Poultry Industry in India

Selvan Kannan
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Barneveld

Agenda

- Indian economy overview
- Broiler market overview
- Layer market overview

India at a glance…

Unique profile

- **$2T** economy, 10 yrs behind **China**
- Consumption, domestic, services driven
- **Entrepreneurial,** family-owned businesses, unorganized
- **Wide disparities** (socio-economic, rural-urban, states)

Stronger macro-economic fundamentals
(vs historical, vs EM)

- **Fastest growing large economy** (7-8%)
- **Improving macro indicators** (fiscal, inflation, forex)
- **Investments, M&A** on rise (FDI, FII, PE, VC)

Mega trends

- **Demographics** & rising middle-class
- **Human capital**
- **Urbanization, infra**
- **Digital** disruptions
- **Federalism,** rise of progressive states

Political context

- **Vibrant democracy**: Single party govt from 2014 (lacks Upper House majority)
- **Reforms** back in focus (Ease of business, Make in India, Start-up India, Skill India, Land/Labor reforms); Big bet on Modi

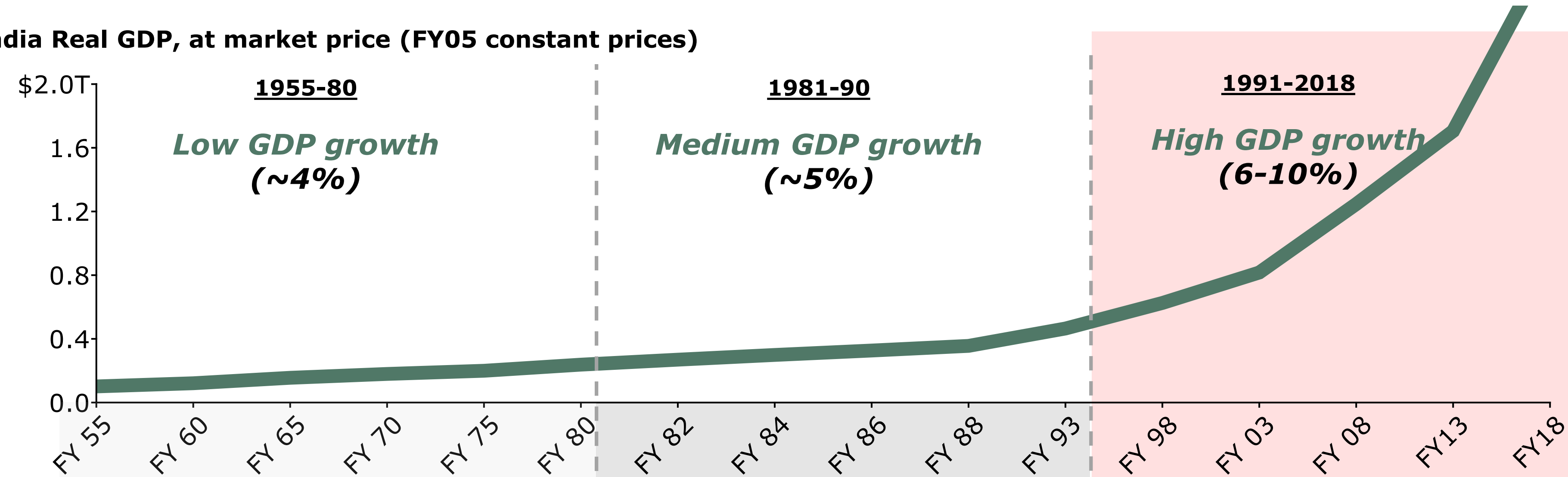
Current 'disruptions'

- **GST**: Unified, simple indirect tax regime driving GDP up by 100-150bps
- **Demonetization**: 50-100 dip in GDP in short-term; long-term growth intact

- **Attractive economic outlook (7-8% annual); #1 priority is employment, inclusive growth**
- **MNCs have won in India, but by following India-specific formula**
- **Key risks: Reforms delay, lower global priority for investments, global shocks (e.g. oil price)**

India is a ~$2T economy - Attained a high growth rate with a vibrant and world's largest democracy…

