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MAHARASHTRA AHEAD

Agriculture-Pathway to Prosperity

For The Sake Of Farmers...

- The coverage of the Scheme of providing Agriculture Loan at low interest rate increased. An Outlay of Rs.138 crore proposed for the same.
- Provision of Rs 40.50 crore made for the implementation of Agriculture Development Project in 6 districts of Vidarbha.
- Rs 65.56 crore proposed for the World Bank Assisted Maharashtra Agricultural Competitiveness Project to improve agricultural marketing infrastructure facilities.
- Rs 850 crore allocated for Maharashtra Rural Employment Guarantee Scheme.
- Maharashtra Water Sector Improvement Project of Rs 400 crore for rehabilitation of canal and distribution works as well as dam safety works.
- Rs 2,129.13 crore for Accelerated Irrigation Benefit Programme.
- An additional outlay of Rs 200 crores for dry land agriculture.
- Required funds for the assistance to farmers cultivating cotton, soyabean, and paddy announced in winter session of the State Legislature have been made available.
- Amount of the assistance will be directly credited to the bank accounts of the beneficiary farmers.
- An outlay of Rs.20 crore has been proposed for creating buffer stock of the fertilizers.
- An outlay of Rs.2500 crore towards subsidy in electricity bills of farmers.
- Mahavitran has set a target of 1,50,000 for energisation of agricultural pump sets for the year 2012-13.
- An outlay of Rs.185 crore have made for removal of Backlog in Electrification of agricultural pump sets.
- To expeditiously complete the ongoing irrigation projects being implemented by the Panchayat Raj Institutions having irrigation potential of 0-100 hectares, an outlay of Rs. 80 crore is proposed for the year 2012-13.
- Under the Integrated Watershed Management Programme, schemes are to be completed over a period of five years. For this, the Central Government has approved Rs.4473 crore out of which Rs. 727 crore 31 lakh have been made available to the State. An outlay of Rs.105 crore is proposed for the year 2012-13 towards State share.

Bountiful Harvest

It gives me immense pleasure to present this issue of Maharashtra Ahead devoted to Agriculture sector.

As the month of June begins, attention focuses on the monsoons and schools. The first showers liven up the atmosphere and the whole of nature is overjoyed giving new energy of rejuvenation to farmers. Between June and September the farmer is completely engrossed in agriculture related work. He then begins to dream of the bountiful harvest.

Indian agriculture is dependent on the nature's weather cycle. The farmers also have to face consequences of reverses in this weather cycle in the form of drought conditions. With the help from the State Government and the never-say-die attitude of farmers such calamities are surmounted.

Man found his path in establishing his credentials, progress, prosperity and well-being through agriculture. He first engaged in agriculture and side-by-side made several inventions and gave a definite shape and direction to the human life on this Earth.

Archaeological evidences point to cultivation of food-grains in the Tapi River belt during Stone Age (4000B.C.). Remnants of ancient agro-based civilization dating back to 1500 B.C. were found at Jorwe in Ahmednagar district.

The seeds of practicing agriculture were sown in Maharashtra during ancient times and agro-based civilisation spread rapidly in the river basins of Tapi, Godavari and Wainganga. Chhatrapati Shivaji Maharaj paid close attention to the welfare of the farmers as evidenced from his letters to his officers.

Useful suggestions given by Mahatma Phule to the then British Government and administrative officers and decisions taken by Rajarshi Shahu Maharaj for the betterment of farmers are found relevant during present times also. The architect of Maharashtra, late Yashwantrao Chavan too advocated agro-based industries and gave it the support of cooperative movement.

Even as the roots of farming have penetrated deep in Maharashtra, geographic diversity as well as natural hurdles in water conservation has forced limitations on agricultural production. However, the lion-hearted farmers of Maharashtra in the last 20 to 25 years have turned towards non-traditional forms like horticulture and floriculture. Hence, Maharashtra has leaped forward in cultivation of mango toJujube and from sugarcane to Soyabean which has fetched decent income for farmers.

Considering the record agricultural production in last year, the country is poised to herald second Green Revolution. In this Green revolution one feels confident that Maharashtra will lead the country in horticulture and non-traditional forms of agriculture.

Agriculture can really become the true symbol of prosperity by adopting modern technology. The agriculture in the form of a bountiful harvest will be inspirational for the future generations.

Some farmers in the State are stamping the seal of prosperity in their region by accepting the challenges of the adverse conditions. Through this issue we want to place this very same inspirational and reassuring reality before the farmers of Maharashtra. The stories of their achievements which dispel all dark clouds of gloom will generate affection and love towards agriculture amongst the youth.

We have received invaluable contribution from Principal Secretary, Agriculture, Dr Sudhirkumar Goel and his colleagues in bringing out this issue.

We are confident that this issue will give enthusiasm and enhance the grandeur of agriculture in Maharashtra.

Pramod T. Nalawade
Editor-in-Chief, 'Maharashtra Ahead', DGIPR

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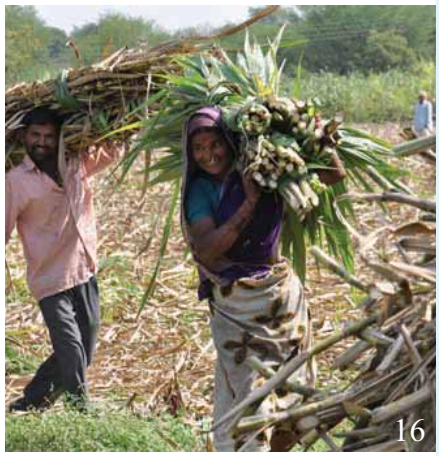
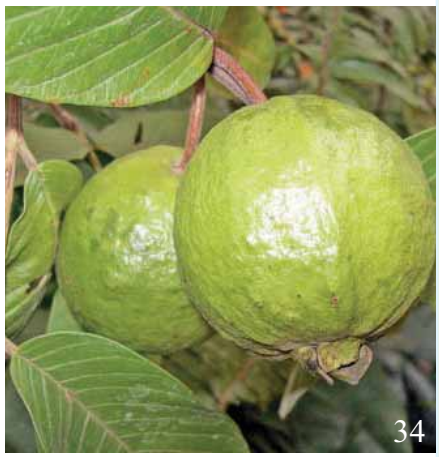




Pls note: The views expressed by the writers are their own

Towards A Skilful Harvest

Agriculture graduates should be encouraged to become agriculture entrepreneurs and agriculturists

We must work for the next Green Revolution and this time the revolution should come from the rainfed areas, and benefit the majority of our people with low land holdings, stresses **Governor K. Sankaranarayanan**

Agriculture continues to support more than 60% of our population. It is therefore our collective responsibility to address the challenges before agriculture and make farming profitable for our farmers once again.

An estimated 40 crore women live in rural India. More than 80 per cent of these rural women are engaged in agriculture, either as labours or workers. Making agriculture profitable will also contribute to the process of economic empowerment of women.

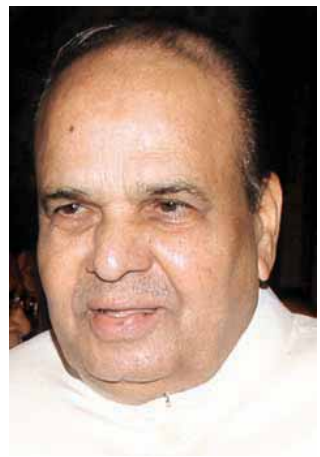
One of the biggest challenges before the nation today is to increase agricultural production and productivity, which has reached a plateau during the last few years.

During the decade 2001 - 2011, India's population increased by 18 crore. In simple terms, we added the population equivalent to the population of Brazil to our population. However, there has not been corresponding increase in the area under cultivation, area under irrigation and availability of water resources.

There have been growing demands on our fast depleting water resources from industries, agriculture and people.

In the years to come, our biggest challenge would be to ensure food security of more than 121 crore people of India.

Global climatic changes are adversely affecting agricultural production and productivity. We will need to enhance our preparedness to tackle the challenges posed by climate change.



More so because our agriculture is largely rainfed. We need more research in dry land farming.

The Hon'ble President of India recently appointed a Committee of Governors to recommend measures to enhance productivity, profitability, and sustainability of agriculture. I am glad that the issue is receiving rightful attention at the highest level.

Within Maharashtra, we have different agro-climatic regions in Vidarbha, Marathwada, Konkan and the rest of Maharashtra. Fortunately, we have agriculture universities in each of these regions. What we need is a regular interface between the universities, Government and farmers in the concerned regions. Farmers can be advised on usage of modern tools of technology, crop patterns, use of fertilizers, etc at such meets. Mechanisation of agriculture is essential to increase productivity.

While we need to invest more in agricultural research and improve its quality, we must also ensure that the research applications reach the farmers, especially the marginal farmers, the

small land holders.

It is necessary that we enhance the skills of those engaged in farming. Farmers should have access to short term skill enhancement programmes in various disciplines relating to agriculture. The Hon'ble Prime Minister's flagship programme of skill development can be effectively used in training the farmers in best practices in farming and allied activities.

I have been stressing from every platform the need to develop vocational and technical skills of our people to enable them earn their livelihood.

Today it is easy to find an engineer, but very difficult to find a carpenter or a plumber to do some small job in your home. Our educational institutions are focussing on designing only diploma and degree courses of long duration in various trades. What we need is a series of short term skill development courses for people of all ages, men and women, educated and less educated, farmers and workers.

There is a need for establishment of a Vocational Training University in Maharashtra which would offer such courses to skill our people, including our farmers.

Recently, I happened to visit a College of Agriculture in Pune. I was surprised to know that few agriculture graduates and post graduates take up farming as a profession. Many agriculture graduates prefer salaried jobs in administration, banking and other areas. Perhaps they do not find farming attractive or financially rewarding. We need to change this picture by encouraging our agriculture graduates to become agriculture entrepreneurs and agriculturists. This will help us bring a turn around in agriculture.

The Green Revolution of the 1960's was generally confined to irrigated areas leaving the rainfed areas neglected. I strongly feel that we now must work for the next Green Revolution and this time the revolution should come from the rainfed areas, and benefit the majority of our people with low land holdings. ■

- As told to Umesh Kashikar

In the Interest of Farmers

Government has taken many measures to give succor to farmers. Some of the measures are…

- Inspite of overall good monsoon in the Kharif season of this year, very low rainfall was recorded during the month of eptember and October. All out efforts have been made to provide employment and drinking water to the people and supply of fodder for animals. The Government has sanctioned extensive assistance of Rs.2000 crore for farmers growing Cotton, oyabean and Paddy, who suffered vagaries of nature and market price fluctuations.
- Due to the persistent efforts made to increase the utilization of created irrigation potential in the tate, there is a substantial increase of 4.21 lakh hectares in actual irrigated area during the irrigation year from uly 2010 to une 2011. nacting a comprehensive law for effective management of available resources and preventing excessive use of groundwater in the tate is in process.
- Over 4 lakh quintals of quality seeds have been distributed to the farmers in Vidarbha facing agrarian distress, at 0% subsidized rates. This has increased the productivity of mainly oyabean, Pigeonpea and Cotton in this region.
- To mitigate hardships of farmers against financial loss on account of adverse weather conditions, the Government has initiated Weather Based Crop Insurance cheme on pilot basis for grape, banana, orange, sweet orange, pomegranate, mango and cashew crops selected part of the tate.
- In Ith Five ear Plan, the Government of India has sanctioned about Rs. 21 crore to the tate since 200 -08 under the Rashtriya Krishi Vikas ojana, and 1 projects have been taken so far.
- From the year 2010-11, the Government of India has declared awarding Krishi Karman Awards to the tates for outstanding performance in production of foodgrains. In the year 2010-11 Maharashtra has recorded highest production of pulses in the country and won the first Krishi Karman Award for the best performing tate in this category.
- During the current Kharif and Rabbi season, uptill now, crop loan of Rs.1 ,960 crore has been disbursed to about 1 lalkh farmers. The Government has initiated steps to increase the participation of other banks, alongwith Co-operative Banks, in crop loan disbursement.
- Under Dr. Punjabrao Deshmukh Interest ubsidy cheme, for getting benefits of interest subsidy to the farmers against prompt repayment of loan, Government has extended the maximum ceiling of the loan amount. As a result, now the crop loan upto Rs. One lakh is available at zero rate of interest and for further loan upto Rs. lakh, the rate of interest is only 1 per cent.
- The climate of our tate is favourable for sericulture, which has a potential to provide regular and guaranteed income to the rural population. The Government has decided to increase area under Mulberry Plantation from existing 2400 hectares to 10,000 hectares in the next years. This will provide opportunities to generate regular employment of about 1, 0,000 persons.
- In order to clear the pending land measurements expeditiously, ero Pendency Programme has been implemented in the year 2011. Under this Programme, more than 6 ,000 pending cases for measurement of land have been disposed off till the 1st December, 2011.
- With the objective of bringing accountability and transparency in land measurement, e-measurement' project has been implemented from anuary 1, 2012. Under this project, the entire land measurement system is being computerized. This makes it possible to give the applicant an acknowledgement of his application alongwith the date on which measurement will be carried out and the name of the officer carrying out the operation. ■

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Seeds of Change

Farmers of Maharashtra are progressive, much ahead in the country in adopting latest farm techniques.

Linking of Employment Guarantee Scheme with fruit crops have not only increased the production of fruit crops but also created huge employment in rural areas says the Chief Minister **Prithviraj Chavan**.

Agriculture is one of the important aspects of the country's economy. With changing times this sector is facing many problems. The growing population and the increasing use of agriculture land for industrial and urban development are the major concerns for food security.

Increasing number of marginal farmers, insufficient resources like water and power essential for growth of agriculture and changing pattern of weather are main concerns. Unseasonal rains due to changing climatic conditions result epidemic of pest affecting crop production. Also the increasing content of carbon dioxide in the air is badly affecting rice and other crops.

The domestic income in cities is four times higher than income in rural areas. When the domestic income in cities grows to 8 percent same time the domestic income of rural areas grows at 4 percent. The gap between them is widening. Majority of population which is still dependent on agriculture sector should be diverted to non-agriculture sector or the situation will deteriorate further. Farmers are increasingly opting for crops of cereals, oilseeds and fruits which give more produce than the traditional crops. The diversity in weather in 9 different agro climatic zones of the State and the standard of soil is useful for fruit crops. The linking of Employment Guarantee Scheme with fruit crops had not only increased the production of fruit crops but also created huge employment in rural areas. We are endeavouring to bring maximum land under fruit crops, ensuring effective post harvesting management and encourage processing and marketing.

SUPPORT OF MODERN TECHNOLOGY

Heavy or scanty rain due to changing climatic condition is nowadays affecting the crop production. As a result the produce is decreasing. We can overcome this problem only when we make available ultramodern technology as a support to the traditional knowledge of the farmers. We have to give not only just the accurate weather forecast to the farmers but also we have to give scientific information to them why and how the climate is changing. Why Mahabaleshwar is getting 5000 mm rainfall and area of Mann and Khatav not getting rains. To do research about speed and direction of rain clouds a world class center "Cloud Physics Laboratory" has

been opened up at Mahabaleshwar. Seismic Research Center has been established at Hazarmachi at Karad by Geology department of Central Government with expenditure of Rs 400 crore. We have to use the technology effectively.

The farmers of Maharashtra are progressive and they are much ahead in the country in adopting latest agriculture techniques. They are producing bumper crops despite calamities but still we have to put emphasis on processing industries to add value in Agriculture sector. We have to prevent waste of produce and go for mechanisation to fill the paucity of farm labour in the season.

DEMAND AND SUPPLY

Due to continuous pumping, level of underground water is fast decreasing in many parts of the State. Fast growing urbanization and economic development has widened the gap between demand and supply of water. The situation will worsen in future due to changing climatic condition.

To preserve our water bodies is the main challenge of our 12th five year plan as stated by the planning commission. We have to work on many fronts to achieve this goal.

ACTUAL SITUATION

We have started implementing "National Water Mission". Avoiding wastage of existing water resources, conservation and seamless water supply to every part of the State are the goals of this mission. We don't have proper water management in place. We have to strengthen the agencies who are implementing water management. Looking at the reality it is need of the hour that we should manage our existing water. There is a limitation to increase in the water supply, so to fill the gap between demand and supply of water, we have to use available water very judiciously and at optimum level.

SEED PRODUCTION

We have to produce pure seeds to improve production of crops. One of the option is our Universities should tie up with private companies to increase the seed production.

USE OF BIOTECHNOLOGY

Opening up of tissue culture banks at tate and University level is need of the hour. Use of BT Cotton demonstrated us the effectiveness of biotechnology. We have to use other BT like biotechnology such as 'Mark Tissue' for other crops also. We are committed to keep Maharashtra on top position in the industrial sector but I would also like to see agriculture should play strongest role in this industrial sector. ■

As told to ir h sh a re

Empowering Farmers

The main concern today is to make farming affordable

The improved agriculture production in the State will empower the farmers and infuse self-confidence in them, says the Deputy Chief Minister **Ajit Pawar**.

The statistics say that 55 population of State dependent on Agriculture sector but in reality almost 00 population is dependent on this prime sector. This is applicable not only to Maharashtra but the entire world. This is the only sector which can cater the basic needs of food and clothing of the population whether they are living in cities or rural areas. The State Government is consistently trying to help farmers and agriculture sector. The Union Minister for Agriculture Sharad Pawar, time and again gives his, support, valuable advice to the State Government for agriculture development.

