

# State of Indian Agriculture and Opportune Areas for Goa

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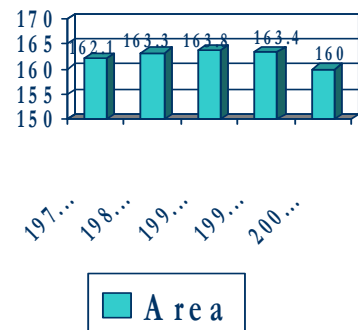
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- **Changing agriculture scenario**
    - Widespread unrest among farming community
    - Declining farm profitability
  - **High economic but low agricultural growth**
    - Overall economic growth is much higher than agricultural growth
    - Declining share of agriculture (18%) in GDP and high dependency (52%)
    - Widening regional disparities
  - **Uncertain policy regime**
    - Domestic reforms
    - Trade related reforms
    - Appeasing policies



# I Challenges



# 1. Small holder agriculture

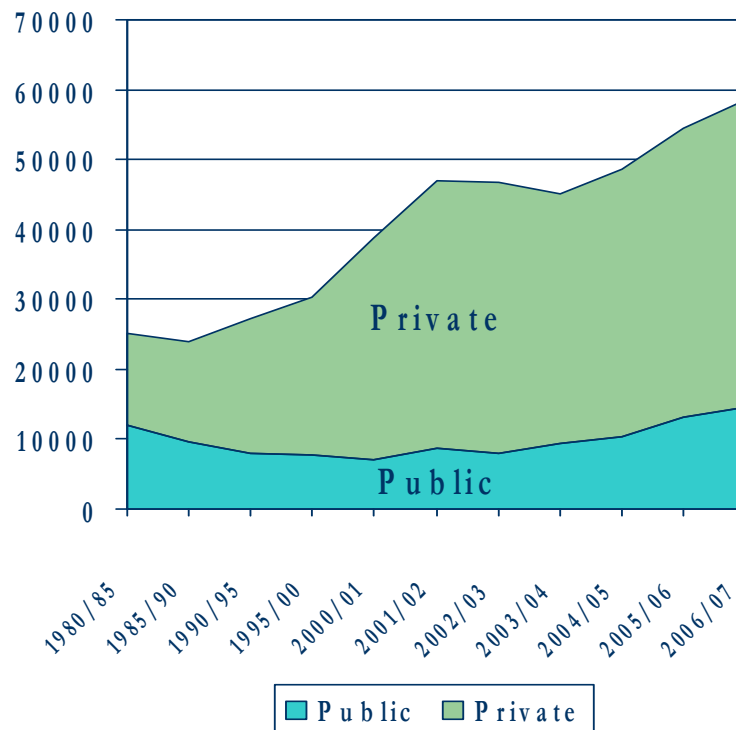


- **Average size of holding declined from 2.30 ha in 1970/71 to 1.32 ha in 2000/01**
  - 0.68 ha in 2020 & 0.32 ha in 2030
- **Number of holdings**
  - Increased from 70 m in 1970/71 to 120 m in 2000/01
- **Operated area**
  - Declined from 162 m ha in 1970/71 to 160 m ha in 2000/01

# Small holding agriculture

- About 80% of the bottom category farmers own about 39% land; while 6% of the top category farmers command 37% land in 2000/01
  - Should we target 6% farmers who cover 37% area?
  - Or, should we target 80% farmers to cover 39% area?
    - And, for what? Different strategies?
- Smallholders :
  - more efficient; Rs 15,000/ha versus Rs 9000/ha
- But have high transaction cost
  - Rs 4650/holding versus Rs 38150/holding

## 2. Investment in agriculture



- **Public sector investment declined until 2002/03;**
  - Came down from 48% to 25%
  - trend slowly reversed
- **Private investment increased from Rs 131 b in 1980/85 to Rs 440 b in 2006/07**
  - Reached from 52% to 75% of total investment
- **Total investment in agriculture increased from 251 b in 1980/85 to Rs 585 b in 2006/07**

