

**Government of Karnataka
Karnataka Agriculture Price Commission**

**Assured Price and Stable Market
for
*Agriculture and Horticulture Crops in the State***

Multi-faceted Recommendations

Based on 2014-15 Cost of Production and Perspective Report

Executive Summary

Today, Karnataka agriculture is facing twin problems of drought and bottlenecks to achieve desired growth which has led to agrarian crisis and the spate of farmers' suicides. To ensure stability of agriculture and welfare of the farmers, it is essential to formulate suitable policies and programmes to strengthen and thus imbibe confidence among the farming community.

In this regard, Karnataka Agriculture Price Commission has scientifically calculated Cost of Cultivation of 17 major agriculture and horticulture crops with active association of farmers. Commission has also analysed actual market status, arrival and behavior of prices of these crops. In order ensure remunerative price and stable market to the crops, the Commission has placed important recommendations under 10 major heads before the Government.

Estimation of cost of cultivation of major agriculture and horticulture crops of the state in a scientific way in association with the farmers from the perspective of transforming agriculture into sustainable enterprise is one of the principle responsibility of Karnataka Agriculture Price Commission. As a prelude to this, analysis of shift and changes in land use pattern during the last decade was undertaken that reveal alarming situation.

Area under crops such as maize, cotton and sugarcane whose production is increasing both at the national as well a global level has increased enormously in the last decade in Karnataka. While the areas under crops important from the food security point of view such paddy, ragi, rabi jowar has been declining drastically over the years.

a) Methodology for Estimation of Cost of Cultivation of crops

While estimating the cost of cultivation of crops, it is necessary to consider **paid-out costs** such as the costs towards seeds, fertilizers, labour etc. actually incurred by farmers. Beside direct cash payment, **depreciation** on machinery and farm buildings, interest on working capital have to be considered.

In addition, we need to consider costs which generally do not get reflected in normal cost estimation such as family labour costs, rental value of own land and time spent by farmers on management, etc. that are termed as *the Opportunity Costs*.

Fifteen crops are selected for estimation of cost of cultivation for the crop year 2014-15. They are, paddy, Jowar, ragi, Maize, Bajra, Tur, Bengal Gram, Groundnut, Sunflower, Soybean, Tomato, Onion, Potato, Dry Chillies and Cotton.

These crops together account for 72 per cent of Net Sown Area thereby throw a light on economic condition of majority the farmers in the state.

Keeping in view States' agriculture diversity and farmers' interest, a modified methodology has been evolved to estimate cost of cultivation of crops. That includes incorporation of 25 per cent of Gross Revenue rental value for own land and 15 percent of total cost (as against 10 % by the CACP) as Managerial Cost.

b) Scientific Estimation of Cost and Returns:

- On an average, the cost incurred on labour (*human, mechanical and animal put together*) account for 38 per cent of total cost of cultivation. Hence it may be inferred that agriculture is not only becoming high cost enterprise but also transforming in to labour intensive enterprise in a state like Karnataka.

- When are consider just paid out cost and cost incurred on family labour, crops such as rainfed paddy, Ragi, Maize, Bajra, Bengal Gram and Potato crops have not even ensured positive returns to farmers.

- **Considering overall cost (Cost C_3) which comprises of rental value of owned land and managerial cost, except onion, cultivation of all other crops have turned out to be loss making in the State.**

- The loss against the total cost was in the range of Rs 3208 per acre in Soybean to Rs 48,723 in tomato.
- The MSP declared by the Union Government is less than the actual cost incurred by the farmers in majority of cases and thereby justices have been denied to the farmers in a state like Karnataka.
- In squeal to above, during the last two years with an intension to curb the growing inflation Union Government has enhanced the MSP by paltry 3.12 annually.

c) Means to Reduce Cost of Cultivation

- Use of Harvester in Ragi crop has considerably reduced cost incurred on wages and it has increased profit per acre by Rs 4560 (*144 per cent*).

- **Similarly, Use of Transplanting machine in Paddy crop has enabled saving of Rs 2405 on wages and increased yield by four quintals together registering 123 per cent increase in net income per acre.**

- More importantly, if farmers were to pay attention towards increasing productivity, per unit cost of production will reduce considerably.
- As per the Commissions' study some farmers obtained yield up to 32 quintal per acre. At that yield level, total production cost comes down to Rs 1286 / quintal, making even the prevailing MSP a remunerative one.

d) Significance of Regulated Markets:

- Out of total production in case of the fifteen crops considered for the study only 41 per cent has been brought and sold in Regulated Market (*APMC yard*) during 2014-15.

- More time for transportation, pre-harvest contract with the local money lenders and traders, quality constraints are the main reasons for selling produce outside the APMC purview.

- **Out of the total produce brought to APMC yard only 53 per cent has received the price higher than the MSP and the rest sold below MSP.**

e) Current Year Production and Price

- During the present Kharif season (2015), production of agriculture and horticulture crops is likely to decline by 29 per cent.
- Price of Paddy, Groundnut, Onion, Potato, Dry chilli and Bengal gram have already showing declining tendency, which may cause concern in coming days.
- Market arrival of most of the crops is concentrated during the period from November to March. Consequently chance of prices exhibiting declining tendency is quite high during the period from April to October.

It is necessary to keep in view the points discussed above while undertaking Market Intervention Strategies including procurement by the Government to stabilize prices of agriculture and horticultural commodities in Karnataka.