As the representative of farmers in the State we have ta en many important decisions which could have a far-reaching impact on the interests of farmers in the State. We have ta en important decision to give interest-free crop loan to the farmers up to Rs. one la h and up to Rs. three la h on mere interest of . Power is being supplied to the Agricultural pumps in subsidized rates. We have made provision of Rs 500 corers for this scheme in this year's budget. Mahavitaran has ept target of .5 la h new power connection this year. Rs. 85 cores have been sanctioned for this scheme. State Government is endeavouring to extend its full support to the farmers.

We have to infuse self-confidence among farmers to speed up our growth in agriculture in the tate. The tate Government is trying hard to ensure secured future of the farmers. Comprehensive Group Insurance cheme, Farmer's Personal Accident Insurance cheme, cheme to tour the foreign countries for latest know how in the Agricultural ector, Incentive for Agro-mechanization, ntrepreneur kill development cheme for farmers in Vidarbha, Incentive for Community Farming, strengthening the Government nurseries are some of the schemes implemented by the Government for overall development of agriculture.

Today, the main concern is to make farming affordable. There is need to find the ways to produce more but in minimum cost. There is need to adopt advance and sustainable techniques in the agriculture sector. For this we have to make certain changes in this field. We have to develop seeds which will give more produce in minimal cost and water. We have to encourage farmers for community farming. We have to judge the viability of contract farming and implement it.

Farmers alongwith the farming should go for horticulture, fruit crops, goat farming, poultry farming. These supplementary business proved their importance in improving economic condition of the farmers. When we talk about development indicator of the tate we take into account the development of infrastructure, the foreign currency invested and number of factories built. But we should also review the development in the life of farmers and farm labourers. The

brightly lit roads in the cities are as the pug roads going in the dusk green forest. The noises of machines in the factories in cities are as important as the smokes from the tractors and pumps in the farms.

It is our responsibility to maintain the growth rate of the Industrial output as well as agricultural production equally.

The fast-growing population is generating greater demand for foodgrains. It is a challenge for all of us to meet these demands. To meet these challenges in this globalized and economically open world the role of farmer is very important. Once again, I assure you that as always the State Government is firmly with the farmers. ■

- As told to *a a eshm kh*

Agritech Interventions Harbingers of Prosperity

The Crop Insurance Scheme will take into account the actual loss of the farmers.

The State Government is planning assessment of all agricultural schemes; based on the findings we will close the schemes which are outdated or not beneficial. We can improve some which can increase production and profitability, Minister for Agricultural, **Radhakrishna Vikhe-Pati**l unfolds new ideas about State Agriculture sector to **Aniket Joshi**.

In view of the changing situation in the rural areas a long-standing practice of every year ta ing stoc of the situation by the Chief Minister before Kharif season has been changed since last two years and now Guardian Minister of every district ta es meetings of concerned authorities and himself apprise of the situation. The Chief Minister then convenes a meeting to chal out the planning for the Kharif season.

AGRO CLIMATIC ONES POLICY

We are trying to change the policy of Agriculture planning. In the State every region has different climatic conditions. The Kon an region receives upto 000 mm rains whereas as in east of the western Maharashtra region gets rains upto 00 mm. Marathwada and idarbha are the lowest rain fed regions. Temperaturre also varies in every region. The State is divided in 9 zones on these two parameters.

We have 4 Agricultural Universities in these 9 agro zones. We are appointing committees for each zone under the leadership of concerned ice-chancellor of the universities. The panel, comprised of farmers and Agriculture Department officials, will suggest crop planning eeping in view of local region, climatic condition and requirement of local farmers. This crop planning will be then implemented for the concerned zone. We are thin ing of having separate agriculture policy for every climatic zone, unli e the present common agricultural policy for the entire State.

Our agriculture policy has failed to increase agriculture produce and income due to irrigation facility and second mar et price for agricultural produce. The Chief Minister Prithviraj Chavan has made a drastic change of handing of the Ministry of Agriculture and Ministry of Mar eting to one minister. We are trying our best to give good results to the farmers because of this arrangement.

CROP INSURANCE SCHEME

Crop Insurance is an important scheme for farmers. Farming is purely dependable on nature's whims. When the crops get damaged we have to give aid to farmers. very year we give financial assistance to farmers for damage to crops due to nature's fury. There should be a Crop Insurance Scheme which will ta e account of farmers' future loss and will give them adequate financial help.

To begin with the Chief Minister Prithviraj Chavan initiated a comprehensive crop insurance scheme for fruit crop on pilot basis. We have to ma e a crop insurance scheme which can be beneficial for farmers who are ta ing Kharif crops as well as Rabi crops. The State Government initiated a meeting of private insurance companies for this scheme, however, besides the Agricultural Insurance Company, the

Central Government underta ing, no private insurance company turned up. The private insurance companies who are propagating mar et economy failed in their duty towards farmers

This insurance scheme will ta e into account the actual loss of the farmers while disbursing the insurance money. It is needless to say that the premium will be much higher than usual. The burden of premium will be shared by State and Central Government. Some part will have to be shared by the farmers. When this issue came up for discussion in Legislative Assembly, many Members of Legislative Assembly gave their valuble inputs. We will discuss the new crop insurance scheme with them and then the final proposal will be placed before the cabinet. This Crop Insurance scheme is important as it will give stability to the sector.

We are concerned about the farmers in idarbha committing suicide. There is problem of not getting proper price for agriculture produce and also we have to increase irrigation facility in this area. We have to move from traditional canal irrigation to micro irrigation. We can increase micro and minor irrigation by use of sprin lers and drips. But I would li e to emphasize about agriculture research and reaching this research to farmers.

We started the use of BT cotton seeds without providing adquate irrigation facility. It is expected to get 5 to la h quintal produce in an acre irrigated land under BT Cotton. Why this is happening Because we started sowing BT Cotton on the land which is only rainfed land. But we are getting only .5 la h quintal from an acre. Why our Agriculture Universities and extension programme failed in this It could have been avoided. Now our scientist must ta e challenge and should invent a seed which can give bumper cotton crop in rain fed land also.

We are giving sets of drip and sprin ler irrigation to the farmers at subsidized rates. More and more farmers are using this technology. Previously it was only being used for fruit crops. After that it is also being used for sugarcane. Now farmers are using this irrigation system for traditional crops li e rice, tur and cotton. The Agriculture department is providing these sets. But when it reaches in the hands of farmers the burden of subsidies also get increases. To lessen the burden we have invited global tender for these irrigation sets. There are automatic, semi-automatic and manual types of sets. I am sure due to global competitive tender we will get the best price for these sets and I hope the prices will come down due to this measure.

AGRICULTURE GRO TH RATE

All are concerned about the growth rate in Agriculture sector. The Prime Minister has time and again stated that we are committed to increase the growth

rate in the Agriculture Sector. The Union Minister for Finance while tabling the budget also discussed about it. In Maharashtra, agriculture growth rate is decreasing. It is due to heavy dependency on rain. The rain god is not ind to us every year. Irrigation facilities in the State are still not adequate. The State Government is trying various options to increase irrigation infrastructure. Use of Micro Irrigation is one of the options. Its usage is increasing after the efforts and continuous persuasion by the concerned authorities.

Producing good quality seeds is also an option. The Agricultural Universities have to change their wor ing style to achieve this goal. The very purpose of the scientific activities in the Agricultural Universities is to improve living standards of the farmers. The onus is on them to improve the quality of Agricultural practices in the State. Their research should be based on demands of farmers not because there is funding available from the Indian Council for Agricultural Research.

We are planning assessment of all agricultural schemes being underta en by the Agricultural Department in last 5 years. We are planning to rope in institution li e Tata Institute of Social Sciences, Go hale Institute or ASHADA for assessment of current schemes and based on their findings we will close the schemes which are outdated or not beneficial. We can improve some which can increase production and profitability.

Our target is to increase growth rate in the Agricultural sector and we are trying our best to achieve this goal. There are some progressive farmers in each district. These farmers are experimenting and executing new methods. We can ma e a group of 00 to 50 such progressive farmers in each district who can help us in planning district level agricultural policy plus crop planning. There is Centrally sponsored scheme called Agricultural Technological Management ATMA , Uptill now District Collector used to be chairman of the scheme, now District Agriculture Superintendent will be Chairman of the Scheme.

Adopting Villages

We have asked the Vice-Chancellors of the Agricultural Universities to adopt some villages in their jurisdiction. They will implement all new techniques of the farming in these villages. Each taluka already have Agricultural Science Centers, Agricultural Dispensaries and farming schools.

There are extension centers of Government and private Agricultural Universities in the villages. There is a center of Agricultural Department at the village level which means there is expertise available at the village level. We just have to use it effectively. Universities have to adopt such villages where such centers and school, collages are available. The Universities have to demonstrate farming using new techniques in these villages so that the farmers of not only the same villages but also villages in the surrounding areas can get benefit of new farm techniques.

SMS to Farmers

Many a times cabinet decisions directly influence cutting process of farm produce. We have given group SIM cards to farmers. They get information about market price of their produce via SMS. The famers will get information by SMS how much fertilizers and seeds are available in their village or tehsil or district level.

Now we are taking help of technology in this process. On experimental basis we are installing weather stations in 21 revenue circles across the State. We will use satellite pictures along with the data of these weather stations so that we can get real picture of the crop situation. We are installing this type of weather station in each revenue circle by public and private partnership.

We are also extending help to farmers to buy sacks of fertilizers at their farm level. While providing information through laptop, mobile and new technologies like 3G and 4G ,we are trying to implement Group Fertilizers Purchasing Scheme to help farmers to purchase fertilizers at their farm to avoid to save their transport expenditure .

AGRICULTURAL MAR ETING

The Chief Minister has clubbed together Agricultural and Mar eting departments to ensure more benefit to farming and farmers. The Mar eting Department is long neglected. Controlling the district Agricultural Produce Mar eting Committees is the main tas of this department. We are planning to change Agricultural Produce Mar eting Committees APMC Act. We are ma ing provisions by which farmers will be able to sell their products directly to consumers.

State Warehousing Corporation is part of Mar eting Department. The corporation is planning to build the state-of-the-art chain of warehouses across the State. These cold storage warehouses will have direct lin with Commodity Mar et. Farmers would eep their produce in these warehouses and could be able to lift 80 percent price of their produce from the ban s. When they get good price they can sell their produce in the mar et. They will get maximum benefit from farming.

We are planning to build facilities across the State where gradation of agricultural produce, storage, pac aging and ultra-modern warehouse would be under one roof. More than Rs. 0000 crores investment is li ely to come in this sector in the next 5 years. It will extend more benefits to farming. alue addition in farming is necessary to give financial stability to farming sector. With some efforts from State Government and some efforts from private sector we are ta ing steps to implement it. Investors meet on Agriculture was recently held in Pune. Many investors are interested to invest in this sector.

Corporate farming is also on fast trac . We are appointing ice Chancellors of Agricultural Universities instead of Agriculture Secretaries on the committee which gives recommendation on price of agricultural produce to Central Government. We are restructuring the Agriculture Universities right from employment to curriculum. Farm sector and farmers will be get benefited by these efforts. ■

The Two Monsters of Agriculture

Corporate sector is waiting to get all the other sectors exhausted which could provide higher returns than Integrated value chains

A massive programme of water harvesting structures using machines at a very fast pace by giving more emphasis to such structures compared to major and medium irrigation projects would loosen faster the grip of atleast one powerful monster – the monsoon says **Sudhirkumar Goel**, Principle Secretary for Agriculture .

Indian Agriculture is in the grip of two monsters the monsoon and the market both mighty powerful and highly unpredictable. The grip of the two gets loosened in a tate like Punjab where nearly 100% cultivable area is under irrigation but gets tightened up in a tate like Maharashtra with second lowest area in the country under irrigation at 1 % of the gross cropped area. One of the monsters the monsoon is understandable but why the other the market When the yields are dependent on the vagaries of nature, they are considerably low compared to those for irrigated areas cost of cultivation due to mindless penetration of green revolution formula even in the rainfed areas being more or less the same, with lower yields the cost of cultivation per unit of produce happens to be much higher in rainfed area compared to those for irrigated areas. As a result, a farmer becomes much more vulnerable to the market fluctuations and have to sell the produce even below the cost of cultivation if prices becomes too low in a situation of glut. Hence the second monster the market is also quite powerful in deciding the fate of hapless farmer open to the vagaries of nature and fluctuations in the market.

What is the impact of these two monsters on Indian agriculture With over half of the working population dependent on agriculture, the agricultural GDP is little over one seventh of national GDP. ituation is even worse for a tate like Maharashtra being largely rainfed. In simple terms, it means an agriculturist in India earns from agriculture almost one seventh in per capita income compared to one who is engaged in non- agricultural activities. o wonder, 42% of the farming population wish to quit agriculture as expressed in O survey. What is worse, agriculture sector continues to grow at a rate less than even half of what it grows in industrial as well as service sectors. That easily explains the continuing decline in its share in national or state GDP over last 0-60 years, while number of those engaged in agriculture is not likely to come down considerably in the years to come.

Then, how do we tackle these two monsters et us take them one by one. First, the monsoon. Inspite of more than 60 years of independence, rainfed area is still 60% of the gross cropped area. For Maharashtra, it is 8 % inspite of a budgetary support of Rs. 0,000 crore. since the formation of the tate. While the irrigation potential created is claimed to be much higher than actual area irrigated, another Rs. 0,000 crore. are said to be needed for completion of on going projects so as to reach 0% of the gross cropped area in future. The performance of soil and water conservation is relatively better with only Rs. 000 crore. spent since 1960s, the protective irrigation provided almost equals to an area

which has been actually brought under perennial irrigation by major and medium projects. Our neighboring State realized the efficacy of small structures for protective irrigation over and above large size projects and could create that many farm ponds, earthen alabunds, cement alabunds which our tate did in thirty gears. Results are there to see - an agriculture growth rate twice compared to what our tate has. esson is loud and clear in situ water conservation is a potent weapon to fight with the first monster – the monsoon. A massive programme of water harvesting structures using machines not labour at a very fast pace by giving more emphasis to such structures compared to major and medium irrigation projects would loosen faster the grip of at least one powerful monster the monsoon. It would need a major policy shift from insisting on ridge to valley treatment based on watershed to the creation of large number of water harvesting structures with continuous upkeep by desilting them on year to year basis by farming population itself. Are we ready to make such a major policy shift to grapple with the mighty powerful, highly unpredictable monster- the monsoon

et us turnover to the other monster the market. It is even much more dangerous that the monsoon. When the monsoon is kind, due to glut situation, it is the market which takes away whatever little a farmer expects as a surplus. If the monsoon has not been so kind, the low volume of produce even in a favourable market situation limits the returns to the farmers. In a market

with 24 crores consuming households in the country where 12 crore farmer households included in the consuming households as well are to sell their produce to them, it is not surprising that in between the producers and consumers, there is a long chain of intermediaries. The monster in the market emanates from these intermediaries who are opportunistic and exploitative they have several names hundekari , commission agents, dalal hamal tolai, mathadi, trader, wholesaler, semi- wholesaler, retailers, transporter etc. etc.

ome of us offer a simplistic solution to tame the monster of the market repeal APMC Act so that farmers are not forced to sell their produce only in the designated markets. Prior to 19 0s, there was no APMC Act and situation was even worse. ome tates like Kerala, never had any APMC Act and the state is no better.

ome tates like Bihar repealed the act seven years back and there is no improvement, rather there is complete anarchy. olution lies in creating competing structures offering services to connect producers to the consumers rather having a situation where traders capture the market in a monopolistic situation. In an enabling atmosphere where investments in Integrated Value Chains IVC connecting producers to consumers picks up, such competing structures would emerge. o investor is willing to enter the market unless there are volumes of any commodity available at designated places with certain minimum quality standards. Corporate sector is waiting to get all the other sectors exhausted which could provide higher returns than IVC. either the regulations to force organized retailers, exporters processors to establish IVC nor just the tax incentives or Viability Gap Funding VGF would attract investors into this virgin territory. It could be only a PPP where the state takes care of backward integration while the Corporates connect the integrated structures to the market, which would bring out a viable alternative to the existing exploitative & highly inefficient market structure.

ach one of these measures deserve an article of comparable length. What would suffice for now is that the platform using which all these measures would get converged has to be an IVC under PPP. hould that be our KRA for next years ■

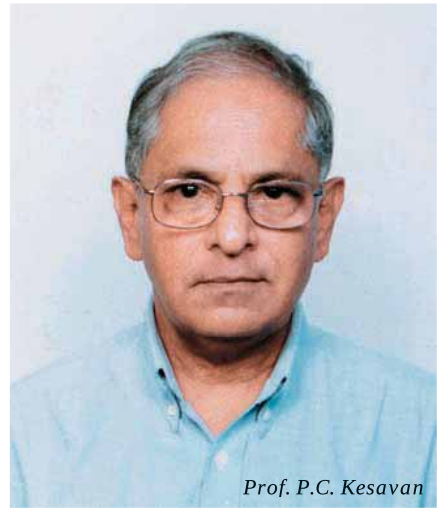
Shaping Our Agriculture Future

Maharashtra should concentrate on cultivation of grains and cereals

There is need to take immediate corrective steps to augment the agricultural produce in the country so as to enable the entire population to get nutritious food, while ensuring that the farmer, who produces the crops gets at least 20 to 25 per cent margin on their investment. Farming should be made profitable, stresses renowned agro scientist **Prof. P.C. Kesavan** in a telephonic interview to **Abhay Mokashi**.

