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The opinions/views expressed in the Land Bank Journal are not necessarily the official views of the National Cooperative Agriculture & Rural Development Banks' Federation.

EDITORIAL

More than five years have passed since the Task Force appointed by Government of India under the chairmanship of Prof. A. Vaidyanathan recommended a revival package for ailing institutions in the Long Term Rural Cooperative Credit Structure. The package sought to bring institutions in the structure to an acceptable level of financial health and to address legal, policy and systemic issues that brought these institutions to its present state. It is unfortunate that the package continues to remain a non starter in spite of announcing its implementation in the Union Budget 2008-09 and Union Cabinet giving its approval to it in February 2009. This delay has taken a heavy toll on the performance of ARDBs in terms of meeting the credit needs of members.

In the absence of reforms and opening up of fresh avenues for raising funds, the structure still depends entirely on NABARD for funds to advance loans. In spite of govt's guarantee for repayment of such funds, NABARD increasingly shows discomfort to finance ARDBs. It appears that NABARD finds it a better option to shun cooperatives in favour of Commercial Banks and Regional Rural Banks, which get lion's share of its budget for investment credit. 9 out of 19 SCARDBs have already been disqualified for drawing its refinance by tightening eligibility norms in the course of last 10 years. This process is being intensified further by risk profiling of SCARDBs for the purpose of refinance allocation, completely discarding the fact that timely repayment of the borrowings by ARDBs with interest is guaranteed by State Govts. This exercise of NABARD carries little sense at this juncture. The structure had incurred heavy losses on account of govt policies which are yet to be compensated under the proposed package. Even today NABARD's own policy of applying new enhanced interest rates on refinance against loans issued by ARDBs at lower interest rates, adds to such losses. Recent decisions of NABARD to downscale refinance to 90% of loans and withdrawing the two year repayment cushion which was given to cover a portion of overdues at farmer level and switch over to half yearly interest demand of refinance instead of yearly interest etc. have taken all SCARDBs to a zone of negative net margins. Risk profiling of

SCARDBs for refinance support in this context will only result in further reduction in the number of SCARDBs eligible for support and also reduction in the quantum of support given to eligible banks. Further reduction in refinance support to these banks will not only dampen their chances of revival but also will aggravate the credit crisis faced by their members. 132 lakhs rural families have pledged their land to ARDBs as security for loans taken in the past. Most of them are unable to access other Rural Financial Institutions for credit. These are the people who are going to be most affected by the delay in reviving the structure and the policy of NABARD to scale down its refinance to these institutions in one pretext or the other.

Recently, replying to a question in the Lok Sabha, Finance Minister stated that the revival package for ARDBs is under active consideration of the Government. It is learnt that the Ministry of Finance is working out options to implement the package, completely excluding banks which are presently not getting refinance support of NABARD. This is a major deviation from the essence of the package recommended by Vaidyanathan Task Force II. We look forward to a change in the approach of NABARD to facilitate viable functioning of SCARDBs and early implementation of revival package, true to the spirit of recommendations made by Vaidyanathan Task Force.

K. K. Ravindran
Managing Director

Broiler Goat Rearing

Mr. Md.Zaheeruddin*

Goats are one of the oldest domesticated species. Goats have been used for their milk, meat, hair, and skins over much of the world. In the twentieth century, they also gained in popularity as pets. Goats are among the earliest animals domesticated by humans. The most recent genetic analysis confirms the archaeological evidence that the Anatolian Zagros are the likely origin of almost all domestic goats today. Another major genetic source of modern goats is the Bezoar goat, distributed from the mountainous regions of Asia Minor across the Middle East to Sind.

In India, Goat is known as 'Poor man's cow' and is a very important component in dry land farming system. Marginal or undulating lands unsuitable for other types of animals like cow or buffalo, goat is the best alternative. With very low investments, goat rearing can be made into a profitable venture for small and marginal farmers.

Raising methods - Goat Rearing

Intensive system

Broiler goat production is highly suitable technology in areas where

green fodder is not available (or) due to lack of grazing land. It is one of the techniques to improve the economy of rural farming community. Broiler goat rearing has been found to be highly remunerative compared to rearing other farm animals and it has been advocated as a better substitute of livelihood for the rural farmer. As far as broiler goat rearing is concerned, we don't have any specific breed for broiler goat kids. The kids produced from goats (whatever breed available in your area) can be used for broiler goat rearing (both male as well as female kids).

Parent stock

This technique is highly applicable to the farmers having goats or already involved in goat rearing. The kids produced from these animals can be used for broiler goat rearing.

For example, suppose a farmer is having 50 goats. Out of these 50 goats, may be 20 goats kidded (delivered) at an average of 2 kids/goat at a time. So that farmer can get totally 40 kids. Out of these 40 kids (20 male & 20 female), the kids which are having higher birth

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weight and those not used for further breeding can be selected for broiler goat rearing.

Note: Broiler kids can be used for meat purpose only and not for breeding.

Housing: Low cost housing should be constructed in such a way in a raised platform (about 1 meter height from ground level) by using bamboo/wooden poles or 'pakka' building by establishing concrete pillars. Floor and side walls may be made of wooden material. Roof may be thatched with coconut leaves, grass or asbestos sheets. Average floor space per kid is 0.75 to 1 sq. meter. Floor should have at least 1 cm space between bamboos / wooden planks to allow passage of dung and urine down to the ground.

Selection of kids

The goat kids about 15 days to 1 month old i.e. before starting to eat green leaves and are having higher birth weight and not used for further breeding can be selected for broiler goat rearing. The selected kids will not be allowed to feed on green fodder/grazing green grasses in open spaces.

Method of rearing

The selected kids are reared intensively by providing

concentrate feed (goat feed) @ 5 g mixed with equal quantity of rice gruel (broken boiled rice) initially i.e. at start (15-30 days). Then gradually increase the amount day by day as per feed intake (e.g. 7g, 10 g, 15 g like that). Apart from these one can add, coconut cake, rice bran or ground cake with minimum level (1-2 g /day / kid to maximum of 150-200 / day) Pure water also should be available at all times (24 hours).

Liver tonic (Tefroli/Livol etc.) and Fish oil should be given twice in a week @ 2.5 ml/animal per day initially and increase upto 5-10ml/kid/day. The young kids should be allowed for mother's milk twice or thrice in a day.

Goat feed: Available in the market or you can also prepare own feed mix by using following feed ingredients.

<u>Ingredients</u>	<u>Parts</u>
De oiled ground nut cake	12
Horse gram	30
Wheat/maize/jowar (grain)	30
Rice polish/wheat bran	15
Dried unsalted fish	10
Mineral mixture	1.5
Common salt	1.5
VitAB2D3	25 gms/100kg of feed mixture

Marketing

In India goat meat is preferred by all. So marketing of broiler goat is not a major problem. Direct marketing is highly profitable. Involvement of middleman can reduce the price of animals. Broiler goat meat is soft and minimize goaty odour. Marketing should be done at the attainment of 25-30 kg or at the age of 3-4 months whichever is earlier.

Breeding of parent stock

Parent stock should be allowed for mating by using good quality male (superior breed) or by using frozen semen at about 45 days postpartum (after delivery). Thereby, the farmers can get continuous supply of goat kids for broiler goat production. Furthermore, the female goats produce more number of kids in their life time. Repeated mating by using same male should be avoided.

Synchronization of estrus

In a large herd, synchronization of estrus by using PGF2 alpha injection and timely breeding by using good quality frozen semen or natural service by superior male will enhance not only conception

rate but also the farmer can bring all the animals to deliver (kidding) at a specified period.

Advantages

1. No need to observe estrus signs.
2. Fixed time breeding at 72 hrs and 96 hrs following PGF2 alpha injection.
3. Delivery of all mated or inseminated animals at a particular time.
4. Highly useful for broiler goat rearing
5. Management is easy.
6. Reduced inter-kidding interval (in between the deliveries)

Conclusion

A farm woman can manage about 10-20 kids at a time without any extra labour. It is highly profitable to the farmers who is already involved in goat rearing. The kids should be sold off at about 3-4 months or at the attainment of 25-30 kgs whichever is earlier. A farm woman/farmer can produce more number of broiler kids in short period of time. Apart from these the reproductive efficiency of female goats can also be highly exploited by proper planning of breeding.

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A Study on Product Profitability of The Pondicherry Cooperative Central Land Development Bank

Dr. R. Velu Raj *

Statement of the Problem

Cooperatives are indispensable institutions in the rural credit structure of our country. In terms of geographical coverage and the population served, the cooperative credit system is today an important institutional credit agency. Under the cooperative credit system, the development banks are term lending institutions. By nature of business, they involve huge one-time lending and recovery spreading over several years in small installments. The purpose of the credit, utilization and the willingness to repay are the major underlying factors for prompt repayment of loans which in turn determine the financial soundness and viability of the banks. Lending to agriculture has always been a risky proposition. Long term investments in agriculture involve capital risks and uncertainty in the recovery. Provision of credit to various purposes spread the risk and thus may reduce the degree of risk associated with lending and recovery.

As such, the banks have started lending to a variety of farm and non-farm activities. Depending upon the purpose, the recovery period is fixed between 5 and 15 years. The lending procedures have also been redefined and regulated. The multi-purpose lending with structured loaning process, it is believed, would help spread the risk and enable the banks to earn better profit and maintain the profitability.

But then,

- i) Do these banks over a period of time by diversifying their portfolio have improved their profit and profitability?
- ii) Have they become viable?
- iii) If so, what are the activities (products) that have contributed to the profitability of the bank?
- iv) Which is the prominent product or activity?
- v) Which product mix contributes to enhance the capital structure as well as investment pattern of the bank?

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- vi) Which product mix maximizes the profit and/or minimizes the cost?, and
- vii) What is the optimum product mix strategy for improving the profitability?

These are some of the basic issues which call for an in-depth enquiry and analysis. Against this, it is decided to make an attempt to study and also to examine the functioning of the Pondicherry Cooperative Central Land Development Bank Limited with reference to the factors affecting the profitability, the product specific profitability and product mix on maximizing the profit and minimizing the cost and ultimately the very financial viability and sustainability of the bank. Such an analysis would provide a comprehensive picture of the existing state of affairs of the bank helping evolving policies for sustainability of the bank. It is precisely against this backdrop, the present study is attempted.

Objectives of the Study

The principal objectives of the study are as below:

1. To trace the origin and growth of Land Development Banking in the Union Territory of Puducherry,
2. To assess the overall performance of the bank,
3. To identify the factors contributing to the overall profitability of the bank,
4. To understand the capital structure and its relationship with profitability, and
5. To examine the lending and investment portfolio and its contribution to profitability.

Scope of the Study

The main focus of the study is to assess the product profitability which eventually determines the financial performance of the bank. An in-depth analysis would certainly help bringing out the products and product mix which contribute to the profitability of the bank. The findings of the study would be of immense help to the authorities of the bank and to the state government for taking effective measures towards improving the business and achieving better financial performance and profitability. The findings of the study would also help to day to day comprehensive and policy implications in order to enhance the profitability in terms of capital structure and investment pattern of the bank.

In terms of periodicity, the study covers the entire life and traces the

origin and growth of the bank. The major analysis and discussion on the overall profitability performance is done for the past fifteen years ending on March 2008. The product specific profitability of the bank covers a short term period of one year i.e., 2007-08 only.

The study is organized in six chapters.

- (1) The first chapter provides an overview of cooperative land development banks in historical perspective.
- (2) The research design is presented in the second chapter.
- (3) The third chapter presents the profile of the bank.
- (4) The chapter fourth focuses on the profitability performance analysis of the bank.
- (5) Product specific profitability and contribution of each product to the overall profitability of the bank is presented in the fifth chapter.
- (6) The chapter six outlines the major findings, suggestions and conclusion.

A) Profile of the Bank

i) Origin of the Bank

The Pondicherry Co-operative Central Land Development Bank

was registered as a co-operative society under the Madras Provincial Cooperative Societies Act (VI of 1932 Madras) on 1st April 1960 with Registration No. P.106 and commenced its functioning from 7th May 1960. Its head office is located in Pondicherry and has a branch at Karaikal. The area of operation is the entire Union Territory of Pondicherry. In the regions Mahe and Yanam, the bank has no branches, but it operates with the help of Pondicherry State Cooperative Bank.

ii) Object of the Bank

The main object of the bank is to support the farmers in getting long term credit for making land improvements and for modernization of agriculture in almost all possible ways.

iii) Membership of the Bank

The bank has three types of membership namely A, B, and C class members. The membership of the bank has increased from 48 members in 1959-60 to 13843 members at the end of 2007-08 growing annually at an average rate of 12.53%.

iv) Management of the Bank

The management of the bank vests with the board of directors

consisting of 15 directors. The day-to-day administration of the bank is done by the Managing Director as its CEO. The staff of the bank are empowered with various powers to look after the operations of the bank. The bank has internal audit system. A manager is in-charge of it.

v) Funds of the Bank

The bank has an authorized share capital of ₹1000 lakhs from the composition of three classes of members' capital. It is in the ratio of 45:55 to be contributed by the government and the members (both B and C class). The volume of share capital during the year 2007-08 had grown to ₹316.91 lakhs as against ₹1.19 lakhs in the year 1959-60. The average annual growth rate in the case of aggregate share capital during this period was 74.80 %. The bank has been able to collect a considerable amount of share capital from the State government.

The 'reserve funds' too has grown sufficiently. There is annual average growth of 78.91% during the reporting period. It has grown from ₹1000 in 1959-60 to ₹3.36 lakhs in 2007-08. The total deposits of the bank have grown tremendously at the rate of 187.25% per annum during the period under review. The collection

and acceptance of fixed deposits brought the growth rate to high level, especially in the recent years under reporting.

The borrowings of the bank have grown gradually during the study period. At the end of 2007-08, it was ₹454.09 lakhs. The bank has withdrawn the flotation of debentures since 1999-2000 due to inability in meeting the requirements of the provisions made by the financing bank. The bank started redeeming the debentures gradually. The outstanding of ordinary debentures and special development debentures stood at ₹15.00 and ₹64.31 lakhs respectively at the end of the study period.

At the end of 2007-08, the overall financial position of the bank stood at ₹1618.56 lakhs with a composition of about one fourth being owned funds and more than three fourth as borrowed funds. The annual average growth rate was 105.59%. That is, there has been an increase in owned funds, and about two fold increase in borrowed funds.

vi) Investments of the Bank

The bank has invested its surplus funds in suitable ways and means so as to earn returns. The average

annual growth of the total investments of the bank is 59.44% during the study period. The total investments amounted to ₹127.41 lakhs at the end of 2007-08.

vii) Loan Operations of the Bank

The bank extends credit to its members under normal, scheme as well as non-scheme lending categories broadly classified into productive and non-productive purposes lending. The bank has put in considerable efforts to lend the available funds to members for productive purposes. The quantum of lending has registered an upward trend except during 1978-79 when there was a short fall. During this period, the average annual growth was reported to be at the rate of 123.64%.

The volume of loans outstanding has grown annually with slight fluctuation. At the end March 2008, the loans outstanding stood at ₹1287.64 lakhs, which was growing at an average rate of 79.83% per annum. The loans recovery performance of the bank is better when compared with the issue of loans. At the end of March 2008, the quantum of recovery was ₹838.49 lakhs. Rapid growth of loans overdue comes into sight during the study period. The rate of growth was 107.11% per annum.

At the end of March 2008, loans overdues stood at ₹290.45 lakhs.

The position of loans issued, outstanding, recovery and overdues of the bank was gradually increasing in all the years under review and especially it recorded a two fold increase in the last five years. The total loan issued, outstanding, recovery and overdues had an increase of 105.54%, 47.38%, 84.14% and 38.15 per cent respectively over the last four years under review. The total loans recovery recorded was 65.12% and the total loans overdues being 22.56% to total loans outstanding.

viii) Working Results of the Bank

Undesirable performance of loans recovery and an increase in manpower and operational expenses, the bank has fallen under accumulated loss during the period. The accumulated loss was ₹261.34 lakhs at the end of 2007-08.

C) Profitability Performance Analysis of the Bank

The profitability performance analysis was done using data from the profit and loss accounts and balance sheets of the recent years from 1993-94 to 2007-08. This included analysis of: (i) the key

performance indicators, (ii) the profitability performance, and (iii) the factors affecting the profitability performance of the bank.

I) Key Performance Indicators

i) Ratios in relation to Structure of Working Capital

The performance of the bank with reference to owned funds to working capital ratio is not quite impressive, although it has good progress in membership drive, deposit mobilization and loans deployment/advances. This ratio shows that the bank has not been successful in increasing the proportion of owned funds beyond 20.81% in the total working capital. The average ratio for all the years put together was only 17.39%.

The performance of the bank in terms of deposits to working capital has moved from low to high percentage over the period under review recording better performance i.e., from 1.58% in 1994-95 to 49.69% in 2007-08.

It is found that the proportion of borrowings in the working capital has come down from 35.17% in 1994-95 to 29.50% in 2007-08. The average of borrowings to working capital ratio was only 61.64%. These indicate that increasing proportion of deposits and

declining proportion of borrowings has been welcome signs which assist in reducing the overall cost of funds and thus would help in improving the profit margin. And at the same time, the proportion of owned funds in the total working capital is not remarkable. Strengthening the financial base of the bank, especially the owned funds position is more important for bringing overall financial soundness. It is an important area that the bank needs to pay more attention in the years to come.

ii) Ratios in relation to Utilization of Working Capital

With regard to utilization of working capital, the consumer loans and medium term loans disbursed by the bank have slowly occupied a major share in the total loans and advances over the years. It was only 5.44% in 1993-94 and it reached at 95.66% in 2007-08 very steadily. The average ratio was 63.56% which exposed the ways and means of earning more interest by providing loans to those purposes which fetch more interest income to the bank.

The ratio of loans and advances to working capital indicated a fluctuating trend during the period under review. The average ratio during the study period was

32.77% the standard deviation was 17.02%. This clearly shows that the bank has been showing improvement in deployment of funds.

Investment to working capital ratio was also found to have fluctuated during this period and it stood at 8.28% in 2007-08. The average ratio was 16.75% and the standard deviation being 3.51%. This is explained by the lack of professionalism in portfolio management and failure in utilizing the opportunities in the money market might be due to or what of proper guidelines in this regard from the state government.

iii) Ratio in relation to Capital Funds

The ratio of borrowings to capital funds has come down from around six and half times in the beginning to less than one and half times in the end of the study period. This ratio has revealed a declining trend. The average ratio was 3.77 times. This is due to rising trend in deposits and debenture redemption exercise done by the bank.

iv) Ratios in relation to Deposits

The credit to deposit ratio shows descending trend due to the liberal attitude of the bank in extending credit to its customers. While the

deposits and advances of the bank increased over the period, the increase in advances is not in proportion to the increase in deposits. The ratio of investments to deposits too revealed a declining trend due to the liberal credit policy.

v) Ratios in relation to Overdues

It was found that the ratio of overdues to working capital had a progressive trend from the beginning of the study period. Later, an erratic trend was found in the overdues to loans and advances ratio. It is because of the government intervention in the form of waiver of penal interest. But, the bank has been trying to reduce the overdues. It recorded a ratio of 17.38% in 2004-05.

II) Profitability Performance Assessment by Considering the Pattern of Income and Expenditure

i) Spread Analysis

The spread analysis considered two items, viz., analysis of interest income and interest paid.

It is found that the interest income has increased during the study period due to overall performance and business conditions and availability of

sufficient resources. But the interest earned ratio exhibited a fluctuating trend and it has not provided a definite trend. The average interest earned in relation to volume of business has grown at the rate of 11.79% over the study period.

A steady growth in the interest expenses of the bank was noticed during the period under review due to increased deposit mobilization. It was about two and half fold increase at the end of the study period. It is also found that the interest expense in relation to the volume of business also grown due to increased deposit mobilization.

Trends in spread indicated a growth of 11.31% annually during the study period. Fluctuation drift found in the ratio was due to the higher interest income and relatively lower interest expense. This ratio has an average of 4.97% annually during the period under review.

ii) Burden Analysis

The analysis of the burden is based on (i) Manpower expenses, (ii) Other operating expenses and (iii) The non-interest income.

It is found that the trend in manpower expenses fluctuated during the study period. The

average annual manpower expense was ₹45.60 lakhs during the study period which is due to annual increments to the employees and periodical hike in the pay structure. The manpower expenses ratio ranged between 2.60% and 4.79% with an average of 3.85% during the study period.

The trends in other operating expenses too had high fluctuation during the period under review. The average annual expense was ₹99.56 lakhs and the average other operating expenses ratio was 8.98%.

The trends in the non-interest income of the bank showed fluctuation until 2007-08. The average non-interest income was ₹77.95 lakhs. The non-interest income to the volume of business was also found to be high due to the non-interest income earned out of banking services extended by the bank. The average ratio during the period was 7.13%.

The burden witnessed wide fluctuations during the period under review. The average annual burden during the study period was ₹79.30 lakhs. The burden ratio ranged between 5.60% and 2.78%. The average of the burden ratio stood at 4.18% annually during the study period.

iii) Profitability Analysis:

It is found that the profitability ratio had positive results only in four years and the rest of the years had shown negative results.

III) Factors Affecting Banks' Profitability

The objective of this part of the study is to test empirically which of the identified variables have significantly contributed to the bank profitability using correlation and regression analysis. For this analysis, independent variables are identified after considering the spread and burden factors.

The spread factors are;

- i) Interest income to volume of business (X1),
- ii) Interest expenses to volume of business (X 2),
- iii) Borrowings to volume of business (X 6),
- iv) Credit Deposits Ratio (X 7),
- v) Consumer loans to loans and advances (X 8),
- vi) Medium Term loans to loans and advances (X 9),
- vii) Overdues to loans and advances (X 10),

The burden factors are;

- i) Manpower expenses to volume of business (X 3),

- ii) Other operating expenses to volume of business (X 4),
- iii) Non-interest income to volume of business (X 5)

Profit to volume of business (Y) is considered as the dependent variable for the study.

i) Correlation Analysis

The study used the lower triangular correlation co-efficient matrices for identifying the degree of relationship between the selected independent variables with the dependent variable for the period 1996-97 to 2007-08.

