



Fourth Annual Convocation



9th April, 2009

Chief Guest



Dr. Mangala Rai

Secretary, Department of Agricultural Research and Education
Government of India

and

Director General, Indian Council of Agricultural Research

Junagadh Agricultural University
Junagadh

Convocation Address

Dr. Mangala Rai

Secretary, DARE

&

Director General, ICAR, New Delhi,

His Excellency, the Governor of Gujarat State and Chancellor of Junagadh Agricultural University, Shri Nawal Kishore Sharma ji, Hon'ble Minister of Agriculture, Cooperation, Animal Husbandry, Fisheries & Cow Breeding, Government of Gujarat, Shri Dileep Sanghani ji, Vice Chancellor of Junagadh Agricultural University, Dr B.K.Kikani, Members of the Board of Management, Academic Council, learned faculty, dignitaries, dear students, representatives of press and media, ladies and gentlemen!

2. It is my privilege and pleasure to be amongst this august gathering today and also to be in part of the country that has given us visionary leaders such as Mahatma Gandhi, the Father of our Nation and Sardar Vallabhai Patel- the Iron man , whose contribution and character continue to inspire each one of us. I pay my humble tribute and warm homage to these magnanimous souls.

3. I am grateful to university authorities especially the Chancellor and Vice Chancellor of Junagadh

Agricultural University, who have given me this honour to deliver the Fourth Convocation Address. At the very outset I convey my heartiest congratulations to all the recipients of the degrees and awards earned through their hard work. I would also like to congratulate the learned faculty who have worked hard with the students and enriched them with the wealth of knowledge, skills and moral values to make them capable of serving the science, society and humanity at large.

4. Gujarat is one of our agriculturally important states. It is a leading producer of cotton, castor, groundnut, milk and marine fish. From nearly 26 percent share in area of cotton cultivation, Gujarat produces about 39 percent of the total cotton produced in the country. Similarly, about 30 percent of the groundnut produced comes from Gujarat, though the productivity in the state is much below the national average. With a contribution of 67 per cent castor seed and 36 per cent cumin seed, Gujarat ranks the first in the world production of these items. Moreover, Gujarat has the highest productivity in fennel seed, isabgul and banana. Besides these, mango, sapota, groundnut, mustard, sesame, tobacco and herbs are the potential from processing point of view. About 7.5 million tonnes of milk is produced in the state. Gujarat produces about 7 lakh tonnes of marine fish that is highest among the coastal states of the country.

5. The state of Gujarat has rich wealth of domestic livestock and the sector is contributing significantly to the economy. The AMUL model of cooperative movement for milk production is already well established and recognized. Considering the fact that a major part of Gujarat falls under the low rainfall zone, it is all the more relevant to promote livestock farming and make livestock an integral part of the farming systems especially in the rainfed areas. Prominent buffalo breeds of Gujarat State are (1) Jaffrabadi, (2) Surti, and (3) Mehsani. Jaffrabadi breed is widely acknowledged for its milk with high fat content, and heavy body. Gir breed of cow is a pride of Gujarat, which needs conservation in pure form.

6. The animal production programmes being followed in the country are based on mixed farming system. In the rainfed and dryland farming systems, it is the livestock which provides sustenance to reduce the impact of drought. It helps in enriching the soil and improving soil health indicating their importance as an important component of sustainable agricultural production system. In arid regions, it is the Livestock-Agro-forestry-Arid horticulture-coarse cereal and legume production system which merits priority consideration.

7. Amongst various sectors, the dairy, meat and fishery have helped to improve our national economy. The contribution of livestock sector to our agricultural GDP

is more than 24 percent. The sector is an important source for strengthening our national food and livelihood security. The landless, small and marginal farmers and women, particularly stand to gain from improvement in the livestock sector. It is also observed that with increasing income the demand for animal based items of food increasing.

8. Therefore, it is an opportunity to visualize the newly emerging scenario and devise appropriate policies and strategies to ensure the required growth and development of the sector. We need to have enriched feed/fodder banks like food/seed banks as technologies for compaction, enrichment and fortification are now available. This would improve animal health, enhance their productivity and overall would enhance their survival particularly during the droughts.

