

**Professor Jayashankar  
Commemorative Address**

**Fourth Foundation Day**

3<sup>rd</sup> September, 2018

**Re-defining Agriculture for  
India and its farmers**

**Dr. Ashok Dalwai** IAS

Chief Executive Officer

National Rainfed Area Authority (NRAA)

Ministry of Agriculture and Farmers Welfare, GOI, New Delhi

and

Chairman, Committee on Doubling Farmers' Income



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I am privileged to be joining the Fourth Foundation Day celebrations of the nationally reputed Prof. Jayashankar Telangana State Agricultural University (PJTSAU), Hyderabad. The University in choosing the name of Professor Jayashankar, honours the memories & contributions of an eminent educationist and an ardent Telangana ideologue. As the only Farm University of Telangana State, it has been in service of agriculture and farmers of this resurgent state.

I am happy to see the bust size bronze statue of Prof. Jayashankar unveiled by Shri K. Chandrasekhar Rao, the Hon'ble Chief Minister of Telangana at the main campus of the University. It is a befitting tribute to an educationist and socially conscious citizen of our country.

The State of Telangana was born on 2<sup>nd</sup> June, 2014, as per the notification of Andhra Pradesh Reorganization Act, 2014, and I understand, that Prof. Jayashankar Telangana State Agricultural University came to be established as per the Telangana Government Order adapting the ANGRAU Act, 1963 as "The ANGRAU Act of 1963 (Telangana Adaptation) Order, 2014".

The University caters to the needs of an enterprising farming community of Telangana, which is endowed with abundant natural resources, diverse soil and agro-climatic conditions suitable for varied agricultural & cropping systems. The state is on the path of becoming 'Seed Bowl of India', among many other expectations.

The University which has in a way inherited long & rich traditions from its predecessor in the domains of agricultural science encompassing education, research & extension has, following its new and current form, acquired greater sharpness and focus under the leadership of Dr. V. Praveen Rao, Respected Vice Chancellor of the University. I take this opportunity to pay tributes to Prof. Jayashankar, and congratulate Dr. Praveen Rao & his dedicated team of scientists and academics, as also all other members of the University. All of you along with the spirited young students deserve appreciation for several successes you have been scoring.

On this happy occasion in the life of your University, it is my pleasure to share some of my thoughts on the New Agriculture of India in service of our Farmers and service of our Nation.

## Scientific Thinking in Agriculture

The Royal Commission on Agriculture submitted its Report in 1928, and ever since, India's agriculture has covered many miles and today is beyond recognition, having progressed significantly with positive achievements. The Royal Commission amongst others brought focus on the importance of research & development, and the concomitant need for building the infrastructure in agricultural education & research. Considering the poverty of infrastructure and knowledge base that was obtained in the 1920s, the initial phase of agricultural growth was incremental and almost invisible.

In the post-independent India, with the adoption of a modern Constitution in 1951, the country's agriculture came to occupy a prominent position in its new economic growth trajectory. The directive principles in Article 48 of the Constitution specifically advocates that the country must endeavour to organise agriculture and animal husbandry on modern and scientific lines. This makes it mandatory, that we explore and apply modern scientific knowledge in the agricultural system. Science itself is an evolving subject and as and when scientific knowledge progresses, it will inherently require us to metamorphose concepts and the way we apply the modern learnings to agriculture.

## The First Tipping Point

Between 1951 and 1961, the country embarked upon a new agriculture system with particular focus on national extension services. Yet, as the mid-1960s hit, the country faced a food crisis for its growing population. The pall of gloom was so severe, that the then Hon'ble Prime Minister of India, Shri. Lal Bahadur Shastri had to appeal to the people to practise self-abnegation, by fasting for at least one meal a week. The nation had to sadly rely on foreign food aid and it was PL-480 (Public Law 480 "Agricultural Trade Development Assistance Act" of the USA) which sustained the basic food requirement of the country.

Necessity is the mother of invention it is said; every crisis is a challenge and every challenge is an opportunity for a society that is willing to pick up the cudgels. It was Shri. Lal Bahadur Shastri, once again, well known for coining the phrase '*Jai Jawan Jai Kisan*', who sowed the first seeds of a new agriculture in India. Two dominant faces of resurgent India's agriculture, beginning in mid-1960s, are what are called as White Revolution and Green Revolution. Both succeeded in making a visible



change in a short span of five to seven years and by 1971-72 India achieved the first stage of food security. The success was only because both revolutions were driven by science & technology, ably supported by professional management practices, alongside a pro-farming policy framework. Of course, our farmers demonstrated their ability to respond positively, despite their low levels of capital and literacy.

