Agriculture Marketing and Supply Chain Management of Basic Commodities

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busy in shopping at Shadman Sunday Bazaar.

# SUPPLY CHAIN MANAGEMENT?

"Integration of key business processes from end user to the original suppliers that provide products, services & information that add value for customers, & stakeholders

- → Demand & supply
- ✓ Producer → intermediaries → consumer
  - ➤ Legal & development trajectory
- ➤ Shifting trends in consumption patterns
- Viability of a given commodity depends on:
  - ✓ Enabling environment (legal, administrative, regulatory frameworks, facilitation regimes: seed, fertilizers, water, research etc.)
  - ✓ Land holding size
  - ✓ Access to credit
  - ✓ Market- functions (information flow/ data?)
  - ✓ Price Vs. value
  - ✓ HACCP/ SPS/ WTO
  - ✓ CLIMATE CHANGE?

# Regulatory Framework Governing Price Control in Pakistan

Legal Framework	Objectives	Area of Enactment
Federal		
The Price Control and Prevention of Profiteering and Hoarding Act, 1977	To control prices, selling and distribution, transport and movement between provinces and withholding of stocks of 'essential commodities'	Essential food commodities: Perishable (fruits and vegetables), nonperishables (wheat, pulse, ghee, sugar and rice)
Punjab		
The Food Stuff Control Act, 1958;	Control of supply, distribution and trade and commerce in foodstuffs.	Wheat, wheat flour, maida, suji, rice, paddy and sugar
Punjab Agricultural Produce Markets Ordinance, 1978	Regulate the purchase and sale of 'agriculture produce' by establishing and administering markets/mandis	Exercising control over the purchase and sale of such agricultural produce in a specific area through notification
Registration of Godowns Act, 2014	Curb hoarding and ensure a stable supply and availability of essential commodities	Registration of godowns with the Punjab Agriculture Department and requires maintenance of records w.r.t. movement of essential commodities in and out of

• Federal, Provincial & District Authorities ensure stability in the prices of essential food items

#### Government's Legal Mandate & Toolkit for Control of Prices of Essential Food Items

The Sindh government made additional legislation in 2010 to promote the establishment of competitive, transparent and efficient wholesale markets in the private sector

- Provincial governments are also responsible for establishing wholesale markets at district levels to regulate the purchase of agriculture produce
- Registration of godowns- to curb hoarding & ensure stable supplies & availability of essential commodities
- With a legal mandate to control food prices, the federal & provincial governments follow a diverse set of practices

# Government Intervention in Major Food Crops

- Wheat is the only crop where government gets directly involved in procurement.
  - A support price is announced before sowing season, in consultation with the Federal & Provincial Govts.
  - After harvesting, PASSCO & Provincial Food Deptts. procure around 10% of the produce as strategic reserve/ stock
- In case of sugarcane, the government's involvement is limited to the announcement of minimum support prices at which sugar mills are legally bound to purchase cane from farmers

- In case of both wheat & sugar/ sugarcane, decision to allow export and/or import rests with ECC upon advice of the Ministry of National Food Security & Research (MNFS&R).
- If market conditions allow, the government authorizes the TCP to import these commodities.
- However, in case of exports, private traders/ mills are authorized to export wheat & sugar on their own, conditioned upon the ECC's approval.

- No direct or indirect measures are in place to control supplies & prices of rice and maize; the markets for these crops run purely on a commercial basis.
- For minor food crops, such as pulses, vegetables & fruits, the government neither announces support or indicative prices, nor gets directly engaged in trading.
- Commercial traders usually import & export these items based on the demand & supply situation in the market

#### Mechanism for Perishables' Prices

- It is done at the wholesale markets (mandi) established by the Provincial governments.
- Small-to-medium-sized growers sell their crops to intermediaries (Arhtis) in the local mandi (or to Beoparis, who aggregate pre-harvest crops from small farmers & then bring the produce to the main mandis).
- Arhtis & commission agents facilitate the auctioning of commodities on a daily basis to wholesale buyers (and some large retailers) & in return, charge a fixed commission.

- This auction process is monitored by the district-level market committees (with representatives from district administration, regional traders, growers & consumers), which record the proceedings of at least five auctions for every commodity.
- Based on the auction-determined wholesale price, the secretary of market committee calculates the retail price as per a pre-defined formula, after incorporating charges related to transport, wastage, packing and retail profits.

- These price committees then report the retail prices to the relevant regional authorities (Commissioners etc.).
- Once the concerned authority receives the price information, it notifies the retail price list and uses its legal mandate to implement the given prices in the retail markets.

## Imports- an Important Component of Food Value-Chain

- With growing housing needs, water shortages and climatic changes, the area under cultivation in Pakistan has failed to keep pace with rising food requirements.
- Therefore, food imports (even exclusive of edible oil) have nearly doubled over the past 5 years.
- This trend is more pronounced in the case of minor crops (pulses, fruits and vegetables), where cultivation has also been hurt by farmers switching to major crops, especially where they are guaranteed a minimum support price.

- Imports now fulfil almost the entire demand for masoor and mash pulses in the country.
- Similarly, in case of condiments such as ginger and garlic, the country's dependence on imports has increased significantly.
- For a number of vegetables also, including tomato, peas, cucumber, turnip, beetroot, etc., local production falls significantly short of meeting the demand.

- This suggests that the domestic prices of these commodities are getting increasingly vulnerable to:
  - ✓ changes in global prices,
  - ✓ exchange rate,
  - ✓ export policy of trading partners, and
  - ✓ the domestic import policy.

