Agriculture Input & Services Sector Overview

January 2018

Fertilizers

Significance of Fertilizers

Fertilizers is one of the most significant and expensive agricultural input

Increased Agri production and higher crop yield is essential for food security

Crops accounted for 6.81% of GDP (34.88% of Agri) in FY17

Agri is important for Food Security and reducing poverty

Crop yield (30% - 50%) is dependent upon balanced use of fertilizers; One kg of fertilizers nutrients produces

- 8 Kgs of cereals (Wheat, Maize and rice)
- 2.5 Kgs of cotton
- 11 Kgs of sugarcane

Nutrient deficiency in soil of Pakistan is met through fertilizers

- Nitrogen Deficiency: 100% of soil
- Phosphorus Deficiency: 90% of soil
- Potassiun Deficiency: 40% of soil

Significance of Fertilizers

- Domestic production of fertilizers decreased by 0.3% during FY17;
  - weak farmer income leading to low purchases
  - gas & urea pricing uncertainty
- Imports of fertilizers decreased by 5.8%
  - Access local supply

Fertilizer Supply Demand Situation								(000 Tonnes)
Description	**Rabi (Oct-Mar) 2015-16**		**Kharif (Apr-Sep) 2016**		**Rabi (Oct-Mar) 2016-17**		**Kharif (Apr-Sep) 2017**	
	Urea	**DAP**	**Urea**	**DAP**	**Urea**	**DAP**	**Urea**	**DAP**
Opening Stock	771	523	1,200	253	1,565	458	1,318	177
Imported Supplies	50	833	0	482	0	843	0	40
Domestic Supplies	2,817	369	3,078	416	2,840	372	2,700	422
Total Availability	3,638	17,25	4,278	1,151	4,405	1,673	4,018	639
Offtake/Demand	2,434	1,439	2,704	697	3,085	1,503	3,000	900
Write on/off	-2	0	-9	4	-2	7	0	0
Closing Stock	**1,202**	**286**	**1,565**	**458**	**1,318**	**117**	**1,018**	**-261**