By the start of the 1970s, the White Revolution was reaching the stage where it was ready to encompass the larger geography of India through operation Flood-1. Over five decades thereafter, the country's agricultural landscape underwent cataclysmic changes acquiring both latitude and longitude in terms of its expansion. It is a matter of pride for the country that by now, India is one of the largest producer, arrogating to itself a prominent place in the top producer brackets across several agri-commodities. These include cereals, fruits & vegetables, meat, milk, spices and aromatics. The commodiousness of India's agricultural output is manifested in 1.2 billion tonnes of a cafeteria of agricultural produce, spanning several domains of field crops, horticulture, dairy, meat, fish, aquaculture and agro-forestry. The year 2017-18 came to record the historical high of 285 million tonnes of food grains, 305 million tonnes of horticulture and 165 million tonnes of milk. The nation owes a tribute to its farmers for having transformed India's agriculture from one of food deficit in 1960s, to that of a net food exporter over these five decades. Indian agri-exports have begun a robust climb, and are at an impressive level of more than US\$30 billion. The newly confident country, backed by the capacity of its farmers, has set a new target of scoring a high of US\$100 billion by 2022-23.

### **Unveiling the Second Inflection**

No system can be constant, for change is a law of nature. No society can also afford to rest on its laurels for there exists the certainty of new challenges emerging and Indian agriculture is no exception. Today, the country is faced with a new set of problems, anchored in the welfare of its farmers'. Not withstanding the new diversification of India's economy, where the services and industry sectors have appropriated themselves a larger share in nation's GVA (gross value added), outsmarting agriculture and sparing it a relatively lower share of 17 per cent, this primary sector still continues to be crucial and critical from the perspective of the nation's welfare.

As high as 48 per cent of India's 130 crore population, continue to depend on agriculture directly or indirectly. In absolute terms, it accounts for an elephantine sized populace of about 62 crore. The shadow that creates an ugliness, in an otherwise bright face of India's agriculture, is the high degree of poverty among the farming community. As per 2011 Census, as high as 22 per cent of the farmers in India lived below poverty line. What is ironical is, that an asset owning class of people has not been able to generate productive employment and adequate levels of incomes. The poverty among the farmers is of a different nature, vis-à-vis that among the asset-less people and is not explainable in rational terms. This finds further substantiation in the low per agricultural household incomes as brought out by the NSSO Survey undertaken during the agriculture year of June 2012 to July 2013. The average monthly income of a farm household was very low at Rs. 6426/- and the corresponding average monthly consumption expenditure was Rs. 6223/-, leaving the family with a paltry saving of Rs. 203/- to meet other family obligations.

It is in the above context, that Shri. Narendra Modi, Hon'ble Prime Minister of India, shared his concern at the National Conference on Agriculture on 20<sup>th</sup> February, 2018 stating that *"while Indian farmers have ensured food security for the nation, the country is yet to ensure the income security of its farmers"*.

The family's income has a great say in the state of its welfare. In order to achieve total welfare of the farm families, as promised by the Constitution, it is important that farming as an activity, is able to generate higher levels of income.

The vision of doubling the farmers' income by 2022-23 finds its origin in the Prime Minister's address at the Bareilly Conference in February, 2016. The new crisis and the new challenge in the second decade of the new millennium are akin to the one that visited the country in the mid-1960s. While then, it was a crisis of food for the nation, today it is the crisis of incomes for the farmers. Just as the then Prime Minister gave a call for action to attain food security for the nation, the present Prime Minister has raised a new clarion call for achieving the income security for the farmers. While there are many a Doubting Thomas, India as a nation cannot dither in embarking upon the new task. Just as the nation then responded positively, and realised its vision within a span of 5 to 7 years, today's India of greater capacity, can easily afford to take this bull by its horns, and work towards

achieving the goal of doubling the farmers' income by 2022-23. The target period now is seven years, *ala* that during the journey of food security.

