



## कृषि और संबंधित क्षेत्र निवेशों की इकाई लागत 2020-21

Unit Cost on Investment in Agricultural and Allied activities  
2020-21

राज्य - कर्नाटक

State - Karnataka

राष्ट्रीय कृषि और ग्रामीण विकास बैंक

National Bank For Agriculture And Rural Development

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**KARNATAKA**

**Unit Costs – 2020-21**



**National Bank For Agriculture And Rural Development  
Karnataka Regional Office  
Bengaluru**





# दृष्टि

ग्रामीण समृद्धि के लिए राष्ट्रीय विकास बैंक

## ध्येय

सहभागिता, संधारणीयता और समानता पर आधारित वित्तीय और गैर-वित्तीय सहयोगों, नवोन्मेषों, प्रौद्योगिकी और संस्थागत विकास के माध्यम से समृद्धि लाने के लिए कृषि और ग्रामीण विकास का संवर्धन.

## VISION

Development Bank of the Nation for Fostering Rural Prosperity.

## MISSION

Promote sustainable and equitable agriculture and rural development through participative financial and non-financial interventions, innovations, technology and institutional development for securing prosperity.

### **Disclaimer**

**NABARD does not accept any financial liability to anyone using this report for any purpose. The costs and parameters suggested are based on information available with NABARD. All Unit costs are indicative in nature and there may be variations based on field /local conditions. Banks/ government agencies may assess the credit requirement, considering the field level situations and keeping in view the technical feasibility, financial viability and also the bankability of the investments.**



## प्राक्कथन

समग्र आर्थिक विकास के लिए कृषि क्षेत्र की संवृद्धि सर्वोपरि है . निवेश ऋण अत्यन्त महत्वपूर्ण है क्योंकि इससे कृषि में पूंजी निर्माण को गति मिलती है. इस प्रक्रिया की सुविधा के लिए, नाबार्ड, कर्नाटक क्षेत्रीय कार्यालय ने सभी हितधारकों को शामिल करते हुए एक परामर्शी प्रक्रिया के माध्यम से वर्ष 2020-21 के लिए राज्य में कृषि और संबद्ध क्षेत्र में विभिन्न निवेश गतिविधियों की इकाई लागत निर्धारित की है. राज्य स्तरीय इकाई लागत समिति (SLUCC) द्वारा अनुमोदित ये लागत मात्र निदर्शी हैं और वित्तीय संस्थान और सरकारी एजेंसियां उन्हें आधार लागत के रूप में रख सकती हैं और आवश्यकतानुसार उनमें परिवर्तन कर सकती हैं.

मैं कर्नाटक सरकार के सभी विभागों, बैंकों, प्रगतिशील किसानों, आईसीएआर संस्थानों, कमोडिटी बोर्डों और नाबार्ड के तकनीकी अधिकारियों द्वारा दिए गए समर्थन और सहयोग के लिए मैं आभर प्रकट करता हूं. हम इस प्रयास को और अधिक परिष्कृत करने के लिए सभी उपयोगकर्ताओं से उनकी की प्रतिक्रियाओं का स्वागत करते हैं.

हमें उम्मीद है कि हमारे इस सामूहिक प्रयास से कृषि क्षेत्र में निवेश में सुधार होगा.

पी. वी. एस. सूर्यकुमार

पी वी एस सूर्यकुमार

मुख्य महाप्रबंधक



## FOREWORD

Agricultural growth is vital for the overall economic development. Investment Credit is a critical component in facilitating capital formation in agriculture. Fixation of unit cost plays a major role in facilitating adequate credit to farmers for meeting their investment credit requirements. NABARD, Karnataka Regional office has fixed Unit Costs for various investment activities in agriculture & allied sector in the state for the year 2020-21 through a consultative process involving all the stakeholders. These costs approved by the State Level Unit Cost Committee (SLUCC) are indicative in nature. The Financing Institutions and Government Agencies may take them as base costs and may modify as per their ground needs.

I acknowledge the support and cooperation extended by all the Departments of Government of Karnataka, Banks, progressive farmers, ICAR Institutions, Commodity Boards and Technical Officers of NABARD. We welcome feedback from users in further refining the various cost indicated.

We hope that this collective effort of ours will improve the flow of investment credit in Agriculture sector.

