

FOURTH ANNUAL CONVOCATION

FRIDAY, 6th FEBRUARY, 2009 AT 12.30 P.M.



Convocation Address by

Dr. M.V.Rao

Ex. Special Director General, ICAR &
Vice-Chancellor, Acharya N.G. Agric. University.



NAVARI AGRICULTURAL UNIVERSITY

: Venue :

**UNIVERSITY AUDITORIUM
NAVARI AGRICULTURAL UNIVERSITY
NAVARI – 396 450**



FOURTH ANNUAL CONVOCATION ADDRESS*

Dr. M.V.Rao

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His excellency the Governor of Gujarat and Chancellor of the Agricultural University, Shri Nawal Kishore Sharmaji; Hon'ble Minister for Agriculture, Cooperation, Animal Husbandry, Cow Breeding and Fisheries Shri Dileep Sanghani, Hon'ble Vice-Chancellor Dr. R.P.S. Ahlawat, Members of the Board of Management, Faculty Members, Scientists, Teachers, invited dignitaries, Ladies and Gentlemen and Dear students:

I feel honoured to have been invited by the Hon'ble Vice-Chancellor of this University to deliver the Fourth Annual Convocation address. Convocation day is unique in the lives of students who are obtaining their degrees after completing the necessary mandated periods of learning and training and this enables them to enter into professional careers or go for still higher degree courses. It is a turning point in their lives. It is also a happy day for the teachers who taught and nurtured the students hoping fondly that some of the students whom





they taught will bring good name them too. I want to congratulate all those students who are getting their degrees today and warmly wish them bright future and, urge upon them to play their role in building up the state of Gujarat and the country both of which are waiting for your knowledge, skills and enterprise. I wish you every success in your endeavours and in whatever career you take up.

My acquaintance and association with the state of Gujarat dates back to 1952 when I came to visit different centers in Gujarat and see the wheat varietal trials. I visited a number of places in north, south and central Gujarat and was greatly impressed by the hardworking farmers. I also had an opportunity to see the different challenging soil, water and climatic conditions of the state. Ever since that visit I have been a regular visitor to this state and watched with great admiration the enormous changes that took place in all fields of agriculture –

***Delivered on 6th February, 2009 at the Navsari
Agricultural University, Navsari, Gujarat**





whether it is animal husbandry, dairy, fisheries, horticulture, crop improvement or in promotion of agro based industries. I have also seen Gujarat in years of drought and the difficulties faced by both farmers, animals and general public. In spite of the difficulties during the periods of scarce rainfall and drought what impressed me most is the valiant spirit, courage, determination and ability of the farmers and people to overcome the hardships and save the valuable cattle. These qualities inherently built in the people of Gujarat made them succeed and make a mark and leave a foot print not only in Gujarat but also wherever they went - whether different parts of India or different countries of Africa, Asia, Europe and the Americas. I chanced to meet them in different countries and admired them for their key and pivotal roles they are playing there whether in agriculture, business, trade, enterprise or management of local systems. They brought name and fame to Gujarat and to the country and we are proud of them. The state of Gujarat is also the home of the Father of the Nation Mahatma Gandhi and great leaders like Sardar Vallabhbhai Patel and several leaders, scholars, social reformers and religious leaders. The country is beholden to this state for all the contributions and directions it gave.

As I visit Gujarat in more recent years I see tremendous





changes in every walk of life – it is a happening state thanks to the dynamic progressive leadership.

Agriculture in the broad sense covering different aspects and facets is crucial to the nation and so also to the state of Gujarat. The state is known for oilseeds, cotton, dairy, horticulture, food grains, spices and vast germplasm resources of both plants and animals. Realising the importance of agriculture four Agricultural Universities were created by the Government of Gujarat to cater to the needs of the different agroclimatic zones of the state. Navsari Agricultural University was set up 2004 to cater to the needs of high rainfall zone of south Gujarat. Navsari campus itself was established in 1965 and the cotton research of this state is well known all over India. It is the centre which gave the first cotton hybrid to the world developed by Dr. C.T. Patel namely the Gujarat cotton hybrid-4 from the cross Gujarat 67 X American Nectariless. It is also interesting to recollect that the first cotton seed processing centre of India was established at Surat as early as 1914. The Navsari Agricultural University is mandated to work for the improvement of plantation crops, cotton, sugarcane, sorghum, rice, millets, pulses, paddy, forest trees, ornamental plants and floriculture and vegetable crops. In a short period of four years the University organized its