# Investment in agriculture

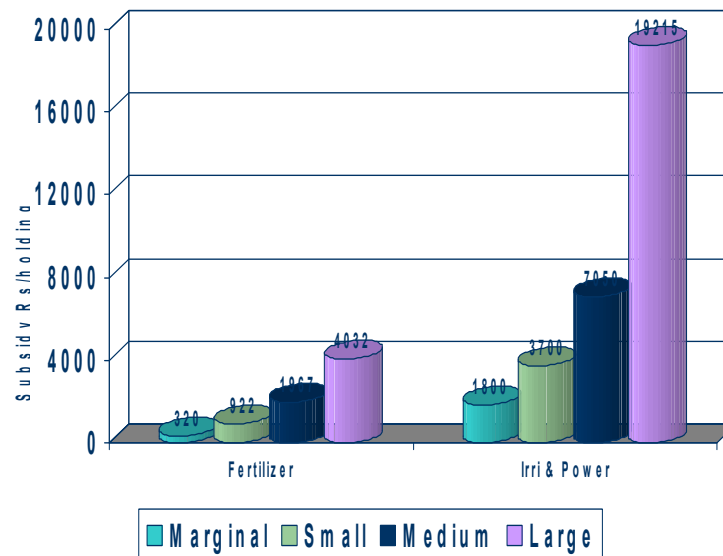
- **Public sector investment declined**
  - from 5% of agGDP in 1980/85 to 1.8% in 2001/02. With trend reversal reached 3% in 2006/07
- **Private sector investment increased continuously**
  - from 5.5% of agGDP in 1980/85 to 9.25% in 2006/07
- **Total investment in agriculture in relation to agGDP declined from 10.5% in 1980/85 to 7.9% in 1995/00**
  - subsequently gradually increased to 12.2% in 2006/07
- **10% decline in investment leads to a 2.4% reduction in agricultural GDP growth (Gulati & Bathla 2002)**
- **Projections are that agricultural investment must be 16% of agGDP to achieve 4% agricultural growth**
  - Should invest Rs 76,805 crores rather than Rs 58,564 crores (i.e. Rs 18241 crores more)

### 3. Growing subsidies in Indian agriculture: Increased about 3.9 times (b Rs)

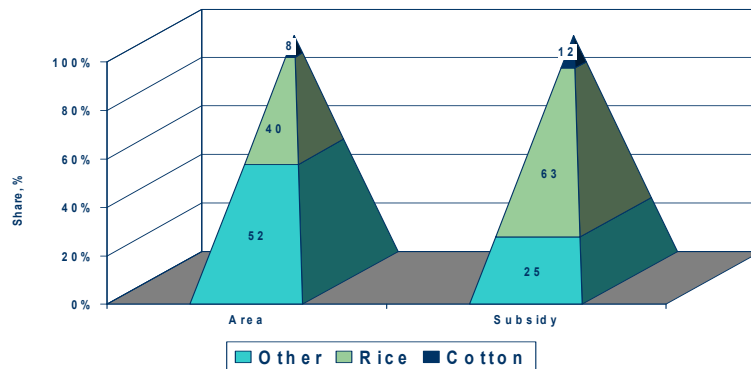
Year	Fertilizer	Electricity	Irrigation	Total
1993/94	45.62	33.86	57.23	157.99
1994/95	57.69	32.99	66.00	178.15
1995/96	67.35	27.89	77.30	190.36
1996/97	75.78	117.89	89.87	298.97
1997/98	99.18	69.66	100.57	286.34
1998/99	115.96	53.88	115.27	305.48
1999/00	132.44	60.33	111.96	335.91
2000/01	138.00	63.60	138.15	355.54
2001/02	125.95	74.22	135.69	354.66
2002/03	110.15	60.82	133.55	322.98
2003/04	118.47	103.20	114.40	359.92
2004/05	158.79	109.38	133.00	427.43
2005/06	184.60	203.01	146.25	608.90

# Subsidy in Andhra Pradesh

Size wise subsidy



# Crop wise subsidy in Andhra Pradesh



**Benefits from subsidies highly skewed**

- Among irrigated crops, 40% area under rice con 63% of subsidies
- Rainfed crops growing on 52% of cultivated area get only 25% of subsidies
- Here cotton is a favoured child. With 8% share of area, gets 12% of subsidies given to all rainfed crops