P V S Suryakumar  
Chief General Manager  
20 March 2020

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## Water Resources



*Clockwise: Farm Pond & drip irrigation in Ramanagara*

## Chapter 1- Water Resources

Sl. No.	Particulars	Unit Cost (₹) Per ha	Repayment/Remarks
1	Bore well (BW) a) 152 mm dia. and depth 200 m b) 152 mm dia. and depth 300 m	144000 227000	11 to 15 years with 11 months gestation period (GP)
2	Pump sets	As per prevailing market rates	
3	Renovation/ Deepening of Wells	33000	5 years including 11 months GP
4	Pump house with A.C Roof (2m x 2m x 2.1m) → 3 HP (2.5m x 2.5m x 2.1m) → 5 HP (2.7m x 2.7m x 2.4m) → 10 HP	22000 34000 42900	9 years' including 11 months GP
5	Storage tank (3.5 m x 3.5 m x 2.5m)	40000	
6	Pipeline distribution systems for Well Commands	24000	
7	Small lift irrigation schemes (command area : 10 - 40 ha)	66000	7 to 9 years including 11 months GP
8	Rain water harvesting-cum-artificial recharge structures for bore wells	51000	5 years with 1 year GP
9	Sub-surface Drainage System – Tile Drain Pipe	160000	7 Years including 1-year GP
10	Sub-surface Drainage System – HDPE Drain Pipe	198000	
11	Dug wells	47000 - 930000	Cost varies depending on rock formation and depth. 11 to 15 years repayment including 23 months GP

### Drip Irrigation system based on spacing norms

No	Spacing (m)	Unit Cost per ha (₹)	Repayment
i	12 x 12	26000	11-15 years depending on the age of crop/plantation with adequate GP
ii	10 x 10	29000	
iii	9 x 9	31000	
iv	8 x 8	36000	
v	6 x 6	42000	
vi	5 x 5	42000	

No	Spacing (m)	Unit Cost per ha (₹)	Repayment
vii	4 x 4	48000	
viii	3 x 3	60000	
ix	2.5 x 2.5	65000	
x	2 x 2	71000	
xi	1.2 x 1.2	77000	
xii	0.9 x 0.90	114000	
xiii	0.6 x 0.6	135000	
xiv	2.5 x 0.6	76000	
xv	1.8 x 0.6	98000	
xvi	1.2 x 0.6	132000	

### Sprinkler Irrigation systems

SI. No.	Particulars	Unit Cost per ha (₹)	Repayment
1	Field Crops (Vegetables/ Pulses)		10-15 years' and 11 months GP
	63 mm HDPE pipes	31000	
	75 mm HDPE pipes	37000	
2	Coffee/ Tea		
	90 mm HDPE pipes	69300	

### Special terms and conditions

- For dug wells / bore wells in over-exploited, critical and semi-critical areas permission needs to be obtained from the Hydro geologists / Dept. of Mines & Geology and positively with the prior approval of the Karnataka Ground Water Authority.
- Star rated pump sets may be promoted and additional cost on energy efficient pump sets may be considered as per prevailing market conditions.
- The minimum spacing to be maintained between dug wells / bore wells, other minor irrigation structures shall be as under.
  - Between two Dug wells with or without pump set: 180 m
  - Between two Bore wells with pump sets: 250 m
  - Between Dug wells & Bore wells: 215 m
- Renovation/ Deepening of Wells (DoW)
  - Only those wells having insufficient water column during summer and need deepening to ensure adequate yield for meeting the water requirement of the crop shall be covered under the programme.
  - The spacing norms between wells may be adhered to under DOW also.
- Power Supply
 

Before approving loan for electric pump sets, the bank shall satisfy itself that the village is electrified and that timely power supply would be available to the beneficiary for operation of the pump set.

## 6. Minimum acreage norm

Structure	Benefiting Area (ha)
Dug well with Pump set	1.0
Bore well with SIP	1.6

## 7. Selection and Installation of Pump sets

- The bank shall ensure that the pump sets financed under the scheme are selected and installed as per BIS: 10804-1994 or latest editions.
- Wherever loan is advanced for replacement of existing pump set by new pump set or for replacement of diesel pump set by electric pump set, the bank shall ensure that there is no change in the HP of the pump set and that the new pump set installed is as per BIS 10804-1994, or latest edition.
- Bank shall ensure that the spacing criteria, as stipulated, are adhered to, for the loans extended for pump sets also.
- Wherever loans are advanced for standby pump set, the bank may ensure that the standby unit is also selected as per BIS 10804-1994.
- Where higher HP pump set is required for use other than irrigation, with common prime mover, total HP of the pump set selected for agricultural use shall not exceed 1.5 times the HP required for irrigation purpose, subject to a maximum of 10HP.
- Capacitors: The electric motor financed should always be provided with a starter and a capacitor matching the motor. The following KVAR rating capacitors are recommended for use:

Below 3 HP -	1 kvar
3 HP to 5 HP -	2 kvar
5 HP to 7.5 HP -	3 kvar

## 8. After Sales Services

The bank shall ensure that adequate after-sales services and repair facilities are provided by the manufacturers / dealers installing the pump set on beneficiaries' wells.

## 9. Water Lifting Permission

Wherever financing pump sets for lifting water from river/ canal is involved, a letter from the competent authority of the Department/ Agency concerned of the State Govt. permitting the beneficiary to lift water from river/ canal and indicating the period up to which such permission is provided should be obtained and furnished to the financing bank before sanctioning the loan.