Two variables namely the interest income to volume of business (x1) and the manpower expenses to volume of business (x3) had significant but negative correlation with the profitability. The variable x1 has direct relation with spread which helps enhancing the profitability of the bank. But, the correlation co-efficient is negative (-0.61) and significant at 5% level. The negative association implies increased interest income. Since, interest income is the major component of the spread, this statistical evidence shows that the spread will help reduce the burden and in-turn influence the profitability positively.

Another variable x_3 viz., manpower expenses had direct relation with burden. The correlation co-efficient has negative influence (-0.74) and significant at 1% level. Hence, it can be stated that decrease in manpower expenses helps improving profitability and vice versa. The manpower expense is the major component of the burden, and any reduction in the level of burden will help increasing the spread. Thus, the manpower expenses are found to have influenced profitability significantly.

It is found that the factors like interest income and manpower expenses marked a negative correlation with the profitability. This indicates that the increase in interest income or the decrease in manpower expenses leads to increased profitability.

ii) Multiple Regression Analysis

The stepwise multiple regression analysis was used to find out the combined impact of relevant variables on profitability. It is found from this analysis that around three-fourths of the contribution in the profitability is explained by the variables - the ratio of manpower expenses to volume of business and the proportion of consumer loans in the total loans and advances.

D) Product Specific Profitability of the Bank

Linear programming model was developed to determine the decision of optimal allocation of available funds to the various business alternatives or to the products and services subject to various constraints so as to maximize profit or to minimize cost. The study used a short-term (1year) data for analyzing the decision of optimal allocation of banks' funds using the software LINDO in order to maximize the profit and/or minimize the cost.

The linear programming model recommended different feasible solutions for maximizing the profit for investment and lending products and minimizing the cost for share capital, deposits and borrowing products from the present level taking into consideration all possible constraints likely to be faced by the bank.

I) Feasible Solutions for Minimizing the Cost of Share Capital, Deposits and Borrowing Products

The study developed three different models and out of which one suitable model is suggested for implementation. These three different models were developed by

altering the sources of funds pattern based on the factors like;

- (i) ignoring the products which are highly expensive in nature,
- (ii) impact of reduction of investment on the total loanable funds and the possibilities of making use of them for other purposes, and
- (iii) optimum use of the capital and human resources of the bank.

The following results are obtained for minimizing the cost of sources of capital.

All the three models for each sources of capital suggested initially model-1 which is considered the best for implementation. But the model-1 has serious consequences, like,

- (i) it was developed without knowing/considering the demand position at the present level of 'c' class share capital, staff security deposit, and government loan for share capital purposes, and
- (ii) it recommended the reduction of lone item at a higher rate without considering the reduction of cost of 'a' and 'b' class share capital, fixed deposits, employees thrift deposit, debenture floatation and loans from the apex bank.

Due to these consequences, this model is not recommended for implementation even-though it helps minimizing the cost than other models. This model also suffers from other limitations such as;

- (i) non acceptance of other sources of capital is contrary to the objective of the bank and basic functions of a bank, and
- (ii) the human resources already appointed to work may become jobless or remain idle and if they remain idle it would cost heavily on the bank.

Therefore, the study recommended model-3 for implementation since it would yield better results in terms of minimizing the cost comparing the results of other models and at the same time enable optimum use of all available resources.

II) Feasible Solutions for Maximizing the Profit of Investment and Lending Products

The study developed three alternative models to determine the product specific profitability of application of funds. Out of the three models developed, one suitable model is suggested for implementation. These three

different models were developed by altering the application mix of funds based on the factors like;

- (i) ignoring the products which have low/no-revenue,
- (ii) impact of reduction of investment and opportunities for utilizing the funds for other business purposes, and
- (iii) optimum use of the resources of the bank.

Linear programming planning models for maximizing the profit revealed the following.

All the three models for applications of capital funds suggested initially the model 1. Model 1 though appears to be the best for implementation, it has serious consequences, like,

- (i) it was developed without knowing/considering the demand position at the present level of investment of debenture redemption fund and investment of fixed deposit and lending of term loans for the staff, and
- (ii) it recommended the enhancement of the above mentioned products at a higher rate without considering the other investments and loans and advances of the bank.

It has also other limitations such as;

- (i) concentration on investment of fixed deposit would result in reduction of fund operations for other business purposes, and
- (ii) the human resources involved in the application of capital funds may become jobless or remain idle.

Due to these consequences, this model is not recommended for implementation.

Therefore, the study found that model 3 as suitable for implementation. It would yield better results in terms of maximizing the profit.

Suggestions

In the light of the above findings, the following suggestions are in order.

- ▶ Though the bank has had high average annual growth rate in share capital, the major proportion is found to be subscribed by the State government. It is, therefore, suggested that the bank should make efforts to drive new members as its ordinary members so as to reduce the contribution of the State

government and to build strong members capital.

- ▶ The reserve fund position needs to be made stronger further. This is possible only when the bank earns sufficient profit from its operating.
- ▶ The total deposits of the bank have indicated a growing statistics. But still, it is strongly suggested that the bank should make further efforts to collect more deposits from the public in order to strengthen the capital base without resorting to borrowings.
- ▶ The borrowings of the bank were found to have increased gradually over year. It requires reducing the level of borrowings especially from other external sources to reduce the cost and thereby to increase the profitability.
- ▶ A closer look at the overall financial position of the bank revealed that both owned and borrowed funds increased with the ratio of 1:2. It is, therefore, suggested that the level of borrowings need to be reduced. This can, at least be reduced to the level of owned funds.
- ▶ In view of higher overdue, it is suggested that necessary steps be initiated to reduce it by means of venturing the loan

operations into profitable manner in newer avenues.

- ▶ The owned fund to working capital of the bank was found to be 1:5 only. It is, therefore, suggested that the bank should focus its operations towards enhancing the owned funds position especially through membership drives.
- ▶ The bank has been showing much interest on distributing non-farm sector loans. About 63.56 per cent of the total loans and advances, for the past one and half decade are distributed to non farm sector. That is, the bank has been slowly diverting its business operations mainly from farm sector loans. It is found to have contributed to the profitability of the bank. Therefore, it is strongly suggested that the bank should find business activities in the non-farm sector or such identical portfolios to improve the profitability of the bank.
- ▶ Investment to working capital ratio indicated a low level i.e., 16.75% on an average. It is, therefore, suggested that the bank should make successful portfolio plans and utilize the opportunities available in the market for making better profitable investments.

- ▶ It is found that the increase in advances is not in proportion to the increase in deposits. Therefore, the bank needs to mobilize more deposits from both member and the general public so as to make adequate loans and advances to the members.
- ▶ The spread to burden ratio is found to have marginal difference (the average annual spread ratio was 4.97% and the average burden ratio was 4.18%). Similarly, the factors like interest income and manpower expenses marked a negative correlation with the profitability. Therefore, it is suggested that the bank should take necessary steps to improve the spread as the burden cannot be brought down easily.
- ▶ Decrease in manpower expenses would result decrease in the burden. It is, therefore, suggested that the bank should take effective measures to reduce manpower expenses by rationally distribution of workload among the employees.
- ▶ Multiple regression analysis revealed that around three-fourths of the contribution in the profitability is explained by the variables - the ratio of manpower expenses to volume of business and the proportion of consumer loans in the total loans and advances. It is, therefore, suggested that the bank should make use the manpower effectively in the supervision and recovery of loans and advances for improving its profitability.
- ▶ In the analysis of minimization of cost of sources of capital, it is suggested to increase share capital and deposits 1.25 folds and decrease of borrowings 0.40 fold in the capital mix. Therefore, the bank has to take necessary action in these lines.
- ▶ Taking in to the different types of share capital, it is suggested to have two fold increase of 'B' class and 18.10 fold increase of 'C' class membership. Therefore, the bank needs to draw measures to increase the levels of share capital through enhancing membership.
- ▶ In the case of deposits, it is suggested to have three times increase of the employees' thrift deposits from the present level. Therefore, the bank should take steps to encourage the employees to subscribe more on thrift deposits.
- ▶ It is suggested that the bank

may make use of more funds towards investment in fixed deposits, and debenture redemption fund.

Areas Identified For Further Research

The following are some of the areas identified for undertaking further research.

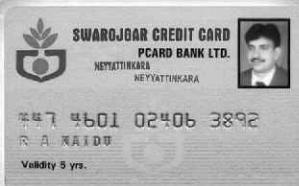
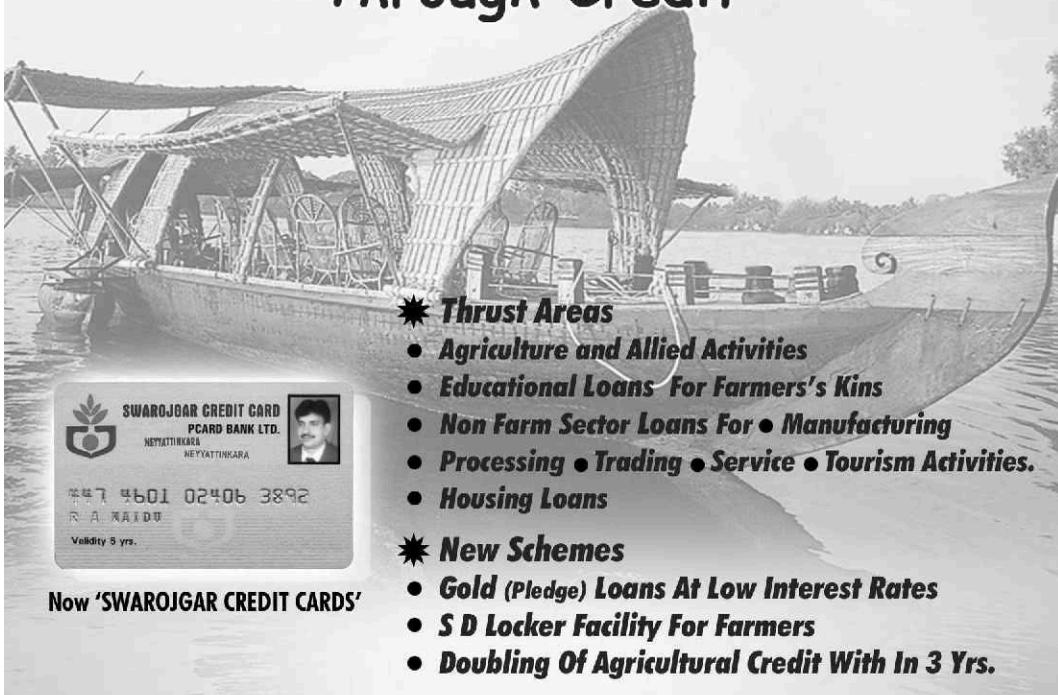
- ▶ Implications of policy changes on and practices of cooperative long term credit institutions.
- ▶ Diversification of business operations particularly from farm to non-farm sector activities and also extension of loans on the pledge of jewels and their impact on the overall functioning and profitability of the land development banks.
- ▶ A study on operational prospects and problems in integrating short and medium term and the long term structures in the purveyance of agricultural development loans.
- ▶ Potentials of and threats to marketing of products of cooperative long term credit institutions in view of the involvement of commercial banks and other financial institutions extending long term farm and non-farm sector loans .

- ▶ Impact of non farm sector lending on sustainability vis-à-vis the objective of the bank.
- ▶ An in-depth study on capital structure and profitability of the bank.

Conclusion

To sum up, the performance of the bank in terms of profitability has deteriorated over years. In order to mitigate such a trend both the bank and the state initiated necessary steps which helped overcome the troubles if not for ever at least for time being. In their effort to make the bank viable, several changes in their lending policies and patterns were introduced. As such, the bank at present has several products in its capital structure and investment pattern. Despite a kind of diversification, the bank is in a critical juncture. The study by applying the most trusted tool on profit planning suggests the viable capital mix and investment mix for application. The suggestions can not be implemented at once by the bank as it needs policy decisions at the state level. It is high time the state considers the recommendations emanating from the LPP models presented in this study and makes policy decisions accordingly.

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An Empirical Study of Perception of Farmers Towards High Quality Vegetable Seeds

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Seed is the most crucial input for productive agriculture and sustained growth in farm production. Seeds are particularly important in farming systems where resources are scarce since a significant contribution to productivity can often be gained solely from the seed used, independent of other inputs. Thus, the genetic potential of seed largely dictates crop yields and the productivity of other agricultural inputs and agricultural practices. It also stimulates the use of new methods, machinery and yield-enhancing agro-inputs. In the significant advances that India made in agriculture in the last four decades, the role of the seed sector has been substantial. The role of the seed sector is not only to ensure adequacy in seed quality but also to ensure varietal diversity.

Seed industry in India

Today, the Indian seed programme boasts of one of the biggest seed markets in the world,

with annual sales at around US \$920 million. Of this, domestic off take accounts for US \$900 million and sales in the global market account for the remaining US \$20million (Murthy, 2002). Indian seed market is almost exclusively supplied by locally produced seeds. Farmers retain seed of major food crops like wheat, rice, sorghum, millet, corn, pulses and commercial crops for many years. The largest volume of seed trade involves local exchanges of established self-pollinating varieties.

The seed replacement rate in most crops is very low, with the exception of cotton and some vegetables (Singh and Asokan, 1994). The use of hybrid seeds is mostly confined to cotton, and to some extent to corn, millet, sunflower, and few vegetables. However, awareness about the high yield and quality of produce from hybrid seeds is attracting farmers and the switching over to hybrids is growing (Raina, 2007).

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The Indian seed industry used to be dominated by public sector seed companies. However, following the easing of government regulations and the implementation of a the New Policy on Seed Development (NPSD) in 1988, with the objective of augmenting productivity and output quality, stimulated major growth in the industry as it attracted a lot of investment in seed business from major domestic seed companies. Overall the private sector seed companies have started playing a major role in seed development and marketing. More recently, the government's decision to embrace biotechnology as a means of achieving food security has attracted several leading biotechnology focused multinational seed companies to India. The composition of the seed industry, by volume of turnover, has reportedly reached a ratio of 60:40 between the private and public sectors (Shiva and Crompton, 1998). Given the growth of the seed sector in recent years, India has the potential to become the foremost player in the seed export business in the developing world with prospective markets in Asia, Africa and South America.

Vegetable seeds

India is the second largest producer of vegetables in the world

next only to China. But the per capita consumption of vegetables in India is only about 140 gms which is far below the minimum dietary requirement of 280 g/day/person (as recommended by FAO). Vegetables form the most important component of a balanced diet. Vegetables have a higher nutritional status in the food chain and are attracting shift in food consumption pattern. India produces more than 91 million tons of vegetables from an area of 6.18 million hectares. The demand of vegetables has been increasing fast in the urban areas with a gradual rise in standard of living coupled with development of communication and transport facilities. It therefore calls for a major research and development effort to meet the increasing demand (Pray and Ramaswami, 2001).

Systematic efforts have been made to upgrade vegetable production technology due to additional requirement for vegetables in the country. The country is endowed with quite a diverse climate which enables production of more than 50 indigenous and exotic vegetables of temperate and tropical origin. In crops like tomato, cabbage, cauliflower, chilli, pepper, melon, watermelon and okra strong

hybrids have emerged and growers have not hesitated to pay more for value added products like disease resistance, seed sales have grown over the years. Specialty traits or incorporation of disease resistance genes are the key for augmenting growth of hybrid seed sales in crops like tomato, melons, watermelons, cauliflower, etc. Eco-friendly hybrids with biotic / abiotic stress tolerance are having big market share and these are expected to perform well in off-seasons also. Products with good transport quality and better shelf life are being preferred by traders and also by consumers. Choice of growers and consumers keep changing and is not consistent over regions. It is important that R&D units reorient on shifting time scales dictated by market compulsions. Super markets in cities bringing in quality vegetables, well packed and presented provide scope for premium quality, unique new products and convenience items (icebox watermelon) as well as novelty items (cherry tomato, colored bell pepper, baby corn, asparagus, lettuce, etc.). Processing industry will have specialized needs in crops like tomato and chilli pepper (Anand et al, 2003).

In the present scenario it becomes very important to

understand the farmers' perception towards high yielding vegetable seeds and the factors that influence these farmers most while deciding or choosing the seeds for their vegetable crops. Vegetables are grown in Punjab in all seasons. The present study was specifically undertaken to understand the perception of small, medium and large vegetable growing farmers towards high yielding vegetable seeds in Punjab. The objective of the study was:

To study and compare the perception of small, medium and large vegetable growers towards high quality vegetable seeds in Punjab.

Research Methodology

Research design for the study was descriptive in nature. The research described the farmers' perception towards high quality vegetable seeds. The population for the study consisted of all the farmers growing vegetables in Punjab. Vegetable growing belts in Punjab are mainly Malerkotla, Ludhiana, Phillur etc. These farmers were classified into 3 categories on the basis of land holding under vegetable cultivation i.e, ≤ 3 acres, >3 to ≤ 6 acres and >6 acres. The sample consisted of 90 farmers (30 from each category)

selected on convenience basis. To collect the requisite information a non-disguised, structured questionnaire was used. To study the perception of farmers towards high quality vegetable seeds, responses were recorded with respect to parameters like seed usage and seed replacement rate, price, yield potential, purchase point etc. Statistical techniques like averages, percentage, standard deviation, t-test and ANOVA were used to analyze the data.

Findings of the study

The findings of the study related to farmer's perception towards high quality vegetable seeds w.r.t seed usage, seed replacement pattern and rate, purchase behavior, perception towards HYVs (High Yielding Varieties) of vegetable seeds are as follows:

Educational qualification of the respondents

To gain a better understanding of the farmers' perception towards high quality vegetable seeds the information regarding the educational qualifications of the respondents was gathered. Table-1 reveals that 78% farmers were below matric level of education.

Purchase behavior regarding high quality vegetable seeds

Farmers were asked about their purchasing habits regarding high quality vegetable seeds (both open pollinated as well as hybrid varieties). All the 90 farmers replied positively when they were asked whether they purchased high quality vegetable seeds i.e., both open pollinated as well as hybrid varieties. Further they were asked whether they purchased seed for every new crop.

Table 1: Classification on the basis of Educational Qualification (N=90)

Qualification	Number of farmers	Percentage
Illiterate	18	20.00
Primary	37	41.11
Middle	16	17.77
Matriculate	11	12.22
10+2	6	6.67
Graduate	2	2.22
Total	90	100

Table 2: Number of farmers purchasing seed for every new vegetable crop (N=90)

Category	Land holding ≤3 acres	Percentage	Land holding >3 to ≤6 acres	Percentage	Land holding >6 acres	Percentage
Yes	23	76.67	26	86.67	28	93.33
No	7	23.3	4	13.33	2	6.67
Total	30	100	30	100	30	100

Table 3: Annual expenditure on purchase of high quality vegetable seeds (N=90)

Amount of money spent ₹	Land holding ≤3 acres	Percentage	Land holding >3 to ≤6 acres	Percentage	Land holding >6 acres	Percentage
0-1000	5	16.67	0	0	0	0
1000-5000	8	26.67	3	10.00	0	0
5000-10000	15	50.00	20	66.67	7	23.33
>10,000	2	6.66	7	23.33	23	66.67
Total	30	100	30	100	30	100

Table 2 shows that 76.67%, 86.67% and 93.33% farmers replied that they bought new seeds for every new crop in the three categories (≤3 acres, >3 to ≤6 acres and >6 acres) respectively showing that in all the categories majority of farmers bought fresh seeds for each new crop.

Annual expenditure on purchase of high quality vegetable seeds

Respondents were asked about their annual expenditure on purchase of high quality vegetable seeds. From Table 3 it can be seen that 50% of the farmers with land holding ≤3 acres spent annually ₹5000-10,000 on the purchase of

high quality vegetable seeds, 26.67% spent between ₹1000-5000, while in case of farmers with land holding under vegetable crops >3 ≤6 acres, 66.67% spent annually ₹5000-10,000 and 23.3% spent 1000-5000 on the purchase of high quality vegetable seeds. The maximum percentage (66.67%) in case of farmers with land holding under vegetable crops >6 acres spent annually greater than ₹10,000 on the purchase of high quality vegetable seeds. The expenditure on the purchase of seeds varied with the land holding. Maximum percentage of farmers spent ₹5000-10,000 or more on seeds.

Increase in production in case of open pollinated varieties

Farmers were asked about the increase in yield on account of using high quality vegetable seeds of both types i.e., open pollinated varieties as well as hybrid varieties.

Table 4 shows that 70% of the farmers with land holding ≤ 3 acres responded that there was 10-20% increase in the yield by using high quality open pollinated vegetable seeds, while in case of the farmers with land holding >3 to ≤ 6 acres and >6 acres, the percentage of farmers for the same increase in yield (10-20%) was 76.67% in each case.

As evident from the table 5, most of the farmers were of the view that

there was increase in yield in the range of 40-50% in case of 60% of the farmers in all categories and even more than 50% increase in yield is registered in case of 40% of the farmers by using hybrid varieties.

Point of purchase behavior of farmers

In order to know the purchase behavior of the farmers, respondents were asked regarding point of purchase of vegetable seeds.

