



FOREWORD

I feel honoured and privileged to place the present Agricultural Policy Document in the hands of the farmers of my State on 1st November 2006 as promised by my Government. The first task that we set for ourselves was to prepare a **“Farmer Centric”** Agriculture Policy Document. The earlier policy document was prepared in 1995, at the instance of the then Chief Minister Sri.H D Devegowda and Late Sri.C Byre Gowda, the then minister for Agriculture.

The present government is strongly committed to the welfare of the farmers. Our intention has been unequivocally stated in the first budget presented by my government on 31st March 2006. Our intent was made clear in the budget speech of 2006-2007 by stating “.....**to constitute a Committee of Agricultural Experts to undertake a comprehensive study of our agricultural systems and to make recommendations on reorienting and modernization of our agriculture**”. Subsequently a decision was taken by the government to prepare an exhaustive Agricultural Policy document. The present Agricultural Policy document focuses on doubling the agricultural production during the next decade, achieving a rate of growth of 4.5 per cent per annum for the agriculture sector, increasing the net income of the farmer and restoring the lost glory of the farmer as *Annadatha*.

The initiative to prepare this document began with several formal and informal meetings and discussions at various levels, in some of which I also had an opportunity of expressing my views and interacting with the stakeholders.

I must place on record the fact that Dr.Swaminathan, Chairman of the National Commission on Farmers, Government of India visited Karnataka on three different occasions in the recent past. He held extensive discussions and gave valuable ideas and suggestions specific to Karnataka. He also had detailed discussions with former Prime

Minister Sri.Devegowda, whose genuine interest in agriculture development hardly needs any emphasis. The National Commission on Farmers has submitted five reports to the government of India. In order to discuss the implications of these reports for the State, five sub-committees were formed by the State Government under experts like Dr.R.Dwarkinath, former Vice Chancellor, Dr.M..N Sheelavanthar, Vice Chancellor, University of Agricultural Sciences, Bangalore, Dr.S A Patil, Director, ICRI, New Delhi, Dr.R.N.Srinivasa Gowda, Vice Chancellor, Karnataka Veterinary, Animal, Fisheries Sciences University, Bidar, Dr.Vasanth Kumar, Director, Horticulture, Government of Karnataka, Bangalore, Captain Raja Rao, former Secretary, Department of Irrigation, Sri.D B Gore, Chief General Manager, NABARD, Bangalore and Professor, R S Deshpande, Institute for Social and Economic Change, Bangalore. Dr.Swaminathan appreciated the proactive approach of the State Government and the fact that Karnataka was the first State not only to constitute the Committees but also to make a detailed presentation before the National Commission on Farmers. The inputs that have come from these Sub-Committees have been used for preparing the present Policy document.

I would like to express my gratitude to all the Farmers, Administrators, Social Scientists, Social Activists, Agricultural Scientists, elected representatives and the Core Group, who spared their valuable time to prepare this document.

I would like to place on record the sincere efforts put in by Sri.Bandeppa Khashempur, Minister for Agriculture, Sri.A Ramaswamy, I A S, Principal Secretary to Government, Department of Agriculture & Horticulture and his team of dedicated officers and Prof.R S Deshpande of Institute for Social & Economic Change..

Our government looks forward to receiving valuable comments and suggestions from the stake holders for further improving the policy document.

H D Kumaraswamy
Chief Minister

November 1,2006
Bangalore



PREFACE

The Karnataka Agricultural Policy has been drafted under the leadership of our Honourable Chief Minister Sri.H D Kumaraswamy. We have earnestly placed the farmers' overall welfare in every sense of the term as our prime goal. The issues confronting the sector and policy leads have been discussed in several formal and informal meetings spanning several hours. Agricultural scientists, academicians, administrators, social workers, NGOs, elected representatives, farmers etc., have been consulted.

I also had the privilege of discussing some policy issues with none other than Dr.M S Swaminathan, Chairman, National Commission on Farmers during his visits to Karnataka. We in Karnataka had formed five Sub-Committees which made a detailed presentation to the National Commission on Farmers. These presentations form a very valuable input to the policy.

I wish to place on record the sincere, hard and honest work put in by Sri.A Ramaswamy, I A S, Principal Secretary, Department of Agriculture and Horticulture and his team of dedicated officers of the Department of Agriculture who worked very hard on the policy paper. I would also like to record my appreciation of Prof.Deshpande, Institute for Social & Economic Change, with whom I had very valuable and useful interaction.

I would also like to thank the Chairman and Members of the sub-committees who provided critical inputs.

Sincere implementation of the present Agricultural Policy will go a long way in improving the lot of the farmers of Karnataka and at the same time raise agricultural production. Our aim is to double our agricultural production in the next ten years and ensure that the farmer gets the best price for his produce.

Bandeppa Khashempur
Minister for Agriculture
Government of Karnataka

November 1,2006
Bangalore

AGRICULTURAL POLICY OF KARNATAKA 2006

Agriculture is a way of life for our people. In material terms, it provides sustenance for the vast majority of our population and accounts for nearly half of our national produce. On the success which attends our efforts here, depends also the success of our entire economic growth. Even now, much of our industry depends on agriculture for its raw material, exports emanate directly or otherwise from the agricultural sector and the growth of rural incomes will constitute an expanding market for the domestic industry.

A particularly disturbing aspect of our performance over the last two decades is that agricultural growth has decelerated over the mid 1990s. Agriculture had grown at 3.2% from 1980 to 1996. It decelerated to 2.1% during the Ninth Plan. The corner stone of the Tenth Plan strategy was a reversal of the declining trend in the growth rate of agriculture and with a target for agricultural growth at 4%. Unfortunately, actual performance of agriculture has deteriorated even further and will possibly not exceed 1.5% during the last year of the Plan. In these circumstances, it is hardly surprising that a perception has grown that the benefits of growth have by passed a substantial sector of our people.

The suicide of several small and marginal farmers during the last few years is a striking example of mismatch between GDP growth and the wealth distribution in our country. The small and marginal farmers have been sidelined to the fringes. A very large number remain steeped in debt. All these years they have been living on the hope that brighter days will dawn very soon, as promised to them by the powers that be. If bold remedies matching the gravity of the problem are not taken by the government, both Union and States, the problem will become further compounded and complex, ultimately, threatening the very fabric of our society.

The periodic failure of the monsoon in the last few years – in Karnataka we have had 4 failures in a row - is certainly a contributing factor, but the problems of agriculture go beyond weather. There has been a loss in the momentum which suggests a deeper problem in our agricultural strategy. Correcting this must be accorded the highest priority.

Prime Minister Dr. Manmohan Singh's statement on 18th October 2006, about the need for **“fundamental new perspectives on rural development and agriculture”** sounds a hopeful note.

The Union Govt. has acknowledged that Indian agriculture is in crisis and the real challenge of the next decade is to pull out subsistence farmers from their marginal existence and propel the advanced farmers on the global platform.

The present Agricultural Policy of Karnataka, after taking a careful note of the harsh realities backed by necessary figures and statistics, has stressed the need to act on five fronts. The entire philosophy revolves around the "*Panchasutra*"

The policy has stressed the need to focus attention and increase investments in the entire chain of activities related to agriculture – the supply of inputs and credit, diversification of crops, better production practices and improved post harvest management. The agricultural credit system needs urgent attention and revamping to ensure supply of adequate credit at a reasonable cost. The cooperative credit system has withered over the years. Our irrigation planning has deteriorated greatly with very slow progress in completing ongoing irrigation projects.

The present policy document has stressed the need to implement a workable strategy for water management in rain fed areas and also adopting the watershed approach in drought prone and water land areas. The management and effective equitable utilization of our shared water resources is the key element in improving agricultural performance. The policy document has drawn attention to the need to promote water efficient technologies and crops.

Other critical requirements for agricultural dynamism, according to the present policy include new generation technologies and effective attention machinery for delivering technological products to farmers. The policy has recognized the need to have a sharper focus on strategic research for evolving the needed technologies, a task that should be assigned to the two agricultural universities in the State. Field extension activity has been clearly assigned to the State Machinery.

Karnataka Agriculture Policy in future envisages a move from the traditional grain based strategy followed in the past towards diversification, emphasizing horticulture, poultry and live stock. This transition poses new challenges including new institutional arrangements. In addition to having more efficient markets and improved delivery channels from farmers to consumers, the policy has underlined the importance of the concerted efforts to increase value addition to agricultural produce.

Karnataka Agriculture Policy has the ambition to double agricultural production in ten years. We are aiming to be a significant player in global agricultural trade. Increased productivity, higher efficiency and greater value addition have been identified as factors for this to happen.

I must place on record the whole hearted support and encouragement that we received from the former Prime Minister Shri. H.D. Devegowda, Shri H.D. Kumara Swamy, Hon'ble Chief Minister, Shri M.V. Rajashekar, Hon'ble Union Minister for Planning and Shri Bandeppa Khashempur, Hon'ble Minister of Agriculture in preparing the policy document.

We also had the unique benefit of interacting with Dr. M.S. Swaminathan, Chairman, National Commission on Farmers and his colleagues. Several useful suggestions and policy initiatives that came from Dr. Swaminathan have found prominent place in this policy document. I would like to express my profound gratitude to Dr. Swaminathan and his colleagues.

I would like to thank the Chairperson of various sub groups who dealt with different aspects of agricultural development of Karnataka. Their report formed the basis for the present policy document. I wish to thank all the farmers and farmer leaders, elected representatives right from the Panchayat level to Zilla Parishad to Legislative Assembly and Legislative Council social activists, freedom fighters, NGOs, and all others who provided significant inputs for this policy document.

Last but not the least this work would not have been possible but for the untiring efforts put by Prof. Deshpande, Institute for Social & Economic Change and whole hearted cooperation extended by Shri Venkataiah, Commissioner of Agriculture, Dr. Prakash, Director of Agriculture, Dr. S.C.V. Reddy, Additional Director of Agriculture and above all Dr. Sarvesh, Additional Director of Agriculture who did an excellent job in coordinating the work of various sub groups and saw to it that they functioned in a time bound effective manner.

It is my sincere hope and desire that the implementation of the present policy will go a long way in improving the lot of the farmers and in accelerating the agricultural growth and allied activities.

A. Ramaswamy, I.A.S.

Chairman, Agriculture Policy of Karnataka &

Principal Secretary

Department of Agriculture & Horticulture

November 1, 2006
Bangalore

GOVERNMENT OF KARNATAKA



AGRICULTURAL POLICY 2006

Department of Agriculture and Horticulture

Bangalore

November 2006

Web site: <http://raitamitra.kar.nic.in>

Have you not heard his silent steps?

He comes, comes, ever comes.

Every moment and every age, every day and every night

He comes, comes, ever comes.

Many a song have I sung in many a mood of mind,

But all their notes have always proclaimed,

“He comes, comes, ever comes”

In the fragrant days of sunny April through the

Forest path he comes, comes, ever comes.

In the rainy gloom of July nights on the thundering

Chariot of clouds he comes, comes, ever comes.

In sorrow after sorrow it is his steps that press upon

My heart, and it is the golden touch of his feet that makes my joy to shine.

Rabindranath Tagore,

Gitanjali, Poem 45

Karnataka Agriculture

Karnataka state forms the South Western part of the Deccan Peninsula and lies between 11.5° and 18.6° North latitude and 74.0° and 78.4° East longitudes. It is the 8th largest state in the country having an area of 191,791 Sq. Kms (6.25% of India's total area of 3,065,027 Sq.Kms.).

As per the census of 2001, the State has a total population of 5.27 crores accounting for 5.13 per cent of the country's total population of 102.70 crores. The rate of growth of population in the State has declined considerably from 21.12% in 1991 to 17.25% in 2001. Sixty six per cent of the total population resides in rural areas, whose main occupation is Agriculture and allied activities.

Out of the total population, 44.6 per cent is working population, of which 69.36 lakh are cultivators and 62.09 lakh are agricultural labourers. One important feature, of agricultural labourers is that the percentage of women (58.19%) overrides the percentage of men (41.81%). The literacy rate of the State is 67.04 per cent, while in rural areas it is 59.68% and that of urban areas it is 81.05 per cent.

The State has 27 districts, 176 taluks, 745 hoblies, 29,483 Villages (27,575 inhabited and 1908 uninhabited) and 5692 grama panchayaths.,

As per the Agricultural Census of 2000-01, the State has about 123.07 lakh hectares of cultivable area out of total geographical area of 190.50 lakh hectares, accounting for 64.60 per cent. The total number of operational holdings is 70.79 lakhs with 1.74 hectares, as average size operational holding. Small and marginal farmers account for 72.9 per cent of the total holdings, cultivating only 34.4 per cent of the total cultivable area. The number of holdings increased by 8.58 lakhs due to fragmentation of the land in the last five years. The average size of holding has decreased from 1.95 hectares to 1.74 hectares.

Out of the total cultivable area of 123.07 lakh hectares, as per the statistics of 2001-02, the net cultivated area was 100.31 lakh hectares and the gross cultivated area was 116.70 lakh hectares, indicating a cropping intensity of 116 per cent. Out of the gross cultivated area, the area under irrigation was 30.89 lakh hectares (26.5%).

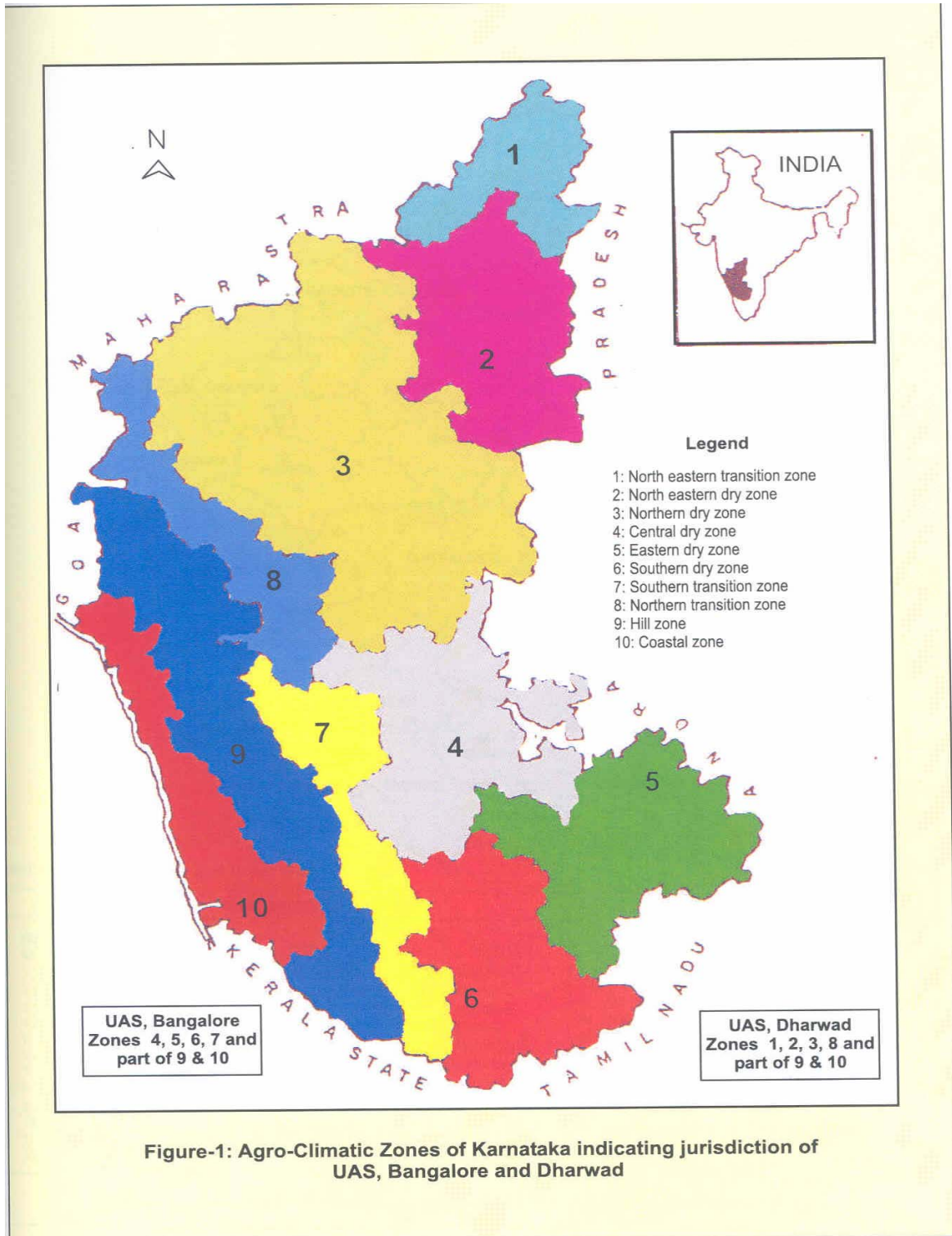
The State is divided into 10 Agro-climatic zones on the basis of soil structure, humidity, elevation, topography, vegetation, rainfall and other agro-climatic factors (Fig. 1).

The State receives normal annual rainfall of 1139 mm, mainly through southwest monsoon (June to September – 806 mm) and Northeast monsoon (October to December – 195 mm). The rainfall during post monsoon period, i.e January- March is about 14 mm and in pre-monsoon period, (April to May) it is 124mm. Accordingly, the state has three agricultural seasons – KHARIF (April to September), RABI (October to December) and SUMMER (January to March).

Agricultural crops are cultivated in an area of about 107 lakh hectares annually. Out of this, in Kharif season it is about 69 lakh hectares (64%), in Rabi season it is about 32 lakh hectares (30%) and the rest 6 lakh hectares (6%) come in summer season. Out of gross cultivated area of agricultural crops an area of about 22 lakh hectares (20.5%) comes under irrigation.

Karnataka State with a foodgrains production of about 100 lakh tonnes contributes nearly 5 per cent to the national foodgrains production. However, owing to successive droughts during the last three years (2001 – 02 to 2003 - 04) the foodgrains production had decreased substantially.

Agro-Climatic Regions of Karnataka



*Panchasutra
for
Agricultural Development*

- 1. Protect and improve the soil health.*
- 2. Conservation of natural resources,
with special emphasis on water and micro irrigation,*
- 3. Timely availability of credit and other inputs
to the farmers,*
- 4. Integrate post harvest processing with
the production process, and*
- 5. Reduce the distance between 'Lab to Land'
in transfer of technology.*

Agricultural Policy of Karnataka

1 Introduction

1.1 Karnataka has a typical composition of having regions with most of the agro-climatic condition in the country, except the snow-clad mountainous region. A large portion of the land falls under semi-arid conditions facing severe agro-climatic and resource constraints. Interestingly, coexisting with this are a few patches of high value - high-tech agriculture. This emerged only during last two decades and has a sporadic presence in the State. Consequently, Karnataka's agriculture is at the same time diversified and segmented in many ways. Karnataka is one of the few States with the lowest proportion of their area under irrigation. Majority of farmers here have no other option but to grow low value crops. Under such speckled situation, agricultural sector of the State is growing moderately despite severe

Contours of the Task

- ☞ *Climatic Composition with varied agro-climatic situations*
- ☞ *Second to Rajasthan in the Share of Drought prone area*
- ☞ *One of the least irrigated regions of the nation*
- ☞ *High density of low value crops*
- ☞ *Faced spate of farmers' suicides*
- ☞ *Large share of marginal and small farmers*

climatic and strong resource constraints. The credit for this goes to the untiring efforts of the farmers in the state. Undoubtedly, the State has the potential to emerge as one of the leading states in this sector too. However, it is a matter of deep concern that even though agriculture directly impacts the overall growth and distribution performance in the State economy, it has not been attracting investments in the recent past. Farmers are expressing the grievous situation picturesquely. It is rightly feared that the sector may confront another strong lingering of stagnation. Realising this, the State Government is seized of this problem

and has decided to give a close policy look to deal with it.

1.2 Karnataka has always taken a lead ahead of the other States in India; in many respects as far as Agricultural Policy initiatives are concerned. It became the first State in the country to have unveiled its own Agricultural Policy as early as 1995, in order to demonstrate that agriculture is a subject enshrined in the State list under the Constitution of India. Two years before that, sensing the impending stagnation in the agricultural sector, the State Government appointed a High Power Committee under the Chairmanship of Shri T R Satishchandran and the recommendations of this Committee were far reaching. The State did not lag behind any other State in preparing a document assessing the situation emerging out of Agreement on Agriculture under the WTO. Similarly, the State

had appointed its own Agricultural Commission under the Chairmanship of Dr.R. Dwarkinath to deal with a few crucial problems confronting the sector during those years. It also has an active Agricultural Prices Commission under the Chairmanship of Dr Bisaliah to advice the State Government on agricultural prices. Further, it also became the first State to take a serious note of the distress confronting the agricultural sector that culminated in a spate of farmers' suicides. An expert Committee was appointed under the Chairmanship of Dr.G. K. Veeresh that recommended steps to remedy the situation, and the State could arrest the pace of farmers' suicides considerably. Now, with this Policy document, the State is venturing into the domain of a dynamic Agricultural Policy that has a **'Farmer –Centric'** approach.

- 1.3 A decade has passed since the adoption of the Agriculture Policy document of 1995 under the stewardship of the then Chief Minister of Karnataka Shri H D Devegowda and the then Minister for Agriculture Late Shri C. Byre Gowda. Therefore, this is an appropriate time to take note of the changing situation. The State also recognizes the increasing distress in the farm sector at an alarming rate and the stagnation of net income flow in the farm sector. In real terms, during the last decade. The average size of holding is shrinking both due to demographic pressures as well as non-viability of farming among the lowest quartile of holdings. As a consequence, the farmers are becoming poorer and expressing unequivocal preference to vocations other than farming. It is also unfortunate that the esteem that the farming profession enjoyed a few decades ago has been eroding, and it is the State's responsibility to redeem it and give back the lost glory to agricultural sector.

2 Backdrop for Policy

- 2.1 Karnataka occupies an unenviable position of the average or the median level. From one side, this can be interpreted as an average response to the developmental initiatives and not buckling down under the pressures of acute production as well as resource constraints. But from another, this also indicates inability to climb up in the developmental ladder despite remaining at the average level for a considerable length of time. Probably, the developmental efforts have been so critically managed that the State continues in the same position without sliding down in the hierarchy and at the same time able to climb up in comparison with other States. It is necessary that the State records its rightful potential position in any inter- State comparisons. Above all, it is the earnest desire of the farmers of the State that they require significant policy changes. Therefore, this is the right time to look back in retrospect and initiate the policy imperatives to adjust to the impending challenges and to

accommodate the needs of the farmers. It is well recognised that finally, the farmers of the state can only take the responsibility to put the State at the forefront of development and consequently for the State to assure welfare of the farmers, which is of paramount importance.

2.2 Farmers in the State, as well as the country today feel completely depressed due to increased consumerism. Over the years, it has been observed that the net income of the farmers at constant prices has remained almost constant, whereas the Consumer Price Index is changing fast and this indicates that the farmers are increasingly facing distress. Undoubtedly, some of them are sliding down the poverty line, and even express their desire to quit farming. Therefore, the first imperative of the

Issues at Hand

- *Karnataka has always been at the high level of performance across States.*
- *Net income of the Farmer has almost stagnated for the last decade though the consumer price index is on increase.*
- *Consequently, farm sector income come under stress.*
- *Welfare of the Farmer is of paramount importance.*
- *Necessary to restore the lost social prestige of the 'Annadata'*

Agriculture Policy today is to provide opportunities for the farmers to enhance their net income to a respectable level. This can be achieved through various ways. Increasing aggregate production is the first and foremost need. This surely is a necessary condition, but not a sufficient condition, as markets and prices play very crucial role in deciding the net income flow to the farm household. Therefore, this policy document keeps at the forefront improving net farm income of the farmer as the prime goal. In order to achieve this, the policy document touches the

aspects of crop planning, production, technology, marketing and prices as foremost components.

2.3 Psychologically, it is quite distressing that the farmers feel that they are at the lowest rung in the social hierarchy, not so much because of any social factors, but largely due to the neglect of agriculture sector, in all walks of life, besides the undue importance given to other sectors. It will be quite an important task therefore, to bring back the glory and self respect of the farming community. There are no policy tools that can achieve this directly. However, putting agriculture sector on a better path and resurrecting its importance across the sectors will go a long way in respect of agriculturists. This is another important task set forth by this policy document.