### **Surmountable Challenges**

It is very aptly said that success is its own enemy. Today's challenges to agricultural incomes arise from increased unpredictability associated with both weather and markets. That Indian agriculture has been monsoon dependent is no gain saying. However, this co-relation is only expected to get compounded with the implications of climate change, entailing in its wake the need for adoption of mitigation, coping, and adaptation measures. This is required to secure and sustain the growth in agricultural production. The other face of uncertainty relates to markets, which is something that is more manoeuvrable, provided one is willing to adopt the appropriate policy framework, supported by the needed technology and management practices.

A market is a place where selling and buying happen, based on the equilibrium that is struck between demand and supply curves. The agricultural marketing structure in the country has remained inefficient and its improvement is a prerequisite in ensuring the farmers get remunerative prices on the commodities they transact. However, the market space for agricultural commodities in India has been artificially circumscribed, by limiting it mainly to the demand that is linked to food and fodder at best.

The mandate of agriculture has largely been defined in terms of fulfilling the demands of human beings and livestock. As long as there was food shortage, the human population of the country provided a natural market with robust demand. The marketing space has grown linearly since the mid-1960s, when the food was produced by the farmer for total or near total consumption in his own home or immediate vicinity. However, soon thereafter, the surpluses began to increase, finding greater arrivals in village markets, followed by taluk, district and state markets, constantly seeking terminal demand to finally end up in the larger national market.

Today surpluses in certain produce segments have reached a point where even the national market, is not capable of consuming it, and will, therefore, need to be evacuated outside the nation's boundaries. Such demand-supply in-equilibrium in the Indian agricultural market, abetted by a dampened agri-commodity market at the global level, has caused a fall

in the prices realised by Indian farmers, much to their disadvantage, in the face of growing output.

### **Expanding India's Agricultural Market**

As long as the mandate of our Agriculture is limited to food and fodder consumption, there would be little scope to scale the remuneration from the markets, whether domestic or global. New market avenues, having added potential are identifiable and these lie in the industry sector. It is logical, therefore, that from the perspective of the farmers' income and sustained agricultural growth, the mandate of Indian agriculture would necessarily have to be redefined. For long, there has been mind-block that has precluded channelling food commodities into uses in the non-food sector. Such a mindset, obviously arose from fear, embedded in the psyche, ever since those unfortunate early years of food deficiency. However, with ever mounting buffer stocks and falling prices, the old fear is misplaced and new courageous steps must be taken. The first critical initiative needed is to adopt a new mandate for agriculture.

### **Delimiting the Mandate of Agriculture**

The Committee on Doubling Farmers' Income, which has been examining the agriculture sector from multiple dimensions, has redefined the mandate of Agriculture. In doing so, the Committee says that agriculture must expand its horizon beyond its currently perceived and predominant deliverables – food and nutrition security. The mandated demand from Agriculture should also include generating of other resources, as raw materials to supply and support industrial enterprises – chemicals, construction, energy, fibre, food, medicinal, etc. Such a redefined mandate will provide greater vertical elasticity to the markets, which currently are hemmed in, restricting its focus to the consumption as food and fodder. Further, the agricultural system must mitigate new learning that rear environmental concerns.

In the new perspective influenced by market expansion and remunerative returns, the redefined mandate of Agriculture should be as follows:

- i. Agriculture has the moral responsibility of meeting food and nutritional security in consonance with the agro-ecological backdrop.
- ii. It has to generate gainful employment resulting in income gains to make the farmers economically more secure.

- iii. It has to generate raw materials that will directly aid agro-processing of food and non-food products to support secondary agriculture.
- iv. It has to support agro-processing industry to produce primary and intermediate goods, which will feed the manufacturing sector.
- v. Agricultural practices need to be on a sustainable basis.

### **Setting a New Direction to Agriculture**

The redefined mandate takes a more holistic, contextual and outcome based approach to Agriculture which is not merely production-centric, but acquires a perspective of income-centricity, treating agriculture as an enterprise.

The adoption of the term 'enterprise' in the context of agriculture demands that attention is paid to three basic variables, namely, higher output per unit of asset (land, animal, water body etc.), reduced cost per unit of output and higher degree of monetisation of the farmers' produce across all the sub-systems of agriculture. This approach alone can facilitate the garnering of net positive returns and qualify agricultural activity to be treated as an enterprise.

