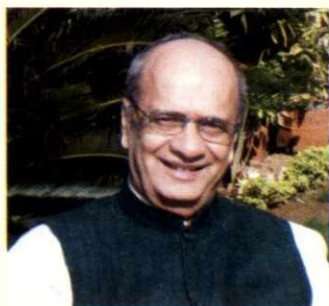


SEVENTH ANNUAL CONVOCATION

February 04, 2012

Convocation Address



Padma Shri Dr. M. H. Mehta

Chairman, The Science Ashram and
Gujarat Life Sciences, Vadodara

[Former Vice Chancellor, Gujarat Agricultural University]



JUNAGADH AGRICULTURAL UNIVERSITY
JUNAGADH - 362 001

Convocation Address by the Chief Guest

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Her Excellency, the Governor of Gujarat and the Chancellor of Junagadh Agricultural University, Dr. Shrimati Kamla; Shri Dileep Sanghani, Hon'ble Minister of Agriculture, Co-Operation, Animal Husbandry, Fisheries, Cow-Breeding, Prison, Law & Justice, Legislative & Parliamentary Affairs, Government of Gujarat; Dr. N.C. Patel, Hon'ble Vice Chancellor, Junagadh Agricultural University; Dr. R.L. Shiyani, Registrar, Junagadh Agricultural University; Vice Chancellors of various Agricultural Universities of Gujarat; Members, Board of Management; Deans of various faculties, University Officers; Members of Academic Council; invited dignitaries; faculty members, degree recipients, students of various faculties, representatives of the media, staff of Junagadh Agricultural University, ladies and gentlemen. I am honoured and delighted to be here on this important occasion.

My congratulations to all the graduates who have received the degrees, awards and distinctions today. I am optimistic that "*Food for All and For Ever*" becomes a

reality. I wish you all the very best for a bright and fruitful career and a very happy life. I also extend my congratulations to the faculty and staff of the University led by the dynamic Vice Chancellor, who have worked hard for imparting quality education and morals to the students.

Junagadh Agricultural University has the great potential and responsibility of serving and uplifting the farming community of an agriculturally challenging region of Gujarat State. This land and its people are unique as described in a Gujarati poem:

Dhanya Bhom, Saurashtra Bhumi

Sarva Bhom Ma, He Ma! Taru Navlu Swaroop!

[Among all the lands, you are unique!]

Over 60 years as an independent nation, India has made major strides in agriculture. The First Green Revolution made India largely self-sufficient in food grains. As a result, the per capita availability of important food items increased even as our population increased. The ratio of agricultural land to agricultural population has shrunk to 0.3 ha per person in India, as compared to over 11 hectares per person in the developed countries. Due to demographic reasons, per capita availability of land, water and other natural resources will continue to decline. This highlights that farm holdings already small are likely

to further decrease in size; making economic viability of farming the big issue. We must evolve strategies that can make small-holders more productive and efficient in their farming operations. They require better quality seeds, fertilizer inputs, new techniques of farming and equipment. Moreover, a farmer is a stakeholder in every aspect related to agriculture whether it is cultivation related activities, research and development, innovative methodologies or marketing. Farmers therefore, must be involved in these various activities, with a sensitivity that safeguards their rights in their land and its produce. Assured and remunerative markets hold the key to retaining the interest of farmers in farming. Post harvest management and agro-processing should be given a major thrust.

Agriculture and National Growth

Agriculture is faced with limited availability of land and water, both stressed on account of the impacts of climate change. Our approach to agriculture, therefore, needs to be redefined in the context of this changing scenario. Increased production will require enhancing productivity levels of existing resources. It is for this reason that there is growing consensus for launching a Second Green Revolution in the country. The First Green Revolution was almost confined to irrigated areas, and

now we should also focus on the rainfed areas, which constitute about 60 per cent of the cultivated areas in the country. Forty per cent of the total food production is from dry land farming, which also supports about 40 per cent of the population, mostly belonging to the poorer sections of society. Dryland farming with mechanization in farm operation could be the cradle for a Second Green Revolution.

The mismatch of slow growth of agriculture *vis-à-vis* steady growth of population, calls for the “Second / Ever Green Revolution” to develop measures to overcome ecological, environmental, technological and institutional fatigues. Second green revolution that is more broad-based, more inclusive and more sustainable; we need to produce more without depleting our natural resources any further, and we look towards our agricultural scientists for ushering this green revolution. The Green Revolution provided relief from hunger with major emphasis on cereals, whereas, the evergreen revolution would need to encompass on oilseeds, pulses, fruits, vegetables, medicinal plants and biofuel crops including fourth generation biofuels. This calls for “Farmers’ Centric” agriculture policy that facilitates achieving a target of 4% agricultural growth providing higher and stable income across different regions and classes of farmers. A move towards second/ evergreen revolution would be to a greater extent aim at 'inclusive

growth' and eco-friendly agriculture. We need to adopt tomorrow's technologies for today's problems. In the area of water management, sustainable and ecofriendly agriculture, value addition and integrated farming, the scientists and farmers of this region can potentially be leaders to the developing world.

