55th ANNUAL CONVOCATION

Monday, the 22nd of May, 2023

at Dr. B.V. Nath Auditorium
Agricultural College, Bapatla, Andhra Pradesh

Chief Guest Address

Padma Bhushan

Dr R S PARODA

Chairman, Trust for Advancement of Agricultural Sciences (TAAS)

Former Secretary, Department of Agricultural Research & Education (DARE), Govt of India

Former Director-General, Indian Council of Agricultural Research (ICAR)

ANGRAU

Acharya N.G. Ranga Agricultural University

Lam, Guntur-522 034
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His Excellency, the Governor of Andhra Pradesh and Chancellor of the Acharya N G Ranga Agricultural University, Sri S Abdul Nazeer, Sri Kakani Govardhan Reddy, Hon'ble Minister for Agriculture, Andhra Pradesh, Vice-Chancellor, Dr A Vishnuvardhan Reddy, Members of the Board of Management, Academic Council, invited guests, dear students, faculty members, representatives of Press and Media, Ladies and Gentlemen. I am honored and delighted to be here for the 55th Convocation of Acharya N G Ranga Agricultural University.

First of all, congratulations to all the students, researchers and teachers who have earned their degrees and awards today. This day signifies a memorable day in your life. You have worked hard to gain new knowledge and have inculcated values that would stand in good stead to achieve new heights as you climb further. No doubt, this also is a day of great happiness for all the parents and teachers. I especially congratulate them. I also take this opportunity to congratulate the faculty members, staff and leadership of this University to have worked hard towards their academic development. I am optimistic that all of you will strive hard to meet the emerging challenges towards our food and nutrition security.

Let me also express my grateful thanks to the Chancellor, Vice Chancellor and the Academic Council for the honor bestowed on me to become an alumnus of this great university.

ANGRAU – A Centre of Excellence

It gives me immense pleasure to mention that ANGRAU has a unique culture of inclusiveness, diversity, personal care, integrity and value-based quality education. The overall achievements highlighted by Dr. A. Vishnuvardhan Reddy are indeed commendable for which I would like to congratulate him and all the faculty members.

I am happy to know that as per ICAR ranking status of State Agricultural Universities (SAUs) for the year 2020, ANGRAU is at 11th rank. This signifies that even after its re-location, it is maintaining academic excellence. I hope it will attain yet better ranking in near future. I understand ANGRAU bagged first position in AIEEA 2021, SKOCH-Silver Award 2022 for

Agricultural Research and Education, Sardar Patel Outstanding Institution Award (1999, 2007), Fakhruddin Ali Ahmed Award for Outstanding Research in Tribal Farming Systems (2020) and among many more. I am sure, this university will soon attain a position among the top five SAUs in India.

It is equally encouraging that the University is implementing unique advisory system for mentoring and guiding UG students, with one faculty-advisor for 30 students dedicated for conducting weekly advisory class to interact and discuss one-to-one for motivating them, also to conduct student-parent teacher session once in a semester. The advisors are like counsellors and guardians on-campus, which truly reflects old the *'Gurukul'* system.

In general, the research accomplishments of ANGRAU highlighted by Dr Reddy are commendable. The development of BPT-5204, a mega rice variety, is a landmark achievement. The University has the credit of releasing first gall midge resistant rice variety '*Kakatiya*', BPH resistant rice variety–'*Vajram*'. Also the rice hybrids APHR 1 and APHR 2 were the first to be released in the country next to Republic of China in the world. '*Trishulata*', the first triple crosses all season maize hybrid was released by ANGRAU. The five rice varieties of ANGRAU namely, Cotton *Dora Sannalu* (MTU1010), *Samba Mahsuri* (BPT5204), *Swarna* (MTU7029), *Vijetha* (MTU1001), and *Nellore Mahsuri* (NLR34449) collectively contribute 74 per cent of the total area and production of rice in Andhra Pradesh, and 25 per cent of the total area in the country. These varieties are popular in 14 states in India, and have a considerable area in Bangladesh, Sri Lanka, Nepal, Uganda, Ethiopia and Kenya. ANGRAU released rice varieties occupy 90 per cent of the total rice area in Andhra Pradesh, and occupy an estimated area of 14 m ha (31.58 %) out of the 45 m ha of rice area grown in India. Similar achievements in other crops are quite commendable for which I again congratulate Dr. Reddy.

India Needs Sustainable Agriculture

The world population is likely to reach 9.8 billion by 2050 requiring an estimated 60 per cent more food. India with 1.41 billion population has become the most populated country in the world already overtaking China. In fact, India with only 2.41 per

cent area supports already 18 per cent of the world's population. Our main challenges are: to alleviate poverty and hunger, reduce the impact of agriculture on the environment and global warming, sustain water and land resources, ensure profitability, and social and economic equity. Therefore, the future thrust shall be around producing more from static arable land (140 mha) and declining water resources. Fortunately, beginning with Green Revolution (GR) in mid-sixties, India's food production has increased more than six-fold (323.6 mt) in 2022-23, compared to four-fold in population. In order to meet the increasing demand of food for additional 15-16 million people each year, despite availability of more diversified food such as fruits, vegetables, milk, meat, poultry, fish, etc., India would still need to produce around 45 mt of additional foodgrains by 2030, i.e., around 6.0 mt per annum. Considering the current challenges, this is likely to be a formidable task.

