

# Reaping the Profits in Indian Agri-Tech

{The trillion \$ market}

by using  
Technology

An Overview of **Startups**  
Maximising **the Output in**  
**Agriculture Sector**

Research Report  
January 2019



Farming is not just a job, it's a way of life





# WHAT IS AGRITECH AND WHAT ARE GOVT. OF INDIA'S INITIATIVES?



## “Agri-tech”



It is defined as a segment of companies  
“using technology”

in the field of agriculture leading to increase in productivity, efficiency and output



## “Agritech”

can be applied across the agricultural value chain  
and can be in the form of  
a product, a service or an application.



## Govt. of India's Initiatives

1. With Prime Minister's aim of doubling farmers income by 2022, agriculture technology could be a major driving force to achieve this aim. Further, Govt. of India offering multiple incentive scheme to support start-ups in agriculture and technology
2. Govt. of India is actively looking to partner “Bovine-tech Companies” for improving the productivity of Bovine population in India (currently it is very low i.e. 4.4 kg/day/animal)
3. Govt. of India is targeting to achieve 2% of world egg market trade through exports by 2022 and total poultry meat production target is set to 6.2 mn tonne (2022-23) from existing 3.26 mn tonne (2015-16)
4. Govt. of India has started the Blue Revolution to fully tap the total fish potential of the country both in the inland and the marine sector and triple the production by 2020



# TABLE OF CONTENT: WHAT WILL WE STUDY HERE?

01



## Crop Farming

- 
- 1.1 Agriculture Value Chain
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02



## Dairy Farming

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- 2.1 Dairy sector: Outlook
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  - 2.3 Dairy Sector Challenges
  - 2.4 Key Startups
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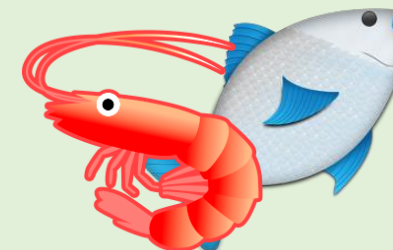
03



## Poultry Farming

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## Fishing Division

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# 01

# Agriculture



## Have a look

How Technology today impacts every aspect of “Agricultural Value Chain...!”

### Inputs / Knowledge



- Getting agriculture inputs directly on phone
- Weather forecast through weather app
- Decision support solutions for farmers like selling crops at right price
- Nutritional Management system
- AI based sowing advisory



### Harvesting & Transportation



- GSM mobile controlled motor
- Hi-tech irrigation system like drip, sprinkler etc.
- Auto Steering Tractors powered by GPS
- Crop counting Machines
- Machine-learning algorithms to differentiate between weeds and crops



### Processing and Storage



- Machine based ImageIN technology to sort based on color, size, type etc.
- Wireless sensor to monitor crops connected with smartphones
- Measuring grains moisture content



### Distribution, Packaging & Handling



- Web and mobile applications to sell directly farm products
- Price forecasting model to prevent inflation
- Dynamic Product Pricing
- Online marketplace for grain
- Using data to track a supply chain



# AGRICULTURE: WHAT WERE THE CHALLENGES BEING FACED BY INDIAN FARMERS?

## Key Challenges

### Small and fragmented land-holdings



Sub-division and fragmentation of the holdings is one of the main causes of our “low agricultural productivity and backward state” of our agriculture

### Scarcity of capital



Since the agriculturists’ capital is locked up in his lands and stocks, he is obliged to “borrow money at high rate of interest” for stimulating the tempo of agricultural production

### Irrigation Problem



Irrigation is the most important agricultural input in a tropical monsoon country like “India where rainfall is uncertain, unreliable and erratic”

### Lack of mechanisation



“Little or no use of machines is made” in ploughing, sowing, irrigating, thinning and pruning, weeding, harvesting threshing and transporting the crops. This is specially the case with small and marginal farmers

### Agricultural Marketing



The farmers have to “depend upon local traders and middlemen” for the disposal of their farm produce which is sold at throw-away price

### Inadequate Storage & Transport



Storage & Transport facilities in the rural areas are “either totally absent or grossly inadequate”. The farmers cannot carry their produce to the main market and are forced to sell it in the local market at low price



# AGRI STARTUPS IN INDIA: WHICH CHANGED THE FACE OF INDIAN AGRICULTURE...!



## 01 crofarm

- a) Brief: A F2B (Farm to Business) venture
- b) Founded in: 2016
- c) Headquarter: Bengaluru
- d) Founder: Prashant Jain & Varun Khurana

**Total Funding:** \$2 mn+

**Investors:**

Factor (E) Ventures, Rajan Anandan

## 02 cropin Innovating Fields

- a) Brief: Engaged in precision agriculture
- b) Founded in: 2010
- c) Headquarter: Bengaluru
- d) Founder: Krishna Kumar