Current Status of Major Crops in Karnataka: 2014-15

| Sl. No. | Crops | Productivity (Qtl./Acre) | MSP declared by Centre 2015-16 (Rs./Qtl) | Cost of Production (Rs./Qtl.) | | Per Acre Profit/Loss (in Rs.) | | % sold through APMCs | Estimated reduction during 2015-15 (%) | Change in cropped area during last decade |
|---------|-------------|--------------------------|--|-------------------------------|------------------------------|-------------------------------|-----------------------------------|----------------------|--|---|
| | | | | Cost A ₁ +FL | Total Cost (C ₃) | Over Cost A ₁ +FL | Over Total Cost (C ₃) | | | |
| 1 | Paddy -IRR | 26 | 1450 (Grade-A) 1410 (Avg.) | 1030 | 1671 | 12666 | -3768 | 49 | -16 | Declining |
| 2 | Paddy-RF | 16 | | 1189 | 1985 | -301 | -12730 | | | Drastic Decline |
| 3 | Ragi | 13 | 1650 | 1881 | 2781 | -2808 | -14380 | 7 | -17 | Drastic Decline |
| 4 | White Jowar | 5 | 1590 | 1712 | 2922 | 3029 | -3260 | 5 | -42 | Drastic Decline |
| 5 | Hy. Jowar | 8 | 1570 | 1307 | 1919 | -299 | -4923 | | | Drastic Decline |
| 6 | Maize | 15 | 1325 | 915 | 1425 | 3996 | -3842 | 59 | -30 | Drastically Increasing |
| 7 | Bajra | 6 | 1275 | 1639 | 2324 | -2687 | -6936 | 41 | -43 | Drastic Decline |
| 8 | Bengal gram | 4 | 3500 | 3456 | 4963 | -59 | -5621 | 26 | - | Drastic Decline |
| 9 | Red Gram | 3 | 4625 | 4009 | 6286 | 3537 | -3293 | 75 | -36 | Moderate Increase |
| 10 | Groundnut | 4 | 4030 | 3966 | 6186 | 572 | -8196 | 39 | -46 | Drastic Decline |
| 11 | Sunflower | 5 | 3800 | 3022 | 4416 | 1144 | -5214 | 30 | -41 | Drastic Decline |
| 12 | Soyabean | 6 | 2600 | 2324 | 3647 | 5127 | -3208 | 21 | 7 | Drastically Increasing |
| 13 | Tomato | 176 | No MSP | 742 | 1086 | 11879 | -48723 | 24 | -9 | Drastically Increasing |
| 14 | Onion | 76 | No MSP | 575 | 1.21 | 51286 | 17417 | 44 | -42 | Moderate Increase |
| 15 | Potato | 35 | No MSP | 1378 | 1906 | -9238 | -27960 | 75 | -15 | Declining |
| 16 | Dry Chilli | 9 | No MSP | 7598 | 11679 | 24467 | -13482 | 49 | -9 | Declining |
| 17 | Cotton | 9 | 3800 (Medium Staple) 4100 (Long Staple) | 2915 | 4528 | 8701 | -5684 | 28 | -43 | Drastic Increase 5 |

Multi-faceted Recommendations

1. Guaranteed Prices to Agriculture produce:

- Minimum Support Price announced by Union Government or Paid out Cost including Family labour (A_1+FL) derived by Karnataka Agriculture Price Commission whichever is maximum be considered as States' ***Statutory Minimum Transaction Price-SMTP***.

- **Enact legislation to ensure that any formal transaction including the sale that takes place within APMCs should not be below Statutory Minimum Transaction Price-SMTP.**

- Impose restriction on informal transaction taking place outside regulated markets for all agriculture and horticulture produce in the state.
- Ensure that the farmers receive price not below total cost (C_3) while procuring for state's PDS program: *Anna Bhagya* and procurement made by HOPCOMS, Farmers Producer Organisation (FPOs), Contract Farming firms, big Retail formats like Safal, Metro, Reliance, etc.
- Expand the 'Food Security Basked' - *Anna Bhagya* scheme by including Tur, Onion and Boiled Rice for distribution.

- **To compensate the loss incurred by the farmers due to fall in prices, new mechanisms like *Price Compensation* and *Deficiency Payment* may be put in place.**

2. Price Stabilization Fund

- State Government to create Rs 5000 cores Price Stabilization Revolving Fund.
- For its efficient and transparent management a separate Secretariat to be established.

3. Timely Procurement and Early Disbursement

- In order to remove the bottleneck in maintaining FAQ standards, educated rural youth need to be trained and used for ***certifying the quality of the produces at the farm level itself*** prior to bringing the produce APMC.

- **Government to bear the transportation cost and supply quality gunny bags to bring produce to market. The *Primary Agriculture Cooperative Societies (PACS)* needed to be strengthened for procurement of farm produces.**

4. Reducing Cost of Production:

- Farm Universities and research institutions should pay utmost attention to reduce the cost of production, evolve low cost sustainable technologies and make them available to farmers.

- **Evolve a system to enlist the farmers possessing different farm machineries and extend the services to others through *online aggregation* on similar lines of OLA cabs.**

- Benefits of MGNREGA to be made available to farmers for soil and water conservation, to undertake land development and other activities.

