

Agriculture in Pakistan: *Challenges and Prospects*

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Layout of the Presentation

- Putting Agriculture in perspective
- Strategic Issues in Pakistan's Agriculture
- The Key Challenges
- The Emerging Opportunities
- Renewed Focus

Putting Agriculture in Perspective: Some Basic Facts—Rural Areas

- Poverty in the rural areas is significantly higher than in the urban areas.
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- 68% of the Pakistan's population lives in rural areas.
- 60% of Pakistan's rural poor are landless.
 - 45% are non agricultural households
 - 15% are landless agricultural laborers.
- With a little developed Non Farm Sector the overwhelming burden is on the agriculture sector

Location of the Rural Poor

Agro-Climatic Zone	Poverty head count %	Poor (%)	Population (%)	Index
Rice/Wheat Punjab	38	12	15	0.79
Mixed Punjab	49	14	13	1.02
Cotton/Wheat Punjab	56	20	17	1.15
Low Intensity Punjab	54	11	10	1.12
<i>Barani</i> Punjab	26	3	6	0.55
Cotton/Wheat Sindh	57	13	11	1.18
Rice/Other Sindh	53	9	8	1.10
NWFP	47	14	14	0.97
Balochistan	39	4	5	0.81
Rural Pakistan	48	100	100	1.00

Source: Malik (2005)

Sources of Income and Rural Poverty – Survey Results show that

- The highest incidence of poverty is in the zones that rely the most on crop incomes.
- In the two poorest agro-climatic zones - crop income accounts for:
 - 67.30 percent of total income in cotton wheat Sindh and
 - 64.26 percent of total income in cotton wheat Punjab.

Sources of Income and Rural Poverty (continued)

- On average crop income accounts for **only** about 50 percent of total rural incomes.
- Due to the unequal distribution of land - increase in crop income serves to exacerbate overall income inequality.
- Within crop income the poor rely mainly on food crops such as wheat
- The well off have more diversified crop production with greater proportion of cash crops.

Historically Diversification has been slow - Share of Different Crops in Total Cropped Area 1990 and 2000 (Agriculture Census Data)

	All farms		< 0.5 ha		2 to under 5 ha		20 ha and above	
	1990	2000	1990	2000	1990	2000	1990	2000
Total cropped area (000 ha)	21,340	23,422	297	212	6,981	7,659	3,455	3,103
Grains	58	59	69	73	61	61	53	50
Wheat	38	40	41	43	39	41	35	36
Cotton	13	14	7	6	12	13	15	14
Wheat Cotton	51	54	48	49	51	54	50	50
Pulses	5	5	1	1	3	4	8	11
Sugarcane	3	4	1	1	4	4	3	4
Oilseed	2	2	0	1	2	2	3	2
Fodder	13	11	14	14	14	12	9	7
Vegetables	2	2	3	2	2	2	3	4
Orchards	2	2	2	1	1	1	4	4
Other crops	1	1	1	1	1	1	1	1

Source: Agriculture Census (1990 and 2000)

The List of the challenges to Pakistan's Agriculture is well known...

1. flat (low) yields and large yield gap;
2. low productivity of water;
3. non-reliability of water services;
4. under-performance of rural factor markets and extension services;
5. under-investment in research and technology development

The Recommended Strategic Interventions are also well articulated.....

- abolish restrictions on the import and export of all agricultural commodities - including wheat
- but follow the policy of support prices for wheat and indicative prices for other crops like sugarcane, cotton, and rice
- improve rural infrastructure and education provision including agriculture extension services;
- crop maximization program – capacity building for small farmers

Strategic Interventions are well articulated

...

- policy regime to remove market imperfections, increase productivity and farmers' profitability, and foster exports
 - corporate farming
- agriculture credit reform
- scaling up of diversification into new, higher value crops including technology adoption and adaptation;
- use of new and more efficient irrigation technology.
- focus on livestock and especially dairy

Some of the Critical Challenges to Leveraging Agriculture for Poverty Reduction in Pakistan

1. Issues connected to Land
2. Issues connected to Water
3. Thin Markets and Weak Institutions
4. Globalization – the need to be competitive and associated issues of quality and standards
5. Disconnect between policy and implementation

Some Exciting Opportunities in Pakistan's Agriculture.....