**Total Funding:** \$4 mn+

**Investors:**

Beenext, Ankur Capital, Sophia Investment

## 03 Gold Farm

- a) Brief: Farm equipment aggregator
- b) Founded in: 2016
- c) Headquarter: Bengaluru
- d) Founder: Abhilash Thirupathy, Karthic

**Total Funding:** \$2 mn

**Investors:**

Mahindra & Mahindra and Infuse Ventures

## 04 ninjacart

- a) Brief: B2B agri marketing platform
- b) Founded in: 2015
- c) Headquarter: Bengaluru
- d) Founder: Thirukumaran Nagarajan, Vasudevan, Sharath Loganathan

**Total Funding:** \$8.5 mn

**Investors:**

Accel Partners, Qualcomm Ventures, M&S Partners, NRJN Trust

## 05 WAYCOOL FOODS AND PRODUCTS PVT LTD

- a) Brief: Omnichannel fresh produce distribution
- b) Founded in: 2015
- c) Headquarter: Chennai
- d) Founder: Karthik Jayaraman & Sanjay Dasari

**Total Funding:** \$2.7 mn

**Investors:** Aspada Investment

## 06 EMB3 Agri Services

- a) Brief: Farm mechanisation service Company
- b) Founded in: 2014
- c) Headquarter: Noida
- d) Founder: Rohtas Mal and Adwitiya Mal

**Total Funding:** \$13.3 mn

**Investors:**

Aspada Investments and Global Innovation Fund (GIF)

## 07 FarmLink

- a) Brief: Supplier of value-added fresh produce
- b) Founded in: 2014
- c) Headquarter: Mumbai
- d) Founder: Akshaya Kamath and Sreeram Chellappa

**Total Funding:** \$3 mn

**Investors:**

Pioneering Ventures, Syngenta

## 08 Gramco Infrotech The Rural Company

- a) Brief: Cold chain technology Company
- b) Founded in: 2010
- c) Headquarter: Indore
- d) Founder: Raman Singh Saluja

**Total Funding:** \$2.3 mn

**Investors:**

The Samridhi Fund

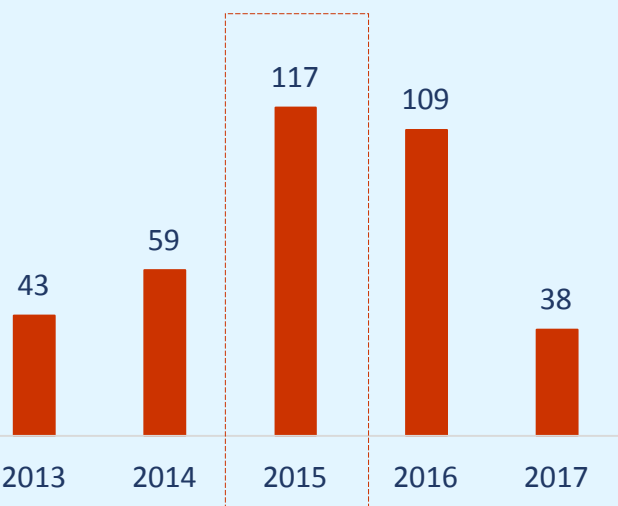
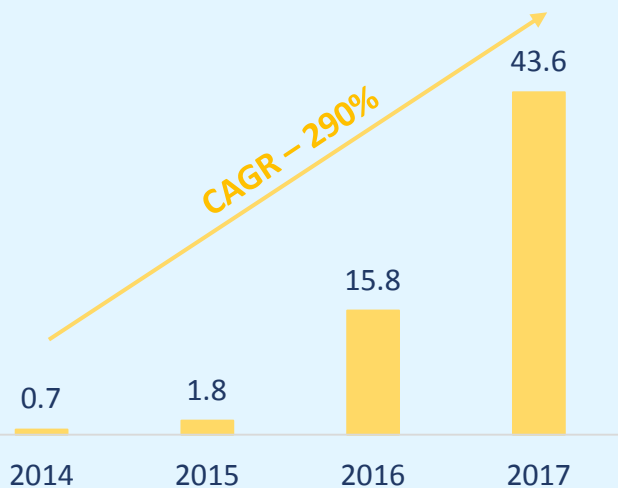
Source: Research

**Note:** These are some few well funded startups





# AGRI INVESTMENTS: STARTUPS STARTED, AMOUNT INVESTED AND SOLUTIONS OFFERINGS...



## Agri-Tech Offering High End Solutions

### Big Data

Data is important in the agricultural industry to root out inefficiencies

- Farm Management Solutions
- CRM & Input Channel solution
- Risk mitigation & forecasting

### Market Linkage Model

Marketplaces help farmers to create standards in produce and keep them informed

- Real time Solutions for farmers
- Agri Inputs market platform
- Agricultural information
- Farm to fork supply chain

