency	Karnataka State Department of Horticulture
5.	Location of Project	Hassan (Tq), Uppar hosalli
6.	Total Project Cost	60000/-
7.	Amount Released by DAC	30000/-
8.	Expenditure incurred	60000/-
9.	<b>Status of Project</b>	Completed
	• Crops covered	Banana + Coconut + Ginger
	• No of Farmers involved	Single
	• Whether any certificate issued	-

### **Observations**

Horticulture crops produce lot of biomass which needs to be recycled for effective nutrient management. Normal decomposition takes lot of time and even after applying of compost it takes several months to actually make nutrient available to

plants. Bio digester is a technique, wherein, plant residues & other organic waste is decomposed or digested in a tank and the filtered decoction is given to plants in the form of liquid manner. This technique not only enhances the rate of decomposition due to availability of sufficient moisture but also hastens the availability of nutrients to the plants since it is given in the form of liquid. This liquid manner can be given to the plants through drip irrigation or sprinkler irrigation or it can be directly supplied to the plants. It can also be used for spraying. This technique has been seen to increase the yield and quality of the horticulture produce besides helping in disease control.

### **Beneficiary No.8**

#### **AREA EXPANSION OF BANANA**

**District: Hassan Taluk: hassan**

Sl. No	Details	Remarks
1.	Name and address of Beneficiary whose field visited.	Manjegowda S/o Marigowda Uppara hosahalli, Shanthigrama Hobli.
2.	Total land available with the beneficiary (ha)	1.60 ha
3.	Crop Cluster under which covered	Banana
4.	Name & Variety of crop planted	Arasikere Tall
5.	Source of planting material.	Horticulture Department
6.	Number of planting material.	1200 Nos.
7.	Number of plants planted.	100%
8.	Date of plants which survived (also indicate percentage survival)	100%
9.	Total amount of subsidy assistance due to the beneficiary as (Rs)	10110-00
10.	Amount paid and date of payment	10110/-, Ch.No. 419417, Date: 23-09-2013.
11.	Mode of payment	Directly credited to the beneficiary's account through Bank.
12.	Source of Irrigation Water	Bore well

	(Bore well/Tube well/Canel)	
13.	Whether Drip/ Sprinkle System in use	No
14.	Other inputs Provided.	Bio Digester
15.	Whether assistance available for organic forming	Yes
16.	If so, area covered	0.40 ha
17.	Assistance available	-
18.	Available marketing facility for the crop	Local
19.	Other infrastructure available in the vicinity	APMC, Hassan
20.	General upkeep of the plot / Machinery Very good/ Good/ Average/ Poor.	Good
21.	Any other relevant observation by the JIT	

### Observations

- Considering the benefits of the nutrient supply through organic means in increasing the yield and quality with less expenditure by producing these nutrient solutions on their own, the farmers are taking up the technology of bio-digester, wherein, the farm wastes like the fallen and dried leaves, weeds, unmarketable produce *etc.* are being decomposed in a pit/tank built for the purpose and the wash out of this in the form of solution is being collected and used for feeding the plant.
- The farmer who has taken benefit of the assistance has cultivated G-9 banana and is producing organic nutrients produced by himself in the bio digester. He enumerated how disease control can also be achieved by this in the form of foliar spray.
- JIT suggested the DDH to develop a success story of this technology supported with relevant data and few photographs for the benefit of the farmers in other states also.

## Hassan District Photographs



## Establishment of New Gardens (Perennials & Non-Perennials Crops)



## Pepper area expansion & rejuvenation



## Organic Farming





## Bee Keeping

## District Mandya





## **Introduction**

### **Soils**

Agro climatically, the district comes under southern Dry zone.

The soils are predominantly Red Sandy loams. They are shallow to medium to depth, well drained with poor water holding capacity.