The world population growth needs to be controlled, with India ta ing the lead in chec ing her population if all the people particularly in India and other developing countries have to be fed, without losing their national political sovereignty. There is need to ta e immediate corrective steps to augment the agricultural produce in the country so as to enable the entire population to get nutritious food, while ensuring that the farmer, who produces the crops gets at least 0 to 5 per cent margin on their investment. Farming should be made profitable, stated Prof. Kesavan.

"Since farming is not profitable for the resource-poor small and marginal farmers, their children are moving away from farming. They move to urban areas in search of jobs. Loo at Dharavi, the largest slum in Asia. Who are these people They come from rural areas of the entire country. Their families have an agricultural bac ground, but the farming is no longer sustainable, hence they migrate to Dharavi and other places in the country in order to e e out a living and feed their families," the professor said. These people are trying to give their families at least one or two meals a day, which often are not balanced.



Prof. P.C. Kesavan

He said that despite increasing GDP, the gap between the rich and the poor is widening. The green revolution had put the rate of yield increases ahead of India's population growth rate, but that is no longer the case now. The green revolution started showing signs of fatigue in yield increase since 990s. There is a famine of rural livelihood, hence, the rural women and men do not have the financial power to purchase the food a basic need although there is now enough food in the country. The poor should have access to food today 00 million people in the country go to bed hungry or half-fed, he pointed out. "We have mountains of grain on one

hand and millions of hungry hands on the other," he added.

The agro-scientist came down heavily on the subsidies li e free electricity to the farmers, which he said, are detrimental to the interests of the farmers and the environment. Illustrating his point, he said when electricity is provided free, the farmers tend to eep their pumps, for pumping bore well water, on for longer than necessary leading both the waste of energy and depletion of precious ground water. Furthermore, in the long run, the water brings with it salts, which settle on the upper strata of the soil after evaporation of the water. This leads to salinisation of top soil which is essential for crop growth, he stated.

He was critical of the fact that States li e Maharashtra were giving priority for the cultivation of sugarcane, which consumes plenty of water and often ground water is tapped for its cultivation. Instead, there should be concentration on grains and cereals.

"What Dr Kurien did for mil , should be done for the cultivation of pulses. His method provided employment to over 90 million people in production of mil . Only two per cent of the US population is engaged in agriculture, which includes mil production, while in India, it is 0 per cent, most of whom are resource-poor marginal farmers, with a large section of this population being women. Today, we are importing pulses. Why cannot the Government support small and marginal farmers to cultivate pulses " he as ed.

Prof Kesavan explained the bac ground to the launch of what is popularly nown as the Green Revolution in India. "In their boo Famine 9 5 America s Decision Who Will Survive ' the two brothers William and Paul Paddoc wrote in 9 8 that there would be a famine by 9 5, which would severely affect India and some other countries. They suggested that those countries with smaller populations could be given food aid and saved from starvation deaths. It was against this bac drop that Prof Swaminathan ushered in the green revolution which referred to as exploitative agriculture. He called it exploitative, because it caused degradation of the soil, the water and biodiversity in the process of increasing productivity." The term "green revolution" to describe this exploitative agriculture was coined by William Gadd of USDA.

Punjab, Haryana and Western UP were highly suitable for the green revolution farming as the availability of water was very good and the seeds available were limited only to wheat. With this exploitative agriculture, leading to dramatic yield increases first in wheat and then in rice, India's image as begging bowl changed into bread bas et.

Prof Kesavan said that Prof Swaminathan had cautioned as early as 9 8 that exploitative agriculture has inherent dangers if carried out with an eye on immediate profit or production motive. "Prof Swaminathan had stressed that the farming community in India should be made aware of the long term detrimental consequences of exploitative farming. Intensive cultivation of land without conservation of soil fertility and soil structure would in the long run lead to the springing up of deserts. Irrigation without arrangements for drainage would result in soils getting al aline or saline. Indiscriminate use of pesticides, fungicides and herbicides could cause adverse changes in biological balance as well as lead to an increase in the incidence of cancer and other diseases, through the toxic residues present in the grains or other edible parts. Unscientific tapping of underground water will lead to the rapid exhaustion of this capital resource left to us through ages of natural farming."

Prof Swaminathan had also cautioned that the rapid replacement of numerous locally adapted varieties with one or two high-yielding strains in large contiguous areas would result in the spread of serious diseases capable of wiping out entire crops, as happened prior to the Irish potato famine of 854 and the Bengal rice famine in 94 . Therefore, the initiation of exploitative agriculture without a proper understanding of the various consequences of every change introduced into traditional agriculture, and without first building up a proper scientific and training base to sustain it may only lead us, in the long run, into an era of agricultural disaster rather than one of agricultural prosperity," Prof Kesavan said.

The agro-scientist feels that the Government should multiply and provide good indigenous seeds to the farmers, to prevent their exploitation. He added that Prof Swaminathan has advocated the setting up of special agricultural zones SA to promote agriculture, as against the special economic zones, which are anti-agriculture. "We are building concrete jungles, which would lead to the collapse

of agriculture," he stated.

"We need to have an evergreen eco-friendly farming and the farmers need to now which crop they should go for, depending on the health of the soil", availability of fresh water, mar et trends etc.

The precautionary principle largely remained only in the print unfortunately, the green revolution was practiced eeping in view only the short-term yield gains and immediate profits. The ecological concerns were not given any discernible attention. No concerted action was ever ta en towards arresting the progressive degradation of soil health, exhaustion of fresh water resources, depletion of biodiversity, etc. Consequently, the productivity has started declining. The greed-oriented wheat rice rotation in the green revolution areas of Punjab and Haryana has been largely responsible for the deterioration of soil quality and depletion of groundwater. Pulses which can fix soil nitrogen were not included in the rice wheat rotation. The result is that these regions which have been granaries of India are slowly disintegrating into food insecure regions

The changing food habits of the population and the high cost of food production are not conducive for the food security. Cultivation of a ilogram of rice requires about 000 litres of water on average if this cost is included in the cost of production, the cost of a ilogram of rice would be prohibitive. Americans consume beef one ilogram of beef requires ,000 litres of water.

Prof Kesavan pointed out that we need to ma e a SWOT analysis on our agriculture. We have a long coastal area. The astern coastal area from Bengal to Tamil Nadu is highly vulnerable to the adverse impacts of climatic change. Apart from sea level rise, the progressive salinisation of coastal soil and aquifers are a serious threat.

On the future of agriculture in the country he said that the Nehruvian and Gandhian path of economy was more sustainable as it was inclusive. Indian agriculture is not in good shape. There is a need to protect it from GM seeds and the multinational seed companies controlling the destiny of India's agriculture. Today, in the name of public private partnership, the public sector supported by tax payers is increasingly working for enhancing the profit of the private sector

We have to accept the fact that land is a shrin ing resource, and the problem is to produce more and more from ever diminishing land and fresh water sources for a huge human population of India that continues to add 8-9 million new births annually. The myopic condition does not allow plans for sustainable development. ■

Agriculture: Revolution At The Grassroot

The challenge for the future is to make advanced agricultural technology reach the grassroot level.

Hardworking farmers of the State have prevailed over adverse natural conditions with the help of modern technology, innovative attitude, painstaking labour and unwavering support from the State Government.

Agriculture in India has progressed a long way from an era of frequent droughts and vulnerability to food shortages, to becoming a significant exporter of diversified basket of agricultural commodities. Maharashtra accounts for nearly 9 percent of the total agricultural income of the country. Major area of the State is under cultivation of owar. Maharashtra accounts for 4 per cent of the total area under jowar cultivation. The State is the biggest grower of jowar, tur, cotton, sugarcane, onion, cashew, grapes, banana, oranges and pomegranates. The net sown area of 8 million hectares is distributed among nearly 0 million farm holdings. The State Government has invested substantial amount of funds in agriculture infrastructure like irrigation and fertilizer industry.

Hardworking farmers of the State have prevailed over adverse natural conditions with the help of modern technology, innovative attitude, painstaking labour and unwavering support from the State Government. Today the challenge for the future is to make advanced agricultural technology

reach the grassroot level. To boost ancillary activities such as animal husbandry, dairy development, fish farming, afforestation and agricultural processing, the State Government has formulated and implemented various developmental schemes aided by the Department of Agriculture.

BACKGROUND

The 5 districts of Maharashtra are divided into 353 talukas, which comprise of 4 , villages in all. The State has a total area of 308 lakh hectares, of which 223-lakh hectares is under cultivation. Out of total area under cultivation percent is under fruit cultivation. The State has varied climatic zones and large variations in soil quality. Nearly a third of its area has scanty rainfall. Main crops in the State are jowar, bajra, soyabean, wheat, rice, sugarcane, cotton and groundnut. Besides this Horticulture crops like mango, cashew, banana, grapes, pomegranates and oranges are also grown.

With such a diverse make up of the land in Maharashtra, policies and processes have to be formulated keeping all these distinctions in mind. Blanket schemes that try to include every aspect of agriculture from a macro level are not very useful at the grassroot level. The State has taken initiatives of devising schemes targeting specific problem areas that have been identified in each region, rather than providing an all-encompassing theoretical policy. The Agriculture Department of the Government of Maharashtra has implemented various schemes ranging from crop management to hybrid seeds, from land management to land fertilizers, from organic remedies against pests to drip and sprinkler irrigation.

AGRICULTURE DEPARTMENT

The need to grow more food was felt at the turn of the 9th Century because of the increasing pressure of population. Based on the recommendations of Famine Commission 88 , the Agriculture Department was established in 88 . The department was initially started with the aim of helping the rural community to achieve higher productivity in agriculture. The Agriculture and Land Records Departments were functioning together till 90 . After getting encouraging results in an effort made to stop soil erosion between 9 5- , the then Agriculture Director Mr Kitting started soil conservation work from 1922.

Agriculture Department took up various land development activities with the enactment in 94 and subsequent enforcement of Land Development Act in 1943. For the first time in 1943, the then Government prepared a comprehensive Agriculture Policy considering the problems in agriculture and allied sectors. According to this policy, emphasis was given on use of water as irrigation for agricultural crops.

GREEN REVOLUTION

The post independence period from 950 to 9 5 is regarded as the pre Green Revolution period. During this period several schemes were launched to boost growth in the agriculture sector. Production of quality seeds through Taluka Seed Farms was started in 1957. During this period emphasis was given to increase irrigated area along with cultivated area. A special campaign was launched in 9 - to encourage use of chemical fertilizers.

Development of hybrid varieties of different crops since 9 5- laid down the foundation for the Green Revolution. Five year plans during this period specially emphasized on development of agriculture. Nala bunding work was taken up alongwith land development

work by the department since 1974 which led to increase in well and ground water level. Introduction of intensive agriculture, comprising of large scale use of improved seed, fertilizers, pesticides and available water helped increase agriculture production. Later on, considering the need for providing guidance to the farmers for proper and judicious use of these inputs, Training and isit Scheme was launched in 98 - 8 . aluable contribution of this scheme through effective implementation of programmes like Crop Demonstrations, Field isits, Corner meetings, Workshops, Fairs, Exhibitions etc. aimed at transfer of technology from Agriculture Universities to the fields of the farmers was evident from the increased agricultural production.

Though we have become self sufficient in foodgrain production despite tremendous increase in population, self sufficiency in agriculture is not the only aim of the State but assurance of more and more net income to the farmers through the efficient and sustainable use of available resources. To achieve this, commercial agriculture needs to be practiced. Different schemes are being implemented to increase agricultural production, export promotion and to encourage the agro processing industry with a view to take advantage of liberalized economy and Global trade. Hence the agriculture department has taken firm steps towards economic progress along with self sufficiency through agriculture and to achieve important position in the global agriculture produce market. The innovative horticulture plantation scheme under employment guarantee scheme implemented by the State is a part of this policy.

The farmer is the focal point of the Agriculture department which is organized in such a fashion that a single mechanism is working to facilitate the farmer for adoption of advanced technology and sustainable use of available resources. Every agriculture assistant working at village level has a jurisdiction over three to four villages with number of farmers limited to 800 to 900 which facilitates more interaction

for easier transfer of technology.

Agriculture Assistant at village level undertakes soil conservation work, horticulture plantation and various extension schemes. He is supervised by Circle Agriculture Officer at circle level. Administrative control, liaison with other departments, monitoring and training programmes etc. are facilitated by Taluka Agriculture Officer at taluka level, Sub Divisional Agriculture Officer at sub division level, District Superintending Agriculture Officer at district level and Divisional oint Director at division level. In addition, Agriculture Officer at Panchayat Samiti level, working under Agriculture Development Officer, Zilla Parishad at district level also implements various agro-inputs related schemes.

Today, the Department is omnipresent from Mantralaya to the field. Policy made in Mantralaya is executed through the office of the Agriculture Commissioner, which is based at Pune. Besides the Commissioner, there are independent Directorates of Distribution, Horticulture, Expansion and Training, Soil Conservation, Agro-Processing and Marketable Farming. There is a administrative layer of Divisional Joint Directors at Thane, Nashik, Pune, Kolhapur, Aurangabad, Latur, Amravati and Nagpur. At the district, level there is a District Superintendent, except for the districts of Mumbai. Every three or four talukas are grouped into a sub-division and each taluka has its Agriculture Officer, in addition to officers of various Agricultural Boards. These officers supervise the work of Agricultural Inspectors and Agricultural Assistants.

EDUCATING FARMERS

To educate farmers about the progress in the field of agriculture internationally and to help them to implement some of these schemes and techniques, the State Government has established several educational institutes that focus on agricultural education. Seed centres that supply hybrid seeds etc are also set up. In 95 , the Department started Seed Multiplication Centres at the taluka level in order to provide quality seeds to the farmer. The Department opened an agricultural institute at Rahuri in 9 8. The Dr. Punjabrao Deshmukh Agricultural University was established at Akola in 9 . The Agriculture Department opened a Seed Standardisation division in 9 0- . The Parbhani Marathwada Agricultural University and Dapoli s Konkan Agricultural University were established in 9 . Today, distance education courses in agriculture can be accessed from the ashwantrao Chavan

Maharashtra Open University. Such Open University courses, available in Marathi and in an easy-to-learn method, are proving to be of good value to farmers.

SINGLE WINDOW SYSTEM

From 98 onwards, the Agriculture Department began aggressively transferring the technical expertise developed in its agricultural universities to the people at the grassroot level. It appointed special outreach officials known as 'Krishi-Gram Vistarak' to organise demonstrations of technology or training workshops for farmers. In 998, the Department put in place a Single Window System. This is a one-stop centre for all sorts of information about farming technology, soil conservation, horticulture and other facets of the occupation. The Department opened special divisions called Agricultural Expansion and Training, Soil and Watershed Management, Agro-Processing and Exportable Agriculture respectively.

HORTICULTURE DEPARTMENT

In 98 , the independent Horticulture Department was formed in order to catalyse the growth of the fruit and flower farming sectors of agriculture. In 1990, the State linked the fruit plantation development programme with the Employment Guarantee Scheme. Because of this administrative step Maharashtra is the leading State in horticulture production. As very less water is required, horticulture has proved to be a blessing in disguise to the arid regions of the State. The State added to its horticulture development initiative with promotion of optimal use of water through micro-irrigation.

AGRO-PROCESSING INDUSTRIES

The State Government views Agro-processing industries as having potential for large-scale employment generation. Cashew processing units, common facility centers, farm produce handling centers and onion storage units have come up at various places in recent years. Some units distil the essences of medicinal herbs and aromatic herbs. The State's agricultural exhibitions are contributing significantly to the spread of agro-processing technology. These exhibitions are annual fixtures in several cities. In recent years, the State s efforts to boost the agro-processing industries have borne fruit. The wine industry has taken root in the districts of Nashik and Sangli. Today, Maharashtra is the leading State in wine production. The State will soon announce its Agricultural Policy. This should provide a fillip to the growth of the agro-processing industry as well as employment generation at the village level.

SOIL TESTING AND LAND HEALTH REFORM PROGRAMME

Agriculture department has devised different programmes for different needs of the farmers. One of them is Soil testing and land health reform programme. As soil is the central resource of any agricultural activity, the Department has opened a Soil Testing Laboratories in each district of the State. These labs test for the nutritient value and presence of various minerals in soil samples furnished by the individual farmer. The testing allows the lab to suggest the right mix of fertilisers to improve the fertility of the farmland. Moreover, the labs suggest remedies for various other soil-related issues. These labs have facilities for water testing as well. Presently this facility is available in 9 districts with the capacity of testing 2.20 lakh samples in a year. Apart from these centers non-Government and private institutes are providing the soil testing facility with same testing capacity. There is a nominal charge for this testing.

The soil-testing laboratories are currently implementing a programme to issue Health Reports for soil across the State. The idea is to formulate a soil fertility index for each village. This will give farmers a ready reckoner about the soil characteristics of their lands.

WATER CONSERVATION

Water conservation is an important factor of agricultural development in the State. The independent Water Conservation Department implements various schemes. The first soil conservation which is a part of water conservation) scheme dates back to 94 . Soil conservation was a single-focus theme until 98 . A new, integrated approach known as 'Watershed Development was implemented between 98 to 99 . The State is involving local residents in watershed development with the help of NGOs. arious Government departments such as Agriculture Department, Social Forestry, Minor Dams, Groundwater Survey and Development and the Forest Departments are involved in watershed development.

MICRO IRRIGATION

The scheme on micro irrigation which was launched since year 98 - 8 has been up graded and is being implemented as the National Mission on Micro Irrigation NMMI during the th plan period. Maharashtra is the leading State with 6.95 lakh ha. area under drip and 2.99 lakh ha area under sprinkler irrigation. The subsidy assistance for small and marginal farmers is 0 percent and for other farmers it is 50 percent of the cost of micro irrigation systems to horticulture and non horticulture crops. This assistance is given to farmers which is limited to five hectares only.