5. Enhancing Bargaining Power of Farmers:

- Enhance *collective bargaining power* of farmers to undertake processing, value addition and marketing of farm produces thereby garner maximum share in consumer rupee. ***Karnataka has to usher a revolution in marketing of farm produce in this regard.***
- State Agriculture and Horticulture universities shall establish crop specific FPOs (*Farmers Producers Organizations*) on pilot bases in their jurisdiction with the help of *Krishi Vignana Kendras*(KVKs).
- Similarly, State Agriculture and Horticulture Departments, MARKFED, Horticulture Federation, Farmers Organizations, SHGs shall establish FPOs throughout the state in collaboration with NGOs and other organisations.
- ***Group Crop Insurance*** Scheme may be designed to cover these FPOs .

- **MARKFED and Horticulture Federation shall be made responsible to intervene in the market operations whenever there is glut in arrivals of agricultural produces.**

- Services of ***Start-up Entrepreneurs*** need to be utilised for aggregation of quality farm produces and to establish direct link between Farmers / FPOs and Consumers.

Strengthening of Marketing Department

- There is a need for efficient and pro farmer markets at the Taluka level. The APMCs are to be strengthened in this regard instead of weakening in the disguise of market reforms.

• Farmers to be educated about pros and cons of e-trading and on line trading. There is an urgent need to provide training and capacity building to farmers on aspects of FAQ standard and grading so as to encourage them to participate effectively in e-trading.

- Market intermediaries' activities have to be regulated and ensure that they take part in e-trading processes in an efficient and competitive spirit.
- Purview of Regulated Market to be expanded and extended up to village level.

• A thorough query followed by comprehensive solutions to the problems of inadequate utilization of pledge loan and illegal collecting commission from farmers in APMC yard is needed immediately.

6. Market Intelligence

- Develop and put in place an efficient **interactive e-portal** jointly by agriculture, horticulture, sericulture and other related departments along with universities to disseminate information on real time basis.
- Establishing KIOSKS at village or Gram Panchayath level and establish permanent Technical Cell to provide timely price and market information to farmers.

7. Effective Persuasion with the Centre

- Union Government to take a clear stand in favour of farmers on Dr. M.S. Swaminathan recommendation regarding ensuring 50 percent profit margin while fixing MSP and bring a legislation on ***Right to Remunerative Price***.
- Extend MSP to horticulture crops and facilitate timely procurement.

• Statuary status to Commission for Agriculture Cost and Prices (CACP) and ensure that it pays adequate attention to stabilise farmers' income.

- Care must be taken to ensure that proposed ***Unified Market System*** does not lead to concentration of trade with a few big players. In order protect farmers' interest it is necessary to have contentious interaction with state Governments.

8. Current Year Important Crops

- a) **Paddy:** Government to take quick and appropriate decision to fix support price for the year 2015-16.
- Ensure higher price to A-grade Paddy variety like Sona Mussori through open market and export trade.
 - Incentives to farmers to grow rain fed and locally grown common grade paddy varieties.
 - Govt. of Kerala *Special Package* for rain fed paddy cultivation and promotion of *Women Labour Bank* of may is worth considering.
- b) **Ragi and White Jowar:** During the current year two lakh tons of Ragi and one lakh tons White Jowar to be procured by giving adequate publicity, arranging timely procurement and immediate payment.
- c) **Onion and Tomato:** It is welcome trend that these two crops have registered higher growth both in area and productivity of crops.
- Like last year untimely rains in late Kahrif season may cause damage to the Onion and Tomato crops.
- Horticulture Department to pay attention to seek long term solutions, besides taking market intervention and other steps.
- d) **Tur and Bengal gram:** Transfer Tur Development Board to Department of Marketing and Strengthen it.
- As United Nations has declared 2016 as *International year of Pulses*, distribute two Kg of Tur per family per month under Anna Bhagya scheme.
- e) **Cotton:** State Government to initiate **Comprehensive Package** to protect the interest of framers similar to one undertaken by Gujarat Government.
- As suggested by Ministry of Textiles, Government of India, steps to be taken for timely procurement of cotton during the current year.
- f) **Groundnuts and Sunflower:** In order seek solutions to production constraints and strengthen market, *Karnataka Oilseed Federation* to

become very proactive. Organise a meeting of all stake holders immediately.

- As per Centre govt's Minimum Support Price implementation Guidelines-2014, market fees, cess and others need to be exempted for the procurement agencies.

g) Maize: Check uncontrolled expansion of area, strengthen value addition and encourage the uses of maize for manufacturing of feed for poultry and livestock, starch and other industries.

h) Other Crops:

Arecanut: Establish a separate board for **Arecanut** on similar lines of Coffee, Rubber and Spices Boards.

- **Appropriate steps to be taken to estimate cost of cultivation and undertake market intervention in such other crops which experience volatile prices.**

9. Supportive Recommendations

A) Cost of Cultivation and Market Intelligence: There is a need to establish a permanent mechanism to undertake estimation of cost of cultivation and to provide market intelligence with active participation of State Agriculture & Horticulture universities and Departments of Agriculture, Horticulture and Marketing.

- Methodology evolved and cost items considered by Karnataka Agriculture Price Commission to be considered while assessing crop loss and declaring relief under different calamities.

B) Implementation of Proper Crop Plan: Constitute a committee at district level under the chairmanship of CEO, with farmers, technical specialists and officers from the concerned Departments as members.