2.4 Agriculture sector of Karnataka has registered growth rates between two and three per cent per annum during the last three decades, but there have been a large number of saddle points due to droughts and other calamities. In order to achieve consistent income flow that records a growth rate significantly higher than the growth rate in the Consumer Price Index for Agricultural Labourers and for rural areas,

it will be essential to place the target of agricultural growth rate at 4.5 per cent per annum. The 4.5 per cent growth rate in gross value of agricultural production will set the net income increase by about three per cent per annum for the farm household. This should be sufficient to take care of increasing prices of inputs, as well as the changes in the terms of trade between agriculture and non-agricultural sectors. **Therefore, it will be quite prudent to set forth a goal of 4.5 per cent per annum in the gross value of agricultural production.**

3 Philosophy and Approach

3.1 The philosophy of the present Agricultural Policy lies in the concept of '*Pancha Sutra*' that was announced by the State in its budget 2006-07 for accelerated growth in agriculture. The five components of Sutra are: (i) to protect and improve soil health, (ii) Conservation of natural resources, with special emphasis on water and micro irrigation, (iii) Timely availability of credit and other inputs to the farmers, (iv) Integrate post harvest processing with the production process, and (v) Reducing the distance between 'Lab to Land' in transfer of technology.

His Excellency the President of India Dr A P J Abdul Kalam during his address on 20th November 2005 to the Joint Session of the Karnataka legislature put forth a four fold mission statement for agricultural prosperity in the State. i.e, (i) Energy Mission: Growing bio-fuel trees like Honge, Jatropha etc., in about 50 per cent of waste lands result in producing 35 lakh tonnes of bio-fuel per year to generate income of Rs. 875 crores and provide employment to 14 lakh persons, (ii) Horticulture Mission: There is need for development in irrigation, infrastructure, distribution, farm mechanization and agro processing. Horticulture Mission will result in an accrual of income of Rs. 10,000 crores with higher employment potential, (iii) Agro Processing: Karnataka is rich in Agriculture and Horticulture produce and there is lot of scope for converting them into value added food products. This mission will provide export revenue of Rs. 50,000 crore and (iv) Water Management: There is a need to create water harvesting and wastewater recycling facilities. This is kept in view as the intrinsic goal of this policy. Keeping these and

'Farmer Centric' approach as the focal points of this policy, the State has set for itself a few major achievements in terms of goals. The policy therefore addresses more to the farmers' problems than to the technology per se.

3.2 This is a **'Farmer Centric'** policy; therefore the process of development begins at the farm. It further covers the role of the State in terms of budgetary support and macro-economic adjustments, production and technology sector, environmental friendliness of the farmer, land issues, agro-processing, associated trade and value addition to the farm products, removal of distortions in domestic

Goals of this Farmer Centric Policy

- *Soil Health*
- *Conservation of Natural Resources mainly land and water*
- *Availability of Credit*
- *Integrated Post Harvest Management*
- *Lab to Land at quick pace*
- *Double the agricultural production in a decade and net income of the farmer*
- *Growth rate of 4.5 percent per annum*
- *Shift to 'demand driven' technology from the 'supply pushed'*

market, and finally strengthening of the allied agricultural sector and linkages

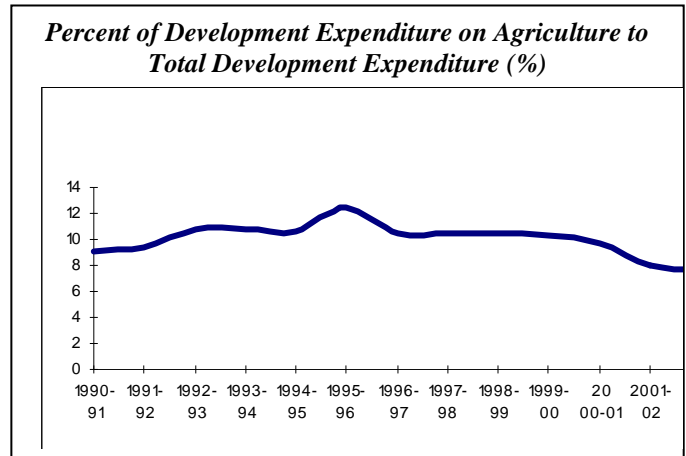
3.3 First, this policy envisages achieving a growth rate of 4.5 per cent per annum during the next decade. It is expected that this growth rate will help to increase the net income of the farmer. It will also help to bridge the income differentials between the agricultural sector and the non agricultural sectors. Employment generation in the farm sector as well as in the allied agricultural sector

is the key to provide incremental income across different regions and classes of farmers. In overall policy scenario, this needs to be attended to by dovetailing employment generation in most of the programmes. Second, the policy focuses on the bypassed regions, as well as bypassed groups of farmers in the process of development adopted thus far. That will bring in the question of attending to regional disparities and providing the growth drivers for the weak regions. Third, hitherto the technological change has been 'supply driven' rather than 'demand driven'. The distance between the 'Lab to land' has always created a lag in reaching the technology at the doorsteps of farmers. Therefore, rethinking is essential in regeneration and dissemination of technological input to provide it a farmer orientation. Fourth, natural resources are under stress, whether it is soil, water or the other biological resources. It is very essential to conserve the resources and at the same time, provide better production environment. The trade-off between production and resource depletion needs to be handled carefully. Lastly, access to factor market and quality of the inputs supplied to the farmers has always been at the centre of discussion. It will be necessary to attend to these lacunae in the best possible manner.

4 Macro Economy of Agriculture

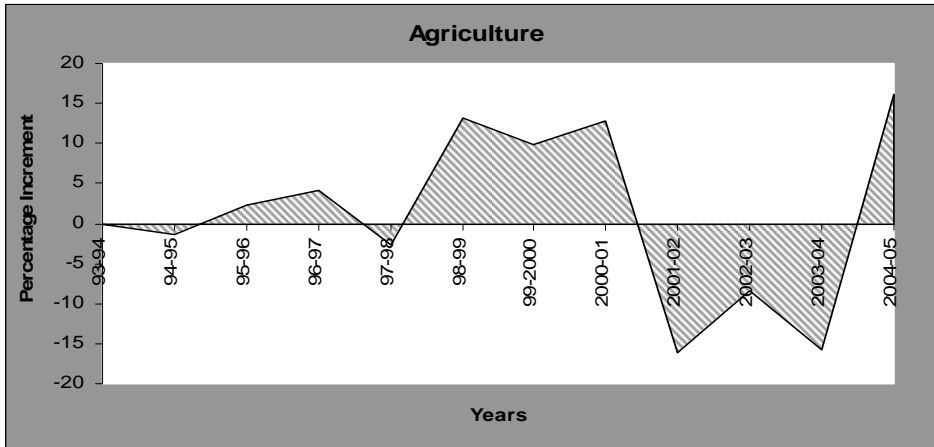
4.1 The macroeconomic situation of agricultural sector during last decade has not been very encouraging. Inadvertently though, agricultural sector received less than its due share of public resources as well as private investment. Similarly, the budgetary allocation to development schemes for agricultural sector has not been very satisfactory. It is essential to

correct this imbalance in investment from public sources, and the budgetary allocation to the agricultural sector needs to be allocated on the basis of per hectare area or per farmer basis. It is suggested that in future budgets, agricultural sector should be allocated resources on the basis of the earlier trends and keeping in view the requirements of growth rate of 4.5 per cent per

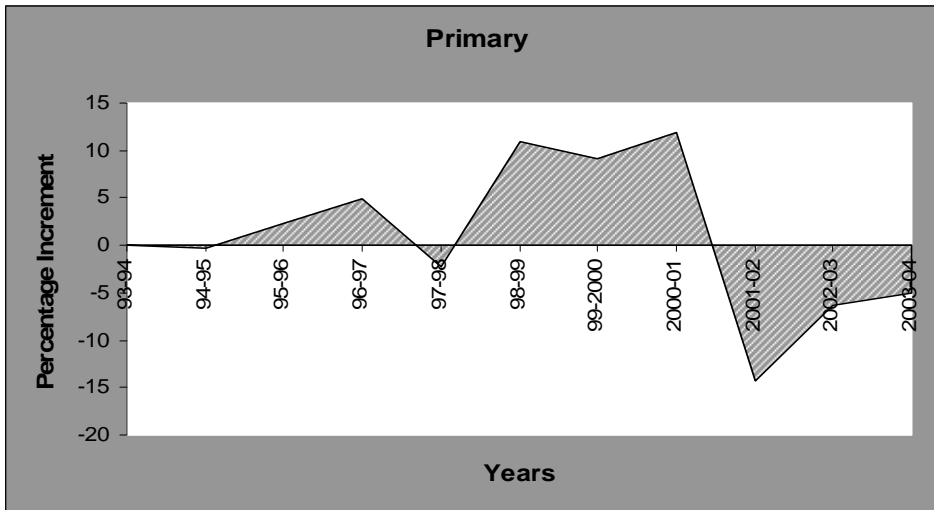


annum in the sector. The expenditure from budgetary resources for development purpose will have to be about 10 per cent of the total development expenditure and the non-development expenditure in the agriculture sector should be between 22 and 25 percent. Generally 8 to 10 per cent of the total expenditure from the budgetary resources goes to agriculture (other than irrigation). However, in the recent past it has gone further down. This should be brought back to the level of 10 percent range.

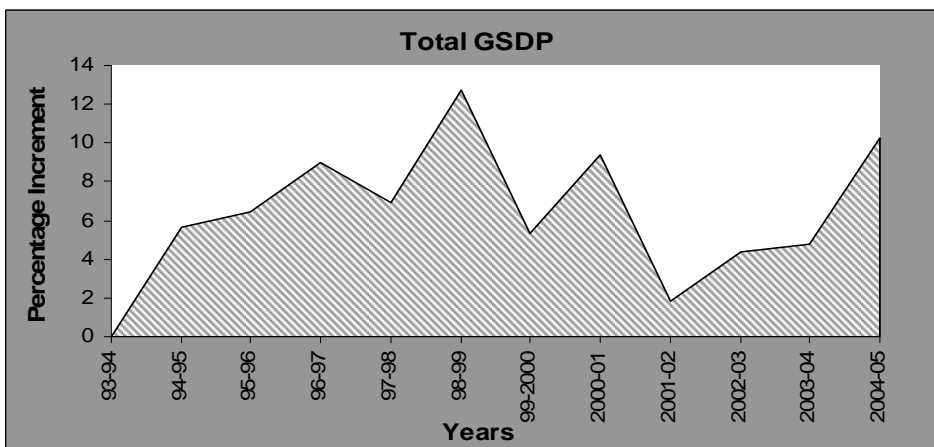
Development expenditure on agriculture as proportion to total developmental expenditure (other than irrigation) has been going down. This needs to be restored back at least to 1995-96 level.



When Agriculture performs, the total GSDP also shows high rate of growth



When GSDP growth goes down, Agriculture sector is blamed.



But when Agriculture sector performs, it is not given its due credit.

Fig 2: Inter-Sectoral Comparison of Growth in SDP: 1993-94 to 2004-05

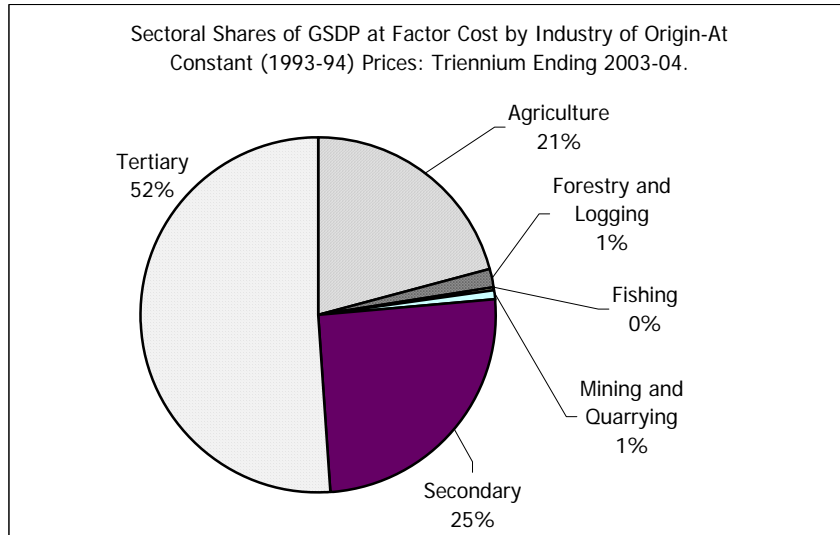
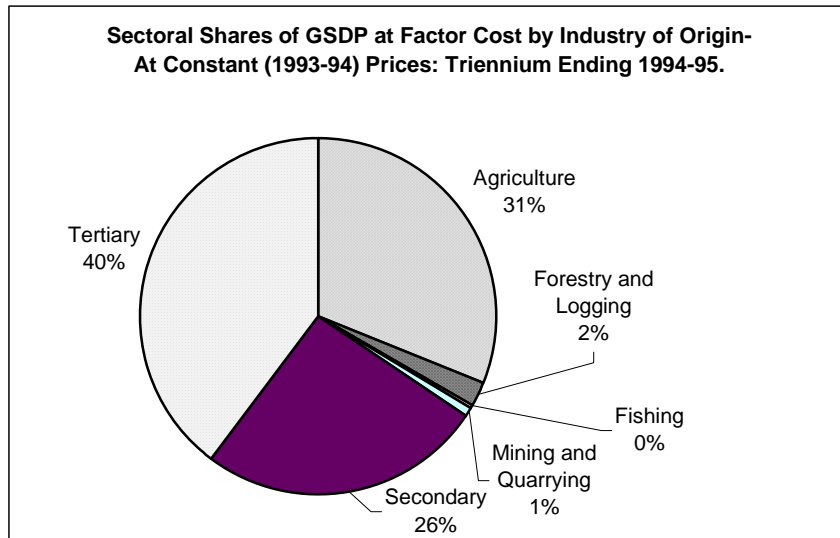


Fig 3: Inter-Sectoral Performance of the Primary Sector

4.2 Capital investment schemes from private sector in rural areas, and especially the backward talukas identified by the Nanjundappa Committee should be encouraged. A suitable scheme, in terms of tax incentives and land incentives will be provided to such investment. However, any such enterprise will not be given good agricultural lands. More than that it will be very clear that, if the investor does not start the promised agro processing plant, within the stipulated time, the caution deposit kept while purchasing of land from the State shall be forfeited. In addition, the land purchased for the agro processing unit shall revert back to the State. Suitable legal framework has to be drafted for this purpose. This will attract investment in rural areas and especially in the backward talukas..

4.3 Various subsidies provided to the farmers under Central Schemes and Centrally Sponsored Schemes can be grouped into two separate typologies. The first typology of schemes includes those programmes that help in boosting the growth of crop economy, horticultural economy, and input sector. These schemes could be easily adopted by all farmers and economically productive on medium and large farms. Therefore, while designing such schemes, the distinction between small, marginal

Macro Initiatives

- Growth rate in GSDP from agriculture at 4.5 per cent per annum.
- Budgetary plan expenditure on agriculture should be 10 per cent of total plan.
- Developmental expenditure on agriculture out of total development expenditure to double.
- Growth in Capital formation at 5 per cent per annum. Investment in Agriculture for food security.
- Investment in rural farm and non-farm enterprises to increase.
- Issue 'Raitha Mitra Pustaka' (RMP) a small coded pass book with all information of the farm family.

and large farmers should not be adhered to. It makes both the scheme as well as its implementation difficult. The second group includes the schemes that essentially support the livelihood of small and marginal farmers. Only in these schemes, the distinction between small, marginal and large farmers should be maintained and preference should be given to them.

4.4 Net income generated in the farm sector during the last decade has shown more or less a complete stagnation in real terms. Naturally, farmers' distress has been increasing in the State like elsewhere in the country. Fortunately, the

agricultural administration in the State and the State policies have effectively controlled the spate of farmer's suicides in the State. This policy focuses on all the major reasons of distress in the farm sector of the State.

4.5 Being a '**Farmer Centric**' policy; the focus of the policy has to generate an honorable level of growth in the net income of the farmer through value addition and agro-processing. It will be necessary to

increase the employment opportunities in the rural areas in farm, as well as in the non-farm sector that will supplement flow of income to the farm sector and agricultural labourers. The new income generation schemes providing opportunity to the farmers to be the drivers of their future will help to restore their self-respect and lost prestige. This will be achieved not merely through employment generation schemes, but largely through the rural industrialization programme that would have a strong link with the other sectors of the economy. Chinese could achieve success through such strategy, and it should not be difficult for the Karnataka to improve on this strategy and reap success. A farmer information book scheme called as '*Raithamitra Pusthaka*' (RMP)' will be issued to each farmer. This will have information about the farmer, coded in a barcode and numerical code. The information will include particulars like name, address, land holdings, irrigation, membership of banks, societies, credit, soil type and crops grown etc. This will contain only six 4"x 3" thick papers and numerical, colour, place and bar codes will be used to save space.

- 4.6 Food security of the State will be of prime importance, even though we welcome the open economy model. Our food basket really comes from the rainfed region and that will be the area on which our future growth depends. The Agricultural Commission of the State will look into this aspect. In order to harmonise the agriculture relationship the State will ask the Land Use Board to have clear demarcation of zones for the purpose. This will collaborate with Land Zonation teams proposed by Dr.M.S.Swaminathan.

5 Land and Soil Health

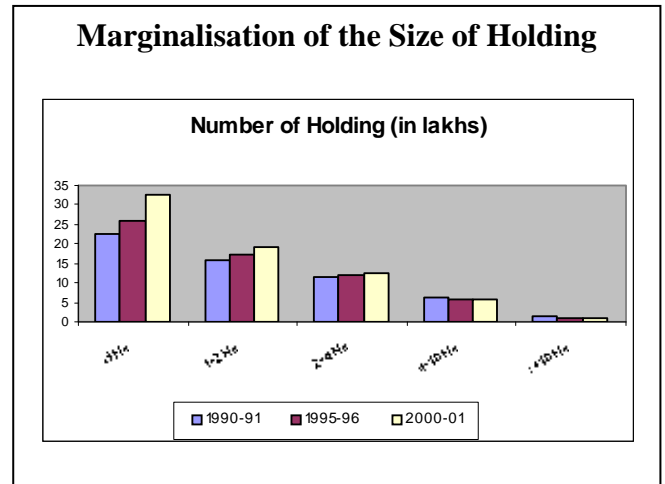
Land Issues

- *Second phase of land reforms is called for.*
- *Cultivable land is declining and land for non-agricultural uses is increasing.*
- *Low cropping and irrigation intensity.*
- *Large steppe of Wastelands*
- *About 51 lakh marginal and small holdings*
- *Unrecorded and reverse tenancy*
- *Incomplete land records*
- *Increased fallow lands and absentee landlordism.*

5.1 Land is certainly a crucial element in the group of all natural resources. Land use trends can impact the economy and ecology simultaneously and at times with serious effects. Therefore, a long-term policy for land use based on trends and carrying capacity is clearly needed. However, given the present trend of liberalization, it is difficult to theoretically justify the process of directing a total land use policy from above with State intervention. This can only be

achieved with the help of a proper incentive structure and chalking out a broad development path for the policy purpose. Karnataka Land Use Board can take a lead on this aspect and prepare an idealistic plan for the sectors.

5.2 Land reforms in Karnataka are heralded as better-implemented reforms compared to many other states in the country. Not only analysts from Karnataka but also from by other states endorse this. The reforms in Karnataka were pragmatic in their content but the process of implementation left a large grey area that remained unattended. Major achievements in this process included the acquisition of surplus land, abolition of intermediaries and abolition of tenancy (at least the recorded tenancy) and ensuring land to the tillers. The main failures listed by a few analysts in the context of reforms are the inadequate distribution of surplus land, quality of surplus land, economic viability of the distributed land and unabated concealed tenancy with usurious practices.



5.3 There are significant changes in the land use structure. Cultivable land in the state is declining and at the same time, land used for non-agricultural purposes is increasing. Trends in the cultivable wasteland and other fallow are also matter of concern. Large steppe of cultivable wasteland remains economically redundant. Cropping intensity and irrigation efficiency are among the lowest. The acreage under large and medium farms is going down at a faster rate and though this has not shown any telling effect on production, it is likely to be problematic in future in the context of the fast changes taking place in the agricultural sector. The average size of holding is 1.95 ha and the number of holdings having land less than 1.0 ha accounted for 42 per cent of the total holdings in the state, which in itself is a cause for concern. The land policy document prepared by Land Use Board a few years ago provides far-reaching imperatives. These are:

- ✓ The responsibility of development of wastelands will be handed over to the farmers' groups, constituted at Panchayat level under the technical support of the State Departments of Agriculture in a public-private partnership programme. If the farmers do not want to contribute monetarily in the programme, the department may undertake it and the cost should be treated as a loan at nominal interest rate. It is proposed that during the next ten years 10 lakh hectares of waste land will be brought under economic use, specifically in Bijapur, Bagalkot, Raichur, Koppal, Hassan, Bellary and Gulbarga districts.

- ✓ The State Land Use Board is a powerful agency for land use but does not function effectively due to administrative bottlenecks. It will be further strengthened for ensuring land resources management, development and conservation. The Board will have technical and managerial staff of proven ability to prepare annual action plans for training of extension personnel and co-ordinate different departmental activities in the implementation of the action plan for agricultural development. It will also be made to function as a Regional Resource Centre for management of the Production Management Information System (PMIS) at the State level.
- ✓ The Panchayat Raj institution (Government) should be the grass-root agency for developing operational (investment) plans and promoting the desired land use on participatory micro-watershed basis. Decentralisation of land revenue administration and the social development programmes like drinking water, primary education and health care to a constitutional self-government closer to the people need to be put in place.
- ✓ Classification and maintenance of Record of Rights of land will be given high priority and land records will be fully prepared before any field level investment planning is taken up in the micro-

Policy Steps

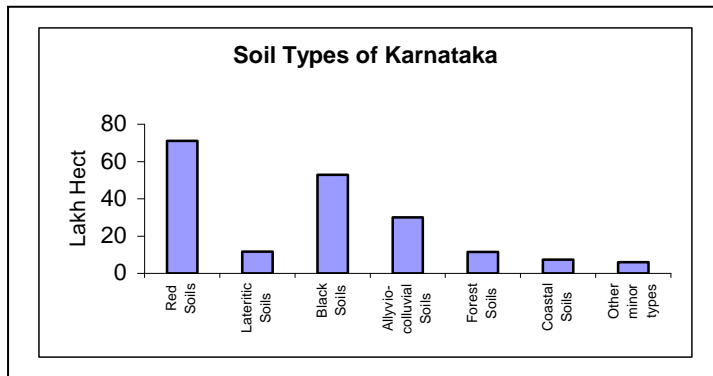
- *Farmers' groups at Panchayat level will manage wasteland.*
- *Public debate on next phase of land reforms*
- *Wasteland to be used for biofuels, medicinal trees and trees with economic value Biofuel development through mission mode.*
- *Land use Board will be strengthened*
- *PRIs to involve in land use management*
- *Bhoomi project to be strengthened*
- *Diversification of Agriculture into other allied activities.*

watersheds. **'Bhoomi Project'** of the State has covered a significant ground in this direction. The land use planning recognises the capability of land resources for alternative uses, but their social benefit-cost calculations vary depending on the ownership. For this reason, a clear demarcation of biosphere reserves, yielding forest, community lands, urban green belt and private lands will be made on a priority basis.

- ✓ While allocating cultivated lands of farmers for other uses, the compensation package be decided at the market prices in consultation with the farmer. This process will be carefully handled in future and necessary changes will be suggested.
- ✓ Satishchandran Committee had recommended that land ceiling may be relaxed for commercial seed production and export oriented or import substituting land based production enterprises to an extent of 100 ha of class A land or its equivalent of which 50 per cent may be owned and rest leased for upto 25 years.
- ✓ It is necessary to recognise the land tenancy and legalise that. Recorded tenancy with a clause barring land alienation will be productivity-oriented form of tenancy. However, it is necessary to

determine the precise manner in which alternative tenancy arrangements affect input use and productivity. A public debate will be initiated on this issue.

5.4 Karnataka has seven major types of soils. Presently, soil erosion is noted in 60 per cent of the area under crops. Water logging, salinity and alkalinity are also major problems. The Tungabhadra



project area, Upper Krishna project area and the Malaprabha-Ghataprabha project regions have large area, either degraded or problematic. A planned programme of conjuring soil health will be taken up by covering 35,000 hectares per year. This will be called

"Bhumi-Taiya Arogya" programme and its operational core will be public private

partnership. This will be achieved with the help of 20 percent contribution from the land owner and 80 percent of the expenditure coming from the State. In addition to manual intervention to restore soil health, agronomic conservation (reduced tillage, residue management and crop cover), integrated plant nutrient system, bio inoculums and application of green manure will be encouraged.

