

TENTH ANNUAL CONVOCATION

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CONVOCATION ADDRESS



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Gujarat

Convocation Address

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Hon'ble Governorshri of Gujarat and the Chancellor of Junagadh Agricultural University, Shri Om Prakash Kohli Ji; Shri Jasabhai Barad Ji, Hon'ble State Minister of Agriculture & Civil Aviation; Dr. A. R. Pathak, Hon'ble Vice Chancellor, Junagadh Agricultural University; 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 and guests, faculty members, degree recipients, students of various faculties, representatives of the press and media, staff of Junagadh Agricultural University, ladies and gentlemen.

I deem it as a matter of privilege and honour to deliver the 10th Convocation Address of Junagadh Agricultural University, a leading and vibrant university of the country.

I extend my heartiest congratulations to the graduating students who have received their well deserved degrees and awards. I also congratulate the teachers who had put in their best efforts to impart knowledge and skills to these graduates. Indeed, it is encouraging to see young faces, eager to shoulder their new responsibilities and duties in their life. You are ready to step into this great wide world from the secured four walls of this university. I am sure, the knowledge that you have gained would hold you in good stead and help you face the challenges that lie ahead of you.

I am sure, in the years to come, the university would reach greater heights in imparting high quality education in agricultural sector, undertaking the need based research programmes by addressing the region specific problems of farmers on participatory mode and by transferring the relevant technology to enhance the farm income and the livelihood status of the farming community and thereby improvement in rural communities.

We are proud of the state of Gujarat for having given us great leaders. Mahatma Gandhi, Father of the Nation, got us the freedom, whereas Sardar Vallabh Bhai Patel unified the country by merging independent states. Gandhiji's love for farming is best reflected in his own words "To forget how to dig the earth and tend the soil is to forget ourselves". Sardar Patel, the Iron Man of India, had been a strong supporter of farming community. He encouraged farmers to get linked to market through milk cooperatives, thus helping both the producers and consumers. Today, the Gujarat farmers are known as leaders of dairy movement in India, which ultimately helped us to become largest milk producer in the world.

In view of the changing scenario in agriculture, updating of courses and curriculum, both at under graduate and post graduate level after every five years is a must. The fourth Deans' Committee of the ICAR paved the way in this direction and most of the recommendations were by and large and faithfully implemented in terms of uniformity in the system of education, examination, evaluation, requirements of credits and duration for degree besides new courses including job orientation like, computer science, environmental science, agri-business, biotechnology, work experience, etc. The revised norms, standards and academic regulations; restructuring of undergraduate programme for increased practical contents; and guidelines for accessing training needs and performance of teaching facilities implemented by all the agricultural universities. Now the Fifth Deans Committee is actively working to suggest possible reforms in the course curriculum structure to suit the needs of various stake holders.

Agriculture, in Gujarat, engages 52 per cent of total workforce and remains primary occupation for two third of population. Rainfed area of the state is about 6.6 mha and about 1.2 mha area is affected by varying degrees of salinity and alkalinity. Gujarat is the largest producer of Castor, Cotton, Sesame, Groundnut and Spices in the Country along with monopoly for crops like dates, Kesar Mango, durum wheat, fennel, cumin and Isabgul. With longest coastline in the country and with a share of over 20 per cent, Gujarat is also the leading producer of marine fish in the country. During the last decade, Gujarat has witnessed an average agricultural growth of about 10.67 per cent as against the national average of 3.57 per cent. Nevertheless this progress should not make us contented as the state agriculture is facing many challenges to achieve sustainable growth rate in future.

The Junagadh Agricultural University is functioning in a typical arid and semi-arid type of climate in the state. Hence, drought, erratic rainfall, low fertility and salinity ingress are the major constraints limiting productivity and agricultural production of this region. Despite all these constraints, the University has responded most dynamically to the needs, challenges and opportunities of agriculture in Gujarat and fine-tuned its mandate, plans and programme accordingly. Despite vagaries of monsoon and climate extremities, hardworking innovative farmers of Saurashtra resulted in good progress. The university is pioneer in development of pearl millet and castor hybrids. The university has registered the famous Gir Kesar mango as Geographical Indication for Gir region of Junagadh & Amreli districts. The JAU has developed facilities for seed production, seed processing, seed storage and distribution has been witnessed since inception of the Mega Seed Project resulting in a

noticeable increase in the seed production and distribution of various crops, viz., Groundnut, Wheat, Chickpea, Pearl Millet, Castor, Sesame and other crops of Saurashtra region. Seeds were distributed under Seed Processing Unit the brand name of "*Sawaj Beej*". Recently, development of cotton stalks shredder has helped in enriching the soil instead of burning the crop residues in the field by farmers. Also, establishment of Agro-Processing Centers in the village through AICRP on Post Harvest Technology has helped immensely to the Farmers in processing their commodities at village level.