## 12. Micro Irrigation Systems

(a) **Drip Irrigation**

- The bank should ensure that only a technically competent and approved firm or person designs and installs the system at the field level.
- The installing agency should assess the water requirement of each plant, optimum crop geometry, etc. and design the efficient system accordingly. The bank should insist for a field layout map showing the benefiting area and item-wise cost estimate.
- Availability of design discharge of suitable chemical and physical quality on a long-term basis should be ensured for smooth operation of the system.
- The installing agency should furnish performance guarantee for the efficient operation of the system for a minimum of 3 years' period as also ensure timely and adequate post sales-service for trouble-free working of the system.
- The bank should carry out periodic monitoring of the implementation and assess the performance of the system at the field level.
- Bank should ensure to safeguard the pipes (main and lateral drips), emitters, etc., against theft, robbery, fire, etc.
- The system components to be installed should conform to the BIS Specification.

**(b) Sprinkler Irrigation**

- The bank should ensure that adequate water of suitable quality to cover the envisaged area is available at the nearest location.
- The design of sprinkler system for the proposed cropping pattern should be done by a technically competent agency /person taking into consideration the source and availability of water, wind velocity in different seasons, soil conditions, agro-climatic situations, etc. to ensure installation of most economical system at the farm level.
- The components of the system including pipes should conform to BIS standards.
- The implementing agency / manufacturers should offer performance guarantee for the operation of the system for a reasonably longer period against any defect either manufacturing/ working or installation.
- The firm should extend regular post sales service for maintenance.
- The bank should conduct periodic monitoring visits to assess the performance of the system and take corrective steps, wherever required.

## Land Development



*Clockwise:  
Vermicompost pit in  
Ramanagara , Stone  
Gully Plug in  
Mandya district*

## Chapter 2- Land Development

### Contour Bunding

Sl. No.	Slope	Per ha length	No. of stone outlets required	Unit Cost per ha (₹)	Repayment
1	2%	200	2	12800	5 – 7 years with 1-year GP
2	3%	222	3	15700	
3	4%	250	3	16900	
4	5%	333	4	22500	
5	6%	400	4	25400	

### On Farm Development (OFD) Works

Sl. No.	Slope	Unit Cost per ha (₹)	Repayment
1	2% - 4%	76000	5 – 7 years with 1 year GP
2	4% - 6%	80000	

### Farm Ponds

Sl. No.	Size of the Farm Pond	Unit Cost for Northern districts (₹)	Unit Cost for Southern Districts (₹)	Repayment
1	10m x 10m x 3m	30000	28000	5 – 7 years with 1-year GP
2	12m x 12m x 3m	43000	39500	-do-
3	15m x 15m x 3m	59000	54000	-do-
4	21m x 21m x 3m	126000	114000	-do-
5	29m x 29m x 3m	260000	232000	-do-

### Composting & Vermicompost Unit

Sl. No.	Specifications	Unit Cost (₹)	Repayment
1	Composting	11000 - 22000*	7 years with 1 year GP
2	Vermicompost -3 m x 1.2 m x 1 m	12,000	3 – 5 years with 1 year GP

	(1.27 cu.m)		
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\*Unit Cost varies depending on the type of land and the number of tanks.

### Gully Plugs

Sl. No.	Type	Length	Specifications	Unit Cost (₹)	Repayment
1	Stone Gully Plugs( SGP)	1 m	Cost varies with height and width	11,000-16000	5 – 7 years with 1 year GP
3	Earthen Gully Plugs (EGP)	6 m	-do-	1500	

### Other activities

Sl. No.	Activity	Unit Cost per ha (₹)	Repayment
1	Tank silt application	24800	3 year with 1 year GP
2	Reclamation of alkali soils	30000 - 35000	
3	Plastic mulching	24000 - 32000	
4	Fencing ( Barbed wire with stone posts/cement pillars)	175/m	Repayment is depending on the crop

### Azolla & Vermi hatchery

No	Activity	Unit Cost (₹)	Repayment
1	Azolla (1 TPA- 2 pits)	156000	5 years with one year GP
2	Vermi hatchery (320 TPA)	438000	5 years with no GP

### Special terms and conditions

### Unit Cost 2020-21

- Banks may finance land development activities as per the cost norms indicated in the relevant Central Scheme. Physical norms for land development works (to be decided as per local rates, DSR/SOR of Department/State Govt.)
- The bank shall satisfy itself that the required technical guidance and supervision is made available by the concerned department of the State Government.
- Field to field level irrigation is discouraged and separate field channels are used to convey irrigation water to various parts of holding.

