

POST COVID OPPORTUNITIES IN AGRICULTURE

DR. MANASI PHADKE, 11TH SEPTEMBER 2020

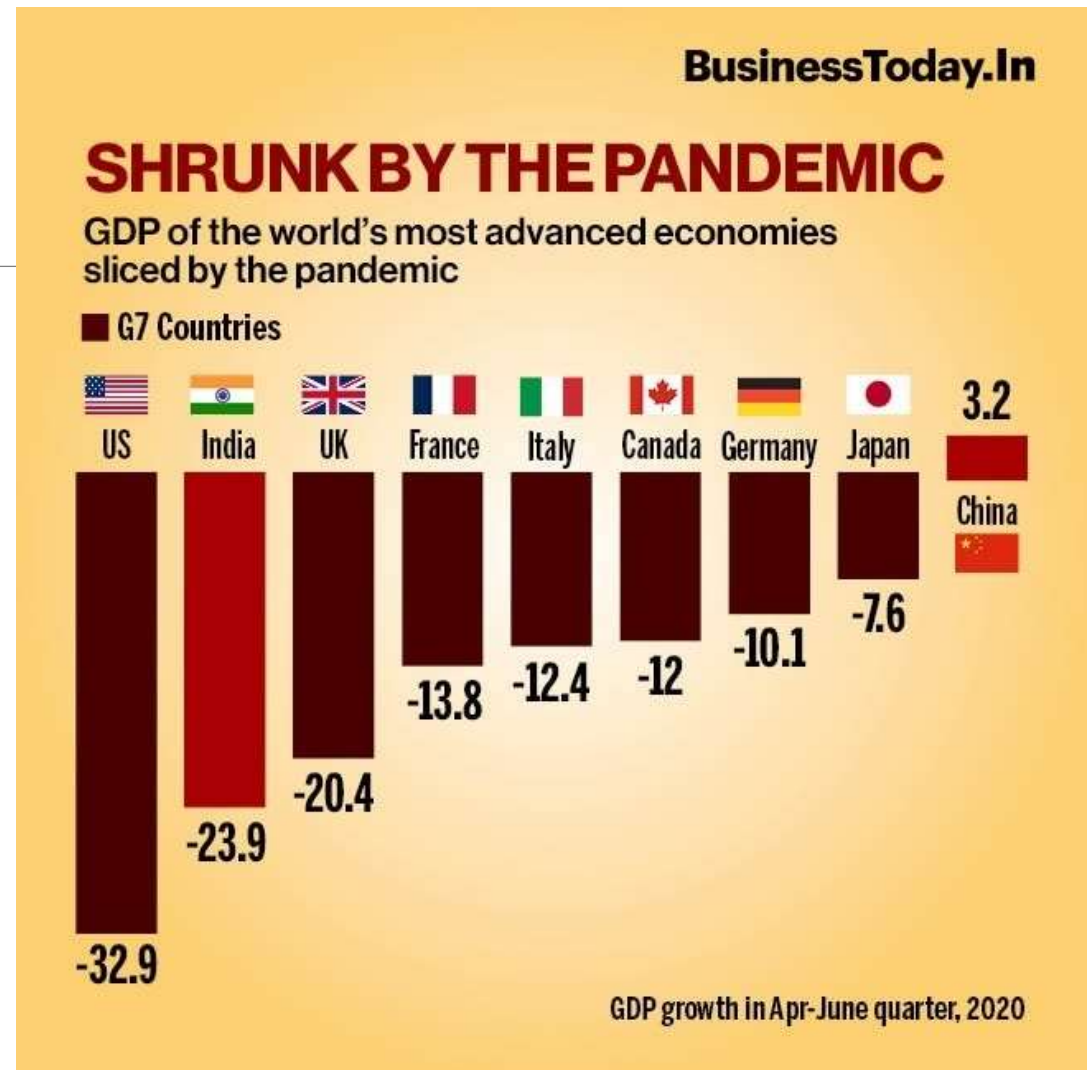


One of the sharpest declines in major economies

Q1 FY21 results are out

Indian GDP shrunk by 23.9%, one of the sharpest reductions in major economies across the globe

