

KEY NOTE ADDRESS

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Horticulture in Pakistan is as diversified as are its climates and topography. There is a rich endowment of indigenous and exotic fruit and vegetable cultivars. The four seasons and perennial supply of irrigation water are unique resources in Pakistan that are available to a very few countries of the world. Horticultural enterprises have a strong potential to diversify and boost our export economy and to alleviate poverty among the small farming households. However, that has remained an illusive reality for many reasons.

The news from print media shows that a great deal of emphases has been placed on the value addition and promotional activities (marketing), obviously assuming that a plenty on the supply side should be available. One has to understand that our yields are dismal and quality of able surplus. We should also ensure a plenty of fruits and vegetables for local consumption. Interruptions in the supply of onion, tomato and potato can distort SPI (sensitive price index). Fruits like 'ber' are beyond the reach of common man and Kinnow, the most accessible (cheap) fruit to all was beyond the reach of many during last production year (2006-07).

Value Addition has a great potential provided the processors are backed by guaranteed production. We know the story of two frozen citrus juice concentrate factories of Sargodha, one was bank-corrupted and the other was off loaded by a major multinational (Cargill) for the obvious reasons. There are about 50 citrus packing houses and hardly anyone running to its full capacity. The investment in mango packing and processing as well as in potato and some vegetables could be beneficial.

But, we must revisit the abandoned and bank-corrupted investments in the processing factories before reinvesting. We need to produce enough and be diversified to feed the currently running processing units and plan more and better production for profitable operation of upcoming industries.

Our top of the line constraint is lack of Human Resources. There is a need for engaging people with vision and leadership qualities.

The small farmers dominated agriculture has a subsistence orientation which needs to be trained into commercial farming. That requires technology, capital, and management of risks in production and marketing. Only a few have mastered this task and much remains to be done. There is potential for a complete turn around.

We are faced with stagnant yields in nearly all crops and that includes major horticultural crops, excepting potato (probably). Our yields of major fruits (citrus and mango) are about a third of the potential yields. The Punjab Government has taken right steps towards futuristic development of citrus and mango. But, the danger is that too much emphasis on two crops may result in a disadvantage to several other fruit and vegetable crops. Let's be sure of a balanced growth in the horticulture sector as we are all aware of the implications of 'gluts' in the market.

Yields are invariably linked with input use efficiency after the genetic potential. One cannot find a single credible genetic improvement program for horticultural crops that could

compare with major crop improvement programs like those for wheat, cotton, rice etc. An elite/dedicated biotechnology based horticultural crops improvement institute must be created to avoid competition with major crops as is the case in the present setups. Similarly, we need to adapt management options similar to the advanced producers in the world to enhance input-use-efficiency.

Water is the major constraint and high investment drip irrigation programs should be launched in the horticulture sector as a priority. Most orchards in the province of Punjab are producing fruits as an additional crop in a double story production where intercropping is the rule. The inputs for the trees are actually a share from the annual crops and that is reflected as poor yields. Trees must be grown as a crop and not as a bonus.

Optimization of input use will also have an impact on the quality of produce. Quality output is the product of a combination of genetics, management and weather conditions. The world is moving towards 'precision agriculture' where inputs are applied in consonance with the needs arising from horizontal and vertical variability of the production systems. Most of the quality vegetable production has evolved into protected agriculture which can be nearly organic in nature. We can make major gains by investing into protected agriculture in its improvised versions.

World markets are sensitive to sanitary and phytosanitary issues. Good agricultural practices (GAP) and traceability are the required elements for sales into high priced markets. Producers need constant training and upgrades to meet the challenges. Aggressive marketing is only possible if we have met all the requirements at farm gate level.

Seed and Nursery are the foundation for high yields and quality production. Unfortunately, the vegetable seed industry and the fruit tree nursery business are totally unregulated. There is no certification of nursery plants sold to the farmer and there is unscrupulous seed business exploiting the vegetable growers. There are laws on the book but no infrastructure to implement the laws.