Table 6 shows that 56.6%, 60%, 70% farmers respectively in the three land holding categories ≤ 3 acres, >3 to ≤ 6 acres and >6 acres purchased seeds from reputed

Table 4: Increase in yield by using open pollinated varieties (N=90)

Percentage increase	Land holding ≤ 3 acres	Percentage	Land holding >3 to ≤ 6 acres	Percentage	Land holding >6 acres	Percentage
0-10	6	20.00	6	20.00	5	16.67
10-20	21	70.00	23	76.67	23	76.67
20-30	3	10.00	1	3.33	2	6.66
Total	30	100	30	100	30	100

Table 5: Increase in production by using hybrid varieties (N=90)

Percentage increase	Land holding ≤ 3 acres	Percentage	Land holding >3 to ≤ 6 acres	Percentage	Land holding >6 acres	Percentage
40-50	18	60.00	16	53.33	18	60.00
>50	12	40.00	14	46.67	12	40.00
Total	30	100	30	100	30	100

Table 6: Point of purchase of vegetable seeds**(N=90)**

Purchase point	No. of farmers with landholding ≤3 acres	Percentage	No. of farmers with landholding >3 to ≤6 acres	Percentage	No. of farmers with landholding >6 acres	Percentage
Reputed Retail shop	17	56.67	18	60.00	21	70.00
Shop in the locality	9	30.00	7	23.33	4	13.33
Wholesaler	4	13.33	4	13.33	2	6.67
Salesman	--	--	1	3.34	3	10.00
Total	30	100	30	100	30	100

Table 7: Information sought on the package**(N=90)**

Information sought on the package	No. of farmers with landholding ≤3 acres	Percentage	No. of farmers with landholding >3 to ≤6 acres	Percentage	No. of farmers with landholding >6 acres	Percentage
Price	3	10.00	1	3.34	3	10.00
Name of manufacturer	20	66.67	18	60.00	18	60.00
Type of seed	4	13.33	6	20.00	2	6.67
Germination percentage	1	3.34	-	-	1	3.34
Quality parameters	2	6.67	5	16.66	6	20.00
Total	30	100	30	100	30	100

retail shops showing that farmers thought that reputed retail shops kept quality seeds. Some farmers also purchased seeds from the shops in their own locality.

Information looked on the package

Usually the information provided on the packages of the seeds is regarding the name of manufacture, type of seed, germination percentage etc. Farmers were enquired regarding the information they looked on the

package while purchasing the seeds.

Table 7 indicated that majority of the farmers in the three categories respectively (66.67%, 60% and 60%) looked for name of the manufacturer i.e. the company name, on the packet in all the land holding categories. 20% farmers in >3 to ≤6 acres category looked for the type of seed (open pollinated or hybrid seeds) and 17% checked the quality parameters on the package. 20% of farmers having land holding

Table8: Parameters considered for selecting a company by farmers

Parameters	Land holding <3 acres (N=30)			Land holding >3 to ≤6 acres (N=30)			Land holding >6 acres (N=30)		
	Mean score	Standard deviation	T score	Mean score	Standard deviation	T score	Mean score	Standard deviation	T score
Germination percentage	1.20	0.40	16.41*	1.23	0.42	15.95*	1.33	0.56	11.03*
Resistance to diseases	1.16	0.73	8.69*	1.46	0.50	16.08*	1.46	0.49	16.08*
Price	-0.03	0.83	-0.21	-0.20	0.65	-1.67	-0.10	0.70	-0.78
Packaging	0.23	0.84	1.51	0.60	0.71	4.61*	0.46	0.92	2.77*
Easy availability	-0.46	0.85	-3.01*	-0.33	0.82	-2.19*	-0.30	0.82	-1.99
MNC	-0.06	1.03	-0.35	0.50	0.67	4.07*	0.67	0.83	4.39*

* t values significant at 5% level of significance, F value at 5%; (between mean scores) = 0.22, (Tested against $\mu=0$)

> 6 acres checked quality parameters and 10% checked price on the package. Germination rate was the least sought on the package.

Parameters considered for selecting a company by farmers

Farmers use different parameters to select a particular company for purchase of vegetable seeds. The responses were sought from three categories of respondents regarding parameters like germination percentage, resistance to disease, price etc.

Mean scores in Table 8 shows that germination percentage and resistance to diseases and pests were the most important parameters for selecting a company for purchase of vegetable seeds by farmers in all the three categories. These parameters were found to be significant at 5% level of

significance. The farmers were almost neutral to the parameter price, packaging, easy availability and produced by Multinational Company (MNC) were not important parameters which were considered when the farmers in the three categories purchased seeds (as indicated by their mean scores). However easy availability for farmers having land holding <3 acres, packaging, easy availability and MNC for farmers having land holding >3 to ≤6 acres and packaging and MNC for farmers having land holding >3 acres has been found significant at 5% level of significance.

ANOVA was applied on mean scores to know whether there was any significant difference in the responses of the farmers of the three land holding categories and the calculated F- value was found to be insignificant, showing no significant difference in the

responses of the farmers of the three land holding categories i.e. in all the three categories the parameters considered for selecting a company were same.

Factors influencing buying decision of farmers

The respondents were asked about the source of information, which influenced their buying decision. Factors which affect the purchase decision are advertisements, salesman, dealer's recommendations, word of mouth etc.

Farmers in all the three categories (Table 9) showed strong agreement with parameters like dealers' recommendation, own experience and word of mouth.

These three factors affect the buying decision of farmers the most. Further, farmers showed strong disagreement with the factor T.V commercials showing that it didn't affect their buying decision. Towards rest of the factors like word of mouth, dealer's recommendation, salesman, display at shop, signboards and hoardings and university recommendations, farmers were neutral i.e, they did not have any impact on the purchase decision of the farmers. All the factors except print advertisement and salesman were found to be significant at 5% level of significance.

ANOVA was applied to know whether there was any significant difference in the responses of the farmers of the three land holding

Table 9: Factors influencing buying decision of farmers

Factors	Land holding ≤ 3 acres (N=30)			Land holding >3 to ≤6 acres (N=30)			Land holding >6 acres (N=30)		
	Mean score	Standard deviation	T score	Mean score	Standard deviation	T score	Mean score	Standard deviation	T score
Print advertisement	-0.13	1.00	-0.72	-0.16	1.01	-0.89	-0.13	1.10	-0.65
T.V.commercials	-1.56	0.50	-17.00*	-1.63	0.49	-18.22*	-1.63	0.49	-18.22*
Word of mouth	1.40	0.49	15.36*	1.46	0.50	15.81*	1.50	0.50	16.13*
Salesman	0.16	0.79	1.15	0.20	0.80	1.35	0.30	0.74	2.18*
Dealers' recommendation	1.60	0.49	17.56*	1.63	0.49	18.22*	1.67	0.48	19.01*
Own experience	1.60	0.49	17.56*	1.53	0.50	16.52*	1.53	0.51	16.52*
Display at shop	0.26	0.63	2.28*	0.40	0.62	3.52*	0.40	0.62	3.52*
Signboards / hoardings	0.36	0.61	3.26*	0.53	0.57	5.10*	0.56	0.57	5.45*
University recommendations	0.80	0.84	5.16*	0.90	0.76	6.48*	0.96	0.80	6.53*

* Significant at 5% level of significance, F value at 5%; (between means) =0.008, (Tested against $\mu=0$)

categories and the calculated F-values was found to be insignificant, showing no significant difference in the responses with respect to the factors affecting purchase of vegetable seeds.

Factors affecting choice of purchase point of farmers

The choice of purchase point depends on various factors like nearness, presence of better quality products, behavior of salesman etc. The respondents were asked to show their level of agreement or disagreement on a scale ranging from -2 to 2.

Table 10 shows that farmers in the three categories showed strong agreement with the parameter presence of better quality products with mean scores of 1.7, 1.7 and 1.67 respectively for choice of point of purchase by farmers. Farmers were neutral to the parameters

price variation, behaviour of salesman, presence of choicest brands and attractive appearance of shop. Disagreement was shown to the parameter nearness/convenience. Factors like presence of better quality, behavior of salesman and presence of choicest brands were significant at 5% level of significance for farmers cultivating vegetables on farm land 3 acres. Factors like nearness and convenience, presence of better quality products, behaviour of salesman and presence of choicest brands were significant for farmers who cultivated vegetables on farm land >3 to ≤6 acres. Price variation was the additional factor found significant at 5% level of significance for the farmers cultivating vegetables on farm land >6 acres.

The calculated F-value for variation between the mean scores was found to be insignificant indicating that no significant

Table 10: Factors affecting choice of purchase point of farmers

Factors	Land holding < 3 acres (N=30)			Land holding >3 to ≤6 acres (N=30)			Land holding >6 acres (N=30)		
	Mean score	Standard deviation	T score	Mean score	Standard deviation	T score	Mean score	Standard deviation	T score
Nearness/convenience	-0.13	0.97	-0.74	-0.40	1.00	-2.18*	-0.36	0.96	-2.07*
Presence of better quality products	1.70	0.47	19.95*	1.70	0.47	19.95*	1.67	0.48	19.01*
Attractive appearance of shop	0.13	0.78	0.93	0.10	0.80	0.68	0.10	0.80	0.68
Behavior of Salesman	0.83	0.65	7.03*	1.00	0.69	7.87*	1.00	0.69	7.87*
Price variation	0.26	0.74	1.97	0.26	0.74	1.97	0.30	0.75	2.18*
Presence of choicest brands	0.50	0.51	5.37*	0.56	0.50	6.15*	0.60	0.56	5.82*

* Significant at 5% level of significance, F value at 5%; (between means) =0.09, (Tested against $\mu=0$)

difference existed in the three categories of farmers.

Farmers' perception regarding brand, price and packaging

Brand, price and packaging are very important factors for the marketing of vegetable seeds. Farmers were asked about different statements indicating their perception regarding brand, price and packaging of vegetable seeds.

Respondents in all the categories (Table 11) showed agreement with the statement that lower price did not indicate lower quality. Respondents seemed to be neutral towards rest of the statements like well established brands are costlier than other brands, higher priced products are of better quality and well established brands are of better quality. Respondents did not agree to the statement that better packaging reflected better quality. Responses to all the statements except that good packaging reflects

better quality were found to be significant at 5% level of significance.

F- Values calculated from the ANOVA table indicate that there was no significant difference between the responses of the farmers towards above statements among the three land holding categories. Thus the perception of farmers regarding the brand, price and packaging did not differ significantly among the three land holding categories.

CONCLUSION

India has a unique opportunity in terms of breeding a range of vegetable crops. The growers and consumers today have a better and wider choice of vegetables. This has been possible because of the R&D activities which have been strengthened and new disease resistance and better quality hybrids which have emerged from private and public sector

Table 11: Farmers' perception regarding brand, price and packaging

Statements	Land holding ≤3 acres (N=30)			Land holding >3 to ≤6 acres (N=30)			Land holding >6 acres (N=30)		
	Mean score	Standard deviation	T score	Mean score	Standard deviation	T score	Mean score	Standard deviation	T score
Well established brands are costlier than other brands	0.66	0.94	3.80*	0.53	0.99	2.89*	0.50	0.96	2.80*
Higher priced products are of better quality	0.60	0.49	6.58*	0.63	0.48	7.06*	0.63	0.48	7.06*
Well established brands are of better quality	0.67	0.47	7.60*	0.67	0.47	7.60*	0.83	0.64	7.03*
Lower price need not indicate lower quality	1.03	0.70	7.86*	1.03	0.70	7.86*	0.86	0.67	6.95*
Good packaging reflects better quality	0.17	0.82	1.09	0.10	0.83	0.64	0.50	0.89	3.03*

* Significant at 5% level of significance, F value at 5%; (between means) =0.08, (Tested against $\mu=0$)

enterprises, which are rapidly gaining ground. Seed quality and treatment have become key points for growers to make choices.

Survey of vegetable growers has also demonstrated that all the farmers purchased high quality vegetable seeds of both open pollinated as well as hybrid varieties. Larger percentage of farmers purchased new seeds for each new vegetable crop. Farmers realized that there was an increase of 10-20% in the yield by using HYVs. A rise of 40-50% was reported in case hybrid varieties. Most of the farmers were found to purchase vegetable seeds from the reputed retail shops and looked for name of the manufacture i.e. the company name, on the packet. Resistance to diseases and pests and germination were the major parameters considered by farmers while selecting a company. Dealer recommendation, word of mouth and own experience were the major factors influencing the buying decision of farmers. Efforts should be made to make quality seeds available to the farmers at reasonable cost for better productivity and reduction in overall cost.

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THE MEGHALAYA CO-OPERATIVE APEX BANK LTD.

HEAD OFFICE : SHILLONG
(Government of Meghalaya Sponsored Bank)
Estd. 16th February, 1971

Phone : 0364-2224166 / 2224160
E-mail : apexbank@sancharnet.in
mcab@dataone.in

Fax : 0364-2222026
Website : www.mcab.gov.in

A premier State Cooperative Bank in the North-Eastern Region having democratically elected Board of Directors since inception and managed by professionals.

FINANCIAL HIGHLIGHTS

(As on 31.03.2009)

(As on 31.03.2010)

• Paid up Share Capital & Reserves	: ₹	2448.88 Lakhs	₹	3146.22 Lakhs
• Deposits	: ₹	79440.40 Lakhs	₹	91168.85 Lakhs
• Loans & Advance	: ₹	20602.27 Lakhs	₹	26323.76 Lakhs
• Investments	: ₹	27461.65 Lakhs	₹	35812.34 Lakhs
• Net Profit	: ₹	1498.02 Lakhs	₹	1938.24 Lakhs
• Working Capital	: ₹	96949.44 Lakhs	₹	110074.94 Lakhs

Our Banking Products & Services

- Current Deposits
- Savings Bank Deposits
- No Frills Savings Deposits
- Fixed Deposits
- Recurring Deposits
- Monthly Income Deposits
- Double Benefit Scheme
- Cash Certificates
- Fixed Deposit linked with Recurring Deposits
- Housing Loan Linked Deposits
- Children Education Deposits
- Crop Loans for Agriculture through KCC / SHG / Cooperatives
- Term Loans for Agril. & Allied Agriculture
- Aquaculture Development-One Thousand Ponds Scheme
- Loans for Housing / Housing Complex
- Loan for SRTO
- Consumer Durables Loans
- Loans to Technocrats & Professionals
- Loans to educated unemployed youths
- Cash Credit & Overdraft Facilities
- Loans for Children Education
- Integrated Village Development Scheme
- Term Loan for Tourism Development
- Personal loan to salary earners
- Bank Guarantee
- Safe Deposit Lockers & Other Ancillary Services
- Loans to Tribals under NSTFDC Schemes

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Managing Director

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Ex-MLA
Vice-Chairman

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The Himachal Pradesh State Co-op. Agriculture & Rural Development Bank Ltd

H.O.: KASUMPTI, SHIMLA-171009

The Bank was established in 1961 to extend long term and medium term loans to farmers for agriculture and allied agriculture activities and Non Farm Sector, presently through 49 branches respectively in the State of Himachal Pradesh.

THE BANK FINANCES FOR:

Farm Mechanisation	:	Tractor, Thresher set and other implements, etc.
Horticulture/Plantation	:	Apple, Stone, Citrus and other plantations, Floriculture
Animal Husbandry	:	Dairy development, Cattle Sheds, Sheep & Goat rearing Poultry, Sericulture, Fisheries, Mushroom, Piggery, Rabbit rearing etc.
Land Development	:	Land leveling, Land reclamation etc.
Non Farm Sector	:	Small Scale Industries, Cottage Industries including Service Sector, Rural Housing, SRTOs' Rural Godowns, Packing & Grading House etc.
Minor Irrigation	:	Construction/repairs of irrigation well, Tube Well, Deep Tube well, Installation of pumpsets, pipelines, lift irrigation etc.

Bank accepts FD for 1 year and above at following rate for Senior Citizens

1 Year 9.50% 2 Years above 9.75% 0.5% more interest for Senior Citizens.

SALIENT FEATURES

- | | |
|---|--|
| 1. Interest payable: Quarterly/half yearly and yearly as per demand | 5. All the loans issued by the Bank are theoretically recoverable since they are secured by registered mortgage of land. |
| 2. Monthly income schedule is available. | |
| 3. TDS is not deducted on maturity of FDs. | 6. Loan against FD to the extent of 75% of FD amount. |
| 4. FD outstanding as on 31-03-2010 is within the own fund limit. | |

Bank provides 1% p.a. rebate of interest on loans to the regular loanees.

**FOR FURTHER DETAILS PLEASE CONTACT US OR
OUR BRANCHES OF THE BANK IN THE STATE.**

H. S. Thakur (HPAS)
Managing Director

Mohar Singh Thakur
Vice Chairman

Sher Singh Chauhan
Chairman

Strategy for Groundnut Crop Improvement

Mr. G. Venkata Murali*
 Dr. P. Rameshkumar Reddy**
 Dr. V. Sudha Rani ***

India is predominantly an agricultural based country. Agriculture is “wheel of the Indian economy” and contributes about 21% of the Gross Domestic Product (GDP), provides employment to two-third of the work force in the country. Out of 328 million hectares of the geographical area in India, 143 million hectares is cultivated. Out of this, only 40% of the land (57 million hectares) has fully or partially assured irrigation facilities. The remaining 60% is totally dependent on monsoon. India produces 10% of the total world's food in just 2.4% of geographical area of the world. The food grain production of India at present is 210.10 million tones, which was merely 54.9 million tones in 1949-50. Food grain production in India increased by 2.51% at annual compound rate from 1949-50 to 2005-06.

Groundnut is the premier oilseed crop of India, which ranks first in area (8.2 m ha) and second in production (6.2 mt) after China

with an area of 4.63 m ha and production of 14.5 million tons (FAO, 2001). The scientists of agricultural universities have developed so many crop varieties and other improved technologies of crop production and crop protection etc.

The number of emerging technologies is not important. What is important is to what extent, these new agricultural technologies are responsible for increasing groundnut production, productivity and farmers income. Hence there is a need for to develop a strategy for effective technology generation, assessment, refinement and their dissemination.

Article is part of Ph D research work Strategy for effective technology generation, assessment, refinement and their dissemination for groundnut crop (see the figure)

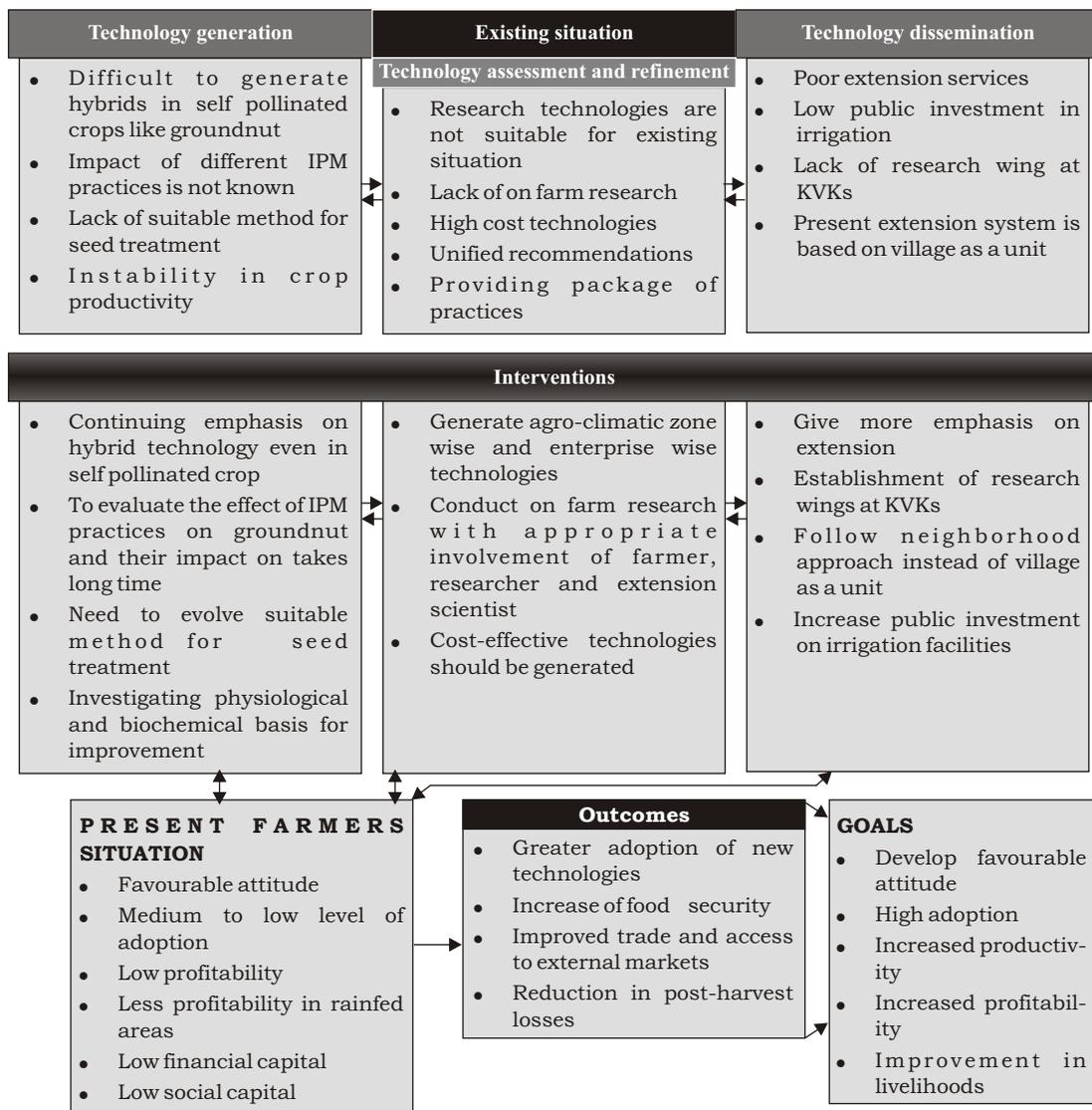
1. Research is needed in development of new plant types and varieties specifically suited

*G. Venkata Murali Ph.D. Scholar, EEL, Rajendranagar, Hyderabad-30

**Dr. P. Rameshkumar Reddy Professor, EEL, Rajendranagar, Hyderabad-30

***Dr. V. Sudha Rani Associate Professor, EEL, Rajendranagar, Hyderabad-30

Fig. Strategy for effective technology generation, assessment, refinement and their dissemination for groundnut crop



for monocropped rainfed areas, multiple cropping and summer irrigated cropping.

2. Respect traditional knowledge because it is based on

countless observations and empirical research over millennia. Our future research should relate to traditional knowledge.