- Specific crops or cropping systems to be identified in each district with an intension of promoting them.

- Based on the district crop plans a comprehensive cropping system to be developed at different agro ecological zones to formulate a State level suitable crop and production plans.

Various Government programmes and support mechanisms are to be dovetailed appropriately for successful implementation of crop and production plans.

- C) **Crop Insurance:** Strengthen the existing crop insurance schemes; evolve innovative ones like *Income Insurance & Group Insurance* schemes to provide multiple options to farmers.
- D) Karnataka State Seed Corporation to take steps to scientifically estimate cost of seed production of different crops and ensure remunerative prices to farmers.

E) Strengthening of Karnataka Agriculture Price Commission: In order to successfully accomplish its mandates, commission may be vested with statutory powers.

Table-1: Details of Districts, Taluks and Sample Size selected for Estimation of Cost of Cultivation during 2014-15

| Sl. No | Crop | Dist | Taluks | | Sample Size |
|--------------|-----------------|---------------|----------------------------|-----------------------|-------------|
| 1 | Paddy Irrigated | Shivmoga | <i>Shivmoga</i> | - | 18 |
| | | Davagere | <i>Davangere</i> | <i>Harihara</i> | 19 |
| | | Raichur | <i>Raichur</i> | <i>Sindanoor</i> | 18 |
| 2 | Paddy Rainfed | Shivmoga | <i>Theerthahalli</i> | - | 21 |
| | | Udupi | <i>Udupi</i> | <i>Karkala</i> | 19 |
| 3 | Ragi | Tumkur | <i>Chikkanayakanahalli</i> | <i>Kunigal</i> | 20 |
| | | Bangalore (R) | <i>Nelamangala</i> | - | 19 |
| 4 | White Jowar | vijayapura | <i>Vijayapura</i> | <i>Indi</i> | 16 |
| | | Kalburgi | <i>Gulbarga</i> | <i>Jeevargi</i> | 16 |
| 5 | Hybrid Jowar | Davanagere | <i>Harapanahalli</i> | <i>Jagaluru</i> | 20 |
| | | Ballari | <i>Hoovina Hadagali</i> | <i>Kudligi</i> | 20 |
| 6 | Maize | Dvg | <i>Harihara</i> | <i>H B Halli</i> | 25 |
| | | Belagavi | <i>Savadatti</i> | <i>gokak</i> | 15 |
| 7 | Bajra | vijayapura | <i>Vijapura</i> | <i>Muddebihal</i> | 21 |
| | | Koppal | <i>Koppal</i> | <i>Kustagi</i> | 11 |
| 8 | Bengal gram | Ballari | <i>Ballari</i> | <i>H. Hadagali</i> | 16 |
| | | Gulbarga | <i>Chitapur</i> | <i>Sedam</i> | 20 |
| 9 | Tur | Kalburgi | <i>Gulbarga</i> | <i>Jeevargi</i> | 19 |
| | | Vijayapura | <i>Sindagi</i> | <i>Muddebihal</i> | 21 |
| 10 | Groundnut | Tumkur | <i>Pavagada</i> | <i>Sira</i> | 18 |
| 11 | Sunflower | Vijapura | <i>Vijayapura</i> | <i>Indi</i> | 20 |
| | | Raichur | <i>Devadurga</i> | <i>Sindanoor</i> | 15 |
| 12 | Soyabean | Belagavi | <i>Bhailahongal</i> | <i>Belagavi</i> | 20 |
| | | Bidar | <i>Aurad</i> | <i>Bhalki</i> | 20 |
| 13 | Tomato | Belagavi | <i>Belagavi</i> | <i>Khanapur</i> | 19 |
| | | Kolar | <i>Kolar</i> | <i>Maaluru</i> | 18 |
| 14 | Onion | Chitradurga | <i>Chitradurga</i> | <i>Hiriyuru</i> | 18 |
| | | Gadag | <i>Gadag</i> | <i>Rona</i> | 20 |
| 15 | Potato | Belagavi | <i>Belagavi</i> | <i>Khanapur</i> | 20 |
| | | Hassan | <i>Hassan</i> | <i>Holenarasipura</i> | 19 |
| 16 | Dry Chilli | Ballari | <i>Ballri</i> | <i>Hospet</i> | 23 |
| | | Haveri | <i>Savanur</i> | <i>Shiggno</i> | 20 |
| 17 | Cotton | Dharwad | <i>Dharwad</i> | <i>Hubli</i> | 20 |
| | | Haveri | <i>Haverei</i> | <i>Shiggaov</i> | 19 |
| Total | | 17 | 57 | | 643 |

Table-2: Size class distribution of respondent farmers

| Sl. No | Land Holding Size | No. | % | State % Share |
|---------------|--------------------------------|------------|------------|----------------------|
| 1 | Marginal (Below 1 ha) | 138 | 21 | 15 |
| 2 | Small (1 to 2 ha) | 234 | 36 | 25 |
| 3 | Semi-medium (2 to 4 ha) | 121 | 19 | 28 |
| 4 | Medium (4 to 10 ha) | 89 | 14 | 24 |
| 5 | Large (Above 10 ha) | 61 | 10 | 8 |
| | Total land | 643 | 100 | 100 |

