Strategies for Horticultural Growth of Andhra Pradesh
BACK GROUND:

• India - Area 23.79 m ha  Production -283.36 m tones  Productivity- 11.91t/ha  
• AP – Area 1.35 m. ha.  Production - 17.33 m. tones  Productivity- 12.88 t/ha
• Hort. crops cover 20.1% of the gross area and contribute to about 5.16% of the state GDP.
• Leading producer of Fruits (99.78 lakh tones), 3rd in spices (6.72 lakh tonnes), 4th in production of plantation crops .
• Vegetables- 13th place (5.41lakh tonnes)
• Actual yields recorded are far below the potential yields – need to increase productivity.

Lessons from green revolution:

• Judicious use of land, water, pesticide and fertilizer
• Conserve and utilize natural resources.
• Diversification for profitability of farms & healthy food

Why diversification

• For enhanced farm profitability
• For effective utilization of natural resources
• To complement the needs of the nutritional security and balanced diet
• To improve livelihood options and environmental service

Horticulture has proved to be a wise option for diversification

➢ Horticulture assumes greater significance in view of the envisioning changes such as
  – Changing food habits, Increasing demand, Rapid urbanization and Increasing income
➢ Horticultural produce being highly perishable necessitates scientific input on production, protection, post harvest handling and marketing.
MAJOR CHALLENGES FOR HORTICULTURAL PRODUCTION:

- **Low productivity**
  - Fruits: 12.33 t/ha (22 t/ha USA)
  - Vegetables: 17.33 t/ha (33 t/ha Spain)

- **Changing production environment**
  - Reduced farm holding (<1.3 ha)  
  - Dwindling natural resources
  - Marginal lands
  - Abiotic stresses (drought, salinity etc.)

- **Post Harvest losses and its impact on per capita availability**
  - 20% losses at different stages of handling, transport, storage, processing and distribution.

- **Changing quality consciousness and global competition**
  - Improving the quality of horticultural produce to be competitive in international market.
  - Pesticide residues, heavy metal contamination- amelioration is essential for export promotion/import substitution.

- **Climate change**
  - Changing dynamics of pests and diseases, pollination biology, increasing abiotic stresses leading to instability in horticultural production and farmers livelihood security

- **Weak market linkages and price in-stabilization**
PROBLEMS IDENTIFIED:

- Lack of regulation in certification of planting material and inadequate supply of quality planting material/seed
- Less focus on soil health.
- Need for upgradation of technical knowledge of farmers and extension workers.
- Weak extension linkage and lack of synergy between the research and extension.
- Indiscriminate use of chemical inputs.
- Lack of varieties suitable for processing
- Lack of varieties for biotic/abiotic stress tolerance
- Less focus on protected cultivation
- Shortage of skilled manpower particularly for protected cultivation.
- Macro/micro nutrient deficiencies
- Low productivity of old and senile orchards
- Lack of machinery for pruning, harvesting, drying etc. in certain crops.

Way forward

- Produce more by enhancing the input use efficiency
- Save and grow
- Integrated farming
STRATEGIES:

Sustaining productivity under biotic and abiotic stresses through crop improvement, production and protection strategies.

I. Crop Improvement

- Conservation of genetic resources and identification land races with specialty traits
- Promote cultivation of high yielding and quality hybrids and potential OP varieties
- Use of promising rootstocks for dwarfing, biotic/abiotic stress tolerance and for problematic soils
- Need based or demand driven introduction of new/exotic vegetables

**Tomato- Hybrids**

**Arka Ananya**
ToLCV+BWR
Round, Med.Firm
local market
65-70 g. 65-70t/ha

**Arka Samrat**
ToLCV+ BW+ EBR
High Round, Firm
Distant market
100-110 g. 80-85 t/ha

**Arka Rakshak**
ToLCV+ BW+ EBR
Square round, Firm
Distant market
90-100g. 75-80 t/ha
Chilli – Potential OP varieties

LCA-625
Deep red, highly pungent, 65-68q/ha

LCA-620
Deep red, medium pungent, 65-70 q/ha
II. Production technologies

- Hi-tech nurseries – Poly house/shade nets – healthy seedlings
- Production & supply of quality planting material/seed
- Adoption of high input use efficient technologies – Drip/fertigation, mulching etc.
  Encourage farm ponds in rain shadow areas for drought mitigation
- Soil test based nutrient management – Soil health cards- INM
  Foliar supplementation
- High Density Planting
- Crop regulation and canopy management
- Environment protection through eco-friendly practices- ICM organic culture –
  Use of organic manures and bio-fertilizers
- Improving quality standards
- Protected cultivation – High value vegetables
  Offseason production for higher returns
  Management of biotic/abiotic stresses under protected conditions
Hi-tech nursery management
Hi-tech production system - Banana
Bunch covering- polysleeves with 2% ventilation
Water conservation using Plastic Mulch