- ✓ It is proposed that **'Soil Health Card'** will be a component of **'Raitha Mitra Pusthaka'** with each individual farmer, whoever seeks the card at a nominal price. The **'Soil Health Card'** will depict the present soil nutrient content, deficiencies as well as the requirement of various nutrients for the soil in order to bring it back to optimum fertility level.

6 Crop Economy

- The University of Agricultural Sciences and Krishi Vijnana Kendras will be made accessible and responsible for demonstrating appropriate technology and provide training.
- Availability of Certified Seeds and quality planting material will be enhanced at university level. Campaign for adoption of hybrids of rice, maize, jowar, bajra, cotton and sunflower will be taken up, Agricultural Universities will contribute towards this. Investment in bio-technology research and extension will be stepped up at both Universities. Agricultural Universities will endeavour to establish their brand name in the seed and technology sector. They will also host a toll free telephone help line and an interactive Internet site to provide technical advise to farmers.

- Integrated farming approach will be demonstrated and popularized in the rainfed areas. Post-harvest treatment, processing and contract farming will be encouraged in selected crops.
- There is a perceptible shift in Karnataka's diversified agriculture to high value crops (figs 4 and 5) But production in most of the crops is stagnant and is decelerating in some of the crops.
- There are four phases prominently visible in the crop economy of Karnataka. The last two phases spanning the decades of 80's and 90's are quite contrasting, indicating dismal performance during the last decade. The policy priority is to bring back the crop economy to sound footing by adhering to proper crop mix and deliberate crop planning upto panchayat level. The suggested cropping pattern for and efficient crop production is shown in fig. 6 and Table 1.

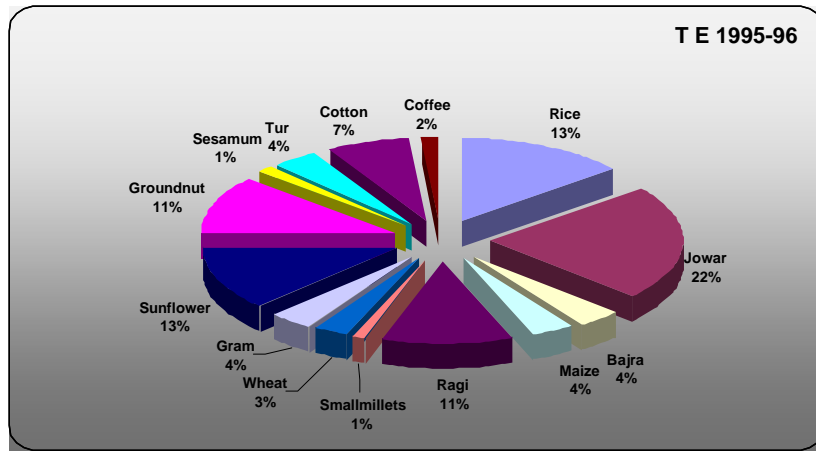


Fig 4: Area Shares of Different Crops during triennium

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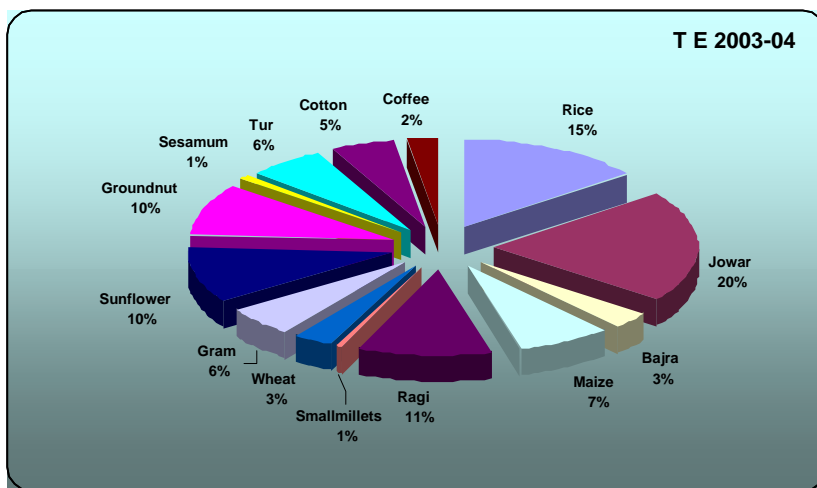


Fig5: Area Shares of Different Crops during triennium ending 2003

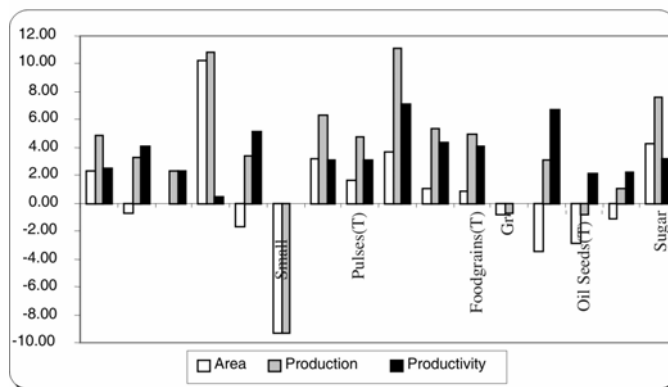


Fig6: Annual Compound Growth Rates in Crop Economy: 1990-91 to 1999 - 2000

Table 1. Suggested Efficient Cropping Patterns For Different Zones

Sl.No	Name of the Zone	Suggested Patterns for Different Zones
1	North-Eastern Transition zone	Area under rained Wheat is proposed to be increased substituting the area under rabi sorghum taking into consideration its high productivity and the need for reducing the area in zone.
2	North-Eastern Dry zone	The area under pearl millet, black gram and groundnut which have high yield potential are proposed to be increased whereas the area under rainfed cotton and green gram are proposed to be reduced.
3	Northern Dry Zone	The area under rainfed cotton and wheat which have low potential is proposed to be decreased. The area under maize, groundnut and pearl millet under irrigation to be increased in view of high yield potential. Increase in sugarcane area is proposed considering the requirements of factories by introducing short duration varieties. Under rainfed conditions, the area under per millet to be increased.
4	Central Dry zone	The area under red gram is to be increased by intercropping sorghum and pearl millet. Cotton is proposed to be restricted to irrigated areas. Groundnut, finger millet and kharif sorghum areas is to be increased considering the factories in the region.
5	Eastern Dry zone	Maize is proposed to substitute a part of rainfed finger millet areas. Groundnut and red gram intercropping are proposed to stabilize the total productivity. Rice area is proposed to be reduced restricting to low lying areas during kharif only.
6	Southern Dry zone	Sugarcane area will be increased in view of the high yield potential and water availability. By increasing the cropping intensity under irrigation the area under groundnut will increase.
7	Southern Transition zone	The area under kharif sorghum and groundnut will be increased in view of their high productivity. Summer rice area is proposed to be diverted to irrigated groundnut. Area under rabi sorghum is to be increased.
8	Northern transition zone	Because of the high yield potential, area under cotton, wheat, kharif sorghum and groundnut is to be increased. Green gram is to be introduced on large scale as a catch crop in kharif. A part of the area under rainfed rice is to be substituted by maize.
9	Hilly	A part of the rice in the upland is to be substituted by finger millet. Green gram and black gram are to be introduced in rice fallows. Groundnut is to be introduced as a second crop after rice with supplemental irrigation.
10	Coastal	The area under groundnut is to be increased in rice fallows on residual moisture/supplemental irrigation. Black gram is proposed as second crop after rice on residual moisture. In view of the sugar factories, area under sugarcane is to be increased to some extent.

7 Rainfed Agriculture and Droughts: From Constraint to Opportunity

7.1 Karnataka has vast areas under rainfed agriculture, and therefore rainfed farming technology will be the fulcrum of any further development in the agricultural sector. These regions are also the backward regions where poverty is more pronounced. It is a clear economic phenomenon that most of the

backward talukas identified by the Nanjundappa committee have large portions of their agricultural land under rainfed conditions. The yields per hectare are quite low, and the crops grown are largely minor millets and pulses. Animal husbandry has also not been developed well in these regions due to perennial fodder shortage. It is necessary to sketch out a clear programme of inclusive development for rainfed agriculture in the State. Satishchandran Committee (1993) had earlier noted that protection through irrigation in the State is quite limited and about 67.8 percent of the geographic area is subject to frequent droughts. Location specific recommendations for soil and moisture conservation and crop production practice for dry lands are available, but these are not fully adopted by the farmers due to various constraints including technical, supply and services, marketing and low profit margins. There is need for more vigorous efforts for development of dry lands on a watershed basis with wider adoption of the recommended practice to enhance crop yields.

Rainfed Agricultural Commission

- *Chairman: Public figure of repute having excellence in the technical area.*
- ▶ *Members specialists from*
 - *Agriculture*
 - *Horticulture/Plantation*
 - *Economist*
 - *Marketing*
 - *Animal Husbandry*
 - *Other Nominated Members*

7.2 Unfortunately, adequate attention is not given to rainfed farming in the semi-arid regions of the State. This was largely due to the heavy workload on officers in the regular departments. It was possibly difficult for them to stretch out to lead a policy breakthrough for this crucial sector. Now, at this cross-roads it is very essential to enthuse dynamic growth initiatives in this region of the

State that covers 80 percent of the farmers. Keeping this in view, the State will organise a Rainfed Agricultural Commission under the Chairmanship of a well-known public figure connected with the development of agriculture and allied activities. This institution should draw up the plan for the rainfed agriculture of the State in collaboration with the two Agricultural Universities and monitor its implementation through the Department of Agriculture, Government of Karnataka. In addition, the following steps could also be taken to step up agricultural development in the rainfed areas of the State.

- ✓ Crops and varieties which are suitable for these regions will be identified, and specific research efforts will be made to direct research towards short duration and drought tolerant varieties. The actual yield be increased to the level of potential yield.
- ✓ As groundwater shortage is an important constraint in the rainfed areas, more thrust for rain water harvesting and watershed development is required. It will be necessary to introduce a scheme of water markets and water sharing by 'groups of farmers'. These schemes will be

supported by the State so that unabated groundwater exploitation will be reduced, and at the same time environmental problems are avoided.

- ✓ Extensive efforts will be undertaken for identifying and rejuvenating ground water recharge zones. Recharge efforts will include recharge points, afforestation in the recharge tracts, percolation tanks and fissures in the aquifer
- ✓ Rural industrialisation is a key for development of rainfed areas. This will provide the required employment and reduce the carrying capacity of land in the rainfed rural areas. However, this process of industrialisation should be conducive to local resources as well as skills. It will be quite erroneous to import resources and skills in these areas to produce commodities, which are largely consumed elsewhere. With this caveat a list of industries should be prepared to be located in these regions by providing investment subsidies. Capital investment subsidies would be in accordance with those of the recently announced Industrial Policy 2006-2011. Another important lacuna noted in these regions is the lack of development of infrastructure that includes roads, hospitals, schools, markets and input suppliers. Such infrastructure acts as a key to shift the production surface, and that could be utilised very effectively by providing infrastructure in these regions with funds drawn from the Rural Infrastructure Development Fund of NABARD. A specific programme will be drawn to provide basic infrastructural facilities.
- ✓ The presence of Raitha Samparka Kendras are quite scattered in these regions. Additionally, the extension mechanism in the rainfed areas has also been quite weak. Strengthening the Raitha Samparka Kendras in these regions could solve the problem of extension as well as technology dissemination. That will be undertaken on the priority.

7.3 Droughts: The Frequent Destabiliser

Karnataka is next only to Rajasthan in terms of drought prone area cover. Droughts have been frequent visitors to the only State, and often drought extends continuously for two years and beyond. A large area is affected by the drought, and even though the calamity is dealt squarely with the help of the state machinery, it is difficult to recoup the loss to the economy that occurs due to the loss of crops, animals, fodder and psyche of the society. In addition, droughts also impact the natural resources like groundwater, soil and forests. In order to deal with this frequent situation, it is essential to draft a long term strategy to mitigate the effects of drought and meet the calamity well before it strikes. Karnataka has a Drought Monitoring Cell which provides technical inputs to the State and also gives prior

warning of the impending situation. The following solutions would help a long way in strengthening the drought-proofing goal of the State.

- ✓ Drought Monitoring Cell should merge with Karnataka Natural Disaster Monitoring Cell and increase scope of its objectives to provide forewarning of all types of natural disasters and also mitigation methods. It is necessary to strengthen this institution as it helps to meet the calamities covering large areas of the State.
- ✓ Telemetric rain gauges will be established at all taluk headquarters in the first phase; hobli headquarters in the second phase and at Mandal Panchayat level in the third phase. Similarly, stream-gauging stations, one for every 150 Sq. Kms, will be established. That will help the monitoring mechanism. Weather watch committees and resource management groups will be established at taluk levels. Drought Monitoring Units at District level involving local people could support these.

Meeting the Challenge of Drought

- *DMC to become KNDMC*
- *Establishment of telemetric rain gauge station up to Gram Panchayats in phases*
- *Taluka level weather watch Committee*
- *One Village One Tank / Pond*
- *Reclaim and Repair streams*
- *Special Groundwater recharge structures*

- ✓ Technical feasibility of diverting west flowing rivers towards east will be examined.
- ✓ A Special Component for Drought Mitigation will become a permanent feature of plan formulation as, in any

case, drought has been a part of Karnataka's life at least twice every five years

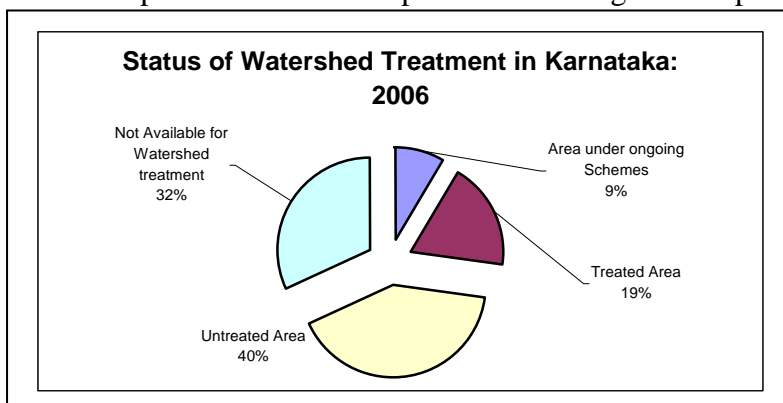
- ✓ Fodder shortage is one of the immediate outcomes of droughts. All Government farms will take up programmes of growing fodder and encourage farmers with irrigation facilities to grow fodder and persuade them by offering remunerative prices. Fodder banks, at least one at hobli level to be established, although it will be ideal to have one at the Panchayat level. The proposed fodder bank would be on the lines of grain bank. This concept radically differs from the fodder bank as defined under CRF/NCCF.
- ✓ Providing employment becomes an immediate necessity during a drought year. The State will have a ready on shelf schemes of alternative employment that can start without much delay with the DMC. It will be necessary to keep a list of vulnerable families in the villages; if possible a register could be maintained of such families. Employment will be provided within a radius of 3 Kms immediately after declaration of drought.
- ✓ Village commons should be developed and promoted for their economic use. As part of this, there is an urgent need to protect and develop Government land available in and around the villages as lung space. Planting of bio-fuel species and fodder is one important economic use of

village commons. Similarly the concepts of “One village - one tank” and “One village -one pond” will be promoted

- ✓ Reclaim and repair the stream and tank beds to divert the water to village tanks. Barrages will be constructed across the rivers and nalas and desilting of tanks is being taken up. A special programme will be drawn at Panchayat level to administer this.
- ✓ Farmers will be encouraged to take up horticulture as a component in the cropping system to save themselves from vagaries of monsoon. Connected activities like orchards, infrastructure development providing seedling at remunerative prices, cold storage facilities, transportation and marketing to be created.
- ✓ Encourage farmers to take up tree planting along with boundaries of their land in a big way by growing neem, tamarind, honge, agase, ala, chigare, fodder trees, etc, at least at the rate of 5 trees per acre.

7.4 Watershed Management: An Inclusive Strategy

Karnataka has given an important place for Watershed Development since mid 1980s. It is one of the priority areas for the state. Karnataka has been one of the pioneers in demonstrating successful watershed development programme. The focus of this development programme is to conserve soil and moisture as well as to put lands to the best use according to their capabilities to improve the overall productivity of the catchment in a holistic manner/way. The process of watershed development involves co-ordinated multi-disciplinary activities of and expertise from several Departments. The Government has therefore considered various models and decided that better co-ordination in planning, implementation and supervision in watershed programmes would be achieved by setting up a separate department and hence the Government of Karnataka has created the Watershed Development Department since April 2000. All the watershed schemes and projects under State Sector, Central Sector Schemes and Externally aided projects as well as District Sector Schemes relating to watershed development have to be implemented through this department.



7.5 Karnataka has the highest proportion of drought prone area next to Rajasthan (152.2 lakh ha). Out of the total geographical area of 190.049 lakh ha., 129.70 lakh ha is available for watershed

development (including 12.80 lakh hectares degraded forest area) against which 39.20 lakh hectare is treated under various Watershed Development Projects upto March 2006. The balance area of 90.50 lakh ha. needs to be treated. It is proposed that the balance area will be developed in phases in next 20 years.

7.6 Watershed Programme has resulted in increased yields of most of the crops and have helped recharge of ground water. There is therefore need to augment the resources for Watershed Development department. It is envisaged that even though optimal results may not be secured, watershed development approach excluding the treatment of non- arable lands should be extended on a wider scale, the treatment of such lands being taken up as and when funds are available. **Jawahar Rozgar Yojana** funds may be permitted to be used on private lands also, the owner being asked to pay part of the cost. A number of programmes are under implementation having bearing on dry land development. An attempt may be made in one or two districts to begin with to bring about maximum integration among them through co-ordinated planning at the district level.

7.7 The most backward taluks (37) in the State are prioritised on basis of the recommendations of High Power Committee for Redressal of Regional Imbalances in the State for development in the first phase. The remaining taluks of the State will be subsequently treated in a phased manner.(Table 2)

Table 2. The details of back ward taluks proposed for development :

Sl. No.	Phase	No. of taluks	Prioritisation criteria
1.	Phase-1	37	37 most backward taluks in Agriculture infrastructure and development as per the HPC constituted for redressal of regional imbalance in the state. (Normal rainfall is also less than 750 mm).
2.	Phase-2	56	Taluks where normal rainfall is less than 750mm., which affects Agricultural productivity and needs watershed development on priority basis in phase-2.
3.	Phase-3	46	Taluks where normal rainfall is between 750mm and 1000mm. needs development in phase-3.
4.	Phase-4	36	Taluks where normal rainfall is above 1000mm., needs development in phase-4.

Watershed Plus Paradigm is recommended. This has an emphasis on involving larger section of the community. It includes:

- ✓ Programme specific and focused project approach. Greater flexibility in implementation. Well-defined role for State, district and village level institutions.
- ✓ An exit protocol for project implementing agencies (PIAs). A twin track approach that provides for short-term and long-term benefits in the implementation of projects.
- ✓ A combination of government organizations/ NGOs as PIAs. A greater role for women. An effective role for Panchayat Raj Institutions (PRIs)
- ✓ Bringing self-help groups comprising rural poor, especially those belonging to SC/ST categories to the forefront. Establishing a credit facility from financial institutions.
- ✓ Transparency in implementation. Effective use of remote sensing data furnished by the National Remote Sensing Agency.

8 Crop Insurance

First crop insurance scheme was presented to the parliament by Dr Rajendra Prasad, as the First Minister for Agriculture of independent India in 1948. Subsequently, the Government of India in March 1970, prepared a draft of the model scheme. An Expert Committee chaired by Dr Dharm Narain examined its feasibility. The Committee did not favour introduction of crop insurance. However, GIC of India offered the schemes of crop insurance in 1972 on its own. In 1976, Prof Dandekar suggested an alternative approach linking crop insurance with crop loan. This was initially introduced in three states in 1978 on a pilot basis. Later on a Pilot Crop Insurance scheme with modifications was launched as Comprehensive Crop Insurance Scheme (CCIS) throughout the country in 1985. The scheme was voluntary in nature in the initial phase but was made compulsory for institutional loanees but failed to provide the needed protection to the vulnerable. Followed by this **Rashtriya Krishi Bima Yojana (RKBY)** was launched formally in 1999. The participation in RKBY was compulsory for farmers growing notified crops and availing crop loans from formal credit institutions. However, non-borrower farmers growing notified crops were also eligible to opt for the Scheme on voluntary basis. RKBY is being implemented in Karnataka from Kharif 2000.

The Government of India constituted a joint group in pursuance of the directions of Government to study the improvements required in the existing crop insurance program and to develop a farmer friendly scheme. The group has examined the views and suggestions of various interest groups including farmers on the shortcomings of the scheme and has suggested improvements in National

Agriculture Insurance Scheme (NAIS). A special team of experts will review these recommendations to make them farmer friendly.

- ✓ The State government will consider extending the Crop Cutting Experiments (CCE) upto hobli level to increase the sample size so that reliability of CCE data will be enhanced.
- ✓ One of the essential insurance requirements is to cover of risk of prevented sowing due to early failure. This is difficult for implementation because of the experience. The area data is available only after lapse of one year; besides providing data on area sown, it is essential to link it with indemnity. No insurer appreciates this from the point of principle of insurance where risk is to be covered prior to the indication of occurrence of loss. This situation will be considered and a solution will be worked out.

Ensuring a Safety Net

- ✓ *Problems of National Crop Insurance Scheme*
 - *Uniform cut off sowing date*
 - *Sowing risk uncovered*
 - *Late indemnity payment*
 - *Perennial –Horticultural Crops*
- ✓ *Comparative advantages of Different Schemes*
- ✓ *Review of the scheme at State level*

- ✓ Coverage of localized risks for damage caused by wild animals needs to be studied and introduced in selected places and SLI shall notify such areas at the commencement of season itself.
- ✓ Coverage of Perennial and Horticulture crops for fruits and vegetables need to

be covered and the process of apportionment of consultants to design and launch insurance schemes for the said crops will be undertaken.

- ✓ The present actuarial method is based on the theory of normal distribution and this is not the appropriate method as productivity curve does follow normal distribution, and the productivity trend is different in view of adoption of technology and improved varieties in agriculture. It is very important to develop sound and appropriate and acceptable actuarial method to move to actuarial regime and the same should be tried for 1 or 2 major crops before adopting to all crops all over the state. Due to unpredictable changes in the weather, global warming, the liability of insurer is increasing in every field of insurance. Therefore, instant shifting to actuarial regime and subsidizing of premium alone may not be acceptable from the farmers point of view, and also the insurer will not be equipped with required funds. Therefore, shifting may be considered in a phased manner.
- ✓ Among other methods of insurance, the weather insurance, Varsha Beema and IFFCO Tokyo insurance need to be comparatively evaluated to maximise the risk cover for the farmer and ease of operations.

9 Meeting the Challenge of Regional Disparities:

Emerging out of Backwardness

- *Investment in the locally suitable Activities*
- *Intensive Watershed Programme*
- *Horticultural Crops*
- *Rural industrialisation both agro based and non-agro based*
- *Skill formation through training*
- *Locally conducive employment strategy*

High Power Committee for Redressal of Regional Imbalances (Nanjundappa Committee) has provided a list of the most backward and backward talukas. The State government is committed to bring these talukas in the mainstream development, and therefore all efforts have to be made to boost growth of agriculture and allied agricultural sector in these regions. It is well known that these regions are also the core rainfed areas of the State

with slow development of infrastructure, including irrigation. Therefore, the strategy for development of these regions has to rest on three important initiatives. First, it is essential to concentrate on intensive watershed development activities in these regions that will improve water conservation and the natural resources base, as well as step up production. Second, allied agricultural activities including rural industrialisation conducive to the local resources and skills would be supporting strategy to absorb the available work force at remunerative wages. This will also generate backward and forward linkages with other sectors of the economy galvanizing the income generation activity. The third strategy involves encashing on the available resources and suitably directing the cropping pattern towards horticultural and other less water consuming crops. The investment density in these regions is presently at a dismal level. If stepped up, it will induce the required growth.

- ✓ As a first and foremost strategy it is necessary to devise a plan of investment for these talukas during the next decade. Such a plan should be discussed with the stakeholders from the talukas as well as various groups. A list of the strategies to be followed for each of the talukas as well as combination of strategies will be provided.
- ✓ A quick study will be initiated to prepare a shelf of strategies and action points will be drawn. This document will also provide the needed investments for different groups of talukas. Broad leads are provided here to work out a future strategy.