The soils fertility status of Mandya in both rainfed and irrigated areas as similar in nature. The organic carbon content is medium and phosphorus and potassium is high. The PH of the soil is generally natural (6.5 to 7.5)

### **Rainfall and Climate**

Total average rainfall of the district is 722 mm with bimodal distribution. The maximum rainfall is received in the months of May and September, October. Kharif season receives 38% rainfall and 36% of rainfall is received during Rabi season. Nagamangala, Srirangapatna, Malavali and Maddur receive less rainfall and are relatively dry and rought prone.

### **Irrigation**

The total area irrigated in the district is 130345 ha. which works out to 52% of cultivated area. Canals are the major source (91228 ha) followed by wells (14507 ha), tanks (14234 ha) and borewells (8487 ha).

## **Field Visit**

### **Beneficiary No.1**

#### **Post Harvest Management**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1.	Name of the Project:	Pack house
2.	Year of Implementations:	2013-14
3.	Project Period:	2013-14
4.	Name of Implementing Agency:	Horticulture Department (Senior Assistant Director of Horticulture, Zilla Panchayat, Mandya)
5.	Location of project:	Urmarkasalagere

6.	Total project cost:	300000.00
7.	Amount Released by DAC:	150000.00
8.	Expenditure Incurred:	325000.00
9.	Status of Project:	
	• Capacity of Unit	10mt
	• Commodity	Vegetable
	• Condition of infrastructure	Good
	• Whether NHM logo displayed	Yes
	• Whether funds disbursed	Yes

### Observation

- The pack house has facilities like grading; weighing scale and plastic crates and the farmer is taking two tomato crops in a year.

### Beneficiary No.2

**Mrs. Chinnama w/o Late Sh. Kari Gowda Vill: Nukanter Halli, Distt. Mandya**

**Activity: Farm Pond**

### Observation

- The farmers are hard pressed for water because the water does not reach these areas sometime and the land has to be left fallow hence there is need to have water storage structures to harvest runoff water and bore well water and store it for some time to provide irrigation to the crop being cultivated.
- The drought during the last 2 years has also created awareness to go for such structures.
- The farm pond of size 20\*20\*3 m being constructed with stone pitching and cement plastering by the beneficiary as envisaged by him in meeting the irrigation requirements of crops like tomato, onion, sugarcane and coconut.
- Water from bore well and canal through underground pipeline fitted by him is helping him to store the water in the pond and provide irrigation to the crops.

**Beneficiary No.3**  
**Post Harvest Management**  
**Onion Storage Unit**

Sr. No.	Details	Remarks
1	Name of the Project:	Onion storage Unit
2	Year of Implementations:	2013-14
3	Project Period:	2013-14
4	Name of Implementing Agency:	Horticulture Department (Senior Assistant Director of Horticulture, Zilla Panchayat, Mandya)
5	Location of project:	Bennahatti
6	Total project cost:	1,00,000.00
7	Amount Released by DAC:	5,00,00.00
8	Expenditure Incurred:	1,25,000.00
9	Status of Project:	
	• Capacity of Unit	25mt
	• Commodity	Small onion
	• Condition of infrastructure	Good
	• Whether NHM logo displayed	Yes
	• Whether funds disbursed	Yes

**Observations**

- The onion storage has been constructed as per requirements and is being utilized.
- The farmer is cultivating two crops of onion in a year and storing the produce.