# Government's vole in vole in Perishables' Perishables' Trade

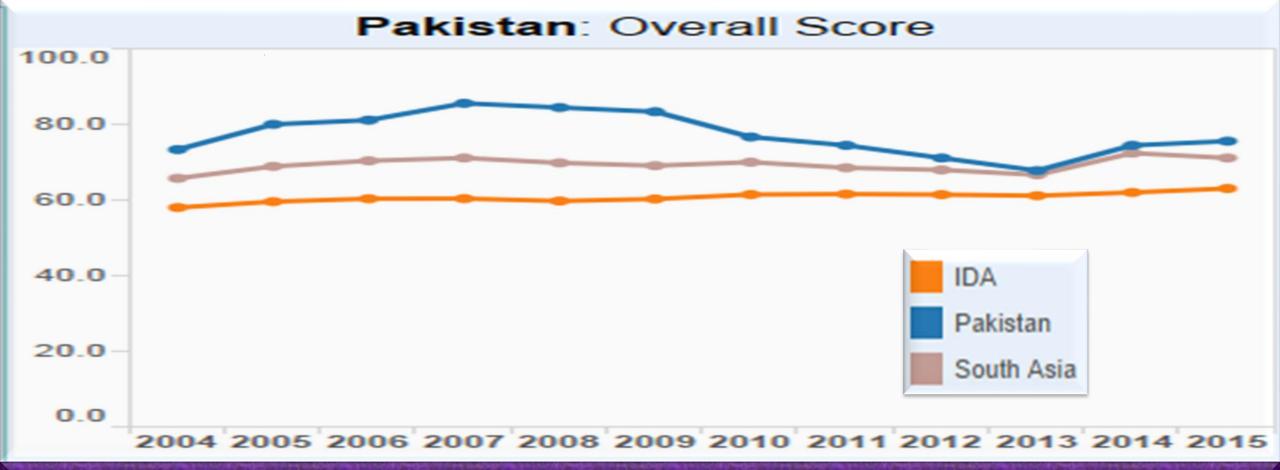
- The import process of agriculture commodities involves a number of stakeholders:
  - ✓ Ministry of Commerce (MoC),
  - ✓MNFS&R,
  - ✓ Provincial agriculture departments,
  - ✓ Commercial traders.
- Although commercial traders may freely import these items, depending upon market conditions, they are required to acquire import permits, which are subject to various regulatory conditions

- First, SPS conditions under:
  - ✓ Pakistan Plant Quarantine Act 1976,
  - ✓ Pakistan Plant Quarantine Rules 1967 &
  - ✓ Guidelines prescribed by the International Plant Protection Convention.
- Once perishable consignments arrive at the border, the DPP (MNFS&R) applies a comprehensive checklist for cargo inspection, before allowing the produce to enter the country
  - ✓ To contain spread of pests & diseases from imported crops to local crops
  - ✓ These are considered important non-tariff barriers to agriculture trade & are used by nearly all agri-based countries

- Hence, the application of non-tariff barriers is flexible- can be relaxed if the situation warrants.
- However, even if the import conditions are relaxed, getting perishable food items imported into the country & having them supplied to major markets across the country remains a time-consuming process.

This underscores the need for a proactive **EARLY WARNING SYSTEM** with respect to crop failure and price pressures in order to ensure uninterrupted supplies in the market.

"Data -> Statistical Capacity"



- Statistical Capacity- the average of score of 3 dimensions of data:
  - Availability
  - Collection
  - Practice

#### **Potential** Challenges Faced by the Government in **Implementing** Food Price Controls

- Early warning signals
- Import decisions during times of temporary commodity shortages
- Timely decisions on imports (especially when they are subject to regulatory approvals)
- Provincial Agriculture Deptts. are responsible for providing the information on crop arrival time & size
  - In case of any shortage or delay, the MNFS&R takes the decision to relax non-tariff barriers & allow smooth import of the commodity
- Therefore, accurate & timely information about harvest is instrumental to avoid commodity crisis.

- Provincial Agriculture Deptts. give crop estimates based on the data they collect on area under cultivation & expected yields
- However, in extreme weather conditions (or other adversities), these Deptts. lack precision in identifying & foreseeing the outcome
- Getting such information entails conducting & repeating wide-ranging surveys through all the major steps of crop development including sowing, crop growth, fertilizing, harvesting, etc.
- However, the information flow can sometimes lag behind due to limited capacity. (The 187.1 percent increase in prices of tomatoes in urban markets during Q2-FY20 is a case in point)



#### Factor Analysis

- Factors proved crucial with respect to the policy environment during the recent episode:
  - As part of its import compression policy, Govt. had tightened non-tariff barriers on import of major food items in FY18 (including tomatoes), & made these conditional to valid import permit, PSP certificates & plant protection release orders.
    - Accordingly, Pakistan imposed a ban on the import of disease-prone tomatoes from India in FY18, which was Pakistan's traditional bulk supplier
  - Informal imports from India were also not forthcoming, as its own crop faced damages from rain, &
  - Political tension between the two countries led to a complete halt in cross-border trade