India has only world's 2.4 per cent geographical area and 4 per cent water resources, but has 17 per cent of its population and 15 per cent of its livestock. Supporting humanity of India's dimension depends on an efficient agricultural system. It is to the credit of our agricultural scientists and farmers that India transformed itself from being a net importer of food grains in the Sixties to being self-sufficient and an exporter. India today stands second in terms of both rice and wheat production in the world. It is also the largest rice exporter and second largest wheat exporter. At the same time, we have to continue making strong progress in food grains production in a challenging scenario of rising population, limited land and water availability, climate changes and degradation of natural resources. It is incumbent on young graduates like you to ensure that agriculture continues to make worthwhile contribution to the economy.

'Agriculture is locomotive of our economy and a prosperous rural economy based on agriculture will ultimately make the nation prosperous' ...Sardar Vallabhbhai Patel

India possesses substantial biodiversity – and is recognised as one of world's mega centres of diversity. Many of these are considered crucial for livelihood security of poor and vulnerable population. Therefore, conservation of natural resources, maintenance of biological wealth and acceleration of agricultural growth are considered of paramount importance in the present context as well as of the future. The Agriculture Universities should remain vibrant, vigilant and responsive to changing scenario through development of novel technologies and by promoting problem-solving knowledge products.

India has vast resource of livestock, poultry and fish, which play a vital role in improving the socio-economic conditions of rural masses. According to a recent report of Department of Animal Husbandry, India ranks first in respect of buffalo, second in cattle and goats, third in sheep, fourth in ducks, fifth in chickens and sixth in camel population in the world. India has 57 per cent of the world's buffalo population and is among the top egg and chicken meat producing countries in the World. Gujarat state, and in particular Saurashtra

region is blessed with several livestock breeds being the home tract of Gir cattle and Jaffrabadi buffaloes. Zalawadi goat and Kathiavadi horse. The Gir cattle are famous for their tolerance to stress conditions and resistance to various tropical diseases. Bullocks of this breed are used for draught purposes and in farming operations.

Today, we are the third largest producer of fish in the world and second largest producer of fresh water fish in the world. The fish production is estimated to be around 9.5 million tonnes. Fisheries sector forms the bread and butter along with nutritional source for millions of Indians. India is blessed with a coast line of 8118 km with an Exclusive Economic Zone (EEZ) of 2.02 million square km. The sector provides employment to over 14 million fishermen. The annual marine fish landing in the state was the highest in the country during 2013, which has reached 7.17 lakh tones with Junagadh district being the highest contributor (3.78 lakh tones). The marine fish products exported from the country also earned huge foreign exchange.

The agriculture sector, in India accounts for about 14 per cent of the national GDP and over 50 per cent of total employment, though there has been a reduction in the number of cultivators from about 127 million as per the Census, 2001, to approximately 119 million by 2011, indicating a shift to non-farm employment. However, agriculture and allied sectors will remain 'necessary condition' for inclusive growth. Since science and technology are key drivers of growth, the agricultural revival / renewal has to be basically knowledge-intensive, technology led and resource based. Hence, far more innovative research, enabling policies and effective delivery of services, supplies and markets are imperative.

The global climate change is now a reality. There has been steady increase in the atmospheric concentrations of carbon dioxide, methane and nitrous oxide, greenhouse gases (GHGs), mainly on account of human activities. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land use change, while those of methane and nitrous oxide are primarily due to agriculture. These increases in GHGs have resulted in warming of the climate system. Analyses done by the Indian Meteorologists also generally show the same trends for temperature, heat waves, glaciers, droughts and floods, and sea level rise as by the IPCC although the magnitude of the change varies. Such global climatic changes will affect agriculture through their direct and indirect effects on crops, soils, livestock and pests. Innovative solutions and action plan will be the key for future. Initiatives like Bio-shield should be taken up as a national movement immediately. The adaptation and mitigation strategies would have to include identification of appropriate germplasm, crop

varieties to cope with extreme weather events, crops and varieties with low water requirements and input conditions, soil and water management, conservation agriculture, energy use efficiency and livestock management to reduce the impact of climate change on productivity and to decrease the GHG (Greenhouse gases) emissions. In this endeavour, the ICAR has launched National Initiative on Climate Resilient Agriculture (**NICRA**) with the main objective to assess the impact of climate change on agriculture and allied sectors in the country and evolve cost effective adaptation and mitigation strategies. The technology demonstration is being carried out in 100 districts of 27 States. Under the project the Council has prepared 580 district level contingency plans that have been used in the states affected by droughts or floods.