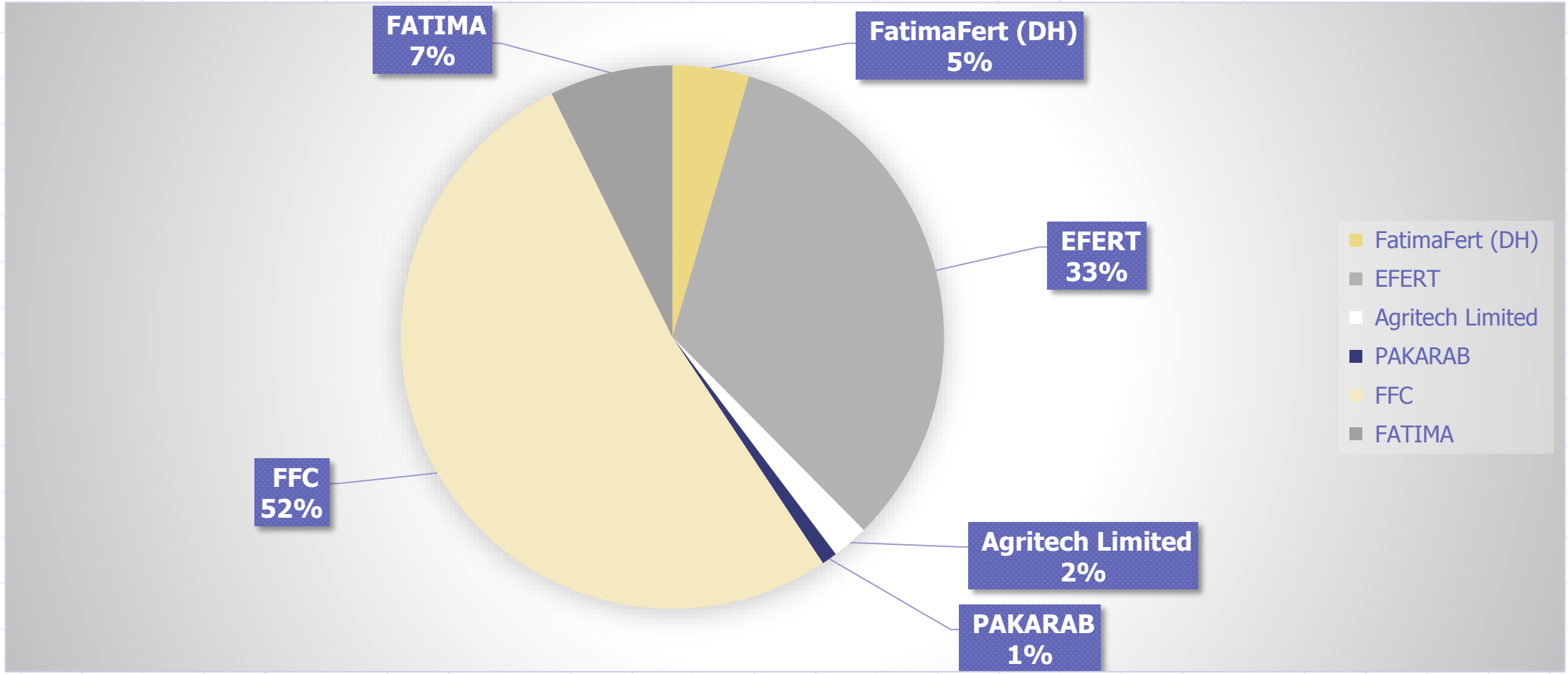
Future Outlook

Description	Oct*	Nov*	Dec**	Jan**	Feb**	Mar**	TOTAL
	UREA						
Opening inventory	732	689	505	165	187	207	732
Imported supplies	0	0	0	0	0	0	0
Domestic production	440	418	460	422	420	500	2,660
Total availability	1,172	1,107	965	587	607	707	3,392
Offtake	375	602	800	400	400	400	2,977
Export	108	0	0	0	0	0	108
Write off/on	0	0	0	0	-	-	0
Closing inventory	689	505	165	187	207	307	307
	DAP						
Opening inventory	359	288	152	147	152	122	359
Imported supplies	241	289	75	50	0	0	655
Domestic production	74	72	70	25	60	70	371
Total availability	674	649	297	222	212	192	1,385
Offtake	387	502	150	70	90	150	1,349
Write off/on	1	5	0	0	-	-	6
Closing inventory	288	152	147	152	122	42	42

* Actual, ** Estimated

Market Share Urea

Urea offtake market share 9MCY17



Fertilizers Sector | Competitive Analysis

Suppliers

Gas Distribution Companies
- SNGPL
- Mari Petroleum
- SSGC

Natural Gas
Government regulated prices and supplies | Controlled Sector Allocation

Substitutes
RLNG (import)
Coal (not feasible)

Manufacturer
Low Bargain Power

Manufacturer

Nine Companies
Demonstrated capacity of 9.4 mln Tons per annum

94% of Industry's Capacity owned by three strong Groups
- Fauji's 42%, Fatima 28%, Engro 25%
- Urea pricing is usually led by Fauji's and Engro

Industry Structure:
Oligopoly

Customers

Dealers
~ 10,000
↓
Farmers

- Companies select dealers and train them | Dealers buy on cash in advance
- Farmers buy from dealers against Credit
- SBP's Agricultural Credit induces farmers' purchasing power