### Farming as a Service

Helping farmers with solutions for efficient farming

- Digital Payments
- Market Pricing
- On demand harvesting
- Machinery platform

### IOT Enabled Technology

Leveraging IoT for precision agriculture, remote monitoring and tracking

- Vertical farming monitoring
- Hydroponic farming ecosystem
- Aeroponics system for smart farming

**TRANSJOVAN CAPITAL**

BOARD ADVISORY | CORPORATE FINANCE | STRATEGY

Source: Research



| 02 |

# Dairy



Feed production



Production



Transport



Processing



Packaging



Distribution

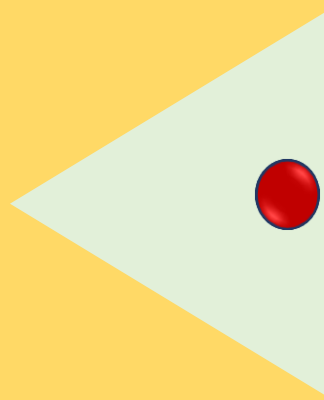
Farm to Table:  
The Dairy Supply Chain



Retail



Consumer





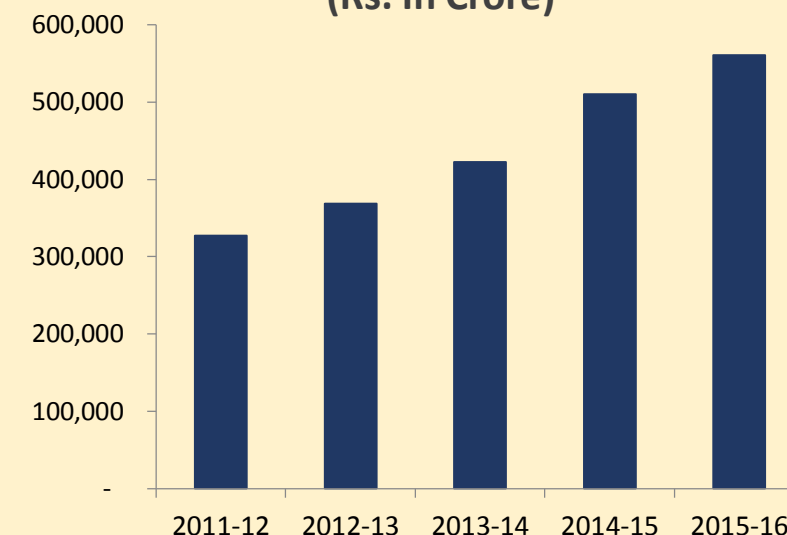


# DAIRY SECTOR IN INDIA – AN OVERVIEW

## Milk Production – Share in GDP

INDICATORS	2012-13	2013-14	2014-15	2015-16	2016-17 (F)
Share of Agriculture & Allied Activities in GDP	17.8%	17.5%	16.3%	15.3%	14.8%
Growth in Agriculture & Allied Activities	1.5%	4.2%	-0.2%	1.1%	4.1%
Milk Production (Mn Ton)	132.4	137.7	146.3	155.5	163.7
Value of milk produced (Rs.Trillion)	3.4	3.5	3.7	4.1	4.3
Share of milk in GDP	3.6%	3.5%	3.5%	3.6%	3.5%

## Contribution of Livestock in GVA (Rs. In Crore)



Source : National Accounts Statistics-2016

\*\*\*  
As per FAO  
2011 estimates

"If \$ 1 invested today"

Expected Return

\$2.9

If Invested in  
"Manufacturing  
& services"

\$3.6

If Invested in  
"Agriculture  
Sector"

\$4.7

If Invested in  
"Livestock  
Sector"

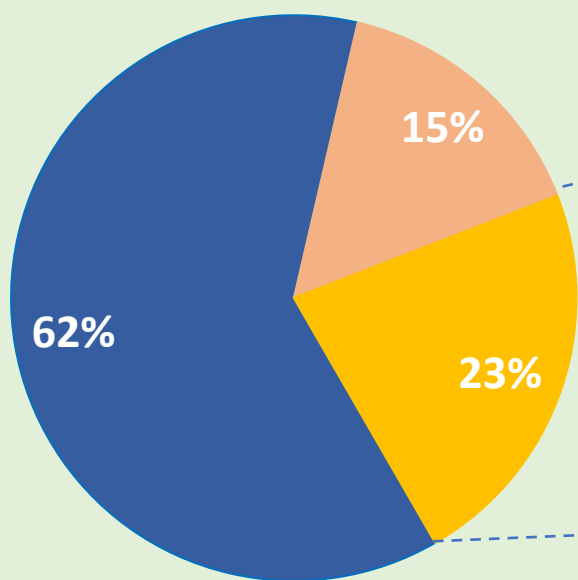
The combined value of  
milk produced  
is  
more than wheat and  
rice put together  
by more than **37%**