3. Integrated crop management modules for each of sub-ecologies and production system should be developed and validated in the farmers' field.
4. The farmers were using plant protection chemicals, which leads to environmental pollution and increase the residues of plant protection chemicals in farm produce and eventually leads to ecological imbalance. It calls for a strategy to demonstrate different aspects of Integrated Pest Management (IPM) practices especially in groundnut which includes cultural, physical, legal, biological and chemical methods of pest control followed by more of field visits, group discussions to avoid indiscriminate use of pesticides.
5. Rainfed ecologies are not only challenges to resources but also to policy makers to develop appropriate strategies to improve food and nutritional security and better livelihoods to rural poor.
6. If the association of growers of different crops, various commodity boards, market committees, financing banks, processing units and voluntary organizations, work for ensuring coordination, there will be excellent results.
7. Cost-effective technologies should be generated for resource poor farmers. Low cost/ no cost technologies are required, as they cannot adopt high cost technologies due to limited resources. The technology generated should be appropriate with respect to farmers' needs, problems and background.
8. Non- availability of credit has been a major constraint for the farmers. The officials should make efforts for sustainable expansion of institutional credit to people who needed it the most at an affordable rate of interest. Besides, there should be improvement in the delivery channels so that funds can quickly reach the people who need them without any leakage at any stage.
9. Encouragement of Participatory Technology Development (PTD) rather than scientist centered technology, so that the technology will be made easy for propagation and multiplication.

10. By acquiring knowledge and skills on recommended groundnut practices and adoption of different technologies suggested by agricultural scientists may lead to visible results, better irrigation, high production, water conservation, increased income, high marketable agricultural produce and eventually leads to farmer's satisfaction through sustainable agriculture.

M a n j u n a t h a B N ,
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In A Nutshell

India is the largest producer and processor of cashews, in the world. India exported 91,559 tonnes of cashew kernels valued at ₹2598 crore and 11364 tonne of cashew nut shell liquid at ₹31.85 crore in FY 11

India is also the largest consumer of cashew nuts with estimated of consumption ranging from 1,70,000 to 1,90,000 tonnes.

The next biggest consumer of cashews is the United States with

consumption of approximately 1,25,000 tonnes.

The global cashew nut trade is estimated to be at around 5,13,750 tonne of kernel basis in 2010.

Wages in the Indian cashew industry has gone up by 35-40% this year, significantly increasing cost of processing. Wages have moved up only by 10-15% in Vietnam, India's strongest competitor in the international cashew market.



THE HARYANA STATE COOPERATIVE AGRICULTURE AND RURAL DEVELOPMENT BANK LTD.

Sahakarita Bhawan, Bay No. 31-34, Sector - 2, Panchkula

The Haryana State Cooperative Agriculture and Rural Development Bank Ltd., is the specialised institution in the State, which caters to the Long Term credit needs of the farmers for the upliftment of the economic position of the agriculturists and allied fields.

The bank advances Long Term loans to the farmers for the following purposes :-

Scale of finance and periodicity of Major Sectors

Farm Sector

Sr.No.	Name of the Scheme	Period	Scale of finance
1.	Minor Irrigation	9 years	₹ 36,000 to 1,50,000
	i. WCS/UGPL	-do-	90% of the project cost
2.	Farm Mechanisation	5-9 Years	85% of the cost of the Machinery
3.	Purchase of Agriculture Land	10 Years	Upto Rs. 10.00 Lacs
4.	Horticulture/Plantation	5-9 Years	₹ 40,000 to 1,55,000 per Acre
	i. Medicinal & Aromatic Plants	-do-	90% of the project cost
5.	Animal Husbandry	5-7 Years	90% of the project cost
6.	Rural Godowns	Upto 10 Years	75% of the project cost

Non Farm Sector

Sr.No.	Name of the Scheme	Period	Scale of finance
1.	Rural Housing	Upto 10 Years	Upto ₹ 5.00 Lacs
2.	Marriage Palaces	Upto 10 Years	90% of the Project Cost
3.	Community Halls	Upto 10 Years	90% of the Project Cost
4.	Village Cottage Industry	Upto 10 Years	90% of the Project Cost
5.	Public Transport Vehicles	Upto 10 Years	85% of the Project Cost
6.	Rural Educational Infrastructure	Upto 10 Years	90% of the Project Cost
7.	Other SSI Units	Upto 10 Years	90% of the Project Cost

Rate of Interest

The Loans for the purpose of non-farm sector, Rural Housing and Purchase of land are being advanced @ 13.25% p.a. w.e.f. 1.4.2011. All other loans are being advanced @ 12.25% p.a. w.e.f. 1.4.2011 and a rebate of 25% w.e.f. 1.12.2010-31.3.2012 is allowed on all slabs to regular paymasters.

Note:-

For further details, kindly contact The Haryana State Coop. Agri. & Rural Dev. Bank Ltd., Panchkula or the District Co-op. Agri. and Rural Dev. Banks at District level and its branches at Tehsil & Sub-Tehsil level in the State.

Satbir Sharma

Managing Director

Phone:0172-2587040

Fax:0172-2587069



THE KARNATAKA STATE CO-OPERATIVE AGRICULTURE AND RURAL DEVELOPMENT BANK LTD.

Tippu Sultan Palace Road, Bangalore - 560 018.

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ANNOUNCES JUST A FEW OF ITS RESPLENDENT ACHIEVEMENTS**

- | | |
|---|----------------------|
| ● Advances (From inception to 30-09-2011) | Over ₹3807.29 Crores |
| ● No. of loan cases sanctioned | 16.95 Lakhs |
| ● Share of Weaker Section in Bank's financial assistance. | 70.17% |

STRIKINGLY INNOVATIVE PROGRAMMES INTRODUCED BY THE BANK

- | | |
|--|--|
| <ul style="list-style-type: none"> ● Waste Land Development and Afforestation ● Rural Housing, S.R.T.O. ● Non-Farming Rural Enterprises, Sericulture, Integrated Horticulture / Floriculture / Tissueculture, Dairy Development and Poultry / Piggery / Rabbit Rearing / Fisheries and Fish Boat ● Big and Small Lift Irrigation Schemes of area 300-2500 acres implemented ● Rural Godowns / Agri Clinic & Agri Business Centres ● Purchase of Agriculture Lands ● Solar Lights ● LPG Connections ● Purchase of Two Wheelers | <ul style="list-style-type: none"> ● Water Harvesting Structures ● Dairy Development by Women Societies ● Vermi Compost Units / Bio-digester ● Rural Toilets ● Scheme for Petro Products - Kissan Seva Kendras ● Short term crop loan through K.C.C. ● Farm Mechanisation ● Combined Harvester ● JCB Dozers ● Passenger Buses ● Coffee curing, Drying etc. ● Rural small / Medium Enterprises ● Agricultural Implements |
|--|--|

BANK ACCEPTS FIXED DEPOSITS WITH THE FOLLOWING ATTRACTIVE RATES OF INTEREST

1. One to two years - 9%, Above two years - 9.5%
2. 0.50% of additional Interest will be given to Senior Citizens
3. Bank advances Gold, Car, Salary, Housing Loans etc. at attractive rate of Interest.

STRENGTHEN THE FARMERS' BANK

**FOR DETAILS, PLEASE CONTACT US OR OUR BRANCH OFFICES OR ANY PRIMARY
CO-OPERATIVE AGRICULTURE AND RURAL DEVELOPMENT BANK IN THE STATE.**

Chokkabasavanagowda,
President

Y. H. Gopalakrishna, K.C.S.
Secretary

M. Venkatarreddy, K.C.S.,
Managing Director

तालाब चयन, निर्माण एवं प्रबन्ध व्यवस्था

मत्स्य पालन हेतु प्रथम आवश्यकता उचित जलक्षेत्र के चयन एवं समुचित प्रबन्धन की होती है। साधारण तौर पर तालाब एक ऐसी भौगोलिक संरचना है जिसमें चारों ओर से पानी आकर निचले व गहरे स्थान में एकत्र हो जाता है परन्तु कुछ समय उपरान्त उस स्थान का पानी सूखने लगता है। समुचित प्रबंध से एकत्रित जल को वर्ष भर रोक कर मत्स्य उत्पादन प्राप्त किया जा सकता है। जल / मिट्टी के भौतिक, रासायनिक एवं जैविक गुण उत्पादन को प्रभावित करते हैं। मत्स्य पालन को प्रभावित करने वाले भौतिक रासायनिक व जैविक घटक निम्न हैं।

भौतिक घटक:- मत्स्य पालन में तालाब की गहराई, प्रकाश, तापमान, टर्बिडिटी, जल बहाव आदि मुख्य कारक हैं।

गहराई:- प्रकाश की किरणों का तालाब के तल तक पहुँचना उर्वरता के लिए आवश्यक है। सामान्यतः ४ से ६ फिट की गहराई प्लवक उत्पादन हेतु उत्तम रहती है।

प्रकाश:- उष्ण प्रदेशों में सूर्य का प्रकाश सतह के जल को निरन्तर गर्मी प्रदान करता है। सूर्य के प्रकाश से संश्लेषण द्वारा कार्बोहाइड्रेट का उत्पादन होता है तथा प्रकाश अप्रत्यक्ष रूप से तालाब के पादपों व गैसों को स्थिर रखने में सहायक होता है।

तलाब के किनारे:- मछलियों एवं अन्य जलीय जन्तुओं को प्रभावित करती है। लम्बे किनारे होने से जलीय वनस्पति व पादक प्लवक उचित मात्रा में पैदा होता है जबकि छायादार किनारे एवं सतह पर तैरने वाले पौधों से प्रकाश अवरोध होता है।

तापमान:- पावन, श्वसन, प्रजनन एवं अन्य शारीरिक क्रियाओं को प्रभावित करता है। तापमान के अधिक होने से घुलित ऑक्सीजन पानी में कम होने लगती है। भारतीय मेजर कार्प अधिक तापमान में रह सकती है, लेकिन विदेशी मछलियों के

लिए ज्यादा तापमान हानिकारक है।

मलीनता:- जल में मलीनता मिट्टी के सूक्ष्म कणों को तैरने के कारण होती है एवं निरंतर जल प्रभाव तेज रहने से स्थायी हो जाती है। मलीनता जल की उर्वरता में अवरोधक होती है एवं इससे प्रकाश की किरणों नीचे तक न पहुँचने से जल पादकों की वृद्धि अवरोध होती है। साथ ही मछली के श्वसनांग बंद हो जाते हैं। अतः पानी की मलीनता को रोकना चाहिए।

पानी का बहाव व दबाव:- मछलियों के जीवन व प्रजनन पर जल के वेग व दबाव का प्रभाव पड़ता है जो कि अन्य भौतिक एवं जैविक गुणों को प्रभावित करते हैं।

रासायनिक घटक:- तालाब में मत्स्य उत्पादकता पानी में घुली गैसों, पी-एच, अकार्बनिक, कार्बनिक यौगिकों की मात्रा पर निर्भर होती है।

आक्सीजन:- मछलियाँ श्वसन हेतु जल में घुलित आक्सिजन का उपभोग करती हैं, लेकिन अधिक अथवा कम आक्सिजन नुकसानदायक होती है। तालाबों में आक्सीजन की कमी से जीवाणु एवं परजीवी मछलियों की उपापचय दर घटती है तथा स्वास्थ्य को कुप्रभावित करती है। अधिक आक्सीजन 'हवा के बबल' नामक बीमारी पैदाकर हानि पहुँचाती है। सामान्यतः ३-८ पी.पी.एम. आक्सीजन का स्तर उचित माना जाता है।

(व) कार्बन डाईऑक्साइड:- कार्बन डाईऑक्साइड श्वसन से उत्पन्न एवं प्रकाश संश्लेषण की क्रिया धीमी होती है तो इसकी मात्रा बढ़ जाती है। कार्बनिक पदार्थों के विघटन से भी यह उत्पन्न होती है। इसकी मात्रा अधिक होने पर जल में ऑक्सीजन घुटने की क्षमता घट जाती है। ५ मिलीग्राम प्रति लीटर से अधिक मात्रा हानिकारक होती है।

समुअंक (पी-एच):- मछलियों के लिए जल समुअंक ६.५-

८.५ के बीच सर्वाधिक उत्तम रहता है। इससे मछलियों की उपापचय दर एवं प्रजनन शक्ति पर असर पड़ता है। पानी के समुअंक को चूने के प्रयोग से सुधारा जा सकता है।

पानी की कठोरता:- पानी की कठोरता कैल्शियम व मैग्नीशियम तत्वों के घुले रहने पर निर्भर रहती है। ५०-१०० पी.पी.एम. के बीचा की कठोरता मछली की वृद्धि के लिए रहती है।

जल में घुले अकार्बनिक व कार्बनिक तत्व:- जल में घुले अकार्बनिक व कार्बनिक तत्व मछली की वृद्धि को प्रभावित करते हैं अकार्बनिक तत्वों में फास्फोरस की एक पी.पी.एम. मात्रा प्लावकों की वृद्धि के हेतु आवश्यक है। पोटेशियम की एक पी.पी.एम. तथा मैग्नीज, कॉपर, एल्यूमिनियम, जिंक की न्यून मात्रा लाभप्रद रहती है। कार्बनिक पदार्थों के रूप में अमीनों एसिड, वसा, शर्करा विटामिन्स जल में आवश्यक होते हैं।

तालाब में नाइट्रोजन चक्र:- नाइट्रोजन प्रोटीन निर्माण के लिए आवश्यक तत्व है, लेकिन अत्याधिक मात्रा घातक होती है। मछलियाँ अपने वनज का ५ से १२ प्रतिशत तक अमोनिया व यूरिया युक्त मूत्र त्याग करती हैं। तलछट पर कार्बनिक पदार्थों के विघटन से उत्पन्न अमोनिया हानिकारक होती है। नाइट्रोसोमोनास बैक्टेरिया अमोनिया को नाइट्राइट में बदल देते हैं जो घातक होती है। नाइट्रोवैक्टर बैक्टेरिया इसे नाइट्रेट में बदल देते हैं जो घातक नहीं होती एवं यह नाइट्रेट तालाब में जलीय वनस्पतियों, वनस्पति प्लवक के द्वारा उर्वरकों के रूप में प्रयोग कर लिया जाता है एवं मछली इसको भोजन के रूप में ग्रहण कर प्रोटीन निर्माण की प्रक्रिया पूर्ण करती है।

जैविक घटक:- तालाब का उत्पादन जलीय पादपों पर भी निर्भर रहता है। यह मछलियों के भोजन के मुख्य अंग होते हैं। कुछ जलीय पादप व पादप प्लवक निम्न हैं:- वैल्सनेरिया, हाइड्रिला, नाजा, ट्रापा, अजोला, लेमिना, वालबॉक्स, युग्लीना, क्लेमाडोमोनास, क्लोरैला आदी। मछली का अंगुलिका जन्तु प्लवक पर निर्भर रहती है जो निम्न है

रोटिफर, प्रोटोजोआ, प्रोटोजोआ, कापीपोड आदि।

मत्स्य पालन हेतु तालाब का चयन:- ०.२ से २.०० हे. तक के तालाब प्रबन्धन व मत्स्य उत्पादन के दृष्टिकोण से उत्तम रहते हैं इससे बड़े तालाबों में भी मत्स्य पालन का कार्य किया जा सकता है। मत्स्य पालन प्रारम्भ करने से तालाब के क्षेत्र की मिट्टी में उपलब्ध तत्वों की जानकारी आवश्यक है। मानकों के अनुसार मिट्टी की गुणवत्ता के आधार पर उसे मत्स्य पालन योग्य बनाकर मत्स्य पालन का कार्य प्रारम्भ करना चाहिए होता है। इसके उपरान्त पानी की वर्षा भर उपलब्धता मुख्य बिन्दु है। वर्ष के अलावा जल का अतिरिक्त स्रोत चयनित तालाब के आस पास होना चाहिए। पुराने तालाबों के बांधों का निर्माण कर उनमें आउटलेट एवं इनलेट का निर्माण सुनिश्चित करते हुए ही उन्हें मत्स्य पालन हेतु उपयोग में लाया जाना लाभकारी होता है।

मत्स्य पालन हेतु नए तालाब का निर्माण:- मत्स्य पालन हेतु नए तालाब के निर्माण के लिए स्थल आसपास की अपेक्षा गहरा होना चाहिए, क्योंकि खुदाई का व्यय कम हो जाता है। यदि प्रस्तावित स्थल के आसपास नदी, नाला या बड़ी झील है तो ये देखने की आवश्यकता है कि ग्रीष्मकाल में उसमें पानी का स्तर क्या रहता है, क्योंकि इसका सीधा प्रभाव तालाब के जल रिसाव पर पड़ता है। उसी के अनुरूप तालाब की गहराई होनी चाहिए वर्षा ऋतु में कैचमेंट एरिया के बहाव के अनुरूप बांध की ऊंचाई, जौड़ाई एवं इनलेट व आउटलेट का निर्माण करना चाहिए। चयनित स्थल की मिट्टी की जलधारण क्षमता उर्वरकता का ज्ञान आवश्यक है। ऊसर एवं बंजर मिट्टी वाले स्थलों पर तालाब निर्माण नहीं करना चाहिए, क्योंकि ऊसर मिट्टी कि पी-एच मत्स्य पालन हेतु उपयुक्त नहीं होती तथा बंजर भूमि में जल धारण क्षमता नहीं होती है। चिकनी/दोमट वाले क्षेत्र में तालाब निर्माण उपयुक्त रहता है। मत्स्य पालन में जल एक अत्यधिक महत्वपूर्ण कारक है। सफल मत्स्य पालन हेतु जल के निम्न मानक निर्धारित हैं:-

रंग	हल्का हरा व भुरा
तापमान	२५-३० डिग्री सेल्सियस
पी-एच	७.५ से ८.५
अविलेयता	१००-१८० पी.पी.एम.
कार्बन डाईऑक्साइड	०-३.० पी.पी.एम.
घुलित आक्सीजन	५ पी.पी.एम.
कार्बोनेट	१०-३० पी.पी.एम.
बाई कार्बोनेट	१५०-२५० पी.पी.एम.
कैल्शियम	७५-१५० पी.पी.एम.
फास्फोरस	०.३-०.५ पी.पी.एम.
सिलिका	४-१६ पी.पी.एम.
अमोनिया	०.५ पी.पी.एम.
नाइट्रेट्स	०.१-०.३ पी.पी.एम.
क्लोराइड्स	३१-५० पी.पी.एम.
घुलित लावण	३००-५०० पी.पी.एम.

मत्स्य पालन में मिट्टी की भूमिका:- तालाब की मिट्टी में उपस्थित पोषक तत्व सीधे मत्स्य उत्पादन को प्रभावित करते हैं। कभी-कभी मत्स्य पालक तालाब में मत्स्य बीज संचित करता है, पूरक आहार देता है, उर्वरक प्रयोग करता है परन्तु जब मछली की वृद्धि नहीं होती तो मत्स्य बीज की गुणवत्ता को दोषी बताता है। वास्तविकता यह है कि तालाब की मिट्टी के गुणों के अनुरूप उर्वरकों का प्रयोग किया जाना चाहिए जो कि मछलियों के भोजन अर्थात् प्लवक उत्पादन में अहम भूमिका निभाते हैं। तालाब की तलीय मिट्टी जल को पोषक तत्व उपलब्ध कराने के साथ अन्य जैविक क्रियाओं की जननी है। इसी कारण सीमेन्ट की तली वाले तालाब में मत्स्य उत्पादन नहीं हो पाता है। तालाब निर्माण हेतु मिट्टी के निम्न मानक निर्धारित हैं:-

क्र. सं.	मिट्टी	रेत का%	सिल्ट का%	क्ले का%	श्रेणी
१.	क्ले (चिकनी मिट्टी)	२८	२२	५०	सर्वोत्तम
२.	सिल्ट क्ले (वालू चिकनी)	४४	४४	४२	उत्तम
३.	सेण्डी सिल्ट क्ले	६३	१४	२२	खराब
४.	सेन्डी लोम	७९	१०	११	अत्यन्त खराब

तालाब की मिट्टी सामान्यतः चिकनी, बलुई अथवा कंकड़ वाली होती है। चिकनी मिट्टी में गोबर, स्लरी, हरित खाद आदि का प्रयोग, अधिक मात्रा में करना चाहिए। अत्यधिक चिकनी मिट्टी घुलनशील पोषक तत्वों जैसे नाइट्रोजन, फास्फोरस, पोटैशियम आदि को अवशोषित कर लेती है। कंकड़ वाली एवं बलुई मिट्टी में पोषक तत्वों को रोकने की क्षमता कम होती है एवं घुलनशील पोषक तत्व नीचे पहुँच जाते हैं। तालाब की मिट्टी में उपलब्ध रासायनिक अवयवों से ही जल को पी-एच का निर्धारण होता है। पी-एच का सीधा असर पानी में घुली फास्फोरस पर होता है। तालाब में अम्लीयता बढ़ने पर पी-एच कम होता है। पी-एच का सीधा असर पानी में घुली फास्फोरस अघुलनशील अवस्था में तेजी से रूपान्तरित होती है। अधिक अम्लियता से मछली में भोजन की उपाचय दर कम हो जाती है। परिणाम स्वरूप तालाब में भोजन होते हुए भी उसका उपयोग नहीं हो पाता है। मिट्टी को मत्स्य पालन के लिए उपयोगी बनाए रखने के लिए आवश्यक है कि उसका पी-एच ६.५ से ७.५ के मध्य रखा जाए। इसका नियंत्रण चूने के प्रयोग से इसे अवक्षेपित करके किया जा सकता है, जो तालाब में आक्सीजन की मात्रा को बढ़ाता है तथा मछलियों के रोग नियंत्रण का कार्य भी करता है। अम्लीयता को उदासीनता के स्तर तक लाने में चूना सहायक है तथा फास्फोरस युक्त उर्वरकों का उपयोग सुनिश्चित करने में मदद देता है। साधारण तौर पर अति अम्लीय मिट्टी में १००० कि०ग्रा० प्रति हेक्टेयर की दर से चूने का प्रयोग करना चाहिए। मिट्टी में उपलब्ध नाइट्रोजन, फास्फोरस, पोटैशियम की मात्रा के आधार पर उसे निम्न प्रकार वर्गीकृत कर ससापतिक उर्वरकों का प्रयोग लाभकारी रहता है।

तालाब में पोटैशियम एक आवश्यक तत्व है जिसकी पूर्ति हेतु २५-५० कि.ग्रा. पोटैशियम क्लोराइड या ४० कि. ग्रा. म्यूरेट आफ पोटैश का प्रयोग प्रति हेक्टेयर प्रति वर्ष की दर से करना चाहिए। जैविक खाद के रूप में गोबर का प्रयोग मिट्टी में उपस्थित कार्बन का आधार पर करना चाहिए, जिसके रवाव