## Farm Mechanization



*Clockwise: Sweep cultivator & tractor in Chikkaballapur*

### Chapter 3 - Farm Mechanisation

Sl. No.	Machinery / Implement	Unit Cost (₹)	Repayment
1	Tractor with accessories – 15 to 25 HP	2.50 - 4.50 lakh	7 to 9 years with 1 year GP
2	25 to 35 HP	4.50 - 5.50 lakh	
3	35 to 45 HP	5.00 - 7.50 lakh	
4	45 to 55 HP	6.50 - 8.50 lakh	
5	55 to 60 HP	7.50 - 9.50 lakh	
6	Trolley – two wheel hydraulic	1.00 - 1.50 lakh	
7	Power tiller 6 to 12 HP	0.60 - 2.00 lakh	5 – 7 years with 1 year GP
8	Seed cum fertilizer Drill	35000 – 60000	5 – 7 years with 1 year GP
9	Paddy Transplanter (4, 6 & 8 rows)	1.5- 3 lakh	5 – 7 years with 1 year GP
10	Cono Weeder/Rotary Weeder	1000-3000	3 – 5 years
11	M. B. Plough (2 / 3 furrows)	0.15 - 0.40 lakh	Tractor with minimum 2-3 implements are requires to be purchased
12	Reversible M. B. Plough (2 / 3 furrows)	0.15 - 1.00 lakh	
13	Disc Plough (2 / 3 discs)	0.40 - 0.60 lakh	
14	Disc Harrow	0.40 - 0.60 lakh	
15	Cultivator	0.15 - 0.30 lakh	
16	Rotavator (540 and 1000 rpm PTO speed)	0.65 - 1.00 lakh	
17	Thresher	0.45 - 2.00 lakh	
18	Bullock Drawn MB Plough	0.15 - 0.20 lakh	
19	Groundnut decorticator-hand operated	9000-11000	
20	Groundnut decorticator	0.50-1.5 lakh	
21	Arecanut climbing machine	6500-8000	
22	Combine Harvesters	As per make / HP	7 - 9 years

### Custom Hiring Centre

Machinery	Total (₹)	Repayment
Tractor –35 to 45 HP	The costs will vary depending on the combination, capacity, make etc.	7-9 Years with 1 year GP
Tractor –15 to 25 HP		
MB plough		
Disc Plough		
Levelers		
Cultivators		
Seed cum fertilize drill		
Laser Guided Land Leveler		
Thresher		
Sprayer		
Shed and office premises		
Servicing tools		

### Special Terms and Conditions - Farm Mechanization

- Selection of the machinery will depend upon the area, major crops, skilled and unskilled labour availability, soil type etc.
- While financing tractors/power tillers & farm equipment's the banks may ensure the respective BIS standards are adhered too.
- Banks may finance FM activities as per the crops grown, presence of other CHCs & concentration of farm machinery in the area.

## Plantation & Horticulture



*Clockwise: Jackfruit in Mandya , Sapota in Ramnagara, Cashew Plantation in Dakshin Kannada*

## Chapter 4 – Plantation and Horticulture

Sl. No.	Crop	Spacing	Population/ acre	Year						Unit Cost per acre (₹)	Repayment
				I	II	III	IV	V	VI		
1	Citrus	6x6m	110/acre	27,144	9,759	8,230	10,858	11,265		67000	12 years including 7 years GP
2	Grape-Seedless varieties	3m x 1.8m	740	289080	1,69,520					458600	7 years including 2 years GP
3	Grape-Bangalore Blue	3.3m x 3.3m	360	2,24,140	1,25,360					350000	7 years including 2 years GP
4	Mango	9m x 9m	50	50,000	15,000	10,000	10000	7000		92000	10 years including 5 years GP

Sl.	Crop	Spacing	Population/ acre	Year						Unit Cost per acre (₹)	Repayment
				I	II	III	IV	V	VI		
5	Pomegranate	3.5m x 3.5m	326	1,06,000	82,340					190000	9 years including 3 years GP
6	Sapota	9m x 9m	50	31,900	8,800	10,800	11,600	12,100		75000	10 years including 5 years GP
7	Guava	8m x 8m	60	40,000	15,000	15,000	10,000			75000	11 years including 7 years GP
8	Guava (High Density)	2.5m x 2.5m	640	80000	27000	23000	15000			145000	
9	Custard Apple	2.5 m x 5 m	320	70460	13680	12560				97000	7 years including 5 years GP

Sl. No.	Crop	Spacing	Population/ acre	Year						Unit Cost per acre (₹)	Repayment
				I	II	III	IV	V	VI		
10	Drum stick	3.5m x 3.5m	326	24000	15000					39000	5 years including 2 years GP
11	Mango( High Density Planning)	5m x 5m	160	53835	19151	27676	34152	40438		175000	10 years including 5 years GP
12	Ber	5 m x 5m	160	25000	15000	6000				46000	11 years including 7 years GP
13	Dragon fruit	2.5 m x 2.5 m	400 poles	625900	35600					662000	4 years including 5 years GP
14	Aonla	6m x 6m	110	18546	7836	7031	6541			41000	10 years including 6 years GP