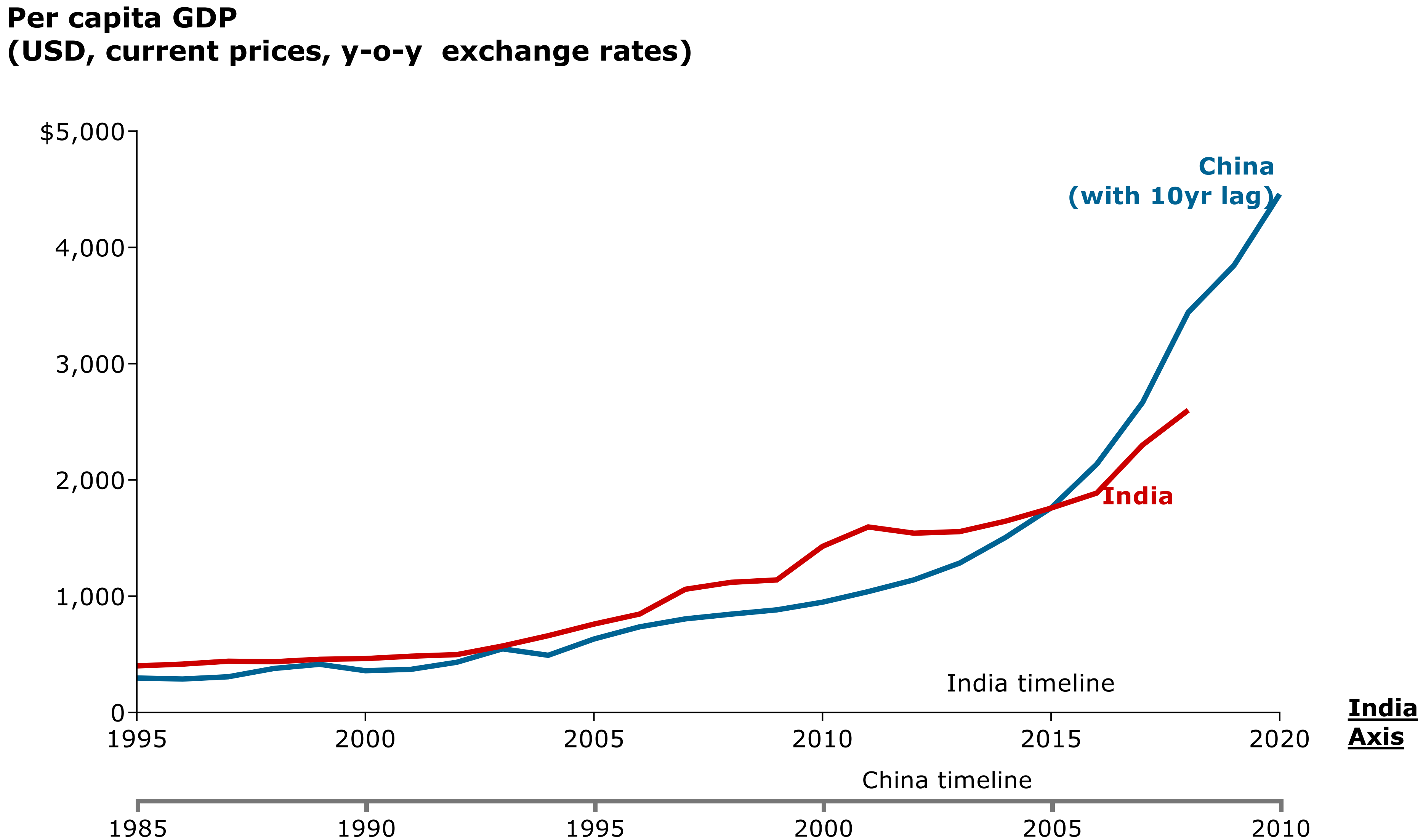
India Real GDP, at market price (FY05 constant prices)



	1955-80	1981-90	1991-2018
Economic situation	• **GDP/Capita**: $262 (FY55), $358 (FY80) • **Nationalization** of industries with socialist focus	• **GDP/Capita:** $374 (FY81), $503 (FY90) • Light reforms • Reduction in state control	• **GDP/Capita:** $520 (FY91), ~$2400 (FY18) • **Economic liberalization** (foreign investments, Privatization, tax reforms)
Political situation	• **Independence in 1947** • **Parliamentary democracy** • **Wars** with China and Pakistan	• **Congress party rule** for most part of the decade	• **War** with Pakistan in 1999 • **Coalition governments** at the center until FY14 • **Single party majority government** from May '14

Source: RBI database; Lit. search;

…and following the same trajectory as China, with a lag of 10 yrs

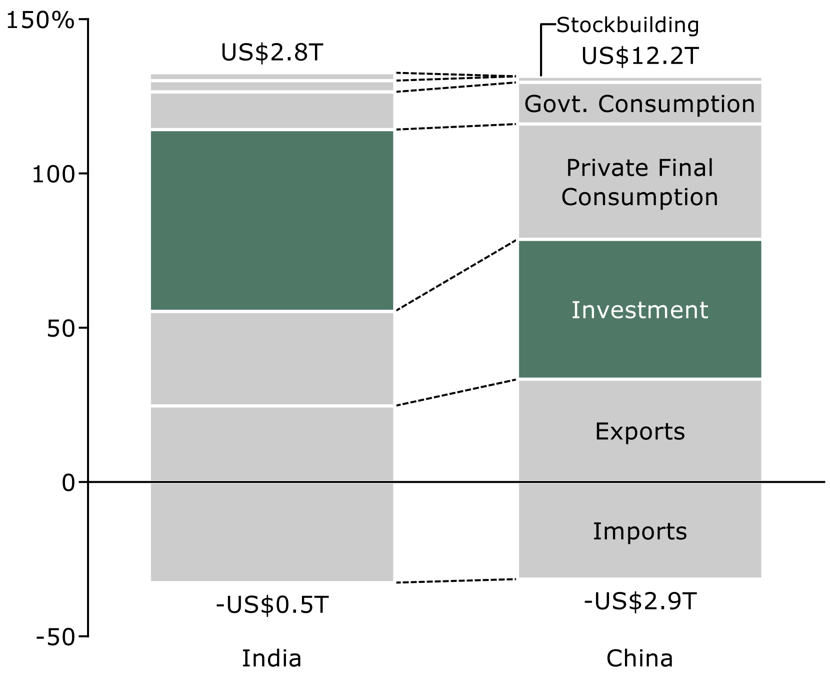


Source: Euromonitor, "The past, present and future of China's automotive industry" by Edinburgh Research Explorer; Business Monitor International; China Association of Automobile Manufacturers; Lit Search;

India profile is different to China with a focus on domestic consumption and a growing workforce to sustain GDP growth