The basic principles of economics inform that when an enterprise is not able to generate net positive returns, the only way out is loss minimisation, which may even mean the closure of the enterprise. However, given that agriculture in India is not just any enterprise, but is a way of life, the option of closing it down does not arise at the individual farmer's level. This makes it all the more important that efficiency is imparted to agriculture to make it profit based. This, therefore, necessitates linkage of agriculture to newer market opportunities. Simultaneously, this implies that production has to be redesigned to meet the market demands that such new opportunities will bring about. In this context, it is important that the crop geometry and production matrix of the country are reorganised. For e.g., the cereals today occupy more than 50 per cent of the net cultivated area leaving little space for their other cousins in the agricultural sector. Today's need for income and job opportunities of the farmers warrant that new engines of growth, which lie in horticulture, animal husbandry and fishery, find greater credence in action and approach. The prerequisite is, therefore, diversification. Diversification is good not only to tap into new opportunities of income but also from the view point of sustainable production practices.

The earlier references to the scope that agriculture holds for generating raw-materials, for a range of industrial activities, can be buttressed by a few examples. Taking the case of sugar, it is seen that over the last ten years, the demand for it has stabilised at about 26 million tonnes per annum. As against this, the country produces 32 million tonnes of sugar. With the supply outweighing the demand, it is but natural that prices shall drop or even plummet. However, the answer does not lie in cutting down on sugarcane cultivation, which is one of the favoured commercial crops amongst the large section of Indian farmers. What is possible, is to grow cane not just for production of sugar as a food item, but also for other raw-material like molasses for use in energy sector. It is in keeping with this deliberation, that the Government of India has now adopted the new policy of allowing B-grade molasses for production of ethanol. Carrying this chain forward, Government is open to blending of ethanol with petrol in a higher proportion, thereby creating a virtuous cycle for sugarcane farmers. In times to come even cane juice can be considered for conversion into ethanol. What the learning from this is, that sugarcane can be grown for different purposes and researchers have to now release varieties, which are capable of not only higher sugar recovery, but are amenable to higher conversion factor vis-a-vis the industrial demands. It also implies that sugar factories need to be upgraded into agro-complexes, where multiple products, like sugar, molasses, ethanol, power, etc. are produced.

Taking another example, of corn, which is now predominantly used in food, fodder and poultry feed sector, yet bears potential for extensive usage in industry. The starch that is produced from corn is amenable to more than 3000 types of industrial goods that can cater to textile production, paper and pharmaceutical industry, besides food range.

These two examples are but only a sampling of the vast canvass that exists for linking agricultural production to industry. The spin-off effect is, that it creates a sustainable system unlike other ore (eg. iron ore, coal, bauxite etc.) based industrialisation which are non-renewable. These kind of new connectivities which are relevant to contemporary and emerging situations are capable of generating gainful employment and higher incomes for those now engaged in agriculture, at unproductive levels.

One of the structural weaknesses of India's agriculture is that, the lands have got fragmented and divided bringing challenges of size. High density of farmers, has only exacerbated the situation. In result, there is high



degree of underemployment and disguised unemployment, wasting the power of human capital. It is estimated, that on an average a farm family is gainfully employed on the farm for about 185 days in a year. This is in backdrop of the fact, that two of the most valuable assets that farmers own, are land and human capital. Maximisation of the usage of these assets will provide a solution to the problems of unemployment and poverty.

In the light of the understanding supra, agriculture also needs to be redefined to include secondary agriculture as integral to the primary economic activity that is agriculture. Today, agriculture as a primary economic activity, is perceived to be merely a production activity. However, the primary source of income generating activity, can also lead to secondary income options. Hence, secondary agricultural activities needs to be recognized and defined. The DFI Committee has defined Secondary Agriculture as a productive activity at enterprise level that,

- i. utilises as raw material the primary product and by-products of agriculture and other biological resources available locally in its rural agrarian neighbourhood; and/or
- ii. deploys locally available skills or a high level of rural manpower, to operate/manage/ maintain the production of goods and services; and
- iii. can be categorised appropriately under the Micro, Small or Medium Enterprises Development (MSMED) Act 2006; and under the Khadi and Village Industries Act.

This definition, puts the productive activities, that output allied goods and services, and employ the primary producer and his/her produce, under ambit of agriculture.