Contribution of livestock  
sector to  
Agriculture GVA has  
doubled in the period  
1980-2016  
"from 14% to 27%"



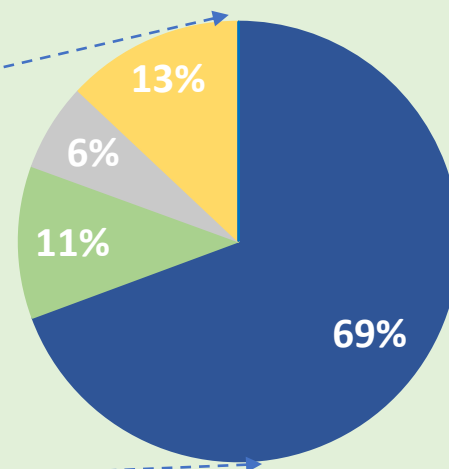
# DAIRY SECTOR IN INDIA - HOW CRITICAL THE SECTOR IS IN TERMS OF PROTEIN CONSUMPTION?

Protein availability for consumption in India for the year 2013



■ Cereal ■ Pulse ■ Animal

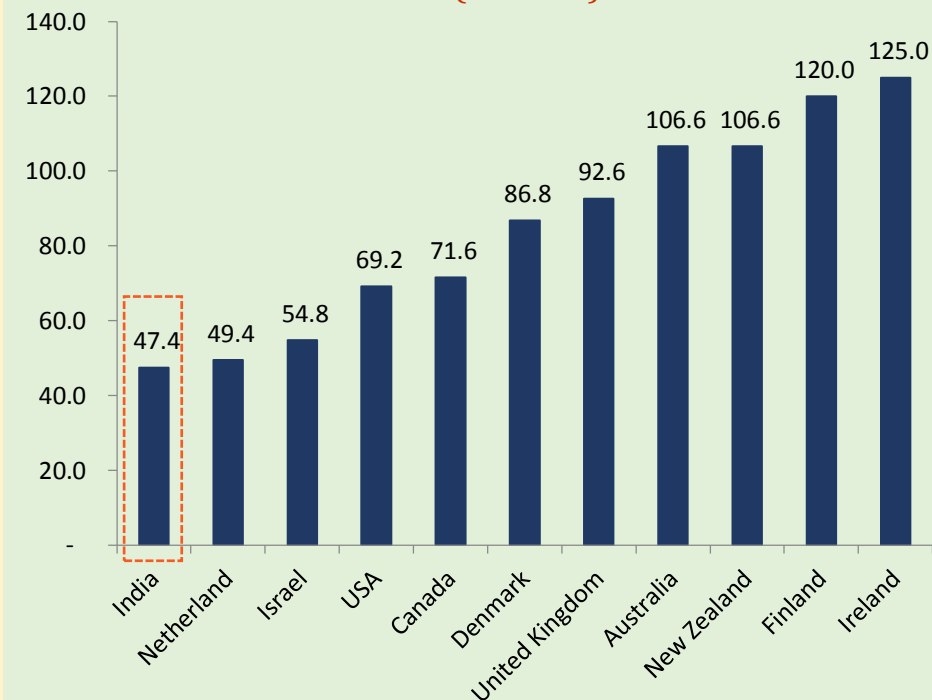
Breakup of Animal protein consumption in India for the year 2013



■ Milk ■ Meat ■ Egg ■ Fish

From the above pie chart, it can be understood that after Cereal the main source of protein for consumption is from Animal in India and mostly of which is consumed in the form of Milk (i.e. 69%) and rest is from meat, egg and fish.

Per Capita consumption of milk worldwide in 2016 (in liters)



Though, Milk is the main source of protein consumption in India after Cereal but its per capita consumption is still very less (viz 47.4 ltr). However, with the help of genetic improvement of animal the milk production and productivity can be increased resulting in increase in per capita consumption



# WHAT ARE THE CHALLENGES FACED BY DAIRY SECTOR IN INDIA?



Problems faced by different stakeholders...!

01

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03

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## Breeders



**Traditional method** of identification, introgression and propagation of genetics are used by the Breeders.

## Farmers



**Shortage of green fodder** and feed concentrate is the root cause of poor performance of dairy sector.

Milk production potential of crossbred cow could not be exploited fully in absence of proper nutrition

## Processing Unit



For providing processed foods to the consumers, the main constraints for the processing unit is to get **good quality milk** from the farmers

## Consumers



Low availability of good quality milk  
Branded processed milk not available in every area

Consumers are very price sensitive and seek quality milk at low price, which is non-existent



# DAIRY STARTUPS IN INDIA: CHANGING THE FACE OF INDIAN DAIRY SECTOR...!



01



- a) Brief: Agriculture dairy products startup
- b) Founded in: 2009
- c) Headquarter: Odisha
- d) Founder: SriKumar Misra

