

Indian Agriculture

Sustainability

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India- Agricultural Scenario

Surpluses [Myn Mts]

- Rice 4myn
- Sugarcane ??
- Cotton ??

Deficits [Grain Equivalent]

Myn Ts = Grain

Vegoil	5	34
Pulses	1.8	6

Total Grain Equiv 40

3 year average.... Deficits set to increase with population growth

Irrigated area – sources and shift 1970 –2000 myn ha [% of total]

	2000	1970
Canals	18 [31]	13 [42]
Tanks	3 [5]	4 [13]
Wells/ Tubewells	34 [59]	12 [38]
Others	3 [5]	2 [7]

Cropping shifts draw scarce water [Irrigated crop only] myn ha – 30 yrs

Irrigated Crop	2000	1970
Rice	23	14
Wheat	24	10
Sugarcane	4	2
Oilseeds	6.6	1
Cotton	3	1.4
Others	15	10

Irrigation – world agriculture

	% Irrigated area to arable land
North America	11.8
South America	8.3
Europe	8.3
Africa	6.11
Oceania	5.3
Asia	33.8
India	33.6

FARM SIZE DEMOGRAPHICS- INDIA

DESCRIPTION	SIZE	AVERAGE SIZE HA	% OF TTL HOLDINGS	% OF AREA	% OF IRRIGATED AREA
MARGINAL FARMS	<1 ha	0.4	62	17	21
SMALL FARMS	1-2 ha	1.42	19	19	20
SEMI MEDIUM	2-4 ha	2.73	12	24	24
MEDIUM	4-10 ha	5.84	6	25	24
LARGE	>10 ha	17.2	1	15	11
ALL FARMS		1.41	100	100	100

SOURCE: Ministry of Agriculture, Govt of India

SMALL FARMS- FACTS!!

	SMALL AND MARGINAL FARMS	MEDIUM AND LARGE FARMS
FERTILIZED AREA TO GROSS CROPPED AREA %	64	58
FERT CONSUMPTION PER HA OF GROSS CROPPED AREA [KG]	72	56
FERT CONSUMPTION AS PROPORTION OF TOTAL CONSMTPN	65	46
	21	24
	21	10

SMALL AND MARGINAL FARMS HAVE THE HIGHEST AVG FERT USAGE

SOURCE: FAI [Fertilizer Association of India]

[All figs in kgs nutrient]

Small farms- productivity

- Fertilizer consumption is no less than on large farms... productivity must also follow.. does it??
 - No reliable data seen on productivity of small farms
 - Land use efficiency.. Bunds and boundaries/ tractor turn
- Labour intensive agriculture is relatively more concentrated on small farms.. Eg vegetables..
Animal husbandry
- Issues of suboptimal resource utilization
 - On farm overcapitalization in irrigated areas
 - Impact on resource optimisation/ cost

Structural issues

- Inheritance
 - Division.. And redivision of land.. Primarily among male progeny
- Cost of land
 - Completely out of sync with farming returns
- Land lease issues
 - Complexity and risk in hiring/ dehiring

Farming is a way of life in most of India.. Not a hard nosed economic choice

Interdependence

- Intermediation thrives with fragmentation of
 - Land holding
 - Financial capability
 - Market lot size
- Few examples of collaborative interdependence
- Collaboration
 - Political and social/ caste differences militate against collaborative endeavour

Entrenched intermediaries challenge disintermediation

Cooperatives...

- Opaque and government ‘managed’
- Vested interest dominance
- Politicians.. learning base

- Collaboration v/s cooperation
 - Clear need for optimising and sharing resources
 - Irrigation
 - Farm equipment

Formally set up cooperatives have thrived primarily in contiguous cash crops ... and where processing linkages drive investment – sugarcane/ milk

Outgrowing traditional barter

Small farmers essentially means low marketable surpluses...

- ❖ traditional response in past was on farm barter
- Even the smallest farmers now aspire to a wider basket of foods... and to access increasingly visible goods and services
- Shift to cash crops and labour intensive crops driven by need to generate cash surpluses.

Contract farming..

- Relevance
- Terms of trade
 - Literacy imbalance.. impact
- Legislative gaps... are there any

Is 'assisted' farming more relevant to the small farm in India than contract farming

CROP INPUT FUNDING - PRIVATE

NEED	NO OF DAYS	FUNDING SOURCE
FIELD PREPARATION / LABOUR SEED BASAL FERTILIZERS HERBICIDES	30	LAST CROP
FERT TOP DRESSING PESTICIDES SUPPLEMENTS ETC FUEL / POWER LABOUR	70	LAST CROP INPUT MFRRS INPUT TRADE (DSTRBTRS) RETAILERS
LABOUR EQUIPMENT TRANSPORT	30	INPUT TRADE UNSECURED PRODUCE BUYERS - SECURED EQUIPMENT HIRERS

Farmer Credit - Dominant Sources and Cost

- Capital Goods
 - Banks
- Marketable Surplus areas > crop related
 - Commission Agents... **24-36%**
- Across segments
 - Cooperatives.. Varying capability by region
- Input related
 - Industry/ Trade.. Built into transaction cost

Social security/ Risk Management

- Small farmer has no real access to any form of crop insurance
- No access to risk management and produce price fluctuation risk mitigation
- Debt trap drives suboptimal choices
- Alcoholism and substance abuse to ‘cope’
- No old age benefits/ no social security.

The future...Small farmers -India

- Some segmental separation
 - Small farms move from broad acre grain and oilseed crops to labour and oversight intensive crops... vegetables/ fruits/ flowers/ herbs and spices/ seeds/ fishery/ animal husbandry
- Increased linkages... demand led production
- Collaborative networks and market access
- Increased supplemental rural non farming activity – custom ploughing/ harvesting/ transportation.

Key is finding alternate employment as small farms split with inheritance

India ...policy environ Ag/ Food

The way ahead

- Invest for productivity— not just subsidise. Indirect subsidies are a zero sum game
- Embrace production enhancing technologies
- Take a long term view on natural trade flows
- Protect producers in export competitive segments... and consumers in others!!
- Be inclusive to worldwide ag reform process- disciplining subsidy practices.

Action Steps

- Immediate serious new study on competitive advantage
- Get the best brains together... domestic and international...debate and decide.. Create support.. Heighten awareness of consequences- Get buy in... and then execute relentlessly.. Integrate investments to align upstream and downstream within selected segments..Trash special interests
- Politically sustainable/ Socially equitable
- Clean up unnecessary constraining legislation.. Immediate!
- Plan for transition mechanisms... graded timeline
- Legislation clean up... target intra economy distortions
- Deploy the very best talent to monitor and execute plan

Spin Off Benefits..

- Will align grain markets with alternate crops and gradually with worldwide values
 - ↑ Will reduce cropping distortions
 - ↑ Will improve flow of technology/ genetics
- Will attract much needed private investment in grain handling/ infrastructure/ financing
 - ↑ Demand led quality / identity preservation
 - ↑ Trade' surpluses nationally and internationally before losing value
- Will Spur investments in food processing
- Will release funding for developing farmgate infrastructure and value adding investments
- Will make farming long term sustainable

Sustainability of Indian Agriculture... the long story of the small farmer

From Denial to Reality

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