9. Livestock production is a livelihood securing activity for more than 70% of the rural population and plays an important role in the socio - economic structure of our country. Our indigenous livestock species that have evolved under dryland conditions are inherently hardy and can remain productive under sub-optimal conditions. While undertaking programme of breed improvement through cross breeding we must ensure that the germplasm of local breeds is not only conserved but improved. In reality, on going local breed improvement programme are

not commensurate with the potential of the sector. Hence trait specific targeted programmes are required to be given much needed emphasis.

10. By the year 2020 the total demand including household, export and other uses of milk, meat and fish is estimated to be 140.72, 11.40 and 11.86 million tonnes respectively. Commercial aspects of livestock and fish production are gaining interest due to changes in land utilization pattern, socio-economic conditions and change in the dietary patterns. With increase in the purchasing power there is likely to be a rapid growth in the domestic demand for livestock and fish based food products. It is projected that by the end of 11th plan our domestic demand for milk, meat and fish will be 113.0, 8.6 and 8.6 million tones indicating annual growth in total demand at the rate of 3.18, 4.65 and 4.58 percent, respectively.

11. The production and productivity of the animals is often constrained because of disease and other health related issues. In addition there are concerns about the increasing environmental stress due to climate changes being observed. The likely incidence of high rainfall, increased temperature and a changing disease and pest complex are further likely to pose challenges in sustaining livestock sector.

12. The control of major diseases of economic importance in endemic areas needs effective diagnostics

and vaccines at an affordable cost. There is a need to keep pace with the contemporary developments in the technology improvements of the conventional vaccines to make them more useful and also continue the R&D effort for development and application of newer generation vaccines. Research on vaccine quality control issues is a priority, with the improvements in the technology and increased demand for many vaccines for use in the country. Research on finding alternative methods of animal experimentation and developing standards needs added attention. Development of multivalent vaccines has advantages as this would reduce the number of inoculations to animals, reduce the handling cost and avoid animal suffering.

13. On mitigation of likely impact of climate change on agriculture the Council has established a network project on Impact, Adaptation and Vulnerability of Indian Agriculture to Climate Change. The Council has approved projects such as 'Rumen microbial manipulations for mitigation of methane emission and productivity enhancement in dairy animals' and 'Antiluteolytic strategies - a novel approach to enhance fertility in buffalo' under the initiative on national fund for Basic and Strategic research in agriculture. Further, the ICAR has established an advanced institute on managing abiotic stresses in agriculture and contemplates to establish state of the art institutes on biotechnology and

on managing biotic stresses. These institutes are to be Deemed to be Universities.

14. Agricultural education has to evolve in tune with fast changing national and international scenario mainly owing to (i) new areas of specialization such as IPRs, other WTO-related areas, techno-legal specialties etc., (ii) stakeholders' expectations esp. for utilitarian mode, (iii) new cutting edge technologies: biosensors, genomics and biotechnology, alternative sources of energy, nanotechnology, etc., (iv) improved tools of content delivery including ICTs, (v) globalization of education, etc. In the past, the ICAR jointly with State Agriculture Universities (SAUs) and others has taken a number of steps for institutionalizing reforms on streamlining and improving agricultural education in the country. Serious efforts have been launched on strengthening quality and relevance of agricultural education through in-service training and necessary infrastructure development. With the rapid change in technology environment, there is demand for developing graduates to harness science and technology. This calls for new courses as per changing market demand and new mode of delivery with effective use of electronic media. Recognizing the need, ICAR embarked upon an arduous task of restructuring the post-graduate (master's and doctoral) course curricula and syllabi of agriculture and allied sciences at the national level. The Council constituted a National Core Group of

12 academicians functioning through 18 Broad Subject Matter Area Committees of experts from all over the country, in July 2007. The Committees consulted about 1000 academicians in the exercise. The report has since been submitted, deliberated in the vice-chancellors' conference and the consensus is for putting it to implementation from the ensuing academic session -2009.