Precision Farming

Precision Farming is a new farming approach which is the need of the hour both globally and at Indian context. For judicious use of farm inputs and improving their use efficiency towards enhancing the productivity, modern precision farming techniques need to be adopted through precise levelling of land, exact application of inputs of water, fertilizers / nutrients, chemicals, etc. and related machinery and effective management of pests and diseases. The precision farming is one of the most scientific approaches for sustainable agriculture as it involves management of inputs both spatially and temporally by integrated approach of frontier technologies of remote sensing, GIS, GPS and micro-processor based variable rate application technologies resulting in very efficient agricultural production systems. Precision farming techniques maximise returns to the farmers in agricultural and allied sectors and also it brings out quantifiable changes in production and productivity, which would be better reflected in the economic upliftment

of the farmers. Therefore, they can be adopted for the major crops of the region. The farmers can be empowered with the precision farming technologies and related advisory service can be extended to the needy. There are already good examples of ICT applications like mKRISHI Model for what I call 20-20 Agriculture. Here the aim is lowering the input costs by 20% through the use of agri-bio inputs and improving productivity by 20%. This is the need for the farmers all over and particularly in this region.

While enhancing our agricultural production system itself is a challenge, it is further made tough by post harvest losses. For many years, the emphasis was given for the production technology of commercial crops. However, the benefit of increased production has not reached to the farmers proportionately due to post harvest losses in food grains, fruits and vegetables. As high as 18 to 25 per cent post harvest losses occur in the entire food supply-chain from production to consumption. The economic value of estimated post harvest losses of different food commodities is as high as about ₹ 76,000/-crores. Further, the post harvest management and value addition of agri-horti produce have not received much attention. Due to lack of inadequate infrastructure for processing, marketing, poor market intelligence, exploitation by the commission agents / traders, too many intermediaries, etc. most of the produce is sold as fresh and hence the gluts are commonly seen. To check these

losses at various levels and convert the excess produce in processed form, there is a need to emphasize research for enhancing the shelf life of fresh agri-horti produce through appropriate post harvest handling and state-of-the-art preservation and storage techniques of value addition for major agri-horticultural crops of this region. Also the agrowaste use for soil enrichment through multi-microbial technology has great advantage.

In view of the globalisation of international market and tremendous boost that is being given for export of agricultural produce, there has been a spurt in the demand for protective cultivation adopting green house technology. Poly houses are useful in serving as rain shelters to permit off-season production of vegetables, in raising the seedlings of vegetables and flowers for capturing the early markets or to improve the quality of seedlings and in propagation of difficult-to-root tree species. By production of high value crops with maximum yields for export market, the income from small and marginal land holding by the farmer can be increased, in addition to generating self employment. In the present scenario of perpetual demand for flowers, vegetables and orchids and shrinking land holding drastically, protected cultivation is the best alternative for using land and other resources more efficiently when the natural environment is modified to suitable conditions for optimum plant growth that provides quality product. The state of Gujarat has

ample scope for promoting commercial floriculture ventures, for which the green house technology would come very handy. Research needs to be focused on standardization of irrigation and production practices of different vegetables and flowers under shade net and polyhouse environment respectively for higher income in this region.

Value Added Agri Revolution – The Junagadh Declaration

Almost a decade back, we had made 'Junagadh Declaration' for Value Added Agriculture Revolution at an International Conference here. I am glad to see some good progress in that line by JAU and other universities. The oil mills at Tadka Pipalia and Fareni are excellent model. It is now time to revisit this and take up an integrated model, consisting of (a) Eco-friendly or Organic Cultivation of oil seeds like Groundnut, Sesame, Salicornia, etc. under 20-20 programme; (b) A network of small village level oil mills; (c) Market Network. Such a project taken up through consortia approach can bring a quantum jump in this sector and can be a model for all developing countries. Similarly for a large number of horticulture crops, farm- animal and aqua-agro units, the time for value added revolution is ripe.

Livestock & Fisheries

The livestock and fisheries sector contributed over 4.07 per cent of the total GDP during 2008-09 and about 26.84 per cent value of output from total agriculture and allied activities. The Eleventh Five Year Plan envisages an overall growth of 6-7 per cent per annum for the sector. In 2008-09, this sector contributed 108.5 million tonnes of milk, 55.6 billion eggs, 42.7 million kg wool and 3.8 million tonnes of meat. India produces more than 55.6 billion eggs per year, with per capita availability of 47 eggs per annum.

Livestock farmers, especially women, have very rich, untapped indigenous knowledge including health care. This knowledge needs to be recorded and strengthened by adding scientific approach. This region has unique gifts of Gir Cows, Jaffarabadi Buffalos and a great cultural heritage of their animals being a part of families.

Gujarat with about 20 per cent (1600 km) of the country's coastline, 33 per cent of the continental shelf area (1,64,000 sq. km) and over 2,00,000 sq. km of EEZ (Exclusive Economic Zone) ranks second among the maritime states in marine fish production. Apart from being a maritime state, it has rich inland and brackish water resources in the form of rivers, reservoirs, village ponds and vast stretches of marshy lands all along the

coast. Out of total available kharland, 89,341 ha of land spread across 10 coastal districts is found suitable for brackish water aquaculture.