**Beneficiary No.4**  
**Nursery/Vegetable seed production/seed Infrastructure**

Sr. No.	Details	Remarks
1	Name of the Project:	Tublar St. Poly House

2	Year of Implementations:	2013-14
3	Project Period:	
4	Name of Implementing Agency:	KSHMA
5	Location of project:	Pandavapura, Mandya Dist.
6	Total project cost:	7,40,000
7	Amount Released by DAC:	3,47,000
8	Expenditure Incurred:	7,40,000
9	Status of Project:	
	<ul style="list-style-type: none"> <li>Name of Nursery and Crops for which plants are produced</li> </ul>	Hybrid Vegetable Seedling product
	<ul style="list-style-type: none"> <li>Name of the crops for which seeds produced.</li> </ul>	Cabbage, tomato, capsicum, chilli, cucumber etc.
	<ul style="list-style-type: none"> <li>quantity produced</li> </ul>	3.5 lakh seedling capacity
	<ul style="list-style-type: none"> <li>Quantity sold:</li> </ul>	4 to 4.5 lakh
	<ul style="list-style-type: none"> <li>Rate</li> </ul>	Varies with variety crops
	<ul style="list-style-type: none"> <li>Amount realizes through sale</li> </ul>	
	<ul style="list-style-type: none"> <li>whether NHM logo displayed</li> </ul>	yes

### Mandya District Photographs



**Tomato crop with mulching of Sri Siddegowda s/o Siddegowda, Uramarakasalagere village of Mandya**

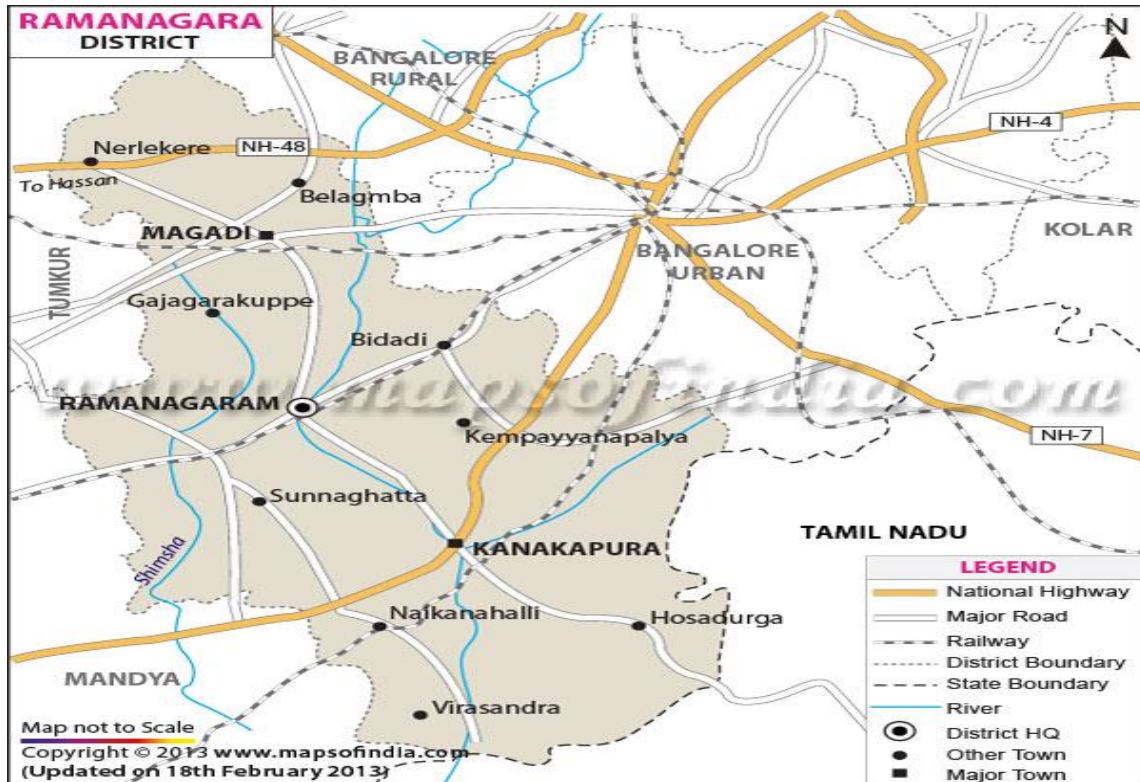


**Onion storage structure supported under NHM to Sri B.K. Javaregowda s/o Motegowda, Bennahatti village, Mandya Taluk, Mandya District during the year 2013-14.**