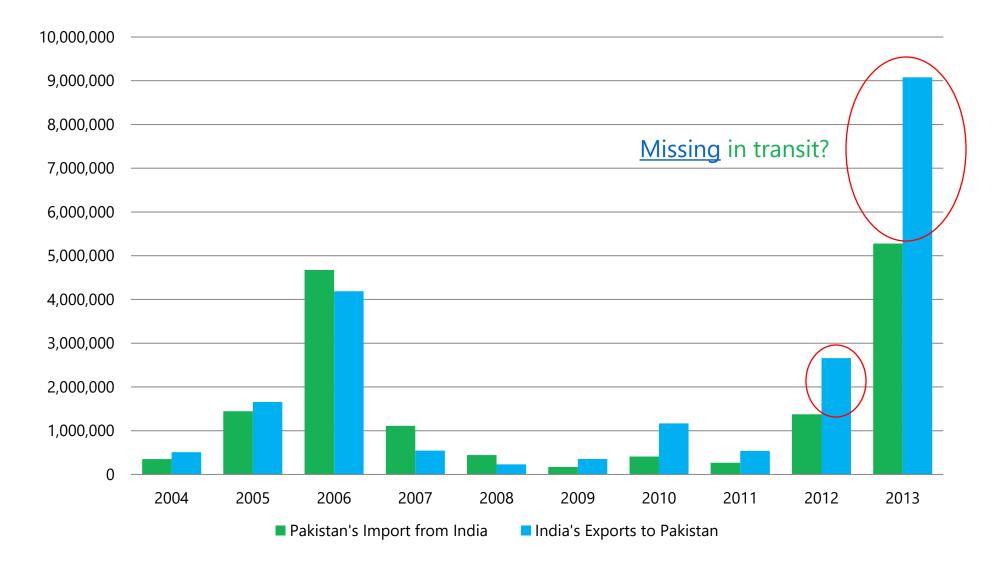
- This halt meant that in case of a shortage (either due to crop losses or delays), commercial traders would need fresh regulatory approvals to arrange the commodity from an alternative, non-traditional supplier
- Therefore, when the tomato crop from Sindh (which accounted for over 35 percent, on average in FY15-FY19, of national supply) got delayed, commercial traders could not import the commodity creating a price surge in the market
- Prices began to surge from mid-October (around the time the crop was due) and touched the peak of Rs 227 per kg by the third week of November 2019.

- Supplies from Afghanistan (also a traditional, but low-volume supplier) made up for some shortages, but volumes were not sufficient & the lack of quarantine staff at the Torkham border delayed arrivals.
- A major opportunity was visible in case of Iran, but no pest risk analysis (PRA) was conducted, which was mandatory before opening the border.
- It was only in mid-November 2019 that the government permitted local importers to bring tomatoes from Iran for a period of three weeks till the time the local crop was expected to become available in the market.

- This permission meant that Pakistani authorities would accept the certificate of the Iranian quarantine department for the release of tomatoes at the Taftan border, instead of waiting to conduct their own PRA.
- Furthermore, given the urgency of the situation, the government also decided to make special arrangements for the presence of Pakistan's quarantine department at the Taftan border
- As it turned out, however, the decision to allow imports from Iran was taken only after excessive profiteering had taken hold.

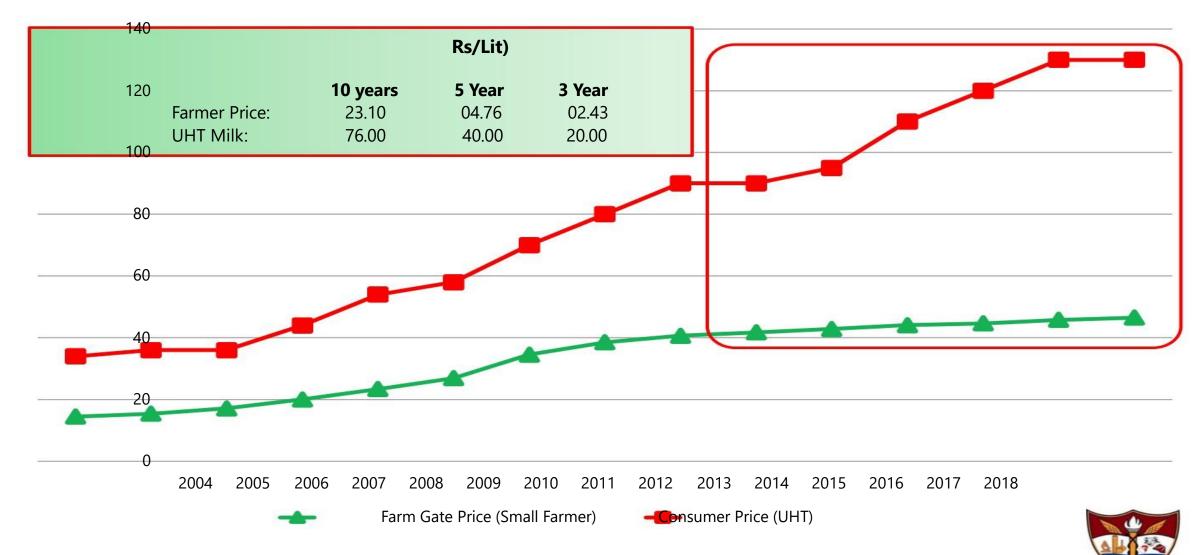
### Customs detects mass underinvoicing as values confirmed vide www.icegate.gov.in

Monday, April 25, 2016 Top Stories
KARACHI: Pakistan Customs has
detected mass under-invoicing on
goods imported from India .....



#### **Source:** *UN Comtrade | International Trade Statistics Database*

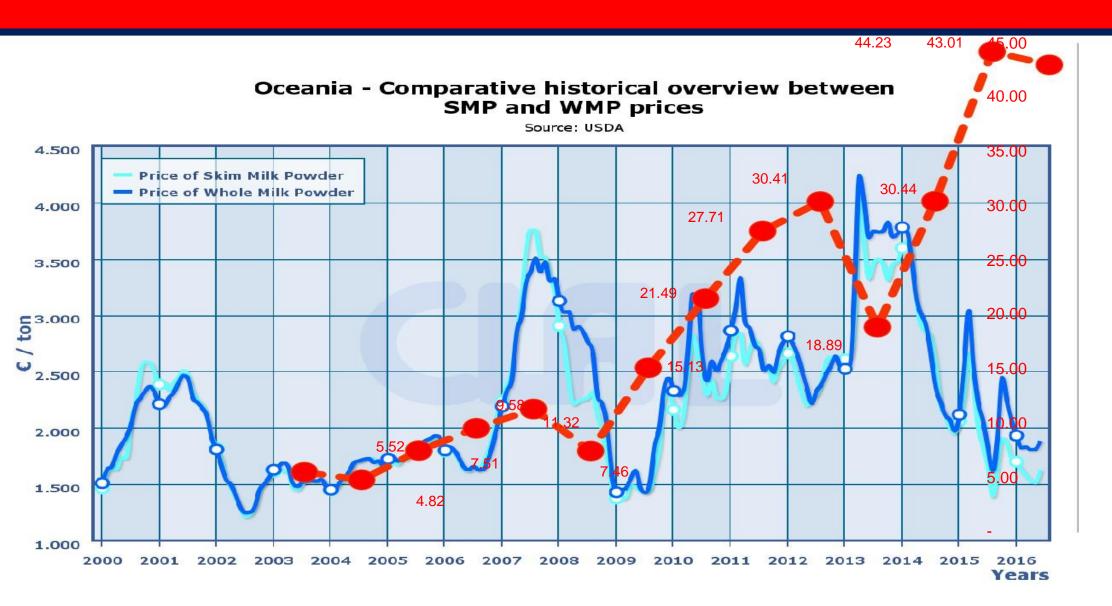
#### Farmer Price vs Consumer Price (Rs./lit.)

