

# **India as a \$ 5 Trillion Economy**

**The Eco- system of Agriculture:**

**Policies, Programs, Institutions and Technologies**

# Understanding an 'eco-system'

*An eco system approach is contextual and holistic – the Academy's eco-system includes the Mess, the Gym, the Plaza, the academic sessions, the formal and informal interactions – and last but not the least – its picturesque location in the Queen of Hills!*

*The eco-system of agriculture has to be seen in the context of*

- 1. MGNREGA and the Right to Food: (thus agriculture is just one of the three pillars of food and livelihood security – and not the key driver of 'political economy')*
- 2. Natural Resources: Managing Abundance/Handling Scarcity*
- 3. Aspirations, Farmworkers, Plantation Labours and Agripreneurs*
- 4. EC Act or Incentives for Exports*
- 5. New technologies in the offering*

# *The context* : The State and Agriculture

- Settled agriculture is the *necessary pre-condition* of the state
- Appropriation of surplus , settlement of boundaries and maintenance of army and bureaucracy
- From the norms of Artha Shastra to the settlement of Todar Mal
- The East India Company : *we shall tell you what to grow*
- Neel Darpan, Two Leaves and a Bud , Champaran Satyagrah
- Dawn of Independence and the Abolition of Zamindari
- The Ship to Mouth Existence and the Imperative of the Green Revolution
- PM –Kisan : will direct transfers mean the end of program interventions

# At the Krishi Bhawan and NITI Ayog: Its not an easy task!

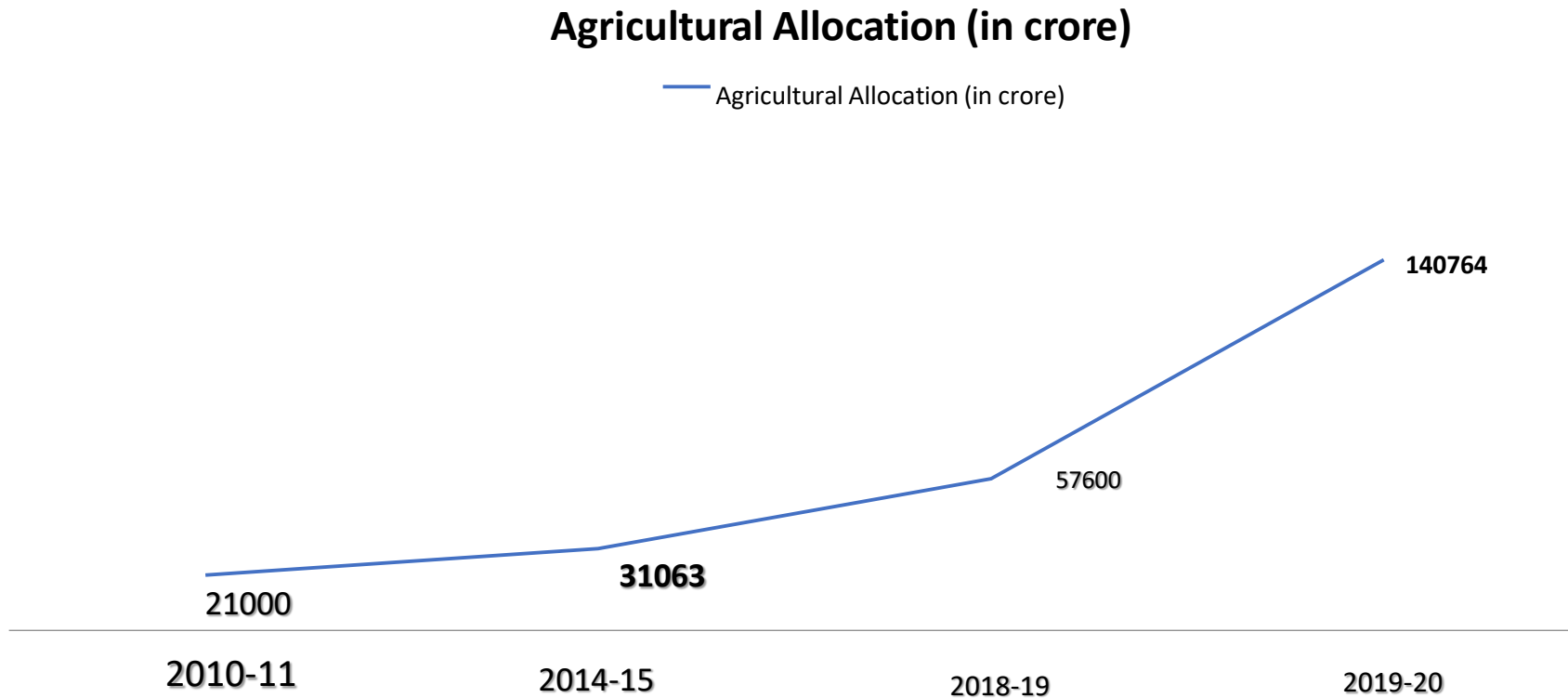
- Striving to balance the interests of the producers and consumers
- Reducing share of agriculture in GDP and employment with a concomitant increase in demand for protein rich diets
- While the Centre is pro-active in suggesting changes to legislation with respect to APLM (P & F ) Act ,2017, AP &L Contract farming and Services (P&F ) Act, 2018 and the Model Law on Land Leasing prepared by the NITI Ayog - most states are not in sync
- With respect to programs, the funding is with the Gol, and the implementation is with the states