मिट्टी की श्रेणी (१०० ग्राम मिट्टी)

पोषक तत्व	उच्च	मध्य	निम्न
उपलब्ध नाइट्रोजन	५०-७० मि.ग्रा.	२५-५० मि.ग्रा.	२५मि०ग्रा. या कम
आवश्यक नाइट्रोजन	१५० किग्रा / हे./वर्ष	२०० किग्रा हे./वर्ष	५५० किग्रा हे./वर्ष
आवश्यक अमोनिया सल्फेट	७५० किग्रा / हे./वर्ष	१००० किग्रा हे./वर्ष	१५०० किग्रा/हे./वर्ष
आवश्यक यूरिया	३२५ किग्रा/हे./वर्ष	४२५ किग्रा/हे./वर्ष	६५० किग्रा/हे./वर्ष
उपलब्ध फास्फोरस	६-१२ मिग्रा	३-६ मिग्रा	३ मिग्रा या कम
आवश्यक फास्फोरस	७५ किग्रा/हे./वर्ष	१०० किग्रा/हे./वर्ष	१५० किग्रा/हे./वर्ष
सिंगल	३७५ किग्रा/हे./वर्ष	६०० किग्रा/हे./वर्ष	८०० किग्रा/हे./वर्ष
ट्रिपल सुपर फास्फेट	१७५ किग्रा/हे./वर्ष	२२५ किग्रा/हे./वर्ष	३५० किग्रा/हे./वर्ष

के उपव्यय पर रोक लगाई जा सकती है। यदि मिट्टी में २% से अधिक कार्बन हो तो १०,००० कि०ग्रा० प्रति हेक्टेयर प्रति वर्ष की दर से १० समान मासिक किशतों में गोबर की खाद का प्रयोग करना चाहिए। तालाब की मिट्टी में रेत यदि ४० प्रतिशत या इससे अधिक है तो पानी ठहरने में कठिनाई होगी। सिल्ट की मात्रा ३० प्रतिशत एवं जल धारण क्षमता ४० प्रतिशत या इससे अधिक होनी चाहिए। यदि ४० प्रतिशत से जल धारण क्षमता कम है तो पानी ठहरना कठिन रहता है। मानकों से संतुष्ट होने के उपरांत तालाब खुदाई का कार्य प्रारम्भ किया जाना चाहिए। तालाब निर्माण में तालाब का आकार, गहराई, बाँध की चौड़ाई, ढाल, ट्रेन्च का अपना-अपना महत्व है। आयताकार तालाब में शिकारमाही के समय जाल चलाने में आसानी रहती है। साधारणतः तालाब की गहराई इतनी रहे कि सूर्य का प्रकाश तली तक पहुँच सकें मत्स्य पालन के लिए पानी का औसत स्तर १.५ मीटर अवश्य होना चाहिए एवं वर्षों के पानी से तालाब के जल, प्लावन, नए तालाब की मिट्टी धसने आदि को दृष्टि रखते हुए कुल गहराई २.५ से ३.० मीटर उचित होती है। तालाब की खुदाई प्रारम्भ करने से पूर्व निर्माण क्षेत्र की वनस्पतियाँ जड़ सहित

निकाल देनी चाहिए। जहाँ बाँध बनाना है उस स्थान की मिट्टी लगभग ६ इंच गहराई से निकाल कर इस पर नई मिट्टी डालते हुए बाँध बनाना चाहिए। तालाब की खुदाई से निकलने वाली मिट्टी को डालते समय बाँध की ऊँचाई के सापेक्ष नीचे मिट्टी की चौड़ाई को दृष्टि रखना चाहिए। साधारणतः पानी की सतह से बाँध की ऊँचाई लगभग आधा मीटर एवं बाँध के शिखर की चौड़ाई लगभग २ मीटर उपयुक्त होती है। छोटे तालाबों में बाँध की चौड़ाई व ऊँचाई का अनुपात १.५:१ तथा एक हेक्टेयर के तालाबों में यह अनुपात २:१ होना चाहिए। ढलान की मिट्टी को कटने से रोकने के लिए उस पर घास लगाना लाभप्रद है। तालाब के पानी के रिसाव को रोकने के लिए आन्तरिक भित्ति (कोरवाल) का निर्माण करते हैं जिसके आधार व ऊँचाई का अनुपात १:५ होता है। बाँध बनाते समय तालाब के चारों ओर गीली चिकनी मिट्टी की दीवार बनाने हेतु प्रयोग करना चाहिए। कोर ट्रेन्च बाँध के बीच में बनायी जाती है। इसकी चौड़ाई ऊँचाई पर निर्भर रहती है जो सामान्यतः एक मीटर होती है। ट्रेन्च की गहराई ०.५ मीटर व आधार १.० मीटर रखते हैं।



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NEWS & NOTES

134th Board Meeting of the Federation

The 134th meeting of the Board of Management of the NCARDB Federation was held on 28 September 2011 at Mumbai. In the absence of Chairman, Shri K. Sivadasan Nair (MLA) who could not be present due to State Assembly Session in Kerala, Shri S. S. Mrar, Vice Chairman chaired the meeting and Shri Y. V. Reddy, Vice Chairman Federation was also present who welcomed delegates to the meeting.

Managing Director, Federation stressed the need for launching the programme of accepting deposits from members in order to build up own resources of banks in view of reduction in NABARD's refinance. He also cautioned the banks regarding NABARD's move towards reducing the refinance support to 90% of loans and also withdrawing two year cushion for repayment of refinance. In this regard M.D. reminded the recommendations issued by the Federation to Banks on Deposit Mobilisation and Deposit

Schemes for ARDBs and deployment of deposits.

Along with other important agendas, the deliberations included revision in the rate of interest on refinance made by NABARD with effect from 20 July 2011 involving a hike of 25 basis points to 9.75% p.m. and considering one time revision of interest after issuing the loans in order to avoid huge losses on account of hike in the rate of interest in refinance taken place subsequently.

The Board finalized the programme of activities during UN IYC 2012 and decided to circulate the same to member banks for information and necessary action. It was also decided to request SCARDBs to constitute State level committee for celebrating UN IYC 2012.

The meeting concluded with vote of thanks to the chair.

Swiss agency and NABARD join hands for climate project in Maharashtra

In an initiative to empower rural communities to cope with vagaries of nature, a Climate Change Adaptation (CCA) project covering

25 villages in Ahmednagar district has been launched in cooperation with the Swiss Agency for Development and Cooperation

(SDC) and National Agriculture and Rural Development Bank (NABARD).

The project, funded by SDC to the tune of ₹ 20 crore aims at developing strategies, knowledge, processes and measures in order to enhance the capacity of rural communities to adapt to the impending impact of climate change and will cover the largely agriculture-dependent population in Sangamner and Akole talukas of the district.

To be funded by SDC and NABARD, the CCA project would be

implemented by Watershed Organizational Trust (WOTR), an NGO, covering about 34,000 hectares of land involving over 9,000 households. "The project seeks to give inputs on sustainable agriculture and prepare farmers for unseasonal rains," said WOTR representative. The CCA project envisages a sustainable ecosystem in the area of its coverage in Ahmednagar district with an increased productivity of natural resources that contribute to improved quality of life of the economically vulnerable target group.

Funds in savings a/cs will now fetch more

The RBI deregulated savings deposit interest rate, a move which will push up the cost of funds for banks. Individual depositors, though, will benefit from this as a number of banks may raise interest rates. The central bank has said banks will have to offer a uniform rate of interest on savings bank deposits up to ₹1 lakh, and for anything above that, they may provide differential rates of interest.

The current savings rate is 4%, which was last raised in May 2011 after it remained unchanged for as long as eight years. However, on the downside, customers may not benefit if banks choose to pay interest on average balances maintained on a quarterly or a monthly basis, which may negate the benefit of higher rates. As of now, interest rate is paid on daily balances.

NABARD sets apart ₹2,000 cr for warehousing infrastructure

NABARD has set apart an amount of ₹2,000 crore during the current financial year for creation of warehousing infrastructure in different States. Incidentally, loans

disbursed to State Governments by NABARD have crossed the ₹1-lakh crore mark as on 30 Sep., 2011. The warehouse fund is being made available under the Rural

Infrastructure Development Fund (RIDF) tranche XVII, This has opened a new channel of funding from NABARD. This would support streamlining of storage of food grains at the production, distribution and consumption

UN agencies stress on importance of farm co-operatives

The role of agricultural co-operatives in poverty reduction and ensuring food security for millions around the world is one of the themes of the International Year of Co-operatives 2012. The importance of agricultural co-operatives has been stressed by three United Nations agencies, namely, Food and Agriculture Organisation (FAO), International Fund for Agricultural Development (IFAD) and World Food Programme (WFP).

Co-operatives have an estimated 800 million members and provide 100 million jobs worldwide, with an aggregate turnover of \$ 1.1 trillion that is comparable to the GDP of many large countries. In Brazil, co-operatives accounted for 37.2 per cent of agricultural GDP and 5.4 per cent of overall GDP in 2009, and earned \$ 3.6 billion from exports. In Mauritius, co-operatives are responsible for more than 60 per cent of the national production in the food crops sector. The agricultural co-operatives can support small farm producers and

levels, not only for State Governments, but also for Government-owned/supported entities and private sector entities which supplement storage requirements for agricultural and allied sector products.

marginalised groups by creating sustainable rural employment. They will also provide men and women small-holders with services such as better training in natural resource management and access to information, technologies, innovations and extension services.

The UN agencies will promote the growth of agricultural co-operatives through a slew of initiatives. For one, the co-operatives will be supported to form networks for pooling their assets and competencies to overcome market barriers and other constraints such as lack of access to natural resources. The agencies will assist policy-makers in the design and implementation of policies, laws, regulations and projects and create enabling environment for the successful operation of the co-operatives. They will also help strengthen the dialogue and cooperation between governments, agricultural co-operatives, the international research communities and civil society representatives.

New performance benchmarks for government banks

The Finance ministry has told state-run banks to achieve new benchmarks that measure financial and functional efficiency to qualify for more cash injection in the coming years. State-run banks will have to improve three key measures of performance: savings and current deposit ratio, employee-branch ratio and profit per employee, said a finance ministry official. These new targets are over and above the annual statement of intent the government signs with banks. "We want them to prepare for the future as more private players will join the fray,"

the official said referring to the draft guidelines for new bank licences put out by the Reserve Bank. The North Block has plans to infuse 3 lakh crore to 5 lakh crore in some 21 state-run banks over the next decade. Under the ministry guidelines, current and saving account, or CASA, deposits, which yield low-cost funds, should form 45% of the total bank deposits. The CASA deposit ratio stood at 41% for private banks in 2010-11 while it was 33% for public sector banks, according to a report by rating agency ICRA.

India 134th in global human development report

The latest annual Human Development Report of the United Nations Development Programme shows that India's ranking has little changed from last year: it is the same lethargic, but steady progress — a 1.5% annual rise in the human development index (HDI). India's ranking went from 127 to 134 in the world, but there were 18 additional countries in the survey this year. Norway, Australia and the Netherlands top the HDI rankings, with 0.943 being the highest value achieved. Burundi, Niger and Congo are at the bottom, with 0.286 being the lowest HDI value achieved.

India's is 0.547 — up from last year's 0.542. It shows itself favourably with respect to income growth and improved educational enrolment over the past three to four years.

However, India stands bottom in South Asia and the Asia-Pacific, with the exception of Afghanistan, on the gender inequality index — encompassing factors such as early pregnancies, total fertility rate and representation of women in the national legislature, among others.

12th Plan: Central schemes to broaden, only numbers shrink

The 12th Five Year Plan, which will start from April 2012, could witness a major change in the centrally sponsored schemes (CSSs). Not only will their numbers come down from the current 147 to 59, but many such programmes will be clubbed ministry-wise into larger schemes. As for the ministry of health and family welfare, the Chaturvedi panel has recommended bringing down the number of the CSSs to 5 from the existing 11. The government spent more than ₹18,000 crore in 2011-12 in central schemes pertaining to the health sector.

Big programmes like the national mental health programme, national programme for prevention and control of diabetes, cancer control programmes and programmes for health care for the elderly, will all form part of the broad national programme on non-communicable diseases. In the department of rural development, the National Rural Livelihood Mission could subsume schemes like the Swarnajyanti Gram Swarozgar Yojana and the programme for development of district-level rural development agencies called the DRDA administration

Disclose audit reports of cooperative banks: CIC to RBI

The Central Information Commission has directed the Reserve Bank to make public audit reports of co-operative banks, rejecting the arguments of the Bank that such disclosure could "lead to loss of faith in some banks" and adversely affect economic interests of the state. The Reserve Bank had sought exemption on two grounds - it could affect economic interests of the state (Section 8(1) (a) of the RTI Act) and information is held in fiduciary capacity (Section 8(1)(e)). The RBI also relied on a previous

decision of the full bench of the Commission which had left it on the banking regulator to decide whether such a disclosure could affect the economic interests of the state. Hearing the plea of Jayantilal N Mistry of Gujarat who sought the copies of audit reports of co-operative banks, Information Commissioner Shailesh Gandhi said even if the information comes under the exempted category cited by the RBI, there was a larger public interest in its disclosure.

Rise in NPAs, slippages need to be urgently addressed

Deputy Governor of Reserve Bank of India, Shri Anand Sinha flagged the steep increase in Non Performance Assets (NPAs) and slippages as two issues that the country's banking sector needed to urgently address. Mr. Sinha said while part of the up-trending of NPAs could be attributed to the fallout of the global financial crisis, the bulk of the problem had its roots in very aggressive lending during the boom period. While ruling out a systemic issue because of this, Mr. Sinha pointed out that while gross NPAs have been going down in spite of inching upwards slightly in percentage terms in absolute terms, the stock of NPAs had been going up in the last four to five years despite the ratio coming down.

The other area of worry was the substantial increase in slippage from 1.8 per cent during 2007-08 to 2.2 per cent in 2009-10. As a result, slippage outsized recovery despite heavy write-offs. Mr. Sinha urged

banks to tone up credit management to contain slippage, mobilise recovery and reduce NPA stock. The RBI would be issuing draft guidelines on Basel III capital adequacy norms for the banking system and put out a final version by March 31, 2012. Stating that the Basel norms were not a regulatory product, he said the RBI sought a smooth transition to the Basel III norms. It is important for senior management of banks have to understand the nitty-gritty of specialised niche products as the complexity of products coupled with excessive risk-taking had led to the governance failure that triggered the global financial crisis. Mr. Sinha advocated appropriate standardisation of the Know Your Customer (KYC) norms to make them a one-time or single-point procedure. While new accounts are largely in adherence with the KYC norms, there is a lot of deficiency with regard to older accounts.

States take IT to farmers

The Agricultural Informatics and Communications Network (AGRISNET), constituted by the Department of Agriculture, provides improved services to farmers through information

technology and seeks to establish Indian agriculture online. Various States, including Tamil Nadu, have implemented the AGRISNET, in collaboration with various agencies, with customisations to

suit the local conditions. Information on the crop coverage, yield monitoring and soil fertility is collected in villages by Assistant Agricultural Officers. With data on 24 lakh farmers, the website, with bilingual support, provides the much-needed information on soil, seeds, schemes and fertilizer. The primary actors in data collection are the Department of Agriculture, the Tamil Nadu Agricultural University, and the Indian Institute of Technology-Madras. The aim is to increase farm-level interactions so that the yield is better, and the bridge is created between demand and supply. The system sends advisory messages to farmers now. In Sivaganga, bio-metric evaluation

of the health of the crop and micro-level planning have already been tried out.

Experts point out that while initiatives in the private sector were limited by geographical concerns, and provided fewer opportunities for farmers' involvement, the attempt here is to include marginal farmers and those with less than two acres. Incidentally, a similar use of technology in fishing is the mobile facility launched by the MSSRF. It provides with fishermen with vital information about safety, including early warnings on how the ocean is going to be. It will also inform them of where a substantial catch is likely to be.

RBI allows RRBs for third party account pay in drafts

The RBI allowed RRBs to collect account pay drafts, pay orders for crediting proceeds to third party accounts with certain restrictions. Till date, it was only allowed in case

of cheques. As per the RBI, the account payee cheques or demand drafts or pay orders should not exceed ₹50,000 for crediting it to third party account.

Higher returns from post office savings schemes

Post Office savings bank deposits without any fixed maturity will earn interest of 4% up from 3.5% now. And interest rates on other small saving instruments, such as, NSC will be indirectly linked to the market. The new rates

could be notified from July 2011 for the current fiscal year.

The Finance Ministry agrees to cut NSC tenure to 5 years, discontinue Kisan Vikas Patras.

Repayment of fixed deposits now with lesser hassle

If you've opened a deposit account with 'Either or Survivor' or 'Former or Survivor' instructions, receiving repayment on your fixed deposits just got easier. In a directive, the Reserve Bank of India has said that if fixed or term deposit accounts are opened under 'Either or Survivor', the signatures of both depositors need not be obtained for

repaying deposits on maturity. In case your instruction is 'Former or Survivor', the 'Former' can withdraw the matured deposit even when both the depositors are alive. However, under both mandates, both signatures are required if the deposit is to be paid before maturity.

Cheques to have 3-month validity

With effect from April 1, 2012, you will have to cash your cheques, drafts, pay orders and banker's cheques within three months from the date of the instrument. Currently, you have a six-month period to cash these instruments.

The RBI has stated that the six-month period is being misused by some to circulate the instruments like cash until it nears its tenure. Hence, it has decided to reduce the validity of cheques and other instruments.

Regional Rural Banks see healthy growth in saving bank deposits

It looks like people in rural areas put more money in savings bank (SB) deposits than in term deposits. This was visible in 82 RRBs, which saw SB deposits rise by nearly ₹15,000 crore and term deposits by around ₹4,800 crore in 2010-11. Also, current account deposits were up by around ₹1,100 crore as per. the RBI in its Report on Trend and Progress of Banking in India 2010-11.

The CASA (current account savings account) deposits

constituted almost 60% of the total deposits. The vast rural presence and small-ticket deposits helped boost CASA. While agriculture credit constituted nearly 55% of the total credit, the crop loan alone was around 40% of the total credit. In all, priority sector lending was 82.4% to the total credit. The credit-deposit ratio, which was 57.1% in 2009-10, increased to 59.69% during 2010-11.

The RRBs recorded a net profit of ₹1,988 crore (₹1,884 crore), a growth of 5.5%. The growth in net profit was mainly because of a nearly 30% decline in provisions and contingencies during the period. The provisions and

contingencies decreased to ₹705 crore (₹1,029 crore) during the period. On the income side, the interest income stood at ₹15,225 crore (₹12,945 crore), recording a growth of 17.6%.

₹6,234-crore package announced for weavers

The Centre announced a ₹ 6,234 crore package for 13 lakh weavers. In Uttar Pradesh, the package will benefit debt-hit 2 lakh weavers. To be implemented from January 2012, the package includes a ₹3,884-crore debt waiver and ₹2,350 crore for a six-fold strategy to uplift weavers during the 12th Five Year Plan. "The scheme will help 15,000 weavers' cooperative societies, besides individual weavers. An individual weaver will get a benefit up to ₹50,000," Under the six-fold strategy, weavers' credit cards will be issued to eligible individual weavers who will be able to access loans up to ₹2 lakh generally in the range of ₹35,000 to ₹50,000 for three years without any collateral security.

Interest subsidy

"The scheme has been finalised and the banks will be advised for its

implementation. We have recommended an interest subsidy of 3% to enable weavers to access loans at 7-8% interest for three years," the Minister said. Over 43 lakh weavers, mainly Muslims, are confined to Uttar Pradesh, West Bengal, Odisha, Assam and some southern States. Under the package, an assistance of ₹4,200 - ₹5,400 per weaver has been proposed, that will provide them leverage for borrowing loans; loans extended by banks will be guaranteed by the Credit Guarantee Fund Trust for medium and small enterprises to the extent of 85 per cent of their outstanding. A price subsidy of 10% is proposed for yarn supplied by the National Handloom Development Corporation and agencies proposed by the State Governments in order to overcome the problem of yarn supply.

Green-linked system soon for devolution of funds

The Planning Commission has devised an environment performance-linked mechanism for devolution of funds to States during the 12th Plan period. This was stated here by the eminent scientist and Member, Planning Commission, Dr K. Kasturirangan here on Thursday while delivering the inaugural address at the 81st annual session of the National Academy of Sciences, India (NASI). States would be ranked on index covering parameters like air and water purity, forest cover and sustainable livelihood. A performance monitoring system would also be introduced. The Green India Mission to bring five million hectares including degraded land and ecologically sensitive areas under green cover

was one of the important targets of the 12th Plan. Dr Kasturirangan said India was preparing to showcase its achievements and plans at the next meeting of the committee of parties to the CBD (Convention on Biodiversity) to be held at Hyderabad in October 2012. The country needed a three-pronged national action plan focussing on species recovery, relocation of villagers from critical habitats and management of invasive species to ensure sustainable management of biodiversity. There was an urgent need to augment and accelerate efforts for conservation and sustainable use of biodiversity and for fair and equitable sharing of benefits arising out of the utilisation of bio resources.

APMCs hold key to retail reform

Despite the existence of a draft model Agriculture Produce Marketing Committee (APMC) Act, not all States that have adopted it enforce this Act in the right spirit, and some have only partially amended/introduced amendment Bills. According to Agriculture Ministry data, out of 35 states and Union Territories (UTs) only 17 States have amended their APMC Acts to allow direct marketing, contract farming and markets in

private and cooperative sectors. Key grain producing states, such as Haryana, Punjab and Madhya Pradesh, have initiated only partial reforms. Also, seven states and UTs don't have any APMC Act to govern agricultural trade. And in the states that allow retailers to do this outside the regulated local markets known as mandi, in practice, poor infrastructure makes that difficult. As a result, the supply chains are fragmented and often

involve several layers of middlemen between tractor and table.