# Investment & subsidies

- **Subsidy bill has been mounting**
- **Subsidies were 9.6% of agGDP and about three times the public investment in 2004/05**
  - It used to be 5% and twice of public investment in 1994/95
- **Proponents of subsidies**
  - Developed countries give more subsidies than India
  - Average of OECD countries PSE 30%
  - 58% in Japan; 34% in European Union; 18% in Canada and 16% in USA
  - But came down from 37% in 1986-88 to 30% in 2007-08
- **Harmful effects of subsidy**
  - Discourage investment
  - Promote irrational use of inputs which leads to resource degradation
  - Impair equity : Biased in favor of better-off regions and crops

## 4. Deteriorating natural resources

- **Soil salinity & water logging**
  - Canal irrigated areas
- **Soil erosion**
  - Rainfed areas
- **Nutrient mining**
  - Imbalance use of N:P:K
  - Micro-nutrient deficiency
- **Falling water table of good quality ground water**
  - 1 m in Punjab to 6 m in north Gujarat annually (Lester Brown 2007)

## 5. Climate change

- **Accelerated glacier recessions; floods; droughts; extreme weather events**
  - **Adversely affect agriculture, livestock and aquaculture**
- **IPCC projected decline in food production**
  - **Ranging between 11 and 46% by 2050**
- **In India, decline in wheat production by 4-5 mt with every 1 degree C rise in temperature throughout the growing season (IARI)**

## 6. Global shocks (3Fs)

- **Fuel prices (over)**
- **Food prices (over but uncertain)**
- **Financial crisis**
  - **Costly imports**
  - **Restricted export**
  - **Restricted FDI**
  - **Slow down in demand for HVCs**
    - **Adverse impact on Agro-processing industry**
    - **Growth of supermarkets and retail chains**
    - **Credit to agriculture and processing sector**



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# Opportunities in Agriculture



# 1. Growing demand for food commodities

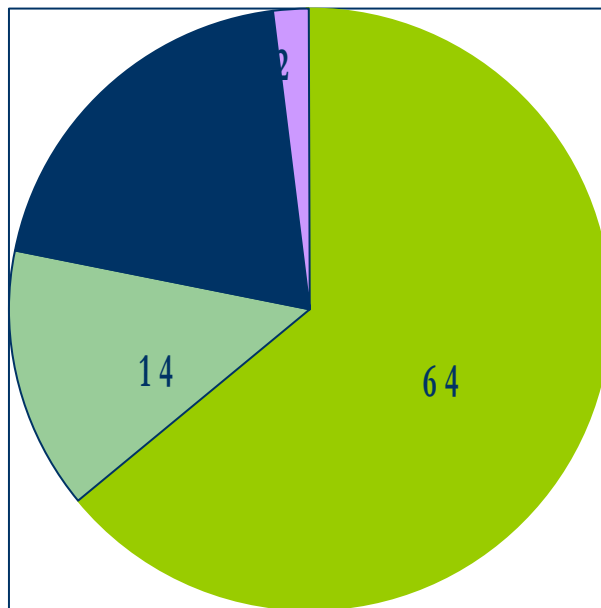
- **Demand for food grains is projected to grow**
  - From 211 mt in 2003/4 to 296.8 mt in 2020/21
  - Projected growth in food grain production is 2.21% during 2003-2012 and 1.85% during 2011-2021 compared to 0.71% during 1995/96 to 2003/04
- **Demand for high-value commodities is growing much faster**
  - More than 100% for milk, eggs and fish
  - 80-95% for fruits, vegetables and milk

## 2. Untapped potential of improved technology (kg/ha)

State	Improved practices	Farmers' yields	Actual yield
Wheat			
Bihar	3651	2905	1783
MP	3297	2472	1789
UP	4206	3324	2794
Rice			
UP	7050	5200	2187
Bihar	4883	4158	1516
Chattisgarh	3919	3137	1455