course curricula into different faculties of agriculture, horticulture, forestry, animal husbandry and agri-business management. The University moved forward to establish in its two agro-climatic high and medium low rainfall zones, regional stations, agri politechniques, agriclincs, training centres and more recently agri polytechnics in agriculture engineering. The seven districts of south Gujarat viz., Narmada, Bharauch, Surat, Tapi, Navsari, Dangs and Valsad which come under the jurisdiction of the Navsari Agricultural University have immense potentialities for agri-horticultural enterprises and this led Government of India to declare south Gujarat as agri-horticultural export zone and special economic zone. South Gujarat besides growing field crops like sorghum, wheat, paddy, hill millets, soybean, bajra, maize, oilseeds, pigeonpea, cotton, sugarcane is also highly suitable for growing horticultural crops like Mango, citrus, banana, sapota, guava, spices and condiments, chillies, flowers and a variety of other crops. Good progress has been made to develop high yielding varieties along with matching production and protection technologies by the University scientists, and this is an ongoing exercise with a number of supporting and collaborative programmes of the Gujarat Government, Indian Council of Agricultural Research and Government of India. I am sure the





University will march ahead and make its contributions not only to south Gujarat, but also the whole state of Gujarat and the rest of the country as well.

While the progress made so far is laudable there are many challenges awaiting us – in the south Gujarat zone, the state as a whole and the country at large. In the convocation address I gave at the Gujarat Agricultural University, Junagadh in December, 1992 I dwelt in detail the agricultural scenario of Gujarat and the opportunities we have to move forward. I am happy that many progressive steps have been taken by the Government of Gujarat to strengthen agriculture of the state through a series of regional Krishi Mahostavs, water harvesting and conservation programmes, Jyotirgam, Soil Health Card System, RKVY, Krishi Vigyan and Farmers Training Centres etc. Thrust is being given to convert the state particularly the southern Gujarat Zone into an export zone because of the horticultural, marine, crop diversity wealth that is present here. Special thrust is also being given to post harvest technologies, product development and product diversification and cutting down the post harvest losses.



Change is natural in nature and it is always an ongoing process. The famous Darwinian theory tells us that in nature it is not the strongest and fastest that

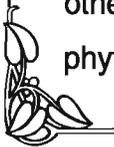


survives, but only those which change according to circumstances. When we make a analysis of present strengths, weaknesses, opportunities and threats in present Gujarat, the first challenge we see is the vast rain dependent agriculture of the state. Rainfall is very erratic and when it is timely and well distributed we have excellent crops and prosperity every where and, the opposite when it fails or when it is in excess. Although efforts are being made to bring water to the fields by exploiting the surface and underground water resources yet large tracts remain rainfed and we have challenges both for meteorologists, crop and horticultural specialists to minimize losses and stabilize production. Although 'Green Revolution' brought significant changes in our agricultural scenario by increasing food grain production from 74 million tons in 1967 to record levels of 230 million tonnes in 2008 and making India the third largest food grain producer and second highest producer of rice and wheat in the world. We have now another challenge to usher in the second Green Revolution to meet the needs of the growing population and its diverse needs. Green Revolution is mostly restricted to areas where there are well endowed water resources. Even if India exploits its vast water resources still 60% of India's cultivable land will be rainfed. I strongly believe that while we continue to





strive to increase the yields under irrigated conditions by upgrading as well as by exploiting the existing technologies by mass transfer of technology programmes, the next Green Revolution has to come from rainfed agriculture. Many of our crops like pulses, oilseeds, cotton, food grain crops like sorghum, pearl millet, minor millets and even 40% of paddy are grown under rainfed conditions. The challenge before us is to bring stability, yield increase and more importantly profitability in rainfed agriculture. It requires well planned multi pronged, multi disciplinary coordinated approach. The second challenge we face is in incurring enormous post harvest losses of our agricultural produce, particularly the horticultural crops and to some extent food grains and animal produce. It is estimated at the national level the losses could be any where between Rs. 60 to 70 thousand crores. This is where we have to plan for appropriate technologies and industries at village, regional, state and country level to develop value added products for consumption in the country and generate wealth in the country side and at the same time be competitive in the international world. Instead of exporting raw materials like Alphonso and Kesar mangoes and other fruits and vegetables which are subject to many phytosanitary restrictions and post harvest losses, if we