Now this scheme is being operated Online. This scheme is called as e-Thibak. Farmer can give Online application and get wide choices to select Manufacturer and Dealer. As everything is Online the transparency in costing is maintained. Tracking of the application has become easy.

Online processing helps in speedy disposals at every stage. This saves the cost and time with the transparency in process. It helps in efficient monitoring Quick Reports for analysis and decision making. This will help in Real-time status and creating data repository.

Farm Pond programme is a flagship project of Maharashtra State. This is like recharging the ground water with rain water harvesting techniques. This helps in well recharging as well as provides protective irrigation. With the investment of about Rs.400 crores around 9, 8 farm ponds have been developed across the State. This has helped in increasing area under protective irrigation of 8 , 45 hectares.

The objectives of the State Government's upcoming Agricultural Policy

- Optimal utilisation of natural resources to boost agricultural productivity
- Self-sufficiency of farmers
- Optimal utilisation of limited water resources
- Production of processed material and timely distribution
- Encouragement of organic farming
- Employment generation through development of Horticulture plantations, forest farming and Pastures on fallow lands
- Improvements in research at agricultural universities and dis-semination of research among farmers
- Creation of basic infrastructure for export of agricultural produce
- Food security and improvement in general nutrition levels

E-GOVERNANCE

With the changing times the agriculture department has also changed its style of functioning. The department has changed its style of governance to E-governance. It is an initiative that has enabled department to function in a more efficient and transparent manner. E-governance is all about leveraging multimedia and network technologies to help agriculture department function better.

Contrary to popular perception, e-governance in agriculture department did not stop at a website or an e-mail. It is a comprehensive service that provides farmers with access to information in a digital world. CROPSAP Crop Pest Surveillance and Advisory Project is an innovative project. After doing the scientific surveillance of pest in the farm advice by experts is given to the farmer. This project received the National award for the e governance.

Information about pest, weather forecast and other information are given to the farmer through the Mahaagri SMS service, for this service about 3.25 lakh farmers are enrolled. In year 2011-2012 about 358 lakh SMS have been sent. To have communication link between farmers and officers of the agriculture department, BSNL has provided a CUG network named MahaKrushishi Sanchar CUG Sewa. Till now 7 lakh subscribers are enrolled under this scheme.

For more convenience of the farmers a Toll Free number 800 4000 has been launched. Apart from that e-Thibak Drip , e-Parawana License , Cyber Extension are the other e-Governance projects which are making agriculture department truly hi-tech and people oriented. ■

- Archana Shambharkar

Contract Farming: A Way Forward

'Contract Farming' is an effective way to coordinate and promote production and marketing in agriculture

Contract Farming can be defined as an agreement between farmers and processing or marketing firms for the production and supply of agricultural produce under forward agreements at predetermined prices, states **Dilip Chaware**

Contract Farming has been in existence for many years as a means of organizing commercial agricultural production of both, large scale and small scale farmers. Mar et liberalization, globalization and expanding agri business pose a challenge to the small farmers to fully participating in the mar et economy.

specially, in the era of globalization, the concept of Contract Farming' is an effective way to coordinate and promote production and marketing in agriculture. Contract Farming' thus can be loosely defined as an agreement between farmers and processing or marketing firms for the production and supply of agricultural produce under forward agreements, frequently at predetermined prices.

ome experts argue that Contract Farming is essentially an agreement between unequal parties, companies, government bodies or individual entrepreneurs on the one hand and economically weaker farmers on the other. The main feature of Contract Farming is that the buyer contractor supplies all the material inputs and technical advice required for cultivation to the cultivator. This approach is widely used, not only for cash crops, but also increasingly for fruits and vegetables, poultry, pigs, dairy products, prawns and fish. Contract Farming is characterized by its enormous diversity with regard to the products contracted and also in relation to many different ways in which it can be carried out. The advantages, disadvantages and problems arising from contract farming will vary according to the physical, social and market environments.

More specifically, the distribution of risks will depend on such factors as the nature of the markets for both the raw material and the processed product, the availability of alternative earning opportunities for farmers and the extent to which relevant technical information is provided to the contracted farmers. These factors are likely to change over time, as will the distribution of risks.

HAT IS CONTRACT FARMING

Contract farming means agricultural production carried out according to an agreement between a buyer and farmers, which establishes conditions for the production and marketing of a farm product or products. Typically, the farmer agrees to provide pre-decided quantities of a specific agricultural product. These should meet the quality standards of the purchaser and be supplied at the time determined by the purchaser. In turn, the buyer commits to purchase the produce and, in some cases, to support production through assistance such as the supply of farm inputs, land preparation and the provision of technical advice.

HO BENEFITS FROM CONTRACT FARMING?

Both partners engaged in contract farming can benefit. Farmers have a guaranteed market outlet, it reduces their uncertainty regarding prices and they often are supplied with loans in kind, through the provision of farming inputs such as seeds and fertilizers.

Purchasing firms benefit from having a guaranteed supply of agricultural products that meet their specifications regarding quality, quantity and timing of delivery.

CAN CONTRACT FARMING BE RECOMMENDED FOR ALL TYPES OF AGRICULTURE PRODUCTS

There need to be no restriction to the types of agriculture products that can cover a contract. There are numerous successful contract farming arrangements for most types of crops and livestock. xamples also exist for forestry, aquaculture and fiber products, as well as for tobacco, aromatic flowers or dairy products. While the applicability is fairly general, there is evidence that the most successful schemes are associated with agricultural products that are high-valued or produced for processing and or exports. Products for which there is high local demand may be more susceptible to side selling and thus are, by and large, less suitable for contract farming.

HAT ARE THE TYPICAL CLAUSES OF A CONTRACT

The most common clauses concern

- General reciprocal obligations; the overall responsibilities of the contracting partners; specifications of the agricultural products to be produced sold under the contractual obligation. Production technology to be used, involving items such as seed variety, soil preparation and cultivation methods, plant or animal disease controls, transportation procedures, storage and quality standards.
- Conditions for purchase, payment obligations, timing and modality of delivery.
- The system to determine the final prices to be paid to farmers, frequently considering effects of variations in product quality and any applicable loan repayments associated with the provision of inputs or services.
- Choice of a jurisdiction to govern the contract, from the legal standpoint. If the two parties are located in states or municipalities that are not in the same legal jurisdiction, then only one should be chosen to be applied.
- Reference to a dispute settlement mechanism or to an arbitrator to resolve disagreements, which is always preferable to legal action.

NEED FOR SPECIFIC LEGISLATION

While there are specific legislations about contract farming in some countries, in many others, general contract laws have sufficed. There might be a need to reconcile general contract laws with other types of legislation affecting agricultural production, agricultural marketing and or land use.

Growing demand for processed food products in India is providing a fillip to India's food processing sector. The Indian food processing sector is undergoing a thorough transformation and there is increasing belief that contract farming will play an important role in this metamorphosis. An important factor in Indian agriculture is that while activities like wholesaling, processing, logistics and retailing are rapidly expanding and consolidating, the basic activities of production of agriculture goods have been shrinking. It is imperative to link the two to usher in viable business opportunities for both sides, the farmers and the business ventures.

Merely providing assured markets, reducing risk elements and talking of remunerative prices will not change the scenario to any large extent. To ensure the efficacy of the mechanism, providing facilities like credit, crop insurance, grading and inspection, technology extension and market information also much reach the farmers' doorstep. It will be only through these inputs which can help enhance the level at which small holders will be able to operate, improve their productive potential and add to their income, thereby mitigating the risks in becoming market players.

The growth and diversification of consumer demand and the expansion of organized agricultural processing and marketing ventures in India in recent times shows that the potential to boost the market opportunities, productivity



and income of farmers very much exists in our economy. However, to exploit these potentials will require creation of new institutions and innovations to develop supply chains and facilitate linkages between farmers, wholesalers, processors and retailers.

There are various models of contract farming, including those led by cooperatives, by farmer groups, and by various types of private sector involvement. What is now required is resource intermediation that develops backward linkages to agri producers. In this situation, contract farming models are considered as useful patterns for streamlining procurement and logistical services that will shape the future of this sector.

Unfortunately, the trend in India is towards fragmentation of land holdings rather than their consolidation. The average size of landholdings declined from 2.2 hectares in 19 0- 1 to 1.06 hectares in 200 . early 88 percent of the farmers have less than 2 hectares of land, and account for about 44 percent of the operated area, according to a study by the ational ample urvey Organisation in 2006. Although these farms are small in terms of holdings, they are more efficient than larger farms in terms of land productivity, some experts point out. They claim that this is due to a high share of family labour on small farms. The share of marginal and small farmers of less than 2 hectares in the total value of agricultural output is about 1 percent, according to another study.

Contract farming models which have built-in safeguards and can share risk and overcome resource constraints can serve as a gateway for small holders to high value agriculture.

In recent years, Indian agriculture has begun to diversify and future sources of agricultural income are likely to come increasingly from the high value segment, driven by rising demand for choice horticultural, livestock, and fishery products. While the potential benefits of high value agriculture, including enhanced income and newer employment opportunities, are significant, it will be necessary to overcome key challenges associated with meeting farmer resource needs and mitigating the production and marketing risks. The challenge is to identify innovative solutions, possibly based on contract farming models, that are efficient and competitive and also inclusive' in terms of working with small holders on sustainable basis.

There is a huge latent demand for agricultural services and creation of rural service platforms that has given rise to another option for forging effective firm-farm linkages. It needs to be noted that research and development activities will lose their effectiveness unless they reach farmers' fields and much depends on the extension service network percolating to the average farmer.

Rural business or "agri-hubs" led by public-private partnerships between panchayats and the private sector is another way of providing input services for farmers and provide markets for their produce. Already, India has a strong Panchayat Raj System. Its proper exploitation can lead to an agri-economic revolution at minimum costs while hardly any new infrastructure will be required to attain the objective.

ome retailers and processors have contractual buyback arrangements with the farmers that specify quantity, quality, and a pre-agreed price. ome of these firms provide back-end support to farmers, including extension services, supply of seed and other inputs and credit facilities. The expenses are adjusted in final payments made to farmers. uch backward linkages are primarily driven by the size and quality requirements of the market and the need to ensure smooth and regular supply of a product that meet certain quality standards. If they are undertaken through an institutionalized structure like PRS, farm produce will reach the urban multitude in a systematic manner and ensure fair remuneration to the cultivator.

Another basic imperative of farm-firm linkage is open-source intermediation, involving provision of information about market prices, crops and good cultivation practices to farmers without any buy back guarantee. The idea is not to create a backend supply line of a particular company but to bridge the knowledge and information gap that exists at the farm level and also supply inputs to farmers without any lock in' agreement. However, in due course, the model of open-source intermediation can be adapted for specific supply lines, as and when an opportunity arises. However, through PRS, transfer of knowledge and technology can be undertaken without involving any economic factors.

The scale of these operations will remain small in the beginning in view of the needs of farmers and rural areas but this model may offer an opportunity to rapidly scale up the activities of private firms and resulting farm-firm linkages. These agri-hubs potentially can provide one stop shopping' for farmers by providing inputs such as seed,



technology, and credit and services such as extension and insurance, as well as daily household products.

Theoretically, farmers stand to gain from contractual agreements that provide lower transaction costs, assured markets, and better allocation of risks. On the other hand, contracting firms have the advantage of more assured supplies, and reasonable control over quality and other specifications. However, in practice, there are practical problems that can be overcome through a carefully structured system.

Contracting agreements are frequently in verbal form or informal in nature and even written contracts often do not provide the legal protection in India to the producer that may be observed in advanced countries. In India, there have been instances of farmers refusing to sell to contracting firms when market prices exceed the contract price and of firms refusing to purchase contracted quantities or pay contracted prices due to market conditions. either the contracting firm nor the farmers are keen to contest these issues in court. Most often, it is mutual understanding and faith that drives contractual relationships and it takes a long time to win mutual trust and confidence. But with PRS in place, such complications can be sorted out.

Contract farming arrangements are often criticized for being biased in favour of firms or large farmers, while exploiting the poor bargaining power of small farmers. In such situations, a viable approach seems to be to form clusters of small farmers through PRS that can create a scale effect and also enhance the bargaining position of the farmers. uccess in developing contracting models or other forms of farm-firm linkages that are effective for small holders will be a key challenge to small holder participation in the transformation of Indian agriculture.

The Government of India's National Agricultural Policy envisages that private participation will be promoted through contract farming and land leasing arrangements to allow accelerated technology transfer, capital inflow and assured market for crop production, especially of oil seeds, cotton and horticultural crops. ational Agricultural Policy of Government of India has also recognized contract farming as an important aspect of agri-business and its significance for small farmers. The Inter -Ministerial Task Force on Agricultural Marketing reforms observed that contract farming was becoming increasingly important.

Recognising the potential and benefits of contract farming arrangements in the agriculture sector, NABARD has taken the important initiative of supporting such arrangements by the banking sector and has developed a special refinance package for contract farming arrangements aimed at promoting increased production of commercial crops and creation of marketing avenues for the farmers.

In order to augment the reach of bank credit and to increase the production of commercial crops as also for creation of marketing avenues for the farmers, all contract farming arrangements are made eligible for availing special refinance package from NABARD.

MEDC STUDY SUPPORTED BY NABARD

NABARD extended financial support for conducting a comprehensive study on contract farming by Maharashtra Economic Development Council (MEDC) and suitable follow-up action on the findings of the study is being initiated. Contract farming arrangements for different types of crops, viz. sugarcane, cotton, vegetables, coffee, tea and foodgrains are already in vogue.

A study on contract farming arrangements in various tates was taken up in 2004 covering eight tates. The salient features are as follows

Contract farming as an arrangement has been operational across the tates. The arrangement encompasses a wide range of crops - Basmati rice, aromatic oils, seed production and potato. The arrangement is beneficial to both, the farmer and the company. The major benefits accruing to the farmer are - quality inputs, technical guidance, assured market and price. There is enhanced farm productivity and income. In many of the contract farming arrangements, the company enjoys twin advantages, viz. assured availability of quality produce at pre-decided rates and assured market for company's products reaching even remote areas. This also facilitates building the image of the company and meets the social responsibility quotient.

The inference is that contract farming, as practised by different companies, is serving the interest of both parties, though in certain cases it is tilted more towards the company.

PRS is in the process of strengthening the roots of our democratic structure till the last man. Coupled with economic strengthening, it can work wonders in India. Rather than frowning at contract farming, it is necessary to employ its positive gains for the improvement of our farm sector. ■

Agriculture Impacts Global Economy

Agriculture has played a key role in the development of human civilization

Alongwith an increasing global population, worldwide robust economic growth has and will continue to increase demand for agricultural products says **Chandragupta Amritkar**

As the global agricultural commodity markets enter a period of high volatility for the sixth successive year thereby making it a topic of discussion at the G20 ummit in eoul. Here we attempt to look at the global agricultural scenario and its impact on the global economy and environment.

Commodity prices have been on the rise largely due to shortfall in crop production and reduced available supplies. Among the important issues facing most governments is the high and volatile commodity prices and their implications for food insecurity. Prolonged periods of high prices could make the achievement of global food security goals that much more difficult to achieve thereby putting poor consumers at a higher risk of malnutrition. This was well reflected in the discussions at the G20 ummit in eoul in ovember, 2010, and later at its une 2011 meeting of Agriculture Ministers in Paris.

Agriculture has played a key role in the development of human civilization. Until the Industrial Revolution, the vast majority of the human population labored in the agriculture sector. In 200 , one third of the world s workers were employed in agriculture. Today the service sector has overtaken agriculture as the economic sector employing the most people worldwide.

Despite the size of its workforce, agricultural production accounts for less than five percent of the gross world product. There are signs that production costs are rising and productivity growth is slowing. nergy related costs have risen significantly, as have feed costs. Resource pressures, in particular those related to water and land, are also increasing. Global agricultural production is projected to grow at 1. % annually, on average, compared to 2.6% in the previous decade.

Today prices of agriculture products are at a record all time high. Without modern agricultural techniques, current population levels cannot be sustained and projected near-term population growth would create stresses that would destabilize the current global social and political order.

Forecast is that demand for more food is set to increase due to several key factors. First and foremost is that, the world population is expected to increase by approximately 1.2 billion people by the year 2020 United ations,

constant fertility variable . At the same time, per capita daily caloric intake for the world's population which is now 2800 kcal, compared to 2280 kcal in the early 1960's, and continues to rise FAO, 2006 and the tate of Food and Agriculture Report 200 , FAO .

imply put, more people times more caloric intake equals more food consumption. Alongwith an increasing global population, worldwide robust economic growth has and will continue to increase demand for agricultural products. Most of this global economic growth is occurring in non-O CD countries where increasing per capita incomes lead to a movement away from staple diets such as rice to more diverse, higher calorie diets which include fruits, vegetables and meat. The developing world's increasingly diverse diet impact on global agriculture demand is compounded by the fact that population growth rates in developing countries are nearly double those of developed countries economic research service, U DA .

The use of agricultural output as feedstock for biofuels will continue its robust growth, largely driven by biofuel mandates and support policies. By 2020, an estimated 1 % of global coarse grain production, 1 % of vegetable oil production and 0% of sugarcane production will be used for biofuel production. Higher oil prices would induce yet further growth in use of biofuel feedstocks, and at sufficiently high oil prices, biofuel production in many countries becomes viable even in the absence of policy support.