**Table 3: Birds Eye View of Developmental Strategies for
The Most Backward Taluks of North Karnataka**

DISTRICT/TALUKA	STRATEGY
BELLARY	
Sandur	Watershed management, Dry land horticulture, Composite Animal farming, Bio-remediating of excavated soils in mining areas.
Kudligi	Seed production of oilseeds, Dry land horticulture, Watershed management, Micro irrigation for floriculture, Post harvest technology for cutflower exports.
BIDAR	
Bhalki	Homestead gardening, Pulse production, promotion of Dal industries, Natural resource management, Sugarcane cultivation, Composite animal farming.
Humnabad	Bio ethanol production from sugarcane cultivation, dairy, cold storage and agro based processing industries on vegetables, fruit production and processing.
Basavakalyan	Dryland horticulture, post harvest processing industries, biofuel production and processing technology.
Aurad	Dryland horticulture, cold storage for vegetables, sericulture, composite animal farming.
GULBARGA	
Sedam	Integrated crop management in redgram and bengalgram, establishment of mini dal mills, strengthening of processing and packing industry, watershed technology.
Shorapur	Hi-tech horticulture development, integrated crop management in cotton and floriculture, groundnut and sunflower cultivation and processing industries, reclamation of problematic soils, development of cropping systems alternate to rice production and processing of papaya, pomegranate and fig.
Yadagir	Pulse production, integrated pest management, integrated crop management in groundnut, agro based industries, establishment of mini dal mills, development of cropping systems alternate to rice, Watershed development, composite animal farming.
Chittapur	Integrated crop management in pulses, integrated pest management, Agro based industries, dryland farming, bio-fuel production and processing.
Aland	Integrated Crop management and integrated pest management in pulses, dryland horticulture, Organic farming and Agro based industries.
Afzalpur	Integrated crop management in pulses, integrated pest management, Agro based industries, sugarcane cultivation, horticulture development, dryland farming, Micro irrigation for vegetable production, grape etc.
Shahapur	Integrated crop management in cotton, chilli and groundnut, reclamation of problematic soils, development of cropping system alternate to rice, seed production in vegetables, Bio dynamic farming.
Chincholi	Integrated crop management in redgram, greengram, blackgram and soyabean, establishment of mini dal mills, Watershed development, organic farming.
Jevargi	Integrated crop management in cotton, chilli and redgram, reclamation of problematic soils, establishment of agro processing units related to pulses, organic farming.

KOPPAL	
Kushtagi	Dryland horticulture for export, oilseed and pulse cultivation, watershed development, irrigation potential to be enhanced, seed production of vegetables and cotton, Agro based industries including processing and cold storage, ground water development, promotion of area under vegetable and flower crops and their seed production.
Yalburga	Dryland horticulture and watershed development, oilseed and pulse cultivation, irrigation potential to be enhanced, encouraging self-help groups through promoting income generating activities.
RAICHUR	
Sindhaur	Efficient land and water management, integrated pest management, aquaculture, poultry farming, integrated crop management in rice, integrated farming system.
Manvi	Efficient land water management, integrated pest management, aquaculture, integrated crop management in rice and groundnut, integrated farming system.
Lingasugur	Oilseed cultivation, watershed development, dryland farming, efficient land and water management, seed production of groundnut and sunflower, sheep rearing and development of wool industry.
Devadurga	Dryland farming, silvi-horti system, sheep rearing and development of wool industries, wasteland regeneration through biofuel species.
BAGALKOT	
Biligi	Efficient land and water management, sugarcane cultivation and sugar based industries, natural resource management, identifying as national grid for groundnut seed production in back water area of UKP, establishing maize and other food processing units for glucose extraction, corn oil, corn flakes etc., promotion of horticulture crops for export.
BIJAPUR	
Muddebihal	Dryland farming and watershed development, dryland horticulture, fruit processing industries, integrated crop management in oilseeds, wasteland development programme through bio-diesel plantation, promotion of apiculture as industry, financial empowerment of small and marginal farmers by promoting organic farming.
Basavana Bagewadi	Dryland farming and watershed development, dryland horticulture, fruit processing industries, integrated crop management in oilseed, reclamation of problematic soils, creation of irrigation facilities, establishment of onion storage structures, promoting seed village concept, financial empowerment of small and marginal farmers by promoting organic farming.
Indi	Hi-tech horticulture development for export, dryland farming and watershed development, fruit processing industry, increasing irrigation facility by completing lift and tank irrigation projects, promotion of oilseed industry.
Sindagi	Horticulture development, dryland farming, watershed development, fruit processing industry, promotion of apiculture as industry, land and water management, promoting sugarcane cultivation and industry. Facilitate the availability of agricultural inputs, promoting seed village concept, financial empowerment of small and marginal farmers by promoting organic farming, promotion of oilseed industry.

Source: Talukas identified by the Committee on Regional Disparity in Karnataka.

Table-4 Birds Eye View of Developmental Strategies for the Most Backward Taluks of South Karnataka

DISTRICT/TALUKAS	STRATEGIES
Bangalore (R) Kanakapura	<ul style="list-style-type: none"> • Soil moisture conservation and soil fertility improvement program through watershed approach. • Promotion of composting/green manuring/ tanksilt recycling. • Promoting alternate land use systems like Agri-horti system for arable lands (mango, sapota, tamarind, jack fruit etc.) and Horti-silvi system (mango, sapota + silver oak, casurina, teak), Silvipasture (block plantation of acacia, silver oak, casurina, D.Sisso, Melia azardicta, cassia and muthuga + S.hamata, S.scabra, calaproimum, anjan, Guinea macuaena, etc.) for non-arable lands. • Promotion of dryland vegetables (chilli, beans, brinjal, tomato, cluster bean, gourds etc.), Floriculture (chrysanthemum, jasmine, crossandra marigold, roses etc.) fruits (guava, papaya, banana), sericulture and coconut plantations. • Development of Livestock component (local draught animals, dairy, sheep, piggery, rabbit, apiculture). • Promotion of processing industries for value addition.
Magadi	<ul style="list-style-type: none"> • Watershed development for soil and moisture conservation. • Promotion of dryland horticulture, alternate land use and integrated farming system. • Development of non-arable lands through horti-silvi system. • Development of live stock components. • Promotion of floriculture industry.
CHITRADURGA Hosadurga	<ul style="list-style-type: none"> • Development of soil and moisture conservation practices through watershed approach. • Promotion of dryland horticulture (mango and sapota) and alternate land use systems. • Encourage large scale production of green gram, sesamum, onion, groundnut. • Livestock development (sheep, dairy, poultry etc.)
Holalkere	<ul style="list-style-type: none"> • Development of maize and cotton based cropping systems. • Promotion of alternate land use systems on watershed basis. • Introduction of efficient intercrops in arecanut plantation. • Development of sheep, dairy and fodder/pasture production.
DAVANAGERE Harappanahalli	<ul style="list-style-type: none"> • Soil and water conservation measures through watershed approach. • Increasing area under high yielding varieties of sorghum, pulses, cotton. • Development of dryland floriculture (jasmine) and fruit crops.
KOLAR Bagepally	<ul style="list-style-type: none"> • Promoting watershed development and rainwater harvesting. • Development of dryland horticulture (mango, sapota, cashew etc.) • Promotion of alternate land use systems - Agro forestry, silvipasture • Development of compost/manure production. • Livestock improvement - dairy, piggery, poultry, sheep

	<ul style="list-style-type: none"> • Development of sericulture industry.
TUMKUR Kunigal	<ul style="list-style-type: none"> • Soil and water conservation measures. • Promotion of dryland horticulture, agro - forestry. • Improvement in livestock production (sheep, dairy, poultry) and fodder production • Recycling agricultural wastes in crop production.
Madhugiri	<ul style="list-style-type: none"> • Rainwater harvesting and soil conservation. • Development of dryland horticulture and alternate land use systems. • Promotion of sheep, piggery and poultry enterprises. • Development of compost/manures • Development of pasture/fodder.
Gubbi	<ul style="list-style-type: none"> • Watershed development for promoting plantation crops (coconut) • Development of dairy, sheep, piggery and poultry • Promotion of compost preparation (coconut coir pith)
Sira	<ul style="list-style-type: none"> • Increasing water harvesting and soil conservation. • Development of dryland horticulture and alternate land use systems. • Promotion of sheep, dairy, piggery and poultry. • Development of compost/manure production. • Development of pasture/fodder production.
Pavagada	<ul style="list-style-type: none"> • Watershed development for soil and water conservation. • Increasing compost/manure production for improvement of soil fertility status. • Promotion of dryland horticulture (amla, pomegranate, custard apple, mango, sapota, cashew) medicine/aromatic plants. • Development of alternate land use systems - agro forestry, horti-pasture, agri-horti , silvi-pastures. • Livestock development (sheep, poultry, quails, dairy etc.) • Fodder/pasture development • Establishment of Agro processing industries for medicinal and aromatic plants. • • Promoting IPM, INM, intercropping in groundnut and alternate crops. • Introduction of automatic seed cum fertilizer drill and other implements for groundnut.
CHAMARAJANAGAR Chamarajanagar	<ul style="list-style-type: none"> • Watershed development. • Development of orchards - mango, cashew, jack, sapota • Improvement of irrigated banana, coconut, ginger and turmeric production.
MYSORE H D Kote	<ul style="list-style-type: none"> • Development of cashew, mango, sapota, (dryland orchards) and oilpalm, banana, arecanut, coconut, papaya, guava under irrigation. • Promotion of vermi composting and organic farming. • Improvement of cotton and tobacco based cropping systems.

Source: Talukas identified by the Committee on Regional Disparity in Karnataka.

10 Agricultural Education and Research

10.1 The State has two Agricultural Universities at Bangalore and Dharwad, catering to the needs of the farmers from south and north Karnataka through the network of colleges, demonstration plots and research stations. These have been consistently at the forefront in the country and recognized for their excellent work. In addition to these, the State also has Veterinary Sciences University at Bidar. Research and extension play a key role in development of agriculture, which further leads to farmers' prosperity. After independence, both Union and the State government shared the responsibility of agricultural research but agricultural education became a State subject. Agricultural Research did not pick up the early signs of distress at the State as well as at the national level and it is manifested in the farmers' situation today.

10.2 Recently a State level Agriculture Research Review Committee was appointed under the Chairmanship of Shri Arora, Former Chief Secretary and Development Commissioner to the Government of Karnataka. The Committee intensively reviewed the research system in terms of quantum and quality of research and transfer of research findings from laboratory to the field of the farmer. It also looked into the relevance of and impact of research findings in addition to analysing the methodology of the transfer of technology and extension services. The members of the Committee discussed with the farmers the receptivity of the research findings from the Agricultural Universities. Arora Committee pointed out some impediments in the Agricultural University system that include: adoption of a rational personnel policy; manpower assessment; inbreeding in faculty development; growth- vis-à-vis student admissions, inflow of research; projects, extension outputs, assignment on consultancy, availability of infrastructure; deterioration in financial health due to system of block grants from the Government of Karnataka including the externally funded projects, and the thinly spread resources. These together have been the constraints, but despite these the Agricultural Education and Research system have contributed meritoriously to the growth of the sector in Karnataka and the Universities received best accolades from ICAR.

10.3 Research and extension being 'interactive,' but being independent departments in the Agricultural Universities probably outlived their original intent and purpose and now the change is both inevitable and essential. In the Post- Green Revolution Technology environment, significant paradigm shifts have taken place in the nature of demand for technology and extension services. Now a strategy of 'contract research and extension' consultancy can satisfy the market-driven demands through letting commercial considerations of technology inputs work outside the public research extension system. However, the

needs of small-marginal farmers and the dry land ecosystem should be met by the “public good” focus of the Agricultural Universities and the line departments. They can also enter commercial sector with their own brand name. Prioritization and reprioritization of focus areas in research should be part of a continuous process.

10.4 It is necessary to take a serious look at the recommendations of the High-Level Committee (Arora Committee) and implement them. One of the most important points emerging out of the report is the dichotomy between ‘demand driven’ research and ‘project-oriented research’. The research scientists need to incorporate ‘Farmer Centric’ criteria that will go a long way in helping the farmers. Understanding the ‘Farmers’ Need’ has to be institutionalised in the University setup, so that their research caters directly to clientele. But at the same time, the goals of basic research should not be lost. Some of the important policy leads are as follows:

- ✓ Primary focus of research in Agricultural Universities should be on applied research as this was one of the objectives for which these universities were established. This however does not mean that basic research should be neglected.
- ✓ Satishchandran Committee (1993) recommended that the Universities of Agricultural Sciences should gear up seed research to develop better seed production, processing, testing, packing, storing and cost reducing technologies.
- ✓ Technologies, which are of industrial use and lead to value addition should be short-listed and could be charged. Emphasis should be given to development of technologies to cater to the needs of a large number of clientele and specifically small and marginal farmers. Agricultural Universities should enhance their media exposure and enter the technology business, effectively competing with private traders. They need to develop the chain of suppliers and their brand name in seed and technology sector.
- ✓ Universities should take up income generating activities using available resources to make them self-sustaining without sacrificing their mandate. In this context Satishchandran Committee (1993) had recommended that private sector should be encouraged to develop research facilities and enter seed business in a big way. There should be no bar on companies bringing parental lines from abroad and taking up seed production in the state.
- ✓ The demand for Agricultural Education is changing very fast and the public institutions may not be able to meet such proportion of work. In the general education sphere, private institutions have played a pivotal role and therefore the State will consider allowing private institutions to venture in the Agricultural Education Sector. There will be two separate streams here, the first will be imparting basic skills leading to a Diploma in Agricultural Sciences and the second will

lead to a Bachelor's degree in Agricultural Sciences as usual. This will be given a serious consideration.

- ✓ Satishchandran Committee (1993) recommended that the Agricultural Universities should draw up a time bound programme to meet the increasing demand of breeders seed and planting material, to enable stepping up production of foundation and certified seeds to meet the replacement rates. This apart, there is need for improvement in the multiplication ratio of breeder seed to foundation seed. A programme to move in this direction will be drawn by a group of experts drawn from the Universities.
- ✓ Integrated farming system approach in research will be introduced in both the Universities to cover different farm sizes and farming situations (1 to 2 acres and 2 to 4 acres) forthwith in each of the agro-climatic zones. Involvement of different agencies in rural areas like NGOs and Community Based Development Organizations (CBDO) may be ensured. Formulation of research projects through participatory process will be introduced immediately. All grants in aid to these universities would be made in accordance with a performance monitorable criteria and

<p><i>Education and Research</i></p> <ul style="list-style-type: none"> ➤ <i>Arora Committee Recommendation to be implemented</i> ➤ <i>Primary focus on applied research</i> ➤ <i>From 'Project oriented 'to' Demand Driven, research.</i> ➤ <i>Take up income generating activities</i> ➤ <i>Reach the farmer regularly for feedback</i> ➤ <i>Establish brand name in seeds and technology</i>
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grants would be allocated after due evaluation of the performance.

- ✓ It was observed by the Arora Committee that the technologies developed by the scientists in the Universities take a minimum of three years

and in some cases more than five years to reach the farmer. This inordinate delay in adoption in certain areas has considerably impaired the production potential. It is very necessary that this delay be avoided. In the first instance, number of frontline demonstrations should be conducted by the scientists to reach a large number of farmers. There is a need for an efficient extension system to carry the message to farmers so that the diffusion of technology is faster. Such a mechanism has to be in tune with the Panchayat Raj system and has to be farmer-centric. It must provide all services from a single window and should take care of the need for constant feed back on problems from farmers to orient applied research from the State level down to Gram Panchayat level.

- ✓ New technologies need to be tested under localized situations and suitably modified wherever necessary for adoption by farmers. Linkage already developed between agricultural research and extension under NARP and NAEP will be further strengthened.
- ✓ Release of technology particularly of varieties/hybrids should be preferably restricted to such of those which have marked improvement over the existing ones with not less than 20-25% increase in productivity levels. The time taken for release of new varieties should be reduced. Useful results from other States should be quickly screened and where suitable, will be adopted in the State

11 Horticulture: Key to Growth in Rainfed Regions

11.1 Horticulture provides excellent opportunity to raise the income of farmers even in dry tracts. A significant shift towards Horticulture is evident in the state with the increase in area and therefore production. Horticulture provides higher unit productivity and greater scope for value addition and this enterprise is spreading throughout the length and breadth of the State. In Karnataka, horticultural crops are grown on 16.30 lakh hectares and provide annual production of 95.81 lakh tons. The area is 13 per cent of the net cultivated area of the State. The total income generated from the sector accounts to over 40 per cent of the total income derived from the combined agriculture sector and that is 17 per cent of the GDP of the State. Karnataka is already in the forefront in respect of area and production of many horticultural crops, but there still exists significant potential to increase area under fruit crops in the North and North-Eastern Dry Regions of the State with crops like mango, grapes, sapota, lime/lemon, pomegranate, fig and papaya. In the Eastern Dry Zone, species that are low water requiring such as mango, grafted jack, anona, amla, wood apple and jamun should be selected. Crops selected for these areas should be hardy, and tamarind, anona, jamun, rose apple, grafted cashew, ber and wood apple meet this description. The non-arable areas in North- Eastern and northern dry zones are suitable for ber, tamarind, wood apple and anona; the central, southern and eastern dry zones are suitable for mango, jack and amla. In the Transition zones, cashew, sapota, jack, wood apple, amla and jamun are better suited. The hilly zone is suitable for pineapple, cashew and jack. Bread fruit, rose apple, komarach and garcinia are specially suited to the non-arable areas of the coastal zone (zone 10). There is a considerable gap in the productivity of mango (8.2 MT/ha), banana (25.6 MT/ha), sweet orange (7.2 MT/ha), lime/lemon (4.5 MT/ha), mandarin (9.8 MT/ha) and guava (7.4 MT/ha) between Karnataka and other high productivity states. Therefore, there is

sufficient scope to increase the productivity of the above fruit crops by adopting high-tech horticulture.

11.2 Floriculture in Karnataka has achieved an impressive growth during last decade. Karnataka occupies the second position in the country both in terms of area and production, next only to Tamil Nadu. In Karnataka, area under floriculture has grown from 4,000 hectares with 21,000 tonnes of production in 1978-79 to 17,419 hectares (46 % share in the country area) with 1,02,205 tonnes of production by 1995-96. Export of floriculture produce has impressively increased more than 700 tonnes (value Rs. 50 crores) in 2004-05 from just eight tonnes (Rs 15 Lakh) in 1994-95. The current export level of the State constitutes 7 per cent of the total earnings of the country's floriculture (GoI 1997). Some pioneering programmes initiated to boost floriculture in Karnataka are: (a) Land ceiling has been raised from 20 to 108 acres for horticultural crops including floriculture; and (b) The industrial policy of Karnataka has identified floriculture as a thrust sector for making it eligible for high scale of incentives. These measures have now started yielding positive results. The new economic policy pursued since August 1991 has resulted in the approval of 134 floriculture export units till 31st December 1995 with a total outlay of Rs.1,091 million in the country. Already 32 units of floriculture have started functioning in different parts of the country. Most of these projects are based in southern India, particularly in Bangalore. Many of the Dutch aided floriculture units have entered into agreements and tie-ups with Indian companies in Bangalore. These trends indicate that Bangalore may emerge as the hub of floricultural activities in India and the state may possibly emerge as a major floriculture exporting State.

- ✓ Area planning for Horticulture Crops is essential as these are largely consumed fresh with only a small percentage of the output getting processed into various products. The 'Horticultural Vision' of the State to be prepared to provide a complete plan upto taluka level and for each crop during next year. This will be put on the web site so that farmers are aware of the crops suitable and the optimum possible area under these crops in their taluka. This will be periodically updated.
- ✓ The above step will fulfil the need to generate proper cropping pattern in specific areas depending on the demand for the crop in the local, domestic and other target market. Moreover, it will also preempt the possibility of unexpected market glut and scarcity created due to improper crop planning.
- ✓ Horticultural crops need continuous extension support. This could be addressed through Hortnet, the interactive website that can be operated through the rural kiosks placed at the **Raitha Samparka Kendras**.

- ✓ The services of the media network of regional TV channels will be fully exploited to provide the services and for the spread of Horticulture knowledge.
- ✓ Cultivation in rainfed areas is the major challenge before the State and rainfed horticulture seems to be the only hope for these areas in the future. It will not only provide income but also additional employment in the integrated processing sector. A massive programme of rainfed horticulture coupled with a drip irrigation scheme will be taken up in the Most Backward Talukas identified by Nanjudappa Committee.
- ✓ In order to improve the economic conditions of the people in the dry tracts and other nutrition and health standards need emphasis and minor fruits play an important role in this regard. A special dry-land horticultural development programme will be taken up with State support, which will be included in the Crop Planning exercise and placed on the website. This will also be popularised through regional TV channels and pamphlets.
- ✓ Thrust will be given to standardize post harvest practices and popularize the same among the farmers by utilizing the services of the existing training centers of the Departments of Agriculture, Horticulture, KSAMB, University etc., to impart crop specific training to farmers, traders and other market intermediaries. Provision of cold-chain system for perishable commodities in the State by establishing pre-cooling centers, cold storages and linking markets with refrigerated transport in the private sector, co-operative and public sectors will be encouraged.
- ✓ Viability of cold storage units will be ensured by locating them at appropriate places and suitable incentives will be provided. For ensuring better occupancy of cold storages, good market information system with marketing credits will be provided.
- ✓ Organic cultivation has more relevance in horticultural sector. This has twin advantages. First it reduces the cost of cultivation and replenishes the soil fertility and second, organically grown fruits and vegetables attract better price and market advantages in both domestic and international markets. Therefore, organic certification procedure needs to be put in place at every **Raitha Samparka Kendra**. In addition to this, awareness will be created among farmers about the advantages of organically grown fruits and vegetables. A special marketing and trade channel will be created for these products under KAPPEC.
- ✓ Adverse climatic conditions and natural calamities have been inflicting heavy losses on horticultural producers. In order to help the farmers, Input Insurance Scheme for identified horticultural crops will be put in place. Similarly, Crop Insurance will also be extended to more number of horticulture crops.

- ✓ Establishment of Alternative Modernized Horticulture Markets that ensures an effective domestic marketing system is the need of the day. Horticultural crops will thrive only with a proper and sustained market support. SAFAL kind of direct market channels will be introduced in specific horticultural areas. In addition to this a scheme of providing price support through Minimum Support Price for Horticultural crops will be worked out in consultation with the State Agricultural Price Commission.
- ✓ High perishability of Horticultural crops calls for proper storage, preservation and post –harvest facilities without time lag. Therefore, handling and collection centers and marketing intervention centres will be opened at vantage points at taluka head quarters. A cold storage will be made available at each taluka place and this will be established under public-private partnership project designed for the purpose.
- ✓ Karnataka has a significant presence of plantation sector which includes coffee, tea, coconut, arecanut, spices and other tree crops. The plantation sector is assisted by different agencies like Coffee Board, Tea Board, Spices Board, but presently there is no single coordinating agency for this. During the next decade, plantation sector will play a very important role in international trade and therefore, it will be necessary that a co-ordinating agency be created in KAPPEC to provide the required boost to the plantation sector. The Pomegranate Growers' Association manages export of pomegranates from North Karnataka. Similar farmers' organizations operated exclusively by the farmers will be encouraged in different crops and these will be associated with KAPPEC.

11.3 Floriculture:

Floriculture in the State has been facing three significant challenges:

- ✓ First, the product has to be taken to airport from distant places which requires huge investment on refrigerated vans. Not all floriculturists are capable of investing that amount. Therefore, the state will help constitute groups of floriculturists with State intervention to overcome this bottleneck.
- ✓ Second, information about prices and the floriculture technology is not readily available to small producers. This will be provided through RSKs web site and through regional language media.
- ✓ Third, sufficient primary markets are not there for floriculture products. More number of markets on lines similar to that of the Bangalore market will be started in the State at vantage places.

12 Inputs and Technology

Inputs and technology are the two essential components that decide the production process. It is from this point that the policy correction process must start from here. Among the inputs; land, water, and purchased inputs such as seeds, fertilisers, plant protection agents etc. are of vital importance. Land and Soil being the vital inputs these are taken up earlier on priority. The income flow to the farm household is decided by the use of inputs as well as input prices and therefore, this sector sets the tone of development in the farm sector. While looking into the input sector, it is intended to reduce the cost of cultivation and that will help enhance net income flow. It is well appreciated that water use efficiency has to be one of the main items on the policy agenda.