15. In order to appropriately address the issues and challenges for agricultural growth and development we need to have state of the art institutions manned by highly competent scientists and science managers. Agricultural universities are our main centres for human resource development. In this endeavour the IV Deans Committee Report on reforms in agricultural education has been implemented. The Accreditation of 14 Agricultural Universities for assured quality of education is done. For skill development 219 Units have been established in 44 universities for Experiential Learning. An ICAR net has been put in place for connecting the libraries of 35 SAUs, 69 ICAR institutes and 182 off campus colleges. In order to further enhance capabilities of Deemed Universities and Agricultural Universities, the ICAR has launched a programme to promote "Niche Area Excellence" in these institutions. Some important Niche Areas Excellence include Hi-tech horticulture, Molecular diagnostics of avian diseases, Resource conservation technology, Soil and water management, Biofuels, Arsenic management

in soils, Fin-fish farming, Immunodiagnosics, Tropical Home Gardens , Agro-based Nutraceuticals.

16. A new activity on overseas fellowships is put under the continuing HRD programme with a view to develop competent human resources that are trained in the best laboratories in the world (for Indian candidates) and expose overseas candidates to the best of the Indian Agricultural Universities for facilitating future cooperation with these countries.

17. Farms constitute the basic skeleton in the AUs established on Land Grant pattern. The Council has launched a mega initiative on "Modernization of Agricultural Universities' Farms" with an outlay of Rs 422 crores. This project has been operationalized from the current year itself. The project envisages enhancing the breadth, relevance and quality of education, training and research through modernization of AU farms. It will lead to enhancing practical and experiential exposure in students and entrepreneurship development, augmenting supply of seed/planting material, providing a common space for interface of public-private partnerships, facilitating technology-incubation and up-scaling of technologies towards commercialization and resource generation.

18. Entrepreneurship is an important element for the development of economy of the country like India, as it

generates employment, produces a variety of goods and services, brings about growth, excellence and sense of achievement in national development and makes the education & planning, hands on experience, effective and well directed. Entrepreneurship can be a career option and it can contribute to national development by making people entrepreneurs. The education has provided crucial role for all such strategies in initiating and accelerating the process of entrepreneurship development. There is a tremendous scope for entrepreneurship in agriculture. Experiential learning is a new initiative with the primary aim of removing weakness in the present educational system and to develop a cadre of highly skilled professionals who can create their own enterprise. It is aimed at competence development through knowledge not only in new and cutting edge technologies; but also in all aspects of enterprise management so that the graduates have complete understanding of field problems, project development and education with the end-to-end approach. Emphasis has been laid on developing skills for carrier in agri-business and agri-clinic.

19. Agro-processing including value addition is now regarded as the sunrise sector of the Indian economy in view of its large potential for growth and likely socio economic impact, specifically on employment and income generation. 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.

20. In order to assure remunerative price to the growers and processed products to consumers at an affordable price; development and application of appropriate post-harvest technology in production catchments leading to establishment of rural agro-processing centre owned and operated by target beneficiaries, individually or collectively, is a must. A large number of unemployed youth in the rural areas could be induced to take up these simple, low cost yet profitable agro-processing activities. The rural youth could be gainfully employed and constant migration of rural youth to the urban areas could significantly curtailed.

21. The role of extension services especially in the technology transfer is most crucial for the farmer to realise the gains from technological innovations. From scientists' point of view, it is important to see that the technology reaches the end user in right manner. The feedback received through extension mechanisms also provides an opportunity for the researchers to assess and refine the technologies. Extension has been put to serve production oriented programmes, area development initiatives, target group based service schemes, and, largely, as a technology delivery mechanism. In the process, simple purpose for which it is designed, namely "helping people

to help themselves" by relating technologies to the needs and opportunities of the farmers have not been emphasized much.

22. We have a good network of agricultural research institutions in the country, which is facing serious resource crunch to meet the existing and emerging challenges. The National Agricultural Research System (NARS) has although significantly contributed to the agricultural progress since independence, but the situation has changed and challenges foreseen in future are complex and the system has to prioritize and focus itself to the jobs for which it has a mandate as also competitive advantage. A clear-cut delineation of roles at the Central and State level is to be ensured. Similarly, the technology delivery system requires an immediate re-look. Technology development and delivery need to be in a continuum and should be interactive. The research system has to forge linkages with the public extension system at all levels, particularly at the district and below levels where the actual uptake and impact happens.