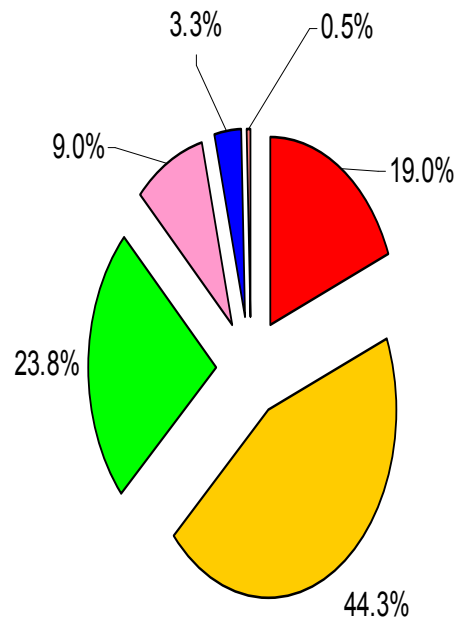
- Globalization offers opportunities to enhance farm incomes manifold if competitiveness, quality and other standards can be met
- Three exciting high potential opportunities
 - Diversification to Tunnel Farming of vegetables
 - The Citrus Revolution in Bhalwal/Sargodha
 - The White (Dairy/Milk) Revolution

The Challenges

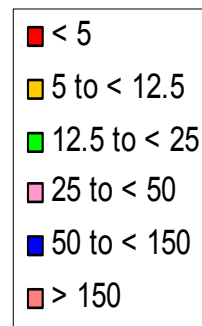
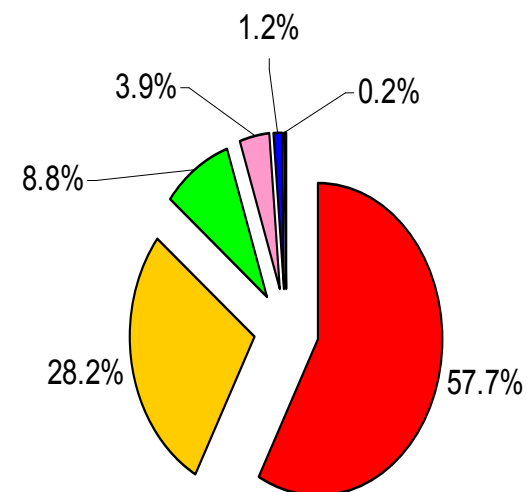
Land: the Number of Small Farms is Increasing

Size of Farm Distribution (Agriculture Census Data)

1960



2000



LAND

- Small farm size and poverty restricts the ability to take risks and diversify
- Issues connected to Land Titling/Records tie up a large proportion of the rural population in litigation and unproductive activity
- Land titling issues also exclude farmers from access to credit markets etc.

WATER: Some Estimates indicate that Requirements will **Outstrip** Availability by 2015

	MAF
Water resources available to meet future needs	
Average annual flow to the sea	38.0 (93% in Kharif)
Additional ground water	1-2
Saving from water conservation	5-10
Estimated total	44-50
Projected incremental water requirements	
Environmental flow requirements	10
Urban domestic and industrial demand	9
Accord deficit	11
Increase in irrigation water demand	5-30
System losses	5-10
Estimated total	40-70

WATER - Irrigation

- **Total irrigated area increased by 80 percent between 1960 and 2005**, from 10.4 to 18.8 million hectares, mainly due to an expansion in tube well irrigation.
- **Nearly 80 percent of Pakistan's cropped area is irrigated.**
 - 37 percent of irrigated land was irrigated solely with canal water
 - 41 percent with canal and tube well water
 - 18 percent solely with tube well water (2004-05 data).
 - About 60 percent of irrigated water available at farm head is provided by canal water; 40 percent is supplied by groundwater.
- **Current patterns of water use are resulting in significant environmental degradation**
 - Losses of soil fertility due to soil salinity and erosion are estimated at Rs 70 bn/year (1.5% of GDP; 6.8% of agricultural GDP in 2004-05) Current patterns of water use are resulting in significant environmental degradation
 - Losses of soil fertility due to soil salinity and erosion are estimated at Rs 70 bn/year (1.5% of GDP; 6.8% of agricultural GDP in 2004-05)
- Inefficiencies in water allocation reduce crop productivity at both head end (due to over-use of water and water logging) and tail end (due to water shortages)
- **Total availability of water in the Indus river basin has declined**
 - Additional storage could help increase availability of water in dry season (rabi), but will not be available for at least ten years

Improving Water Use Efficiency

- Improved water delivery and increased efficiency of water use are the most promising approaches in the short to medium term
 - Better water management through establishment of water users' associations or other institutional mechanisms
 - Canal lining
 - Adoption of water saving technology at farm level
- Changing current crop mix can improve water use efficiency
 - Rationalizing water charges could facilitate these changes
 - But Programs may be needed to ease the transition of farmers and processors