Agriculture is sector now facing several challenges like growing demand for increase in production, safe and healthy food, threat from changing weather conditions, increased risk of diseases and pests to plants etc. Nanotechnology can be gainfully employed in tackling these problems by facilitating research at below molecular level. Nanotechnology can revolutionize agriculture for improving the ability of plants to absorb nutrients, rapid disease detection, molecular treatment of diseases, efficiency of herbicides and pesticides, developing most efficient farm machinery, facilitate exact quantity of pesticides application, food processing and value addition etc. Land degradation and increasing pollution are the sources for inappropriate resource management. Soil health assessment, development of remedial measures and its implementation on a large scale would be required.

The use of mechanical power is now critical to make an optimal use of other resources and in-time completion of various farm operations under intensive agriculture. The farm mechanization has played a key role in modernization of Indian agriculture due to its benefits of improved labour efficiency and productivity, efficient use of expensive farm inputs, reduction of human drudgery and timeliness of operations. Given the high cost of farm machinery, the marginal and small farmers can benefit from its use by opting for custom hiring.

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. 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. The farmers can be empowered with the precision farming technologies and related advisory service can be extended.

Reducing post-harvest losses is now an important area that deserves priority attention in our research and development programmes. On an average, post-harvest losses of the tune of 4 to 6 per cent in durables and 12 to 15 per cent in case of fruits and vegetables have been documented. The challenge is in handling of fresh produce after harvest with emphasis on reducing losses, value addition, maintaining quality and marketing. Agro-processing is now regarded as the important sector of the Indian economy, in view of its large potential for growth and likely socio economic impact specifically on employment and income generation. Some estimates suggest that in developed countries, up to 14 per cent of the total work force is engaged in agro-processing sector directly or indirectly. However, in India, only about 3 per cent of the work force finds employment in this sector revealing its underdeveloped state and vast untapped potential for employment. Properly developed, agro-processing sector can make India a major player at the global level for marketing and supply of processed food, feed and a wide range of other plant and animal products.

Renewable energy sources- solar, wind and biomass have potential to be utilized as supplementary energy source. It is heartening to see that Gujarat has made considerable progress in setting up wind mills to harness the wind power. The decentralized production of electricity using biomass is being attempted through the producer gas route, in addition to photovoltaic solar system for lifting water, lighting and energy for household appliances. It is estimated that more than 600 million tonnes of biomass is available from various crop residues and agro-wastes of which about 60-65 per cent can be used for power generation. Besides huge municipal waste is also available which has potential to be utilized for energy production.

Integrated Farming System (IFS) approach as a biophysical and socio-economic capsule has immense potential to address instability of income, food and nutritional insecurity, unemployment, vulnerability and poverty of small and marginal farmers as well as landless labourers. An IFS involving crops, fruits, vegetables, dairy, poultry, inland fisheries, goat/sheep rearing, apiculture, sericulture and organic farming by minimizing the use of chemical fertilizers and pesticides is a profitable, sustainable and eco-friendly agriculture which needs to be practiced by each and every farmer. Diversification and selection of alternate but complementary enterprises would ensure optimization of resources, recycling of farm residues, minimizing risks and generation of employment. Considering the large area under rainfed situation in the state, adoption of best practices of water harvesting, water use efficiency, adoption of low volume high value crops (eg: datepalm, castor, seed spices,

medicinal plants) and agricultural diversification encompassing arid-horticulture (pomegranate, ber, aonla, banana, etc.), animal husbandry, fishery and agro-forestry/silvi-pastoral sectors is to be given emphasis. The Slogan, “More Crop per drop” given by Hon’ble Prime Minister, Shri Narendra Modi Ji, during the Foundation Day Ceremony of ICAR would revolutionize the Indian Agriculture. Scope of drip irrigation and fertigation is enormous to grow high value medicinal plants, flowers and vegetable crops. Promotion of agro-forestry and silvi-pastoral practices, using best grasses and trees in the world that are available here, through scientific land use planning can make all the difference. Gujarat State has always remained ahead and the holy alliance of farmers, scientists and policy makers, existing in the state would help in achieving accelerated growth in agriculture.