DOMESTIC, CONSUMPTION FOCUS

Real GDP by component (FY18, US$T)



Note: Real GDP calculated by adding GDP components
Source: World bank: RBI; Euromonitor; TRAI

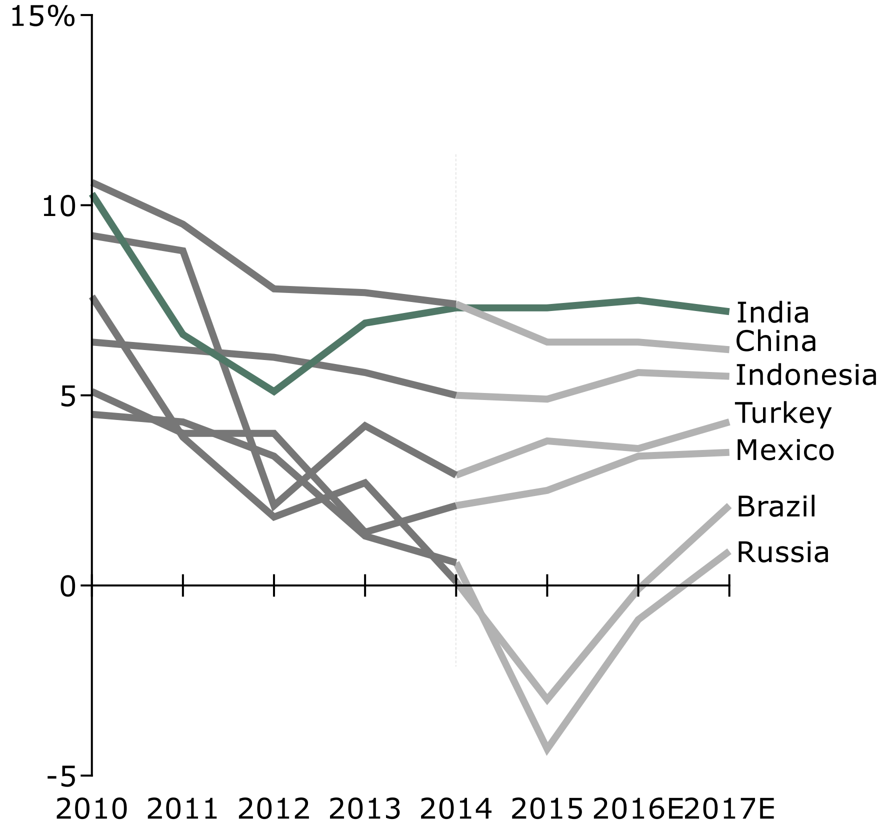
LARGE GROWING WORKING POPULATION

	India	China
Government	Federal **democracy**: Significant power with states	Single party communist state
% Working age (Additions '13-30)	66% (**~200M)**	73% (-19M)
GDP & GDP per capita (2015)	\$2.8T/~\$2,400	\$12T/~\$6400
% Rural population (2030F)	67% (60%)	45% (31%)
Nature of businesses	• Unorganized • SMEs • ~60% family-owned businesses	• SOE • Significant presence of MNCs • Large set of first generation businesses

India has performed and held up well in recent past

INDIA OVERTOOK CHINA IN GROWTH IN 2015

Real GDP Growth Rates (CY)



INDIA HAS SHOWN IMPROVING MACRO TRENDS OVER LAST 5-10 YEARS

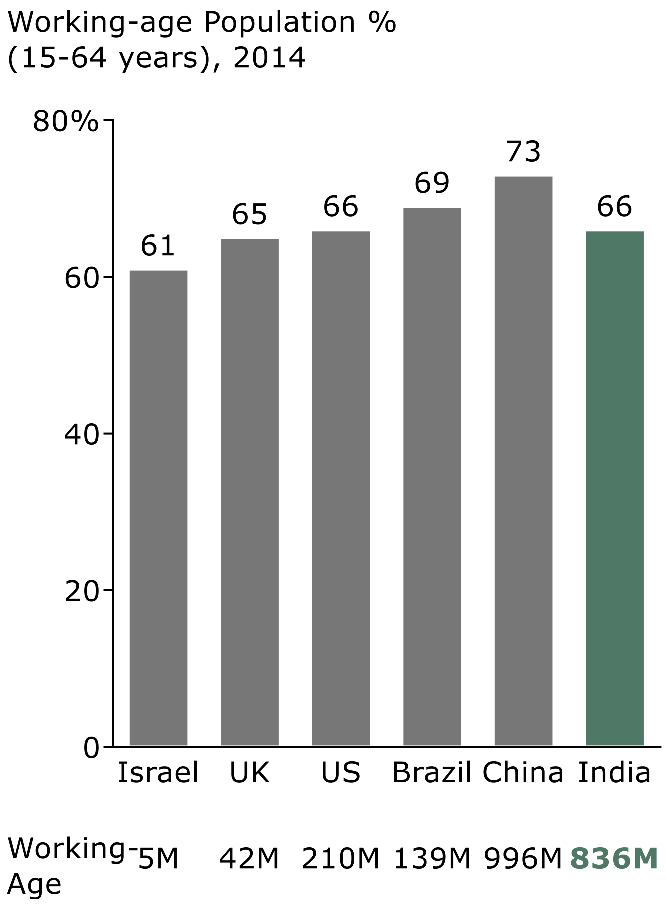
	Historical	Current
Fiscal deficit (% of GDP)	**FY10:** 6.5%	**FY16:** 3.9% **FY17E:** 3.5%
Current account (% of GDP)	**FY12:** 6.3%	**FY16:** 1.4%
Government debt (% of GDP)	**FY12:** 69%	**FY15:** 69%
CPI y-o-y	**FY12:** ~8%	**FY16:** 5%
Forex Reserves ($)	**FY05:** ~100B	**Oct'16:**~360B
INR/USD	**Jan'15:** 62	**Dec'16:** 68