Many governments have subsidized agriculture for a variety of political and economic reasons. These agricultural subsidies are often linked to the production of certain commodities such as wheat, corn maize , rice, soybeans, and milk. These subsidies, especially when instituted by developed countries have been noted as protectionist, inefficient, and environmentally damaging.

EN IRONMENTAL IMPACT

The environmental impact of agriculture varies based on the wide variety

of agricultural practices employed around the world. Climate change and agriculture are interrelated processes, both of which take place on a global scale. Global warming is projected to have significant impacts on conditions affecting agriculture, including temperature, precipitation and glacial run-off. These conditions determine the carrying capacity of the biosphere to produce enough food for the human population and domesticated animals.

Rising carbon dioxide levels would also have effects, both detrimental and beneficial, on crop yields. The overall effect of climate change on agriculture will depend on the balance of these effects. Assessment of the effects of global climate changes on agriculture might help to properly anticipate and adapt farming to maximize agricultural production. At the same time, agriculture has shown to produce significant effects on climate change, primarily through the production and release of greenhouse gases such as carbon dioxide, methane, and nitrous oxide, but also by altering the arth s land cover, which can change its ability to absorb or reflect heat and light, thus contributing to radiative forcing.

ORLD IN ESTMENT REPORT

U CTAD's World Investment Report 2009 Transnational Corporations, Agricultural Production and Development reveals some fascinating shifts in the global agricultural sector. Most striking twelve of the world's 2 leading agricultural production (plantation) firms are from developing countries. ime Darby of Malaysia is largest, with 10.9 billion in total assets and 4. billion in foreign assets in 200 . As striking, it is much larger than os. 2 and - the Dole Food Company and Fresh Del Monte Produce of the United tates, with 42.6 billion and 2.1 billion in total assets, and 2.6 billion and 1.8 billion in foreign assets, respectively. India's Karuturi Global, a rose producer, with 4 million in total and million in foreign assets, ranks o. 2 . Five of the other Top 25 agricultural production firms are Malaysian, and five are from Indonesia, Thailand, ri anka, Papua ew Guinea and outh Africa.

Agricultural firms from developing country are also becoming significant M A players in agricultural production. In 2008, they acquired 1.6 billion worth of plantation assets, representing 40 per cent of the total global M A value in this vertical. Developing countries are now also leading targets for global agricultural production M As.

Despite their dominance in global agricultural production, firms from developing countries play a much smaller role at the top of the four other agriculture-related verticals considered by the report. The world's 2 top agricultural suppliers and privately-owned agri-food businesses are all from developed economies.

MILLENNIUM DE ELOPMENT GOALS

The Food and Agriculture Organization of the United ations FAO is working with its Member countries and the entire international community

List of countries by agricultural output in 2011.

Agricultural output in 2011

Rank	Country	Output in billions ofUS$	Composition of GDP (%)	% of Global Agricultural Output
	World	*4,249.237*	*6.1%*	*100.0%*
1	China	737.113	10.1%	17.3%
	European Union	*316.398*	*1.8%*	*7.4%*
2	India	303.382	18.1%	7.1%
3	United States	181.128	1.2%	4.3%
4	Brazil	144.589	5.8%	3.4%
5	Indonesia	126.006	14.9%	3.0%
6	Nigeria	93.179	39.0%	2.2%
7	Japan	82.173	1.4%	1.9%
8	Russia	77.717	4.2%	1.9%
9	Turkey	71.584	9.2%	1.7%
10	Australia	59.529	4.0%	1.4%
11	Iran	54.034	11.2%	1.3%
12	Spain	49.286	3.3%	1.2%
13	France	47.198	1.7%	1.1%
14	Thailand	45.971	13.3%	1.1%
15	Mexico	45.037	3.9%	1.1%
16	Argentina	44.764	10.0%	1.1%
17	Pakistan	44.008	20.9%	1.0%
18	Italy	41.776	1.9%	1.0%
19	Egypt	33.944	14.4%	0.8%
20	Malaysia	33.442	12.0%	0.8%
-	*Remaining Countries*	1,933.377		45.5%

(EOM)

for achievement of the Millennium Development Goals.

These eight goals - each with specific targets and indicators - are based on the United ations Millennium Declaration. They commit the international community to combating poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women.

T M
D G

Goal 1 radicate extreme poverty and hunger
Goal 2 Achieve universal primary education
Goal Promote gender equality and empower women
Goal 4 Reduce child mortality
Goal Improve maternal health
Goal 6 Combat HIV AID , malaria and other diseases
Goal nsure environmental sustainability
Goal 8 Develop a Global Partnership for Development

As per FAO the world can feed itself with less food output than previously forecast if it turns to sustainable farming, cuts waste and stops excessive consumption. If current consumption patterns persist, the world will need to raise food output by 60% by 20 0 to feed a population expected to rise to 9 billion from about billion now. However, it is possible to feed the population with a smaller rise in food output than that.

On the production side, agricultural and food systems should reduce their negative environmental impacts, including soil and water depletion as well as greenhouse gas emissions, the report said.

On the consumption side, people need to cut food losses and waste which amount to 1. billion tonnes a year, roughly one third of world food production for human consumption.

To beat the projections we need to make bold policy decisions that will affect income growth patterns, changes in dietary preferences, levels of food waste and how agricultural production is used for non-food purposes, the report said. ■

Agro-Based Industries
Increasing the Output

Maharashtra has necessary ingredients to surge ahead in agro-processing and agribusiness

No country in the world is endowed with as much of nature's bounty as India. Agribusiness in India has potential of creating over 25 crore jobs in rural areas without much involvement of the Government. Agribusiness is the right starting point in our march towards prosperity says **Narayan Haralikar**

India is a wonderful country. One may say it's Nature's own creation. India has almost all the climatic zones of the world. And hence we find here as many inds of crops and grains and vegetation which can be found in a corner of the world. This variety of crops and vegetation is the highway or the flyover to prosperity. Large internal mar et, population and austere habits are the ey words of Indian economy. Industries and enterprising people is another factor. Maharashtra is no different. In fact Maharashtra is nown to be a Miniature India.

Maharashtra has been a cradle of industrial revolution in India, since pre-independence period. ven today, everyone loo s up to Maharashtra to be a pilot. Maharashtra has lived to its expectations so far and has potential to lead the country. Maharashtra is considered to be most industrialized State in India. Rate of urbanization, too, is very high about 4 per cent in the State. Industry and services sector in the State has a significant share in the State GDP, about 90 percent while, that of the agriculture and allied sector has remaining 0 percent share. In a way this is an ideal situation. However, when we say India, vis- -vis Maharashtra is an agrarian economy, agriculture and allied segment should play a better role. Today, the world economy, including that of India is reeling under recession, when agriculture and agro-based industries could be a path brea er. It can be a growth engine of

this millennium for India, according to Dr. P. L. Gautam, Vice Chancellor, G.B. Pant University of Agriculture and Technology at Pantnagar in Uttaranchal. Agricultural sustainability, which is of paramount importance in present context, can be achieved by following a system approach only. Dr. Gautam says, a sound and customized policy support would go a long way in achieving this goal.

Maharashtra, being a miniature India, has divergent agro-climatic conditions. It has, however, achieved a breakthrough in agricultural production since past quarter of a century. Food grain productivity of Maharashtra was little over 1000 Kg per hectare, while number of agro-processing cooperative industries, as registered with the co-operatives department, was about 0,000, a couple of years back. There are 201 sugar mills in the tate, of which 1 2 are in cooperatives sector. Among the sugar mills in the tate, 64 have distilleries and 2 have co-generation power plants. It is true that, as of the day, most of the production houses in cooperatives sector are in losses due to a variety of reasons. et, according to, not only Dr. Gautam, as mentioned above, but also many of the professional organizations including the CII (Confederation of Industries in India) and the ASSOCHAM (Association of Chambers of Industries and Commerce), agribusiness in India has potential of creating over 25 Crore jobs in rural areas without much involvement of the Government. Agribusiness is the right starting point in our march towards prosperity, if we understand that Late Dhirubhai Ambani, the founding father of Reliance Group of Industries began his career in agro export and Azim Premji of Wipro Industries, in food processing. World trade in food products, sea food, herbal products and flowers is more than 400 Billion U Dollars. o country in the world is endowed with as much of nature's bounty as India. Maharashtra, as also India, has large tracts of fertile land, though most of it is arid. Of about 3.08 Lakh Sq. Km. of geographical land mass of the State, 224.5 Lakh hectares of land is under cultivation and 52.1 Lakh hectares is under forests in Maharashtra. Considering the fact that about 45 Lakh hectares of land produces cereals and little over 56.5 Lakh hectares produce nearly 19 Lakh tonnes of pulses and allied crops besides 45 Lakh tonnes of oil seeds, and given the entrepreneurship among its people, Maharashtra has necessary ingredients to surge ahead in agro-processing and agribusiness. Thanks to the visionary rulers of the tate, Maharashtra has over 200 institutions providing agriculture and veterinary as well as hotel management and hospitality training at under graduate and post graduate levels. There are many other institutions providing short duration courses in food processing, horticulture, gardening, etc. With the availability of such a large training infrastructure, what Maharashtra really needs is a definite roadmap to improve storage and transport facilities, and marketing network. It will help agro-processing and allied industries in rural and semi urban regions of the tate.

Maharashtra has many agro-processing industries which produce value added products for domestic consumption and exports. But these efforts are sporadic and isolated and are either a poultry or dairy based, than agriculture based. ugar mills and wineries are exceptions. However both these industries follow the beaten track sugarcane for sugar production and grapes for wine. A little more entrepreneurship and venture capital support is needed to tread into different tracts, such as sugar from beat, a tea from herbs without using tea leaves, fruit juices and fruit wines of the sort etc. There are many more avenues available in the agro based and allied industries including dairy products, confectionary, sheep and goat as well as other animal rearing. Technological practices and innovations as applied to agriculture could also be a good and un beaten track to follow.

Among the viable and strategic agribusinesses one is Food Bank'. Almost a quarter of the farm produce is lost during storage and transport, while another ten percent of it becomes unworthy of human consumption, as it perishes. The Food Bank would be an answer to this problem. It is a sort of chain of cold storages, created and managed by various nationalised and other larger banks with broad financial base. uch a bank may work as safe

deposit vault in a financial bank and also as commodity exchange.

Bio nergy Bio Fuel is another field which may come up in rural areas in near future. A group of individuals or villages may form a cluster to produce non-edible oils and biogas as fuels of the future. Biogas can be used for individual or community kitchens and street lighting besides running agricultural pumps. It is also useful for generating electricity and running vehicles as well. Oil seeds is dry land crop and has potential to provide large employment and mitigate to certain extent fuel needs of the country.

Blue Revolution or Fish production is another sector where India is pushing ahead with rapid increase in fish production in fresh waters and farm ponds. It has proved to be a boon to small farmers. Maharashtra has exported more than Rs. 2,100 crore worth fish and fish products last year. Fish production in the tate, sea water and fresh water, both, has declined this year to about 4 lakh metric tonnes. In the earlier years it was around . 0 lakh metric tonnes.

Animal Husbandry and Dairy Industry in Maharashtra ranks sixth in the country. Live stock has depleted during past few years owing to increasing urbanization and water and agricultural land shortages. till, the animal count in the tate is little more than 80 lakhs or little above ,000 per one lakh population. There are 2 veterinary hospitals and 6 mobile, 1, 2 clinics and 2,896 primary health posts for animals. Moreover, many veterinary graduates are taking to private practices in the field. The newly emerging Pet Clinics in urban and semi urban areas are potential employment generators. Dairy industry has not much developed in the tate beyond milk collection centres and chilling plants, though individual entrepreneurs such as Chitale and Thite and few of the district Milk Cooperatives such as Gokul, Warana, hivamrut, Mahanand etc. have flourished. The unorganized industry in manufacturing milk products including Paneer cottage cheese , Khava, Pedha, table butter etc. has large potential for employment of both, skilled and unskilled labours. There are speciality products as Kunda' and Basundi' concentrated in certain pockets of the tate, which need to be provided with financial assistance and also refined training facilities.

Poultry is another sector with individual and cooperative entrepreneurs venturing in it. Most of them are in egg production and sales while a few are hatcheries. ome have also ventured into exports of chicken meat and egg powder. This business has provided extra income for a large household in rural Maharashtra. It is a growing segment with further employment and business potentials.

Vegetable and fruit dehydration is a neglected field for business purposes. There is a growing demand for dehydrated vegetables not only overseas but also within country in large metropolis and armed forces as well as in shipping industry. India is known for spices since long and here are a large variety of spices depending upon its usages as well as the user. This business also has a scope for innovations.

Father of the ation Mahatma Gandhi had insisted upon revival of rural economy and self reliant villages for a vibrant prosperity and an allround development. According to him agriculture was mother of all industries. Keeping this in mind, Maharashtra Government has always endeavoured to provide sufficient finance and other inputs for the agriculture and allied businesses and industries. Kisan Credit Card Scheme, Kisan Janata Accident Insurance cheme, Agricultural Insurance, Live stock Insurance , Sant Tukaram Van Gram Scheme etc. are a few of the welfare schemes implemented by the tate Government for the betterment of farmers and dependant agrarian society.

The well known brand of Amul Dairy and milk products in Gujarat is not a government enterprise. It grew through individual efforts and today it is a leading brand in India. Mahabeej and Mahico are also leading brands in seeds in Maharashtra and elsewhere. They too are individual enterprises. A few years back, some of the innovative and creative agricultural graduates ventured into a business little known until then – the Agricultural Clinics and the business grew. Today, in the age of speciality services, still there are gray areas in agriculture and allied industries, such as soil testing, entomology, tree grafting, floriculture, agro packaging, and many such, where young people from various learning streams can join hands to give a boost to agriculture and allied industries, which may keep Indian Economy afloat in the midst of global recession. Of course a strong political will of the rulers is also needed to support any such efforts to be successful. ■

Crop Insurance A Boon to Farmers

Maharashtra has taken lead in Weather Based Crop Insurance Scheme

Weather Based Crop Insurance Scheme offers insurance cover to the farmers against losses caused by aberrant weather conditions during the crop cycle. It aims to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss.

The National Agricultural Insurance Scheme NAIS is a hit with farmers from Maharashtra. According to the latest data by Ministry of Agriculture, out of crore farmers who had availed the scheme, more than 80 la h farmers from Maharashtra and 50 la h farmers each in Rajasthan and Andhra Pradesh have ta en the agricultural insurance scheme. Farmers from the states such as West Bengal, Bihar, har hand, Orissa, Chhattisgarh and Tamil Nadu have been trailing in subscribing to the crop insurance scheme which has been currently operational across 548 districts. Farmers under NAIS bear only around of the premium cost, with the Central and respective state governments sharing.

Agriculture in India is highly susceptible to ris s li e droughts and floods. It is necessary to protect the farmers from natural calamities and ensure their credit eligibility for the next season. For this purpose, the Government of India introduced many agricultural schemes throughout the country by forming Agriculture Insurance Company of India Limited AIC .

AIC was incorporated on 20th December, 2002 with an authorised share capital of I R 1 billion and paid up capital of I R 2 billion. The present products provided by AIC include ational Agricultural Insurance cheme, WBCI - Weather Based Crop Insurance Scheme, MNAIS - Modified National Agricultural Insurance cheme, Bio - Fuel Tree Plant Insurance, Cardamom Plant ield Insurance, Coconut Palm Insurance cheme CPI , Potato Crop Insurance, PulpWood Tree Insurance Policy, RainFall Insurance cheme For Coffee RI C 2011, Rubber Plantation Insurance, Varsha Bima RainFall Insurance and Weather Insurance RABI . Future products planned by AIC include ugarcane Insurance, Tea Insurance, Basmati Rice Insurance, Aromatic Medicinal plants Insurance and Contract Farming Insurance.

The most prominent Insurance cheme is the ational Agricultural Insurance cheme.

AI provides insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests and diseases. It also encourages the farmers to adopt progressive farming practices, high value in-puts and higher technology in agriculture. Finally it helps stabilize

farm incomes, particularly in disaster years. This scheme is available to all farmers loanee and non-loanee both irrespective of the size of their holdings. It is compulsory for loanee farmers and optional for non-loanee farmers. um insured may extend to the value of threshold yield of the area insured. Coverage of all food crops cereals, millets and pulses , oilseeds and annual commercial horticultural crops in respect of which past yield data is available for adequate number of years. Among the annual commercial horticultural crops, seven crops namely, sugarcane, potato, chillies, ginger, onion and turmeric are presently been covered. Premium rates are . % for bajra, and oilseeds and 2. % for other Kharif crops, 1. % for wheat, and 2% for other rabi crops. mall and marginal farmers are provided subsidy of 0% of premium charged from them. xpenses on account of indemnity claims, Corpus Fund, A O xpenses, publicity, premium subsidy to small and marginal farmers etc. are shared between Central and tate Governments on 0 0 basis in the initially.

Under the scheme, each tate is required to reach the level Gram Panchayat as the unit of insurance in a maximum period of years. As of 2011, the General Insurance Corporation of India GIC is implementing the scheme, but the Government has plans to set up an exclusive organization for implementation of the new scheme.

