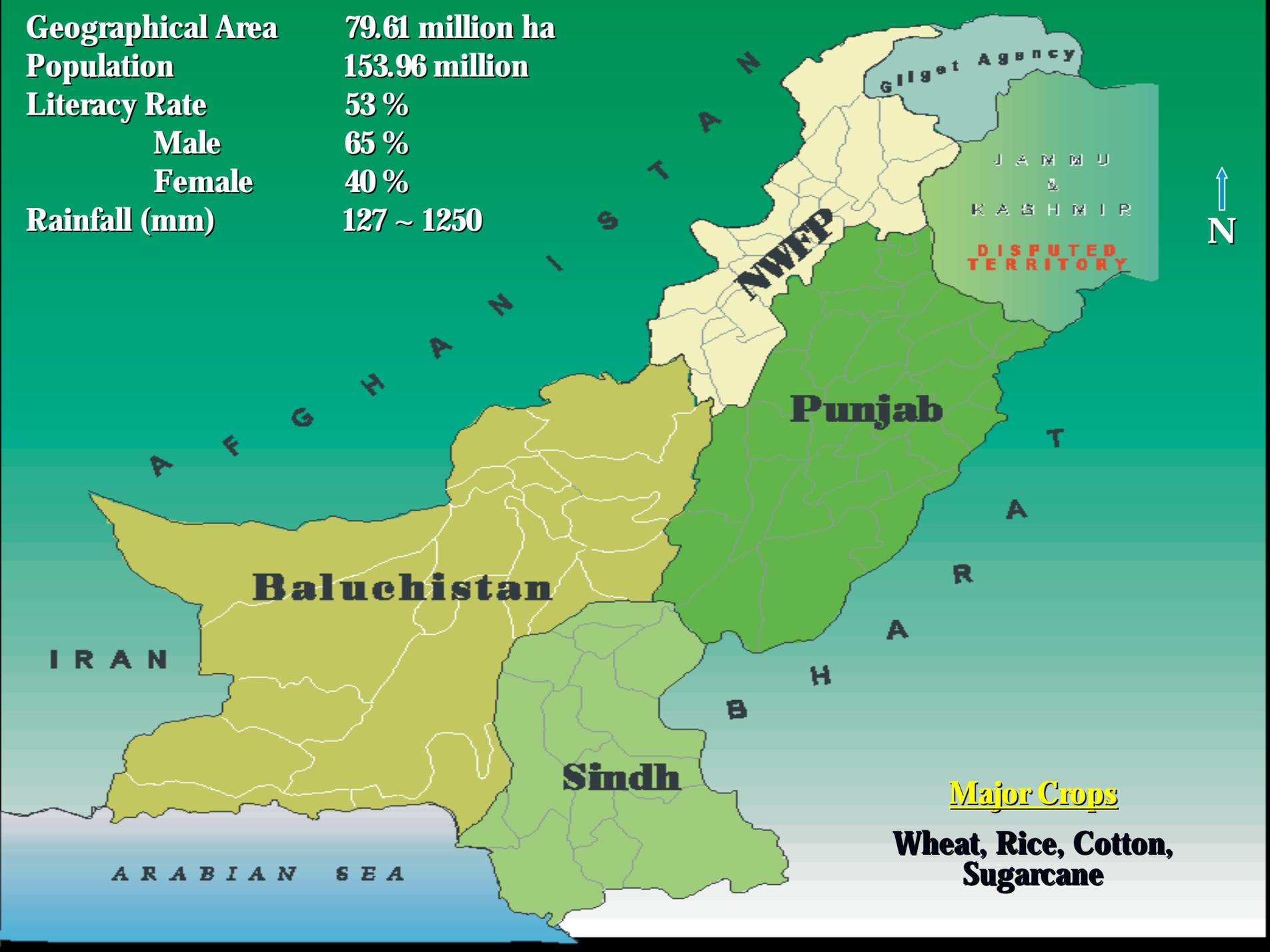


Agricultural Mechanization and Processing in Pakistan

- **Overview**
- **National Perspective**
- **FMI Contributions**
- **Agro-based Processing**
- **Vision**

Geographical Area 79.61 million ha
Population 153.96 million
Literacy Rate 53 %
 Male 65 %
 Female 40 %
Rainfall (mm) 127 ~ 1250



Major Crops

**Wheat, Rice, Cotton,
Sugarcane**

Agriculture in National Economy

- **Gross Domestic Product** **22%**
- **Employment** **43%**
- **Export Earnings of Raw & Processed Products** **70%**
- **Industrial Production** **51%**



Farm Mechanization

Aims at

- Increasing productivity of land and labor
- Bringing in more area under cultivation
- Conserving energy and resources
- Sustaining agricultural production
- Improving operators' comfort and safety
- Protecting environment
- Increasing farm profits



Farm Mechanization

National Perspective

- Practicing selective mechanization
- Mechanized operation for which there was shortage of labor, power or both
- Popular forms of mechanization are:
 - **Bulldozers**
 - **Power rigs**
 - **Tractors with cultivator, wheat thresher & sprayer**
 - **Tube wells**