Source: IMF; EIU; Bloomberg; RBI; Euromonitor

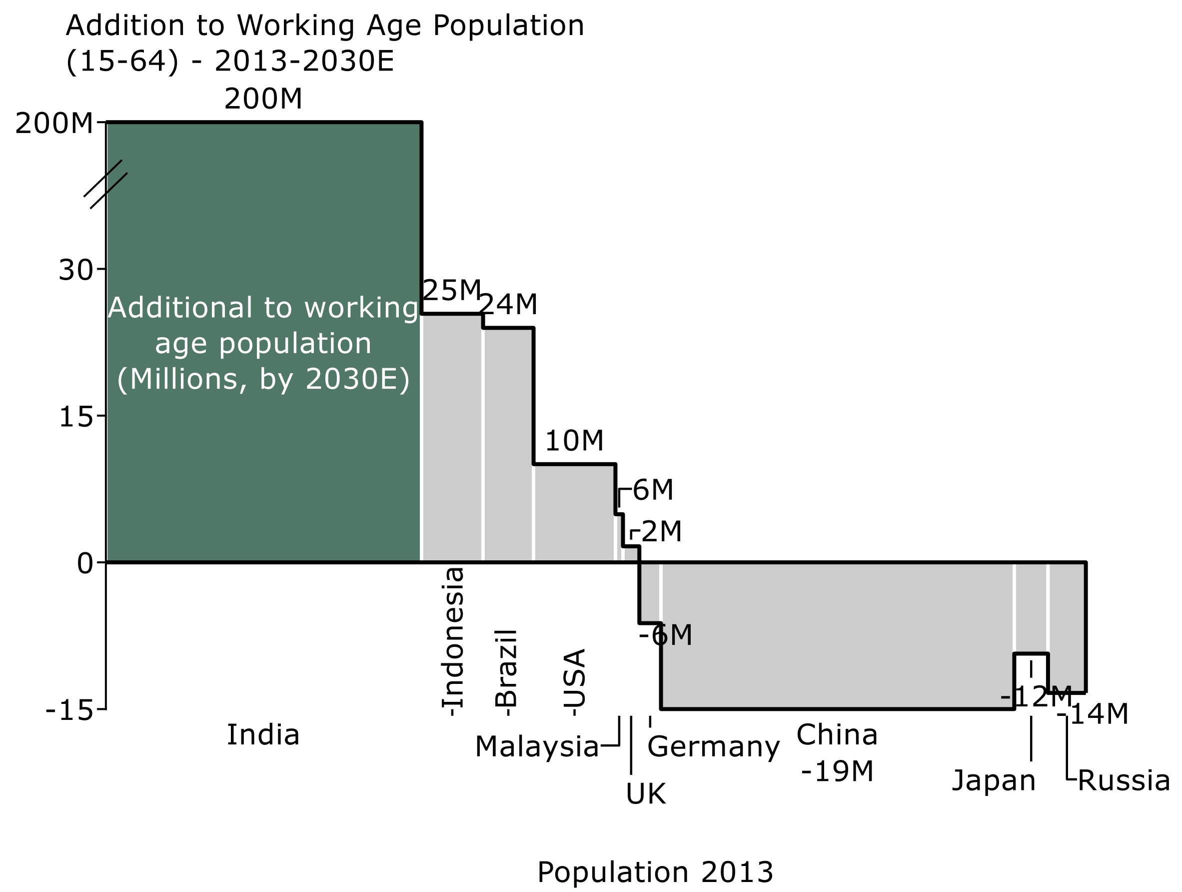
India is expected to add several times more working age population than major countries combined by 2030

AT ~850M, INDIA HAD ONE OF THE HIGHEST WORKING-AGE POPULATIONS IN 2014; EXPECTED TO ADD ~200M BETWEEN 2013 AND 2020, MORE THAN ALL MAJOR COUNTRIES COMBINED