Maharashtra has also taken a lead in Weather Based Crop Insurance cheme WBCI . HDFC rgo has provided WBCI for farmers in Maharashtra after getting permission from the tate Government. The policy will run as a pilot for farmers for Mrig Bahar in Kharif 2012. The policy will cover crops such as orange in Akola and Buldhana, guava in alna and Buldhana and sweet lime in Aurangabad, alna, anded, Parbhani, Beed and Buldhana Districts. The insurance scheme is compulsory for farmers who take loans. The premium is deducted from the loan amount. Weather based crop insurance scheme offers insurance cover to the farmers against losses caused by aberrant weather conditions during the crop cycle. It aims to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss resulting from incidence of adverse conditions of weather parameters like rainfall, temperature, frost, humidity etc. While Crop Insurance specifically indemnifies the cultivator against shortfall in crop yield, WBCI is based on the fact that weather conditions affect crop production even when a cultivator has taken all the care to ensure good harvest. ■

eam aharash ra hea

The 'E'ssence of Agriculture Development

IT and e-governance is giving the needed boost to the agriculture sector

The Chief Minister Prithviraj Chavan called upon the agricultural universities to step up research and development and the IT application to spur growth in agriculture sector in the State, states **Sanjay Jog**.

Maharashtra has been a role model for other States, be it in the field of administration, infrastructure, agriculture and allied sectors. The State faces a challenge of increasing agricultural production and productivity and achieving a sustained 4 growth. Besides, the presence of large number of farmers with less than 5 acre of land makes it more difficult to achieve the growth especially when land has become ey component in the st century. However, in order to effectively tac le the situation the State Government has ta en a slew of initiatives with the application of information technology in the agriculture sector.

The Chief Minister Prithviraj Chavan during his presentation to the Planning Commission observed that if urban incomes continues to rise at 8 or more and rural incomes increase only by 4 or less, the rural urban divide would become even deeper unless agriculture sector grows at a rate higher than 4 and large population gets shifted from agricultural to non-agricultural activities. Similarly, the Chief Minister called upon the agricultural universities to step up research and development and the IT application to spur growth in agriculture sector in the State.

Amid the changing cropping pattern from low income generating crops li e cereals to higher income generating crops li e pulses, oilseeds and horticulture and also due to the challenges posed by the global warming, the State Agriculture Department has launched SMS Bul Broadcasting application for timely and fast delivery of the information and advisory to the farmers. Advisory on plant protection, weather is broadcasted. More

importantly, location and crop specific critical agro advisory is given to the farmers on their mobile. These SMS are delivered in nglish and in Marathi so that more and more farmers can benefit. At present 3.22 lakh farmers are registered for this service.

Further, the Agriculture Department wants to attract more and farmers to ta e advantage of Close User Group CUG Maha Krishi Sanchar initiative. As on May 31, 2011 seven lakh farmers and extension wor ers have been subscribed in CUG. This programme envisages free cost of communication within farmers and experts and also provides a monthly GB free GPRS download. The Agriculture Department has tied up with the Government underta ing BSNL for this purpose. The department has rolled out Maha Krishi Sanchar plan with modified features.

The Kisan Sanchar toll free service G C AGRIN T was launched since June 6, 2011. An interactive toll free service 1800-2334-000 addresses the agriculture input such as seed, fertilizer and insecticide availability and quality control queries of farmers of the tate.

O L G C G B icenses to eeds, Fertilizers and Insecticides manufactures Producers dealers are issued by the department. Online licensing software is developed with IC Pune. Application for obtaining license and tracking of the application and issuing of the license will be done through this system. The data base generated will help the authorities in monitoring the licensing status. The BI Business Intelligence reports will help to take decisions. The online software was rolled out on May 5, 2012.

S H C G G G C The Agriculture Department, in a bid to maintain and enhance soil health, has launched a software for soil health management. oil health card online dissemination and expert advice on crop and nutrient management has been developed with the IC.

A C G G For Agri census of the tate an application has been developed with IC, Pune for integrating database of land records available with the revenue department. This saves resources for manual data collection, time and resources to greatest possible extent. The Revenue Department will prepare land records database. Most of the data required for census is available from land records such as survey number, name of land owner, cultivable and non cultivable area and holding type. However, few missing entries like gender, caste, resident status and cultivator operational holding would be incorporated.

MICRO IRRIGATION ONLINE IMPLEMENTATION APPLICATION SYSTEM

Maharashtra is not so well endowed in terms of water resources. The ultimate irrigation potential through surface water is assessed at 8 lakh hectare (38% of the cultivable area). Though the average rainfall is 1360 mm, distribution across the tate is highly skewed. Out of 358 talukas, 148 are drought prone. o far, the tate has created irrigation potential of 63.70 lakh hectatre and the tate plans to create potential of 2 lakh hectare in 2012-13. Against this backdrop, the Agriculture Department has devised micro irrigation online implementation application system under which about Rs 700 crore subsidy is distributed annually for micro irrigation. To bring the transparency, efficiency in the work flow in the whole process from application to subsidy deposition in the beneficiary accounts, an online application have been developed.

AGRICULTURE MISSION MODE PRO ECT

The project envisages to provide relevant information and services to the farming community and private sector through the use of information communication technology. It aims to replicate the agricultural e-governance projects being carried in different tates at a national level and provides the services through multiple delivery channels. The phase I covers assessment, identification for the services, design of an IT enabled solution to support service delivery, capacity building while the phase II will focus on business process re-engineering for the prioritized services, design of an IT enabled solution to support service delivery, capacity building.

Minister for Agriculture Radhakrishna Vikhe-Patil argues that this project stresses on using IT in all stages of the agricultural crop cycle including the crop selection stage, the pre-cultivation stage, the crop management stage, the pre-harvest stage, the harvesting stage and the post-harvest stage. The project focuses on providing informational services to farmers on a variety of farm-related issues including seeds, soil-test-based information, fertilizers, pests, Government schemes, and weather.

Furthermore, the Agriculture Department is aggressively implementing e-governance programme which enables private sector participation to benefit farmers by providing an integrated platform to promote value added services in xtension, Marketing, Processing.

Against the backdrop of these initiatives, agriculture experts believe is that the success largely depends on the timely implementation. The Government is banking heavily on transforming the agriculture sector during 12th plan especially when % population still strives on agriculture and allied sector. The IT and e-governance may give a necessary boost to achieve this ambitious goal. ■

Agriculture: Newer Avenues

Need of the hour is to put agriculture research into practice in our day to day farming.

With the latest advanced technologies it is possible to reduce cost of agriculture production and increase the profit margins, thus making the field lucrative for young entrepreneurs. It is estimated that around 12,000 graduates from agriculture and allied sectors pass out from agricultural universities every year in the country.

It is irony that in our society agriculture is not considered as the priority sector by people, they don't want to indulge in this field. We should not forget that development of any State or country depends on this sector. Agriculture is the backbone of economy. If you loo at countries li e USA and China, they have well organized agriculture sector which is the major contributor to their respective GDP.

Many feel agriculture alone can solve the problem of the rapidly growing rate of unemployment. Unemployment is a major problem of India and presently more than 4.5 crore youth are unemployed in this country. Agriculture sector has the major potential for providing the employment opportunities to this huge population of unemployed people.

Being such a vast sector agriculture can absorb large number of youth. While many of our institutions are conducting research in agriculture the need of the hour is to put this research into practice in our day to day farming. Than s to latest advanced technologies it is possible to reduce cost of agriculture production and increase their profit margins, thus making the field lucrative for young entrepreneurs. Its estimated that around ,000 graduates from agriculture and allied sectors pass out from agricultural universities every year in the country. Thus we have a reservoir

of agricultural graduates who can take an initiative in setting up of various smaller commercial ventures providing the required services for quality production in agricultural and later marketing and post-harvest utilization of the surplus produce.

mployment opportunities in agricultural area may be divided into various categories. These include Agribusiness Agricultural Research, Agro Industry, Agricultural ducation, Agricultural ournalism, Agricultural and atural Resources Communications,BuildingConstruction Management, Agriscience, Resource Development and Management, Parks, Recreations, and Tourism Resources, Packaging, Horticulture, Forestry, Food Science, and Fisheries/Wildlife, ervices in Agriculture, Banking, Farming, Conservation, Agricultural Engineering, Management, Sericulture.

Within Agricultural Science there are four broad areas of specialization namely Food cience, Plant cience, Soil Science and Animal Science. Agribusiness has a great potential. People with a business background are needed and employed as marketing and merchandising specialists sales representatives agricultural economists; accountants; finance managers, and; commodity traders etc.

Horticulture with its offshoot floriculture has become a focus of export activity. India's exports of roses, carnations, gladioli, chrysanthemums, jasmine and other tropical plants and flowers are touching new heights. In the field of fruits and vegetables too, India has tremendous export potential. andscapers and horticulturists are hired by hotels, health farms, and holiday resorts to beautify their surroundings. Florists and nurseries are doing lucrative business especially in the metropolitan cities. Suburban farmhouses have become important suppliers for the domestic market.

There's great potential in different agricultural universities who recruit agricultural postgraduates for different post from concerned field of specialisation.

The Central Government has also launched various schemes to engage the unemployed agricultural graduates in setting up of such ventures in agriculture sector which will not only accelerate the agricultural production with the dissemination of latest technical know how to the farmers but also provide employment opportunities to lakhs of other unemployed youths of this country.

One can choose career under ICAR in the areas of research one can become an Agricultural Research Scientists (ARS). Those looking for government jobs can become Agriculture Development Officers (ADO). Recruitment to these posts is made on the basis of an examination conducted by public service commission concerned department.

Banking sector also has quite a few posts for postgraduates in agriculture. Reserve Bank of India, tate Bank of India, other nationalised banks and some private banks offer openings for postgraduates in agriculture and allied areas as Field Officers, Rural Development Officers and Agricultural and Probationary Officers.

Opportunities are plenty. One only has to look for them ■

eam aharash ra hea

Need is for SAZ

Organic agriculture can contribute to ecologically sustainable, socio-economic development

Organic farming provides long-term benefits to people and the environment. It helps to increase long-term soil fertility, controls pests and diseases without harming the environment, ensures that water stays clean and safe, uses resources which farmers already have, so that they need less money to buy farm inputs, produces nutritious food, feeds for animals and high quality crops to sell at a good price, states **Sudhir Brahme**

It is the right time to switch over from the Green Revolution to the Brown Revolution the colour symbolizes the organic manure . It's the nown fact that the Central Warehousing Corporation godowns have been so over-flooded with foodgrains that grains go rotting year after year for lac of storage capacity.

The situation in the State warehousing corporation is so satisfactory that even the present nearly-drought condition did not deter the State Government much as it succeeded in eeping the situation under control within its limits. The Union Agriculture Minister has gone on records to State that even as Central Government offers more foodgrains the State Governments reject the offer as they don't have enough storing room.

A glance at the State budget reveals that a major chun is being devoted to the irrigation projects with a view to bringing more and more land under cultivation. The bitter fact is that we have over exploited the Green Revolution and we continue to do so. Agriculture is the bac bone of Maharashtra as 45. 0 per cent population is living in rural area.

ven as the Government is displaying willingness to bring more agricultural land under cultivation, conversion of farm land into non agricultural NA is on rise in last over a decade and the ratio is li ely to be 50 50 in a couple of years.

Of the total irrigated land in the State per cent comes under seasonal rains. Though the State has the largest water capacity of 5 per cent of the national capacity, it has failed to curb the NA transformation. Small farmers opt to sell the land as they are unable to sustain on expensive farming. It is obvious failure of the Government to

safeguard the interests of the small farmers. Secondly the Government's priority seems to be for the more yield on less land through hi-breed farming. This yield is certainly not qualitative compared to the organic farming.

Father of the Green Revolution and Nobel Peace Prize laureate Norman Borlaug has advocated organic agricultural systems for being more environment-friendly and more sustainable than conventional farming systems. ven the UN nvironmental Programme concluded that organic methods greatly increase yields in Africa.

An international study claims that organic agriculture could feed the entire global population, somewhat more than billion people. It states that organic farms have lower yields than their conventional counterparts in developed countries 9 but higher than their low-intensity counterparts in developing countries 80 , attributing this to lower adoption of fertilizers and pesticides in the developing world compared to the intensive farming of the developed world.

The Rodale Institute has conducted a 0-year Farm Systems Analysis Trial" of organic farming. Their findings suggest that organic farming is superior to conventional systems in building, maintaining and replenishing the health of the soil. In addition to soil health, the Institute s trials loo ed at economic viability, energy usage, and human health and concluded that organic agriculture is more sustainable than conventional.

Organic agriculture is nowledge intensive. Globally, capacity building efforts are underway, including localized training material, to limited effect. As of 00 , the International Federation of Organic Agriculture Movements hosted more than 0 free manuals and 5 training opportunities online.

BENEFITS OF ORGANIC FARMING

Organic agriculture can contribute to ecologically sustainable, socio-economic development, especially in poorer countries. The application of organic principles enables employment of local resources e.g., local seed varieties, manure, etc. and therefore cost-effectiveness. Local and international mar ets for organic products show tremendous growth prospects and offer creative producers and exporters excellent opportunities to improve their income and living conditions.

Organic farming provides long-term benefits to people and the environment. It helps to increase long-term soil fertility, controls pests and diseases without harming the environment, ensures that water stays clean and safe, uses resources which farmers already have, so that they need less money to buy farm inputs, produces nutritious food, feeds for animals and high quality crops to sell at a good price.

On other hand modern, intensive agriculture causes many problems. Artificial fertilizers and herbicides are easily washed from the soil and pollute rivers, la es and water resources. Prolonged use of artificial fertilizers results in soils with a low organic matter content which is easily eroded by wind and rain. Dependency on fertilizers increases and more money is needed

every year to produce the same yields of crops.

Artificial pesticides stay in the soil for a long time and enter the food chain where they build up in the bodies of animals and humans, causing health problems; artificial chemicals destroy soil micro-organisms resulting in poor soil structure and aeration and decreasing nutrient availability pests and diseases become more difficult to control as they become resistant to artificial pesticides. The numbers of natural enemies decrease because of pesticide use and habitat loss.

Organic outperforms conventional in years of drought. Organic farming systems build rather than deplete soil organic matter, ma ing it a more sustainable system. Organic farming uses 45 less energy and is more efficient. Conventional systems produce 40% more greenhouse gases. Organic farming systems are more profitable than conventional.

Organic food provides more money and a better opportunity to compete internationally with the huge distributors. Organic prices are much more stable than conventional foods, and the small farms can still compete and have similar prices with the much larger farms that usually take all of the profits.

FARMERS MAR ETS

In the United tates, % of organic farms are smaller than 2. hectares. In California 2% of the farms account for over half of sales. mall farms join together in cooperatives such as Organic Valley, Inc. to market their goods more effectively. Most small cooperative distributors have merged or were acquired by large multinationals such as General Mills, Heinz, ConAgra, Kellogg, and others. In 1982 there were 28 consumer cooperative distributors, but as of 200 only remained.

This consolidation has raised concerns among consumers and journalists of potential fraud and degradation in standards. Most sell their organic products through subsidiaries, under other labels. Price premiums are important for the profitability of small organic farmers. Farmers selling directly to consumers at farmers markets have continued to achieve these higher returns. In the United tates the number of farmers markets tripled from 1, in 1994 to ,2 4 in 2009

HAT IS ORGANIC FARMING

Organic farming implies to the use of the best of the traditional farming methods combined with modern scientific knowledge. It works in harmony with nature rather than against it. The methods and materials that organic farmers use facilitate keep and build good soil structure and fertility. It also involves careful use of water resources and good animal husbandry. mphasis is given on genetic diversity to achieve good crop yields without harming the natural environment or the people who live and work in it.

The farmer would use a range of organic methods at the same time to allow them to work together for the maximum benefit. For example the use of green manures and careful cultivation, together provide better control of weeds than if the techniques were used on their own. Organic farming works in harmony with nature rather than against it. This involves using techniques to achieve good crop yields without harming the natural environment or the people who live and work in it.

Organic farmer should not see every insect as a pest, every plant out of place as a weed and the solution to every problem in an artificial chemical spray. The aim is not to eradicate all pests and weeds, but to keep them down to an acceptable level and make the most of

the benefits that they may provide. To be successful organic farmer needs to learn to grow the crops and varieties which are suited to the local conditions. He should grow crops which are suited to his geography and climate. He should choose varieties which are suited to the local conditions such as local varieties.

Organic farmer needs to manage the soil well to produce a healthy crop. This involves considering soil life, soil nutrients and soil structure. Artificial fertilizers provide only short term nutrient supply to crops. They encourage plants to grow quickly but with soft growth which is less able to withstand drought, pests and disease. Artificial fertilizers do not feed soil life and do not add organic matter to the soil. This means that they do not help to build good soil structure, improve the soils water holding capacity or drainage.

SPECIAL AGRICULTURE ONES

Maharashtra, having taken some pioneering efforts and initiatives that are emulated even by the Central Government, can take a lead in formulating the pecial Agriculture ones A policy. If it so happens, despite several political draw-backs of late and security concerns, the tate can still corroborate to its reputation as the most progressive tate. To pay a befitting tribute to the architect of Modern Maharashtra in his Birth Centenary year it is necessary to take some concrete steps in this direction.

The main aim of the A policy should be to elevate the rural standard of living. The policy would safeguard the interests of small farmers encouraging them to go for community farming. The A would utilize the on-going schemes of various Central and tate Government agencies in a coordinated manner to cover the entire chain from farm to the consumer. In all the projects, necessary commitments would be given by the tate Governments.

Another important area of focus under A should be marketing, market promotion and market development for Indian produce. The market-oriented research, development and extension activities short-term and long-term goals of the Indian export industry all this could be achieved through A .