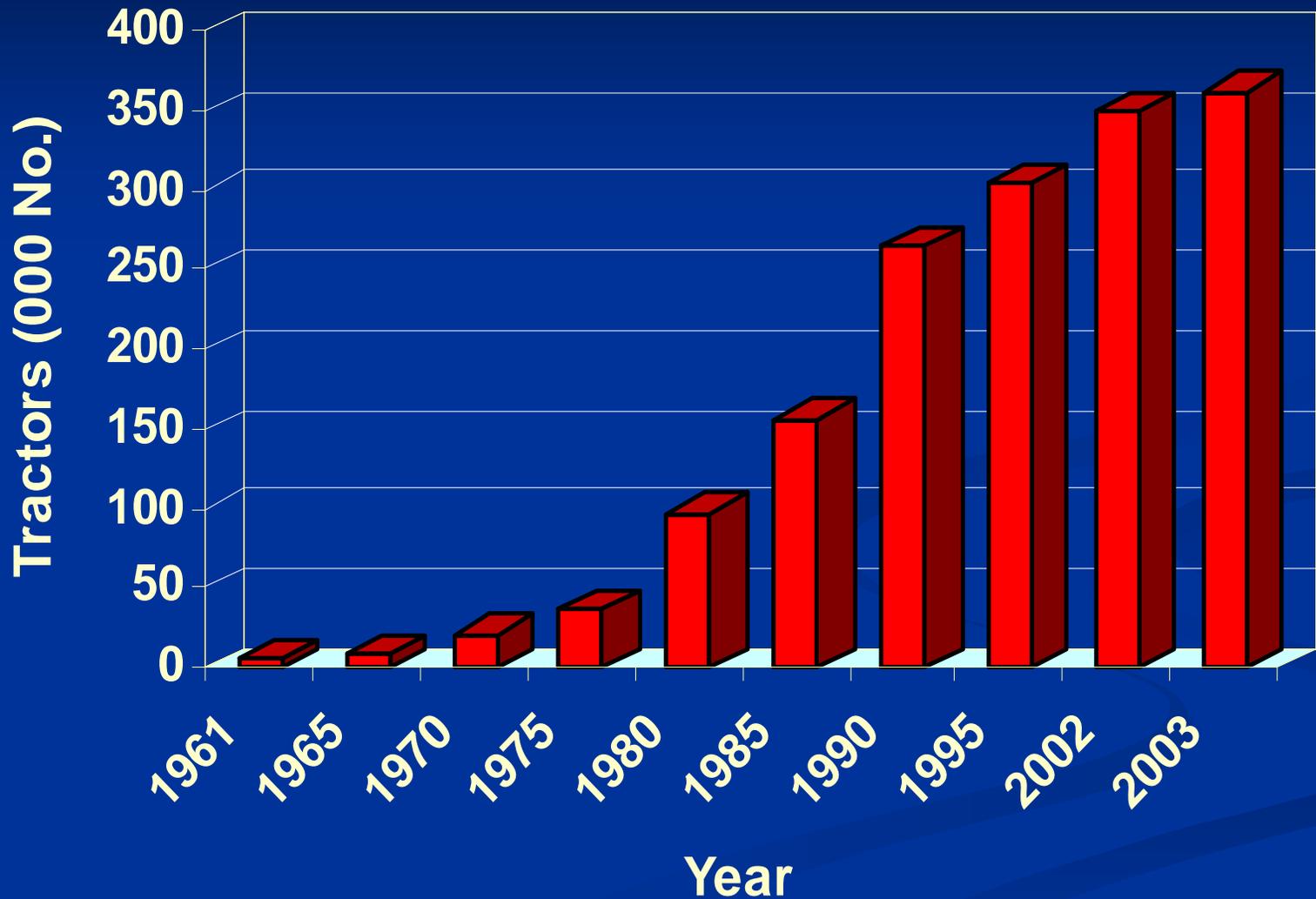


Agricultural Machinery Used in Pakistan

Machinery	1968	1975	1984	1994	2004
Tractor	18,909	35,714	157,310	252,861	401663
Cultivator	14,338	31,619	146,863	236,272	369866
Mould Board Plough	2,335	2,734	7,319	28,413	40050
Disc Plough	2,513	2,938	6,355	20,372	29218
Blade	3,925	4,200	69,004	164,489	
Chisel Plough	-	-	712	6,535	
Rotavator	-	-	2,101	5,594	
Bar/Disc Harrow	2,007	2,373	8,140	12,233	23764
Ridger	-	120	4,711	10,984	71338
Grain Drill/Planter	563	1,174	11,251	64,126	70810
Sprayer	-	-	-	20,778	
Trailer	-	18,074	98,787	176,412	242655
Wheat Thresher	-	5,635	78,377	112,707	137270
Reaper	-	-	-	7,972	
Combine Harvester (Wheat & Paddy)	-	-	-	859	6000