NSO data also tells us which exact sectors stand affected



Statement 1: Quarterly Estimates of GVA at Basic Prices in Q1 (April-June) of 2020-21
(at 2011-12 Prices)

(₹ in crore)

Industry	April-June (Q1)				
	2018-19	2019-20	2020-21	Percentage Change Over Previous Year	
				2019-20	2020-21
1. Agriculture, Forestry & Fishing	4,27,177	4,39,843	4,54,658	3.0	3.4
2. Mining & Quarrying	88,634	92,807	71,209	4.7	-23.3
3. Manufacturing	5,61,875	5,78,936	3,51,396	3.0	-39.3
4. Electricity, Gas, Water Supply & Other Utility Services	74,998	81,628	75,877	8.8	-7.0
5. Construction	2,49,913	2,62,828	1,30,750	5.2	-50.3
6. Trade, Hotels, Transport, Communication & Services related to Broadcasting	6,09,330	6,30,860	3,34,284	3.5	-47.0
7. Financial, Real Estate & Professional Services	7,57,850	8,03,322	7,60,491	6.0	-5.3
8. Public Administration, Defence & Other Services	3,87,589	4,17,483	3,74,656	7.7	-10.3
GVA at Basic Prices	31,57,366	33,07,707	25,53,320	4.8	-22.8

Agriculture was the only respite...

- Viewing GDP estimates from the sectoral perspective also instructive
- Consumption fell during lockdown
- Many daily workers lost their jobs, there were pay cuts in many industries
- Led to a slowdown in consumption of FMCG, consumer durables
- Led to a contraction in manufacturing, further lowering jobs, employment etc.
- Sharpest contraction in services led by construction and trade, hotels etc.
- Agriculture growth rate is the silver lining on the horizon
- This came on the back of a good Rabi season and excellent procurement facilities provided by the GOI

Agriculture: The Lone Warrior

- GDP contribution of agriculture is only 14% in FY20
- Shows steep fluctuations in the growth rate across time
- Agriculture is the main occupation for 42% of Indian population
- Characterized by very small holdings; average size of operational land holdings only at 1.08 ha
- 82% of farmers are small and marginal, owning less than 2 ha of land
- 4 sub-sectors of agriculture are horticulture and agriculture crops, livestock, forestry and fishery
- Horticulture and agriculture is the main segment within the sector, but allied activities very important
- Agriculture – Income, Livestock - Cashflow



Agriculture during Covid times

- Agriculture activities were not under the ambit of the lockdown – Agriculture labourers were allowed to harvest the fields
- In Maharashtra, the GoM launched the Covid Veg Initiative
- Nearly 2500 FPOs/ SHGs/ FGs were mobilized by the DoA to deliver fresh F&V to the doorstep of the consumer
- It was a win-win: Farmers managed to sell perishable crop and the customers managed to get farm-fresh, regular F&V supply at their door
- Interestingly, the Covid was a harbinger of a new marketing channel for farmers: Direct sales to retail consumers
- Post lockdown, the system has vanished, but leaves us with some points to ponder



What does agriculture@India need?

- We have smart farmers who have decoded production
- Successive Governments have relied more on subsidy support rather than critical capital investment in irrigation, power etc.
- Farmers need reliable inputs rather than subsidies
- Reliable power, seeds, fertilizers, pesticides to be given at the correct time
- They need good insurance schemes that cover them for the vagaries of the weather
- And they need good prices, discovered on MARKETS!

Markets – Contract farming

- Making farming **market-linked** is the dominant theme in agriculture economics today
- Rather than produce turmeric and then go searching for buyers, connect the buyers to the turmeric farmers
- Let the buyers suggest quality norms and train farmers on that
- Let the buyers provide seeds and package of practices, which the farmers agree on
- In other words, make **contract farming** possible!
- Recently, the GOI has passed an Ordinance allowing contracts – this is a good move for agriculture!