Table-3: Overview of the major Agriculture & Horticulture Crops in Karnataka: 2014-15

| SL. No. | Crops | Area (Lakh Ha) | % | Decadal Change | | Production (Lakh Tonnes) | Karnataka's Position in the Country (Area) | | Major Districts |
|--------------|-------------|----------------|-----------|----------------|-------------|--------------------------|--|------|--|
| | | | | %. | Growth Rate | | % | Rank | |
| 1 | Paddy | 13.26 | 11 | -11 | -1.19 | 59.88 | 3.31 | 10 | Raichur, Davanagere, Shivmoga, Bellari, Mysore, Koppal, Uttar Kannada, Yadgir, Mandya, Belagavi |
| 2 | Ragi | 7.08 | 6 | -25 | -2.2 | 12.86 | 57.83 | 1 | Tumkur, Hassan, Kolar, Mandya, Chitradurga, Bangalore Chikmagalur, Mysore |
| 3 | Jowar | 10.47 | 9 | -31 | -3.58 | 13.2 | 20 | 2 | Kalburgi, Vijayapur, Belagavi, Bagalkote, Raichur, Gadag, Bidar, Yadgir, Bellari, Dharwad |
| 4 | Maize | 13.37 | 11 | 43 | 4.54 | 42.18 | 15 | 1 | Davanagere, Belagavi, Haveri, Chitradurga, Bellari, Vijayapur, Bagalkote, Hassan, Koppal, Shivmoga |
| 5 | Bajra | 2.34 | 2 | -46 | -5.78 | 2.7 | 3.58 | 6 | Vijayapur, Koppal, Raichur, Bagalkote, Yadgir, Bellari, Kalburgi, , Belagavi, Bidar, Gadag |
| 6 | Bengal gram | 9.39 | 8 | 124 | 7.89 | 7.69 | 9.53 | 4 | Kalburgi, Vijayapur, Raichur, Gadag, Bagalkote, Belagavi, Koppal, Bellari, Dharwad, Bidar |
| 7 | Tur | 7.28 | 6 | 21 | 3.07 | 4.79 | 16.95 | 2 | Kalburgi, Vijayapur, Yadgir, Bidar, Raichur, Tumkur, Koppal, Chitradurga, Davanager, Ramanagara |
| 8 | Ground Nut | 6.54 | 5 | -37 | -4.77 | 5.63 | 12.48 | 3 | Chitradurga, Tumkur, Bellari, Raichur, Gadag, Belagavi, Dharwad, Vijayapur, Koppal, Kolar, Kalburgi |
| 9 | Sunflower | 3.56 | 3 | -75 | -15.16 | 2.12 | 62 | 1 | Raichur, Vijayapur, Koppal, Bagalkote, Gadag, Kalburgi, Bellari, Chitradurga, Yadgir, Belagavi |
| 10 | Soyabean | 2.56 | 2 | 92 | 7.9 | 2.26 | 1.87 | 5 | Bidar, Belagavi, Dharwad, Kalburgi, Haveri |
| 11 | Tomata | 0.64 | 1 | 47 | 4.27 | 20.31 | 10.98 | 4 | Kalburgi, Belagavi, Haveri, Davanagere, Mandya, Chamaraajnar, Chaikaballapura, Koppal, Mysore, Hassan |
| 12 | Onion | 1.65 | 1 | 11 | 0.51 | 29.86 | 11 | 2 | Gadag, Vijayapur, Bagalkote, Chitradurga, Haveri, Belagavi, Chikamagalur, Bellari, Chamaraajanagar, Davanagere |
| 13 | Potato | 0.43 | 0 | -43 | -7.38 | 5.65 | 2 | 9 | Hassan Belagavi, Chikamagalur, Kolar, Chikaballapur, Bengaluru, Dharwad, Chamaraajanagar, Bidar, Mysore |
| 14 | Dry Chilli | 0.83 | 1 | -33 | -6.05 | 1.69 | 12 | 3 | Dharwad, Bellari, Gadag, Haveri, Belagavi, Raichur, Chikamagalur, Tumkur, Bagalkote, Vijayapur |
| 15 | Cotton* | 8.75 | 7 | 111 | 8.13 | 22.52 | 5.07 | 5 | Kalburgi, Haveri, Mysore, Dharwad, Gadag, Belagavi, Bellari, Raichur, Chitradurga, Koppal |
| Total | | 88.15 | 72 | | | | | | |

* Cotton production in bales (170 Kgs of Lint = 1 Bale) Source: DES, GoK

Table -4: Scientific estimation of per acre cost of cultivation for major Agriculture and Horticulture crops of Karnataka 2014-15