On the larger perspective this would shape up a Modern Rural Development model. For this the Rural and Agriculture Development Corporation RADCO , a nodal agency could be formed. The RADCO would take of care of all aspects of physical infrastructure for agriculture such as transportation, soil testing, pre and post harvest activities, organic manure, water and power supply.

In the new model the rural development focus would be shifted from district to taluka. ach taluka would have at least one growth centre depending on its geographic size. The growth centres would take care of processing of agriculture produce by converting it in to the ready to use and ready to consume products, their packaging, marketing and exports through the Agriculture and Processed Food xport Development Authority AP DA , the Central Government agency.

very taluka could be converted in to a city. Barring the luxury, glitter, glamour and the vibrancy that are the identities of an ideal metro, all other attractions of city life could be made available. The other perspective of the policy should be making available all the facilities and necessities of better life style within the periphery of a taluka in order to curb rural migration

Right soil cultivation at the right time, crop rotation, green manures and legumes as well as mulching on the soil surface form the base of this type of farming. With a view to controlling pests, diseases and weeds natural pesticides would be used and useful predators that eat pests should be encouraged. Thus healthy balance between nature and farming would be created helping the crops and cattle grow and thrive. Recycled and composted crop wastes and animal manures to be used in organic farming could be created collectively.

The Government should form clusters based on geographic conditions and soil quality. These clusters would be supported by the growth centres. SAZs should be identified by the tate Government, complemented by the tate agriculture universities. The agricultural universities would play an important role in this. The varsities could identify the clusters for particular crops. The tate Government agencies, institutions and authorities such as Agriculture Produce Marketing Corporation APMC and Maharashtra Industrial Development Corporation MIDC would complement. The APMC should cut down the multi-level marketing chain in order to give direct fiscal benefits to the smallest of the small farmer. The MIDC would provide post-harvest infrastructure. ■

Restoring The Future

Maharashtra State Warehousing Corporation provides economical services to the farmers to store their primary produce

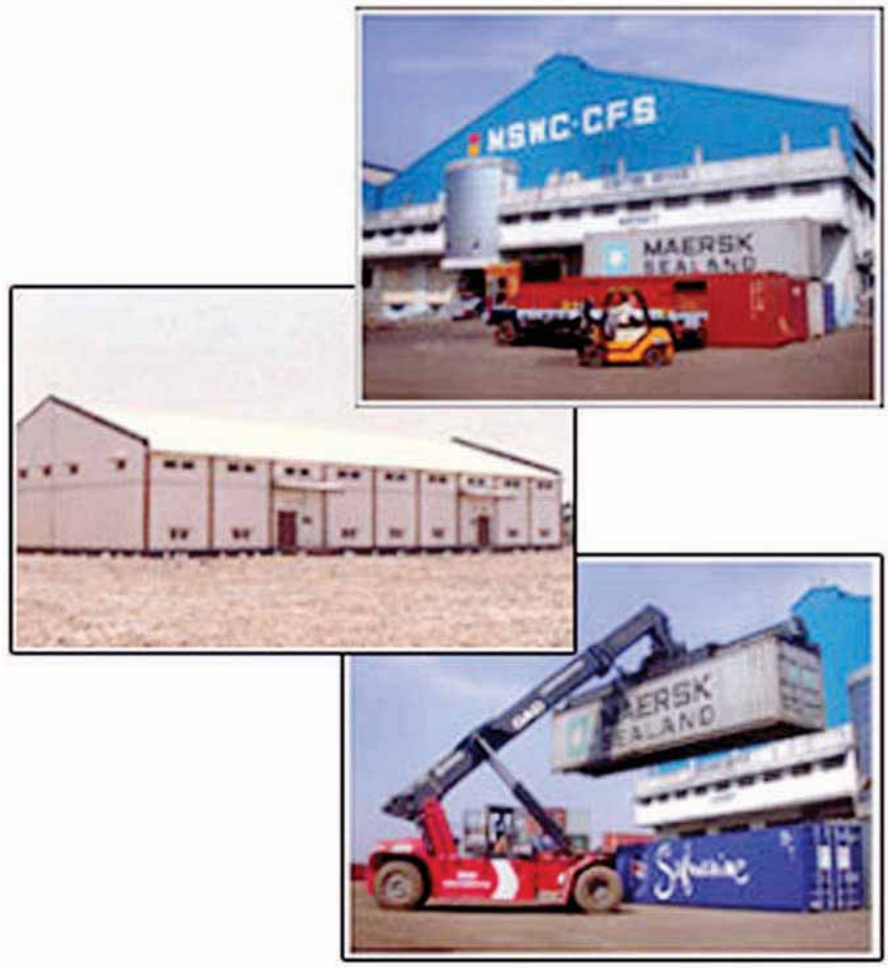
MSWC is the best and most important link in the State wide network of godowns. The availability of Services of warehouses at the grassroot level with modernization of warehouses, cleaning and grading yards, immediate pledge finance by banks against warehouse, will lead to improve the financial level of farmers says **Avinash Pande,** Senior Manager, MSWC.

India is primarily an agriculture country. The base of the Indian economy concentrates on agricultural and Maharashtra is playing effective and leading role in Agricultural and Co-operative sector of the country. Not only agriculture but also Agro-processing Industry in State is continuously showing increase in employment and turnover, but still the basic framewor for growth of this sector is not developed upto level that will really benefit the farmer and the end user. There is huge gap between the prices which farmers get for their produce and the purchase prices of the consumers. Further, the quality of the products is not assured. In uropean Mar et, a system is developed to maintain the quality of the product with the help of cold chain that the quality of the product is well controlled.

In Maharashtra, rural areas have the Society Primary Agriculture Co-operative Societies PACS , godowns, with small capacities already in existence. In coordination with this networ of PACS crop loans are made available. Still the purpose of the creation of these godowns is not met as the marketing chain at field level is not developed. ven today, farmers have no option other than to sell their produce only in the local mar ets, where promising prices are not assured. Sometimes even production cost also is not recovered.

Netherlands, contributes only 3% of World's floriculture production, but is ranked first in international mar et. The producers, are facilitated with export facilities with the networ of infrastructure from farm level to the ports of export, adding to it, the facilities of online trading, facilitating trading at local to international mar ets, and its physical movements to different countries.

In Maharashtra, agri production is not a problem, but the scientific storage and controlled movement, at every level from production to mar et is attracting the problems of non availability of infrastructure. There is need of creation of infrastructure to facilitate systematic maintenance of quality and ma ing available a sound mar eting platform of online trading. NABARD is facilitating by way of crop loan on concessional interest rates, for improvement of agricultural production. The issue of offering the similar concessional interest loan against pledging of



"Negotiable Warehouse Receipt" was discussed recently during the meeting and was proposed by the Chief Minister of Maharashtra, with Dr. S.K. Goel, Principal Secretary, Agriculture and Mar eting, to Prof. K. . Thomas Minister of State Food and Processing, Government of India. As a result of decision in this meeting, Governemnt of India vide its Notification dated. 0. . 0 , introduced extension of crop loan facility against "Negotiable Warehouse Receipts NWRs ". On introduction of this facility, Maharashtra State Warehousing Corporation, publicized this facility throughout the State to all Grampanchayats, Co-operativve Societies, PACS, APMCs, Agriculture Department and Co-operation Department's all field offices.

arlier, the interest rate of loan against NWR was being charged about by number of Banks, with the notification of 0. . 0 , the extension of lower interest loan against NWRs, as that of Crop loan has facilitated farmers of the State to get the lower interest rate loan against NWRs issued by Maharashtra State Warehousing Corporation. As such MSWC has effectively turned down the important stone to offer the facilities to the State.

For the appropriate growth and development of the warehousing sector in the country and to bring efficiency in the conduct of warehousing business, the Government of India has introduced a negotiable warehouse receipt NWR system in the country by enacting the Warehousing Development and Regulation Act, 00 . At present concessional crop loan at with interest rate subvention is available to farmers as pre-harvest loan. However, in case of post-harvest loan against the negotiable warehouse receipts, the farmers are granted loan at commercial rates. In order to discourage distress by farmers and to encourage them to store their produces in warehouses against warehouse receipts, the benefit of interest subvention will be available to small and marginal farmers having Kisan Credit Card for a further period of upto six months post harvest on the same rate as available to crop loan against negotiable warehouse receipt for eeping their produce in warehouses.

Maharashtra State Warehousing Corporation is a body corporate and is the business of scientific storage in the State. Presently MSWC is performing its activity with Physical Warehouse Receipt System and manual recording consider the need of time to enact of WDRA. MSWC has underta en the project of Computerization, Software Development and online trading through Warehouse Receipt.

MSWC is functioning at 9 locations in all over Maharashtra and all godowns are registered and wor ing as per the provisions of Warehousing Corporations Act, 9 , Bombay Warehouses Act, 959 and rules framed there under and also providing the facilities of Negotiable Warehouse Receipts. The main objectives of the Warehousing Development and Regulations , Act, 00 are to ma e provisions for the development and regulation of warehouses and negotiability of warehouse receipts to ma e them a prime tool to trade and to facilitate finance against it throughout the country. The system will allow ban s to improve the quality of their lending services and enhance their interest in financing the negotiable warehouse receipt issued by the registered warehouse against the deposit of agricultural and other commodities. Besides, the farmers, it will be beneficial for a number of sta eholders such as banks, financial institutions, insurance companies, trade, commodities exchanges as well as consumers. The system of negotiable warehouse receipts would result in providing considerable benefits, both at the macro as well as micro levels and increase the liquidity in the rural areas, encourage scientific warehouse of agricultural goods, lower cost of financing, improve supply chain, enhance rewards for grading and quality and better price ris management. Ultimately, all these will result in higher returns to farmers and better service to the consumers.

MSWC is the best and most

important lin in the State wide networ of godowns, which are needed to be accredited under WDRA to issue negotiable warehouse receipt. The availability of Services of warehouses at the grassroot level with modernization of warehouses, cleaning and grading yards, immediate pledge finance by ban s against warehouse receipts, mar eting of agriculture produce of the farmers through Commodity Spot xchange, will lead to improve the financial level of farmers and it can be effective remedy to control suicides of farmers.

In order to provide the scheme of Negotiable Warehouse Receipt to farmers at their door step by storing the foodgrain in the convient godowns to farmers MSWC has plan to form the cluster of godowns.

MSWC has planned to facilitate immediate loan against NWR to the farmers from the various ban s. Further, to facilitate immediate loan against NWR upto 0 of the value of their produce and its online trading, MSWC is developing SAP RP Software system to accommodate the ultra modern facilities for the benefit of farmers, to be implemented throughout networ of all the Warehouses of the State. Warehouse Receipt has become an important tool and is having all the properties of Negotiable Instrument, hence is accepted as Negotiable Instrument throughout the Country, by all the Ban s.

To facilitate the Negotiability of the Warehouse Receipt, uality parameters are to be followed for the foodgrains to be accepted under storage. For this MSWC is developing Food Grain testing Laboratory, and Cleaning and Grading ard at every Warehouse. Further planning to facilitate pac ing unit at every centre. Will facilitate to have cleaning and grading of the foodgrains of the farmers, the quality of the food grains will be tested and the tested goods will be available for storage as well as will be mar eted easily by nowing quality parameters of the same. The high quality of food grains will attract higher prices to the food grains. Ultimately, the resultant will be the exportable export quality products of the farmers and higher earnings of the farmers. This will encourage the farmers to trade high quality product, will earn higher and consumers will get quality food grains at reasonable rates.

The Basic project attracts the baseline of networ ing of Spot Mar et, xchange, Logistic nterprises of National and International levels. Further Cold Storages and Refer ans networ is planned to form Cold Chain and is also in plan of MSWC. Chilly of Nandurbar Guntur Tribal Areas, Blac Beans from Satara, Maldandi owar, Tur of idarbha, etc are mostly preferred commodities in storage of MSWC.

MSWC has planned to develop at least 00 Warehouses at important Circle level. This will facilitate to have networ upto rural level which will ma e farmers to store their agri produce at their doorstep. Further an innovative project is designed to form storage umbrella under Hub and Spo e Model, which will join PACS godowns as Spo es and MSWC's Warehouses will be performing facilitation to the farmers as Hub. For developing this project, on 5.0 . 0 , a meeting between Chairman WDRA, Chairman NABARD, Principal Secretary Agriculture and Mar eting Government of Maharashtra and MSWC was held and shape giving activity has been started to the Project. For this a study group has been formed and primary recommendation is to create minimum 50 MTs capacity at PACS level. MSWC has identified 40 MSWC Centres as Hub and 5 0 PACS godowns under first phase to facilitate farmers with Scientific storage, Cleaning and Grading, Laboratory Testing and Online Trading to farmers, with Pledge Loan Facility at lower interest rates by various ban s, to meet immediate financial requirement of farmers and facilitating them to avail the higher mar et rates in the off harvest season.

Government of India has provided funds of 000 Crores in ear 0 - , and has raised the same to Rs. 5000 Crores for the ear 0 - , for development of Warehousing Sector, to meet the requirement of Warehousing a per the directives of H'ble Supreme Court of India. MSWC has also underta en projects of Rs. 9 Crores. These projects include development of godowns in Tribal, Naxalite, Suicide Prone areas, as well as at the places where there is no facility of warehouses in the State. Also multistory Warehouses at selected places are planned. MSWC has one Container Freight Station at NPT, Navi Mumbai, and under oint enture is planning to develop another CFS at Dighi Port. The vision of Chhatrapati Shivaji was desirous to develop networ of Warehouses in the State and is the ey for the prosperity of the State, this vision is being followed by MSWC. ■

The Spice Made Them Millionaires

Organized group of farmers can use their management skills to exploit the situation.

Farmers of Sillod prefer Chili because if they sow the seeds in summer they get this cash crop in the monsoon and it suited the farmers in this rainfed area.

Management of agriculture has become ris y affair due to inconsistent weather, lac of proper irrigation and increasing rate of farm labour. Rising price of production cost, pressure of mar et economy and instability in the prices of cash crops are factors the farmers has to ta e into account for crop management. But still there are opportunities to cash on.

Organized group of farmers can use their management s ills to exploit the situation.

Sillod tehsil in Aurangabad district receives average 00 mm rainfall in a year. The roc y terrain of the tehsil which houses the world famous Ajanta caves does hold very little water paving limited scope for water conservation. One la h hectares land comes under Kharif crop and only 000 hectares land is under cultivation of Rabi crops.

Corn Cotton are the main crops in the region. Though both are cash crops the production cost eats profit of farmers. Braving the situation few groups of young farmers with the active help of State Agriculture Department have succeeded in cultivating crops li e Turmeric, Tomato and Chilli using high end technology.

Farmers of Sillod prefer Chilli because if they sow the seeds in summer they get this cash crop in the monsoon and it suited the farmers in this rain-fed areas It is gathered that the medium spicy G 4 Guntur 4 variety of chilli has good demand in Mumbai and Surat mar et for export. The cultivation of chilli was underta en by Raised beds method. To learn the cultivation a study tour was organized in Chattisgarh under Agricultural Technology Management ATMA Agency.

To ma e the shipment of the chilli towards Mumbai economically viable it is calculated that at least to tonnes chili is required in a truc . It has to be ta en into account the duration between two pluc ing of chilli is about 0 to days and every pluc ing requires 5 to 0 labours for per acre.. The group of farmers was divided accordingly.

Farmers from group and some of the farmers from village bought their own truc s for transportation. According to land holding group of 0 to 0 farmers were made. ventually the techniques of cultivation and mar eting were being taught to the farmers from the entire talu a. Previousely the Gross Domestic Production of Sillod talu a including Kharif and Rabi Accounts for Rs. 50 crore to 80 crore.

The crop of Chilli added Rs.50 crores in the itty of famers due to which they were able to fund their production cost of another Kharif crops. The project was a success due to farmers' ability to handle latest technology in the field, their discipline in crop management, their earthy sense about mar et. The success also boosted the confidence of local Agricultural extension system.

The farmers who were holding land from 0 gunthas to 0 acres learnt how to do successful community farming. The average crop production of all farmers rose up to 50 tonnes per hectare.

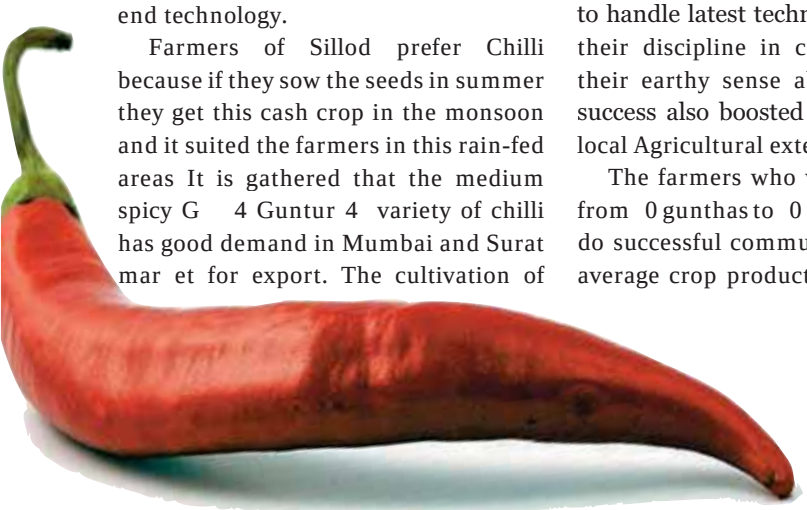
The drip irrigation scheme of the State Government helped a lot to achieve this milestone. The scientists and experts hailed this project as one of the best example of precision farming. The young leader of the farmers group ijay Tejrao Daud bagged the prestigious asantrao Nai Agricultural and Rural Development Award for the year u .