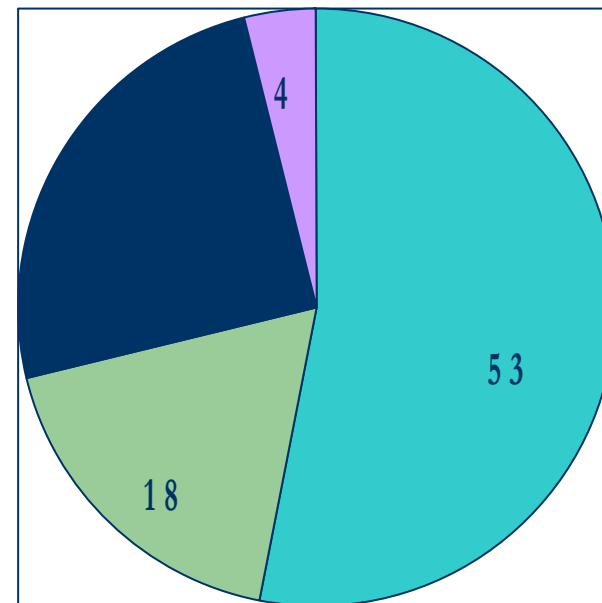
### 3. Agricultural diversification: Changing share of different sub-sectors in India, % (Birthal, Joshi & Roy 2007)

T E 1982-83



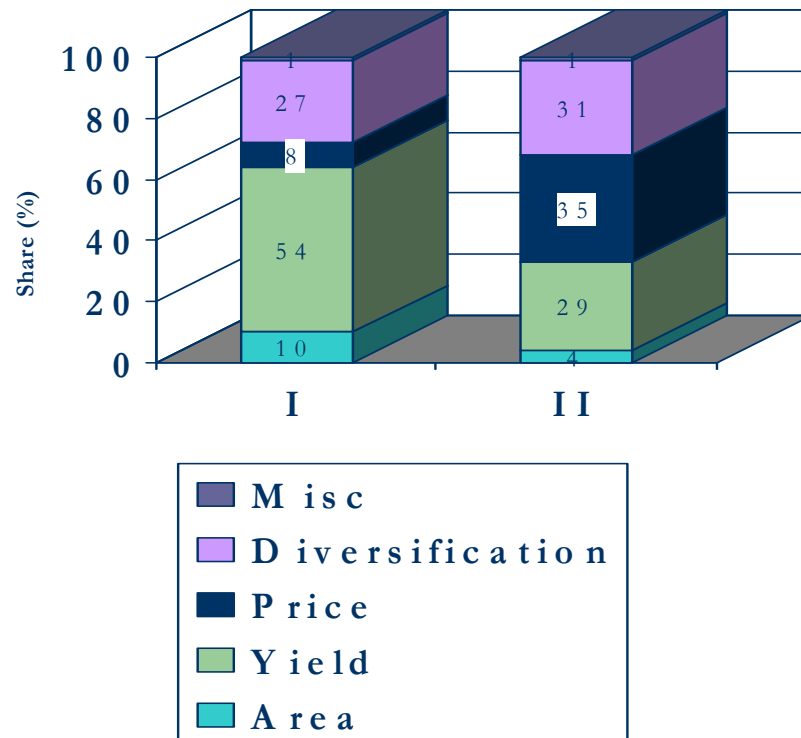
■ Crop ■ Horticulture ■ Livestock ■ Fish

T E 2002-03



■ Crop ■ Horticulture ■ Livestock ■ Fish

# Sources of agricultural growth: all India



- During 1980s, main source of growth was technology followed by crop substitution
  - **Rice and oilseeds**
- During recent times, main source of growth was rise in prices followed by crop substitution
  - **Fruits & vegetables**
  - **Wheat**
- Growth sources have implications on equity

## Share of fruits & vegetables in total cropped area of the growing households (%)

Farm category	Vegetables	Fruits
Small	18	35
Medium	13	31
Large	11	26
All categories	15	31

## 4. Emergence of innovative institutions: *contract farming or cooperatives*

- **Public sector initiatives**
    - *Punjab Agro-industries Corporation (PAC)*
  - **Cooperative sector initiatives**
    - *Dairy sector*
    - *Safal*
    - *Mahagrapes*
  - **Private sector initiatives**
    - *FieldFresh*
    - *Mahindra Subh labh*
    - *Nigger Agro; Goderej; Dabur*
    - *Venketeshwar/Saguna/ Pioneer*
  - **Multi-national firms**
    - *Nestle*
    - *Pepsi*
- **Opportunity for agri-input services**
    - *Rallies*
    - *Mahindra & Mahindra*
  - **Financial institutions**
    - *ICICI bank*
    - *Rabo bank*
    - *Yes Bank*
  - **Rise of Retail Chains**
    - *Foodworld*
    - *Nilgiri, and many more.....*
  - **RELIANCE; BHARTI**
    - *The latest and big players in retail chain!*