can add value to them and develop products after studying the importing countries needs and preferences, we can earn much more foreign exchange. The third challenge is in the pulse sector where we are very deficient and dependent upon large imports. Although we are the biggest pulse crop growers in the world raising a variety of crops, our pulse consumption over the years has fallen from 72 grams per capita per day to present 24 grams due to stagnation in production and increase in population. Protein mal nutrition is rampant in the country. Pulse crops need our specific attention in terms of bringing stability, yield increase and resistance to different abiotic and biotic stresses. We have similar challenge awaiting in the oilseed sector where we are now very deficient. We grow 9 different oilseed crops but mostly under rainfed conditions. Gujarat, which is one of the most important groundnut growing states of the country is prone to vagaries of weather and so also the other states which grow oilseed crops. We reached near self sufficiency in vegetable oil sector in the early 90s through the well planned coordinated approach of the Technology Mission on Oilseeds but this scenario has changed now making India as one of the major vegetable oil importing countries in the world. We have to relook at our vegetable oilseed Sector, exploit the non





conventional crops like oil palm, simarouba glauca, rice bran, mango kernel, cotton seed, oil bearing tree species, soybean, sunflower and also non conventional areas . We have to improve the oil extraction and solvent extraction technologies and our mills require renovation and modernization. Rice and wheat which are the main stay for our food security need up gradation in yield and stability against different pests and diseases which are continuously evolving to produce new races and biotypes.

Biotechnology is emerging as a very important subject in the world today in key sectors like pharmaceuticals, nutrition enhancement, crop improvement, management of pests and diseases, weed management etc. Many of us in our country underestimated in the past the power of biotechnology in crop improvement. The private sector particularly in developed countries like USA invested heavily in this field because biotechnology unlike conventional plant breeding etc. require heavy investments and sophisticated facilities. They released the first genetically modified crop varieties in maize, soybean, rapeseed-mustard, papaya and cotton for management of pests, weeds, viruses or improved quality. The varieties and technologies so developed spread very fast in USA,





Canada, Brazil, Argentina, China, South Africa and several other countries except in Europe. China realized the potentiality of biotechnology and moved very fast to develop modern facilities resulting in production of their own genetically modified crop varieties. In India after their identification and exploitation the dwarfing genes Norin and Dee-Gee-Wo-Gen in wheat and rice, respectively in the mid sixties, which brought the 'Green Revolution'. The next break through in crop technology was witnessed only with the exploitation of the Bt. gene in cotton. Starting with Gujarat this genetically modified Bt. cotton material moved to other cotton growing states and we witnessed a remarkable jump in cotton production and reduction of pesticide application. The Bt. Cotton with the Cry 1Ac gene from the soil inhabiting organism *Bacillus thuringiensis* which is effective only against The American boll worm *Helicoverpa armigera* is further strengthened with the addition of other gene/s to protect the cotton crop against other pests like *Spodoptera litura* etc. These bacterial genes and other genes are being incorporated in other crops like brinjal, ladies finger, cabbage and other crops. Although any technology that is developed has to be tested for various parameters by different agencies before it is released and popularized has to be constantly watched for any possible side





effects. We have now to realize the power of modern gene technology and there is an urgent need to train our manpower and develop facilities for serving the cause of our agriculture. Our Agricultural Universities have a special responsibility to train our scientists in all modern branches of science like biotechnology, issues coming up with globalisation, World Trade Organisation, Trade Related Intellectual Property Rights (TRIPS), patenting, Plant Breeder's Rights (PBR), Intellectual Property Rights (IPRs) , global warming, business management, international marketing systems, post harvest technologies, phytosanitary rules and regulations etc. We have to realize the implications of the warning given by our past President of India H.E. Dr.A.P.J. Abdul Kalam who said "If you are technologically backward be prepared to be subjugated".