Working-age Population % (15-64 years), 2014



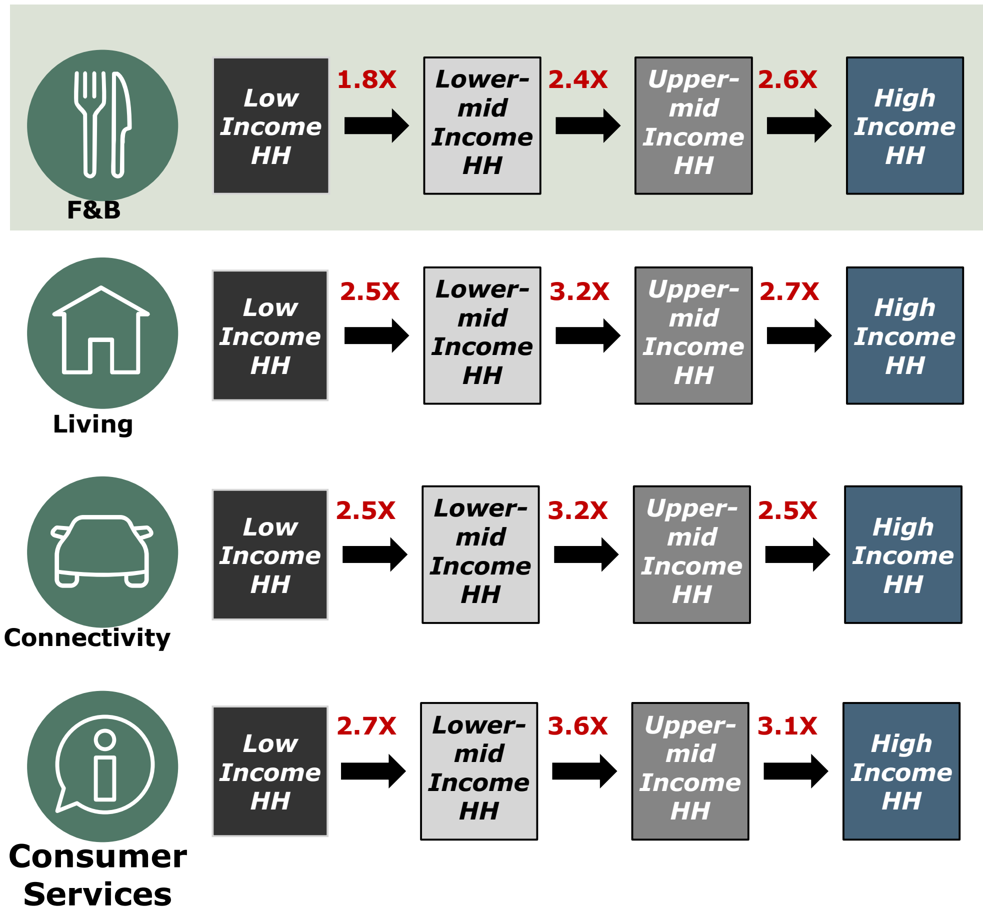
Addition to working age population (15-64 years) from 2013 to 2030E



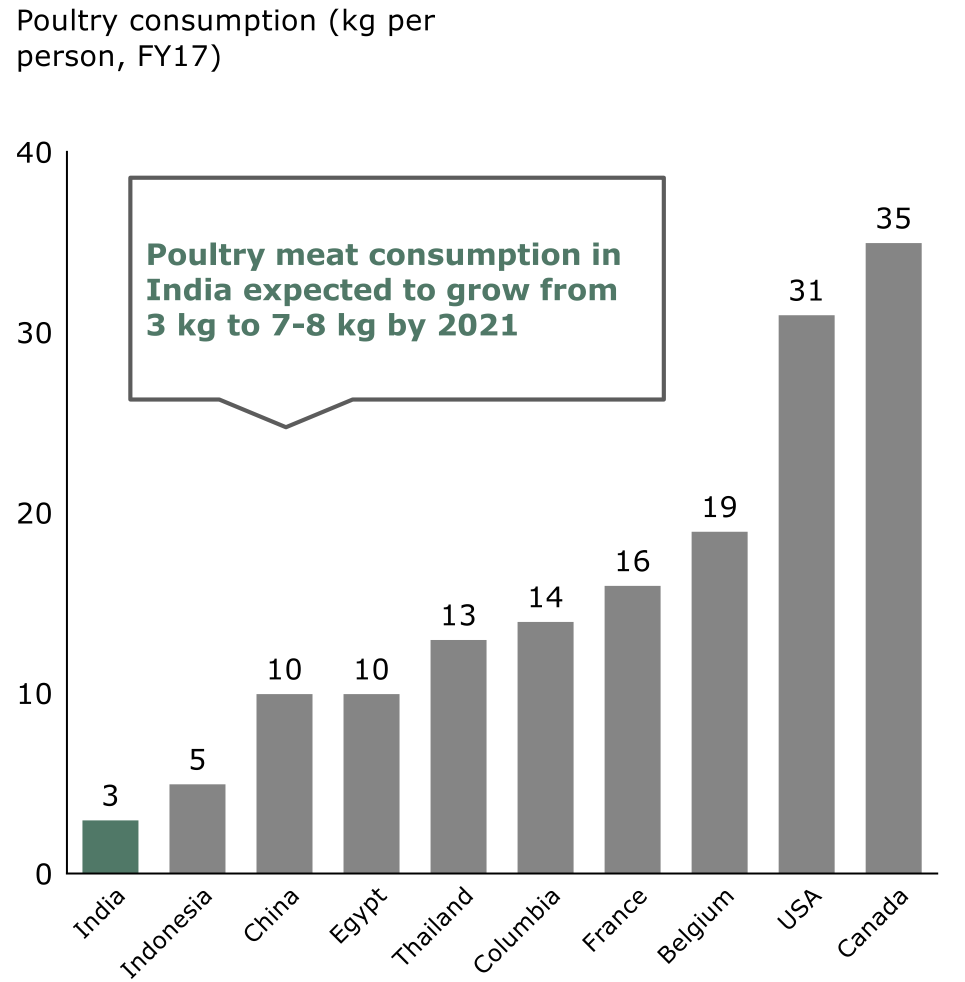
Note: National population estimates as on 1st Jan, 2013

As working population and incomes increase, there is a likely 2.5x increase in spend in F&B, accelerating meat consumption

As income segments increase exp. increases >2.5x across categories



This is likely to increase India's meat consumption by 2.5x over the next 3-5 years