Consumer
Have low Bargain Power

Manufacturing Capacities

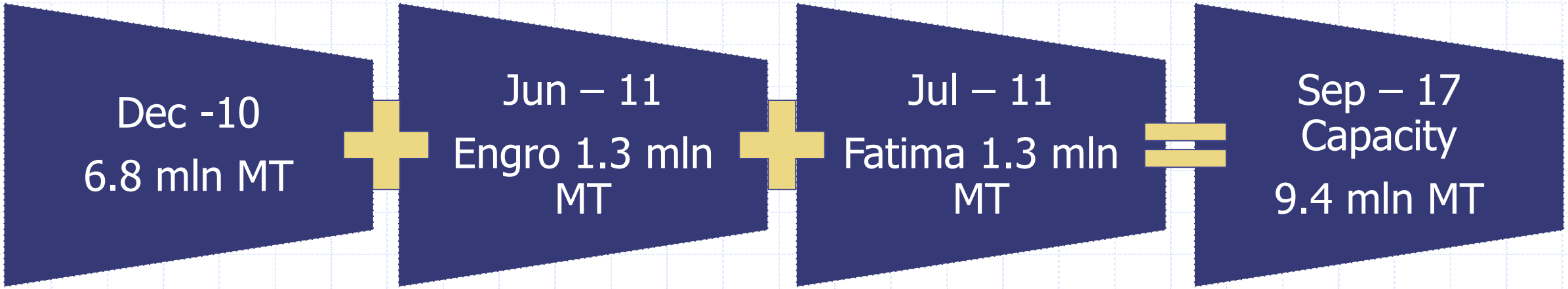
- Pakistan's Urea manufacturing capacity exceeds country's demand
- There is only one DAP manufacturer, whose capacity is insufficient to meet the demand and hence, DAP is imported

Fertilizer Industry Demonstrated Capacities (thousand MT p.a.)									
Group's Name	Company's Name	Nitrogenous Fertilizers		Phosphatic | Complex Fertilizers			Grand Total	Plant Location	Brand Name
		Urea	CAN	DAP	NP	Others (SSP)			
Fauji's	Fauji (FFC)	2,500	-	-	-	-	2,500	1 & 2 - RYK | 3-Ghotki	Sona
	FFBL	700	-	670	-	-	1,370	Port Qasim Karachi	Sona
	Sub-Total	**3,200**	**-**	**670**	**-**	**-**	**3,870**		
Engro	Engro Fertilizer	**2,275**		**-**		**-**	**2,275**	Base Plant & Enven - Dharki	Engro
Fatima	Fatima	500	420	-	360	-	1,280	Rahim Yar Khan	SarSabz
	Fatima Fert*	446	-	-	-	-	446	Sheikhupura	Bubber Sher
	Pakarab	92	450	-	350	-	892	Multan	SarSabz
	Sub-Total	**1,038**	**870**	**-**	**710**	**-**	**2,618**		
	Agritech	433	-	-	-	81	**514**	Urea-Mianwali | SSP-Hazara	Tara
	Others	-	-	-	-	162	**162**		
Grand Total		**6,946**	**870**	**670**	**710**	**243**	**9,440**		

Capacity Expansions in Past

- The country, though added capacities in CY11, has continued to import urea until CY15 due to shortage of gas – a vital raw material
- In medium term, new capacities are not expected to be added in the country
- The industry players have been exploring opportunities to set up plants in other countries e.g. US and Tanzania.

Capacity Expansion in years – Majorly Nitrogenous Fertilizers



Primary Cost | Gas Pricing

- Feedstock price, a basic raw material, is subsidized for the fertilizer sector – 80% discount to fuel stock
- Fertilizer policy 2001, further subsidized and fixed feedstock on new plant at USD 0.7/mmbtu (Fatima: 1.5 mln Tonnes, Engro Enven: 1.3 mln Tonnes)
- Levy of GIDC, in 2011, escalated the cost of manufacturing; however, passed on to farmers

Two Components of Cost

- Current Gas prices as set by OGRA at Rs. 423/mmbtu (inclusive GIDC of Rs. 300/mmbtu) for feed gas and Rs. 750/mmbtu (inclusice GIDC of Rs. 150/mmbtu) for fuel gas. Only 2 players- EFERT and FATIMA have and edge over others as they produce gas at $0.7/mmbtu without the obligation to pay GIDC of Rs. 300/mmbtu.
- Gas Infrastructural Surcharge (GIDC) accounts for ~50% of the cost per tonne of urea

GIDC Disputed

- The Government of Pakistan has imposed a 'Gas Infrastructure Development Cess' (GIDC) – a special additional tax levied on various economic and industrial sectors. This tax is chargeable according to the amount of Natural-Gas consumed by each company. Therefore, the fertilizer sector, being the biggest consumer of natural gas in the country, is subjected to the highest rate of GIDC. According to the GIDC Legislation bill 2015; the revenues generated by the 'Cess' shall be utilized for development of large-scale Gas-infrastructure projects.
- All industry players, including fertilizer manufacturers, in 2014, challenged the imposition of GIDC
- GoP, responded by promulgating GIDC Act, 2015; which has again been declared void ab initio by the High Court of Sindh in 3Q16
- There is likelihood that the GoP would challenge the decision or may adopt some other mechanism to fill the revenue gap; hence, transfer of beneficial impact remains uncertain.