Sl. No.	Crop	Spacing	Population/acre	Year						Unit Cost per acre (₹)	Repayment
				I	II	III	IV	V	VI		
15	Jamun	8m x 8m	62	35000	20000	10000				65000	7 years including 4 years GP
16	Papaya	3m x 3m	444	55000	20000	17000				92000	5 years including 2 years GP
17	Jackfruit	10m x 10m	40	25000	10000	5000				40000	11 years including 2 years GP

## Plantation Crops

Sl. No.	Crop	Spacing	Population /acre	Year						Unit Cost (₹)	Repayment
				I	II	III	IV	V	VI		
1	Coconut	8m x 8m	60	33700	9700	7600	10100	11600	13600	86500	12 years including 7 years GP
2	Oil Palm	9m x 9m	50	28850	17375	23000	22900			92000	12 years including 5 years GP
3	Coffee (Robusta)	3m x 2.5 m	533	70000	40000	30000	25000			165000	11 years including 5 years GP
4	Coffee (Arabica)	2 m x 2m	1000	80000	50000	30000	20000			180000	12 years including 5 years GP
5	Cashew	7m x 7m	81	33740	11984	10000	13000	16000		85000	10 years 6 years GP

### Spices

Sl. No.	Crop	Spacing	Population/acre	Repayment	Unit Cost (₹)
1	Pepper (intercrop with Arecanut)	3m x 3m	444	8 years including 4 years GP	105000
2	Pepper (intercrop with Coffee)	6m x 6m	111	8 years including 4 years GP	66000
3	Cardamom	1.8m x 1.8m	1230	8 years including 3 years GP	140000
4	Curry leaf	3m x 1.5m	880	7 years including 3 years GP	32000

### Floriculture

Sl. No	Crop	Spacing	Population	Year						Unit Cost (₹)	Repayment
				I	II	III	IV	V	VI		
1	Jasmine	1.5 m x 1.5 m	1780	71384	28574	29174				71000	4 years including 1 year GP

Sl. No	Crop	Spacing	Population	Year						Unit Cost (₹)	Repayment
				I	II	III	IV	V	VI		
2	Rose	0.75 m x 0.75 m	7100	127900	20100					148000	5 years with 1 year GP

### Apiary

Activity	Spacing(m)	Population/ 1000 Sq.m	Unit Cost (₹)	Repayment
Apiary	25 x 25	50	65000	4 years with 1 year GP

### Vegetable Nursery

Activity	Unit Cost (Rs.)
Vegetable nursery (shade net) –0.5 acre model	8,05,000

## Protected Cultivation

Crop	Cost Estimates (₹/sq. m)			Repayment
	> 2080 sq.m to 4000 sq.m	>560 sq.m to 1056 sq.m	Up to 560 sq.m	
Naturally Ventillated Poly House (NVPH) with 2 side corridor and 1.6mm gutter connected	900	995	1135	10 years with one year GP
NVPH (2 side corridor and 0.5 mm gutter connected)	800	905	1125	10 years with one year GP
Shade net house (2-side corridor)	440	---	---	10 years with one year GP
<b>Disclaimer: The above cost estimates are indicative and are recommended based on the economics given by NHM. Hence, costs may vary based on the adopted technologies.</b>				

In addition to the above, investment Cost of Protected Cultivation, the average cost of Production for 1st year for the following crops -

- (a) Flowers - ₹ 370/Sq.m  
 (b) Vegetables - ₹ 120 /Sq.m

Note: The above cost estimates may vary depending on the type of crop and variety.

### **Special terms and conditions**

- The financing bank may consult the State Department of Horticulture or the concerned Commodity Board to ensure technical feasibility of the crop investment.
- The bank shall satisfy itself that planting material of required quantity and quality, procured by the borrowers are from reliable sources such as nurseries of Agricultural Universities or State Government or any other recognized private nursery.
- Loan shall be issued in respect of investments for raising plants during the first year and also for subsequent maintenance, till the plant attains economic bearing stage, or as indicated in the Unit Cost. However, where loans are proposed to be availed of only for the first year planting, it should be ensured that the borrowers have their own resources to meet subsequent expenditure.
- Suitable inter crops may be taken up during the gestation period of the main crop, wherever feasible.
- Mixed cropping shall be encouraged, wherever possible, as in the case of coffee, arecanut, coconut etc.
- A suitable tie-up arrangement can be tried with the marketing agency concerned for recovering the loan installments with the concurrence of the borrowers.
- Protected cultivation- The Unit Costs does not include available subsidy component. Banks may ensure convergence of credit with ongoing subsidy schemes & Banks need to evaluate the economic viability of the project based on the prevailing market conditions. Unit Cost has been calculated for top ventilated type GI Structure, gutter connected, 200 micron UV Stabilised poly sheet including shade net