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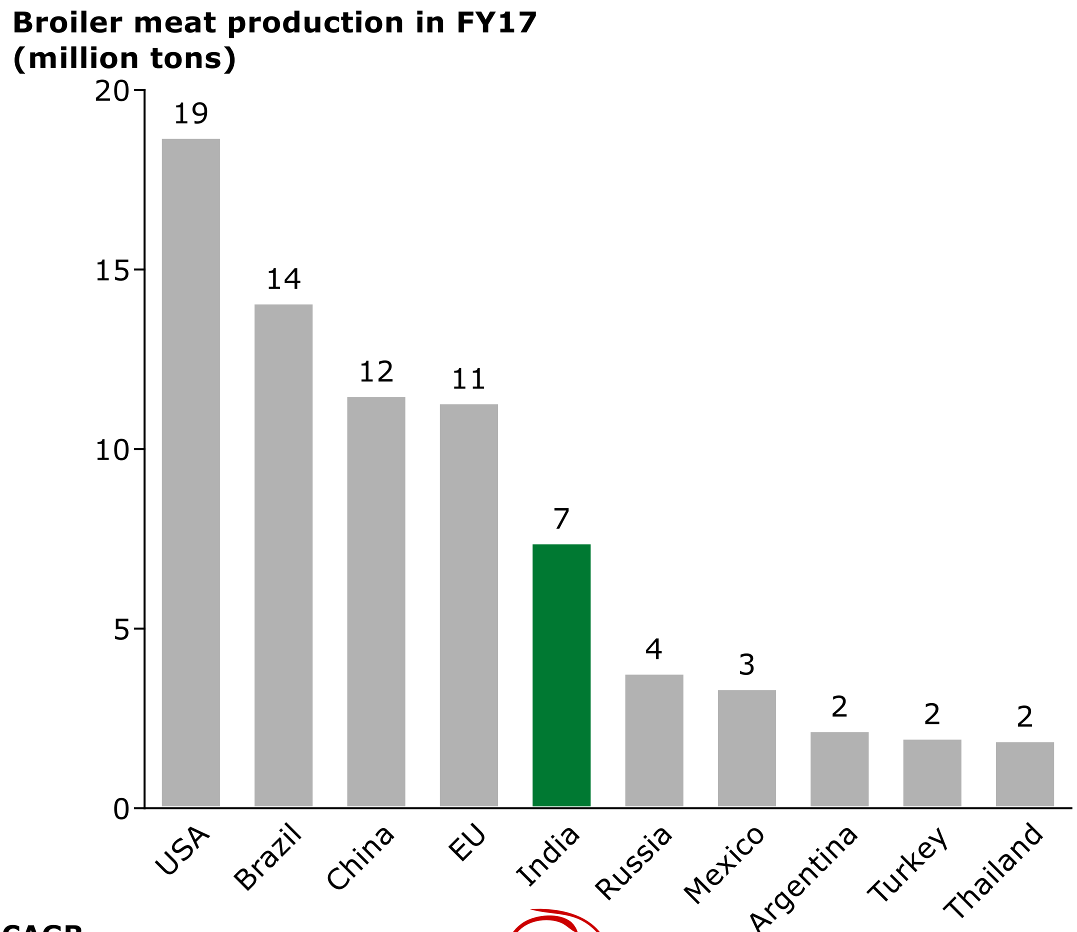
India is the world's fifth largest producer of broiler meat; annual broiler feed requirement of 13M tons