**Total Funding:** \$23 mn +  
**Investors:**

- Aavishkaar Venture Capital
- Eight Roads Venture
- Neev Fund

02



- a) Brief: Largest Dairy IOT Company
- b) Founded in: 2011
- c) Headquarter: Bengaluru
- d) Founders: Jinesh Shah, Praveen Nale, + 5 more

**Total Funding:** \$14 mn  
**Investors:**

- Binny Bansal
- Venture Highway
- Omnivore
- Bill & Melinda gates

03



- a) Brief: End to End supply chain
- b) Founded in: 2015
- c) Headquarter: Maharashtra
- d) COO: Gaurav Haran

**Total Funding:** \$4 mn +  
**Investors:**

- Pioneering Ventures
- Schreiber Foods

04



- a) Brief: Milktech delivery startup
- b) Founded in: 2015
- c) Headquarter: Gurugram, Haryana
- d) Founders: Anant Goel, Anurag Jain, Ashish Goel + 2 more

**Total Funding:** \$19 mn +  
**Investors:**

- BEENEXT
- Mayfield Fund
- Kalaari Capital
- Blume Ventures
- Unilever Ventures

Source: Research

**Note:** These are some few well funded startups, can see more startups in this sector to address this sector's problems

05



- a) Brief: Online Milk delivery startup
- b) Founded in: 2014
- c) Headquarter: Bengaluru
- d) Founders: Aakash Agrawal, Ebrahim Akbari

**Total Funding:** \$2 mn +  
**Investors:**

Omnivore Partners and Tom Varkey

06



- a) Brief: Milk aggregator from dairy farmers
- b) Founded in: 2017
- c) Headquarter: Mumbai, Maharashtra
- d) Founder: Sarad Garodia

**Total Funding:** 4 Crores  
**Investors:**

Mahendra Mehta



# | 03 | Poultry |



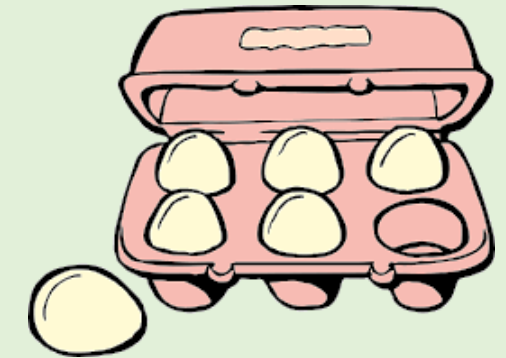
**Poultry: How it's shaping the growth of Indian Economy....!**