Markets – Warehousing and Logistics

- Suppose the farmer is not into contract farming. He produces wheat
- Lack of storage infrastructure at a decentralized level
- PACS godowns are at times unusable!
- Create spaces and cold stores
- Will the farmer store just because there is a godown in the vicinity?
- No! He needs immediate cash to pay off the money lenders
- So we need to create a system of getting him a loan based on what he has stored
- This is warehousing finance
- Today, if a farmer stores produce worth Rs.10 lakh in a godown, he gets a loan of Rs.8 lakh from a commercial bank or NBFCs based on the Warehousing Receipt



The traditional agri-markets of India

- Agriculture Produce Market Committees: Dominant marketing channel for agri produce in the country
- Farmer takes produce to the trader/ Arthiya in the mandi
- The Arthiya arranges for an “auction” – the wholesalers, retailers, food processors etc. bid for the produce
- However, led to monopsonistic environment with single traders becoming dominant
- Arthiyas also doubled as moneylenders, giving credit for personal consumption and for farm activities
- The system went against the interest of farmers
- Farmer share in retail price stuck at 30% for most perishable commodities



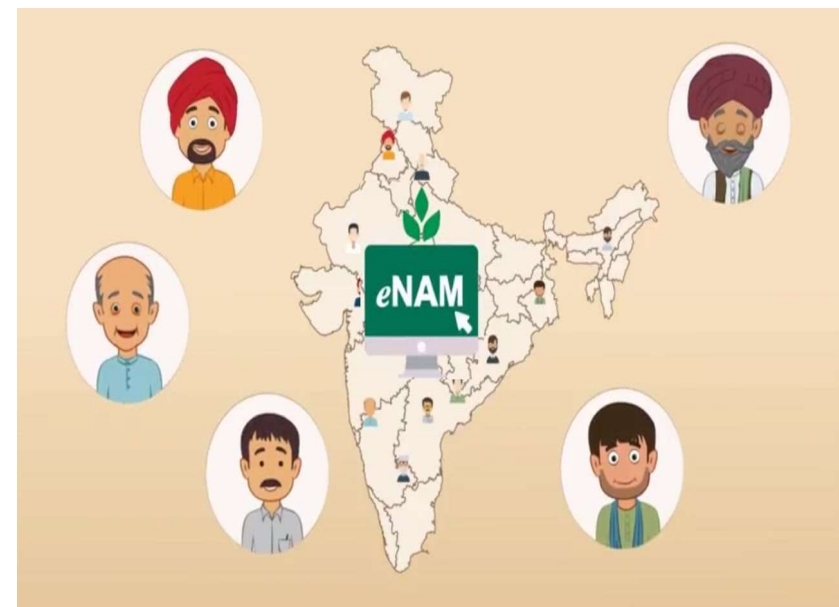
New Marketing Channels: Need of the day

- Usual marketing chain is lengthy: Tomato Farmer – Trader at Vashi market – Wholesalers in Azadpur – Retail markets at Delhi
- Can the farmer directly sell to wholesalers at Azadpur? Or even better, to retail markets?
- That will need 3 conditions:
 1. Legal Support: Government has to ALLOW farmers to sell outside the APMC mandi
 2. Infrastructure: Logistics and warehousing that allow tomatoes from Vashi to reach Azadpur
 3. Technology: B2B apps, quality assurance, cold storage etc.



Enabling Conditions

- GOI has introduced APMC reforms!
- APMC reforms – Farmers allowed to sell to ANYONE and ANYWHERE in the country
- Will a trader in MP be interested in buying 2 tons of onions from a marginal farmer in Maharashtra?
- Aggregation needed!
- GOI is supporting creation of 10000 FPOs in the country: That can create a good scale for operations
- How will the onion farmer come to know where best prices prevail?
- APMC mandis are now connected through the eNAM initiative – this helps the farmer in price discovery



Digital Agriculture

- As the country integrates into one NAM, there is now huge opportunity for infrastructure, logistics and warehousing! Let us see how..
- FPOs can sell their goods to traders in MP on eNAM
- But how does the trader in MP know whether the quality of onions sold is upto the mark?
- So, quality assurance technology is coming in rapidly!
- FPO aggregates the commodities, takes a photo and connects to an App
- The App scans the product for colour, size, irregularities in shape
- It can even scan for chemical composition of the produce!