Primary Cost | Gas Pricing

- FOB bulk China urea prices fluctuated around US $ 268-285/t. Middle East bulk urea price was quoted at US $ 270-295/t fob. DAP prices during November 2017 were quoted at US $ 324-350/t fob bulk in US Gulf and US $ 380-410/t fob in China market. Ex-Karachi price of urea was in the range of Rs. 1926-2109 per 50 kg bag while that of DAP was in the range of Rs. 2635-2869 per 50 kg bag during November 2017.

UREA Dynamics

- Urea production clocked in at 5,179k tons in 11MCY17 as compared to 5,503k tons in 11MCY16, a decline of 5.9%.
- The lower production was mainly attributable to irregular operations of LNG based power plants.
- The urea offtake witnessed a cumulative decrease in 11M2017 as compared to 11M2016 mainly due to the ambiguity regarding the subsidy announcement, combined with low farmers economics (crops registered growth of 3.02% compared to -4.97% growth last year).
- The government support is in the form of cash subsidy of PKR 100/bag and fixed priced of PKR 1,400/bag.
- During the year, Government allowed 600k tons export of urea in April 2017 for a period of six months, in order to offset the increased inventory pile up.
- The country has exported 547k tons of urea till end-November 2017

Going forward:

- Challenge is to reduce inventories
- Exports allowance by GoP supported by export subsidy critical for the industry
- Increased working capital requirement – high inventory, receivables and subsidy receivable from GoP.
- Behavior international prices would determine local players' profitability

Fertilizer Industry | Outlook: Negative (Maintained)

+ Significant dependence on agriculture in the country's economy
+ Sustainable gas supply ensured at ~ 75% of the country's capacity, which covers demand
+ Established demand of fertilizers backed by vital need of agricultural output; No substitute of the products

- Margins under pressure | price cut amidst abundant supply
- Challenge is to reduce inventories; low international price makes exports unfeasible
- Financial risk: increased working capital requirements and constraints on cash flows; inventories, trade receivables, and subsidy receivable from Govt. of Pakistan
- Permanent resolution of cheap gas to small players is vital for their survival
- High price of LNG not feasible for Urea production
- Behaviour of international prices would determine local players' profitability
- GIDC case not yet settled

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- Oil and Gas Regulatory Authority, Notified Gas Prices Consumer Gas Prices

Pesticides

Pesticides Production Process

Step 1

- **Manufacturing (technical ingredients):** requires a hydrocracking plant, heavy capital investment required; not done in Pakistan

Step 2

- **Intermediate processing:** synthesized into intermediates; not done in Pakistan