Brinjal

Gerbera

Fertigation in vegetables
Protected cultivation to address the challenge of shrinking land and water
III. Crop Protection:

- IPM/IDM technologies including bio-control to combat major pests and diseases. (Need for curbing unauthorized bio-products)
- Diagnostic kits for early detection of viral diseases.
- Forecasting and forewarning system

Integrated pest management in vegetables
Post Harvest and Value addition

- **Pre harvest practices to minimize postharvest losses**
  - Balanced nutrition (micro and macro elements) for post harvest quality
- **Care in harvesting**
- **Post Harvest handling**
  - Pre-cooling units, grading, packing
  - Supply of plastic crates, silpaulin sheets etc.
  - Pre-storage treatments, wrapping, cushioning, wax emulsions etc.
- **MA storage, shrink wrapping machines etc.**
- **Ripening chambers**
- **Value chain development to promote exports**
- **Cold storage – Warehouse Receipt Finance**
- **Processing and value addition**
  - Dryers, steam boilers, polishers etc.
  - Home made processing and branding/ Technical assistance.
  - Minimal processing and Value added products
Manual Sorting & Grading

De-sapping

SOFT BRUSHING WITH WATERSPRAYING

Grading

PROPER METHOD OF PACKAGING
V. Mechanization in horticulture

- Mechanization in vegetable nurseries and other annuals
- Pruning and canopy management
- Mulching
- Mechanization in greenhouses
- Pesticides Spraying
- Harvesting and transporting machines
- Grading & Packaging

VI. Capacity Building (HRD)

VII. Market Intelligence
INTERVENTIONS

• Establishment of new gardens / Area Expansion:
Subsidized planting material, micro irrigation, inputs etc. are required to bring vast areas of uncultivable land under horticultural crops. (Dept. of Horticulture)

• Rejuvenation / replacement of senile gardens:
Old orchards - to be rejuvenated with suitable cultural manipulations/ top working or replanted with high yielding varieties. (Dept. of Horticulture)

• Establishment of model nurseries:
Model nurseries with hi-tech facilities - production and supply of genuine planting material to the farmers.
Vegetable seedlings of costly hybrid varieties raised in portrays are to be supplied to the farmers. (Dept. of Horticulture, Dr. YSRHU)

• Encouraging Peri-urban vegetable cultivation:
Peri-urban vegetable culture - emphasis on community-based vegetable production systems to ensure year-round availability of vegetables to the urban and periurban poor.

• Encouraging Protected cultivation
Ensures year round production of vegetables and flowers.
Minimises gluts and helps in price stabilization.

• Promotion of organic cultivation – IPM/INM practices
Dry land areas and high altitude & tribal areas - best option for promoting organic cultivation.
IPM practices need to be promoted to produce residue free product.
INM practices would help in sustaining the productivity. (Dept. of Horticulture, Dr. YSRHU)
• Encouraging dry land horticulture

  Improvement of economic conditions, nutrition and health standards of the people of the dry tracts (Dept. of Horticulture).

• Initiatives on water conservation

  Incentives for rain water harvesting on farmers’ fields - farm ponds
  Micro irrigation, mulches etc. (Dept. of Horticulture).

• Creation of Postharvest infrastructure

  Provision for- Cold storage units, Precooling units, Pack houses & Ripening chambers
  Govt. intervention - to solve the problems of high electricity charge, high rate of interest on loans. (Govt. of A.P.)

• Creation and development of processing facilities

  Establishment of processing units
  Contract farming by the industry to ensure assured supply of raw material
  Creation of Agri Export Zones to promote exports
  Facilitation for marketing of processed foods by the Govt. (Dept. of Horticulture).
Market intelligence & marketing of the horticultural produce

Identification of market linkages of production areas with
- Creation of Agri Export Zones
- Establishment of Food and Horticulture technology Parks
- Terminal markets/ rythu bazaars
- Ports
- Existing processing facilities and

Establish Efficient market linkages-
- Tie up with exporters
- Buyers – Sellers meets
- Market regulation and price support
- Creation of quality test facility
- Marketing at farmers level - Formation of Farmer Producers Organizations

Formation of fruit/vegetable clusters & Farmers’ co-operatives

Transfer of technology and capacity building
- Establishment of Training Institutes (HTI)
- Establishing strong linkages and synergy between research and extension wings
- Training on- GAP, protected cultivation, Postharvest handling, waste management, Processing and Value addition
- Adopted Village Concept, Front Line Demonstrations, Field days, Exposure visits, Crop seminars, Mass campaigning, TV and AIR, Use of ICT

Farmers to be encouraged to take up seed and nursery production by upgrading their skills and infusing technical confidence through training.
Thank You