IMPLEMENT STATE-LEVEL LAWS

A reform of the APMC Act will require huge political will to break these agricultural cartels, in addition to harmonising the implementation of the Act in the different states that create market distortions. But unless state-level APMC laws are altered and implemented to conform to the

spirit of the model APMC law, the benefits from the increased investment in the retail sector and new infrastructure creation won't reach the small farmers and small agro-processors. Creating an effective choice of multiple and competitive market channels for farmers by means of APMC reform will be the first step towards fighting the persistent inflationary conditions assailing the country.

Use mobile telephony to expand banking in rural areas: Rangarajan

Banks should piggyback on the mobile telephony platform to provide banking services to rural households, said Dr C. Rangarajan, Chairman, Prime Minister's Economic Advisory Council. Delivering the Foundation Day lecture on role of technology in development of banking at the Institute for Development and Research in Banking Technology (IDRBT), he said over 700 million mobile connections could be used for authentication and conducting banking transactions.

Mobile banking has huge potential and the stakeholders need to collaborate much more proactively for common benefit. Saying that technology provides the

scope for affordable financial inclusion, Dr Rangarajan said: "The best way offered for inclusive banking would be through the twin-routes of mobile banking and the banking correspondent model." The technology should also be harnessed to increase electronic transactions as against paper-based clearing. Banks should develop in-house IT skills and broaden the IT management to achieve consolidation and minimise costs, he said. To ensure continuity of services and safety of data in times of unexpected crises, banks should put an adequate business continuity plan for technology-related matters, Dr Rangarajan said.

Small borrowers to get working cap

The finance ministry has asked state-owned banks to lend money to small borrowers in the form of working capital, where the borrower pays interest only on the fund drawn from the bank instead of the entire loan amount. The move aims to provide more flexibility to small borrowers and reduce their cost of funds. The ministry has directed all state owned banks to convert term loans given to self-help groups (SHG) to working capital loans by December 31. "The current practice of giving loans through term loans takes away time of bank staff due to the enormous

amount of paperwork involved," the ministry had earlier said in a statement. Bankers said the move will boost loan books of banks as in working capital loan the principal amount is rolled over every year unless the loan is recalled. Also, monitoring working capital loans is easier for banks as they have access to borrowers' transactions. Currently, a huge portion of loan availed by SHGs is in the form term loans. According to the latest available data, as on March 31, 2010, outstanding bank loans stood at ₹28,038 crore to 48.51 lakh SHGs.

Coir Board Launches Radiation-proof Coir-mix Umbrella

An umbrella developed from the blend of coir and cotton could address the increasing concern on the harmful effect of ultraviolet (UV) rays on the skin. The product designed by the Central Coir Research Institute (CCRI) has the capacity to block UV rays. It is made of 80% coir and 20% cotton. We colour the yarn before blending so that we get a multi-coloured product, which will effectively prevent UV rays from hitting the

body, he said. The institute is in the process of applying for patent. According to Sharma, the product can find application in beaches, golf courses and in roadside shops. Normally, big cloth umbrellas are used in beaches, which cannot provide protection from UV rays. The only negative factor is that it cannot be used in rains. It could cost between ₹1,500 to ₹2,000 per piece and will last for around three years.

Haryana vegetable initiative

Haryana has launched a new scheme to increase vegetable

production and productivity and market the produce through

farmers' groups, dubbed the 'Vegetable Initiative for Urban Clusters', in Gurgaon and 11 other districts in the State. The districts where the scheme has been launched are Mewat, Rewari, Palwal, Faridabad, Jhajjar, Sonapat, Panipat, Rohtak, Karnal

and Kurukshetra, which are predominantly vegetable-growing clusters, in addition to Gurgaon, the spokesman of Haryana Horticulture Department said here. He said ₹12 crore has been earmarked for the purpose.

Per capita income rose to ₹54,000 in 2010-11: Govt

Per capita income in the country rose to over ₹54,000 in 2010-11 from ₹18,450 in 2001-02, Parliament was informed today. "The per capita income at current prices has registered an annual average growth rate of about 12.8

per cent during the (2001-02 to 2010-11) period." The per capita as measured by net national income stood at an advance estimate of ₹54,527 in 2010-11, up from estimate of ₹46,492 in 2009-10.

German expertise for farmers to tackle climate change

The NABARD has joined hands with a German federal organisation to help communities and farmers in Tamil Nadu adapt to the climate change. In collaboration with GTZ, a German Federal body, NABARD has begun implementing a 'climate proofing' project in Poosaripatti and Appiampatti micro watersheds in Dindigul district. While being implemented on a pilot basis initially, the project would be replicated across the State based on the response. Through this project, the adaptive capacities of people will be increased with respect to innovative potential, flexibility and decision making power," he said. Through Climate

Proofing, the success of a project would be ensured despite of climate change through the adaptation options. They include early warning systems, plans for maintenance and renovation of existing structures, insurance systems and financial products for adaptation.

Livelihood measures like introduction of heat, drought and salinity resistant crop varieties, crop diversification, drought tolerant livestock, innovative farming techniques such as mixing long and short duration crops, inter cropping and early sowing would also be suggested. NABARD had organised a stake holders meet with

the climate experts of GTZ at Madurai on September 28 and 29 with another workshop proposed in the third week of December to finalise the interventions.

Interviews, meetings and participatory rural appraisal exercises were conducted in the project villages.

Kharif rice procurement crosses 12 million tonnes

Anticipating a bumper paddy crop, the government's kharif rice procurement drive has picked up pace in the last few weeks. The latest data from FCI say the government has lifted 12.46 million tonne (mt) of rice till date for the season against 12 mt of purchase reported during same period last year. Most of the purchase was from Punjab, Haryana, Andhra Pradesh, Tamil Nadu, Chhattisgarh

and Uttar Pradesh. Since October 1, when rice procurement started for 2011-12, FCI and state government-owned agencies have picked up 7.6 mt from Punjab, 1.9 mt from Haryana and 2.61 mt from Tamil Nadu. Other key contributors to the central pool have been Chhattisgarh 7.93 lakh tonne, Andhra Pradesh 7.43 lakh tonne and Uttar Pradesh 7 lakh tonne.

Rural BPOs Become The Next Tech Hub

The IT-BPO companies are moving towards rural areas due to factors like availability of untapped talent, affordable real estate, lower labour and operational costs. The prime advantage of rural BPOs is that employee costs are half that of urban BPOs and the overall operating costs are 30 to 40% below urban BPOs.

Rural BPOs contribute more than \$10 million towards India's IT-BPO revenues. The rural BPO employee base of 5000 (FY09) is expected to grow by more than 10 times in FY12. The attrition rate at rural BPOs are between 3-5 % compared to a high of 50% in urban BPOs.

₹2,000 cr State package for cotton, paddy farmers

The Maharashtra State Government announced a Rs 2,000 crore package for cotton, paddy and soyabean farmers on Wednesday three days ahead of the expiry of the election code of conduct. The

Government also announced scrapping of the State Committee for Agriculture Costs and Prices, saying it will be reconstituted. The other major announcements were a plan to constitute a new committee

that will suggest ways to 'stabilise' rain-fed farming, new block-level automatic weather information centres, a permanent insurance scheme that will compensate even

in case of dip in market prices and a new textile policy to encourage ginning and pressing and other value-addition units in cotton growing areas.

Livestock sector faces new challenges: Report

The growing global population has thrown up many a concern over what hold for different sectors in future and one of the major areas that has been engaging the attention of scientists, economists and policy-makers is food security.

According to a report, titled 'World Livestock 2011', released by the FAO, world meat consumption is projected to rise around 73% and dairy consumption by 58% by 2050 over the current levels. This will have to be met by large-scale and intensive animal-rearing operations and as of now, there are no technically or economically viable alternatives to achieve the desired levels of production. The existing systems give rise to concerns about their environmental impacts such as groundwater pollution and greenhouse emissions, as well as their 'potential to act as incubators of diseases', says the report.

Since 1967, global production of poultry meat increased by around 700%, eggs by 350%, pig meat by 290%, sheep and goat meat by

200%, beef and buffalo meat by 180% and milk by 180%. This resulted largely from an increase in the overall number of animals being raised. But using the same level of natural resources as at present, it is hard to think about meeting the projected demand by keeping twice as many poultry, 80% more goats and sheep, 50% more cattle and 40 per cent more pigs, feels the report.

It notes that based on the existing knowledge and technology, there are three ways of increasing the production in an environmental-friendly manner: reduce the level of pollution generated from waste and greenhouse gases; bring down the input of water and grain needed for output of livestock protein; and recycle agro-industrial by-products through livestock populations. Livestock products today contribute 12.9% of calories consumed worldwide and 20.3% in developed countries. Their share to protein consumption is estimated at 27.9% worldwide and 47.8% in developed countries, says the report.

Subsidies may be farmed out via corporates

For the first time, the Centre plans to partly route its farm subsidies through large companies with expertise in rural linkages, such as Nestle, ITC, Adani, Marico, Tata Chemicals and Pepsi Co. A blueprint is being created under which the government will partly fund agri-projects of companies. These companies will, in turn, have to deliver measurable increase in yield, infrastructure and incomes of at least 10,000 farmers each, said a senior official in the Ministry of Agriculture, who did not wish to be named. The expenditure on each farmer is expected to be ₹1 lakh over three years, of which the Centre will pay half. The rest has to be arranged by the company by creating a consortium of lenders to the project and through its own resources. The Government's target is to reach 1 million farmers over the next five years with a kitty of

₹5,000 crore. If the company meets its targets, it will receive 8% of the project cost as reimbursement of overheads. The scheme is expected to be announced in next year's Budget speech after the Planning Commission approves it. "This is the first time the Centre will directly implement its farm-related schemes. An analysis of current programmes shows that public-private partnership would be the best route for future success," the official said. The co-operation of a state government will be sought when a project comes up for appraisal and sanction. In their new role as implementers of the Centre's schemes, companies will be able to build a firm supply chain and also become the farmer's one-stop solution provider for everything from seeds, technology and irrigation to post-harvest crop management and marketing.

India loses 8 lakh hectare arable land to non-farm use

India lost as much as 8 lakhs hectare of arable land to non-farm usage, including the construction of buildings, roads and railways, in the five years through 2008-09, the government said, as an expanding economy has put pressure on the key natural resource to keep its growth engine running. According

to the latest data with the government, farmland in the country has shrunk to 182.38 million hectare during 2008-09 from 183.18 million hectare during 2003-04, Minister of State for Agriculture Harish Rawat said in a written reply to the Lok Sabha. The share of the agriculture and allied

sectors in the overall gross domestic products declining to 14.4% from nearly a half during independence and making farming among the least remunerative activities. While the economy grew at an average of 7.8% in the five years to 2006-07, the agriculture

and allied sectors expanded by an average of 2.5%. Moreover, the farm sector grew at just 3.2% in the four years to 2010-11, while the overall economy expanded at an average of 8.2%, underscoring the vast requirement of land for non-farm purposes.

RBI flags deteriorating loan portfolios of banks

Risks are rising for the banking sector even as credit growth slowed and slippages outpaced credit growth, said the RBI's Financial Stability Report (FSR) covering the last six months. The risks to banking sector have increased since the previous FSR. The banking sector faced profitability pressures due to higher funding costs and asset quality pressures due to a slowing economy. Even though the Capital To Risk Weighted Assets Ratio (CRAR) and Non Performing Assets Ratio (NPA) of Indian banks compared favourably with the major advanced countries as well as peer Emerging Market Economies, there has been a continuous decline in these parameters, said the report released today by the Reserve Bank of India. The Systemic Risk Survey conducted by the RBI for the first time has identified deterioration of asset quality as the highest risk.

The year-on-year growth rate of NPAs, at 30.5%, as at end

September 2011 was higher than credit growth at 19.2%. Slippages, that is, fresh accretion to NPAs, too, have outpaced credit growth and grew at 92.8% (year-on-year) as at end September 2011. Despite the recent spurt in NPAs, the impairment levels in Indian banks compare favourably with the banking sectors in both the advanced and peer economies. The major sectors that contributed to the increasing trend in NPAs were the priority sector, retail, real estate and infrastructure. In the infrastructure segment, the power and telecom sectors saw increased impairments and restructuring.

The report also said that higher provisioning requirements, consequent to higher non performing assets and higher interest expenses have put pressure on the banks' profitability. The CRAR continued to slide, though it remained well above the regulatory minimum under both Basel I and Basel II norms. CRAR

fell from 14.21% as at end March 2011 to 13.5% as at end September 2011. India also lags behind its

peer group countries in this respect, the FSR said.

RBI frees interest on co-op banks savings accounts

The RBI deregulated interest rate on savings accounts in all State and Central Co-operative Banks, a move that will fetch better returns for depositors. RBI had freed these rates for the scheduled commercial banks in October 2011. In a notification addressed to all State and Central Co-operative Banks, RBI said they are free to determine their savings bank deposit interest rate subject to two conditions. Under the first condition, the notification said, "Each bank will have to offer a uniform interest rate on savings bank deposits up to ₹1 lakh, irrespective of the amount in the account within this limit".

The other condition states that for savings bank deposits over ₹1

lakh, a bank may provide differential rates of interest, if it so chooses. This would, however, be subject to the condition that banks will not discriminate over the interest paid on such deposits, between one deposit and another of similar amount accepted on the same date, at any of its offices, it said. Till now, cooperative banks were mandated to give 4% interest rates on such deposits. The rate was increased from 3.5%. It also said interest rate on Non-Resident (External) accounts scheme and Ordinary Non-Resident Deposit under savings account, which has been prescribed at 4% per annum at present, will continue to be regulated until further review.

Plantation Problems

Of around 15.9 lakh growers and 23.5 lakh labourers involved in raising plantations in India, nearly 79.4% of growers and 57.3% of labourers are from South India.

Value of plantation crops in 2010-11 is estimated at ₹33,486 crore, which account for nearly 2.5%

of India's agricultural GDP; export realization estimated at ₹7,241 cr. The share of South India in the total value is estimated at 70.2% whereas its share in the export value is 76.6%. About 12.64 lakh growers cultivate plantation crops in South India, providing year round jobs to nearly 13.5 lakh labourers.

Banks can't charge for account closure

Banks have been told not to charge fees from customers who are closing their accounts as RBI moves to make modern banking accessible to millions of ordinary people, including pensioners and the poor. In a recent meeting

between the banking regulator and heads of various banks, the central bank has told the banks not to charge any fee if a customer desires to opt out of a bank either due to a change in employment or a transfer to another city.

Banks to issue CTS 2010 std Cheques from April 2012

RBI directed all banks to issue cheques conforming to Cheque Truncation System (CTS) 2010 standard with uniform features from April 1, 2012. The new standard with set of minimum security features would ensure

uniformity across all cheque forms issued by banks in the country and also help presenting banks while scrutinizing and recognizing cheques of drawee banks in an image based processing scenario, RBI said.

5000 'brown label' ATMs

The banking industry is rapidly moving towards the Brown Label ATM model. Hughes Communications India, a broad bank satellite service provider will set up 5000 brown label ATMs in the country. In a 'brown label' ATM the hardware as well as lease is under the ownership of the service provider, while connectivity and cash handling & management is the responsibility of the sponsor

bank. The model has two primary benefits viz., banks will not have to lock their funds in a fast depreciating asset since the capital investment would be undertaken by the ATM vendor. Also, since the vendor gets a fee for every transaction from the bank whose ATM card is being used, there is an incentive to ensure efficiency in terms of usage.

RRBs asked to open 1600 branches in Financial Year 2012

The Government has directed RRBs to collectively open a whopping 1600 branches this fiscal 60% more than commercial banks

opened in rural areas in FY-11. The move aims at accelerating banking penetration in rural and semi urban centres. As on March 2011,

82 RRBs had 16004 branches constituting 1/3rd of the total commercial bank branches in rural and semi urban centres. The Ministry wants RRBs to increase

the tally by 10% to 17600 by March 2012 and then open another 1760 branches next fiscal to cater to yet-unbanked huge populace.

KISSAN KERALA <http://www.kissankerala.net>

Karshaka Information Systems Services And Networking (KISSAN) is an integrated, multimodal delivery of agricultural information system, which provides several dynamic and useful information and advisory services for the farming community across Kerala.

The key feature of KISSAN is the integrated ICT enabled service delivery model that makes available to the agricultural experts from agriculture related organizations to reach timely and effective assistance to farmers anywhere in the state. The project solves the problem of content gaps by providing the authentic local language enabled agricultural information through various ICT enabled delivery systems like Television network, Internet based services, Telephone and Mobile etc to the farmers. The farmers can choose any medium to seek the relevant information. The following are some of the major services offered by the project: (i). Online Agri advisory services: dynamic portal based online Advisory services, (ii) Kissan Krishideepam: an

agriculture based weekly television program in local language through satellite channel, (iii) Online Agri video Channel: country's first dedicated online video channel in Agriculture, (iv) Tele Advisory Services: telephone based Agri advisory services through a dedicated telephone number for the farmers and (v) The mobile based Agri Advisory services: provides text, voice and video based contents and information broadcast service for the farmers.

Some of the major achievements and milestones of the project are: (i) It has answered more than 18000 questions of farmers through online, (ii) generated 32225 online soil test based fertiliser recommendation advisory for farmers. (iii) completed the production and telecast of 348 weekly episodes of television based agricultural program through Satellite channel, reaches to more than 46 lakhs regular viewers (iv) produced more than 1000 hours of digital quality video materials on best farming practices, success stories of farmers etc. and (v)

launched the country's first dedicated online video channel on Agriculture in collaboration with

Google/YouTube and uploaded more than 150 videos.

Solar-powered sprayer that solves many problems

Take the case of the humble yet important knapsack manual sprayer (hung on the shoulders). Mr. David Raja Beleau, Assistant Director of Horticulture Kadayam, Tamil Nadu, who developed a solar powered battery operated sprayer for farmers. An electric motor operated by a 12 volt 7 Amp rechargeable battery, powers the sprayer which has a capacity of 16 litres. Once charged, it can be operated for nearly eight hours and there is no need for petrol or any other fuel to operate the device. While spraying in the field, the battery can be further charged by switching on the solar power system attached to the sprayer.

The solar power system in the sprayer also facilitate lighting of 'wireless light traps' that control insect pests and reduces the number of insecticide sprays by fifty per cent, cutting the cost of cultivation for the farmer. This reduces pesticide residue in the products thereby improving the quality of the products. The light traps can also control mosquitoes effectively.

The solar power system is priced at Rs. 3,500. Farmers can buy it and fit to the existing devices they use," says Mr. David. Those who are interested can contact Mr. David Assistant Director of Horticulture Kadayam through his mobile number 9486285704.

Changes in ARDBs

- | | |
|---|--|
| <p>i) Shri Solomon Alex, has assumed charge as President of the Kerala State Cooperative Agril. & Rural Dev. Bank Ltd., w.e.f. 7th October 2011.</p> <p>ii) Shri Himansu Sekhar Panda, has assumed charge as Managing Director of the Orissa State Cooperative Agril. & Rural Dev. Bank Ltd., w.e.f. 16th October 2011.</p> | <p>iii) Capt. J.M. Pathania (HPAS), has assumed charge Managing Director of the Himachal Pradesh State Cooperative Agri. & Rural Dev. Bank Ltd., w.e.f. 1st November 2011.</p> <p>iv) Dr. S. K. Batish, has assumed charge as Managing Director of the Punjab State Cooperative Agril. Dev. Bank Ltd., w.e.f. 5th December 2011.</p> |
|---|--|



THE GUJARAT STATE COOP. AGRICULTURE AND RURAL DEVELOPMENT BANK LTD.

489, ASHRAM ROAD, AHMEDABAD 380 009. Email: gscardb@gmail.com

Phone: (079) 26585365-70-71

Fax: 2658-1282/8269

Gram: "KHETI BANK"

The Bank was established in 1951 to extend long term and medium term loans to farmers for agriculture and allied agricultural activities through 176 branches and 17 district offices located at each taluka places and district places respectively in the State of Gujarat. The Bank has significantly contributed towards rural development of Gujarat since inception by advancing Rs. 2790 crores long term loans to 6,75,226 farmers for agriculture and allied agricultural activities up to 31.03.11.

THE BANK FINANCES FOR :

Farm Mechanisation:	Tractor, Thresher set and other implements etc.
Horticulture / Plantation:	Mango, Chickoo Plantation etc.
Animal Husbandry :	Dairy development, Cattle rearing, Cattle sheds, Bullock cart, Sheep & Goat rearing, Poultry, Sericulture, Fisheries etc.
Land Development :	Land levelling, Land reclamation etc.
Non Farm Sector:	Small scale industries, Cottage industries including service sector, Rural housing, SRTOs, Rural godowns, APMCs, Cold storage etc.
Minor Irrigation:	Construction/repairs of irrigation well, Shallow tube well, Deep tube well, Installation of pumpsets, Pipelines, Lift irrigation, Drip irrigation, Check dams, Sprinkler irrigation etc.
Kissan Credit Card:	KCC for Purchase of Fertilizers, pesticides, equipments and maintenance, and payment of electricity bills etc. It is a medium term credit requirement of its borrowers who are regular in their repayment obligation to the Bank.
Rural Housing:	Construction of new houses, repairing and renovation of old houses.

Bank accepts FD for 1 year and above at following rate of interest.

1 year	9.25% p. a	2 year and above	9.25% p. a.	3 Years and above	9.5% p. a.	Double	94 months	
							For Senior Citizens:-	0.5% more interest. Double 89 months

Salient Features :

- Interest payable: Quarterly/half yearly and yearly as per demand
- Monthly Income Scheme is available
- TDS is not deducted on maturity of FDs
- FD outstanding as on 31.3.11 is within the own fund limit.
- All the loans issued by the Bank are theoretically recoverable since they are secured by registered mortgage of land and as such FDs mobilized by the Bank are fully secure.
- Loan against FD to the extent of 75% of FD is available.

DIVIDEND ON SHARE IS REGULARLY PAID TO SHARE HOLDERS.

FOR FURTHER DETAILS, PLEASE CONTACT US OR THE BRANCHES OF OUR BANK IN THE STATE.

Shri Kanubhai M. Patel
Chairman

Shri Govabhai H. Desai
Vice Chairman

Shri V. M. Chaudhari
Managing Director (I/C)

GRAM : KISAN BANK

Phone : MD 2550280

Fax No.: 0755-2557620, 2576876

E-mail: mpvikasbank@rediffmail.com



**MADHYA PRADESH STATE COOPERATIVE
AGRICULTURE & RURAL DEVELOPMENT BANK LTD.**

8, Arera Hills, Old Jail Road, Bhopal - 462 004.