Despite these achievements, India currently has around 16.5 per cent population below poverty line. Around 60 per cent of our children under five years of age are malnourished. Therefore, we need to ensure their food and nutritional security. The National Food Security Act (2013) is thus a bold initiative of the government in this direction. Towards nutrition security, the role of millets is rightly being highlighted as we celebrate the International Year of Millets 2023.

The action plan on doubling farmers' income, led by the *NITI Aayog,* is around four strategies - development initiatives including infrastructure, access to technology, policy interventions, and institutional mechanisms. Other initiatives like *Pradhan Mantri Krishi Sinchayee Yojana* (PMKSY); *Paramparagat Krishi Vikas Yojana* (PKVY); *Pradhan Mantri Fasal Bima Yojana* (PMFBY) etc., adoption of transformative technologies such as GM crops, use of drones, AI, sensor-based applications etc., establishment of FPOs and SHGs and linking farmers to market are indeed the steps in right direction.

Though the share of agriculture in national GDP is gradually declining, yet it contributes around 18-20 per cent of national GDP. Besides, more than 50 per cent of our people depend on agriculture

and allied sectors. Therefore, we now need to transform our Indian agriculture to be more efficient, productive, secure (resilient) and sustainable. To achieve this, a clearcut vision, accompanied by equally bold policies and resolute action is now needed. Scaling new innovations to accelerate agricultural growth above 4 per cent would require increased investments (almost double) with firm commitment to implement policy reforms and targeted mission mode programs.

Now is the time to bring in change through bold policy decisions to take India to newer heights. The government and private sector initiatives must address farmers' diverse needs. The strategy should now focus on harnessing scientific, technical and institutional innovations, besides needed policy reforms and we must build stronger national and global partnerships. Insurance of horticultural crops, livestock and fishery needs to be given equal importance under *Pradhan Mantri Fasal Bima Yojana* (PMFBY).

Diversification towards more remunerative and high value crops such as vegetables, fruits, condiments, spices, etc. will help reducing poverty. We have already released more than 70 biofortified varieties in cereals, millets, pulses, oilseeds, vegetables and fruits possessing high nutritive value and low anti-nutritional factors. As already stated, the millets (miracle grains) are better adopted to biotic stresses and also less susceptible to pests and diseases. They are 3-5 times nutritionally superior in protein, minerals and vitamins compared to rice and wheat. Hence, local food systems need to be promoted on a wide scale. Recently held UN Food Systems Summit has also laid greater emphasis on renewed R&D efforts on local nutri-food crops to ensure nutrition, health and immunity.

Plant pests and diseases also pose a serious threat to our food security. For example, a severe outbreak of Brown spot fungus (*Helminthosporium oryzae*) had destroyed our rice crop resulting in two million deaths (Bengal Famine, 1942-43). The potato late blight caused by *Phytophthora infestans* (Irish Famine, 1845) killed more than one million people. Today, production and productivity of wheat crop is hampered by various diseases including rusts, powdery mildew, spot blotch, Karnal bunt, and *Fusarium* blight.

In addition, there is threat of new virulent transboundary stem rust disease - Ug99 for wheat production, Infestation of Fall Armyworm (*Spodoptera frugiperda*) has recently resulted in huge losses in corn. Considerable reduction in cotton yield has also occurred lately in several states due to high infestation of pests. Hence, there is need to identify and stack multiple resistance genes so that duration of resistance gets increased. An Integrated Pest Management (IPM) approach involving technological innovations, molecular biology tools, biocontrol agents, and nano-based sensors need to be employed for effective plant health management. Use of innovative genome editing technology (CRISPR/Cas 9) will enable crop breeders to fast-track development of new varieties with multiple resistance.

With adoption of Bt cotton technology in 2001, India has tripled its cotton production just in a decade (from 13 m to 40 m bales by 2013-14) and became an important exporter of cotton, while the area increased significantly from 8.0 to now 12.0 mha. Also, the use of pesticides decreased by almost 40 per cent. In sugarcane, major gains have been obtained through genetic enhancement (mobilization) to spread its planting from tropical south to sub-temperate regions in north India. Similarly, breeding suitable single cross hybrids of maize for winter season in eastern India, short duration chickpea to spread its cultivation from north to south India and short duration mungbean to fit well in rice-wheat cropping system in the northern region and adoption of urdbean in rice dominated areas of central region in Andhra Pradesh and Odisha led to more sustainable intensification and increase both in production and productivity. For most of our rainfed drylands, conservation agriculture (CA) has a great potential for increasing crop production while saving on costly inputs, thereby increasing farmers' income. However, its scaling would require a Mission-mode approach to make grey (rainfed) areas green, which seemed to have been bye passed earlier by Green Revolution. Moreover, around 200 mha around the globe have already been covered under CA mainly under dryland (rainfed) agriculture. Hence, scaling CA innovation must now be a national priority.