All of these above mentioned concept level rethinks, will also require fresh look at the way we categorize farmers and how we redefine their welfare.

### **Recognizing the Farmer**

For long, development in agriculture has meant development of the agriculture sector and more precisely the commodities. The science and technology, as also past policies, have therefore chased commodities and the feed. What was needed, and what is now needed even more so, is to recognize the central actor, who is the farmer. It is, therefore, appropriate



that Government has renamed the Ministry as the Ministry of Agriculture & Farmers' Welfare. This, in a sense recognises, that while agriculture is for the nation's security and for the nation's citizenry, the farmers' welfare is equally important and that only then, can it ensure the sustenance of the farmer too.

However, the term 'farmer' has remained amorphous and principally, it has been linked to ownership of land. In reality, the actual tillers of the land are not always the asset owners, as per land records. They can be lessees, tenants, licensees, etc. who actually sweat it out on the field, who bear the risk, and yet do not find support from several farmer-centric schemes and entitlements provisioned by the Government. It is also a paradox that in a land-hungry country like India, as high as 10-25 per cent of the land remains fallow, either current or permanently. This therefore, calls for a new definition of the individual farmer, so as to recognise both owners and non-owners of land, as farmers. Since non-land owning farmer-status is likely to be transitory and therefore dynamic, it will be necessary to deploy technology to build an equally dynamic farmers database, and update it from time to time. The newly defined agriculture, with the farmer occupying the central pole position, demands the creation of comprehensive farmer's database.

Redefining agriculture, expanding its market horizon and the involved set of productive activities, along with refreshing the definition of a farmer, are but the initial pivots that base a whole series of transformative changes that India's agriculture is stepping into. A paradigm shift in agricultural development is afoot and the next immediate years and the coming decades can be expected to witness the coming of a long term Income Revolution for our farmers.

**Thank You.**

It has been a personal gain in responding to the University's invite. For, I learnt so much by my interface with Dr. Praveen Rao & others of his team; and further stand to benefit from the partnership between our two organisations - Ministry of Agriculture & Farmers' Welfare and Professor Jayashankar Telangana State Agricultural University.

*Jai Telangana, Jai Hind*

### *About the Speaker*



Dr. Ashok Dalwai IAS, of the 1984 Odisha State cadre, is an eminent administrator who hails from Belgaum district in the State of Karnataka. An agricultural graduate from UAS, Bangalore, he specialized in Agril. Economics at UAS, Dharwad and was subsequently awarded Ph.D. in Economics in 2005. He has held several top ranking administrative positions in the States of Odisha and Karnataka handling portfolios as varied as Sericulture, Steel and Mines, Textiles and Handloom Development, Industrial Infrastructure and Investment Development, Small Industries Development, State Finance Corporation, Hirakud Command Area Development Authority during 2002-2010. He has also served as District Collector of Kalahandi, Odisha and Raichur in Karnataka. As Deputy Director General, Unique Identification Authority of India (UIDAI) (2010-2015) he was responsible for developing and deploying state of the art technology for biometric enrolment and de-duplication, besides authentication and other applications enrolling more than 100 crore residents across the country.

From 2015, he took on responsibility of reform and policy formulation in the Department of Agriculture, Cooperation & Farmers' Welfare in the Ministry of Agriculture & Farmers' Welfare, Government of India. Currently he is serving as the CEO, National Rainfed Area Authority in the rank of Secretary to Government of India. He is credited with drafting the 'Strategy for Doubling Farmers' Income by 2022'; the Model Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, 2017; and Model Agricultural Produce and Livestock Contract Farming and Services Act, 2018. He has overseen the roll out of online trade platform called eNAM across the country. He is also Chairman of the Committees on promoting pulses, oilseeds & millets in the country. Earlier in his service he has drafted the first Agricultural Policy of Odisha in 1995, first Textile Policy of Karnataka in 2003 and a ten year Perspective Plan for the Kalahandi.

As Commissioner of Bangalore City Corporation he introduced Self Assessment Scheme of property taxes which has now been adopted across the country.

He has keen interest in Agriculture, Ecology and Technology and has published several technical & general interest papers. He has also lectured at several fora within & outside the country.

He was awarded Honorary Doctorate in June 2017 by his alma mater, the University of Agricultural Sciences, Dharwad in recognition of his contributions to society and agriculture in particular.