# Matching Expectations!

- Policies: Self Sufficiency in cereals and pulses/diversification of agri-exports/restriction on imports/promotion of contract farming /doubling farmers income/incentives to food processing /minimum support price for select commodities/value chains and market-led growth for HVA
- Programs: RKVY/NFSM/MIDH/PMFSBY/PM–AASHA/PM -KISAN
- Institutions: CACP/FCI/ NAFED/ NCCD/ SFAC/NDDDB/NHB/APEDA/ NCOF/Bi-lateral CoEs
- Technologies: Cold Chain and ripening chambers/micro irrigation/protected cultivation/hydroponics/GM?

# Agriculture Sector Allocations

- Highest ever allocation in agriculture : 1,40,764 crore !



# Agriculture Sector Allocations

- Clear that the move is towards DBT , as well as an acknowledgment that programs have not been very successful
- From state to technology- driven Market led growth with income support to farmers with less than 2 hectares of land (12.6 crore)  
Obviously, growth in production has not led to commensurate growth in farmers income.
- Indian consumers receive higher CSE while producers receive lower PSE (compared to other OECD countries)

# Agriculture Production in India

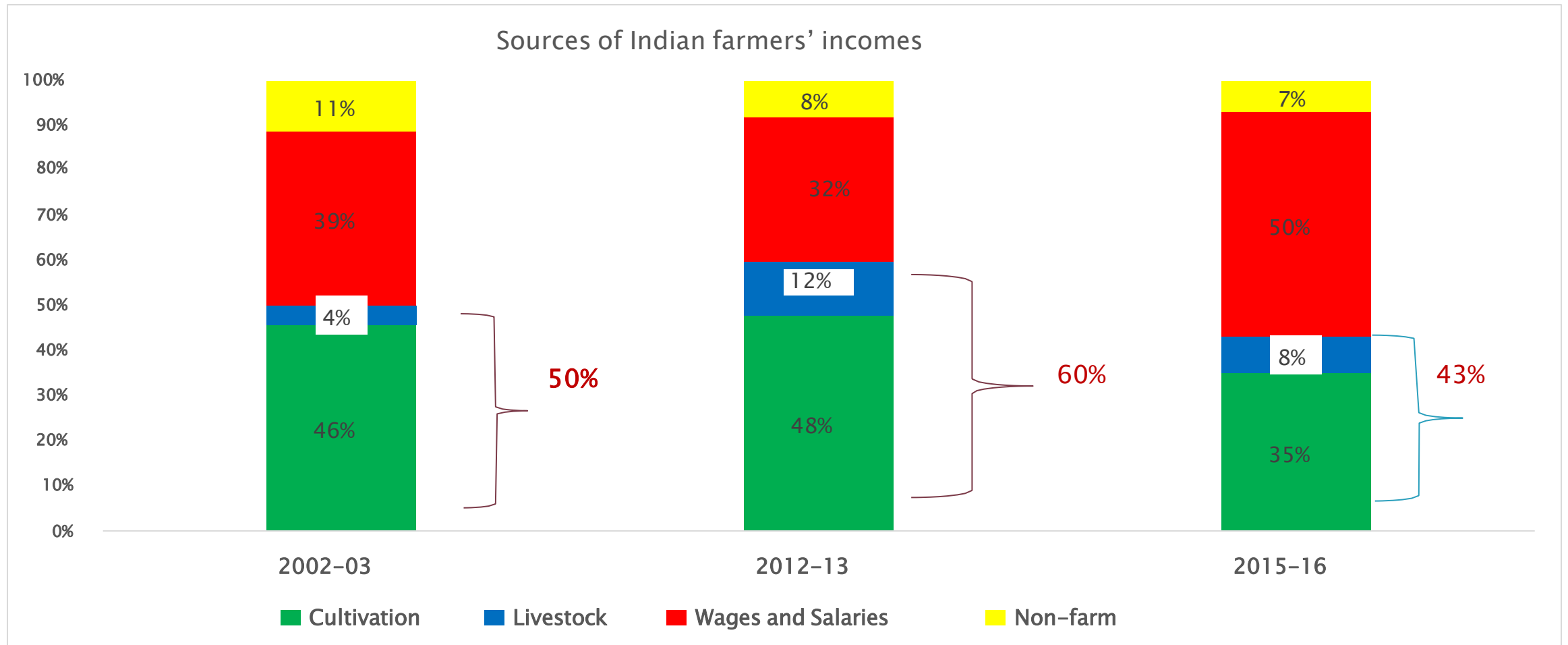
- Wheat: 100 MT
- Rice: 115 MT
- Pulses: 28 MT
- Nutri – Cereals: 50 MT
- Fruits: 200 MT
- Vegetables: 100 MT (*horticulture (F&V) now exceeds agriculture in volume and value*)
- Milk: 180 ML(litres)
- Eggs: 28 billion!
- Sugarcane: 400 MT



# Sources of Farmers Income

- Core agriculture is NOT the main source of the farmers income
- Within agriculture, the share of HVA – horticulture, poultry, dairy – is growing
- Wages, salaries and Non farm income is growing even faster!

# Sources of farmers' incomes



Source: Agricultural Policy – A Holistic Approach by Ashok Gulati