There may be largely positive impacts of climate change on Gujarat coast such as new fisheries may emerge, biomass of a few existing fish populations may increase. However, it may cause stress on species like Bombay duck and *Coilia*. In this regard, research efforts are required to assess potential positive and negative impacts of additional species entering into fisheries, to identify additional post harvest infrastructure requirements, and to monitor invasion of new fish parasites and diseases from southern latitudes.

The brackish water shrimp farming activity is well-established in South Gujarat, however, the potential sites along Saurashtra region required to be promoted for this purpose. Utilizing these lands for brackish water aquaculture may create more rural employment, and also enhance the aquaculture production. There is excellent scope for integrated Aqua-Agro Complexes.

Innovative Spirit

Agriculture has played a very important role in the growth of human civilization and of nations, particularly in our country, which basically evolved as an agricultural society. According to FAO estimates, with global

population expected to reach more than nine billion by 2050, agricultural production will need to grow by 70 per cent to keep the world's population fed and healthy. The projections are that, by then the population of India will be around 1.6 billion, making it imperative for us to urgently focus on our agriculture. Past experiences will be very helpful but along with it, we would need to think of new approaches and new innovations, pull in every resource and maximize its benefit, being conscious at the same time of maintaining sustainability and welfare of those engaged in the sector.

Invention is the first idea for new product or process development. It is the culmination of the first attainment to put it in practice. After the first green revolution, we tried to look only into new inventions in agriculture like the triple-gene dwarf wheat and rice to happen or Bt-gene for insect control for second green revolution. Inventions do not occur daily but innovations can. We did not realize that there are enumerable small innovations that can be put together to bring in developmental change in agricultural sector. In agriculture now we need innovations more than ever before. Innovations and human resources are the twin engines of growth and development. Farm innovations should be cost-effective, location-specific and affordable. Innovation in the field of less expensive modern farm machinery needs to be taken up as a priority area, to

substitute for traditional labour intensive jobs like transplanting, inter-cultural operations and harvesting. There should be equipment designs that take into account that a large number of women are engaged in agricultural operations. Agriculture being the biggest employer and livelihood provider in the country, this sector offers considerable scope for equitable growth of the economy.

Agricultural Education –New Challenges

A good number of fish processing and storage plants are available in Veraval, Mangrol, Porbandar and Dwarka. However, there are only few private entrepreneurs in value added fish product business. Efforts are required for promotion of businesses venturing into value-added fish product development.

The state agricultural universities are our main source of developing competent human resources that are so critical for the development of agricultural sector. Higher agricultural education is an important activity mandated for the ICAR. The Central Government through the Indian Council of Agricultural Research provides professional and partial financial support for enhancing the quality and relevance of higher agricultural education in the country. The support is for policy, quality assurance through accreditation, common academic regulations, updated and contemporary course curricula and delivery

systems, improvement of faculty competence, promoting excellence through scholarships/fellowships, niche areas of excellence, experiential learning, National Professors, National Fellows, Emeritus Scientists, admissions of students through all India competitions, modernization of farms, IT support and upgradation of infrastructure and facilities including libraries. It is however, recognized that the major support comes from the respective state governments.

Over the years, the level of public finances of the states to the agricultural universities seem to remain below the requirements of the universities in the context of contemporary needs of higher agricultural education. Even these amounts are mainly channelized towards meeting salary expenses and much of the development work is carried out through the funds provided by the ICAR. A separate budget-line for higher agricultural education and research needs to be earmarked in the State budget and the mechanism of support is to be rationalized to ensure continued and need based funds availability to the State Agricultural Universities to become globally competitive.

Agriculture will continue to remain the backbone of society and national development. There is a need for radical changes in the administrative and management system of agri unversities. Scientists and Vice

Chancellors have to be free from the administrative and political controls and be encouraged to face global challenges.

Quality of education in most of the agricultural universities is affected due to shortage of dedicated teaching faculty. Lifting the ban on recruitment of teachers and allowing universities to select competitive faculty are issues which need urgent attention. The Agricultural Universities of Gujarat are fortunate to receive very good support and encouragement from the Government of Gujarat. I appreciate the proactive role of Hon'ble Agricultural Minister, Shri Dileep Sanghaniji in this context.

The Road Ahead

Dear young friends...

As you step out for building a new India, remember to ask yourself "What kind of life you want?" You want a safe, secured and selfish life or you want to have innovative, dynamic and selfless role to help millions of less fortunate sisters and brothers! This year we celebrate the 150th Birthday of Swami Vivekanand, who said "Life is short, the vanities are transient, only those live who live for others".

I feel that among the youth, you – the agricultural experts- with new knowledge and innovative approach, are in a privileged position to make a great contribution to the removal of hunger and poverty, creating sustainable environment and improved livelihood of people. May you have the capacity to dream and the power to convert your dreams in to mission.

JAI HIND