**Broilers  
Production**



**Layer (Eggs)  
Production**



**3<sup>rd</sup>** India's rank in Broiler  
Meat Production

**2<sup>nd</sup>** India's rank in Egg  
Production

01

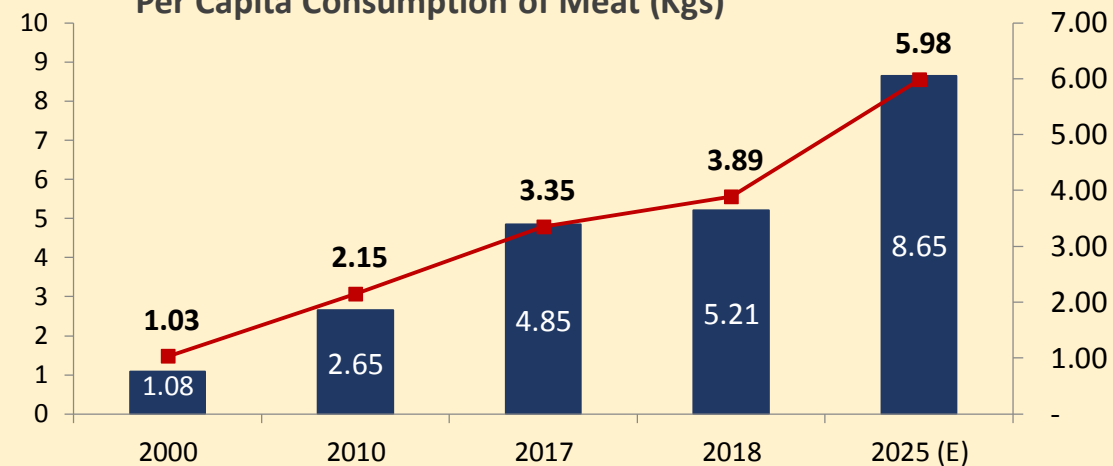


**Broilers**

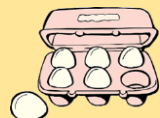
**Market Size**  
**INR 730 billion**



**Broilers Meat Gross Consumption (Mn MT)**  
**Per Capita Consumption of Meat (Kgs)**



02

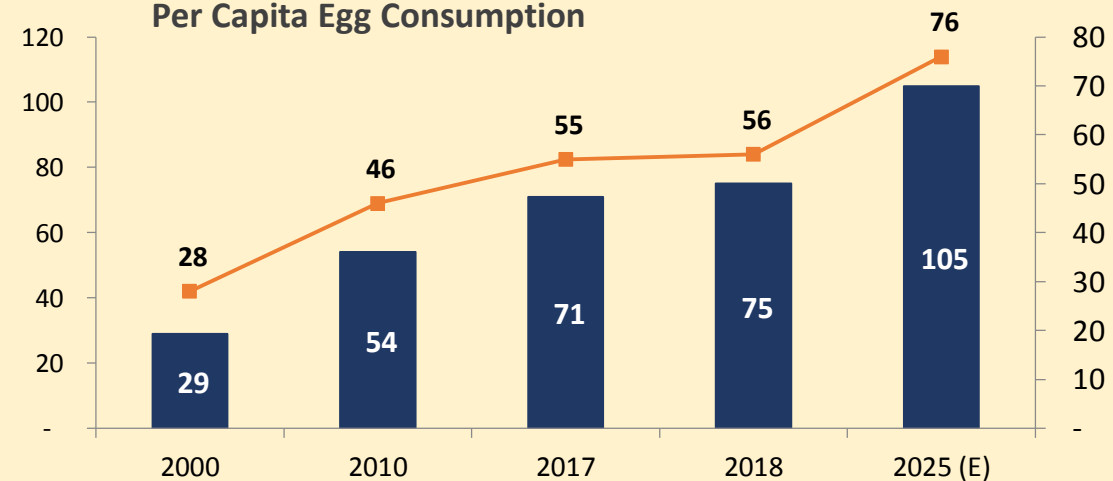


**Layer (Egg)**

**Market Size**  
**INR 420 billion**



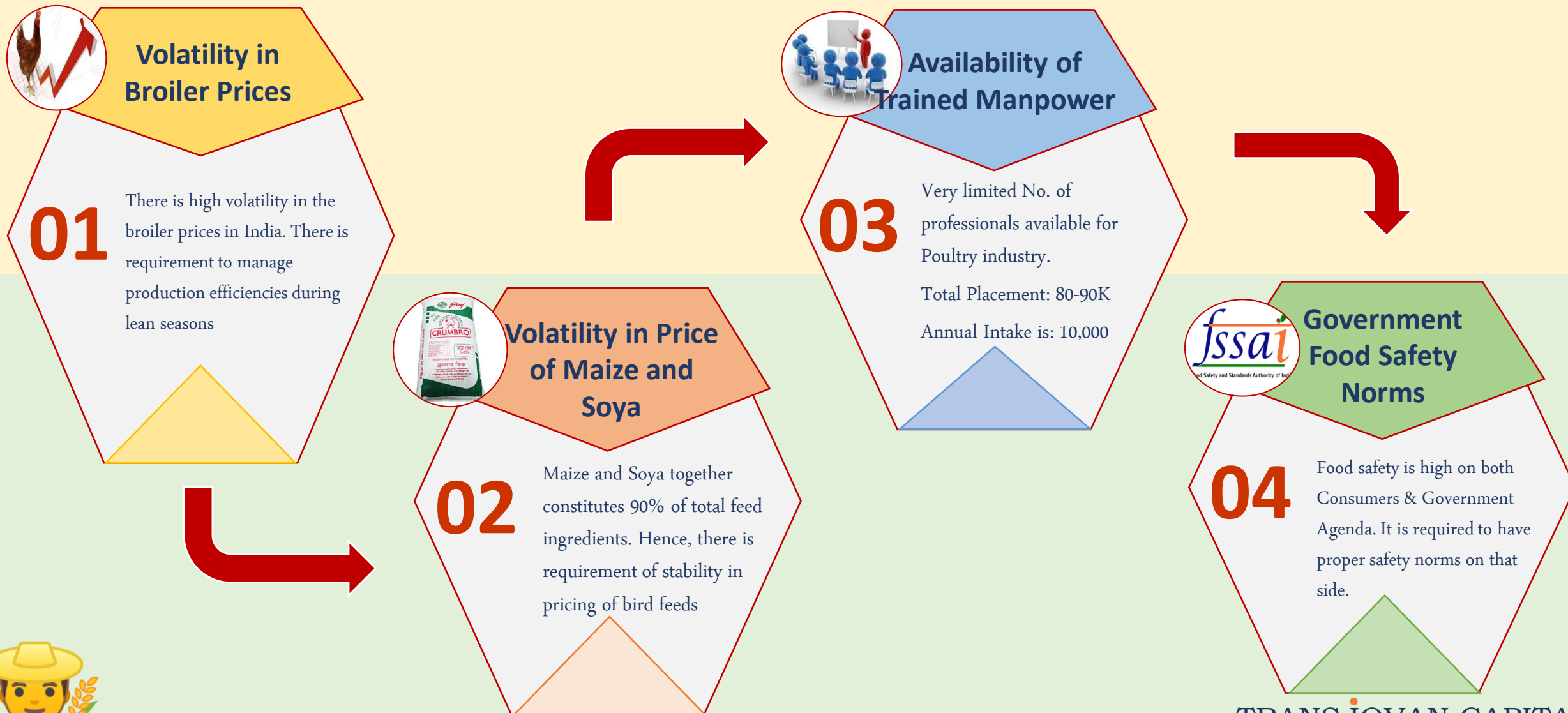
**Layer Egg Consumption in Billion**  
**Per Capita Egg Consumption**