23. Extension workers are the most important source in transmitting technology to users. Agriculture extension workers do not reach every farmer and every farmer cannot visit agricultural research station. Hence, there is limited flow of information about the latest agri-technologies. For speedy dissemination of

technology, extension workers require media effective media support. No doubt, print media, interpersonal communication and traditional media have been playing important role in transfer of technology, but in today's information era quick transfer of technology can only be possible through electronic media. There are many new electronic technologies appearing daily that go well beyond the computer. These new electronic information and communication technologies are beginning to assume a more important role in our society. Radio, television, tele-conferencing and Internet technology have all been used to accomplish this. Cyber Extension includes effective use of information and communication technology, national and international information networks, internet, expert systems, multimedia learning systems, and computer based training systems to improve information access to the farmers, extension workers, research scientists, and extension managers. The villages of Gujarat state are now being connected with e-gram and e-dhara to facilitate farmers for their documentary requirements in farming and allied fields. Similarly all the villages can be linked for e-transfer of technology ultimately to boost the agricultural production.

24. We recognize the need of becoming competitive in the international intellectual property rights (IPR) regime so that we can ultimately bring the Indian farmers away from subsistence with the transfer of our IPR enabled

technologies through commercial, cooperative and public routes. In the early 1990s, ICAR had taken initial steps for the pro-active management of IPRs generated by our scientists. At that time, neither the products in the areas of food and agrochemicals nor the methods of agriculture and horticulture were patentable subjects. Also, there was no national legislation on the plant variety protection in place. This obviously led to slow progress of IPR titles for NARS. By 2005 the country had revised and enacted various IPR laws to meet the national requirements vis-à-vis the Agreement on Trade Related Aspects of Intellectual Property. These developments have also opened new opportunities before the public research and education system to become contemporary, compatible and competitive.

25. The Council has operationalized Guidelines for IPR portfolio Management and commercialization of technologies. The initiative is expected to create IPR awareness and literacy, enhance the work environment for higher innovativeness, ensure that the scientists/innovators are duly rewarded with their share of benefits accrued, and guide the manner of technology transfer which would be competitive and better serve the interests of agriculture and farmers. A win-win situation for all partners/ players/ stakeholders/ beneficiaries would indeed be helpful. In today's context it has become necessary to do so, for unprotected research results in the

public domain to arrest unacknowledged use/exploitation of such research for commercial gains by other agencies both within the country and abroad. Moreover, protection of IP creates incentive for more knowledge and technology generation as scientists/innovators are recognized and rewarded. In an effort to promote IPR awareness in the NARS scientists from the Council have conducted about 12 training workshops in different parts of the country and trained more than 550 officials from ICAR institutions and SAUs.

26. Public private partnerships will play an increasing role in the advancement of agricultural research under the IPR regime. The transfer of IPR enabled agricultural technologies through commercial route will gain greater importance in the future. In addition to IPR and technology management, research partnership between the public and private sector is also essential to achieve faster progress and dissemination of technology to the end-users, thus, there is a need to know as to how best to link these two sectors to have their activities complemented in "Public Private Partnership" mode for better research and development.

27. On this occasion, let me reiterate the commitment of the ICAR for bringing about and enhancing the overall quality and relevance of higher agricultural education and first rate technology developments in our

country through effective partnership among and collective wisdom of the components of the ICAR-SAU system. The Council would continue to provide performance-linked support, with appropriate financial discipline, to SAUs.

28. India has the largest number of youth and the young ones are the treasure of the nation. The educational institutions mould these young minds through education; training and strategically direct their energy and skills into productive channels. Then we are able to ride over the challenges and continue steadily on the path of progress. Dear students, from today onwards you have stepped into a new phase of life that is full of opportunities. You would be choosing different careers. The path is strewn with many kinds of obstacles, attractions and distractions. Remember that you have to remain steadfast on your objectives and goals. Build a strong moral character which is the true asset of man. I would like to quote Dr. Martin Luther King, Jr. "I have a dream that my four children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character" A meaningful life is always better than a mere successful life. My best wishes to one and all.

Thank you!