## Sericulture



*Clockwise: Coccons,  
Mulberry plantations in  
Ramnagara, Bombyx  
mori Cocoons being  
arranged in Chandriks'*

## Chapter 5 – Sericulture

### 1. Mulberry cultivation and rearing – one acre model

Sl. No	Particulars	Total Cost per acre (₹)	Repayment
	On farm activities : Mulberry cultivation and rearing		6 years with 1 year GP
1	Mulberry cultivation (one acre) – first year	60000	
3	Rearing shed size- 1000 sq. ft (50' x 20' x 15')	809000	
4	Rearing stand and equipment (Type-1 : 13.5 m x 1.60 m x 2.25 m)	82200	
5	Rearing cost capitalised for one crop	21800	
	<b>Total :</b>	<b>973000</b>	

### 2. Chawki Rearing Centre – 5000 Disease Free Layings (DFLs) per batch

Sl. No.	Particulars	Unit	Quantity	Unit price (₹)	Total Cost (₹)	Remarks
I	Capital cost					Cost varies with quantity & unit price. 4 Years with 6 months GP
a.	Cost of Building	Sq. ft	1200	600	720000	
b	Establishment of mulberry garden	Acre	2	60000	120000	
c	Rearing equipment		LS		617000	
II	Recurring cost capitalized (40 days)		3	60100	180300	
	<b>Total cost (I (a+b+c)+II)</b>				<b>1637000</b>	

### Special terms and conditions

The terms and conditions indicated below are for area based sericulture development programme:

- The borrowers may be identified in consultation with the State Department of Sericulture/Central Silk Board, especially in non-traditional zones/districts.
- While financing for seed cocoon production, ensure that the scheme area is a notified seed area.
- Ensure that the borrowers selected have adequate source of irrigation while financing for mulberry cultivation under irrigated conditions. If necessary, water saving irrigation system like Drip and Sprinkler may be suggested, wherever feasible, and the required credit assistance extended.
- Improved High Yielding varieties of mulberry and silk worm races may be insisted upon under irrigated conditions.

- Supply of planting material of specified mulberry variety may be ensured through Government Seed Farm or reputed private sources.
- The financing bank may ensure that there is adequate supply of quality disease free silkworm eggs (DFLs).
- The borrowers should be included under the ongoing tripartite system to ensure proper recovery of loan.
- The financing bank may ensure that a sound/competitive marketing infrastructure is available in the scheme area and the farmers are not required to carry their cocoons to a far-off market.

## Forestry



*Clockwise: Silver oak, Melia Dubia leaves being collected in Ramanagara, Teak plantation in Ramanagara*

## Chapter 6- Forestry

Sl. No.	Crop	Spacing	Population per ha	Year				Total Cost (₹)	Repayment
				I	II	III	IV		
1	Sandalwood	10' x 10'	1080	64884	21910	21085	8121	116000	12 years including 11 years GP
2	<i>Melia dubia</i>	3 m x 3 m	1111	56509	24554	24054	5983	111100	7 years including 6 years GP
3	Bamboo	5 m x 5m	400	35870	16070	9660	-	61600	8 years including 5 years GP
4	Bamboo Tissue Culture	5 m x 5m	400	43870	16870	9260	-	70000	8 years including 5 years GP
5	Teak	2 m x 2m	2500	92925	21250	11825	-	126000	13 years including 7 years GP
6	Mahogany	4.57 m x 4.57m	478	43254	18504	18504	4738	85000	10 years including 9 years GP
7	Silver Oak	3 m x 3m	1111	55120	24554	24054	6272	110000	7 years including 6 years GP

- Forest Department suggests that sandalwood/ teak cultivation should be grown preferably along with the Agriculture/Horticulture crops as these species have longer rotation period compared to other fast-growing species.
- In case of Sandalwood plantation, protection cost of plantation after the 10<sup>th</sup> year for appropriate fencing may also be taken into account. Further, the Unit Cost may vary for the different agro climatic regions and on the locality specific requirement/conditions. Further, the Unit Cost may vary for the different agro climatic regions and on the locality specific requirement/conditions.
- Farmers should be encouraged to take up agroforestry activities particularly in the initial years to ensure steady flow of cash to the farmers.