# POULTRY: WHAT ARE THE CHALLENGES IN THIS SECTOR?



01



Licious operates a web-based meat delivery service designed to serve meat-lovers. The Company's service processes and packs fresh chicken, lamb and seafood products as well as meat based products (spreads, soups and pickles).

### Funding



### Features



### Lead Investors:

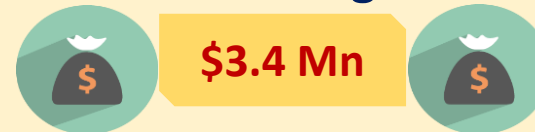
Mayfield Fund, Vertex Ventures, Bertelsmann, 3One4 Capital & UCLA Investment Company

02



ZappFresh is a spunky new food brand determined to change the face of fresh meat supply in India forever. Be it the hygiene of the farm and the stock, the chopping room, the packaging, the certifications or the actual delivery.

### Funding



### Features



### Lead Investors:

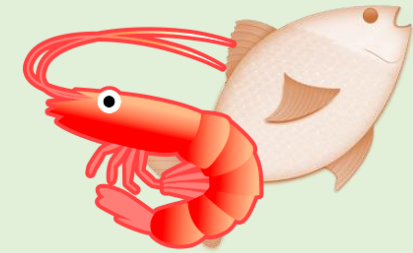
SIDBI Venture Capital and Amit Burman

Source: Company Website

04

**Aqua**

(Fishery Division)

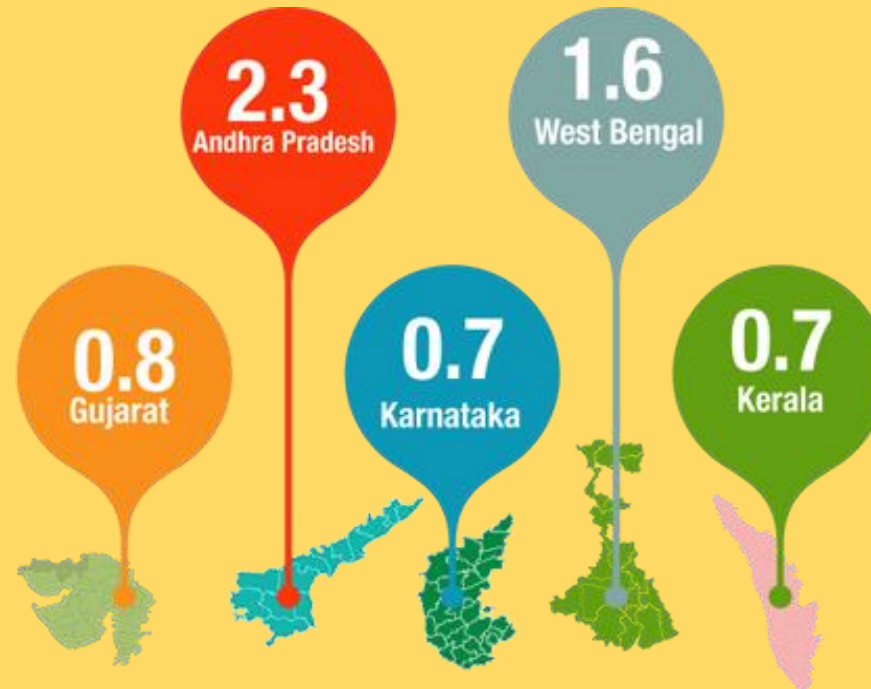


**Top 5**

**Fish Production States**

**in India**

(Figures in Mn MT)



## India ranks #2 in Fish Production

India recorded an average annual growth of 14.8% in production of fish and fish products in the last decade, as compared to the global average of 7.5% in the last decade