13 Irrigation: Precious Needs to be Well Managed

13.1 Agriculture being the main occupation of the State, Irrigation plays a significant role in increasing the yields from the land. The development of irrigation in the State was slow and unsystematic during the pre-independence era. However, there were some notable irrigation works undertaken and completed during the pre-independence period such as Krishnaraja sagar (which was the only major project completed prior to independence,) Vijayanagar canals, Cauvery anicut channels, Gokak canal, Vanivilas Sagar, Marconahalli and Anjanapur. Though major projects like Tungabhadra, Bhadra and Ghataprabha stage -1 were commenced prior to the plan period, their progress was slow and they got impetus only after their inclusion in the First Five Year Plan. There were more than 25,000 tanks scattered over the erstwhile Mysore State, but in the Bombay-Karnataka and Hyderabad –Karnataka areas, the number of such minor irrigation works was less.

13.2 Irrigation is classified mainly into two broad categories. (1) Flow irrigation (2) lift irrigation. Depending upon the extent of irrigation potential, these are further classified into major, medium and minor categories. Along with natural streams, the other sources of irrigation are mainly reservoirs, dams/anicut, tank, pickups, bandaras and open & tube wells. The stagnation of productivity in irrigated areas is due to lack of implementing updated scientific water management techniques and proper awareness among the beneficiary water users. Independent well irrigation system is being adopted wherever required to the **maximum extent**. As a result, groundwater table has been going down, and the State has the dubious distinction of housing the highest number of ‘grey blocks (over exploited groundwater regions)’ in the country.

Similarly, tanks have fallen in disuse, and only recently, a massive project to rejuvenate tank irrigation in the State has been taken up. Even after completion of this project, well irrigation will continue to be the major source of irrigation.

Table 5: Status of Major & Medium Irrigation Projects in Karnataka as on March 2006 (in Rs.lakhs)

	No. of irrigation projects	Administration Approved cost	Present Cost	Exp. Upto 3/2006	Balance
Completed	42	14858.38	17195.28	17195.28	0
Ongoing	55	2867872.48	2867872.48	1813584	1054288.48
New	19	51582.00	52921.00	112.54	58808.46
Total	116	1063974.18	2937988.76	1830891.82	1107096.94

Source : Water Resources Department, Government of Karnataka, Bangalore.

Irrigation Development

- Planned ultimate irrigation potential 35 lakh ha. from major and medium irrigation.
- Potential of 21.97 lakh has. has been created under major and medium irrigation projects
- Ongoing projects : 55. Investment required Rs. 10543 crores
- According to master plans, the likely total utilization under major medium and minor irrigation projects using surface water is 1690.30 TMC.

13.3 As per state water policy 2002, the Ultimate irrigation potential planned is 61 lakh ha., consisting of 35 lakh ha. from major and medium irrigation, 10 lakh ha. from minor irrigation and 16 lakh ha. from ground water source. A potential of 21.97 lakh ha. has been created under major and medium irrigation projects up to end of March 2006. The average annual yield of all the rivers of Karnataka has been roughly estimated as 3438 TMC. The

State has prepared master plans for various river basins. According to these plans, the likely total utilization under major, medium and minor irrigation projects using surface water is 1690.30 TMC.

Krishna basin	1156.00	TMC
Cauvery basin	408.62	TMC
Godavari basin	22.37	TMC
Other Basins	103.31	TMC
Total	1690.30	TMC

13.4 Achievements upto end of March 2006 :

The total investment upto end of March 2006 on major and medium irrigation projects in the State is Rs.24,272.51 crores. This does not include the investment made on irrigation projects prior to the plan period (prior to 1951).

Since inception and upto end of March 2006, a total irrigation potential of 21.97 lakh ha. has been created under major & medium irrigation projects as hereunder.

4,59,571 ha. under 8 Major and 34 medium completed projects.

17,38,058 ha. under 23 major and 32 medium on going projects.

From First Plan period to Ninth plan period, a cumulative expenditure of Rs. 15,684.48 crores has been incurred on major & medium irrigation projects and an irrigation potential of 19.05 lakh hectares has been created. During Tenth plan period and upto end of March 2006 an expenditure of Rs. 12,354.29 crore has been incurred and an irrigation potential of 2.92 lakh hectares has been created.

For financing irrigation development, Karnataka has established five Neeravari Nigams out of which three, namely Krishna Bhagya Jala Nigama Limited (KBJNL), Karnataka Neeravari Nigama Limited (KNNL) & Cauvery Neeravari Nigama Limited (CNNL) are active and the other two namely Lift Irrigation Corporation (North) and Lift Irrigation Corporation (South) are inactive.

Krishna Bhagya Jala Nigama Limited (KBJNL) was incorporated during 1994 to expedite the works of Upper Krishna Project and it started functioning w.e.f. 19.08.1994. Similarly, in order to expedite the completion of the projects in Krishna basin, other than the Upper Krishan project, Karnataka Neeravari Nigama Limited (KNNL) was incorporated as a special purpose vehicle, which started functioning w.e.f. November 1998. The Cauvery Neeravari Nigama Limited (CNNL) was incorporated during the year 2003 and it started functioning w.e.f. June 2003 in order to ensure repair, renovation & re-furburishment of the irrigation assets and to ensure economic use of available water within the legal framework of the interim award of CWDT in the Cauvery basin. These Nigams have been borrowing from the market through the issue of long term bonds.

Irrigation projects have been handled by 6 Command Area Development Authorities (CADA) and since its inception an area of 1541009 ha. has been irrigated through participatory irrigation Management, by forming Water Users Co-operative Societies (WUCS). As on September 2006, 2353 WUCS has been established against a target of 2945 WUCS.

Minor irrigation constitutes 46 percent and canals 40 percent of the total irrigated area. The State has energized 8.7 lakh irrigation pump sets and they account for 42 percent of the total power consumption of the state. Capital disbursements of plan outlays by the State have come down to 27 percent (1988-89) from 34 percent (1980-81). But there is a 75 percent increase (from 1980-81 to 1988-89) in non-plan expenditure

on major and medium irrigation projects of the State. Keeping in view the discussion, the following policy steps are recommended :

13.5 Major Irrigation Schemes

- There are a number of irrigation projects at various levels of completion in the State and this need to be taken on priority. Large amount of investible resources are locked up in these projects and the gains therefrom have been negligible.
- The present level of allocation of funds for irrigation projects is too meagre compared to the outlay required for completion of the existing projects. The delay is due to taking up too many projects compared to limited availability of funds, resulting in cost escalation. There is need to augment the resources for speedy completion of the projects. Future preparation of irrigation projects will be based on the realistic ex-ante evaluation and detailed economic appraisals. These should be publicized to generate a favourable climate for implementation. A clear programme of completion of these projects prepared by the irrigation department along with the investment required will be presented to the government in order to take this on top priority.
- Participatory Irrigation Management will be encouraged by strengthening and monitoring of participatory Irrigation Management and by capacity building of Water User's Societies (WUS) . This will bring about awareness of their rights, roles and responsibilities in effective utilization and monitoring of water allotted to them.
- The concept of rotational water supply system is followed throughout the country since many decades. It is also a part of the National Water Policy, 2002. This needs to be adopted for efficient use of water. The rationale behind rotational water supply system is that most of the crops do not require irrigation everyday. They need irrigation once in 8-20 days depending on nature of crop and type of soil. Rotational Water Supply system envisages that if water is allowed in a canal for 15-20 days followed by a gap of 10-15 days, more land could be irrigated with the available water. Similarly, with different dates of sowing for different crops in a command of distributaries, all the farmers can irrigate their lands. This will be enable the tail-enders to get the benefit of irrigation.
- Implementation of "On and Off" system-Strict implementation of 'on and off' system of irrigation by imposition of localization and improvement of operating system will be taken up on priority.

- Satishchandran Committee (1993) has recommended that there is need to have detailed studies on the extent of availability of surface waters for irrigation in different rivers basins and also to study the possibility of transvalley diversion of water and other measures to increase the irrigation potential in the state. This would become a guideline for co-ordinated reservoir operations for all the reservoirs in a basin. The cost of irrigation projects is very high.
- Diversification of crops will be encouraged in command areas by introducing different disincentives to farmers growing paddy and encouraging light irrigated crops in the place of paddy.
- Cultivation of paddy will be encouraged only under limited water conditions by popularising methods such as aerobic cultivation and SRI method of cultivation so that water use efficiency is increased.
- Revision of water rates will be considered on par with O & M costs, so that farmers are made to understand that water is scarce and a costly input in agriculture.
- Distribution of water by pipe system at distributory level will be done on pilot basis so that volumetric supply of water can be made with increased conveyance efficiency.
- A similar programme will be drawn for de-silting of canals and their lining in major irrigation regions.
- Construction of pick-ups will be taken up in situations where excess water flows out of canals into streams for utilising waste water and series of Bandaras will be planned in the river course.
- Serious considerations will be given to inter and intra basins from surplus regions to deficit regions.
- Development of eco-strips all along the canal net-work and the benefits derived thereof may be shared amongst the beneficiaries of water users associations.
- The generation of local indigenous technology, conceiving new innovative technology at the local level should be identified/recognised and such innovative methods should be implemented at the government cost/non-government efforts/local agencies. The latest irrigation technologies viz. Israel method, Subhash Palekar, Anna Hazare, Sri.Rajendra Singh and other State award winning methods may be encouraged and adopted to enhance irrigation and thereby reap agricultural benefits.

- There is a need to revive our traditional knowledge and incorporate them in and around the water bodies, especially dam sites. The sight of water itself is a great healer and it also induces tranquillity. Eco-tourism may be encouraged in all irrigation projects. These settings not only induce an awareness to respect Mother Nature but also to generate revenue.
- Adequate agro-based and agricultural associated industries, Market places and food processing units may be created for overall development of the farming community.

13.6 **Minor Irrigation (Tank Irrigation etc.)**

Tank irrigation is the most dependable and environment friendly irrigation system. It combines advantages of the well irrigation and canal irrigation and at the same time keeps out the usual negative externalities in these two sources. If water use efficiency is put in place in tank irrigated area and the tanks in disuse are brought back to life, this source of irrigation will give better returns per unit of water. These returns will be free of negative environmental externalities.

Desilting of tanks has been taken up under a special programme by the state government.

1. The management of tank irrigation should be handed over to Gram Panchayats. It is recommended that WUAs IN TANK COMMAND AREAS BE FORMED. Where the area of operation exceeds 1000 ha., formation of separate WUAs based on hydraulic unit may be considered. In Lift irrigation schemes too, such WUAs should be formed. Most farmers in tank-irrigated area depend solely on tank water for absolute irrigated crops. But WUAs should encourage the conjunctive use of water by utilizing rain water in command areas to meet the initial needs of crops.
2. Cultivation of high water consuming crops like paddy and sugarcane under tank and lift irrigation projects will be discouraged and these will be replaced by crops of high water use efficiency and better economic returns
 - Water loss conveyance of water under all tank and lift irrigation projects will be fully prevented through appropriate technology. In all Lift irrigation projects compulsory pipeline distributory scheme should be implemented. No new project be sanctioned unless concerned farmer's group forms WUAs and indicate their willingness for taking over water distribution.

- A self-finance scheme will be formulated by the concerned WUAs to meet the capital cost involved. Private-public partnership will be considered as an alternative.
- The collection of rainwater in tanks will be improved by better water harvesting in catchment area, desilting and other techniques. Catchment area of each tank should be well maintained to avoid interruption of water inflow and to make sure that tanks are filled every year.

13.7 Ground Water Irrigation.

Problem of high exploitation of ground water is quite severely felt in Karnataka. The exploitation of ground water is not uniform throughout the state. Over exploited districts in terms of ground water are Kolar, Bangalore Rural, Tumkur, Chitradurga, as well as under-exploited districts like Shimoga, Chikkamagalur and Raichur present divergent scenario in respect of future use of ground water. In many regions, the water quality is the main issue and their suitability for irrigation is questionable. Farmers spend a large amount of money on bore wells without a clear economic analysis about the profitability. The depth of bore well is some times as much as 600-800 ft. resulting in high cost of lifting water and initial investment. The general perception that bore wells are perennial with unlimited source of water has resulted in wasteful investment both by farmers and Government agencies. Most open wells are dry and Irrigation potential of remaining wells is restricted to few months to few years. Failure to recharge wells has affected the ground water potential. Following steps will be taken to activate the sector and eliminate environment problems.

- Government will soon enact a legislation to regulate and control the development and management of ground water on the lines of the model bill circulated by the Ministry of Water Resources, Government of India in January 2005. This will be taken on priority. Discouraging farmers through administrative steps for lifting water from un-economic depths. The new bore wells should not be located very close to the existing bore well. The scheme of

Revitalising Irrigation

- Completion of the incomplete Projects
- Implementation of “On-Off” system.
- Particularly Irrigation Management through WUAs in canal and tank command areas.
- Tank to be rejuvenated and managed by Panchayats.
- Diversification of cropping pattern.
- Shifting to less Water Consuming methods like SRI.
- Revision of water rates.
- Piped water delivery system.
- Catchment of area treatment in for tanks.
- Community based recharge of ground water
- Discouraging deep tube wells.
- Micro-Irrigation as the first priority.

Micro-irrigation helps all types farmers in saving water, increasing yields, supporting new technological packages and increasing the employment irrespective of the size of holding. It will be therefore essential that the scheme of subsidies for drip/sprinkler irrigation should be provided to all farmers and regions irrespective of the size of holding or type of the region. Micro irrigation revolution will go a long way in creating perfect water use discipline in the state and help us reap advantages like Israel. The state, therefore takes a lead to create such water use discipline.

- To prevent over exploitation of ground water, steps such as ineligibility for subsidy, non-provision of electricity for deep bore wells will be considered. In all tanks, lift irrigation projects and command area farmers will be encouraged to adopt sprinkler or drip irrigation systems.
- Community based recharging of ground water will insisted upon to augment individual approach.
- Encouraging conjugative use of ground water and surface water particularly in command areas.

14 Disseminating Growth Drivers: Changing Role of Extension

14.1 During the last two decades, the agricultural situation in the country has undergone a qualitative change. The combined effect of the relentless population growth, improved family incomes has lead to challenge in life styles; created export opportunities and expansion of agro – based industries. All these have resulted in palpable changes in the demand pattern for agricultural commodities. The land area available for cultivation being limited, under the pressure of population growth, farm holdings in the country are increasing in number, but decreasing in size. Thus, between 1970-71 and 2000-01, the number of holdings in the state has increased from 36 lakhs to 66 lakhs, and the average farm size has come down to 1.95 ha from 3.2 ha.

14.2 The increased number of small holdings makes it necessary to focus on them as the future harbingers of change and instruments of growth. The present, male- centered “contact farmer approach”, is inadequate for familiarising the entire family with modern agricultural technology. It is well recognized that farmers are changing over the years, both as individuals, as well as their contact with the outside world and their information seeking habits. Today they require extension services unlike two decades ago. As the agricultural sector will be gradually segregating into two different segments

– commercial and subsistence- the extension system will have to adopt a bimodal approach in its working. In fact, it is desirable that these strategies are regarded as two distinct extension systems for each of them will be dealing with separate operational conditions and farm managers, as well as different enterprises and technologies.

14.3 The extension services are also meant to support the commercial segment, which entails high value enterprises, superior technologies, large investments, better management practices and rigid product specifications. They must be able to offer high grade technologies, required high standards, dynamic approach and firm dependability. The present day public extension system does not measure up to this expectation. The chances are that such quality services are afforded mostly by private extension services that survive on performance. Since most commercial ventures are specialized operations, this extension service must also be highly specialized. 'The task' involved is one of providing guidance to clients on venture-specific technologies and related managerial guidance. Often, these clients require guidance on the inputs and market options. New process of extension will be organised on the following policy lines:

- ✓ Professional extension groups will be constituted involving farmer specialists in professional organizations, operating individually or in groups, as extension consultants. The farmer centred extension services will be organised with specialised training and tool support from the knowledge centres.
- ✓ Extension service by farmers' organizations will be organised as followed in advanced countries related to specific enterprises, they may be co-operatives of grape growers, milk producers or poultry farmers; or general farmers' organizations. .
- ✓ Establish an extension network at the Gram Panchayat level (See Figure) as suggested by Arora Committee. This includes a broad based single window extension system under one roof at each Gram Panchayat headquarters with the following composition.

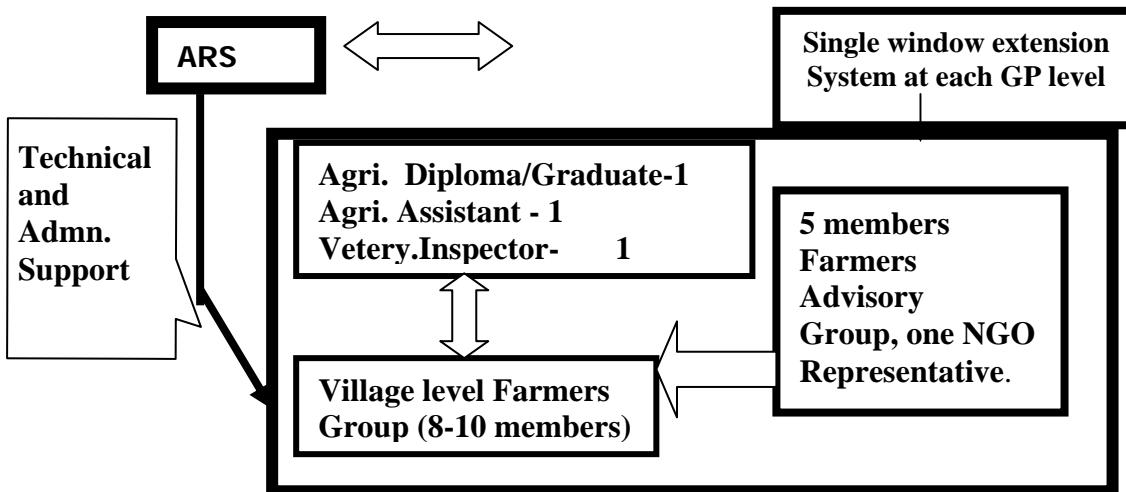


Fig7: Extension Network Module at Grama Panchayat Level

- ✓ The technical services offered by agro processing units are similar to those of the others but have strong link with the clientele. Here too, the technical service will be coupled with supply of technology, inputs, credit, and grading. This will be encouraged as it has strong forward and backward linkages.

- ✓ The extension system has to undergo a change in its outlook with a view to have ‘target oriented’ and

<p><i>Proactive Extension</i></p> <ul style="list-style-type: none"> ✓ <i>Number of Small and Marginal Farmers have increased.</i> ✓ <i>Small and marginal farmers are the harbingers of future change.</i> ✓ <i>Extension for the entire family.</i> ✓ <i>Commercial and non-commercial extension</i> ✓ <i>Extension services by farmers’ organizations.</i> ✓ <i>Target Oriented to Result Oriented</i> ✓ <i>Network at Gram Panchayat level</i> ✓ <i>Agricultural Consultant Scheme</i> ✓ <i>Krishi-Techno Park at Gram Panchayat level</i>
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‘result oriented’ programmes with more emphasis on increasing the productivity of crops through method and result demonstrations. These will be ‘demand driven’ rather than ‘supply generated’

- ✓ The training of extension staff will extend beyond crop production to

cover tree cropping, animal husbandry, sericulture etc. in order that they may follow the whole farm approach in dry land areas.

- ✓ Agricultural Consultant Scheme will be initiated in the Gram Panchayats. In order to ensure that the technologies generated by Agricultural Universities percolate down to different rural strata, it is proposed to strengthen the extension linkages. Agricultural graduates will be motivated to undertake Agricultural Consultancy Services against payment of fixed honorarium. These Consultants will be attached to Gram Panchayats. The Agricultural Consultants will act as catalysts in bringing the desired change in cropping systems, introduction of new technologies, providing market information and other required support to enhance the income of farmers. The Consultant will be responsible in

drawing suitable location specific cropping plans for the Gram Panchayat with the technical guidance of Agricultural Office from local RSKs and the Assistant Directors of Agriculture at the taluk. Each Gram Panchayat will have demonstration plot established under the technical guidance of Agricultural Scientists. Besides, the Consultant will be providing market information to the farmers in close liaison with the line Departments at taluk / District level. The Agricultural Consultant scheme elaborated earlier will have direct linkages with the researchers from Agricultural Universities for the purpose of information. These Consultants will be trained in the Agricultural Universities and provided a package of technology that is locally acceptable. The Consultant will also act as the conduit for reaching the local level problems to the University scientists and obtaining solutions from them.

- ✓ It is proposed to establish '**Krishi-Techno Park**' involving public –private partnership in one hectare area in each Gram Panchayat which would be utilized to demonstrate the new technologies for the benefit of farmers. The demonstration on improved technologies for the major crops grown in the Panchayat area will be taken up with the help of Agricultural consultant in coordination with the Panchayat administration on the existing government land. The scientists working in KVKs/ Agricultural Research Stations located in the district will provide the necessary scientific backup. The existing schemes of providing inputs at subsidised rate will be leveraged for effective use of farmers consortia.
- ✓ Small and marginal farmers extension inputs have to be differently organised. Here greater emphasis should be placed on non-cash and low cost technologies. While new technologies must be advanced and time tested, traditional practices should not be discarded.
- ✓ Emphasis of extension will be on reducing the cost of cultivation and cutting down the expenditure on purchased input. This will enable the farmer to increase the net income flow. Specific farm practices will be devised to achieve this.
- ✓ Attention has not been given to other farm enterprises like animal husbandry, horticulture, farm forestry, sericulture and fisheries, as also to the post-harvest technology, whole farm development, and whole family approach. These will be specifically incorporated in the extension discipline.
- ✓ Formulation and transmission of extension messages will not be confined only to information delivery approach; it will focus on a need-based educational approach, sensitive to the requirement of different groups in different locations.
- ✓ '**Talking Type**' of extension will be replaced by '**Doing Type**'. Reaching the contact farmers and delivering the messages by '**Doing Type**' of extension will be emphasised.

- ✓ The Village Level Workers have played a very significant role during the Green revolution period; this office has been totally neglected. They had the required initiative and the sense of purpose, which can be re-established in a different form.

14.4 Raitha Samparka Kendra

Raitha Samparka Kendras have been operating in the State for a few years now. These are the knowledge centres for the farmers that provide information on inputs, farm practices and market intelligence. However, the operation as well as speed of Raitha Samparka Kendras needs to be improved substantially. These should support inputs, information about the inputs, package of practices, information about the markets and the probable changes in the market, as well as new technologies. Therefore, these will be properly equipped, both in terms of training and manpower. A few Committees, which studied the problems of Karnataka agriculture, had suggested this but sufficient investment has not been made in this sector. The Raitha Samparka Kendras should operate in addition to the Consultants suggested earlier at the Gram Panchayat level. Each taluk of the state will have a fully equipped Raitha Samparka Kendra, and this movement should begin at the most backward taluk, and the backward taluk will be as identified by the Committee on the Regional Imbalances in Karnataka. Specifically, this policy document suggests that:

- ✓ As an immediate action, Raitha Samparka Kendras should be started at the taluk headquarters in all the talukas identified as most backward by the Committee on Regional Imbalances in Karnataka.
- ✓ An Agricultural graduate trained in all the vocations in agriculture, as well as allied disciplines will be in charge of each Raitha Samparka Kendra. This training should concentrate only on giving the basic knowledge of the disciplines at the agricultural universities in the state. Refresher courses should be run for these graduates once in two years.
- ✓ The graduates in charge of Raitha Samparka Kendras will coordinate the activities of the farmers and help to constitute farmers groups for the purpose of purchase of inputs as well as marketing produce.
- ✓ The Raitha Samparka Kendras will display prominently the prices prevailing in the markets as well as new technologies that have been developed by Agricultural Universities and research stations.
- ✓ Satishchandran Committee (1993) recommended that there is a need to start a Plant Protection Training Institute. One of the RDTCs may be converted as an institute for Plant Protection to provide **Error! Not a valid link.** training to grass root level functionaries at RSKs by properly developing and up-grading the present facilities.

- ✓ Raitha Samparka Kendras will be equipped with rural kiosks that have preloaded information about various farming practices and market information. These kiosks should also have the data on the products demanded in the world market, as well as the prices prevailing in the world market.
- ✓ Raitha Samparka Kendras should be equipped with a toll-free telephone number that will be accessible to the farmers in the region in case of emergencies. These Kendras should serve as hub centre for the farmer as well as a meeting point for consultation by the farmers. Knowledge inputs from farmers will also be available here.
- ✓ Raitha Samparka Kendras will hold consultations with the farmers at the beginning of every season and advise the farmers about the ensuing season, as well as crops to be grown based on market intelligence.

The requirement of an academic degree in Agricultural Sciences as a pre-requisite for obtaining dealership in any of the agricultural products should be insisted upon.