- The MPSCARDB provides long term loans to agriculturists through its affiliated Distt. ARDBs in the State for various agricultural and rural development activities like Minor Irrigation Schemes, Dry Land Farming, Land Development, Wasteland Development, SGSY, Organic Farming, Horticulture Development, Aromatic & Medicinal Plants, Farm Mechanisation, Dairy Development, Fisheries, Poultry, Bio-gas Plants etc.
- The Bank also disburses long term loans under Non-Farm Sector mainly for setting up of Cottage and Village Industries, SRTTO, Establishment of Milk Chilling Plant, various service sector activities in rural areas, for Clinic, Nursing Home and Pathology, Radiology etc.
- To facilitate availability of loans to farmers at nearby place, the affiliated 38 Distt. ARDBs have opened 273 Branches in the State.
- The Bank has, so far disbursed long term loans of Rs. 2839.59 crores to 9.49 lakhs farmers from its inception in 1961.
- The Bank also accepts Term Deposits from Individuals & Institutions for the period of one year & above. All Distt. ARDBs in the State accept FD on behalf of MPSCARDB in various Schemes i.e. Fixed Deposit, Double Deposit, Recurring Deposit etc.

Financial Particulars of the Bank as on 31st March 2011 (Provisionals)

		(₹ in crore)
1.	Paid up Share Capital	44.99
2.	Reserve and other funds	257.09
3.	Debentures in circulation	1001.51
4.	Fixed Deposit	106.99
5.	Loan Disbursed During the year	13.95
6.	Loan Outstanding	1140.49
7.	Investment	37.96
8.	Working Capital	1476.19

Prakash Khare
Managing Director

Kishan Singh Bhatol
Chairman

AGRICULTURAL NEWS

Static productivity, poor post-harvest technology pound garlic

Garlic is grown in the world over 12.25 lakh hectares (lh) with 156.85 lakh tonnes (lt) production which translates into 12.80 tonnes/hectare productivity. India is one of the largest producers of spices in the world and leads the production table in many spices including garlic.

China is the world leader in production (120.88 lt) contributing to 77.07% of world tonnage followed by India at 5.29% (8.3 lt), S.Korea at 2.08% (3.27 lt) and Russia at 3.98% (2.54 lt). India is the second largest producer of garlic in world. The countries with high productivity grow long day type garlic whereas India grows tropical type garlic, which matures in 130 days in short winter.

Madhya Pradesh, Gujarat, Orissa, Rajasthan, Uttar Pradesh and Maharashtra are the main

States where garlic is grown commercially at an average yield of 4.535 tonnes/ha. Gujarat is the leading garlic producing State with production of 2.28 lakh tonnes ('08-'09) accounting 26% of total production and yield of 6.89 tonne/ha. Uttar Pradesh ranks second with production of 1.89 lt followed by Madhya Pradesh (1.67 lt). Punjab is the State with the highest yield at 14.73 tonne/ha.

Garlic in plains is grown from October-March. Making available ample quantity of seed at reasonable rates vis-a-vis creation of facilities for long-term cold storage of garlic seed bulbs is one area of critical importance. Cold storage of garlic with back up of irradiation for suppression of sprouts in strategic production areas would help in reduction of post-harvest losses remarkably.

From barren land to rose fields, a success story

Rameshwar Prahald Bobade's agricultural land was barren. With poor groundwater levels, the borewell on his land turned defunct and this forced him to work as a labourer to eke out a living. But that is past. Rameshwar Bobade has

now planted rose plants on his 10 'kuntas' of land. Even before he could sell the garlic that was produced simultaneously on the same land, Mr. Bobade is gearing up for a good yield of roses.

There are over 1,000 acres of agricultural land in the village and it is mostly rain-fed. With poor access to water, farmers had to be content with a single crop during kharif season. Annual average rainfall here is about 700 mm and during a good monsoon, the excess rainwater used to drain away without serving any purpose.

Pepsico, under its corporate social responsibility activity, in association with the ADI conducted a water resource assessment study. Check-dams were constructed on three rivulets that pass through the village and over 100 water recharge structures in the locality, to

facilitate better water access to the farming community. With check-dams, the groundwater levels have improved over the last two years. Most 30-40 feet deep wells in the vicinity are now filled to the brim.

Awareness programmes were also conducted for farmers to help them adopt better farming practices. "I was unaware of the drip irrigation technique. With sufficient water supply, I planted rose plants on the field and simultaneously planted garlic seeds between them. The garlic yield was good and many roses too have blossomed in my field," beams Mr. Bobade.

Loans under Kisan Credit Cards to be treated as direct farm lendi

Banks offering credit to farmers under the Kisan Credit Card would be treated as direct finance for agriculture under priority sector lending, the Reserve Bank of India clarified in a notification.

Credit under the KCC is primarily for agricultural purposes, the RBI said.

This will offer banks one more avenue to reach the target for direct

lending to agriculture, which is 14.5% of total advances. The total target for agri lending is 18 per cent of total advances.

According to the RBI regulations, working capital and term loans for financing production and investment requirements for agriculture and allied activities are treated as direct finance to agriculture under priority sector.

Corporate farming to increase black gram output

Black gram (*Vigna Mungo L.*), is an important pulse crop containing about 26 per cent protein and is an

important part of Indian diet. The crop is resistant to adverse climatic conditions and is also a good source

of fodder. Black gram crop is mini-fertiliser factory as it restores soil fertility by fixing atmospheric nitrogen and thus producing nitrogen equivalent of around 22 kg per hectare.

Black gram, also known as urad bean, mash and black matpe is short-duration pulse crop. Black gram accounts for about 10% of India's total pulse production. Black gram is cultivated in India in about 3.24 million hectare with average productivity of at 469 kg a hectare. The production of the black gram was 1.82 million tonnes in the year 2010-11, with around

78% production (1.4 million tonnes) from kharif season and 0.42 million tonnes from rabi season. Major producing States in India are Andhra Pradesh, Maharashtra, Madhya Pradesh, Tamil Nadu and Uttar Pradesh. Bihar has the highest productivity with 800 kg a hectare followed by Uttarakhand (786 kg a ha) and West Bengal (714 kg a hectare). Andhra Pradesh is the largest producing state contributing for about 19% of the country's output, followed by Maharashtra and Madhya Pradesh, with 20% and 13% respectively.

Kashmir's organic farms: 32,000 hectares and growing

Farmers in J&K have been doing farming without the use of chemicals on approximately 32,000 hectares of land across the state since long. But now with the growing demand for organic produce around the globe, the state is keen to take up the practice on a much larger scale.

The Sher-e-Kashmir University of Agriculture Sciences and Technology (SKUAST) has recently enlisted more than 200 farmers who already have organic farms. While these farmers want organic certification for their produce, the

varsity will help them increase the organic yield.

Kashmir produces around 87,000 tonnes of walnut kernels annually from its 40 lakh walnut trees across the state. While walnuts are organic as no pesticides are used to grow them, saffron, which is cultivated on more than 3,000 hectares, is only ten per cent organic. SKUAST has already established a big organic bio-fertiliser plant in North Kashmir that will supply bio-fertilisers and vermicompost, mycorrhizae and azolla to interested farmers.

Transplanting redgram under rainfed farming

Redgram or pigeon pea (*cajanus cajan*) is one of the important pulse crops of Tamil Nadu, the productivity of which is very low. The main reason for this is difficulty in maintaining the plant population. Transplanting is a new tool by which healthy and vigorous seedlings can be raised in nursery, screened and transplanted in the main field so that optimum plant population could be maintained in rainfed situation which leads to higher productivity.

With the aim of increasing the area under redgram in dryland condition, research efforts were done at Regional Research Station (TNAU), Aruppukottai in which early maturity during pre monsoon pigeonpea cultivars like APK1, Vamban 2, Vamban 3(RG) of 110 days duration were raised in protrays nurseries during pre-monsoon period and 21 days old seedling were transplanted on receipt of soaking rain by augur hole pit method.

In this method seedlings were transplanted and pits were filled with well composted coirpith formed by the augur hole digger. In

this technology, main field duration of the crop is reduced to 90 days coupled with land management technique for effective moisture conservation and foliar nutrition during peak flowering stage can sustain the yield in rainfed conditions. The early stage weed competition is avoided by transplanting. Hence, plant growth and yield parameters are favourable for higher assured average yield of 870 kg/ha.

The same technology of transplanting redgram under irrigated condition is in progress at Department of Agronomy, Agricultural College and Research Institute, Madurai in which early maturity variety APK1 of 110 days duration were raised in protrays nursery and 21 old seedling were transplanted in the main field.

The results of the study revealed that transplanting 21 days old seedlings at 45 x 20 cm spacing with split application of recommended dose of fertilizer combined with foliar application 1 per cent polyfed and 1% multi 'K' at peak flowering stage recorded 12% increased grain yield.

Collective farming by women in Kerala

Kerala women's collective farming initiative, billed as the

largest livelihood venture of the kind in the country by transforming

women labourers into master cultivators, is all set to emerge as a role model for the entire country under the 12th Five Year Plan.

After group farming, another revolutionary initiative by Kudumbashree, an innovative community based women-oriented initiative, Government of Kerala to fight poverty caught the attention of many. First project sanctioned by the Mahila Kisan Sasathikaran Pariyojana (MKSP) by the Centre and was launched to ensure food security both at household and community levels. Kudumbashree executive director Smt. Sarada Muraleedharan: .“This is basically a livelihood initiative to enhance the quality of life in the society, especially among the weaker sections.

“It could bring about an all-round improvement in the lives of women who were merely workers and now they are successful cultivators,”

The women are into cultivation of paddy, tuber crops, food crops, vegetables, spreading a silent revolution in State by earning extra to help themselves and families.

Some of the groups have literally turned barren tracts of lands into highly fertile fields. At Perambra in Kozhikode district, the members cultivated at a place which was fallow land for 30 years.

One of key achievements of the project is to make the families self-sufficient in the case of food crops. For more details visit www.kudumbashree.org

India needs to produce 494 MT by 2050

Mr. Anil Jain, Managing Director, Jain irrigation systems and Chairman Assocham

Knowledge Millenium Council on Agriculture and Food Security said, India need to produce 494 MT by 2050 (present 247 MT) form a net cultivated area of 145 mha (present 143 mha). The irrigated area then should be 146mha (present 79kha). We need water “created” to bring about the increase in irrigated area.

Also we can see the net cultivated area has come to a plateau. It is simple to conceive that without water saved from the existing irrigated agriculture it will be very hard to achieve the targeted area under irrigation.

Irrigated agriculture is the major contributor to the world food security for the last 4-5 decades. On a global scale, irrigated agriculture accounts for less than

20% of the total cropland area but yields 40% of agriculture output.

Doubling agricultural output by 2020 will require increasing the rate of productivity growth to at least double. This will certainly require substantial investment in making rain fed agriculture more efficient.

In india we have arrived a critical juncture as far as out agriculture production is concerned. With just 48% of agriculture land with irrigation cover the contribution to GDP by agriculture is possibly only by bringing in more rain fed area into irrigated to enable those dry land farmers to go for a second crop after the rain-fed crop. Analytically, it is increasingly become clear that sheer increase in productivity in the existing irrigated lands cannot push GDP much. But encouraging one rain fed crop farmer to cultivate a second crop would hike the agriculture GDP Growth Rate to up to 8%.

He said, the role of all of us including farmer, consumer and policy makes are clear. Treat farmer as "Entrepreneur"; focus on knowledge transfer and competency building of individual farmers; convert agriculture to precision farming model and identify risks; provide causes

mitigation solution through PPP model; creation of supply chain infrastructure through cluster approach; provide capital subsidies and not consumption subsidies ; create decentralized irrigation and power infrastructure for optimum productivity.

He also suggested creation to any Integrated Soil-Crop-Climate-Market plan on national basis; create a national forum between center and state on lines of finance commission; separate agriculture budget in the parliament and create a committed agency for monitor and evaluation and timely course correction; focus on increasing per capita income; renewable energy in agriculture e.g. solar pumps and competency building in high tech agriculture through revamping education and advocacy.

Mr. K.C. Mehra, Chairman of ASSOCHAM Knowledge Millennium Council said, a second Green Revolution must help small and marginal farmers prepare for unprecedented challenges lying head. Production shocks from floods and drought will increase risks faced by farmers. Smallholder farmers, who depend almost entirely on rain-fed farming, will be the most vulnerable of all. They must be able to adopt to the impacts of climate change, from

higher temperatures to changes in crop diseases and pest outbreaks and increased stress on agro-ecosystems that are already degraded. Adaption will require

technological and policy innovations, coupled with new farming systems like the use of advanced technologies.

Food Consumption in India to grow US \$ 240 Billion

Food Consumption in India is expected to grow to US \$ 239.7 Billion by 2013 from 168.6 Billion in 2008. India with a Population of more than 1.1 Billion, is one of the largest consumer markets in the world, according to the study jointly undertaken by KPMG and ASSOCHAM.

The report says aggregate annual disposable income is growing at CAGR of seven percent and is bound to reach INR 90 trillion by 2025.

The number of upper and middle class Indians consuming packed food is expected to rise to 200 million by 2012, up from 30 million in 2008.

The share of organized retail is expected to go up to 12.5 percent

from the current 9 percent of the overall retail market in India by the end of 2011, reaching a size of USD 90 billion.

Exports are expected to grow at 11 percent p.a until 2009 until driving the growth in the sector. Government policy drive include several initiatives to improve the level of food processing, increased FDI levels across the food sector, export promotion policies, mega food parks etc.

FDI inflows into the sector were USD 2.4 billion between 2007 and 2010, compared to USD 1.3 billion in the previous 7 years.

The planned outlay during the 11th plan (2007-12) in food related infrastructure is to the tune of INR 643 billion.

Punganur cow a craze among the rich

The milk of this small breed has high fat content and rich medicinal properties

An increasing number of backyards of ultra-rich families in

the city is in the possession of a common asset these days: a special breed of cow the Punganur dwarf cow which originated in Chittoor district.

Considered among the world's smallest breed of cows, the Punganur breed's milk has a high fat content and rich medicinal properties.

While cow milk normally has a fat content of 3 to 3.5 per cent, the Punganur breed's milk contains 8 per cent, similar to buffalo milk, according to officials of the Animal Husbandry Department.

Divine offering

Perhaps, this is why the Tirumala Tirupati Devasthanams

Farmers switch on to customised mobile info advisory services

With ICT emerging as a buzzword in agri-biz to cash-in on the farmer's perennial need to cut costs and raise yields, a number of mobile-based agri-information providers have thrown their hat into the ring.

The paid agri-advisory services provided by them include weather, disease and water alerts, latest crop price trends, best time for planting and when to sell, and agri-finance and credit information. These are communicated through SMS and mobile-based IVRS in local language.

But are farmers biting the bait? More important, are they willing to pay for such services?

(TTD) has about 200 Punganur cows in its cattle-yard. Ghee prepared from the milk of these cows is being used in 'archana' (offering) for Lord Venkateswara.

Available only in small numbers, the Punganur cow has become a craze, a status symbol, among the wealthy in the Andhra Pradesh capital of late. "They are shelling out at least ₹1 lakh to buy the cow, which is believed to bring good luck," sources in the Forest Department said.

According to Mr Vijay Pratap Singh Aditya, CEO of Ekgaon Technology, which has been hawking a farm advisory service package called 'Onefarm' in Gujarat, Rajasthan and Tamil Nadu for the last three years, the answer is a qualified yes.

"Farmers are willing, if the information is customised to their specific soil, crop and weather conditions, besides alerts on stuff such as how much water would be released by the local dam authorities and when it would to reach their respective fields," he added.

Personalising package

But what is critical is convincing farmers on the utility of such services. “Initially, farmers were unwilling to pay, as the package being offered was very generic with standardised weather and agricultural information sourced through central level bodies. But personalising, localising and specialising the advisory service, coupled with the right pricing

points, increased their willingness to pay,” said Mr Aditya.

With 12,000 farmers presently under its fold, Ekgaon plans to grow this to 15 million in five years, which would generate revenues of about ₹100 crore (last year, the company managed a paltry ₹1.57 crore). Besides attracting new farmers, it is also important to retain existing ones. “Our retention rate is almost 50%”,

Money grows on organic manure

Villages in Tirunelveli, Tamil Nadu, have turned away from chemical fertilisers to reap healthy profits.

Tirunelveli in Tamil Nadu is famous for its soaring temple towers, the bustling train junction, and the swift waters of the Tambaraparani river.

About 45 km south of this bustling town is a clutch of villages in which a quiet transformation is on. The area is largely isolated there are no government bus services, no schools or health centres function here. For any emergency, villagers have to travel nearly 20 km to the neighbouring town of Thisayanvilai. The men work in farms, while the women roll beedis for income.

Until a few years ago, many farmers in this drought-prone region were forced to sell their land or leave them barren. Today, however, more than 40 villages here are successfully growing crops ranging from sunflower to chillies, using their own inputs.

Recalling the tough times, farmer T. Anthony says, “Till a few years ago, due to drought, much of the land in our village lay fallow. We walked several kilometres every day in search of potable water. The situation turned worse during summer. Though a few big farmers carried on with some farming, a severe shortage of fertilisers forced them to give up too.” Nearly everyone in the village owed thousands of rupees in debt to the retail fertiliser shops in town.

“Monsoon failure and yield loss made repayment difficult, and increased the interest rate further. If we do not repay in one year, the amount doubles the following year. For even small crops such as chillies or tomatoes, we were dependent on credit from the shop owner,” farmer M.D. Annadurai recollects.

But all that has changed now. “Today, despite acute water scarcity and power cuts, we are successfully growing sunflower, plantains, paddy, chilli and groundnut. Some farmers have earned nearly Rs 1 lakh from growing small onions as intercrop in chilli fields,” says another farmer, S. Jayalaxmi.

So how did this dramatic improvement come about?

“We felt that the solution lay in finding an alternative to costly fertilisers. Initially, we trained about 1,000 farmers to make their own farm inputs,” says J.H.S. Ponnaya, the 80-year-old head of the NGO Sands (Suvisheshapuram and Neighbouring Development Organisation) in Tirunelveli.

The farmers now use panchagavya (a combination of milk, ghee, curd, fruits) and other manure made from locally available organic farmyard inputs. Not only

is this helping them save money but also boosting their yield.

Farmers in Kazhuvor, Eranthai, Vijayanarayanam and Vijayaachambadu villages in Nanguneri taluk and Perunkannankulam and Vadivammanpatti villages in Radhapuram taluk are among those who have switched from chemical fertilisers to organic manure for over a year now.

Says Ranjitha Packiyam, a farmer in Kazhuvor: “I used my own inputs for my paddy crop in an acre plot and found it helps good growth. Previously I spent more than ₹1,500 for buying these inputs. But now I am saving on the money by making manure on my own.”

T. Suyambu Rajan from Vijayanarayanam village concurs: “I applied this manure to my three-acre plantain crop and found them growing well.”

“We are happy to hear farmers say they are able to save some money with this method. Our country's agriculture is going through a critical phase today. A cure for this can be surely found if both media and society become more sensitive to the farmers' problems and take a proactive stand on the issue,” says Ponnaya.

Mission Saffron' brings smile for Pampore farmers

Pampore would have just been a small nondescript town 11 km away from Srinagar but for the swathe of saffron flowers that bloom just above the fields outside it every autumn. This October the painstaking plucking of these purple flowers have brought a rare happiness among farmers here. There has been a marginal increase in both the production and prices of saffron. "Prices fluctuate because of demand and supply problem but this time it is around ₹1,000 to ₹1,020 per 10 grams," says Bilal Ahmad Rather, a farmer. "It is better than last year."

"Last year we produced around 9,460 kg of saffron but this year our expectation is at around 10,500 to 11,000 kg because we have more area under this crop now," says Dr Farooq Ahmad Lone, director agriculture, Jammu & Kashmir. "We are working towards a target of producing 18,500 kg within four years by increasing per hectare yield from 2.5 kg to 5 kg which is reasonably possible."

"The effort is getting impetus from the government's ₹372-crore 'Mission Saffron' project aimed at reviving the sector completely. With a five-year deadline, the project will reduce the country's dependence

on imports.

India's saffron consumption is estimated at 20 tons a year, half of which is met by Iran, Spain and China, world's major saffron producers. Kashmir, one of the only four producers of saffron in the world, barely consumes a fraction of what it produces. Most of its output goes to the plains with exports of just about 4,000 kg.

Historically, Pampore has remained Kashmir's main saffron grower for over thousand years. Kishtwar of Jammu is the other. Located on the Jammu-Srinagar highway, this town of 70,000 owes its fame either to the spice or to the famous romantic poetess Haba Khatoon who was the queen of Kashmir's last independent king Yusuf Shah Chak. After the Mughals invaded and conquered Kashmir, they banished Chak. The forced separation fetched Kashmir its greatest poetry.

LOSING CULTIVABLE LAND

However, years of continuing conflict in the state had forced the farmers to look for other means of livelihood. Areas adjacent to Pampore witnessed massive land use conversion, which began with

the state government converting acres of saffron land into government offices and joinery mills even before the militancy broke out.

Saffron cultivation came under such threat that in 2006 a law was passed by the state legislature banning land use in the area. There have been other detractors as well.

According to Dr Lone, a drought and the corm rot disease that hit the saffron in the last few years had also reduced the land under saffron from 5,707 hectares in 1997 to 2,713 hectares in 2002. "Last year it was sown on 3700 hectares and this year it is much more," he said. Dr Firdous A Nehvi, a professor of plant breeding and genetics at Sher-e-Kashmir University of Agricultural Science and Technology and the expert behind drafting 'Mission Saffron', says climate change also played a role.

Through most of the spring and summer there has been too much of rain leading to over-irrigation of the corm. Corm rot is caused by overirrigation as increased humidity leads to fungal attacks of the corm, the source of the plant and the flower. 'Mission Saffron' hopes to undo all that and restore Pampore its saffron glory. A vital component of the project is to

install an elaborate sprinkling irrigation system.

