



To Enhance Plant-Based Nutrition and Boost Export, A Vegetables Mission Is Required

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Introduction

Post-Covid, balanced diet and immunity to diseases shall remain major considerations in our food choices. Plant-based nutrition will drive the future food habits of the middle and upper-class population towards vegetables and pulses.

Vegetables constitute a paltry 9% of the total calorific intake of Indians. Against a WHO recommendation of three servings of 100g vegetables each per day per person, we consume two servings of 80g each. Vegetables can help in our journey to reach nutritional security.

We produce about 200 Mn tons (MT) of vegetables and 100 MT of fruits annually. With population expected to exceed to 150 cr by 2030, we will have to produce 350-400 MT of vegetables. We have to increase acreages and yields.

Production

Vegetables are comparatively short duration, low input crops. Multiple crops in a year are profitable, but our yields are low. They are half of China and 25% of USA. There is a definite need to improve yields through better seed and agronomic practices.

Better quality seedlings with higher viability will reduce seed cost and enhance yields. Qualified nursery entrepreneurs must be encouraged on commercial scale in rural areas with mechanized seeding and portable trays.

There is a great need to coordinate the extension activity through village level extension workers from Krishi Vigyan Kendra's (KVK) of ICAR to advice on crop specific innovative and sustainable practices. Front line extension staff should use digitized extension material on smart phones and tablets for effective communication.



Localized seed production, especially for OP vegetables must be encouraged through formation of seed production clusters. These should be backed by linkages to markets through government and co-operative channels.

Research

There is need to step up research investments. We have to dig deeper into genomics and bio informatics to find genes that can resist biotic and abiotic stresses, nematodes, reduce damage in handling, storage and transport and ensure longer shelf life in retail outlets. Our plant architecture must suit drip irrigation systems better, as in Israel and Spain. ICAR research must be linked to the market through appropriate commercial arrangements such as licensing the new varieties and collection of royalties or other fees.

A coordinated approach between private and public research programmes will help in focusing on areas of strength and avoid duplication of efforts and expenditure. Policy support to enhance research investments in terms of IP protection and research incentives will help in bringing world class varieties to farmers.

Technology transfer from lab to land needs to be speeded up manifold so that farmers access the latest products. Creation of localized seed banks with geo-tags can enhance the value of seeds grown locally. They can be used as assets for capitalization and attract investment from seed researchers.

We missed the Bt Brinjal bus which picked up Bangladesh on its way. Adequate scientific evidence shows the benefits of Bt in large pesticide consuming crops like Brinjal, Cabbage, Cauliflower and Okra. Bt technology helps in making our vegetables chemical free and in enhancing farmers yields and profits. They benefit both the consumer and farmer. It is still not too late.

Market linkages

Farmer's profitability depends on farmgate prices and market linkages. Since vegetables are perishable, producers need a strong linkage to the market and processing industry. Direct purchase of vegetables from farmgate and supplying them to both retail and bulk consumers can be strengthened with infrastructure and technology. Value addition through storage and processing is required on a large scale to absorb surplus production during glut times and to stabilize market prices. A big PPP



project at state and district level and with inter-state relationships, modelled on the EU market, might provide a workable solution.

Some young agri-tech entrepreneurs are using app-based aggregation of vegetables from farmers and are connecting them to large retail city markets. Though some digital platforms operate connecting farmers and buyers, the government may have to create a national grid of such applications with ENAM to connect farmers to markets.

Contract farming with farmer groups to produce specific varieties suitable for processing would ensure both demand and supply round the year, VIZ. canned tomatoes, tomato paste, lycopene production etc. The recent reforms announced by the finance minister shall help in this endeavour.

FPOs may be utilized for providing technical advice and inputs, output marketing as well as in downstream processing of fruits and vegetables for value addition. Necessary infrastructure can be developed with PPP at the village level and along the entire value chain utilizing digital technology for linking with the remotest regions.

Policy support is required to increase vegetable cultivation under poly houses/ greenhouses, as seen on a commercial scale in Europe and Israel. This will include financial support for seed companies to develop seeds suitable for poly house cultivation. Demand for organic vegetables and fruits is growing and farmers need help to participate in these markets.

We should work with a target of 50- 60% of the consumer price going to the farmer. The efficiency of the market link- age system will be determined by this parameter. This can only be achieved by transparency in the supply chain and fair transactions.

Exports

India can become a global leader in custom production of vegetable seeds for other countries, for export of vegetables seeds developed in India and for conducting joint product testing programmes in India and outside.

We exported 1.2 MT of vegetables worth Rs. 5400 cr last year. India can play a bigger role. Identified export production zones, approval of specific plant protection chemicals and plant nutrition chemicals that are safe with negligible residue levels, free movement of seeds and planting material across borders and bank funding are important.



For meeting export market requirements, other measures like farmers ensuring traceability of production, an India GAP that will support growers in meeting export market requirements, common facility centre for post-harvest handling and meeting certification requirements of importing country are needed. Logistical support for farm to port movement and appropriate cold storage and transportation are essential.