| Groups/Crops | | Cost (Rs/Acre) | | | Paid Out Costs (%) | | | | | Opportunity Costs (%) | | | Cost /Qtl (Rs) | |
|---------------------------------|-------------|----------------|------------------|-------------------------------|--------------------|--------------------|----------|------------|-----------------------------|-----------------------|----------------------|-----------------|---|------------------------------|
| | | Paid out Cost | Opportunity Cost | Total Cost | Man Days | Bullock/ Machinery | Inputs | Fixed Cost | Interest on working Capital | Family Labour | Rental Value of Land | Managerial Cost | Paid out + Family Labour (A ₁ +FL) | Total Cost (C ₃) |
| Cereals | Paddy (IRR) | 26836 (59) | 18838 (41) | 45674 (100) | 10 | 17 | 27 | 2 | 3 | 5 | 23 | 13 | 1030 | 1671 |
| | Paddy (RF) | 26245 (64) | 14789 (36) | 41034 (100) | 24 | 26 | 10 | 1 | 3 | 6 | 17 | 13 | 1189 | 1985 |
| | Ragi | 26095 (65) | 13772 (35) | 39867 (100) | 27 | 16 | 18 | 1 | 3 | 6 | 16 | 13 | 1881 | 2781 |
| | Jowar | 11106 (59) | 7568 (41) | 18674 (100) | 7 | 18 | 30 | 1 | 3 | 7 | 21 | 13 | 1712 | 2922 |
| | Hy. Jowar | 8954 (58) | 6435 (42) | 15389 (100) | 7 | 25 | 21 | 2 | 3 | 12 | 17 | 13 | 1307 | 1919 |
| | Maize | 12888 (56) | 10240 (44) | 23128 (100) | 9 | 18 | 25 | 1 | 3 | 10 | 21 | 13 | 915 | 1425 |
| | Bajra | 10064 (64) | 5658 (36) | 15722 (100) | 9 | 24 | 26 | 2 | 3 | 9 | 14 | 13 | 1639 | 2324 |
| Pulses | Bengal gram | 11514 (63) | 6801 (37) | 18315 (100) | 11 | 25 | 22 | 2 | 3 | 7 | 17 | 13 | 3456 | 4963 |
| | Tur | 11512 (57) | 8605 (43) | 20117 (100) | 10 | 17 | 25 | 2 | 3 | 9 | 21 | 13 | 4009 | 6286 |
| Oilseeds | Groundnut | 16332 (57) | 12103 (43) | 28435 (100) | 10 | 14 | 29 | 1 | 3 | 12 | 18 | 13 | 3966 | 6186 |
| | Sunflower | 10158 (50) | 9981 (50) | 20139 (100) | 8 | 12 | 26 | 1 | 3 | 18 | 19 | 13 | 3022 | 4416 |
| | Soyabean | 14712 (61) | 9307 (39) | 24019 (100) | 15 | 19 | 22 | 2 | 3 | 4 | 22 | 13 | 2324 | 3647 |
| Vegetables and Commercial crops | Tomato | 122253 (64) | 69061 (36) | 191314 (100) | 16 | 10 | 34 | 1 | 3 | 4 | 19 | 13 | 742 | 1086 |
| | Onion | 34864 (45) | 42719 (55) | 77583 (100) | 17 | 4 | 20 | 1 | 3 | 11 | 31 | 13 | 575 | 1021 |
| | Potato | 45036 (66) | 22548 (34) | 67584 (100) | 14 | 11 | 37 | 1 | 3 | 6 | 15 | 13 | 1378 | 1906 |
| | Dry Chilly | 65136 (60) | 43296 (40) | 108612 (100) | 17 | 9 | 26 | 1 | 7 | 5 | 22 | 13 | 7598 | 11679 |
| | Cotton | 24931 (60) | 16617 (40) | 41548 (100) | 17 | 15 | 21 | 1 | 6 | 5 | 22 | 13 | 2915 | 4528 |
| Average | | | | 13 | 16 | 26 | 1 | 3 | 8 | 20 | 13 | | | |

Table -5: Economics of Major Agriculture and Horticulture Crops in Karnataka 2014-15.

| Groups/Crops | | Total Cost (Rs./Acre) | Paid Out Cost (Rs./Acre) | Yield (Qtl/Acre) | Price (Rs./Qtl) | Gross Income (Rs./Acre) | Net Income/Loss (Rs./Acre) | |
|------------------------------------|--------------|--------------------------|-----------------------------|---------------------|--------------------|----------------------------|----------------------------------|------------|
| | | | | | | | Paid out Cost & Family Labour | Total Cost |
| Cereals | Paddy (Irr) | 45674 | 26836 | 25.66 | 1524 | 41906 | 12666 | -3768 |
| | Paddy (RF) | 41034 | 26245 | 15.62 | 1170 | 28304 | -301 | -12730 |
| | Ragi | 39867 | 26095 | 13 | 1662 | 25487 | -2808 | -14380 |
| | White Jowar | 18674 | 11106 | 5.2 | 2295 | 15414 | 3029 | -3260 |
| | Hybrid Jowar | 15389 | 8954 | 7.55 | 1267 | 10466 | -299 | -4923 |
| | Maize | 23128 | 12888 | 15.35 | 1175 | 19286 | 3996 | -3842 |
| | Bajra | 15722 | 10064 | 6.2 | 1206 | 8787 | -2687 | -6935 |
| Pulses | Bengal gram | 18315 | 11514 | 3.69 | 3440 | 12694 | -59 | -5621 |
| | Tur | 20117 | 11512 | 3 | 5188 | 16824 | 3537 | -3293 |
| Oil Seeds | Groundnut | 28435 | 16332 | 3.95 | 4111 | 20239 | 572 | -8196 |
| | Sunflower | 20139 | 10158 | 4.56 | 3273 | 14925 | 1144 | -5214 |
| | Soyabean | 24019 | 14712 | 6.3 | 3137 | 20811 | 5127 | -3208 |
| Vegetables and Commercial Crops | Tomato | 191314 | 122253 | 176 | 809 | 142591 | 11879 | -48723 |
| | Onion | 77583 | 34865 | 76 | 1250 | 95000 | 51286 | 17417 |
| | Potato | 67584 | 45036 | 35.46 | 1117 | 39624 | -9238 | -27960 |
| | Dry Chilli | 108612 | 65316 | 9.3 | 10229 | 95130 | 24467 | -13482 |
| | Cotton | 41548 | 24931 | 8.92 | 3891 | 35864 | 8701 | -5684 |