Tractor Population



Farm Machinery Manufacturing

TRACTORS

- Massey Ferguson F-240 & MF-265/375
- Fiat Fiat-480 & Fiat-640
- Belarus MTZ-50 & UMZ-6AKM
- Ford 3600 & 4600
- IMT 540 & 560



Farm Machinery Manufacturing

TRACTORS – DELETION ACHIEVED

Massey Ferguson

50-60 hp tractors 87%

70-85 hp tractors 60%

Fiat (CNH)

50-65 hp tractors 85%

Belarus

50 hp tractors 68% (no more in business)



MECHANIZATION ORGANIZATIONS

R & D Institutions

- Farm Machinery Institute (FMI)
- Agricultural Mechanization Research Institute (AMRI)
- Agricultural Mechanization Research Cell (AMRC)
- Centre For Agricultural Machinery Industry (CAMI)

Universities

- Agricultural University, Faisalabad
- Agricultural University, Tandojam
- Engineering University, Peshawar

Others

- MINFAL, PDAE, ZTBL, APTMA, PAMIMA

FARM MACHINERY INSTITUTE

FARM MECHANIZATION
for
SELF-RELIANCE & QUALITY LIVING



Mission

Contribute to

- food security
- poverty reduction
- environment protection

by fostering sustainable enhancement in productivity of agricultural production resources

through farm machinery

- Development/adaptation
- testing & standardization
 - commercialization



FMI Contributions (Software)

Testing & Evaluation - Machines Tested

- Prototypes 20
- Commercial/Local 21
- Imported
 - Tractors 20
 - Others 35

Standardization - Standards Developed

- Farm machinery 53
- Plant protection equipment 10
- Earth moving machinery 18



Agro-based Processing

'Globalization'

- Enhanced capacity building
- Human resource development
- Industrial base diversification

Agro-Processing Industries

- Food industry 13.8%
- Beverages man. 1.6%
- Tobacco man. 7.4%

Number of Industrial Establishment in Pakistan

Industries	1977-78	1980-81	1984-85	1985-86	1986-87	1987-88	1990-91	1995-96	2000-01
Total Agro-based	1883	2043	2552	2515	2661	2763	2913	2798	2861
All Industries	3676	3815	4423	4349	4594	4753	4792	4474	4528
Food Manufacturing	462	494	848	730	831	822	858	931	880
Dairy Products Except Ice Cream	3	3	6	9	12	12	14	5	10
Processing, Canning and Preservation of Fruit Vegetable, Fish and Sea Food	24	24	18	21	22	17	21	16	19
Edible Oils	111	124	193	173	179	173	154	129	99
Rice Mills	42	57	194	125	170	184	208	241	228
Wheat and Grain Milling	116	123	199	200	211	214	259	330	300
Refined Sugar	25	31	38	38	39	40	45	58	62
Others	141	132	198	164	198	182	157	152	162
Manufacturing of Textile	924	914	895	980	1013	1045	1135	1068	1063

Processing Industries

Issues

- Lack of standardization & certification
- Lack of innovation in product development
- Un-even standards and quality control
- High packaging and input costs
- Phytosanitary, hygiene, health and safety

Policy and Strategy

- Standards & product quality improvement
- New products development

Fruit and Vegetable Processing

Crops	Estimates 2004-05	Targets					Annual Growth (%)
		2005-06	2006-07	2007-08	2008-09	2009-10	
Fruits	6,000	6,570	7,194	7,878	8,626	9,445	9.5
Vegetables							
Potato	1,888	2,001	2,121	2,249	2,384	2,527	6.0
Onion	1,850	1,943	2,040	2,142	2,249	2,361	5.0
Other vegetables	3,250	3,559	3,847	4,267	4,672	5,116	9.5

Fruit and Vegetable Processing

Issues

- Low yields
- Poor quality (short shelf lives)
- Non-standard nursery plants
- Non-availability of disease-free seeds
- Poor management & cultural practices
- High post harvest losses (30-40%, Rs 50 b/yr)
- Lack of basic infrastructure (transport, storage, preservation and distribution)

Milk Processing

Issues

- Low yield
- Under-fed cattle
- Low feed quality
- Non-adoption of clean milk production practices
- Lack of chilling facilities
- Adulteration
- Increasing energy costs
- Costly packaging
- Sub standard containers
- < 2% milk production processed

Agribusiness Development

Issues

- Poor infrastructure (energy, transport & storage)
- Sector institutions and policies
- Governance practices
- Access to modern technology, financial & business development services

Agribusiness Development & Diversification Project

- 5 years project
- 4 billion Rs
- ADB assistance (ASF)

Vision

- **Mechanization strategy formulation**
- **National Network of Agricultural Mechanization**
- **Machinery Testing Lab Accreditation**
- **Grain Drying & Storage**
- **Agro-Processing Machinery**
- **Livestock Mechanization**
- **Energy efficient & environment friendly technologies**
- **Mechanization Informatics**

Thank you