**Tomato crop with mulching of Sri Siddegowda s/o Siddegowda,, Uramarakasalagere village of Mandya**

## District Ramnagar



### Introduction

1. Name of the District : Ramanagara
2. Geographical Position\*

North Latitude Between  $12^{\circ}33'$  to  $12^{\circ}58'$

East Longitude Between  $77^{\circ}13'$  to  $77^{\circ}25'$

3. District Headquarters name : Ramanagara
4. Geographical area : 355912
5. Cultivable area : 206790(2010-2011)
6. Net area sown : 169203(2010-2011)
7. % of cultivable area to geographical area: 58.10
8. Area under Horticultural crops: 61030ha(2010-2011)
9. Area under Horticultural crop : 63000ha(2013-2014)

### Area , production and productivity of major fruit crops 2012-13

S. No	Crop	Net Area Sown (ha)	Area sown more than once (ha)	Total Cropped Area (ha)	Cropping Intensity (%)	Production (MT)	Productivity (ton/ha)
1	Mango	19931.00	-	19931.00	-	199314.00	10.00
2	Banana	3409.60	-	3409.60	-	84744.00	24.85
3	Citrus varieties	19.16	-	19.16	-	166.00	8.66
4	Guava	83.00	-	83.00	-	900.00	10.84
5	Sapota	777.81	-	777.81	-	8581.50	11.03
6	Pomegranate	12.00		12.00		95.00	7.92
7	Jack	303.00		303.00		6045.00	19.95
8	Papaya	119.90		119.90		9801.00	81.74
9	Total grapes	6.00		6.00		108.00	18.00

### Field Visit Beneficiary No. 1 Drip irrigation and Activities (NHM)

Sl. No	Details	Remarks
1.	Name and address of Beneficiary whose field visited.	Krishnappa s/o Puttappa, Avaragere, Bidadi Hobli, Ramanagar Taluk.
2.	Total land available with the beneficiary (ha)	60 quntas
3.	Crop Cluster under which covered	Pomegranate
4.	Name & Variety of crop planted	Bhagava
5.	Source of planting material.	Private nursery
6.	Number of planting material.	504
7.	Number of plants planted.	Nov.2013
8.	Date of plants which survived (also indicate percentage survival)	504 (100%)
9.	Total amount of subsidy assistance due to the beneficiary as (Rs)	21068/-
10.	Amount paid and date of payment	Due for payment
11.	Mode of payment	
12.	Source of Irrigation Water (Bore well/Tube well/Canel)	Bore well

13.	Whether Drip/ Sprinkle System in use	Yes
14.	Other inputs Provided.	
15.	Whether assistance available for organic forming	
16.	If so, area covered	
17.	Assistance available	
18.	Available marketing facility for the crop	
19.	Other infrastructure available in the vicinity	
20.	General upkeep of the plot / Machinery Very good/ Good/ Average/ Poor.	Good
21.	Any other relevant observation by the JIT	

### Observation

- This is Pomegranate (baghwah variety) along with drip irrigation in 0.6 ha under AEP. The crop establishment is good.
- Pruning of water suckers and training to single stem was suggested by JIT.

### Beneficiary No. 2

Sl. No	Details	Remarks
1.	Name and address of Beneficiary whose field visited.	Jayalakshammaw/oHomba Hanumaiah, Avaragere, Bidadi Hobli, Ramanagar Taluk.
2.	Total land available with the beneficiary (ha)	3 Acre
3.	Crop Cluster under which covered	Mango
4.	Name & Variety of crop planted	Alphonso
5.	Source of planting material.	NA
6.	Number of planting material.	120
7.	Number of plants planted.	NA
8.	Date of plants which survived (also indicate percentage survival)	NA
9.	Total amount of subsidy assistance due to the beneficiary as (Rs)	13550/-