Table -6: Comparative statement of MSP and Costs estimated by Union Govt. (CACP) and Karnataka Agriculture Price Commission (Rs./Qtl)

| Crops | | CACP (2015-16) | | | KAPC | | Difference compared to MSP | |
|------------------|--------------|--|------------------------------|-------------------------|--|------------------------------|-----------------------------------|----------------|
| | | Paid out Cost + Family Labour (A ₂ +FL) | Total Cost (C ₂) | MSP | Paid out Cost + Family Labour (A ₁ +FL) | Total Cost (C ₃) | Paid out Cost + Family Labour (%) | Total Cost (%) |
| Cereals | Paddy (Irr) | 892 | 1168 | 1450 (Grade-A) | 1030 | 1671 | 41 | -13 |
| | Paddy (RF) | | | 1410 (Common) | 1189 | 1985 | 19 | -39 |
| | Ragi | 1742 | 2148 | 1650 | 1881 | 2930 | -12 | -44 |
| | White Jowar | 1789 | 2306 | 1590 | 1712 | 2922 | -7 | -46 |
| | Hybrid Jowar | | | 1570 | 1307 | 1919 | 20 | -18 |
| | Maize | 964 | 1255 | 1325 | 915 | 1425 | 45 | -7 |
| | Bajra | 1558 | 1855 | 1275 | 1639 | 2324 | -22 | -45 |
| Pulses | Bengal gram | 2487 | 3612 | 3500 | 3456 | 4963 | 1 | -29 |
| | Tur | 3176 | 4149 | 4625 | 4009 | 6286 | 15 | -26 |
| Oil seeds | Ground nut | 4024 | 5276 | 4030 | 3966 | 6186 | 2 | -35 |
| | Sunflower | 3503 | 4229 | 3800 | 3022 | 4416 | 26 | -14 |
| | Soyabean | 1770 | 2418 | 2600 | 2324 | 3647 | 12 | -29 |
| Commercial Crops | Cotton | 2753 | 3767 | 3800 (Medium Staple) | 2915 | 4528 | 30 | -16 |
| | | | | 4100 (Long Staple) | | | | |
| Average | | | | | | | 13 | -27 |

A₁ = All actual expenses in cash and depreciation on fixed assets

A₂ = A₁+ Rental Value of Land

FL = Family Labour

C₂ = Total Cost

C₃ = C₂ + Managerial Cost (15 % of C₂ Cost)

Table 7: Profitability of mechanization in Ragi and Paddy Crops: 2014-15

| Sl. No. | Particulars | Ragi * | | | | Paddy ** | | | |
|------------|--------------------------------------|--------|---------|------------|-----|--------------|---------|------------|-----|
| | | Reaper | | Difference | | Transplanter | | Difference | |
| | | With | Without | Rs. | % | With | Without | Rs. | % |
| I | Decrease in Cost | | | | | | | | |
| 1 | Labour and Machinery Cost (Rs./Acre) | 16,027 | 20,816 | 4789 | -23 | 12700 | 15105 | 2405 | -16 |
| 2 | Input Cost (Rs./Acre) | 8,244 | 8,274 | 30 | -1 | 14506 | 18088 | 3582 | -20 |
| 3 | Total Cost (Rs./Acre) | 24,271 | 29,090 | 4819 | -17 | 27206 | 33193 | 5987 | -18 |
| 4 | Cost of Production (Rs./Qtl) | 1,448 | 1,774 | 326 | -18 | 869 | 1207 | 338 | -28 |
| II | Increase in Returns | | | | | | | | |
| 5 | Yield (Qtl./Acre) | 14 | 14 | 0 | 0 | 29 | 25 | 4 | 16 |
| 6 | Price (Rs./Qtl) | 2,000 | 2,000 | 0 | 0 | 1575 | 1575 | 0 | |
| 7 | By Product (Tractor Load) | 2.00 | 2.13 | -0.13 | -6 | 1.00 | 1.50 | -0.50 | -33 |
| 8 | Price (Rs./Tractor Load) | 2000 | 2000 | 0 | 0 | 2000 | 2000 | 0 | 0 |
| III | Net Income | | | | | | | | |
| 9 | Net Income (Rs./Acre) | 7,729 | 3,170 | 4559 | 144 | 20469 | 9182 | 11287 | 123 |

* In Bangalore Rural and Tumkur Districts

** In Davanagere and Raichur districts

Table 8: Inverse relationship between Productivity and Cost in Irrigated Paddy

| Yield (Qtl./Acre) | Production Cost (Rs./Qtl) | | Farmers (%) |
|----------------------|--|-------------------------|----------------|
| | Paid out Cost + Family Labour (A_1+FL) | Total Cost (C_3) | |
| 24 | 1265 | 1903 | 13 |
| 25 | 1154 | 1794 | 8 |
| 26 | 1150 | 1792 | 23 |
| 27 | 1144 | 1773 | 23 |
| 28 | 1080 | 1701 | 25 |
| 31 | 993 | 1616 | 4 |
| 32 | 731 | 1286 | 4 |