Diversity is the key to risk management. Our major fruit crop (citrus) is a monoculture of Kinnow mandarin. Despite a large array of available mango cultivars, the production is restricted to a small group of famous varieties. There are others in which diversity remains unexploited for example in the case of dates and guava. Among vegetables and melons, we have failed to develop any appreciable range of cultivars. The unruly seed and nursery business are partly to be blamed. As mentioned earlier, long term investment into genetic improvement programs is needed to address this issue.

A large segment of horticultural industry is 'Urban and Periurban' in nature. Vegetables, flowers and nursery production enterprises in and around the urban areas are leading the sector. The vegetables produced here are generally unhygienic but they control the market. The nurseries are selling plants without any legal binding. The unprecedented surge in the urban landscape requirements has resulted in introduction of large variety of exotic ornamental plants. Most of these introductions have met no quarantine regulations and many of them could be identified with new and unforeseen disease and pest problems. The current years' cotton crop losses are largely attributed to the spread of 'mealy bug' which is a pest of nursery plants.

Nurseries are an established source of spread for most virus and virus-like diseases of citrus and other vegetatively propagated plants. Also, the repeat use of infested nursery soils is spreading nematodes and other soil borne diseases to the production fields. A major check is needed here because what is planted today that takes few years to start bearing and last for decades. Farmers can ill afford to replace an orchard planted by wrong trees after several years of investment and continue to suffer losses.

Emerging disease and pest problems haunt the farmers. Our backbone of the economy, cotton crop goes through good and bad years because of virus and pest problems. We have seen a nearly complete destruction of 'shesham' trees. The same category of pathogen is found to be responsible for the death of mangoes which could be serious concern in the coming days. We

know from other countries of the world where Citrus Tristeza Virus wiped out citrus in Argentina. Citrus canker is the major citrus killer in Florida. Witches' Broom Disease of Lime eliminated centuries old 'limu' from the Gulf countries and Iran. And the danger caused by presence of greening disease in Pakistan is a serious threat to Kinnow-the monoculture. Major investments are needed in R&D to combat these impending risks.

R&D is also wanting for the introduction of new and novel crops in the horticulture sector. The organic production has become a niche area where we need to emphasize and some of our fruits; particularly Kinnow can be made to qualify for that segment of the market. World is faced with climate change and that will be reflected in our farming systems.

If, I am asked to invest into only one area for growth in horticulture, I will go for a complete revamp of seed and nursery business which is achievable within a time frame of 3-5 years. And, if I am given a second option and 10-15 years of time, that would be a biotechnology based breeding program. We have a tested example of corn crop in the country. There is one critical input i.e. hybrid seed and everything else followed. Corn is the only crop which has registered yield gains progressively and there is an industry to buy corn.

Any investment into agro-industries without assured and cheap raw material will turn into a hide and seek game by loan seekers who will get the loans written off at the end of day.

Several years back, we entered into a STED (Science and Technology for Economic Development) competition of GOP and secured a project for developing a model nursery program for citrus at UAF. The project stand completed and offers an opportunity for R&D to be duplicated for the revamp of nursery operations.

Research vision, capacity, capability, consistency and honesty are the challenges. We have scattered resources in some areas and not in others. There is also a need for S&T and analytical supports to backup producers and exporters for proper safety instructions and certification.

We have a history of international support in agriculture. That includes collaborative research, bilateral programs, cooperative agreements and loans etc. MART program of US-AID, Italian Fruit and Vegetable Development Project, ARP-II of World Bank, Australian Cooperative Program on citrus and mango are a few examples to cite. The sustainability problem begins after the international donors and cooperators end their task. It is hoped that current and future initiative will be sustained beyond the donor supports.

The program of this conference is very well designed to address the current and emerging needs of the horticulture sector. There is local and international participation. It is expected to generate a doable set of recommendations for the growth of horticulture in the country and resulting prosperity for the farmers.