15 Factor Markets

Agricultural factor markets in Karnataka have large imperfections operating all along. These imperfections in the factor markets have been causing concern to the farmers as the cost of cultivation has been increasing. There are five important problems which surfaced during discussions with the farmers and farm leaders. First, the availability of inputs in required quantity as well as quality of the supplied inputs causes concern. Inputs like seeds, fertilisers and pesticides are not available sufficiently at accessible distance from the village. In addition to this, the quality of inputs supplied has also been quite low and therefore there were quite a few cases of low germination of seed and ill effects of fertilisers. Number of cases in which spurious pesticides have been supplied are located. It will be essential to remedy this problem. Secondly, there are limited number of the suppliers of inputs, and that leaves little option to the farmer and naturally suppliers take advantage of the situation. Therefore, it is necessary to increase the network of inputs suppliers in the state. Thirdly, the prices of inputs have been increasing at a higher pace than the product prices. As a result, the net income generated in the agricultural sector has been shrinking over the years. Whereas the product prices are indirectly controlled by the cartels operating in the regulated market, inputs prices grow unabatedly in the absence of effective control. There is no price band directed either by the State or by the manufacturers to bring under control the prevailing price. Fourth, the information available to the farmers is largely from the input dealers. The input dealers make best out of this dependence, whereas the farmers lack information, and at the same time there

are not many competitors in the market. The unprotected farmer collects the information as well as inputs from these dealers who are at times not even qualified to sell their products. As a result, the farmer ends up in either using excess inputs or wrong inputs, culminating in the shrinkage of the net income of the farm household. Lastly, under the situation, the farmer tends to use non-recommended doses of fertilisers or pesticides, resulting in damage to the crop and the soil. At times, these damages are irreversible and huge investment is required to restore the soil fertility and to reinstate the farmer, into the profession.

Keeping these problems in view, the policy initiatives required are as follows:

- ✓ Satishchandran Committee (1993) had recommended that the single window concept of supply of seed and other inputs at Gram Panchayat level may be tried on a pilot basis. Encouragement for research and development of genetically modified varieties and new varieties with high yield potential and suitable for different agro-climatic and adverse conditions should be given by providing enough resources to the Agricultural Universities and encouraging NGOs, Farmers' association/ groups and farmers. Identification of different seed production zones based on their suitability and encouragement of the private investments through incentives of tax and subsidies.
- ✓ State Level Expert Committee will be constituted for monitoring performance of varieties developed by private companies for assuring the quality of seeds supplied to the farmers.
- ✓ Establishment of Seed villages will be taken up to meet the requirement and promotion of production of certain traditional/local varieties on scientific basis to improve the quality of seed material. It is planned to establish at least one seed village in each hobli to produce open pollinated varieties required for the hobli. The technical support will be provided for the seed village by the SAU's while the logistic support will be provided by KSSC and KSSCA. Seed is the most vital input in agriculture and the new policy lays major emphasis on production and supply of quality seeds. In spite of the efforts by SAU's, KSSC, KSSCA and many private seed companies, the seed replacement ratio in the state is about 12-15 per cent. It is planned to increase the replacement ratio to 33 per cent.
- ✓ Registration of seed dealers should not be delayed or neglected. A more rigid and foolproof procedure for quality control of breeder seeds will be brought in to ensure what their quality should be. The working of monitoring team should be made more rigorous.
- ✓ Newly released seeds by private organizations should be brought under compulsory certification. This certification procedure should be such that the commercial interests of the producer companies are safeguarded with regard to disclosure of the names of parental lines

- ✓ Every Gram Panchayat will also have an input demand schedule, prepared for the purpose of the coming season. This demand schedule will contain the information about the seed, fertilisers and pesticides requirement etc. for the crops planned in the next season. Such a demand schedule will be available with the Agricultural Consultant at the Gram Panchayat level.
- ✓ Sathishchandran Committee while recommending the steps to meet the stagnation of the agricultural sector had recommended that the small and marginal farmers may be encouraged to form farming societies or groups “Farmers Consortia” without surrendering the ownership rights in order to have viable operational areas. This policy also envisages addressing the problem of marginalisation of the size of holding by organizing the Farmer’s Consortia. A group of 10-25 farmers will be encouraged to organise themselves as a group on the lines of SHGs. Each Farmers’ group will be provided with a subsidy up to Rs 20,000 to purchase equipments and inputs. Gram Panchayat should be encouraged to constitute farmers groups in order to purchase inputs as well as sell their produce in the market collectively. This group should operate on the lines of self-help groups. Further, these consortia will be extended 75 per cent subsidy on small machinery and equipments like sprayers, dusters, harvesters, threshers, shellers, decorticators, etc. The consortia will also be encouraged to establish vermicompost production units to cater to the needs of members to ensure increased use of organic matter.
- ✓ It is proposed to establish a Custom Hiring centre at each Gram Panchayat for custom hiring of farm equipments as it reduces the production cost and also increases the productivity of land. The Panchayats can hire out the implements and ensure that the farming operations are carried out on time.

16 Credit: Life Line for Prosperity

Credit is one of the major inputs used by the farmers. Karnataka is one of the highest credit absorbing State’s from scheduled commercial banks, but that does not get reflected in the capital intensity in the sector. The credit availability from scheduled commercial banks has increased in the recent past, and this increase has been mainly directed towards consumer durables and not farm investments. The pathetic story of the entire episode is that the farmer seeks credit for many reasons, including farm investment, but does not clearly anticipate the expected gains from the activity. Besides, there are a large number of distracting factors pulling down the net income flow from the activity. As a result, the borrowed credit no more remains a rescuer but turns to be a nightmare. As a consequence, farmers are getting largely indebted, which gets reflected in the increased level of distress in the farm sector. In addition, there are wide differences that exist in procedure across credit institutions, including cooperatives and scheduled commercial banks. These differentials and the procedures for obtaining

credit from the banks makes it difficult for the farmer to have an easy access to credit. Farmer is not averse to payment of interest but the transaction cost of obtaining such credit itself is quite substantial, in addition to the harassment. In order to wean back the farmer from the money lenders it will be essential to iron out the differences in the interest rates across banking institutions as well as procedures for obtaining credit. Following steps are suggested in order to increase the credit accessibility and credit efficiency in Karnataka.

- ✓ NABARD was established as a specialized institution to serve the credit needs of the agricultural sector. It works under the Ministry of Finance even though the Ministry of Agriculture governs all the activities of the agricultural sector. It is therefore not surprising that the decisions and policies of NABARD are guided by the principles of Finance and Commercial Banking. It will be quite prudent to put NABARD under direct control of Ministry of Agriculture and that will change the situation and make credit sector farmer friendly. The State Government will advocate this point and at the same time persuade NABARD to enhance its share in total agricultural credit.
- ✓ The procedures of obtaining credit as well as rate of interest across different banking institutions will be made uniform. NABARD and Commercial banks will be approached to get this done. A farmer will be given a passbook in which all the entries about credit should be made, and it will be an essential accompaniment for any application for credit. The basic information about a farmer will be recorded in the passbook as elaborated earlier.
- ✓ Farmer usually does not require bulk credit at the beginning of the agricultural season, but the banking system provides lump-sum credit at one time. This results in diversion of funds to other uses by the farmer as the funds are available right in the hand. Therefore, even though the total amount should be sanctioned at the beginning of the season, the release of instalments should be based on the type of activity undertaken at the farm level. Interest, however, should be charged only for the amount withdrawn and utilized.
- ✓ Whenever commercial banks are in financial difficulties, Reserve Bank of India helps them to come out of these by following a set procedure. The same criteria should be applied to the District Central Cooperative Banks. This matter will be taken up with the concerned authorities.
- ✓ Commercial banks cater largely to the needs of the medium and large farmers, whereas cooperative banks are accessible to all the groups of farmers. Thus, going by the very distribution of the land holdings the small and marginal farmers are served by cooperative banks. Therefore, strengthening the Cooperative banking sector will be taken on priority.

- ✓ The Cooperative Banking sector in Karnataka is providing credit at a concessional rate of 4 per cent per annum, but at the same time and for the same purposes the Commercial banks charge higher rate of interest. This discrepancy will be removed by discussing with the authorities.
- ✓ Keeping in view the decline in the profitability of agriculture and increasing distress and indebtedness of the farmers, the government will consider providing support to the banking system for reducing the rate of interest for crop loans and other loans to 4 per cent per annum.
- ✓ There is a need for Distress 'hot-spots'- moratorium on debt recovery till reasonable profit margins in agricultural operations are restored. The debt recovery may be staggered in easy instalments. For this purpose, liquidity support will have to be provided to the localized banks like RRBs/ Cooperative Banks, etc.
- ✓ The banking system needs to develop crop business potential for financing projects for improving/modernization of markets, storage including cold storage facilities, rural based transport operators, etc.
- ✓ Credit Counselling will be established where severely indebted farmers can be provided with a debt rescue package of information in order to get out of the debt trap, and thereby save themselves from committing suicide.
- ✓ Promote credit and insurance literacy through the '**Every Village A Knowledge Centre**' movement. For this purpose, extensive use of radio and TV will be used.
- ✓ Credit provided for bore wells will be carefully monitored, both in terms of availability of groundwater and the use of credit.
- ✓ Adequacy and timeliness of credit is important than cost of credit. Special efforts will be made to improve access to institutional credit in poverty stricken tribal areas. Emphasis will be on credit flow rather than on making available subsidy/concessions.
- ✓ The government of Karnataka constituted a Committee on 6th May 2005, to examine the recommendations of the Task Force (Chairman Shri Viswanathan) and give its views for implementation in the state. The recommendations will be viewed.

- ✓ In Karnataka, the Syndicate Bank sponsored Regional Rural Banks (RRBs) viz. Bijapur, Malaprabha, Netravati and Varada Grameena Bank and Canara Bank sponsored RRBs Viz., Tungabadra, Chitradurga, Kolar and Sahayadri GBs have been amalgamated with effect from 12 September 2005. The new banks have been named Karnataka Vikas Grameena Bank and Pragati Grameena Bank respectively, with Head Office at Dharwad and Bellary. In May 2006, State Bank of Mysore formed Kalpatharu Cauvery GB with Head Office at Mysore. Such amalgamation would

have impact on operational efficiency and strength of the merged institutions and may result in provision of better services at the grass root level.

17 Agricultural Labour: Pivot of the Sector

Agricultural labourers form a major share of the total agricultural workers. Total agricultural workers in Karnataka according to the 2001 census are 62 lakhs of which 36 lakhs are females and 26 lakhs are male agricultural labourers. In addition to these, many of the marginal and small farmers also work as agricultural labourers. Therefore, the welfare of the farmers is very much associated with that of the agricultural labourers. These are largely unorganised, and therefore the wages in rural area are decided through a mutual contract. That does not preclude implying the workers had less than the minimum wages and there is hardly any insistence on giving minimum wages to the agricultural labourers. The problem is acute in northern Karnataka from where agricultural labourers prefer to migrate as construction workers and urban workers to locations like Dharwad, Bangalore and Chennai. They live in miserable conditions in urban localities, without any of the basic facilities. This policy document takes note of the conditions of agricultural labourers who stay in rural areas, as well as those who migrate to urban areas.

- ✓ It will be endeavoured to organise institutional support to agricultural labourers in stressful years. Under the present employment guarantee scheme, the labourers are provided guaranteed employment for hundreds days.
- ✓ Skill development centres, specifically at companies, that level would be started for agricultural labourers, providing them training in the new technologies. This will include Agro processing, packing and transporting of agricultural products.

18 Organic Farming: Preparing for Future

The chemical approach to productivity augmentation followed since mid-sixties has depleted the natural resource base for sustainable agricultural growth. The earlier technology has disturbed the biological composition, which might have lasting adverse impact on equilibrium. Unless the disturbed natural resource base equilibrium is restored, sustainable agricultural growth with competitive edge will not be possible. Holistic development of natural resources aiming at sustainable livelihood and security for all life forms in the region will be the focal point for future strategy. This would call a search for new technologies, policies and institutional approaches for

rebuilding the natural resource base. Restoration of soil health and fertility through appropriate organic package including vegetative cover would be crucial. At the community level, around the village alongside main roads leading to farms, on tank/canal bund and on common land will have to be protected to provide sound environment support to agriculture, in addition to building up vegetative cover at the farm level. Earlier, Satishchandran Committee (1993) had recommended that there is a need to provide more focus on integrated pest management with the object of providing protection at minimum cost with due concern to environmental factors. The integrated pest management will include cultural, biological and crop rotations along with chemical control measures. These should be emphasized particularly around cities and towns where vegetable farming has become a major enterprise involving extensive use of plant protection chemicals. In the very right spirit, the Government of Karnataka has come out with a State Policy on Organic Farming in 2004, and articulated the advantages of organic farming technology vis-à-vis green revolution technology. The policy document has also recognized the principal requirements for organic farming, provide policy objectives on organic farming and future strategies for promotion and revival of this traditional system of farming. Here, it would have been sufficient to reiterate the recommendations of this Committee, but emphasis need to be laid on major policy leads.

Specifically, the following policy steps could be implemented:

- ✓ Incentives for Organic Farming will be provided for each farmer harvesting organically certified produce of crops of more than 5 quintals.
- ✓ Chemicals that cause fast degradation of land and their critical doses will be listed and the list prominently displayed at each taluka level office as well as in Raitha Samparka Kendras. Satishchandran Committee (1993) recommended that a drive should be launched for augmenting production and use of non-chemical fertilizers suited to different farming situations. This would need appropriate thrust on research and extension programmes.
- ✓ Organic Farming will be included in the syllabus as a subject at primary and middle school level. It will also be introduced as one of the compulsory subjects at degree level as well as Post Graduate level in the State Agricultural Universities.
- ✓ Organic Farming Systems will be identified for each Agro-Climatic region, scientifically analysed and recommended through a special publication entitled Organic Package of Practices. The System developed by Subash Palekar will be the starting point of this course.

- ✓ Organic Farming System will be made compulsory on 40 per cent land of the Government owned agricultural, horticulture, sericulture and forest nurseries.
- ✓ Protection and development of local livestock breeds will be undertaken through a special vehicle designed by the Veterinary University, Bidar.
- ✓ Organic Seed Banks will be opened at each Raitha Samparka Kendra and Panchayat Office. Local level Farmers' Committee will manage these.
- ✓ The food provided at mid-day meals and Anganwadi Centres will be prepared out of Organic farm products, and that should be purchased from farmers or farmers' groups.
- ✓ Organic Farmers Associations will be promoted in order to facilitate certification of the products.
- ✓ Subsidy scheme will be prepared for harvesting, collection, processing and marketing expenditure relating to Organic Farm Products.
- ✓ Organic Farming System will be taken up under special extension programme and popularised through mass media.

19 Bio Fuels

Today in India we import 70 per cent of petroleum per year at a cost of \$44 billion. The oil imports largely dictate the balance of payment of the country. The biofuel revolution may help change the situation significantly. Even 10 to 15 per cent replacement of the fossil fuel by bio fuel would not only save precious foreign exchange but will provide employment and livelihood opportunities to a large number of farmers from the fragile eco regions. Karnataka has vast patches of unutilised and underutilised lands, and specifically these are located in the steppe of drought prone areas in North Karnataka. In Karnataka, it is estimated that about 13.5 lakh hectares of arid and semi arid lands are available to suitably bring under cultivation of plants providing biofuel. This is in addition to the sugar cane byproducts available from sugar producing units. Even if the available bio fuel is used in Public Transport Systems and by 25 per cent of the private vehicle owners, the effect can be remarkable. The technological support for this is already available with the University of Agricultural Sciences at Bangalore and Dharwad. Therefore, it is not necessary to spend anything on the generation of the technology. However, it will be required to establish lands to process biofuels at vantage points in the state. This would require identification of the regions and crops suitable for the regions. Presently, Jatropha, Maize, Jowar, Neem, Pongamea Simerouba are the identified plant species that provide good amount of biofuels. Biofuels provide about 159 man day work per year and net income of Rs 5000 to Rs.9000 per hectare.

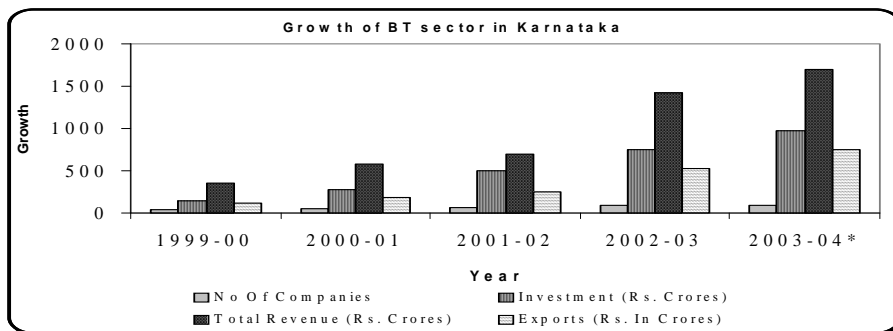
- ✓ It is envisaged that in the state about 10 lakh hectares of wasteland can be brought under biofuels, specifically in north Karnataka and southern scarcity zone. This could be done through the Department of Agriculture, and with the presently existing administrative machinery.
- ✓ The locations suggested in order to establish bio fuel processing units could be in Hassan, Bijapur, Bidar, Tumkur, Kolar, Chitradurga, Koppala, and Raichur. It will be necessary to establish a chain of suppliers from the farm to the processing unit and from the processing unit to the distribution.
- ✓ Special efforts will be made for locating new and renewable traditional and non-traditional energy resources through research. Identification of various bio-fuel plants suitable for different climatic and soil conditions will be taken up on priority. Agriculture Universities will be provided with necessary infrastructure for collecting and disseminating information on production techniques and their bio-fuel usage.
- ✓ The western ghats and the Northern scarcity region are quite suitable for cultivation of the biofuel rich crops. These will be taken up for cultivation on priority.
- ✓ A scheme will be put in place for encouraging the farmers in cultivation of bio-fuel plants by providing technical support and strengthening co-ordination between its extension service providing agencies and bio-fuel cultivating farmers.
- ✓ It is estimated that around 13.5 lakh hectares of the dry and semidry land is available for similar purposes and therefore a programme will be drafted to bring gradually some area under these crops every year.
- ✓ Marketing arrangements with a supply chain (Biofuels Cooperatives) will be made that will connect village producers to the processing units. This can be designed on the lines of Milk co-operatives. This will require effective mechanism for development of forward and backward linkages for bio-fuel product such as markets for oil feeds to raise the soil fertility, glycerine producing units, machines to run pump sets, electricity supply in the remote areas and fuel extraction units.

20 Biotechnology

20.1 Karnataka has more than 40 biotech companies established between 2000 – 2003. This rate of growth far exceeds any other State. Karnataka has attracted maximum Venture Capital funding in the Biotech sector in the country (over Rs. 100 crore). Almost 90 per cent of biotech companies in Karnataka are in and around Bangalore. The Bangalore Helix – the Biotech Research Park when completed would be spread over 90 acres. The park shall provide world-class infrastructure with water, power and telecom connectivity. Sectoral development of BT covers agriculture, health, industry and others. From a sample of 92 companies, contract research and bioinformatics has more

number of companies of about 30 per cent, followed by Agri-biotech and health biotech companies with around 25 and 20 per cent respectively. The infrastructure facilities in terms of high level research and academic institutions, industry, information technology, etc., in the State have been attracting large number of firms.

20.2 The State has provided a very congenial atmosphere for establishment and development of biotech companies. Such companies increased from 35 to 92 between 1999-2000 and 2003-04 at an average annual growth rate of 28 per cent. Biotechnology is a capital-intensive sector, where the State has seen significant rise in investment, at an annual average rate of 61 per cent. Similarly, the total revenue has risen from Rs. 355 crore to Rs. 1700 crore. Greater potentialities of biotechnology are expected from its strength in augmenting the export sector. This can be seen from the rapid increase in export in the



State. Exports from biotechnology sector have increased from Rs. 117 crores to Rs. 750 crore at an average annual growth rate of 61.5 per cent during 1999-2000 to 2003-04. This needs to be taken up vigorously.

21 Towards Farmers' Welfare

21.1 This is a farmer centric policy, and therefore, farmers' welfare is given prime importance here. There are five major components of farmers' welfare. First the farm dictates the welfare orientation of the farmer. It incorporates the type of soil, the size of holding, the crops grown, technology utilised and basic infrastructure. The impact of factor market imperfections dictate the second component of farmers' welfare. Here, if the inputs are available easily and at affordable prices, it helps to optimise the welfare of the farm family. Availability of agricultural labourer and the conditions of the agricultural labourer also dictate the type of output available from the farm. Third, the production process and the product market behaviour dictate the net income generated in the farm family. Fourth, the post harvest value addition and marketability of the products produced

largely decided economic conditions of the farm family. Lastly, the family health and social institutions that support the farmer of prime importance in the aggregate welfare. All these factors are considered here in order to maximize the welfare of the farmer and restore back the lost social prestige of the farmer.

- ✓ 21.2 There are more than 20 administrative departments, several boards and corporations dealing with programmes and schemes impacting the livelihood of the farmer. However, there is no single department or coordinating agency exclusively meant to safeguard the welfare of the farmer. Presently welfare departments exist in various ministries such as Child Welfare, Women Welfare, Social Welfare etc., but there is none to attend to farmers' welfare in totality. Farmers problems are attended to by a number of officers and as a result the farmer has to move incessantly from one desk to another. It is therefore essential to redesignate the Department of Agriculture as '**Department of Agriculture and Farmers' Welfare**'

22.3 Ensuring Farmers' Health- Yashaswini Rural Healthcare Scheme

The Government of Karnataka has implemented a unique **Yashaswini Rural Healthcare Scheme** all over the State to cover the health expenditure and hospitalisation needs of the farmers. The Scheme has become a great success and other state governments have evinced keen interest in implementing a similar programme in their respective states. So far, 17 States have come to Karnataka to study the scheme including Chief Ministers of some States. Harvard University has set up a **Yashaswini Chair** and has commended its implementation and recognised it as a "**Role Model**" for developing countries. Similarly, the Rockefeller Foundation has evinced keen interest to come to Bangalore to study the scheme in detail.

- ✓ During the last 3 years, over 50,000 surgical operations have been performed and nearly two lakh farmers have been treated as out patients. This is a record in the annals of the history of Health Sector.
- ✓ Presently the scheme is available only to farmers who are members of a co-operative society, but it is essential that the scheme is extended to all the farmers and the treatment be recorded in the "Raitha Mitra Pustaka".
- ✓ One of the important reasons which has driven the farmers to commit suicide - as has been brought out vividly by the National Commission on Farmers - is that the farmer cannot get even the basic minimum medical care, let alone quality health care.

- ✓ This has led to the farmer borrowing money at high rates of interest from money lenders, for his or his family member's treatment. This huge burden, coupled with crop failure has driven him to the desperate act of committing suicide. **Yashaswini Co-operative Healthcare Scheme** has shown the way as to how the health needs of farmer and his family can be met in an effective manner. State Government should therefore take all steps to strengthen **Yashaswini** movement in the State. This is all the more important and necessary since the scheme has earned handsome praise from His Excellency the President of India, the Honourable Prime Minister of India and Honourable Deputy Chairman Planning Commission, Government of India.
- ✓ The proposed universal Health Insurance scheme of the State Government by name **Suvarna Suraksha** to cover Agriculture labor under below poverty line must be given effect to immediately.

23 Trade Performance: Confronting a Formidable Challenge

23.1 Karnataka has been participating aggressively in agricultural trade through KAPPEC. Major commodities exported from Karnataka include coffee, silk products, cashew, gherkins, agricultural processed food and spices. The total agricultural exports are in the range of Rs. 2,000-3,000 crores for the last five years. There are significant fluctuations in the value of exports of coffee products and silk products, whereas cashew and cashew kernels recorded peak returns in 2004-05. In all respects, 2004-05 was a good year as far as exports of agricultural products from Karnataka is concerned. However, it is necessary to re-emphasise this sector and aggressively trade in other commodities too. The concept of Agri-Export Zone has been taken and AEZs are established in Karnataka with a financial implication of Rs. 10.95 crore by signing a MoU with Karnataka Agricultural produce processing and Export Corporation (KAPPEC) and APEDA. This Agri-Export Zone focussed gherkin and at present, Karnataka is growing gherkin on 15,000 acres by involving almost 30,000 farmers. The total export of gherkin from India is worth Rs. 150 crores, of which Karnataka alone accounts for Rs.139 crores. The districts covered include Bangalore, Kolar, Hassan, Tumkur, Chitradurga, Dharwad and Bagalkot.