## Animal Husbandry Dairy



*Clockwise: Gir cow in  
Dharwad, Milking  
Machines in  
Bangalore Rural &  
Khillari Cows in  
Dharwad,*

## Chapter 7 – Animal Husbandry

### 1. AH – Dairy

#### Dairy – One animal unit

A. Cross bred Cows (CB Cows)	Unit Cost (₹)	Repayment
Jersey or HF Crosses - 10 to 12 lpd	62000	5 years' including 6 months GP
<b>B. She buffaloes</b>		
Graded Murrah/ Surti/ Dharwad/ Pandapuri/ Mehsani yielding - 9 to 10 lpd	60000	
<b>C. Indigenous cows</b>		
Malnad gidda (yield 0.8 to 1 lpd)	13000	
Hallikar	25000	
Deoni	32000	
Gir, Sahiwal, Tharparkar	45000	

#### Dairy- Two Animal unit

Sl. No.	Particulars	2 CB Cows unit (₹)	2 Buffaloes unit (₹)
1	Cost of animals- cross bred Jersey/HF	124000	120000
2	Transportation of animals @ ₹ 2000/- animal	4000	4000
3	Recurring Cost- for 1 <sup>st</sup> batch		
i	Insurance @5% on cost of animals	3000	2900
ii	Feed for 30 days @ ₹ 22/- for 120 kg per animal	2640	2640
iii	Fodder cultivation for 1 animal @ ₹ 5000/- per animal	5000	5000
iv	Miscellaneous cost @ ₹ 20/- per day/animal	600	600
	<b>Total (rounded off)</b>	<b>139000</b>	<b>135000</b>

#### Ten Animal Dairy Unit

Sl. No.	Particulars	10 CB cows unit (₹)	10 Buffaloes unit (₹)
1	Cost of 10 animals – Cross bred Jersey/HF	620000	600000
2	Cost of Shed for 10 animals @65 sq ft/animal @ ₹ 100/-sq ft.	65000	65000
3	Transportation of animals @ ₹ 8000/- animal	20000	20000
4	Recurring Cost- for 1 <sup>st</sup> batch		
i	Insurance @ 5% on cost of 5 animals	15500	15000
ii	Fodder cultivation for 5 animals @ ₹ 5000/- per animal	25000	25000

iii	Feed for 30 days @ ₹ 22/- 120 kg per animal for 5 animals	13200	13200
	<b>Total (rounded-off)</b>	<b>759000</b>	<b>738000</b>

### Unit Cost for Dairy- Indigenous Breeds (Gir, Sahiwal and Tharparkar)

Sl. No.	Particulars	2 animal unit (₹)	10 animal unit (₹)
1	Cost of animals- cross bred Jersey/HF	120000	600000
2	Transportation of animals@ ₹ 8000/- animal	16000	80000
3	Cost of Shed for 10 animals @65 sq ft/animal@ ₹ 100/-sq ft	0	65000
4	Recurring Cost- for 1 <sup>st</sup> batch		
i	Insurance @5% on cost of animals	3000	15000
ii	Feed for 30 days @ ₹ 22/- for 120 kg per animal	1980	9900
iii	Fodder cultivation for 1 animal @ ₹ 5000/- per animal	1250	11250
	<b>Total (rounded off)</b>	<b>142000</b>	<b>781000</b>

### Other expenditure and techno-economic parameters

Particulars	Cost (₹)	Remarks
a. Cattle/buffalo shed (110 to 140 per sq ft) <i>1. Thatched shed @ ₹ 140 per sq ft</i>	18200	Cattle shed store room should be an integral part of Dairy scheme and should not be financed separately
<i>2. AC roof shed @ ₹ 250 per sq ft</i>	32500	
b. Construction of store room ₹ 250/sq ft Requirement of storage space upto 5 animals- 50 sq ft 6-10 animals -100 sq ft 11-15 animals- 150 sq ft 16-20 animals- 200 sq ft	12500 25000 37500 50000	
c. Feed & Fodder Cost Feed: 30 days feed @ ₹ 22 per kg Feed requirement will vary depending on yield and breed of animal Fodder: ₹ 5000 per animal towards cost of fodder cultivation.	22 5000	
d. Transportation cost of animals	2000	Loans to be recovered along with the loan disbursed for purchase of animal.
e. Cost of milking machine (for 5 to 10 animal unit)	40000-60000	
		Milking machine may be integral part of Dairy scheme and also may be financed separately to enable automation in the farm.

Particulars	Cost (₹)	Remarks
f. Cost of cross bred milch cows	6200 per litre of milk yield	

### Calf-rearing - rearing of female calf (CB Cows)

Sl. No.	Particulars	5 heifer calves Unit (₹)	Remarks
1	Cost of 5 heifer calves - Cross bred Jersey/HF for 5 heifer calves @ ₹ 5000 per animal	25000	Loan to be repaid immediately if sold as breeding animal, otherwise GP of 3 years & 3 months.
2	Cost of equipment - LS	3000	
3	Cost of shed (40 sq. ft per calf )	22000	
4	Transportation including transit insurance @ ₹ 500 per animal	2500	
5	Concentrate feed for 28 months – 1600 kg per calf @ ₹ 22 per kg	176000	
6	Fodder cultivation cost for 28 months	37440	
7	Cost of breeding medicines, vaccines and Misc. charges	5000	
	<b>Total ( rounded-off)</b>	<b>271000</b>	

### Male calf rearing

No	Activity	Unit Cost	Remarks
1	Male calf rearing (indigenous animals-Deoni, Hallikar, Amrit Mahal) 10 male calves.	381000	GP- 3 years. Entire repayment to be completed by 5th year
2	Male calf rearing (indigenous animals-Deoni, Hallikar, Amrit Mahal) 20 male calves.	761000	GP- 3 years. Entire repayment to be completed by 5 <sup>th</sup> year

### Hydroponic unit for Fodder cultivation

Activity	Unit Cost	Remarks
Hydroponic unit for production of green fodder (for 2 heads of cattle)	60000	5 Year repayment with no GP

This unit may be considered for finance only in areas where there is severe shortage of green fodder & also to be integrated with modern dairy farm.