10.	Amount paid and date of payment	Full
11.	Mode of payment	ECS
12.	Source of Irrigation Water (Bore well/Tube well/Canel)	Bore well
13.	Whether Drip/ Sprinkle System in use	No
14.	Other inputs Provided.	
15.	Whether assistance available for organic forming	
16.	If so, area covered	
17.	Assistance available	
18.	Available marketing facility for the crop	
19.	Other infrastructure available in the vicinity	
20.	General upkeep of the plot / Machinery Very good/ Good/ Average/ Poor.	Good
21.	Any other relevant observation by the JIT	

### Observations

- In Case of Rejuvenation of Mango trees In 0.8 ha. area with 85 trees of 15 year age the basin preparation, application of fertilizers, stem coating with Blitox And pruning of unproductive branches was done.
- JIT suggested to take up rejuvenation work in the unproductive senile trees by top cutting process.

### Beneficiary No.3

#### Polyhouse

Sr. No.	Details	Remarks
1.	Name of the project:	Subsidy for Polyhouse under RKVY
2.	Year of Implementation :	2011-12
3.	Project Period:	2011-12
4.	Name of Implementing Agency:	Department of Horticulture
5.	Location of project:	Karenahalli, Bidadi Hobli, Ramanagar Tq
6.	Total project cost:	18.70 lakhs

7.	Amount Released by DAC:	2011-12
8.	Expenditure incurred:	9.35 lakhs
9.	Status of project:	
	• crops for which plants are produced:	Colour Capsicum and green capsicum
	• Name of the crops for which seeds produced:	-
	• Quantity produced:	47 tonnes
	• Quantity sold:	4
	• Rate:	Rs.25/kg 2 <sup>nd</sup> grade
	• Amount realizes through sale:	Rs.42/kg 1 <sup>st</sup> grade
	• Whether NHM logo displayed:	

### Observations

- In 2000 sq m area polyhouse under RKVY the farmer is cultivating coloured capsicum with plastic mulch and has harvested 20 tons so far and expecting another 2 tons.
- From earlier capsicum crop the beneficiary informed he could fetch 27 tonnes of produce which was sold at the rate of Rs. 42 per kg of A grade and Rs. 25 per kg for B grade marketable fruits
- JIT suggested to take up cultivation of non solanaceous crops viz beans and European cucumber.
- The farmer expressed his happiness for the cultivation of capsicum under green house because he could get a good profit from 2000 sq m area compared to what he could have got from his other 5 acres of land.
- No NHM sign board with logo could be observed.

### Beneficiary No.4

#### Mechanization

Sr. No.	Details	Remarks
1.	Name of the beneficiary:	B.T. Shanthakumar s/o B.T. Thimmaiah Banandur, Bidadi Hobli, Ramanagar
2.	Year of Tmplementation :	2013-14
3.	Project Period:	2013-14

4.	Name of Implementing Agency:	Department of Horticulture
5.	Location of project:	Ramanagar district
6.	Total cost of Tractor:	5,16,800/-
7.	Subsidy/ Released by DAC:	75,000/-
8.	Expenditure incurred:	75,000/-
9.	Status of project:	
	• Name of Crop	Mango, Vegetables
	• Technology adopted	-
	• Whether location easily approachable	Yes
	• Whether NHM logo displayed	Yes

### Observations

- The beneficiary who has availed financial assistance for purchase of tractor under NHM mechanization component is satisfied since he could plough and cultivate the entire 7 acres of land in time. Because of mechanization he could transport FYM fertilizers and other inputs in time.
- So far it is being utilized for his own land. If need be, he may go for custom hiring also.

### Ramnagar District Photographs



**Pomogranate drip irrigation plot of Krishnappa s/o puttaiah,at Avaragere.**



**Mango Rejuvenation plots of Jayalakshamma**



**Poly House of Lakkanna at Karenhalli**