The steely will of farmers from this drought prone area has given this project tremendous success. Scientists from Marathwada Agricultural Universities visited frequently to the project to guide the farmers. Their involvement in the project and the efforts put in by officers and employees of Agriculture extension programme was laudable. ■

U a e a kar

Columbus brought Chili from Latin America and introduced it to the then known world. Vasco Da Gama brought this spice to the spice rich India. The arrival of Chilli chilled the existing spices and became substitute to all high priced spices. The spice became a menu in the platter of poor along with salt. The Chilli not only added spice in the life of farmers of Silod but some able to buy four wheeler because of its farming.

The community farming of chili on 2000 hectares of land in the Sillod tehsil had raised total production income of the farmers by more than Rs. 50 crores.



Magic of Turmeric

The "Tarpa", traditional pipe of Thane tribals was registered as turmeric brand.

The turmeric corp was introduced as a sustainable income generation crop to the tribals to end their misery.

It was a need of the hour to find a substitute cash crop which can raise the living standard of tribal population of Thane District who were only dependent on rice crop. The Agriculture department and the district administration chalked out an ambitious plan under the leadership of Abasaheb arhad, the District Collector. The tribals living in hilly region of Thane district usually used the traditional ways of farming which hardly generate any income to them. After completion of harvesting season the tribals has to work as laourers on kilns. The turmeric crop was introduced as a sustainable income generation crop to the tribals to end their misery.

In Kharif season of year 2010 to 2011 turmeric seeds were brought from atara and cultivated at awhar on pilot basis. The environment suited the crop. The bumper production assured the success.

The training of farmers was started from December 2011 under ATMA programme. tudy tours of farmers were organized at atara, angli, Kolhapur, Turmeric Research Centre at Kasbe Digraj and elam, Tamilnadu. 102 Tribal farmers from Vanganpada, Pathardi, Pimpurna, yahali Budruk, arsun and Khabala like 12 villages decided to participate in cultivation project of turmeric. The production cost of turmeric is Rs. 90,000 to Rs. 1 lakh per acre. The tribals did not have means to raise the fund so the Thane District Central Cooperative Bank was chipped in. Rs one lakh per hectare loan was sanctioned by the bank. Rs 12, 00 per hectare was given to each farmer under ational Horticulture Mission and Rs. 10,000 was given by Tribal Development. Department as assistance. In May 2011 the farmers went to elam in Tamilnadu alongwith Agriculture officers to get knowledge of cultivation and to buy the seeds of turmeric.

Four truck load 4 tonnes of seeds of Chinna elam variety which was considered as best variety seeds for turmeric production was bought from elam, Tamilnadu. 102 famers 100 tribals from 12 villages sowed turmeric seeds on 60 acre of land in une 2011 under the guidance of Agricultural department.

anuary to March was the watering season for the turmeric crop. ets of drip irrigation were provided to the farmers on 90 percent assistance by the Tribal Development Department. lectric motor and pump sets were made available by the district administration and Tribal Development Department. Power connections were made available on emergency basis where need felt. In the first season there was average production of 100 quintal per acre wet turmeric crop by the tribals.

To increase comradeship among the farmers a cooperative society was registered under the name of awhar Taluka Turmeric Producers Farmers' Cooperative ociety . For sell of the produce necessary permissions were obtained from Food and Drugs Administration, abour Department and ales Tax Department. There was need of one polisher and two cooker to polish and cook the turmeric. District Planning Committee provided Rs. 10 lakh assistance for these machines. A polisher and 2 boilers were bought in angli and handed over to the society. The process of cooking, drying up, polishing, grinding and packing was done on turmeric. It was done between 1 th February to 20th March. For grinding polished turmeric an agreement was made with Gurukripa Masala Mill from Koparkhairne, avi Mumbai and in the presence of farmers the grinding was done. Packaging of grinded turmeric was done at Agriculture Department's warehouse at Chavindra, Bhiwandi.

Those tribal famers who were getting Rs. 5000 to 6000 per acre from rice crop are now getting Rs. one lakh per acre from turmeric.

Before that Tarpa traditional pipe of Thane tribals brand was registered as turmeric brand. Design of pouch was finalized and a three layer pouch was made to sell the turmeric. The price of the turmeric was fixed as Rs. 200 per kilo pack.

2 rd March 2012, sale of turmeric started in presence of renowned personalities.

Farmers and employees and officers of Agriculture Department were at the counters to sell the turmeric that has brought hope in eyes of tribals. ■

- *S a k a*

Efforts and Inspiration

Solanke is an avid farmer who believes in trying new technology and experiments in his agricultural production

Vishwanath Solanke is in the silk farming business since last four years. One acre of mulberry plants is enough to get 4 time production of silk cocoon. In each time Solanke earns between Rs 60,000 to Rs.80,000. But afterward he used to earn Rs. 1.50 lakhs each year.This time he has produced white cocoon, and it is assumed that he might earn more than Rs. 2 lakhs.

Vishwanath Solanke holds a land of 6 acre in Mugat village in Mudkhed tehsil of Nanded district. He does silk farming along with banana, vegetables and other crops. Two years ago he was awarded by the State Government as "Millionaire farmer". Those farmers who earn profit of more than 1 laks rupees in one acre by investing fewer amounts bagged this honour by the government. Taking cue from Solanke 96 farmers from Nanded district has harvested 27000 kg silk cocoons by using 53,000 Silkworm larvae eggs. It gave them a net profit of Rs.50 lakhs.

ishwanath Solan e a progressive farmer belongs to the village named Mugat. Mugat is situated at Mud hed Tehsil of Nanded District. Under the guidance of sil business officers, Solanke had started his silk farming on two acres of land in 200 - 08. He received a loan of Rs. 22,500 from the employment guarantee scheme for plantation of mulberry plants.

ast year he planted special species of mulberry called V-1. He installed the drip irrigation system in his land.

For which Government had offered him subsidy of 50 % of total planted land i. e. Rs. 37,500. At the same time he build rearing house, which constitute area of 110 x 21 square feet. This rearing house cost him Rs.1.5 lakhs. Solanke received a subsidy of Rs.75000 under CDP scheme jointly funded by Central ilk Board and tate Government which is 50 % cost of silk rearing house.

In 2010-11 he again received another 75% financial assistance from silk board to purchase 350 bivoltine egg larvae. It gives him 2.5 quintal of silk cocoons.

In 2011-12 he earned Rs. 1.5 lakhs by rearing 450 eggs. Solanke participated in various study tours organized in Nashik, Pune, Baramati as well as Mysore. In this study tours, he studied deeply about sericulture.

His practical experience and valuable guidance of district officers of silk board enabled him to make rapid growth in silk farming.

olanke is an avid farmer who believes in trying new technology and experiments in his agricultural production. He holds a land of 6 acre in which he sowed banana and mulberry plants. Alongwith this he also takes crops of vegetable and fruits. Two years ago he was awarded by the tate Government as Millionaire farmer . Those farmers who earn profit of more than Rs.1 lakh in one acre by investing fewer amounts bagged this honour by the Government.

In the year of 2011- 2012, 96 farmers from anded district has harvested 27, 211 kg silk cocoons by using 53,669 silkworm larva eggs.

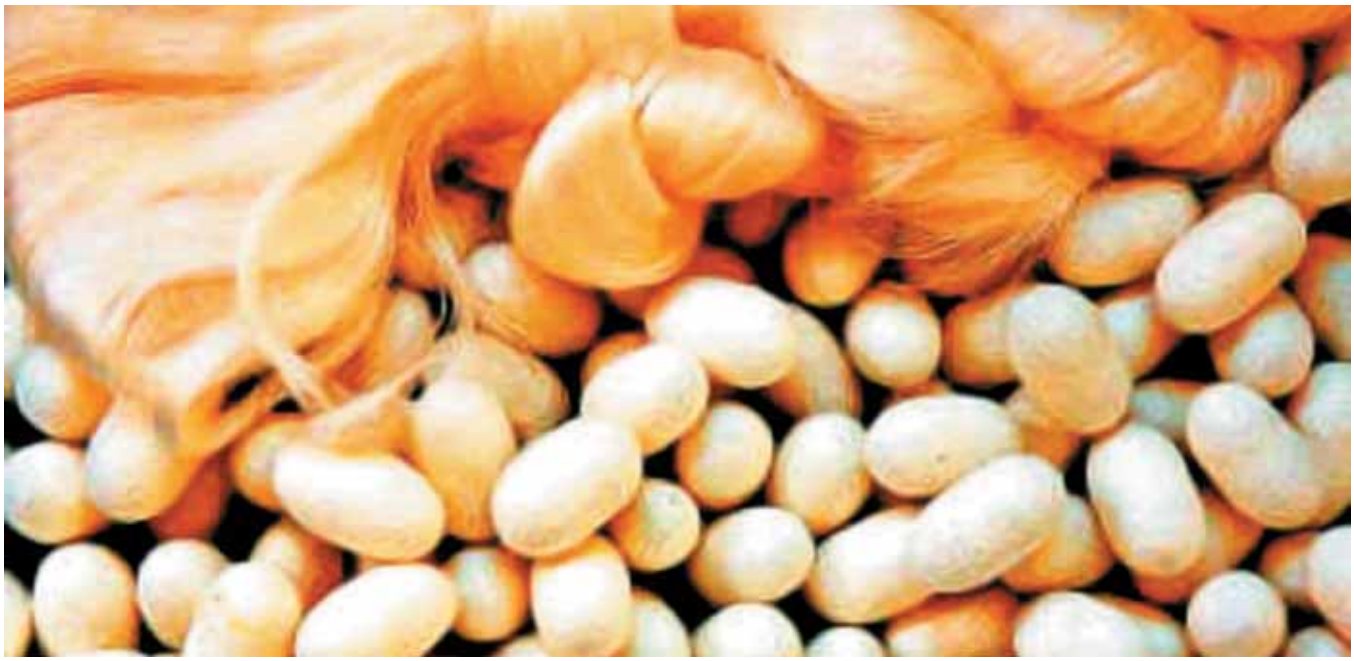
It gives them a net profit of Rs.50,98,900. By the end of April 2012, 108 farmers have registered themselves by paying just Rs. 500 for per acre to sow the mulberry plants. The whole district is moving towards the sericulture. ■

karam ai

Sericulture: Silk Farming

The sericulture is helping hand for mainstream farming

One time plantation of Mulberry trees is useful for next 12 to 15 years. It needs very less water and does not require any fertilizers and pesticides. So, automatically the expenses on silk farming comes down.



Sericulture or sil farming is the guaranteed source of monthly Income. Government is already providing the assurance of rate and mar et place for produced sil . Sil worm's larvae are fed on mulberry leaves. One time plantation of Mulberry trees is useful for next to 5 years. It needs very less water and does not require any fertilizers and pesticides. So, automatically the expenses on sil farming comes down.

Worms are fed on dried tree leaves. After feeding of worms the remaining of leaves can be used as supplement for milch animals. It increases productivity of milch animals. Waste of vegetation and worms can be converted in good natural fertilizer. With the help of earthworm it can be composted as a earthworm fertilizer as well. The stic s of mulberry are a good source of fuel. The sericulture is helping hand for mainstream farming. Any member from family can run this process of sericulture without investing extra time. It's a profit oriented side business.

Farmers get their payments through the cheque or it can be directly deposited to their account as well.

SUBSIDIES FOR SIL FARMING

1. A farmer can get financial assistance of 5 of per acre Rs. 50 for per acre for Mulberry plantation.
. Rashtriya Krushi i as ojana provides subsidy of Rs. 0,000 for Labour and other required apparatus for next three years.
. There is assurance of 5 subsidy for drip irrigation. i.e. Rs. 5000 for per acre.
4. Assistance of Rs. ,500 is given to purchase equipments for sil worm feedings.
5. 50 subsidy is given for Sil worm rearing house. Minimum is Rs. ,500 and maximum Rs.one la h.
. Free training camp is organized for farmers.
. The inter-State study tour is organized to get informed about the progress of farming business.
8. gg bags are provided on concessional rates. ■

- S r h acha ar

Interested farmers can contact district office for silk farming and register themselves by paying Rs.500 per acre. The plantation is raised as block plantation system. After period of 4 to 5 months of plantation, farmer must build the Silk Rearing House. Area of rearing house should be 50x20 feet for one acre of land. For other information in this regard farmers can contact:

Reshim Development Officer Grade-1
District Silk Office, 19-K, Pragati Bungalow,
Shri Siddhivinayak Colony,
Savedi, Ahamadnagar,
Tel. no. – 0241- 2428546

Agriculture At A Glance...

Agriculture Area (Area in '000 ha.)

Net Sworn Area - 17,401

Gross Cropped Area - 22,612

Gross Irrigated Area – 4,050

Percentage of Gross Irrigated Area to Gross Cropped Area – 17.9

Area under Principal Crops

(In thousand hectares)

Rice - 1,518

Wheat – 1,307

Jowar – 4,060

Bajra – 1,035

All Cereals – 8,990

All Pulses – 4,038

All Foodgrains – 13,028

Sugarcane Harvested Area – 965

Cotton – 3,942

Groundnut – 357

Production of Principal Crops

(In thousand tonnes)

Rice – 2,696

Wheat – 2,301

Jowar – 3,452

Bajra – 1,123

All Cereals – 12,321

All Pulses – 3,096

All Foodgrains – 15,417

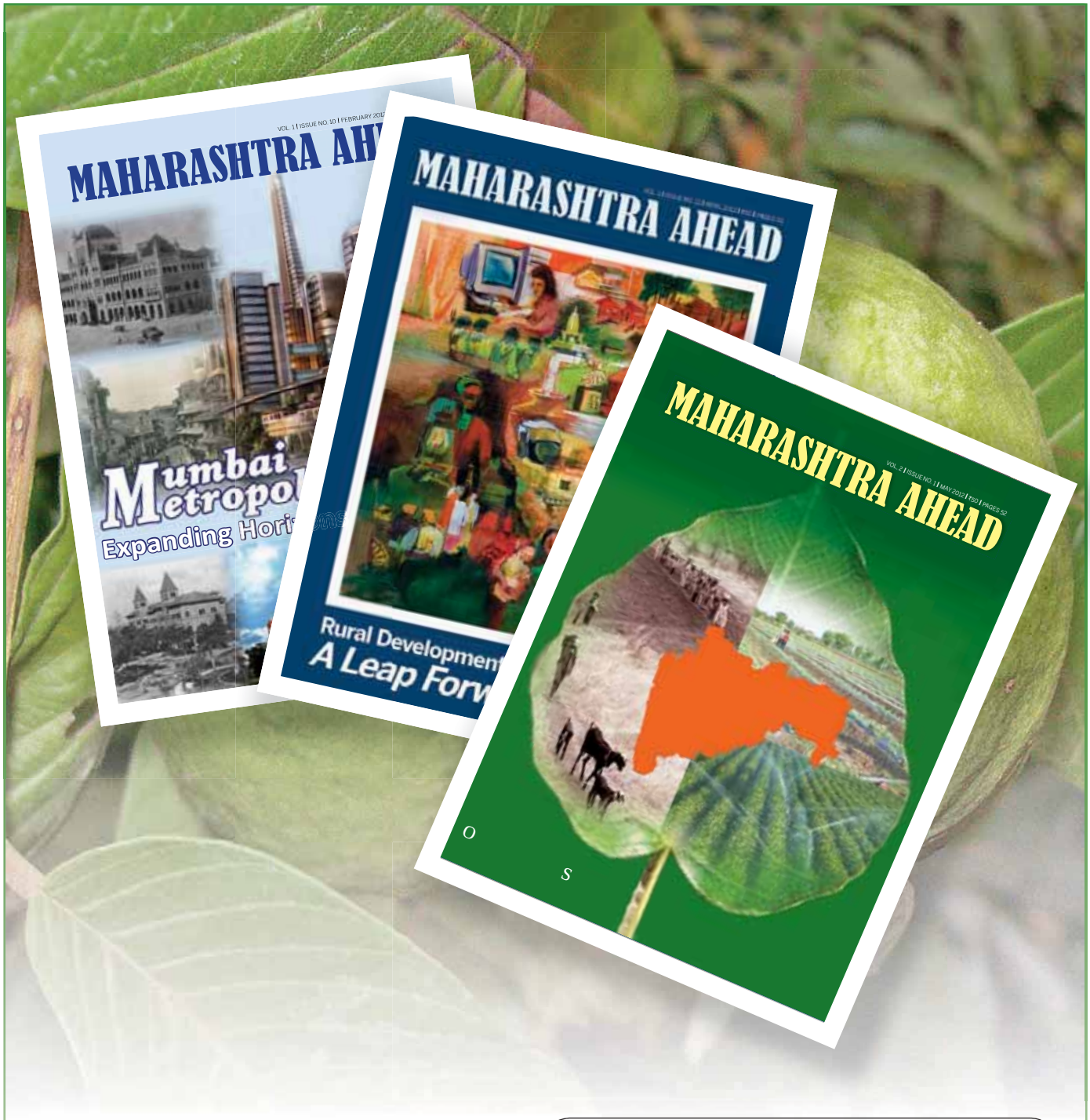
Sugarcane– 85,691

Cotton (lint) – 7,473

(Production in cotton in 170 kg per bale in '000 bales)

Groundnut – 458

(Source: **Economic Survey of Maharashtra 2011-2012)**



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MAHARASHTRA AHEAD

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