# The transformation of Agriculture

- Green Revolution : Seeds, credit, MSP, CACP White Revolution : co-operative structure , technology and markets
- Blue Revolution : mechanization, carp polyculture, intensive shrimp cultivation
- Red Revolution (poultry , egg and meat) : contract farming, vertically integrated operations and driven by the private sector
- Rainbow (Horticulture Revolution) : Driven by NHM and MIDH,
- FPCs, Cold Chain, Micro Irrigation: protected cultivation, Market linkages - including exports and FPI

# Agri Exports : Policy & Potential

## *Produce in India : Feed the World - Phase V paper*

*Harnessing the potential of Indian Agriculture through sustainable policy instruments, to make India a global power in agriculture and raise farmers income*

- To double agricultural exports from present - US \$ 30+ billion to – US \$ 60+ Billion by 2022 and reach US\$ 100 Billion in the next few years thereafter, with a stable trade policy regime.
- Export basket, destinations and boost high value and value added agriculture exports including focus on perishables.
- To double India's share in world agri exports by integrating with global value chain at the earliest
- Enable farmers to get benefit of export opportunities in overseas market.

# Institutions in Agriculture

- CACP
- NABARD : Rural and agriculture credit , rural markets and infrastructure , RIDF, support to co-operatives
- NDDB : Pan India Milk co-operatives
- NCCD: Policy Advisory and Standards for post harvest management , including logistics
- SFAC : FPCs, E NAM , procurement
- FCI & NAFED : PSS operations

# Newer Technologies for Agriculture

- Robotics,
- Gene Editing,
- New Organic
- Big Data & AI