India



14.8%



Global

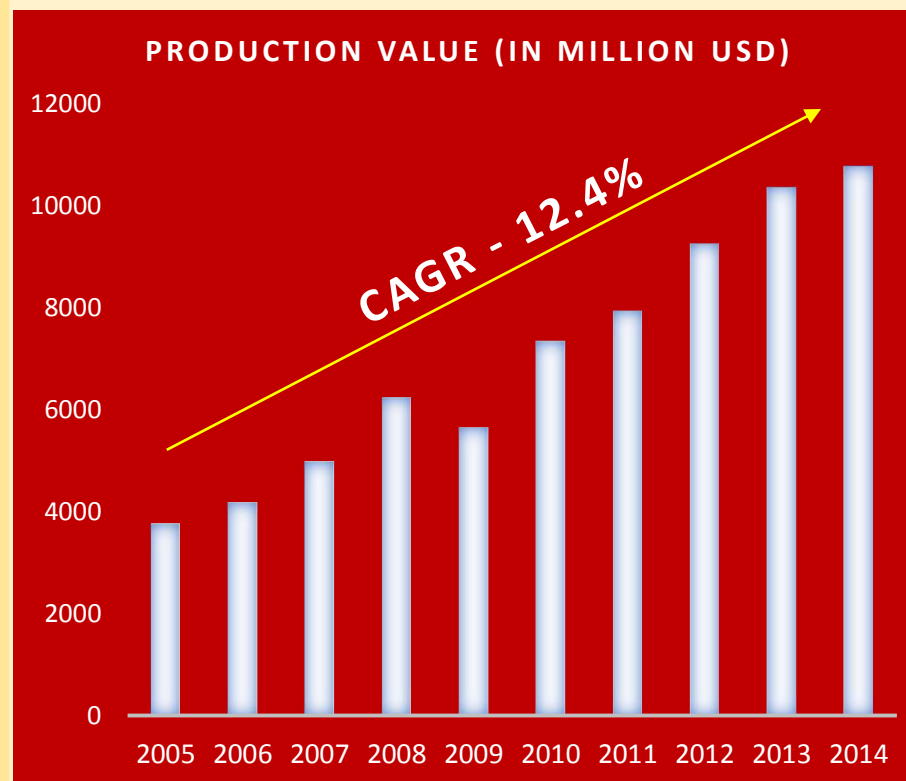


7.5%

Growth  
(Last 10 years)

Source: Seafoodsource.com

## Rising Aquaculture Production



Source: Statista.com

## Challenges that can be converted into Opportunities



Low Feed Quality



Poor Post Harvest Infrastructure



Inefficient Administration



# FISHERY DIVISION: EMERGING STARTUPS IN INDIA



★ Well Established  
Company

**Started in 1993**

- Avanti Feeds is the leading manufacturer of Prawn and Fish Feeds and Shrimp Processor and Exporter from India
- Avanti Feeds Limited has established joint venture with Thai Union Frozen Products PCL., the world's largest seafood processors
- They also guide the farmers in Seed Selection, Culture Practices through Qualified and Experienced Technical staff



**Started in 2017**

- Aqua Connect offers a real-time tech-based farm-monitoring solution, consultations and aquaculture expertise, and export market access to coastal farmers.
- It organises the entire value chain from hatcheries (that breed shrimps) to ponds to the marketplace.
- The farmers are connected with vendors and suppliers, farm input manufacturers and exporters.

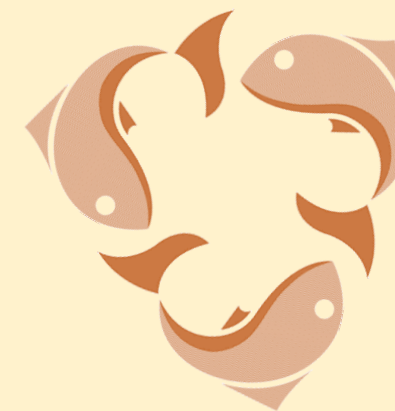


## INTENSAQUATICA

**Started in 2015**

**Total Funding Amount : \$ 372,000**

- Intensaquatica Total Private Limited develops and offers technology solutions to increase yield from fish farms through intensive farming
- Angel investor Sharad Sharma has invested Rs 25 lakh in Intensaquatica



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For any business inquiries, you may email at: [info@transjovancap.com](mailto:info@transjovancap.com)

## Contact Us

TRANSJOVAN CAPITAL ADVISORS LLP

Level-2, Elegance Tower

Mathura Road

Jasola

New Delhi – 110 025

India

Website: [www.transjovancap.com](http://www.transjovancap.com)

Transaction Team:

Should you require any clarifications, do feel free to get in touch with:

Gaurav Asthana	Managing Partner	<a href="mailto:gaurava@transjovancap.com">gaurava@transjovancap.com</a>
Bharat Mishra	Associate	<a href="mailto:bharatm@transjovancap.com">bharatm@transjovancap.com</a>
Debjit Krishnan	Analyst	<a href="mailto:debjitr@transjovancap.com">debjitr@transjovancap.com</a>
Rachit Kapoor	Analyst	<a href="mailto:rachitr@transjovancap.com">rachitr@transjovancap.com</a>