INDIA HAS BEEN GROWING THE FASTEST AMONG LARGE PRODUCERS AT ~6% P.A. OVER LAST 3 YEARS



CAGR (FY14-17)	3%	4%	-4%	3%	6%	5%	3%	2%	1%	6%

...AND HAS FY17 BROILER FEED REQUIREMENT OF 13M TONS

3.5B **Total broiler bird placements in an year in India**

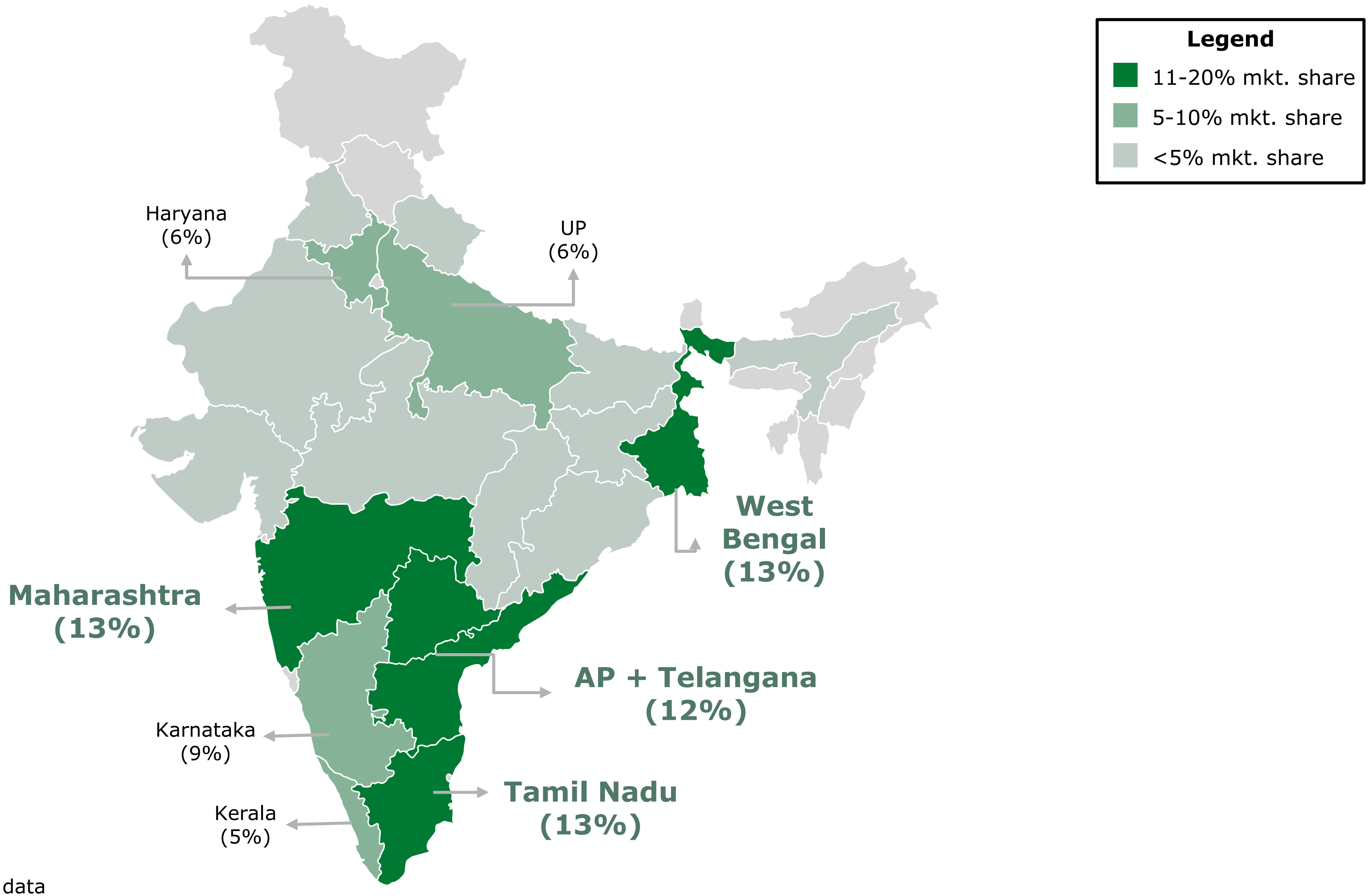
7M **tons of meat produced every year (typical bird weight is 2kg)**

13M **tons of feed required** (1.7 FCR i.e. need 1.7 kg feed to increase bird weight by 1kg)

$5 Bn **Total value of broiler feed consumed** (assuming average feed price of INR 26/ kg)

Source: CLFMA data, Market inputs, Management interviews

Indian broiler industry is largely concentrated in five states, which account for >50% share of total production



Source: CLFMA data

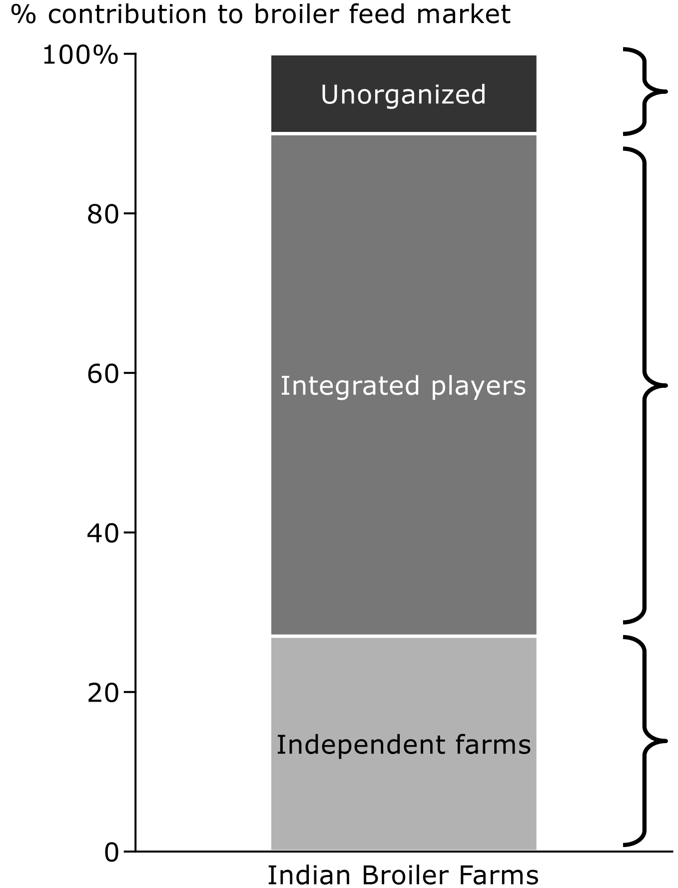
The industry is dominated by vertically integrated players; ~90% of market uses branded feed

CASH FLOW IS A KEY ISSUE IN THE BROILER INDUSTRY…

Key characteristics of broiler industry

- **Periodic inflows of cash**
  - Cash in-flow only when birds are sold to slaughterhouses after maturing
- **High dependence on credit**
  - Periodicity of cash flow leads to cash deficit for feed purchase
- **Significant risk**
  - Risk of mortality of birds
  - Risk of disease

…LEADING TO LARGE SHARE BY INTEGRATORS WITH HIGH WORKING CAPITAL



INDEPENDENT FARMS RELY ON EXTERNAL FEED DUE TO LACK OF SCALE

~10% of the market typically uses backyard mixed feed because of lack of awareness