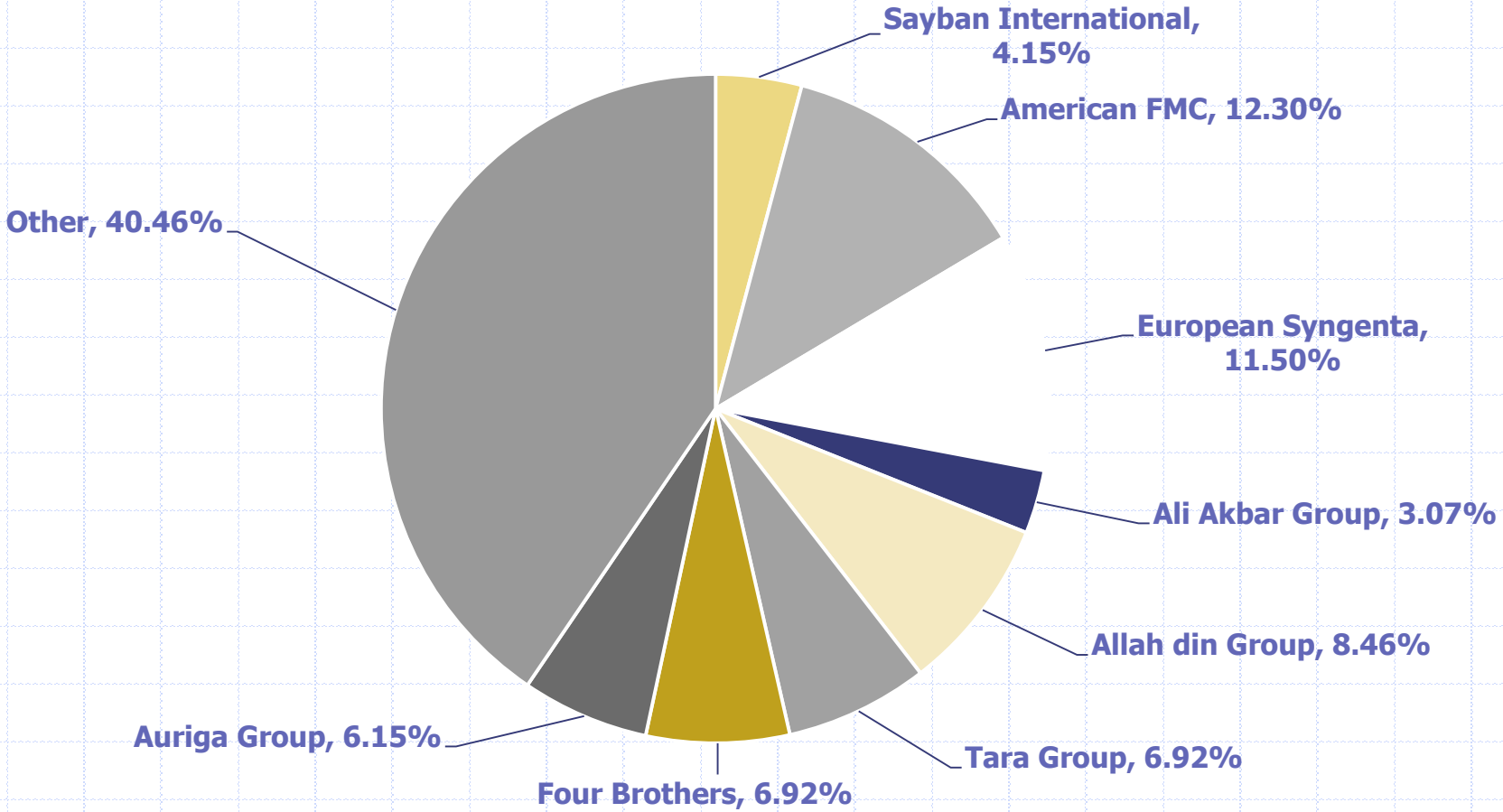
Step 3

- **Formulation:** little value addition to the production process, done in Pakistan, which is why imports remain cheaper than local production

Key Points

- The annual market for pesticides is around PKR 60-70bln.
- Some of the key inputs for the agriculture sector include:
  - 1) Seeds 2) Fertilizers 3) Pesticides 4) Farm Machinery
- Main Categories of Pesticides are:
  - 1) Insecticides 2) Herbicides 3) Fungicides
- The main crops in Pakistan include, wheat, cotton, rice, sugarcane, maize, fruits and vegetables.
- Insecticides account for the major share of the pesticide market
- During the sowing season of cotton cycle, usage of pesticides is at peak. However, use of pesticides continues before, during and after sowing till the product is ready.
  - 1) In Sindh Sowing season starts from mid of May till mid of June
  - 2) In Punjab Sowing season starts from early May till end of May
  - 3) Herbicide is sprayed before sowing and Fungicide after sowing.
- Only liquid sprays are used in cotton, rest of the agriculture use both Granules and sprays.

Pesticides Market Share



*Market for pesticides is around PKR 60 to 70 Billion

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Analysts	**Faraan Taimoor** ***Associate Financial Analyst*** faraan.taimoor@pacra.com	**Saliha Sajid** ***Associate Financial Analyst*** ***saliha.sajid@pacra.com***	**Jhangeer Hanif** ***Unit Head – Ratings*** jhangeer@pacra.com
Contact Number: +92 42 3586 9504			

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