Indian subcontinent is one of the key centers of origin of several species of plants, animals, fish, microorganisms etc. in the world. We have tremendous wealth of medicinal and aromatic plants, breeds of cattle and other genetic resources. There is a great urgency and moral responsibility on the part of every citizen to protect this valuable germplasm for our own use and for the use of our posterity before they are lost with winds of modernization. We have already seen this happening in





major crops like rice, wheat, sorghum, pearl millet, minor millets, pulses, cotton as well as in cattle breeds. The wide range of varieties evolved locally or developed by farmers over centuries to suit different agroclimatic conditions or tastes, are now being replaced by few genotypes. The Indian Council of Agricultural Research is making every effort to collect, evaluate and preserve the indigenous germplasm of plants, animals, fish, microorganisms etc., through its various institutions. We have to take up DNA finger printing of our indigenous materials as well as the varieties, parental lines of hybrids before others patent them. We are already witnessing claims of our indigenous basmati rice by others. Intellectual Property Rights is a subject of vast significance in the modern world. Inventions that are emanating from the thoughts of an individual or a group of individuals accounts for some capital and time of the inventor. These may result in products and hence intellect is now considered as an asset and source of income. IP assets are now considered as financial assets and sellers and buyers of IP can manage their IP as financial assets. The key words for a modern moving economy are: Innovation, Information and Ideas. Indian agriculture, now and future has to achieve strength from knowledge based developments, respond to market





sentiments and enhance the money flow to both rural and urban markets. Winston Churchill once remarked “in future empires will be intellectual empires and not land oriented empires”. India has enormous wealth of intellect and we have to sensitise our students on the opportunities coming up in the world. It is worth mentioning here that one famous scientist Prof. Martin Rees observed ‘Our future will depend on what happens in India and in China; that is where the world’s intellectual capital will be concentrated and where world’s fate – economic, political and environmental will be decided’. Hence I urge the policy makers, university authorities to bring changes in our course curricula so that our young students come out of the portals of the universities, bubbling with new ideas and knowledge on opportunities. The Government of India realizing the scope of our valuable germplasm and exploitation of biological wealth started two authorities viz., Protection of Plant Varieties and Farmers’ Rights and the National Biodiversity Board.

Agriculture is the backbone of Indian life and culture. Food Security is of prime consideration for all of us. The fragile food security we had soon after independence, gradually changed with the combined efforts of our scientists, policy makers, administrators, input agencies and above all by our hardworking farmers





to the present comfortable situation through the 'Green Revolution', 'White Revolution', 'Blue Revolution', 'Yellow Revolution' and 'Golden Revolutions'. India is now an important producer of various agricultural commodities. In spite of the progress made in agriculture and food fronts still about 30% of our population is below the poverty line, 55% of our children are malnourished and 45% of our children are born under weight. The population which was only 360 million in 1951 has now trebled to nearly 1200 million and it is projected that in the next two decades India will be the most populous country in the world surpassing China. Our land available for cultivation in the last 30 years is static at about 142 million hectares. The global scenario is also bleak. According to Jacques Diouf Director General of the Food and Agricultural Organisation of U.N., 40 million more people are added in 2008 in the world to the already 973 million malnourished people. There is less food in the world and more so with the diversion of food crops like corn for biofuels and vegetable oils like palm oil, soya oil, mustard and sunflower oil for biofuel. There will be less food and vegetable oil in the international market and even if they are available they will be too costly. So we have to keep at the back of our mind what Pt. Jawaharlal Nehru said ***"anything can wait but not agriculture"***





and what Indira Gandhi said ***'No Country can raise its head among the comity of nations if it cannot feed its own people'***. India which was known in the past as a land of starving people and famines cannot afford to neglect agriculture. We have to invest more in agricultural research which will be the key for future agriculture and food and nutritional security of our people. Our scientists also have to change their outlook from paper oriented research to product oriented research.

In conclusion I urge our young graduating students to keep abreast with all the developments in the state, country and the world and work with dedication, zeal and determination to build a strong, modern India as the Father of our Nation Mahatma Gandhi – the son of Gujarat, wanted Gujarat is a land of hard working, innovative people with enormous enterprenurial skills. We have high hopes on you young graduates to exploit the strengths of Gujarat and make it a land of opportunity, prosperity and a jewel of the country. I wish you all success in whatever career you choose. God bless you.

Thanking you,

JAI HIND