Globalization – Offers challenges as well as opportunities

1. Globalization – the need to be competitive and meet issues of quality and standards and aggressive niche market development
2. When Domestic Markets are thin and supporting Institutions are weak

The Disconnect between Policy and Implementation

- Absence of M&E – feedback and dissemination
- Need for a holistic approach
- Structural Disconnects and lack of capacity at the implementation level
- Budgeting and Expenditure Reform Issues

The Exciting Opportunities

1. Taking Advantage of the Potential from globalization

- If SPS standards, quality requirements and competitive niche markets can be developed domestic farm incomes can (potentially) increase manifolds

2. TUNNEL FARMING: Yields gap between tunnel farmers and traditional vegetable growers

Yield (tones/acre)	Cucumber	Tomato	Sweet Pepper
Median tunnel farmer	40	38	25
Median control group	7	22	6
Ratio tunnel : control	5.9	1.7	3.9

2. TUNNEL FARMING: Fantastic Returns (median net returns Rs/acre)

	Cucumber	Tomato	Sweet Pepper
Median tunnel farmer	253,083	226,630	179,231
Median control group	42,339	41,843	10,562
Ratio tunnel :control	6.0	5.4	17.0

2. TUNNEL FARMING: Characteristics of Tunnel farmers

- **Very highly educated**, high levels of exposure, including international travel
- **High degree of commercial orientation**, including other farm and non farm commercial interests
- **Non-credit constrained**
- **Technical sophistication** and sound knowledge of agriculture
- **Innovative approach**, willingness to experiment
- **Location of farms** sufficiently far away from main cities to take advantage of lower labor costs

3.KINNO PROCESSING:

Comparison of Prices Received and Revenues Earned by Farmers

	Control Group	KPF farmers	KPF advantage (%)
Citrus Prices Received (Rs/40 kg)			
Full sample	192	312	
Citrus Revenues (Rs/ acre)			
Full sample	Rs 22,999	Rs 27,551	19.8

3. KINNO PROCESSING:

Comparison Summary – Farmers selling to Kinnoo Processing Factories and Others

Control group: farmers selling through traditional channels

- **Similarities**

- Age, family size, citrus growing experience

- **Differences**

- **Education:** KPF farmers have 40% more schooling
 - **Citrus area:** KPF farmers have 63% operational area under citrus vs 50% for control group
 - **Water quality:** Only 10% KPF farmers reported bad groundwater quality vs. 40% in control group

3. Exports of High-Valued Products such as Kinnoos

- A coherent strategy to meet SPS (Sanitary and Phyto-Sanitary) standards imposed by importing countries would:
 - Better define roles of agencies/institutions involved in SPS management
 - Strengthen technical capacity for risk assessment
 - Re-institutionalize early warning and surveillance systems for pest, diseases and contaminants

4. Livestock and Dairy

- Livestock accounts for about 50 percent of agricultural GDP
- Livestock is more evenly distributed than are land and access to water
 - *Livestock growth is pro-poor*
- Veterinary services and milk marketing are major constraints
- Halla Dairy Experience provides some exciting lessons

4. WHITE REVOLUTION – The *Idara-e-Kissan* (IK) “Hala Dairy” Experience Sources of Productivity Differences

	Access to service (%)		Average service usage	
	IK members	Non-members	IK members	Non-members
Artificial insemination	28	6	-	-
Vaccination	83	72	2.3	1.5
Animal health treatment	44	44	4.4	1.9
LS extension	56	0	2.9	0
Loans/advances	78	39	Rs 3,264	Rs 2,285

4. WHITE REVOLUTION – The Idara-e-Kissan “Hala Dairy” Experience – KEY LESSONS

- Livestock productivity improvement can be achieved by working through Community Based Organizations
- Incentive compatibility and accountability are main factors responsible for success (e.g. self employed staff and oversight by farmers org)
- Government has a role to play in providing public goods
 - Breed improvement
 - Fodder productivity
 - Extension

Re-emphasizing the Key Policy Priorities for leveraging Agriculture for rural poverty reduction

1. Address the **disconnect** between policy and implementation- build capacity at the devolved local level esp. for extension and outreach
 - Build M&E capacity and use Evaluative evidence to bridge the disconnect between policy and implementation
2. Make policy sensitive to regional disparities
3. **Address the Land Issue – especially land records, titling and judicial reform re. land**
4. **Focus on improving water use efficiency**
5. Make Trade Liberalization really **Work** for the Poor – institutional reform, governance reform, judicial reforms (contract farming), vertical coordination
6. Take a holistic view to improve the Rural Investment Climate and simultaneously develop the Non Farm Sector

Thank you so much