Digital Agriculture

- Fritolays buys potatoes in March (low prices) and uses them through the year till next February
- Cold storage solutions are needed – sensors installed in cold storages inform warehouse manager about the temperature, humidity within the warehouse
- The new emerging norm is that quality records and storage solutions are to be created within 20 minutes of the produce reaching the warehouse
- Scope for automation/ robotics!



Ke dil abhi bharaa nahi? Insurance!

- Agri-insurance is another opportunity for tech
- How do you calculate loss? Crop Cutting Experiments (CCEs)
- DoA conducts 16 CCEs in a taluka
- If the yield of crop < yield averaged over past 5 years, entire taluka is said to have crop loss!
- PMFBY comes in and gives insurance!
- Now, the CCEs are manually conducted by a Committee – huge scope for manipulation
- ISRO – let us calculate the yields through RS imagery!



IOT

- Using RS “Indices”, we can predict the yield on ground
- Drones help to detect losses from localized calamities focussed in small areas
- RS predicts that crop growth in South West corner of the farm is stunted: Nitrogen needed
- This is directly connected to an App on an automated tractor
- Tractor auto-supplies nitrogen at the desired coordinates
- Welcome to the Internet of Things (IOT)!

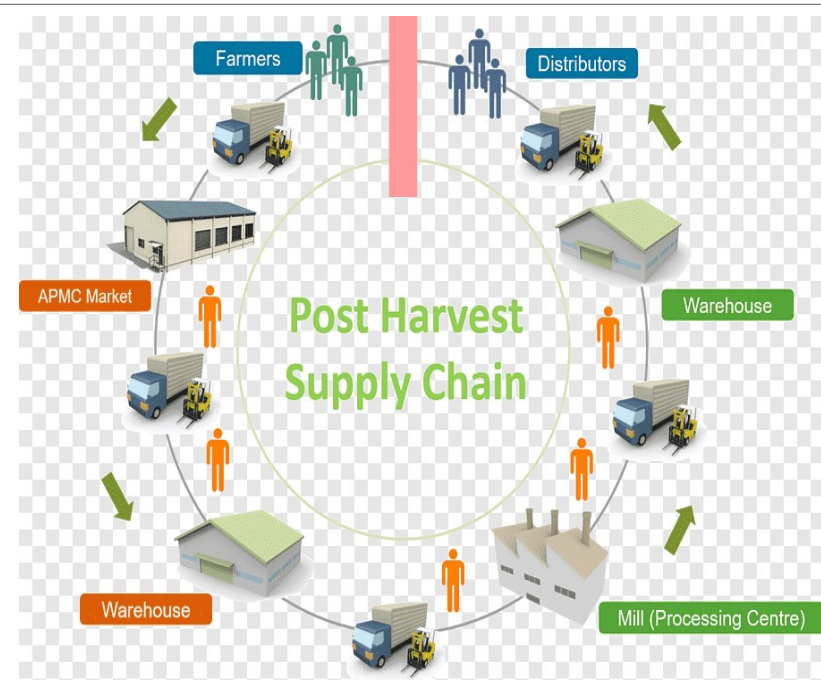


End to end digitization!



Can the boom be sustained?

- Covid has created opportunity
- Pre-Covid, presence of food items within organized retail was 5-8%.
- Post, it has increased to 12%
- Increased recognition that food safety-conscious consumers will demand food that has come through a quality conscious supply chains
- Hygiene factors in loading, unloading, packing, sorting, grading, handling can be enhanced through good practices and ensured through technology
- FPOs, agritech, presence of organized retail and consumers with last mile connect to quality conscious consumers can really make the segment fly



Going Ahead...

- Capital investment in agriculture needed – water, power to warehouses, roads to markets
- 50% of agritech startups feel that funding is still a major issue; better funding options for the industry needed
- Government can itself have a policy of working with startups
- FCI, CWC storages need to be modernized – preferential treatment can be given to startups
- Farming bank accounts to be seeded with Aadhar and 7/12 extracts: Will increase confidence of banking system in farming
- Agristack policy
- Responsible data
- Agriculture needs to be integrated with food policy
- We have to start thinking of **food eco-system** rather than focus only on agriculture



Thank you!

Dr. Manasi Phadke

manasi.phadke@gmail.com

www.manasiecon.wordpress.com