In fact, agriculture must be seen as an important sector of national economy which needs to be accelerated through mobilizing resources for investment, incentives for sustainable farming practices, ease of doing business, progressive market reforms, improved governance to balance center-state relations and strengthened public-private partnership. There is also an urgent need for scientific agro-ecoregional planning and balanced 'agri-food system-based' multi sectoral approach for faster agricultural growth and to contribute at least one trillion (20%) of targeted five trillion economy, as projected by our Prime Minister Shri Narendra Modi. Towards this, therefore, timely implementation of reforms suggested in Dr RS Paroda Committee Report, submitted to Government of India in 2019 shall help achieve SDGs by 2030 and also ensure much secured and sustainable agriculture for our farmers.

Dear Young Graduates

Future of India's Agriculture is in your hands. You can reshape and transform it. Agricultural productivity in India is still below its potential, which I see as an opportunity. For feeding a growing population and ensuring food and nutrition security, greater dependence on advanced technologies like precision agriculture, biotechnology, GM crops, sensor technology, bioinformatics, climate-smart agriculture, robotics, drones, big data management, artificial intelligence (AI) and regenerative agriculture will be needed. Adoption of best management practices can reduce area under cropland, decrease water demand, and reduce inputs, especially agricultural chemicals. The food system transformation in India, similar to elsewhere in the world, must produce more from less, optimize the input use efficiency, and minimize leakage of agro-chemicals in the environment (e.g., soil, water, air). The focus must also be on nutrient dense food using more sustainable practice of organic farming. The UN Food Systems Summit recently has laid greater emphasis on regenerative agriculture. Hence, focus should now be on 'One health' concept, requiring rebuilding of soil organic matter, and greater use of both integrated resource management (INRM) and integrated pest management (IPM).

Time has come to also popularize farming as a respectable profession in the eyes of our society. The new education system aims to impart skills to the students and make them employable at different stages of getting education. I feel this can help Indian agriculture and the country's economy to grow faster. Invariably, our bright graduates look for better opportunities abroad. We need to reverse this trend of migration by creating better opportunities at home. In this context, Motivating and Attracting Youth in Agriculture (MAYA) is critical for enhancing production and contribute towards national economy. The agri-graduates be encouraged towards becoming **'*Youth as an Agripreneur*'** and **'Job Creator rather than Job Seeker'.** This would require change of mindset, institutional backstopping, hand holding, and mentoring young talent to accept new challenges. I see this as an opportunity to bring in needed educational reforms in ANGRAU. This would require flexibility from formal degree oriented programs to those of certificate and diploma oriented training of youth to serve agriculture and allied sector better.

The smallholder farmers are a stressed community whose income is not enough to meet their essential needs. In fact, we need to have ***'Farmers First'*** approach now to address their problems more effectively. Youth can fulfill this vision but would need enabling environment. Universities can help in this regard to empower youth with better knowledge and skills in emerging areas: such as IPM, biocontrol/microbiome technology, animal husbandry, fishery, nano-technology, specialty agriculture, high-tech horticulture, vertical farming, urban farming, precision farming, protected cultivation, etc. Under New Education Policy (NEP-2020), there is provision to go for diploma courses and skill development programs, which SAUs need to take up in an aggressive manner.

To serve better the farmers on their door step, 'Agri-clinics' need to be established on priority at the village or block levels. The qualified agriculture graduates can run these 'agri-clinics' with support from the government and the private sector. I strongly

feel that our graduates should be given specialized training and the licenses for sale of agricultural inputs, machinery and tools, as is the case in pharmacy sector. It will help in efficient technology transfer, self-employment generation, and provide quality inputs for productivity enhancement.

Remember, you are among very few fortunate ones who got education in this esteemed institution. While you may use your expertise to rise in career and create wealth for yourself, it is also your duty to work for the welfare of our society, especially to reduce the economic disparity to empower disadvantaged and to provide food, nutrition and environmental security. For achieving success in your life, please do remember what our former President Dr APJ Abdul Kalam said: "***Dreams are not what you see in the sleep, it is something that does not let you sleep"***

Let me also draw your attention to a favorite mantra from कठोपनिषद which Swami Vivekananda often used to quote: ''उठो, जागो और तब तक मत रुको जब तक लक्ष्य प्राप्त ना हो जाये ।'' "which means "Arise, awake, learn from the right people and stop not till the goal is reached". No road to success is smooth. Always remember that hard work and perseverance will surely let you achieve success in your life.

I once again congratulate all those who have received degrees, gold medals and awards today. Let the process of learning continue throughout your life. I wish you all the success and a bright career. While leaving the portals of this university, you must take pride having graduated from ANGRAU.

Finally, let me congratulate the Hon'ble Chancellor, Vice Chancellor and the entire faculty for organizing this Convocation so successfully. Let ANGRAU continue reaching new heights and serve the farmers of the progressive state of Andhra Pradesh.

Jai Hind