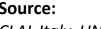




Pakistan Dairy Association, Market Information

#### International Prices of Milk Powders Vs Imports Volumes to Pakistan

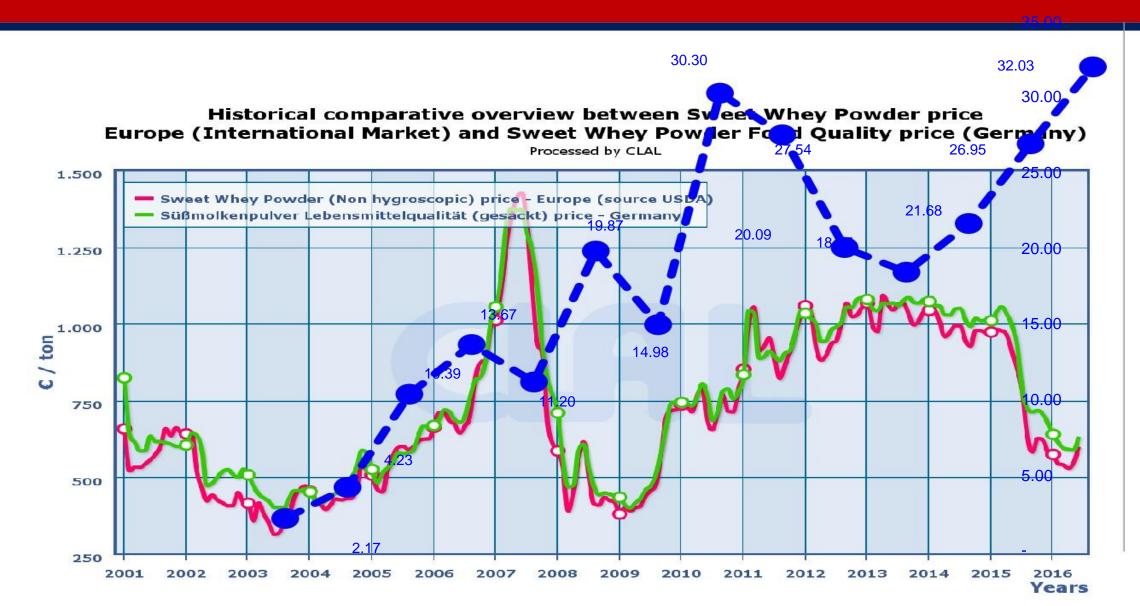




Source: CLAL Italy, UNComtrade



#### **International Prices of Whey Powders Vs Imports Volumes to Pakistan**



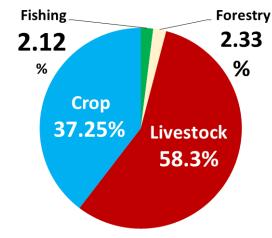
#### **Source:** *CLAL Italy, UNComtrade*



Misconceptions & Structural Issues in Agriculture Marketing & Supply Chain Management of Basic Commodities in Pakistan







# Methodologies & Practices in Controlling Prices at tactical level

#### Price Magistracy

Raids/Imprisonments/Fines

Weights & Measures ?

#### Controlling the supply channels

- Taking control of Stocks e.g. sugar
- Holding of Supplies- perishable goods e.g. Vegetables & Fruits
- Ensuring direct supplies- Green Channels etc.

#### Total Landed Farmers: 5,249,800

Acre	Total Farmers (000)	% of Total	Owners (000)	% of Total	Owners cum Tenants (000)	% of Total	Tenants (000)	% of Total
1.2	1237	43%	1152	23.5%	15.7	0.29%	69.6	1.32%
2.4	965	18%	846	16%	41	0.7%	78	1.5%
5	1144	22%	944	18%	93	1.7%	106	2%
7.5	792	15%	620	12%	88	1.6%	83	1.5%
12.5	619	11%	444	8%	98	1.8%	76	1.44%
Total	4747	90%	4006	76%	335	6.3%	412	7.86

63%

**7**%

**Owners cum Tenants** 

**Tenants** 

8.6%

Absentee?