The project envisages establishing 128 tube wells one well for 30 hectares, and offering growers 3715 sprinkling sets at half the cost. "More land has been brought under saffron this year due to the incentives offered by the government," says Bilal Rather, who lives in Khatoon's ancestral Chandhara village. His neighbour Khursheed Ahmad also believes the mission has helped.

"I was cultivating on one kanal (one eighth of a hectare). Now, it has gone up by four kanals because the government is giving incentives that is making it more remunerative," he says. Under the scheme every grower will get ₹25,530 for a kanal by way of fertilisers, fungicides besides guidance. In the first year, the government has already dispensed ₹10 crore from the ₹17 crore incentives covering more than 3,500 growers. The onetime incentive will be extended to all the 3,700 hectares in four years. "We strictly followed the advice and it helped us in getting results in the very first year," Khursheed said. The major part of the mission is to set up a saffron park that has a world-class quality control laboratory and an e-auction centre,

which will end the monopoly of brokers. "We have already issued the tenders for the ₹22 crore project and progress on this should be visible early next year," Dr Lone said.

Authorities say this park is the answer to the menace of fakes synthetic saffron made by drying another lobes (of flower), colouring it tan red and adding starch to it. Apart from being used in pharmaceuticals, pan masala , perfumes and confectionery , saffron is also used by Jain and Hindu temples. The Nakoda Parsav Jain temple near Jodhpur, one of the most sacred places of the Jains, consumes over 1.5 kg every month with demand peaking to 3 kg a month during the festive season and fairs.

"This year the prices have remained in between ₹120 to ₹140 a gram. Adulterated saffron remains the real challenge for which we conduct regular tests," says PC Jain, temple's senior manager. The saffron sales are also witnessing an increase in demand with the advent

of the wedding season in the mainland. J&K Handicrafts Corporation Ltd, in Chandigarh, for instance, is selling mongra saffron at ₹200 a gram.

"It has become a status symbol to give a gram of saffron along with the wedding card in north India," says Harpreet Chhabra, CEO of Delhi-based , USMS Saffron, which sells saffron under the 'Baby' brand. In Gujarat and Rajasthan, he added, saffron consumption was very high at 100 to 250 gm for each marriage function especially during winters when vasana (health tonic) is prepared. The company claims to have a 50% market share of the market.

The rising demand has fueled the need to disperse saffron cultivation . The success of 'Mission Saffron' will determine the future geographic dispersal of the costliest spice. "Right now there are 226 villages that grow saffron but once the project clicks the number should cross 300 in a few years," says an optimistic Dr Lone.

India accounts for 44% of world palm oil imports

Oil Palm (*Elaeis guineensis*) belongs to Arecaceae family and is a native of West Africa. Oil is extracted from both the pulp of the fruit and the kernel, which find

wide applications in food and industry.

India is the largest consumer of palm oil in the world, consuming around 17 per cent of total world

consumption. Indonesia is the largest oil palm producer contributing to over 40 per cent of the world production. India is also the largest importer of palm oil amounting to 44 per cent of world imports.

Palm oil is widely used as cooking oil and is extremely tolerant to high temperatures. It is used as industrial frying fat and is also well suited for processing noodles, potato chips, french fries, doughnuts and other snacks.

Used to produce vegetable ghee or vanaspati, palm oil can also be used in shortening for bakery products, as an ingredient in ice-cream, as a non-dairy creamer or coffee whitener and confectionary fat. Palm oil also finds applications in soaps, epoxidized oil used in plastics, oleo chemicals, fatty acids, diesel substitutes, glycerols etc.

Output

With an estimated global production of 49.3 million tonnes of crude palm oil in 2011, oil palm is grown in about 40 countries of the world covering an area of 14.9 million ha. The world average yield of palm oil is reported to be 12.2 tonnes fresh fruit bunch (FFB)/ ha, and Guatemala, Nicaragua and Malaysia top the yield chart with

24.6, 24.3 and 21.1 tonnes/ha respectively.

Indonesia and Malaysia are the leading oil palm producers contributing 40.8 per cent and 40.3 per cent to the world production respectively followed by Nigeria, Thailand and Colombia

India holds a tiny share in area and production of palm oil, although it is the largest consumer of palm oil, with an estimated consumption of approximately eight million tonnes (2010-11).

Palm oil was introduced in India as a small-holders irrigated crop in 1989 to meet the growing demand for vegetable oils. Estimated area under palm oil cultivation in India is about 1,71,000 ha producing approximately 66,000 tonnes of crude palm oil (2010).

Andhra Pradesh is the leading palm oil producing state in India contributing approximately 86 per cent of country's production followed by Kerala (10 per cent) and Karnataka (two per cent). Other oil palm producing states include Orissa, Tamil Nadu, Goa and Gujarat.

Imports

India is the net importer of palm oil which constitutes about 80 per

cent of the country's total edible oil imports. India's import of crude palm oil was estimated at about 8.2 million tonnes in 2010-11 and Malaysia was the leading supplier of oil palm constituting over 20 per cent of the total imports. Other countries supplying refined and crude oil palm to India include Indonesia, Germany, Italy and China.

Crude palm oil

The major crude palm oil markets in the world are bursa Malaysian derivative (BMD) and Indonesia market. In India, crude oil palm is traded in Kandla, Mumbai, Kakinada, Chennai, Vijayawada, Haldia and Indore.

Crude palm oil is also traded at the Indian commodity exchanges such as National Commodity & Derivatives Exchange Ltd (NCDEX), Multi Commodity Exchange of India Ltd (MCX) and National Multi Commodity Exchange Ltd (NMCE). The oil prices in India move largely in line with international palm oil price movements and domestic demand and supply situations.

Schemes for development

The Union Government has undertaken definitive schemes and programmes to increase oil palm production in India considering the

heavy dependence of the country on edible oil imports. Oil palm development programme (OPDP) under Technology Mission on Oilseeds and Pulses and Programme of oil palm area expansion (OPAE) under Rashtriya Krishi Vikas Yojana (RKVY) are some of the ambitious schemes of the Government.

Under the Union Budget 2011-12, ₹300 crore has been proposed to bring 60,000 hectares under oil palm plantation, by integrating the farmers with the markets. The initiative is expected to yield about three lakh tonnes of palm oil annually in five years.

However, the consumption and import of oil palm has been constantly rising while there has been a negligible increase in domestic production. Creation of adverse price atmosphere due to heavy price fluctuations, availability of cheaper imported oil palm and lack of processing facilities has affected the area expansion under oilseeds particularly in the states of Orissa, Tamil Nadu, Goa and Gujarat.

Promoting oil palm cultivation

Organisations such as Oil Palm India Ltd, a joint venture between the Government of Kerala and Government of India have been

promoting oil palm cultivation among the small holders.

Godrej Agrovet is one of the leading private companies involved in oil palm production and has developed over 35,000 ha of oil palm in about eight states.

Ruchi Soya Industries Ltd and Foods Fats & Fertilisers are the other companies engaged in oil palm business.

100% Subsidy for small marginal farmers.

The government on Tuesday announced 100 percent subsidy for small and marginal farmers for taking up micro irrigation and 75 % for other farmers. The schemes is aimed at benefiting small and marginal farmers and increasing the agricultural yield by expanding the area under irrigation. An official statement said while small and marginal farmers would be given 100% subsidy to install drip and sprinkler irrigation system to a maximum of 60,000 acres, others would be given 75% subsidy for irrigation on 15,000 acres.

The state has utilized about 95% of surface of water and 85% of ground water and increase in micro irrigation will help in better management of water, the release stated.

While there is a need to promote oil palm by the way of area expansion and better cultivation practices, it is equally important to focus on innovative growth strategies such as marketing of high grade derivatives and nutraceuticals, bio-mass utilisation and branding of palm oil as healthy cooking medium.

Marginal farmers could avail themselves of 100% subsidy to install micro irrigation system for up to 2.5 acres and small farmers up to 5 acres. They would be given a maximum subsidy of ₹43,816 per acre. Preference would be given to women, members of scheduled castes and schedule tribes, ex service men and the differently-abled. The release said that Chief Minister Jayalalitha had introduced micro irrigation concept even during her first regime of 1991. The farmers would be given subsidy for installing drip and sprinkler systems and they could choose any micro irrigation firm recognized by the Tamil Nadu Horticulture Development Agency (TANHODA)

Tripartite Agreement

A special feature of the scheme was that a tripartite agreement would be signed between the farmer, the firm and the project implementation agency for maintaining the system for at least three years. The government also fixed a time frame for the installation and operationalisation of micro irrigation systems to speed up the process. Orders for establishing the irrigation system would be passed within 10 days of the farmers applying for it. The farmers should get the land ready within the next seven days. Within the next fortnight, the firm

₹12.93 crore allotted for increasing sugarcane productivity

In a bid to promote Sustainable Sugarcane Initiative (SSI) programme, Chief Minister Jayalalithaa has allotted ₹12.93 crore.

According to an official release, the State government is keen on making agriculture a profitable enterprise through which the income of farmers could be enhanced.

Besides, it would lead to augmented production of raw materials required for industries and also increase food production commensurate with the growing

concerned should establish the micro irrigation system. A condition had been laid down that the firm concerned would be responsible for repair and maintenance for three years free of cost. Further, dealers recognized by the State micro irrigation committee should establish a service centre in every district.

Service Card System

A service card system would be introduced for farmers to record their complaints. Farmers would also be trained to operate the system. Besides, instruction manuals in Tamil would be distributed among them.

population of the nation.

As sugarcane is the major raw material for more than 25 industries, the Chief Minister has ordered implementation of the SSI programme. By increasing productivity of sugarcane and reducing the expenses for its cultivation, sugarcane farmers could earn more, the release said.

The programme consists of various features, including shade net nursery, drip irrigation, and training for cultivation.

Sugarcane seedlings for transplantation on 7,500 acres

where the SSI programme would be implemented would be raised through 1,000 shade net nurseries. This would be executed through the cooperative and also private sugar mills. For this, the government would spend Rs. five crore. In a bid to purchase drip irrigation equipment, small and marginal farmers would be extended a subsidy of 100 per cent and other farmers 75%.

For procuring sugarcane boosters, farmers would get a subsidy of ₹10,000 per acre.

Cotton productivity at 510 kg per hectare

Cotton productivity improved 21% over a five-year period to 510 kg per hectare in the 2010-11 crop year, Parliament was informed on Tuesday. Productivity of the prominent cash crop stood at 421 kg per hectare in the 2006-07 crop

Apart from providing training, all the details of the programme and the feedback from those trained would be printed as a book and distributed to farmers.

The release said that through this programme, both the length and the weight of sugarcane would improve. As the seedlings are to be raised in pro-trays, they could be shifted easily. Besides, as planting would be done with sufficient space in between, intercrops could also be raised.

year, minister of state for agriculture Harish Rawat said. "As a result of the implementation of the Mini Mission II, the production of cotton has risen to 334.25 lakh bales," said Rawat.

Producer companies help farmers reap profits

Farmers are joining India Inc in mind, body and spirit. In a quiet revolution underway across the countryside, growers are setting up companies, replete with balance sheets, professional CEOs, board of directors, and income tax returns. As many as 200 companies have been formed by farmers from different parts of the country and another 100 are likely to be set up by March next year. With an

average 1,000 members, more than 2 lakh farmers are now shareholders in what are known as 'producer companies' under the Companies Act. "It was a job offer like any other in the market," said Sanjeev Kumar Gupta, managing director, Devbhumi Natural Products Ltd, based in Uttarakhand, with 2,200 shareholders. The company exports certified organic honey and also supplies silk and

other produce to Fab India, the clothing and home furnishing chain. "Agri-business enterprises are increasingly looking for direct tie-up with farmers to source agricultural produce. Producer companies are an important solution for aggregation and quality management," said Bhaskar Reddy, director, Ficci.

The trigger was an amendment to the Companies Act in 2004 to allow producer companies. The ministry of agriculture, has given seed capital to 400 producer groups and helps negotiate bank finance. But registrations gathered steam recently when farmers realised the value of economies of scale and collective negotiation in a more market-driven agriculture. Most companies are located in Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu. As organised retail is doubling its share every three years or so and is likely to play an increasingly important role in influencing the nature of agricultural markets in the coming decade. Farmer-owned companies demonstrate the benefits of aggregation of

production base and produce at a time when 83% of the land holdings are owned by small and marginal farmers.

Producer companies offer farmers several benefits. They allow growers to formulate a collective production and marketing strategy in line with customer requirement, negotiate better terms with buyers, buy inputs such as seeds and chemicals in bulk, and receive technical guidance at their doorstep. Some companies also undertake premium distribution and help in receiving subsidy from agriculture departments. The law does not allow producer companies to get non-producer shareholders or members. This means private equity funds, other corporates or politicians cannot acquire stake or hold a post.

In most producer-owned companies, 10 farmers, usually active members of the community, are appointed as chief promoters. The company floats shares that are picked up by other farmers. These shares can be transferred but can't be listed.

India faces uphill task in mechanising cotton farming

India may be the second largest cotton grower but it still lags behind in mechanisation of farm operations of the fibre crop.

With the country facing labour shortage and farm wages rising, cotton growers are looking at various ways to cut costs. For

example, the cost of picking cotton from the farm has increased to ₹10-12 a kg now from ₹4 in 2007. Labour availability, too, dropped from 70.3% of the population in 1961 to 48.9% in 2010.

Among nations growing cotton, cotton picking is completely manual in India.

In contrast, a country such as Turkey has mechanised cotton farming within a short span of time. "Almost 60% of its cotton operations was mechanised within a decade," says Mr Ganesh Jayaraman, Global Director, Cotton Product Line, Agriculture and Turf Division of John Deere.

In China's Xinjiang province, 40% of cotton operations has been mechanised, while in the US, mechanisation helps in baling cotton on the farm itself.

Problems

"Cotton picking is one of the critical operations of cultivating the fibre," says Dr V.M. Mayande, Vice-Chancellor of Dr Panjabrao Deshmukh Agricultural University in Akola. "Small-sized farms in India is another issue and, therefore, small machines are required. Also, the opening of the cotton boll has to be synchronised," he says.

However, the most important thing to be done before mechanised picking is to defoliate the plant. "No appropriate defoliant is available in the country," says the farm varsity vice-chancellor.

"The appropriate defoliator can be found," says Mr Jayaraman, adding that controlling the cotton plant's height is one of the major issues in India.

"The problem in India and Pakistan is that not many varieties are available for mechanised picking," says Dr Mayande. "The height of the plant that grows up to six feet is another major constraint," he says.

"Maybe, India can restrict the number of hybrids grown. It can help. The height of the plant can be brought down to about 4 feet," says Mr Jayaraman. Currently, hybrids account for nearly 95% of the total 120 lakh hectares under cotton in the country.

Only one picking

In India, farmers pick cotton twice or thrice from the plant in a season. "Mechanisation means the picking can be done only once. Can our farmers afford to lose the extra pickings?," wonders Dr Mayande.

But Mr Jayaraman points to the US as an example. In 1926, US

harvested 18.5 million bales on 47 million hectares of land. Now, it harvests 18.1 million bales on 10.7 million hectares. "A similar solution can be found here by increasing the yield," he says.

While hand-picking of cotton results in 2-2.5 per cent trash content, it could be higher in mechanisation. "For ginning mills, pre-cleaning will become a big operation," says Dr Mayande.

Some of the options under consideration are power tiller type of pickers with sensors to zero in on cotton's white colour.

Effective management of papaya mealy bug

In India mealybug infests a whole range of crops and numerous weeds. Infested growing points become stunted and swollen which may vary depending upon the susceptibility of each host. Heavy clustering of mealybugs can be seen under leaf surface giving the appearance of a thick mat with waxy secretion.

Resemble patches

Severe infestations resemble patches of cotton all over the plant. They excrete copious amount of honey dew that attracts ants that leads to the development of black sooty mould, which inhibits the plants' ability to manufacture food.

John Deere has come up with two-row pickers in Turkey and Uzbekistan but the company is yet to figure out what type of mechanical picker will suit India.

"We don't believe all farms can be mechanised in India. However, mechanisation will depend upon the Government's will and right agronomic practices that have helped countries such as the US, Turkey and China," says Mr Jayaraman.

Both nymphs and adults suck the sap from leaves causing withering and yellowing of leaves. Fruit may drop prematurely on crop plants. Heavy infestation can cause defoliation and even death of the plant.

When fruits are infested, they may be entirely covered with the white, waxy coating of the mealy bug. Infestation can lead to fruit drop, or fruit may remain on the host in dried and shrivelled condition.

Mealybug infested fruits are unfit for marketing. In cassava serious attack results in retarded growth, affecting the yield badly. It

feeds on soft tissues and injects saliva that causes curling and contortion of leaves.

Biological control

Biological control by release of natural enemies has proved to be very successful. The National bureau of agriculturally important insects (NBAIL) has successfully imported three parasitoids to suppress the mealybugs effectively.

Inoculative release of the exotic parasitoids @ 500 parasitoids of each species per village in the mealybug infested areas is effective.

The larvae of *Spalgus apius*

commonly called as blue butterflies feed on all stage of the mealybug. As the young larvae are similar in appearance to mealybugs, it is difficult to recognize them amidst the host population.

Adult is a small butterfly with upper side of the wings dark brown in colour and ash coloured lower sides with dark striations. Krishi Vigya Kendra at Karur has mass multiplied the parasitoids successfully in the laboratory as well as field conditions.

S. Vijay & J. Diraviam

Krishi Vigyan Kendra Karur
District, Tamil Nadu

Papaya: Introducing high-yield varieties key to healthy profits

Papaya is a tropical fruit widely consumed across the world with growing popularity over the past few years.

It is native to southern Mexico and Central America, but has long been known and cultivated in the home gardens by the people of tropical and subtropical areas. It is one of the few crops which fruit throughout the year, offering quick returns.

Over time, it has grown from the status of a home-garden crop to that of a commercial crop in many tropical countries as it is one of the highest producers of fruits by per-hectare.

Area and output

Over the last two decades global papaya production has more than tripled to 105 lakh tonnes in 2009 from 31 lakh tonnes in 1989. This growth in production has been accompanied by an increase in productivity to 25 tonnes a hectare from 14 tonnes a hectare. India is the leading producer of the fruit and has increased its share in world production to 37% in 2009 from 11 per cent in 1989.

Other major producers are Brazil, contributing 17.1% (17.92 lakh tonnes) of world tonnage,

followed by Indonesia at 7.3% (7.66 lakh tonnes), Nigeria at 7.3% (7.63 lakh tonnes) and Mexico at 6.7% (7.07 lakh tonnes).

A growing population and increasing per-capita incomes have generated robust demand for fruits in India. Besides, there has been a growing trend towards healthier food consumption reflected in the growing interest in the nutritional aspects of tropical fruits.

This change is borne out by a multi-fold increase in production of papaya over the last two decades, primarily on domestic demand.

Between 1991-92 and 2009-10, the area under cultivation for papaya more than doubled to 95.7 thousand hectares from 45.2 thousand hectares in India, whereas production witnessed an almost five-fold increase to 39.14 lakh tonnes from 8.05 lakh tonnes. This was due to an increase in productivity to 41 tonnes a hectare in 2009-10 from 18 tonnes a hectare in 1991-92.

This compares well with the world average of 25 tonnes a hectare but lags the other key producers like Brazil, Indonesia and Mexico.

Andhra Pradesh produces a significant proportion of the crop at

around 38%, with an output of 15 lakh tonnes and a yield of 80 tonnes a hectare.

Gujarat ranks second with a production of 8.32 lakh tonnes, followed by Karnataka (4.19 lakh tonnes), West Bengal (3.21 lakh tonnes), Chhattisgarh (2.12 lakh tonnes), Madhya Pradesh (1.93 lakh tonnes), Assam (1.19 lakh tonnes), Kerala (0.8 lakh tonnes) and Tamil Nadu (0.74 lakh tonnes). Of these, the top four accounted for 79% of the total production in 2009-10.

Global Trade

In 2008, global exports of papaya were 2,45,937 tonnes and worth about ₹940 crore. Mexico is the largest exporter of papaya by volume accounting for 37% of the exports, followed by Brazil and Belize at 12%.

The US accounts for over 50 per cent of papaya imports by volume and over 30 per cent by value. Other key importers are Singapore, Canada, the Netherlands, Germany, the UK, Spain and Portugal.

India exports less than 1 per cent of its produce primarily to West Asia. This accounts for 3-6% by volume and a miniscule 1-2% by value of global papaya exports.

The ripe fruit is eaten raw or processed into juices, jams, canned cubes, candied slices, ice-cream flavouring, etc. The unripe fruit is usually cooked before consuming.

Green papaya fruit and the tree's latex are rich in an enzyme called papain, which has uses in medicine and industry. Papain is used as a protein digestive and in the manufacture of pharmaceutical preparations for digestive disorders.

It finds extensive use in the manufacture of proteolysed preparations of meat, liver and casein. It is also used in tenderising meat, softening leathers, degumming natural silk and wool fabrics, chewing gums, tooth paste and cosmetics.

Post-harvest

Papaya is highly perishable with a shelf-life of four to six days after harvest under tropical conditions and up to three weeks at low-temperature storage. Post-harvest losses can be significant if harvesting, packing and handling techniques are inadequate or inappropriate.

Moreover, sellers require the fruit at specific stages of ripeness for optimum sales, which is around 50-70% of yellow colouring. Therefore, for the fruit to arrive in

markets properly ripened, attention has to be paid when packed, with adequate time buffer built in for transport.

Productivity has been lower in India as compared to most major producing countries due to cultivation of local low-yield varieties. Additionally, papaya is highly susceptible to pests and diseases, which further lower productivity. On the other hand, lack of information on post-harvest handling, storage and transport practices leads to losses.

Way Forward

Demand for papaya in the domestic as well as export markets and its profitability for farmers requires a deeper look at all opportunities for its commercial exploitation.

The Government and the private sector must work towards introduction of higher yielding varieties and focus on infrastructure, transport and human-resource development to minimise pre- and post-harvest losses. Papaya is still primarily consumed raw.

Developing more processing options and markets for processed products can reduce post-harvest losses, besides adding value to the produce.