# How do innovations help small holders?

- Higher profit resulting from
  - *Access to better technology*
  - *Lower transaction costs*
- Farmers receive higher prices
  - *5-20% higher in vegetables (SAFAL case study in India)*
  - *25% higher in broiler (Venkateshwara Hatcheries case study)*
  - *4% higher in milk (Nestle case study in India)*
- Risk is shared
  - *As high as 88% risk is shifted by producers to the firm*

# Goa Specifics : Thinking Ahead

- **Key objectives :**
  - Increase efficiency to enhance profitability
  - Improve equity
- **Focus on :**
  - Niche advantage
  - From traditional commodity farming to
    - Creative diversification
    - Primary to secondary agriculture
    - Technology infusion

## **Business principles of value addition and giving producer rightful share of added value**

**Value creation**

**Value protection**

**Value sharing**

**Value recovery**

- **Processor benefits most**
- **Wholesaler, middleman, retailer and consumer receive decreasing benefits**
- **Producer hardly gets any share of the pie**

**Must ensure that producer is not left out of the loop**

**\*Producer cooperatives**

**\*Processor getting the supply directly from producer**

**(Federated Farmers Farms)**

## Adding value to Primary Product from Seas (8000 km of Coast-line)

<b>1x</b>	<b>40x</b>	<b>500x</b>	<b>10,000 x</b>
<b>Sea weed</b>	<b>Agar</b>	<b>Agarose</b>	<b>Sepharose</b>

## 5. Agricultural trade (million US\$)

Year, TE	Agril export	Agril imports	Total trade	% trade of Ag-GDP
1992	3231	550	3781	5.4
1995	4779	1014	5792	7.3
1998	6508	1951	8459	8.8
2001	5843	2222	8065	7.5
2004	7577	3207	10784	8.5
2007	13652	4494	18146	9.7
CAGR,%	8.34	14.82	9.59	-



**III**  
**Way Forward**



# Way forward!

- Key objectives:
  - Efficiency: Accelerate agricultural growth
    - Improve production efficiency
    - Reduce marketing inefficiencies
    - Strengthen agro-processing sector
  - Equity: Improve food and livelihood security
  - Environment: Protect & improve environment

# Improve efficiency

- Improve efficiency in production
  - Reform key sectors
    - seed, irrigation, power, fertilizer, extension
  - Land development
  - Balance use of nutrients
  - Water management
- Delineate low-performing high-potential areas
  - Eastern Indo-Gangetic plain
  - Central India
  - Rainfed areas (700-1000 mm for higher impact)

# Reduce marketing inefficiency

- Fully operationalize Model Marketing Act
- Promote innovative marketing institutions
  - Contract farming
  - Cooperatives
  - Farmers' associations
  - Farmers' companies
- Future trading
  - Uncertainty prevailing!
- Promote concept of warehouse receipt
- Storage, warehouse, cold storage, cold chains
- Access to price information and roads (investment)

# Improve food & livelihood security

- Employment generation in rural areas
  - NREGP
  - All districts versus 200 days employment in 100 poorest districts
  - Sustainability of the program?
    - Improve capacity of the beneficiaries
- Welfare and social safety net programs
  - Target regions and groups
  - Governance issues

# Improve environment

- Resource conservation
  - Technologies
    - RCTs
    - SRI
    - Improve water & nutrient efficiency
  - Incentives and policies
- Agri-waste management

# What to do for reaping the benefits?

- Enhanced investments
  - New forms of investment
  - Favorable business environment to attract private investment
  - Non-farm opportunities
- Strengthen institutions
  - Reform key sectors including strengthen input delivery system
  - Land reform (or promote farmers' organization)
  - Link farmers with emerging markets
  - Agricultural insurance
- Innovations
  - More research on institutional and agri-governance issues
  - Linkage between research and farmer

# Conclusions

- Changing scenario is throwing enormous opportunities
  - Rising income, urbanization, globalization
- Huge potential exist for augmenting agricultural production and income
  - Specially in high-value segment
  - Smallholders may gain more
- Multi-pronged strategy
  - Major reform is needed

# Thank you

Poverty (food insecurity) is the worst kind  
of violence



**Mahatma Gandhi**

If a free society can not help the many,  
who are poor and food insecure,  
it can not save the few, who are rich

**John F Kennedy**