Table-9: Marketing and Price Status of Crops in APMCs: 2014-15

| Sl.No | Crops | Production (Lakh Tonnes) | Marketed at A.P.M.C (Lakh Tonnes) | Quantity sold in Regulated Market (%) | Average Price (Rs/Qtl) | Minimum Support Price (Rs/Qtl) | Sold above MSP (%) |
|----------------------|-------------|--------------------------|-----------------------------------|---------------------------------------|------------------------|--------------------------------|--------------------|
| 1 | Paddy* | 59.88 | 29.59 | 49 | 1711 | 1360 | 98 |
| 2 | Ragi | 12.86 | 0.93 | 7 | 1602 | 2000 | 20 |
| 3 | Jowar | 13.2 | 0.69 | 5 | 1612 | 2300 | 53 |
| 4 | Maize | 42.18 | 24.99 | 59 | 1253 | 1310 | 0 |
| 5 | Bajra | 2.7 | 1.11 | 41 | 1212 | 1250 | 61 |
| 6 | Bengal gram | 7.69 | 2.02 | 26 | 3584 | 3175 | 56 |
| 7 | Tur | 4.79 | 3.59 | 75 | 5055 | 4350 | 63 |
| 8 | Groundnut | 5.63 | 2.18 | 39 | 3892 | 4000 | 45 |
| 9 | Sunflower | 2.12 | 0.63 | 30 | 3188 | 3750 | 0 |
| 10 | Soyabean | 2.26 | 0.48 | 21 | 3325 | 2500 | 100 |
| 11 | Tomato | 20.31 | 4.82 | 24 | 776 | - | - |
| 12 | Onion | 29.86 | 13.16 | 44 | 1077 | - | - |
| 13 | Potato | 5.65 | 4.24 | 75 | 1173 | - | - |
| 14 | Dry Chilli | 1.69 | 0.83 | 49 | 3188 | - | - |
| 15 | Cotton | 22.52 | 6.26 | 28 | 3683 | 3750 | 89 |
| Total/Average | | 233.34 | 95.54 | 41 | | | 53 |

Table-10: Reasons of selling outside APMC

| Sl. No. | Reasons | % |
|----------------|---|----------|
| 1 | Time consuming & requires more no. of visits etc. | 30 |
| 2 | Prior contract with private money lenders | 19 |
| 3 | Not satisfied with the auctioning process | 13 |
| 4 | Constraints due to APMC rules & regulations | 10 |
| 5 | High rate of commission by middlemen | 8 |
| 6 | Problem of quality (FAQ) | 8 |
| 7 | Not satisfied with prices at APMC | 7 |
| 8 | Relatively higher prices outside the APMC | 5 |
| Total | | 100 |

Table- 11: Behavior of production, arrivals and price during 2015-16

| Sl. No. | Crops | Expected Production in Kharif** (Lakh Tones) | Last year Production in Kharif* (Lakh Tonnes) | Deficit % | Last 5 years Average Prices (Rs/Qtl) | Price as on October 2015 (Rs/Qtl) | Maximum Arrival Months | Price declining Months | Coefficient of Variation (CV) (%) |
|-----------------------|-------------|--|---|-----------|--------------------------------------|-----------------------------------|----------------------------|----------------------------------|-----------------------------------|
| 1 | Paddy | 38.98 | 46.65 | -16 | 1395 | 1870 | November-January, May-July | May-October | 22 |
| 2 | Ragi | 10.20 | 12.31 | -17 | 1343 | 1559 | December-April | April-September | 25 |
| 3 | Jowar | 0.93 | 1.6 | -42 | 2089 | 2269 | January-May | April-October | 9 |
| 4 | Maize | 26.53 | 37.88 | -30 | 1093 | 1326 | November-March | April-July | 12 |
| 5 | Bajra | 1.42 | 2.48 | -43 | 1140 | 1298 | September-January | April-June, October-November | 12 |
| 6 | Bengal gram | - | - | - | 3063 | 4387 | January-April | April-June | 17 |
| 7 | Tur | 3.04 | 4.74 | -36 | 3931 | 7444 | November-March | May, July-November | 22 |
| 8 | Groundnut | 1.87 | 3.49 | -46 | 3361 | 4426 | February-March | July-October | 12 |
| 9 | Sunflower | 0.51 | 0.86 | -41 | 2993 | 3310 | September-January | April-July | 6 |
| 10 | Soyabean | 2.03 | 1.89 | 7 | 2843 | 3256 | October-January | September-February | 18 |
| 11 | Tomato | 18.4 | 20.31 | -9 | 954 | 1188 | June-September | January-April, September-October | 20 |
| 12 | Onion | 17.22 | 29.86 | -42 | 1072 | 1759 | September-December | February-June | 25 |
| 13 | Potato | 4.74 | 5.56 | -15 | 1134 | 1014 | August-September, May | January-April | 22 |
| 14 | Dry Chilly | 1.45 | 1.6 | -9 | 8109 | 10331 | January-April | April-November | 12 |
| 15 | Cotton | 10.99 | 19.33 | -43 | 4254 | 4338 | October-March | October-December, May-June | 7 |
| Total Shortage | | | - | -29 | | | | | |

Source: * Directorate of Economics and Statistics, ** Karnataka state Departments of Agriculture and Horticulture Bangalore.

Cotton Production in Bales (170kgs of Lint = 1Bale)