23.2.1 A similar Agri-Export Zone was established in the year 2002 for Rose Onion. Presently, Rose Onion is grown on 10,000 acres with 5,000 farmers participating in it. The total value of exports of Rose Onion from Karnataka is about Rs. 50 crores and it benefits the farmers from Bangalore and Kolar districts. Similarly, an Agri-Export Zone for floriculture has also been established with a financial allocation of Rs. 29.28 crore. Agri-Export Zone of floriculture benefitted farmers from Bangalore, Kolar, Tumkur, Kodagu, Dakshina Kannada, Uttara Kannada and Belgaum districts. In addition to

this, the State is endeavouring to establish Agri-Export Zone for Vanilla, Mangoes, Grapes, Lime, Pomegranates, Medicinal and Aromatic crops.

Table 6: Export Performance of Karnataka (in Rs. Crore)

Commodity	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06*
Coffee Products	1183.93	957.53	881.42	730.65	757.57	705.65	749.98
Silk Products	521.24	772.39	672.24	746.09	967.99	898.8	730.28
Cashew & Cashew Kernels	251.55	187.98	163.54	279.83	265.72	518.35	302.76
Agricultural & Processed Food Products	195.33	237.91	349.51	366.99	361.25	362.41	213.58
Spices	61	73.74	69.12	91.65	99.58	109.54	154.76
Tobacco/ Beedi	16.25	3.23	2.7	3.72	--	--	--
Bangalore Rose Onion	--	38.62	48.35	39.38	51.5	52.57	19.51
Gherkins	--	--	120	139	140.7	141.3	213.96
Flowers	40.66	40	40	42	44	50	50
Total Agricultural Exports	2269.96	2311.4	2346.88	2439.31	2688.31	2838.56	2434.83
Total Exports	12854.25	16027.46	20145.58	29897.99	41670.24	62638.56	65455.18
Per cent of Agricultural Exports in Total Exports	17.66	14.42	11.65	8.16	6.45	4.53	NC

Note: *April 2005-December 2005. NC- Not Computed

Source: Karnataka State Agricultural Produce Processing and Export Promotion Corporation Ltd (KAPPEC).

23.3 Presently, agricultural trade from Karnataka is being handled by Karnataka State Agricultural Produce Processing and Export Corporation (KAPPEC LTD). It was established under the Companies Act, 1956 on 22nd April 1996 to develop and promote production, processing and export of agriculture, horticulture and floriculture products. KAPPEC also helps in identifying modern technology for increasing productivity, production, processing and storage of these commodities and implementing the same in the State. It organizes exhibitions, buyer-seller meets; participates in domestic as well as overseas exhibitions and study tours abroad involving farmers to create awareness in them about the technologies adopted by their counterparts abroad to increase both production and productivity. Since its inception till 31.08.2006 KAPPEC has handled about 2,53,455 Mts. of agriculture and horticulture commodities valued at Rs. 40,767 lakhs and earned a profit of about Rs. 775 Lakhs. KAPPEC has exported Grapes, Pomegranates, Mangoes, Drumsticks, Cauliflower, Watermelon, Red Split Lentils, Niger Seeds, Anato Seeds, Fenugreek, Coconuts, Onion, Potatoes, Chillies, Garlic, Ginger, Corriander, Turmeric, Safflower etc. seeds to various destinations like USA, UK, Singapore, Srilanka, Malaysia, Mauritius, Middle East, Turkey, Australia, Netherlands, Mexico, Brazil etc.

23.4 KAPPEC has created a 'State of art' post harvest infrastructure facility consisting of packing house, pre-cooling unit and cold storages for export of grapes, pomegranates, lime etc, from Bijapur and surrounding areas in the State. It has been designated as the **“One Star Export House”** of the Government of India for its export performance and has also been appointed by the Government of India as one of the canalising agencies for export of all varieties of onions from the country. It is the nodal agency of the Government of Karnataka for the implementation of agri export zones for gherkins and Bangalore Rose onion.

23.5 In order to facilitate trade in agricultural commodities in the State this institution should be strengthened further:

- ✓ This policy shall endeavour to provide help in establishing post harvest infrastructure facilities in different parts of the State based on their feasibility in a phased manner for the development and expansion of agriculture and horticulture exports from the State.
- ✓ Establishment of location specific and commodity specific Silos and Warehousing facilities based on their feasibility in different parts of the State will be given high priority.
- ✓ Farmers are the partners in this exercise of the State and therefore they will receive the best attention in this exercise. Supply of good quality inputs to farmers producing for the purpose of trade will be ensured by KAPPEC and the input supply will be linked with production programme.
- ✓ KAPPEC will help identify technologies for the processing of agriculture and horticulture produce and adopt the same in the state for the benefit of farmers in order to add value to their produce for the purpose of trade.
- ✓ Keeping in view the aggressive role of trade in agriculture, KAPPEC established itself as a competent institution to develop international trade from Karnataka. KAPPEC has its plans to cover other areas of agricultural trade and therefore, it will be essential to strengthen KAPPEC as an institution.
- ✓ Presently the State has only KAPPEC as the nodal agency and it has no branches in the State. For the ease in operations two more branch offices of the agency will be made functional in the State. One will be located in North Karnataka and another in Coastal regions to deal with the commodities produced in the respective regions.
- ✓ Agricultural and horticultural commodities with export potential will be identified and facilities to promote exports will be provided. In order to encourage exports of commodities these commodities will be exempted from the market fee as in case of gherkins. The state will encourage establishment of Agriculture Export Zone/Food Parks and allied activities through private and public sector.

- ✓ Groups of selected progressive farmers from different districts will be taken to a few selected countries at state expense and they will be shown agricultural technologies and trade of commodities followed in different locations. This will be done every year, so that these farmers become harbingers of growth.
- ✓ Karnataka had taken the lead during 1999 to establish a Cell in the Department of Horticulture to analyse the likely impact of World Trade Organisation and make suggestions to prepare for meeting eventualities. The WTO Cell submitted its report to the Government of Karnataka and provided long-term and short-term strategies to meet with the situation that may emerge as a consequence of the Agreement on Agriculture under WTO. However, the impact was not as severe as expected, and therefore the policy initiatives turned out to be quite beneficial for the State. The WTO Cell still exists in the Department of Agriculture, but it is necessary to revitalise its functioning and policy initiatives in order to take the best advantage of the situation. The WTO Cell can assist the State government putting forth the case of the State to the Ministry of Commerce, Government of India, before every negotiation. The Cell will be strengthened in the coming years, and at least two meetings of the Cell will be held, inviting knowledgeable people from within the State to discuss forthcoming issues. A communiqué will be addressed to the Ministry of Commerce at least twice a year in order to keep them posted with issues confronted by Karnataka farmers.

24 Agro Processing

- 24.1 Stagnation in the real net income of the farmer is one of the focused issues addressed in this policy document. The increase in net income is possible either through reduction in the cost of cultivation or increasing the returns from the market and post-harvest value addition. It is a matter of common knowledge that most of the agricultural produce is sold as basic produce rather than processed products in the market. Moreover, a large share of the agricultural produce is sold in the local village markets and to the middleman who gather this material at the village itself. As a result, getting higher net income addition to the farmers' household is a far cry. Therefore, it is essential to work on two fronts, namely, reduction in the cost of cultivation, and increased value addition. Apart from this it will also be necessary to streamline the trends in the prices of agriculture products in the market. Keeping this in view, the following specific recommendations are provided:
- 24.2 Food Processing Industry has enormous growth potential and it is expected that food production will double in the next 10 years. The growth of the food processing industry will bring immense benefits to the economy, raising agricultural & horticultural yields, meeting productivity, creating employment and raising the standard of very large number of people throughout the country,

specially in rural and semi urban areas. The approach paper to the National Food Processing Policy of the Government of India aims at increasing the processing level of food products from the existing 2 per cent to 10 per cent within the next 10 years.

- 24.3 Karnataka is the eighth largest state in India both in area and population. Food Processing Industry has been identified as the “thrust industry” in the Industrial Policy of the Government of Karnataka. The State is rich in resources for development of a wide range of food processing industries. It produces 12 per cent of total fruits and 8 per cent of total vegetables grown in the country. His Excellency The President of India Dr. A.P.J. Abdul Kalam also stressed the need for development of this sector and highlighted the unlimited potential for agro food processing in Karnataka.
- 24.4 Food processing enhances shelf life and adds value even if the agri produce is merely cleaned, sorted and packed. Value addition enables remunerative prices to farmers and enhanced shelf life leads to reduction in wastages. It is employment intensive and creates 1.27 jobs directly and 3.64 indirectly for every Rs.1 Lakh invested. It provides diversification and commercialization of agriculture by providing effective linkage between consumers and farmers. It also provides convenience and safe food to consumers. It ensures availability of processed products from fruits, vegetables and other crops to the consumers throughout the year irrespective of the season. It is conducive to “Contract Farming” eliminating the risk of farmer subjected to the market fluctuations and there by assures income to the farmer.

Table 7. Processing facilities available presently in the State

Sl. No.	District/s	Food Processing Units
1	Bangalore, Tumkur, Hassan, Hubli, Davanagere, Kolar, Coorg, Dakshina Kannada, Uttara Kannada and Belgaum	40 gherkin and vegetable and fruit processing Units
2	Belgaum, Bijapur, Davanagere, Gulbarga, Bidar, Dharwad and Bellary	40 Sugar Mills
3	Uttar Kannada and Dakshina Kannada	111 Cashew Processing units
4	Gulbarga and surrounding areas	128 Pulses Processing Units (Dal Mills)
5	Bangalore, Mysore, Hulbi-Dharwad	50 Roller Flour Mills
6	Hassan, Chickmagalur and Kushalnagar	65 Coffee Curing Works
7	Bellary, Koppal, Raichur, Shimoga, Mysore, Mandya, Davanagere and Tumkur	1,700 Rice Mills
8	Chitradurga, Raichur, Gadag and Hubli-Dharwad	23 Oil Mills
9	Tiptur, Tumkur, Dakshina Kannada, Mysore and Chamarajanagar	50 Dessicated Coconut Powder Units
10	Bangalore, Kolar, Mandya, Mysore, Chamarajanagar, Kodagu, Chitradurga, Shimoga, Dharwad, Bidar, Gadag, Uttara Kannada and Dakshina Kannada	37 Medicinal and Aromatic Plants

24.5 Policy Initiatives to be taken:

- ✓ A clear plan for Agro processing will be drawn on the lines of Agro processing policy undertaken sometime back by the Central Government. This will clearly specify the basic agricultural produce that will undergo processing, and the type of processing. Further, the location of such processing units should be finalised based on three criteria, namely: i. Availability of the basic agricultural produce, ii. Developmental hierarchy of the selected region (specifically these units to be located in the most backward regions identified by the Nanjundappa Committee), iii. Feasibility of the public-private partnership and availability of capital, either in the form of an investor or a group of farmers.
- ✓ The proposals for Agro processing units will be scrutinised on the basis of the criteria mentioned above, and a subsidy scheme will be drawn in order to establish these units in the backward regions. The subsidy scheme will be on the lines of the scheme presently operating in the industrial sector.
- ✓ A complete technical know-how will provided by the state to establish these units and the project proposal will be scrutinized by experts of processing , both in financial and technical fields. These

proposals will be discussed and the processing units established within six months of the preparation of the proposal.

- ✓ A special Advisory Cell will be established in KAPPEC at the three establishments indicated earlier. KAPPEC will also provide the backup facilities and help to build the forward and backward linkages for agro processing.
- ✓ Increase the availability of appropriate type of raw material at a reasonable price through increased productivity, efficient extension services (both public and private) focused R & D and liberal import of new seed / breed, efficient future markets, enhanced credit availability and crop insurance to farmers.
- ✓ Promote contract farming to deal with tiny and fragmented land holding, erratic production due to natural factors, subsistence farming, non-uniform and inconsistent supply of raw material, and long chain intermediaries.
- ✓ The Agro processing industries would be eligible for incentives as detailed in the Industrial Policy 2006-2011.
- ✓ Promote modern integrated cold chain (from farm to processing facility to retail outlet), set up pre-processing centres and pre-cooling facilities near farms and mandis, encourage investor friendly food parks, upgrade food processing clusters, modernize agriculture markets and warehouse.
- ✓ Ensure adequate and timely credit to investors at reasonable rate of interest particularly for working capital.
- ✓ Declare food processing industries as “seasonal industry” for the purpose of Labour Act. These industries will also be exempted from payment of minimum demand charges to KPTCL during the closure period of more than 90 days at a time.

Table 8 Specific Initiatives suggested for food processing units.

Sl. No.	Food Processing Units	District/s
1	IQF Unit (Processing and export of frozen vegetables)	Hubli-Dharwad
2	Gherkin and other vegetable processing Wheat Flour Mill	Belgaum
3	Fruit Processing (Particularly Pineapple)	Uttara Kannada, Dakshina Kannada and Shimoga
4	Grape Processing and Wine Manufacturing	Bangalore, Kolar, Bijapur and Bidar
5	Guava Processing Plant	Kolar, Bangalore and Dharwad
6	Pulses Processing	Gulbarga and Bidar
7	Rice Mill with Sortex machinery	Raichur and Gangavathi
8	Grading/Colour Sorting Unit	Bijapur
9	Fig Dehydration	Bellary and Hiriur
10	Chilli processing and oleoresin	Byadagi
11	Black pepper processing and Cardamom grading and packing	Kodagu
12	Export of Pomegranates and other Horticulture Produce	Kushtagi
13	Maize processing and Starch manufacturing	Davanagere, Harihar, Dharwad and Bagalkot
14	Vanilla Processing & Packing	Dakshina Kannada
15	Mango Processing	Hubli-Dharwad, Srinivasapur/Kolar
16	Potato Processing	Kolar, Hassan, Belgaum and Bangalore
17	Areca nut Processing	Shimoga, Chickmagalur and Sirsi
18	Coconut Processing	Tumkur, Chitradurga, Dakshina Kannada, Hassan, Chickmagalur, Bangalore, Mandya and Mysore
19	Medicinal and Aromatic Plants Extraction	Mysore and Dakshina Kannada

- ✓ Full exemption from payment of electricity tax and levy of concessional ST of 4 per cent on liquid fuel used for captive power generation, without any time limit, except for the units located in Bangalore Urban and Rural districts.
- ✓ An incentive scheme to be formulated for the participation of agro food processing industries to take part in national and international exhibitions / seminars related to promotion of food processing industries.
- ✓ To immediately declare and announce the wine policy being formulated by the Government of Karnataka.
- ✓ Exemption of stamp duty and registration charges for food processing units for registration of land, documents etc (except for units situated in Bangalore urban and rural)
- ✓ Full EOU engaged in the food processing units be exempted from the payment of VAT

- ✓ Whenever upgradation requires substantial investment, KSFC & other financial institutions will provide funds to food processing units for modernization and upgradation, purchase of imported equipments etc.,
- ✓ Food processing industry in the areas where power is a major constraint would be allowed to set up captive power generation units and the Government will not levy tax on it.
- ✓ The Universities of Agricultural Sciences will have Cells which will consist of entrepreneurs, scientists and Govt. nominees. These Cells can work on issues like sustainable agriculture and horticulture. Indiscriminate use of pesticides and chemical fertilizers has to be seriously looked at. They also have to focus on developing variety suitable for processing rather than focusing only on table varieties.
- ✓ Public Private Partnership (PPP model) will be encouraged for the investment in Food Processing Sector. A separate fund will be set aside to assist entrepreneurs to establish agro processing units.
- ✓ The departmental farms belonging to Department of Horticulture, Department of Agriculture, University of Agricultural Sciences are to be given for the captive cultivation and establishment of agro processing units in various parts of the state.
- ✓ A task force on agro food processing industries would be constituted under the Chairmanship of The Hon'ble Minister for Agriculture and Principal Secretary / Secretary (Agro Processing and Post Harvest Technology) as Member Secretary. This empowered committee will be named **“Food Processing Monitoring Council” (FPMC)** comprising members from Research institutes; Food Processing Industries; Universities and Academia; Government of Karnataka (related monitoring departments); Financiers and bankers. The terms of reference of this will be decided in due course but the focus will be on: norms for quality, criteria for setting up of food processing industries, formulation and implementation, regulations and monitoring sector wise food processing system and to advise on quality related aspects such as food laws and food safety. This will closely monitor the implementation of all policy initiatives and periodically review the financial and other implications of the policy in practice so that the benefits under the policy are measurable and could be suitably modified in the light of the experience gained.

25 Sericulture: The Cash Generating Activity

- 25.1 Karnataka is the premier State in the production of silk in the country, producing about 7471 MTs of mulberry silk out of a total production of 15,400 tons of mulberry silk in the country. Since 1980 sericulture has spread to all the districts of the State. It is an agro-based, cottage, rural industry

providing employment to rural women folk and the weaker sections like minorities, SC/STs and other backward classes. Sericulture activity provides employment to 13 persons per hectare of mulberry throughout the year through all its activities. During the next decade, it is envisaged to increase Silk production from the present 7,471 Mts to 20,000 Mts. Leaving out the Districts where the potentialities have been tapped to the maximum, horizontal growth is foreseen in Hassan, Mandya, Tumkur, Chitradurga, Belgaum, Bagalkot, Haveri and Bidar districts.

25.2 The present global scenario demands the production of gradable silk in bulk. Hence, it is envisaged to give more attention to the following aspects.

- ✓ More than 80 per cent of the total silkworm seed production is by the private sector. To ensure quality seed production and update the knowledge of the private seed producers, regular training is required. Also, to strengthen the infrastructure, financial assistance is to be provided for production of Bivoltine dfls. Training in adoption of new technologies in mulberry cultivation, silkworm rearing and silk reeling will be provided.
- ✓ Community chawki rearing centers will be encouraged to avoid crop losses. Disease control programmes have to be taken up periodically to check the out-break of diseases.
- ✓ Assistance for construction of reeling sheds, introduction of new accessories to cottage based installation of multiend reeling machines, automatic reeling units will be provided. The State will aim at globally acceptable quality silk production, hence ARM will be promoted.
- ✓ To reduce the cost of production, solar energy heaters/boilers/economic ovens, hot air drying, water softening, lighting facilities etc., will be introduced by providing necessary assistance.

25.3 Department of Sericulture has been implementing the centrally sponsored scheme "**Catalytic Development Programme**" with the assistance of Central Silk Board since the 10th Five Year Plan period. Schemes under Catalytic Development Programme like Drip irrigation, construction of rearing houses, Raising of mulberry saplings, Installation of multi end reeling machines, Incentive for Bivoltine Silk etc. are very popular. In order to ensure production of better quality cocoons and silk with increased productivity, these programmes under Catalytic Development Programme will be stepped up for which adequate funds will be made available under the State and Central sector. The perspective plan of the Department of Sericulture to achieve the above objectives is given below it is proposed to provide sufficient budgetary allocation under State sector, District sector and Centrally sponsored scheme of Government of India.

Table 9 Perspective plan of the Department of Sericulture - 2017

Sl.No.	Details	Status as on 31-03-06	2007-12	2012-17
1	Area under mulberry (hec)	87,739	1,39,000	1,50,000
2	Leaf Productivity / hectare (kg)	20,825	23,000	25,000
3	Brushing/hectare (No.of DFLs)	1,488	1,498	1,510
4	Average yield/100 DFLs (kgs) CB / BV	55/60	60/65	65/70
5	Production of cocoons / hectare (kg)	632	900	926
6	Total Cocoon Production (MTs)	55,493	1,09,654	1,38,900
7	Reditta (kgs) CB/BV	7.4/6.50	7.27/6.25	7.05/6.00
8	Total Silk Production (MTs)	7,471	15,000	20,000
9	Employment generation No.(lakhs)	11.40	12.54	13.68

26 Animal Husbandry Sector

26.1 Livestock economy of Karnataka acts as a buffer in the case of crop failure, as well as in weak economic regions. Karnataka has progressed very well indeed in the development of livestock. However, there are quite a few aspects that need to be attended to in the coming decade. Presently, the share of animal husbandry in the State Domestic Product is about 3.6 per cent and that in the agricultural GDP is about 16.27 per cent. Karnataka has 9.54 million cattle population, and 3.99 million buffaloes. In the recent past, the cattle population has declined by 11.90 per cent per annum, whereas the number of crossbreed cows has increased at a staggering rate of 40.51 per cent per annum. This activity has substantial potential for employment generation. Presently the milk production in Karnataka comes to about 3.92 million tonnes.

26.2 Poultry is also an important sector in Karnataka, and the total production stands at 177.19 million eggs. Meat production from all sources is about 0.2 million tonnes. With such a significant share of livestock in the economy, the State can become one of the important regions in the country. However, the sector needs further incentives. The policy interventions planned in the livestock sector are as follows:

- ✓ It is necessary to establish a Livestock Feed and Fodder Corporation that will involve self-help groups for breeds, purchase of inputs and marketing of the products. This Corporation will help the livestock farmers to deal with the exigencies during distress.
- ✓ Special schemes will be drawn to strengthen physical/infrastructural facilities of existing cattle and buffalo farms and semen production centers, quality control laboratory and also research laboratories. This will include Dairy Co-operative Sector to meet global and corporate challenges by rehabilitation of Sick unions taking suggestions from KVAFSU, IRMA, and IIM & NDDB.

- ✓ Crop - livestock integrated farming system will be encouraged to improve both income and household nutritional security of farmers and releasing farmers from distress.
- ✓ Effective steps will be taken for strengthening marketing system by helping co-operatives and other small dairy processing units to form and promote their brand and for creating the awareness among consumers in the wake of global competition from big companies as well as making dairy co-operatives globally competitive.
- ✓ Efforts will be made to create disease free zones for clean and hygienic milk and other Livestock products.
- ✓ Private investment for promotion and integration of supply chain in the sector will be encouraged by providing enough support and incentives to ensure remunerative prices for producers.
- ✓ To increase the wool production in the state at 5 per cent per anum.
- ✓ Rural Abattoirs at Hobli and Taluk levels will be encouraged to ensure supply of meat and other products and provision of units to process the waste products from such Abattoirs used for organic manure etc., without causing pollution problems.
- ✓ Cut & carry system of fodder will be encouraged to avoid degradation of grasslands & grass reserves by bringing Common Property Resources (CRP) under control of local bodies for development and maintenance.
- ✓ All poultry farms and hatcheries will be registered. This will be followed by an epidemiological network for monitoring and surveillance of poultry diseases & strengthening of IAH & VB for production of poultry vaccines.
- ✓ Animal and husbandry extension activities at Taluk level will be strengthen by providing mobility Extension and teaching aids etc., and through establishment of Extension cell at the Directorate of Animal Husbandry

26.3 Fisheries

- Lot of fishermen to be improved
- Need of the hour is to modernise Fishing Industry in tune with the world standards besides promoting larger export of marine and marine products .
- In addition the fishers should be encouraged to avail credit facilities at 4 per cent rate of interest .
- Due emphasis will be given to development of hatcheries to increase breeding stock and also mechanisation of boats, crafts.

27 Agricultural Marketing and Prices

27.1 Functioning of agricultural produce markets and fluctuations in the prices are two major problems voiced by the farmer. These two are the major determinants of the economic destiny of the farmer and hence need major policy changes. Currently there are 145 main markets and 350 sub-markets and 714 rural markets functioning in the State and the Department of Agricultural Marketing controls these markets under the Karnataka Agricultural Produce Marketing (Regulation) Act, 1966 and Rules 1968. The implementation of these acts however, has not been effective in reducing market imperfections even though the articles of Act promise a perfect marketing situation. At present 113 agricultural commodities including fruits, vegetables, livestock, fisheries and forest products have been notified for regulation. The market committees are handling about Rs. 8000 crore worth agricultural commodities per year.

27.2 The Marketing Department and institutions have experienced quite a few changes in the agricultural marketing sector. These include: (i) Increase in the market arrivals as a share of total output; (ii) Reduction in the market inefficiencies in terms of unauthorised charges and irrational grading; (iii) Dissemination of market information at the regulated market yard; (iv) Creating better storage facilities and place to stay for the farmers; (v) Marketing charges payable by farmers were either dropped, standardized or liability shifted to the buyers; and (vi) Significant reduction in the sale in the village and in the proportion of distress sale.

Table 10 - Agricultural Marketing Activities in Karnataka: Some Indicators

Year	Main Markets (Nos)	Sub Markets (Nos)	Total Markets (Nos)	Total Markets per lakh ha. of GSA	As % of Main Markets in India	Annual Turnover Value for Total Markets (Rs.in Crores)
1990-91	116	295	411	3.39	1.75	2448.05
1993-94	122	307	429	3.50	1.79	3636.89
1996-97	133	329	462	3.75	1.94	5595.09
1998-99	140	333	473	3.84	1.98	6500.21
1999-00	140	333	473	3.92	1.98	6647.81
2000-01	141	342	483	3.93	1.97	7512.21
2001-02	141	342	483	4.14	2.01	7902.39
2002-03	144	343	487	4.22	1.95	8128.02
2003-04	145	350	495	4.32	NA	8437.03

Note: N A – Total markets not available for the respective year.