Extension coverage is important for effective technology dissemination. The ICAR is performing this role through nationwide network of Krishi Vigyan Kendras mandated for frontline demonstration of new technologies. In order to improve the technology dissemination '*Farmer FIRST*' is contemplated to enrich farmers-scientists interface for technology development and application with the primary objective to take up technology development based on feedback with the participation of various stakeholders especially farmers. The initiative will focus on: i) Enriching Farmers-Scientists interface; ii) Technology Assemblage, Application and Feedback; iii) Partnership and Institution Building and iv) Content Mobilization.

Gujarat has evolved its one month long '**Krushī Mahotsav Campaign**' as a unique extension model that brought agricultural scientists, extension staff, agro-industries, input suppliers, cooperative banks, local and state level political leaders together on a platform to exchange knowledge and information on the latest technologies and market opportunities. Large exhibitions in all the agricultural university campus and district towns are widely attended by thousands of farmers. A '**Krushī-Rath**' completes with Audio-visual equipments, posters, models and accompanied by scientists and administrators- visit, every village of the state.

The ICAR continued to contribute towards maintaining and upgrading quality and relevance of higher agricultural education. Financial and monitoring support was provided for Niche Area of Excellence and Experiential Learning units (375), besides refurbishing and maintenance of educational structures, student and faculty amenities, equipments, course curricula improvement, education and research and ICT and multimedia learning resources. Besides, the quality assurance of Agricultural Universities is being ensured through accreditation.

Students in agricultural disciplines have to be infused with skills and competencies to enable them to work in a multi-functional set-up. They have to be taught to integrate knowledge and practices from outside their core subjects. Professional skills apart, they have to be given training in critical skills like communication, decision-making ability, project writing, team building, leadership, languages and entrepreneurship. Agriculture universities have a huge stake in the success of the farm sector as well as welfare of the common man. The yardstick of their performance is the quality of graduates being produced. We require committed, capable and hard working professionals from our agricultural institutions to spearhead the next farm revolution. Students of this University are no exception and they must fully contribute to this impending transformation in agriculture. I wish them the very best in life and career.

The new initiatives for the 12th Plan include *Student READY* (Rural Entrepreneurship and Awareness Development Yojana) that aims at entrepreneurship development among youth. It combines both Rural Agricultural Work Experience (RAWEX) and Experimental Learning courses to provide students with the grass-root level experience and entrepreneurship skills. The vast network of Agricultural Universities and Colleges can play a leading role in cultivating self-confidence and capabilities in the students required for taking up agriculture as a profession. Secondly, to make agriculture and rural professions intellectually stimulating and economically rewarding to enable to attract and sustain rural youth in agriculture and allied sectors, *ARYA* (Attracting and Retaining Youth in Agriculture) programme of ICAR proposed in the 12th Plan is to build capacity of rural youth through special programmes and projects including 'learn while you earn' programme; develop a comprehensive policy for development of youth in rural areas and recognize the requirements of the new-age farmers and endeavour to fulfill the same.

To ensure efficiency, effectiveness and sustainability in agricultural production, a paradigm shift in educational learning system, technology, curricula and infrastructure is essential. Rapid change in life styles, social values and work ethos in every walk of life exerts enormous pressure on our colleges and universities. It is high time to take advantage of new system of education and make use of multi-media, e-journals, e-books for quality mass education and e-governance.

Dear friends, while wishing you all the best in life, I would like to share with you that for your generation living in an environment of stiff competition and time is most precious thing in the world. Not even a single minute of your life should be wasted. All your time

should be utilized in pursuits of development towards intellect and mind through worthy action. The basic idea of acquiring education should be to see beyond obtaining degrees. You should develop within yourself discipline, humility, truthfulness, respect for others and spirit of service to society along with confidence and courage. I would also urge upon the learned teachers to serve as the real inspiration for students by virtue of their own actions that combines practice with precept.

Today **marks** an important day in your lives and a significant milestone in your life's journey. Entering into this University facing intense competition, you pursued your academic work with great dedication. By your hard work and by dedication to maintain high standards, you earned your degrees and awards. It is a moment of pride for you as much as it is for your teachers, parents and those who had any part in shaping your life so far. You can recall that your mission for higher learning began here with great passion. But know for sure that it will not end here. It will not end until you feel fully confident of meeting uncertainties and challenges of the life's laboratory and dealing with successes and failures with a positive attitude and for the good of all. Let the words of Swami Vivekanand be your guide in your journey ahead.

Finally, let me express my deep gratitude to Hon'ble Governorshri, Hon'ble Vice Chancellor and the members of the Board of Management for having invited me to share my views with you.

JAI HIND