**68.6%** 

#### **Growth Indicators- Real Time Livestock Census Punjab 2018**

#### **CURRENT LIVESTCK POPULATION (IN MILIONS)**

Species	Pakistan Economic Survey 2017-18	Pakistan Agri Census 2010	Punjab As per Economic Survey 2017- 18	Punjab Agri Census 2010	% share of Pb as per ES	Punjab Real time door to door Livestock Census 2018
Cattle	46.1	24.11	22.58	13.20	49	14.945
Buffalo	38.8	23.46	25.22	16.01	65	14.122
Sheep	30.5	15.02	7.32	4.94	24	6.056
Goat	74.1	45.73	27.41	17.39	37	14.564
G.Total	189.5	108.32	82.53	51.54		49.687
Back yard Poultry	87.16	-	41.83		48	13.754
Commercial Poultry	1057.65	-	772.08		73	-

#### Milk Production, Productivity & Per Capita Availability

Pakistan (Economic Surveys 2005, 2010, 2015)

Cattle (Mi	opulation + Buffalo Illions) nic Surveys	Dairy in Lactation (Millions)		Milk Productio (Billions Lit.)		Lit/Yr available for humans @ 63% of total Produced	Per day availability to Humans (Lit) @ 63% of produced by subtracting 37% for calf on the analogy of Pb Liv. Census 2018	Dairy animal/da	
2005	56.8	25.3	14	38.37	156	155	0.424	<b>6</b> (1516/ Yr)	Variable Figu
2010	67.3	30	16.5	44.82	177	159	0.437	<b>5.9</b> (1494/ Yr)	able calculated Figures in Eco
			4	50.88	191	167	<u>0.459</u>	6.8	as per nomic s
2015	76.8	44.5% Pb t qe Liv. Cen. 2018 ni	For Punjab taken as 55% for Buffalo & Cattle -of national herd- averaged out	28	10.5	168	0.460	( 1696/ Yr)	production urveys
Punjab (Livestock Census, 2006, Agri. Census 2010, Livestock real time/door to door Census 2018)									
<b>2006</b> (Liv. Cen)	29	12.	.9	17.73	87.5	128	0.349	5.5 (1375/ Yr) <sub>22</sub>	weig rounding cattle @
2040								9.	hte s up

<u> </u>	arrjan (21700	7.55k			it rear time,	455: 15 455:	
<b>2006</b> (Liv. Cen)	29	12.9	17.73	87.5	128	0.349	5.5 cattle PB (1375/ Yr)
<b>2010</b> (Agri. Cen.)	28.9	12.86	17.68	93.6	119	0.326	5.5 Lit./ ani 5.5 (1375/ Yr)
<b>2018</b> Livestock Cen. (9211)	29	<b>12.9</b> (44.5% of herd)	17.73	110	101	0.278	5.5 (1375/ Yr)

## Demographic Composition

Landholding fragmentation rate 42% in 1990- crossed 67% in 2010 (95% now)

Total villages in the Punjab **25,892** 

Households in the Punjab <u>18.33 M</u>/ 110 M Pop.

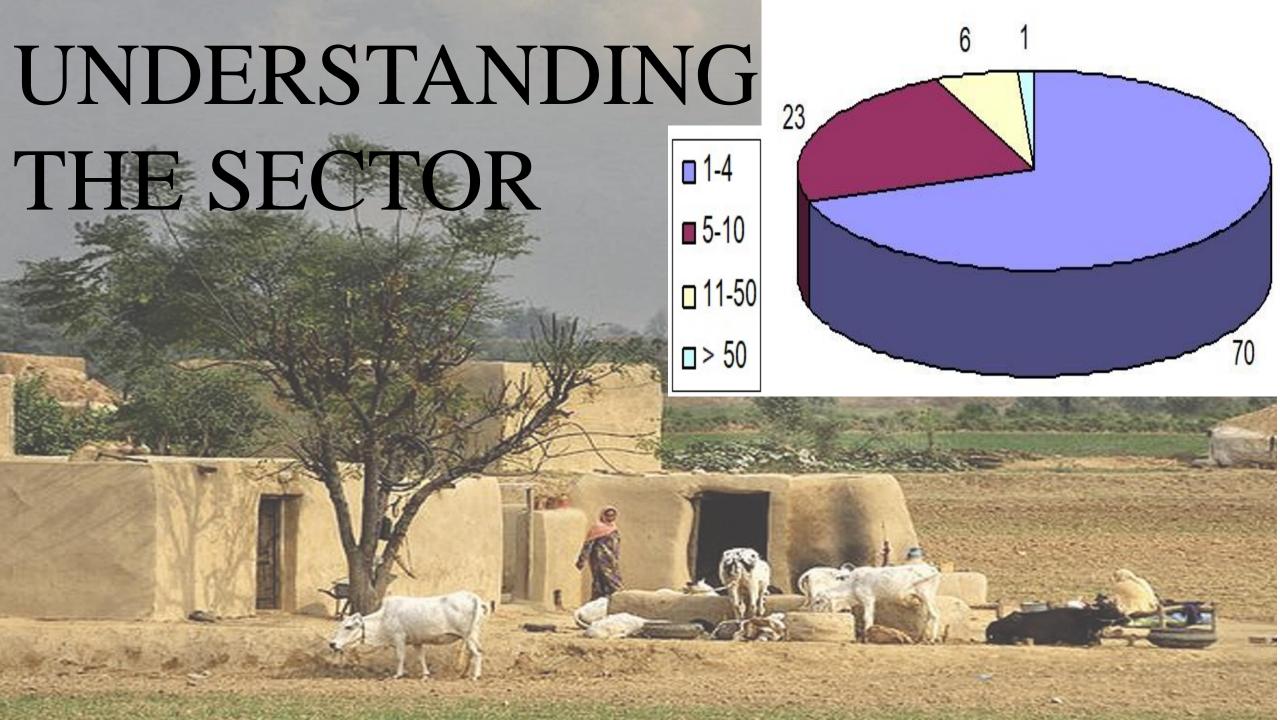
Rural Households in the Punjab @ 63.29%: **11.6** M

Livestock Farmer captured on 9211 System: **9.8 M** 

- Composite Families Captured <u>3.2 M</u>
  - ✓ Largest women engagement in any sector of economy (rural woman spends 59% of her daily time in livestock related activities in Punjab)

46% labour force

11% share in National GDP & 58.9% in Agri Sector GDP (ESP)



#### Access to Credit & Vertical Market Linkages

89% livestock Farmers are Landless Livestock Share In Agri share in **Credit's** Agri **Consumption** sector **GDP** 58.3% 7% **State Bank of Pakistan 2010** 