Sources: 1. Statistical Abstract of Karnataka for Various Years, Directorate of Economics and Statistics, Bangalore: Government of Karnataka.; 2. Agriculture Produce Marketing Board, Bangalore: Government of Karnataka; 3. Fertilizer Association of India, 1997.

27.3 In the marketing sector, inadequacy of market infrastructure has been the main reason for market imperfection. Several studies have shown that there has been significant increase in horizontal and vertical integration of agricultural markets and now a larger share of the marketable surplus reaches market. However, many deficiencies have to be attended to create adequate marketing infrastructure and plug the inefficiencies. The marketing infrastructure is inadequate and its growth has been insignificant. It is high time now that the investment in this sector also comes from private sources. A conducive environment for attracting private investment is the need of the day. In the current liberal trade regime, what is needed is to strengthen the marketing system in the public sector and provide scope for private investment especially regulated markets, which are still dominant market outlets for farmers to sell pulses, oilseeds and maize. Some of the important issues that feature in the changed circumstances could be classified under three groups: The first comes domestic market reforms and making domestic market competitive and non-discriminatory. A proper conduit between the domestic and international markets has to be established. Second issue relates to the identification of commodities and the sectors that need to be encouraged in the new organizations . The third component involves preparedness for the likely market shocks and therefore, putting in place a proper safety net programme. Specific policy leads to deal with these issues are :

- i. A comprehensive review of existing legal instruments should be undertaken with a view to simplifying and synchronizing them.
- ii. Creation of market safety nets for the farm produce that require special treatment due to vulnerability on account of international price fluctuations.
- iii. An effective price monitoring system along with market information kiosks providing information on prices, quality, international trade centres and technology. Statistical system and database should be strengthened.
- iv. The marketing system should provide the farmers a regular outlet for the produce at a remunerative price. Similarly, to the consumers and manufacturers of agro based raw materials, it should ensure a steady flow of commodities at reasonable prices.
- v. The Marketing efficiency consists of two aspects namely a) operational efficiency and b) pricing efficiency. The former focuses on reducing the costs of marketing such as improved packaging, transportation and storage, which will result in increased producer's share in consumer's rupee and reduce the price spread. Pricing efficiency facilitates the transmission of price signals at all levels in the shortest possible time.

- vi. One of the main reasons for stagnation in net farm income is that the schemes aimed at production enhancement never considered factor and product markets as important economic levels. This emphasizes the role of agricultural/rural markets as an institution affecting income flow to farm households. This in turn is determined by the operational efficiency and the prices prevailing in these markets.
- vii. The agricultural product markets are largely governed through both unorganized private trade and organized marketing institutions. In the organized sector, the Commodity boards, Corporations, Export Councils and Cooperatives play a predominant role.

27.4 Policy Steps Needed

- ✓ The Karnataka Agricultural Produce Marketing (Regulation) Act, 1966 has been amended several times over the years. It is necessary to review provisions of the Act and Rules in the present scenario in the economy for improvement of the organized agricultural marketing system. The Model APMC Act can be used to effect amendments in APMC Act. Private investment will be allowed for creating infrastructure in the agricultural marketing network and an atmosphere of healthy competition will be created. The market charges and fees will be rationalized so as to reduce the cost of marketing and enhance the competitiveness to favour the farmers.
- ✓ The existing KAPM(R) Act will be reviewed for giving incentives for setting up regional commodity exchanges, auction houses and terminal markets by way of public- private participation to create competitive trade environment. The charges and fees will be more in the nature of service charges based on quality of service provided and its applications will be at different slabs in consonance with the type/scale of service/facilities provided to market users. This will be rationalised.
- ✓ The State shall endeavour to provide remunerative price to farmers' produce by harmonizing domestic prices with world prices and improving the efficiency in marketing system. The broad policy of the state would be to encourage free trade and to go by the overall demand and supply conditions. This would be combined with the policy of providing protection to the farming community by ensuring remunerative prices and supplying quality products to the consumers at reasonable prices. A market linked insurance scheme will be worked out on the basis of past marketing experience.
- ✓ The wholesaler/processors/retailers etc. will be permitted to procure commodities directly from the farmers or traders in production or trade centers. Marketing as part of contract

farming will be encouraged to ensure better income to the farmers. Foreign direct investment and private sector investment will be accorded permission to take up ventures in agriculture /food processing and marketing.

- ✓ The promotion of marketing infrastructure development will receive utmost importance with a view to reduce quantitative and qualitative losses and improve the efficiency of marketing services.
- ✓ Functional networking of all the APMC's in the state is considered necessary to achieve an integrated system for marketing agricultural and allied commodities in the State to even out at the regional demand-supply imbalances. It can mitigate the intensity of price falls through sharing information on impending problems arising out of demand supply imbalances. This arrangement can help in coping with the marketing crisis, which is a regular phenomenon in agricultural commodity market.
- ✓ A down stream networking of all marketing logistics by the APMC's of the region in co-ordination with Farmers' Association, Transporters, Warehouses, Processors, Co-operatives and Financial Institutions will improve the operational efficiency due to economies of scale in logistic management.
- ✓ Farmers will be encouraged to sell at a place of their choice and prompt payment of sale proceeds will be ensured.
- ✓ The role of APMC's will redefine from that of a regulator to a facilitator. The priorities will be relisted from being regulator and facility provider at market yards to that of playing a more active role in the activities of grading, quality improvement, value additions, packaging etc. The functioning of APMC's will be restructured to incorporate backward linkages with farmers and forward linkages with trader/processors/food retail outlets etc.
- ✓ Automation of trading of commodities and related practices in the yard right from the entry of the commodity into the market till it leaves the market in all regulated markets will be taken up in a phased manner in all regulated markets. Charges would be collected by making the "user pays" principle that governs public investment.
- ✓ Scientific grading facilities will be created at market yards and in production centres to ensure supply of quality products. Private as well as co-operative sectors will be encouraged in this endeavour.
- ✓ To protect the interests of the farmers against the distress sale, the Market Intervention Scheme will be strengthened by increasing the corpus of the Revolving Fund with 50% contribution from Union Government. The State Government will approach Government of

India for this purpose. Minimum Support Price scheme will be extended to all the major crops of the state and specially attuned to cover small and marginal farmers. Satishchandran Committee (1993) recommended that arrangements for procurement / purchase of Ragi, Jowar and maize have to be properly organized if support pricing policy is to be meaningful. A procurement and Public Distribution network for these crops should be put in place. Farm income insurance scheme will be implemented and the risks of loss of income due to fall in the prices of commodities will be covered under the scheme. Future markets will be set up for major commodities of the State.

- ✓ The pledge loan facility will be extended to rural and co-operative godowns. Suitable modifications in the Warehousing Act will be made to secure the interest of lenders for increasing the quantum of loan against warehouse receipts. Provision of soft loan at lower rate of interest for small and marginal farmers will be explored.
- ✓ Promotion of pledge financing and marketing credit through the network of rural godowns, by evolving simplified procedure and legal arrangement with Banks will be done and it will be ensured that warehousing/godown receipts are accepted by the bankers for providing marketing credit.
- ✓ Development of rural godowns/storage to provide at a single point, comprehensive warehousing and marketing services to farmers including the facility of grading, standardization, packing, quality certification, credit and bulk market will be taken up on a priority basis.
- ✓ The Gramina Bhandara Yojana, which is a pioneering scheme of Government of India ensuring construction of godowns in rural areas under public, private and co-operative sectors and also ensures pledge loan facility, will be implemented comprehensively, if required with State support.
- ✓ An effective market information and intelligence network, preferably web enabled ITES (Information Technology Enabled Services) and IVRS system will be evolved to serve the complex marketing information needs of the farmers, processor and other stake holders. The existing website **Krishi Marata Vahini** will be strengthened to reach out to all areas in the state.
- ✓ Retail chains will be encouraged in the State by changes in the KAPM(R) Act to provide for procurement of commodities directly from the farmers and trader to supply to retailer and consumers. Foreign direct investment in retailing will be allowed so as to accelerate investment for marketing infrastructure and establish direct link between farmers and food

retail chains, The establishment of farmers markets “**RAITHARA SANTHE**” will be encouraged at all feasible places in the State and necessary incentives and facilities will be provided to farmers to sell their produce directly to the consumers.

- ✓ Farmers representatives, progressive farmers, leaders of self-help groups etc., will be trained in marketing technology through the University of Agriculture Sciences and the KSAMB training centers.
- ✓ Agricultural Marketing Extension through various Development Departments of the state, Universities, Boards and Corporations related to field will be further strengthened to reach all the people involved in agricultural marketing like farmers market functionaries, exporters etc. The personnel engaged in extension work will be equipped with necessary knowledge, skill and equipments to take up market extension work including improved packaging methods, transportation methods, maintenance of quality standards, export markets etc.
- ✓ A grievance redressal cell will be created. The complaints will be addressed to the apex organization at the state level so that redressal can be timely, fair and not adjudicated by the persons directly involved in the grievances in the market.
- ✓ There should be a thorough review of the methodology of arriving at MSP, discussed with farm leaders and academicians. Such review should be taken periodically and should be transparent in nature.
- ✓ Sample checks of the data collected under Cost of Cultivation scheme by independent agencies are extremely necessary. This process should be made mandatory for each of the State.
- ✓ MSP, if declared before the sowing season, can become an effective tool of Price Policy. Similarly, the gap between the recommended price by the CACP and the MSP declared by Government of India should be rationally explained. The MSP should have flexible sliding scale based on the Index of input prices and CPIAC.
- ✓ The procurement mechanism needs some streamlining and the State governments should be encouraged to set up their own Agricultural Prices Commissions. Such Commissions will help monitor the prices and the procedure of intervention on the similar lines as has been done in Karnataka.
- ✓ Inter-crop price parity can be utilised to encourage or discourage a particular cropping pattern. Probably during the 1990s little attention was paid to this aspect. Therefore, coarse cereals suffered a relative neglect at the policy threshold. This policy should be used by encouraging growth-oriented crops.

- ✓ Price Policy now needs to keep in view the crops having international trade potential. Two aspects have to be kept in view to encourage agricultural trade. First, to monitor and manoeuvre the Price Policy between domestic prices and international prices and second, to encourage cropping pattern in favour of export-oriented crops.
- ✓ MSP policy has not reached the farmers except in the regions with predominantly commercial agriculture. This is both due to the present process of implementation and declaration of MSP. To overcome this lacuna the information of MSP should reach the farmers through the well oiled extension agencies.
- ✓ Satishchandran Committee (1993) recommended that support pricing should always take into consideration the factor of inflation and see how best this could be neutralized while fixing the prices to make it remunerative to the farmers.
- ✓ The Agricultural Prices Commission will work on refining the methodology of arriving at the Minimum Support Prices. Providing remunerative prices to farmers will be the focus of this methodological revision. This methodology will involve not only the cost of cultivation but also the price line of the inputs as well as the consumer price index for agricultural labourers. The methodology would be debated at state level and communicated to CACP and thereafter will be followed in the State.
- ✓ A permanent vehicle for market intervention scheme will be put in place in order to reduce the market generated distress of farmers.

28 Agricultural Administration

Agricultural administration in the state is handled by various departments that include Department of Agriculture, Department of Horticulture, Department of Livestock and Animal Husbandry, Department of Sericulture, Department of Watershed Management, Department of Water Resources and along with various autonomous bodies and Boards. The Administrative Reforms Commission had suggested various measures in order to improve agricultural administration in the state and one such solution provided by the Commission is to enhance horizontal integration across these departments. It must be recognised that the administrative machinery was established keeping in view the situations that prevailed during the first two decades after independence. This situation has undergone a sea change in the decades thereafter and specifically after the onset of liberalisation in the country. It is essential now to administer less and administer in-depth rather than administering widely. Besides, the participation of stakeholders in the administrative leads and implementation of designed programmes has become a keyword. Therefore, it may not be erroneous if the changes

suggested by the Administrative Reform Committee are implemented to improve the two capabilities of the department. Specifically, the following steps will be taken:

- ✓ Presently the integration of the Departments is taken care of at the State level; however, there is no clear machinery that will integrate these departments at district and sub-district level. A coordinating group will be established at each district level that will function as the hub for coordinating various activities of these departments.
- ✓ The filling up of the vacant posts cannot be postponed any further as it is having a deleterious effect on the quality of services being rendered to the farming community. This is also seriously affecting the fair name of the Government in the eyes of the farmer. Therefore the vacant posts need to be filled up keeping in view the State Policy on Human resources management.
- ✓ A Cell, comprising of one officer from each department will be constituted in order to oversee the implementation of the Agricultural Policy in the State. This Cell will also have members from the Agricultural Universities, Research Institutions and Academics. The Cell will directly report to the Principal Secretary, Agriculture and Horticulture Department.
- ✓ Presently, a Cell is existing in the Department of Agriculture which advises the State on matters pertaining to agricultural trade and WTO. This Cell should function in close coordination with the Ministry of Commerce, Government of India and at state level with KAPPEC.
- ✓ Karnataka is one of the pioneering States which has established an active Agricultural Prices Commission .The Commission has been advising the State Government on the price policy for agricultural commodities. The Commission should be made permanent and a part of the Agriculture Department.
- ✓ The State will also establish a permanent Agriculture Commission, membership of which shall include to get a continuous feedback from farmers and to advise the State on policy matters. The Agriculture Commission will work in coordination with the Policy Implementation Cell.
- ✓ The State will also endeavour to establish Karnataka Trade Authority at the State level, on the lines of Indian Trade Authority, that will work in collaboration with KAPPEC as well as the Department of Industries & Mines to oversee trade issues and safeguard the interests of the State in the changing international trade scenario.

29 Decentralised Governance

Karnataka is one of the pioneering States to have established the three tiered decentralised administrative system through Panchayat Raj. Article 243 of the Constitution of India provides for a large number of self-governing sectors in the Gram Panchayat under Eleventh schedule. Karnataka Government has taken steps to pass on administration of majority of these to the Gram Panchayats. However, a good number of components still remain to be done. Keeping in view the spirit of the Constitution of India, it is necessary to utilise this institutional mechanism to the best advantage of the farmers. The advantages here are that the administration is at the door steps of the farmer, and also the farmers have a full stake in designing and administering their own destiny. This being a participatory institution, and therefore, success is inevitable in most of the programmes. This policy takes the view that Panchayat Raj institution should be utilised effectively in order to boost growth in rural areas. Specifically, the State shall endeavour that:

- ✓ Each Gram Panchayat, would prepare a crop plan that will be discussed in the Panchayat and displayed prominently. This will reduce the possibility of having glut in the market. The Gram Panchayat office will also display technical information as well as prices of important commodities as prevailing in the domestic and international markets.
- ✓ Each Gram Panchayats will have a storage godown and farmers will be encouraged to deposit their produce in these godowns. Warehouse receipt will be issued to the farmer on which the farmer can obtain pledge loan from commercial as well as cooperative banks. This advance will be at concessional rate of interest to enable the farmer to repay the credit thus borrowed immediately after the sale of the produce.
- ✓ Gram Panchayats will be provided the required physical infrastructure needed to demonstrate and popularise new technologies. As indicated elsewhere in this policy document, the Gram Panchayats will also maintain a demonstration plot of its own, with the help of Agricultural Consultants in order to show the working of new technologies.
- ✓ Each Gram Panchayat will be equipped with a computer kiosk preloaded with all requisite information about technology, prices of various crops and other prerequisites. This will be looked after by the Agricultural Consultant. Public-private partnership should be explored in establishing such computer kiosks.

**INCENTIVES, SUBSIDY AND CONCESSIONS IN INDUSTRIAL AND
AGRICULTURAL SECTOR – 2006**

Sl. No	Particulars	Industries				Agriculture
		Tiny	Small Scale	Medium Scale	Large Scale	
1	Capital Investment Subsidy Developed Areas – Nil Developing Areas –25 % of value of fixed assets subject to a ceiling of Rs.25 lakhs. Growth Centres –30 % of value of fixed assets Subject to a Ceiling of Rs.30 Lakhs	Yes	Yes	No	No	No
2	Industrial units making new industrial investments under Expansion/ Diversification/ Modernisation (As applicable to new Industrial Units)	Yes	Yes	Yes	Yes	No
3	Industrial infrastructure development/ Common infrastructure/ facilities in Notified Industrial Clusters	Yes	A separate Infrastructure Upgradation Fund of Rs.500 would be created for upgradation of infrastructure facilities in existing industrial areas/ estates and also for maintenance. This fund may also be utilised for new industrial areas. Separate guidelines would be issued for utilizing this fund			No
4	Exemption of Electricity Duty on Captive power generation	Yes	Yes	Yes	Yes	No

5	Sales tax deferred (KST/VAT) S. T. Exemption or 6 years S. T. deferment- Only for those SSI which were half way through deferment	No	Yes	No	Yes	No
6	Khadi and Village Industries are exempted from Payment of CST and VAT on sale of finished goods	Yes	Yes	No	No	No
7	Mega Projects Special incentive package shall be considered depending on the merits of each case	No	No	No	Yes	No
8	Export oriented industries Subsidy on export equipment But input tax 100 %	Yes	Yes	Yes	Yes	Yes
9	Exemption from Stamp duty and Concessional registration charges	Yes	Zone 1: Full exemption, Zone 2: 75 % exemption, Zone 3: Nil			No
10	Entry tax & Special Entry tax concessions	Yes	Zone 1&2: i) ET & ET exemption on “ Plant & Machinery and Capital Goods” for an initial period of 3 years from the date of commencement of project implementation. For this purpose, the term “Plant & Machinery and Capital Goods also includes Plant & Machinery and Capital Goods i.e., equipment etc. which is put up in the power project units for captive generation of Electricity.			No

			<p>ii) On raw materials, inputs components parts & consumables (excluding petroleum products, wherever applicable) for a period of 5 years from the date of commencement of commercial production. Zone 3: Nil</p>			
11	Human Resource Development	Yes	<p>i) Grant upto 5 acres for Government land will be consider along with capital contribution of 50 % of the project cost subject to a ceiling Rs.2 crores per Training Establishment for sector specific training ii) Recurring cost for running the training institution an amount of Rs.750/- p.m. per trainee will be provided subject to a ceiling of Rs.15 lakhs per year for period of 3 year iii) Government will launch a new scheme to provide Rs. 750/- p.m stipend with suitable matching contribution by training institutions for on-the-job training of unemployed educated youth for training in different vocations through industrial / service establishment</p>			No
12	Weiver of conversion fine for converting Agriculture lands to Industrial use.	Yes	<p>Zone-1: Full exemption subject to a maximum of 50 acres per unit Zone-2: 75 % exemption subject to a maximum of 25 acres per unit Zone-3: Nil</p>	<p>Zone-1: Full exemption subject to a maximum of 25 acres per unit Zone-2: 75 % exemption subject to a maximum of 25 acres per unit Zone-3: Nil</p>	<p>Zone-1: Full exemption subject to a maximum of 10 acres per unit Zone-2: 75 % exemption subject to a maximum of 10 acres per unit Zone-3: Nil</p>	No

13	Acquisition & allotment of land through KIADB	Yes	In respect of lands acquired for development of industrial area/ estates or single unit complex KIADB acquisition charges to be levied is 28% in respect of areas in Zone 3. For the areas in Zones 1 & 2 acquisition charges would be 10 %			No
14	Subsidy for setting up of Effluent Treatment Plants (ETPs)	Yes	One time capital subsidy upto 50% of the cost of ETP, subject to a ceiling of Rs.100 lakhs per unit for all categories of industries for Zones			No
15	Agriculture Produce Processing Industries Exemption of APMC Cess	Yes	APMC Cess in respect of direct procurement of agriculture produce for processing from farmers by processing industries is exempted			No
16	Subsidy for Bio-fertilisers [For Oilseeds, Pulses, 50 % subsidy to farmers on ISI brands, not exceeding Rs. 50/ hect] Seed treatment a) 50 % subsidy/ not exceeding Rs.200 on all crops	No	No	No	No	Yes
17	Supply of green manure seeds @ 50 %, Rs.500 subsidy to farmers	No	No	No	No	Yes
18	Plant protection [50 % subsidy, not exceeding Rs.500 on chemicals for control of endemic pests on crops except (Cotton, Sugar cane, Tobacco, oil seeds, Pulses, and Maize)]	No	No	No	No	Yes

19	Minikit demonstrations under Integrated scheme Of Oil seeds, Pulses and Maize (ISOPOM) (General/SC/ST/Woman farmers a 100 % subsidy)	No	No	No	No	Yes
20	Production of certified seeds under seed village of varieties specific to problem areas incentive @ Rs.125 / Qtl for seed producing agencies and @ Rs.375 to farmer under LSS, ISOPOM scheme	No	No	No	No	Yes
21	Incentive on use of breeders seed of the varieties to probleme areas. Full reimbursement to producing agencies under ISOPOM Scheme.	No	No	No	No	Yes
22	Distribution of Micro-nutrients on subsidy of 50 % of cost limited to Rs.250/ hact	No	No	No	No	Yes
23	Distribution of Plant Protection Equipment on subsidy of 50% of cost limited to Rs.600 per manually operated equipment and Rs.1,200 per power operated equipment	No	No	No	No	Yes

24	Distribution of identified bullock drawn and manually operated and improved farm implements on subsidy of 50 % limited to Rs.2,000/- implement (Bullock drawn) Rs.10,000/- Tractor drawn	No	No	No	No	Yes
25	Distribution of power tillers on 25 % of the lowest cost or the maximum limit fixed under Work plan Rs.30,000/- 25 % of the lowest cost or the maximum limit fixed under State sector Rs.30,000/- Totally 50 % of the cost or upper limit of Rs.60,000/-	No	No	No	No	Yes
26	Training programmes for farmers in the districts (ISOPOM, Cotton, FFS) Providing TA, DA	No	No	No	No	Yes
27	Assistance of Rs.500/-Qtl is provided for production of foundation seeds. Oil seeds, Pulses, and Maize under ISOPOM scheme	No	No	No	No	Yes
28	Sprinkler sets to small and Marginal farmers and for an area upto 2 hectares @ 33 % subsidy upto Rs.10,000/ set for General farmer, 50 % to SC, ST, SF, MF, and Woman farmers upto Rs.15,000/- under ISOPOM	No	No	No	No	Yes
29	Gypsum/lime distribution 50 % subsidy assistance upto Rs.500/- hect	No	No	No	No	Yes

30	Purchase of small tractors below 38 PTO HP @ 50 % of the maximum cost limited to Rs.60,000/-	No	No	No	No	Yes
31	Supply of drip irrigation equipments @ 50 % of the cost or a maximum of Rs. 22,500 / hact	No	No	No	No	Yes
32	Rashtriya Krishi Bima Yojana (RKBY) For annual Horticultural & Commercial crops, along with Food and Oilseeds	No	No	No	No	Yes
33	Award of Krishi Prashanthi to the farmers who achieve higher yield in the crops at State/District/Taluka levels. (Prize amount from Rs.3,000 to 30,000/-)	No	No	No	No	Yes
34	Minimum support price and Market support for agricultural commodities	No	No	No	No	Yes
35	Central Government policies and incentives, Additional support like institutional finance priority in the Government purchase programe and taxation from certain provision of labour laws	No	No	No	No	No

36	National equity fund scheme to cover projects upto Rs.10 lakh for equity support	No	No	No	No	No
37	Widening the scope of the single window loan scheme to cover project upto Rs.20 lakhs with working capital margin upto Rs.10 lakhs	Yes	Yes	Yes	Yes	No
38	Equity participation by other industrial undertakings in the SSI, not exceeding 24 % of the total shareholding	No	Yes	No	No	No
39	Setting up of factoring services through small industries development Bank of solve the problem of delayed payments	Yes	Yes	Yes	Yes	No
40	A technology development cell to provide technology inputs	Yes	Yes	Partial	Partial	No
41	Priority in allocation of indigenous raw materials	No	No	No	No	No
42	Marketing of mall consumption items under common brand name	No	Yes	No	No	No
43	Sup-contracting exchanges to encourage parts, components etc.	No	Yes	No	No	No
44	Nodal agency for export promotion	Yes	Yes	Yes	Yes	Yes

45	Supply of machinery on hire purchase	Yes	Yes	No	No	No
46	Tax incentives - Tax holiday for a period of 10 years from income tax for companies and 25 % of profits in the case of other entities	No	No	No	No	No

Zone 1: Most and More Backward Talukas, **Zone 2:** Backward Talukas,

Zone 3: Industrially Developed Talukas