### Fodder Cultivation- Stylo

Activity	Unit Cost per ha (₹ )	Remarks
Fodder Cultivation (Stylo)	22000	5 Years with no GP

### Special terms and conditions

1. The bank shall select villages keeping in view the compactness of the area to facilitate supervision and nearness of villages to veterinary dispensaries, animal breeding centers and milk marketing facilities.
2. The bank shall ensure that a unit of 2/3 milch animals is financed and that animals are purchased with an interval of about 4-6 months to ensure continuity in milk production.
3. The bank shall finance under the scheme only good quality animals viz. Graded Murrah buffaloes / Cross bred cows, preferably freshly calved animals in second or third lactation.
4. (a) Immediately after purchase, suitable arrangements for identification of animals by tattooing or ear tagging shall be made with the help of State Animal Husbandry Department. In addition to this, the record of particulars of the animal identification (colour, birth marks, etc.) shall be maintained.  
(b) Certificate regarding age, milk production and health of animals financed shall be obtained from qualified veterinary assistant surgeon.
5. Animals should be vaccinated with the help of the Veterinary Department, against diseases such as Rinderpest, *Haemorrhagic Septicaemia* and Foot & Mouth disease, depending upon prevalence of particular diseases in the area and as per the advice of the State Animal Husbandry Department.
6. Adequate insurance cover is to be obtained for all animals purchased under the scheme.
7. The bank shall satisfy itself that beneficiaries have adequate arrangements for supply of green/dry fodder and concentrate feed. The bank shall, wherever possible,

encourage the beneficiary to take up green fodder cultivation on his/her own.

8. The bank shall satisfy itself that adequate facilities for veterinary aid and breeding are available from the Government department / Milk Union concerned to the beneficiary in the vicinity of the scheme area.

9. In cases, where cross bred / indigenous cows are financed, the bank shall satisfy itself that breeding service, with high quality semen of exotic / cross bred pedigree bulls, is available at the artificial insemination centers in the scheme area.

10. Wherever loans for construction of cattle shed are not given, the bank shall ensure, before sanction of loan for purchase of milch animals, that the beneficiary either has a cattle shed or facilities to provide shelter or will be able to provide a cattle shed out of his own sources.

11. The bank shall satisfy itself that suitable and satisfactory arrangements exist for marketing of milk. Such arrangements could either be in the nature of organised marketing through milk collection centres or outlet for direct sale of milk at a remunerative price.

12. Wherever an arrangement is made to market milk through organised system, the bank may make arrangements with the milk collection agencies for loan recoveries out of sale proceeds.

## Poultry



*Clockwise: A poultry farm in Tumkur, high tech poultry farm in Bangalore Rural, Giriraja Chicken in Mandya*

**2. AH- Poultry****a. Commercial Layer unit-5000 layers (1+1+4 under Cage system)**

Sl. No.	Particulars	Cost (₹)	Remarks
A	Civil structures	1036826	5 years including 1 year GP
B	Electrical installations @ 4% of civil costs	37024	
C	MI structures	86250	
D	Equipment	796500	
E	Working Capital	1055000	
	<b>Grand total (rounded off)</b>	<b>3012000</b>	

**b. Commercial Broiler unit - 500 birds (Deep litter system)**

Sl. No.	Particulars	Unit Cost (₹)	Remarks
1	Land	Own	5 years including 1 year GP
2	Civil Structures -	65000	
3	Electrical installations	2600	
4	Broiler equipment (500 chicks; ₹ 35 per bird)	17500	
5	Working capital -	64900	
	<b>Total Cost</b>	<b>150000</b>	

**c. Commercial Broiler unit -500 birds per week (Deep litter system)**

Sl. No.	Particulars	Unit Cost (₹)	Remarks
1	Land	Own	5 years including 1 year GP
2	Land Development- levelling(0.51 ha) & fencing	38704	
3	Civil Structures -	475000	
4	Electrical installations	19000	
5	Minor Irrigation structures -	125000	
6	Broiler equipment (4000 chicks; ₹ 35 per bird)	140000	
7	Working capital -	325050	
	<b>Total</b>	<b>1123000</b>	

**d. Commercial broiler unit -1000 birds per batch**

Particular	Unit Cost (₹)
Commercial broiler unit -1000 birds per batch	312600