Access to Credit

- Collateral?
- Unique Identifier

73% Potential
Banking Market
does not have
access to Banking
Products in
Pakistan

Linkage Vertical Market

### **Total Factor Productivity**

TFP- variable that accounts for effects in total output not caused by traditionally measured inputs of labour & capital

\* TED may account for up to 600/ of growth within

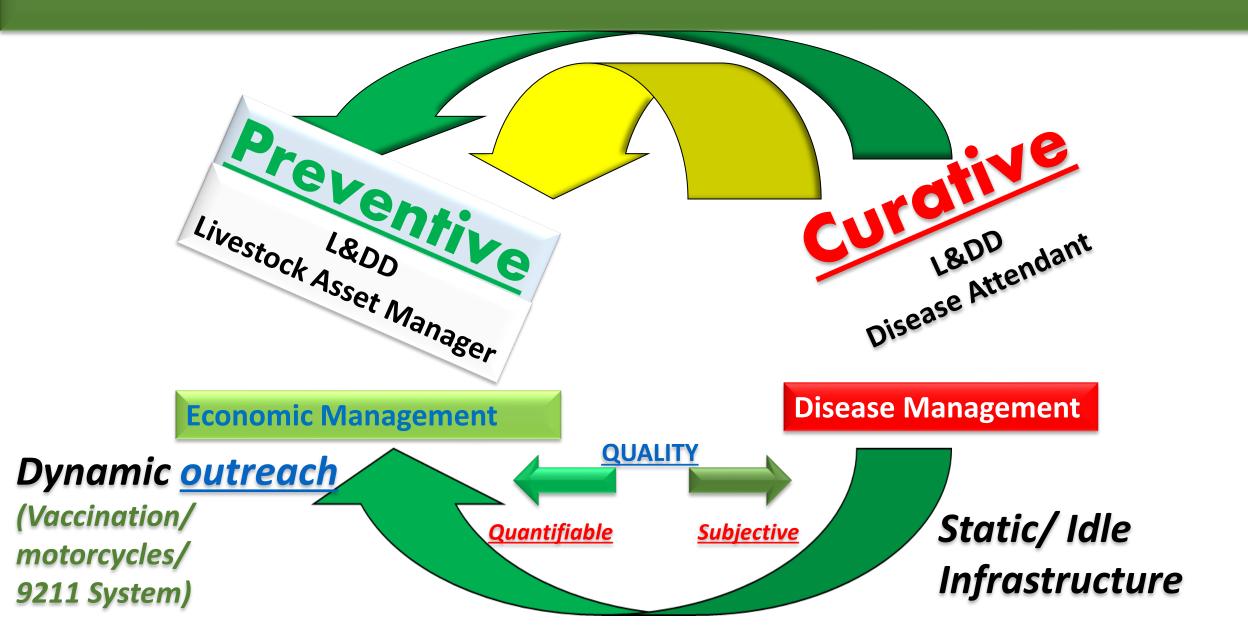
TFP is joint effects of many factors:

- innovation,
- a buman canital





### PARADIGM SHIFT



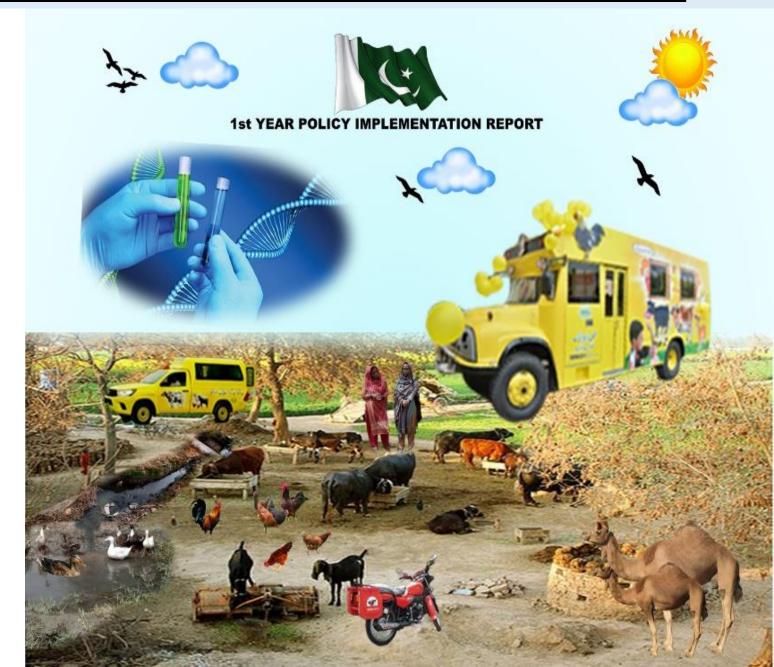
### LARGEST ON-FARM SERVICES' DELIVERY MODEL

- ✓ <u>9335</u> Medical-Kit Mounted M/Cycles;
- ✓ <u>353</u> Mobile Veterinary Dispensaries,
- ✓ <u>44</u> Mobile Veterinary Laboratories,
- $\checkmark$  **9** state of the art mobile training schools,
- ✓ <u>11151</u> well trained field staff (Vets.)
- ✓ delivering <u>434</u> well documented services pertaining to:

Prevention, Extension, Breeding, Diagnostics, Surveillance, & Treatment

#### AT DOORSTEPS OF:

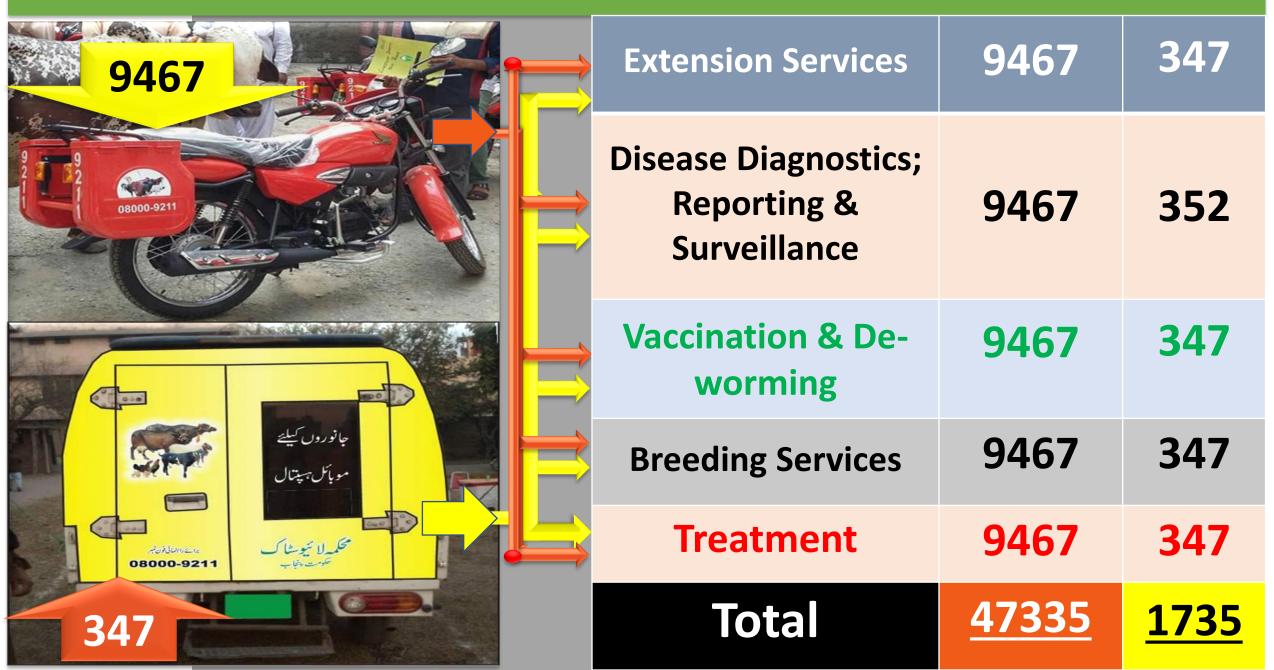
- ✓ 9.8 million livestock farmers;
- ✓ their 74 million livestock,
- ✓ across all of <u>25,892 villages</u> of the Punjab
- ✓ with complete service history profiling &
- ✓ 360 degree viewable and retrievable electronic log—largest ICT based System







#### FORCE MULTIPLIER- 9211 MOBILE COMPOSITE PLATFORM













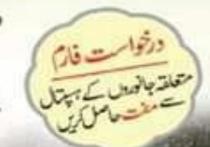




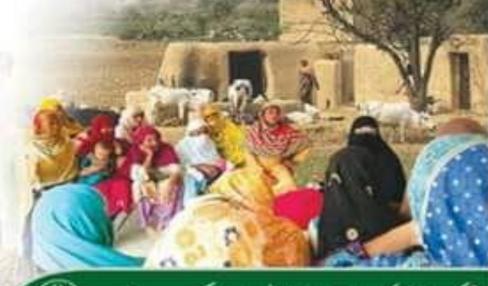


## 45 برارم داور فواتين كى بطور لانيوستاك مددكار فرينك

"اینی گاؤں میں ٹریننگ حاصل کرکے علاقہ اور خاندان کی خدمت کے ساتھ سماتھ بہترروز گار کمائیں







فكمه لائتوساك ايند ۋىرى دويلىمنت حكومت پنجاب د







### د فعه 144 کانفاذ ... فوری گرفتاری کا آغاز

مجه حضرات زیاده دوده حاصل کر نیکے لائے میں

بے زبان جانوروں کو بوسٹن (Boostin) اور سومائیک (Somatech) نامی ہار مونز کے ٹیکہ جات لگاکرانسانوں اور جانوروں کی زندگی سے کھیل رہے تھے

درآمدوفروخت کنندگان/استعال اورسپلائی کرنیوالے افراد کے خلاف سخت کارروائی کا آغاز



دنیا بھر میں بیمتنازعہ ہار مونز کے ٹیکہ جات اوران سے پیداکر دہ دودھ بیادر کی بیکہ جات اوران سے پیداکر دہ دودھ بیادر کی بیکہ ویشیوں میں اسقاطِ حمل احمل نگھرنا اور مسطائنٹس جیسے موذی امراض کا باعث بن رہاتھا

استعمال یا فروخت کنندگان اورائے سٹاک کی نشاندہی ٹال فری نمبر 10800-9211 پرکے اپنے خاندان کی صحت کی حفاظت کریں

