

# **THOUGHTS ON POSITIONING RESEARCH TO ADDRESS EMERGING ISSUES OF INDIAN AGRICULTURE**

**V.L. CHOPRA  
PLANNING COMMISSION**



# AGRICULTURAL SCIENCE : CHALLENGES AND WAY FORWARD

- Agriculture is a complex enterprise that involves crops, livestock, animals. Non-farm factors heavily influence output
- Present discussion restricted to scientific aspects of securing better crops and higher output

# KEY CHALLENGES

- Overcoming yield barriers
- Conserving natural resources
  - Soil, water, nutrients, biodiversity
- Safeguarding production
  - Ecologically and environmentally acceptable solutions for pest and disease control
- Making agriculture remunerative & interesting
- Ensuring quality products at competitive price
- Facing climate change imperative
- Ensuring shorter product cycle

# THE WAY FORWARD

- Knowledge-led agriculture
- Emphasis on Innovation
- Shift from 'Research & Development' to 'Research for Development'
- Location-specific technologies for maximising benefits
- e-communication to reach to the farmer

# RESEARCH AND INNOVATION

- Radical change in the organizational set up
  - Remove duplication, mandate ambiguity
- Prioritize and set clear goals
  - Broader base, greater depth
  - Anticipatory approach
  - Interdisciplinary integration coupled with disciplinary excellence
  - System based for seeking holistic solutions
- Develop a clear road map and allocate adequate resources linked to accountability and delivery

# HR DEVELOPMENT

- Comprehensive overhaul of education system
- Requirement of incentive and reward system
- Develop leadership training and succession plans for a robust Agricultural Research and Education System

# IMMEDIATE ACTIONS

- Harness available technologies to boost production
- Emphasize delivery of inputs and knowledge to the farmer
- Network the entire process from production to processing to marketing to encourage adoption of best practices for securing maximum benefits and desired product quality

# RESEARCH-LED AGRICULTURAL REVOLUTION : SOME POSSIBILITIES

- Overcoming feedback inhibition to break yield barriers
  - doubling sugar yield through production of sucrose and isomaltulose
  - seed yield increase through increased sink strength
- Devising new, affordable and portable tools for quick and easy assessment of nutrient status of soil/water quality
- Gene and allele mining for more efficient use of germplasm resources
- Develop e-resources for dissemination of technology
- Complete e-solutions for individuals, communities and geographic locations