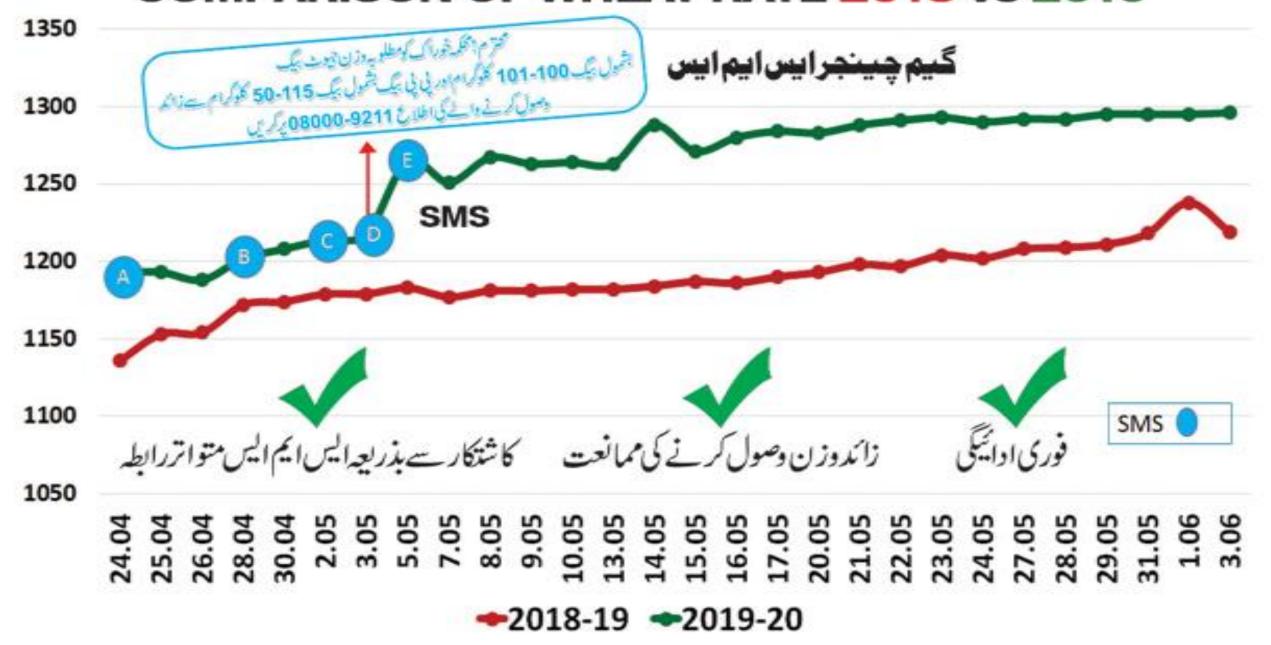
محكمه لائيوسٹاك اينڈ ڈىرى ڈويلىمنٹ جىكومت پنجاب







#### **COMPARISON OF WHEAT RATE 2018 vs 2019**



# 

محترم! آ کیکیگا وَں میں بار دانہ کے اجراء اورخریداری گندم شروع ہور ہی ہے ،جسکی اطلاع تما م کا شتکارو ل کوان کے فرا ہم کر دہ موبائل برکی جار ہی ہے ۔اس بابت تمام کا شتکار بھائیوں کو مزيدتا كيدكى درخواست بي-محكدكى رجنمائى نال فرى نمبر 921-08000 يركرس محكمه خوراك پنجاب

محتر م احصول باردانه کیلئے آپے موبائل نمبر پرایک سے زا کددرخواست وصول ہوئی ہے، فوری متعلقة سنٹر پر ریکارڈ تقید این کروائیں۔شکریڈ محکمہ خوراک پنجاب

28-4-19

محرم البناباردانه 29 اپریل کومتعلقه سنرسے وصول کریں۔ باردانه بحساب 8 بوری یا 16 تھیلے فی ایکڑ جاری کیا جائےگا۔ CDR بنام سنٹرانچارج بنوا کیں محكمه خوراك پنجاب

جن کا شتکار بھائیوں کا 10 ایکڑ رقبہ مختلف سینٹروں میں ہے وہ اپنابار دانہ متعلقہ سينظرول سے حاصل كر سكتے ہيں۔ محكمہ خوراك پنجاب

5-5-19

محترم! محكمه خوراك كومطلوبه وزن جيوٹ بيگ بشمول بيگ

100-100 كلوگرام اوريي يي

بيك بشمول بيك 115-50 كلو

لرام سے زائد وصول کرنے والے کی اطلاع

08000-9211 يركرين

19-4-19 باردانه کیلئے آ کی درخواست کی تصدیق کاعمل جاری ہے۔ محكمه خوراك پنجاب

19-4-19 محترم! باردانه کیلیے آپی پٹوارر بکارڈ کے کوائف تاکمل ہیں محكمة خوراك پنجاب

28-4-19

محترم! إني باردانه كى منظورشد و درخواست كى بابت ريكار دُا پني متعلقه استى آفس میں جمع کرائیں محکمہ خوراک پنجاب

2-0-2 محتر م کاشتکار بھائی اگرآپ کی گندم تیار ہے اور باردان شیڈول سے پہلے چاہئے تو متعلقہ مرکز خریداری گندم سے فوراً باردا نہ حاصل کر سکتے ہیں محکمہ خوراک پنجاب متعلقہ مرکز خریداری گندم سے فوراً باردا نہ حاصل کر سکتے ہیں محکمہ خوراک پنجاب

## THANK YOU

Q&A

- Ministry of National Food Security & Research (MNFS&R), Govt. of Pakistan
- Agricultural Census Organisation, Govt. of Pakistan
- Daily Price Report CSPM, Govt. of Pakistan
- Trade Development Authority of Pakistan, Govt. of Pakistan
- National Agromet Centre, Govt. of Pakistan
- Agribusiness Development and Diversification Project, Govt. of Pakistan
- Punjab Agricultural Research Board, Govt. of Pakistan
- Trading Corporation of Pakistan, Govt. of Pakistan
- Pakistan Agricultural Research Council, Govt. of Pakistan
- Planning Commission of Pakistan, Govt. of Pakistan
- National Drought Monitoring Centre, Govt. of Pakistan
- Agriculture Department, Govt. of The Punjab
- Journal of Agricultural Research, Govt. of The Punjab
- WTO Cell, Govt. of The Punjab
- Punjab Agriculture and Meat Company, Govt. of The Punjab
- Agriculture Department, Govt. of Sindh
- Agriculture Department, Govt. of KPK
- Agriculture Department, Govt. of Balochistan
- University of Arid Agriculture, Rawalpindi
- University of Agriculture, Faisalabad
   Nawaz Shaif Agriculture University, Multan
- Food & Agriculture Organization (FAO) UNO
- FAO Agriculture Marketing
- World Trade Organization (WTO)