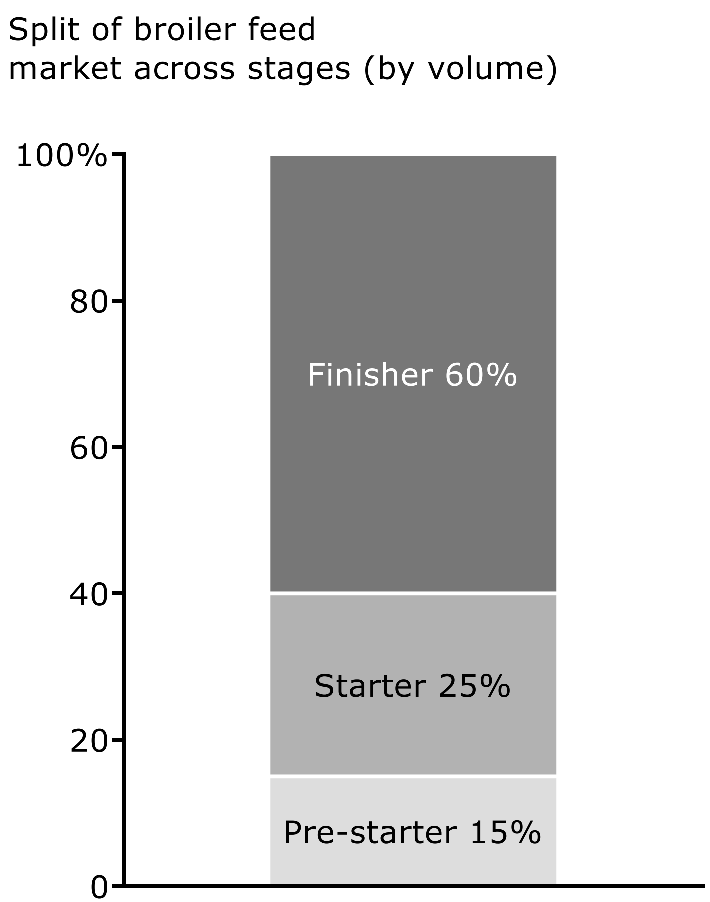
~63% of the market typically uses branded feed (manufactured in-house) as they are integrated across the value chain

~37% of the market typically uses branded feed purchased from third party players as they lack scale to manufacture own feed

Source: CLFMA data; Dept. of Animal Husbandry, Dairying and Fisheries reports; Management interviews

Customer requirements and use of branded feed vary across the broiler lifecycle

BROILER FEED REQUIREMENTS ARE SPLIT ACROSS THREE STAGES



CONSUMERS HAVE DIFFERENT BUYING BEHAVIORS ACROSS LIFECYCLE STAGES

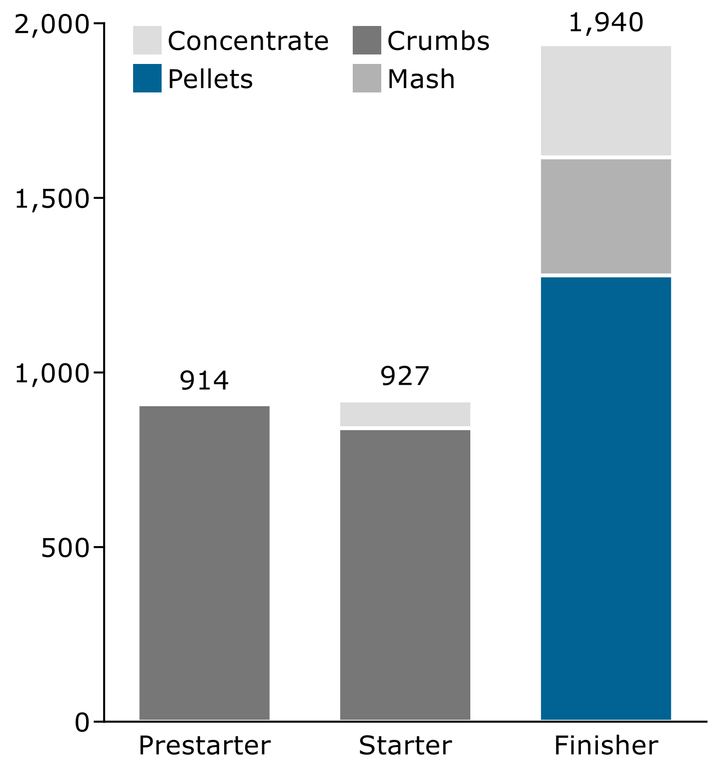
ANIMAL LIFECYCLE	TYPICAL NUTRITION PERIOD	CUSTOMER BUYING BEHAVIOR
PRE-STARTER (15% of volume)	• 0 - 10th day	• Prefer **high quality feed** to reduce mortality • **Integrated players** have **significant presence** in this segment, since they can offer **feed + DOC**
STARTER (25% of volume)	• 11th - 20th day	• Prefer **low quality, low cost feed**
FINISHER (60% of volume)	• 21st – 40th day	• Prefer **feeds with high nutrition,** to reduce FCR and achieve final weight in fewer days • **Discounts & credit** are important purchasing criteria

Source: World's Poultry Science Journal, National Centre for Biotechnology Information, US Food & Agriculture Org.

Broiler feed normally procured as full feed as most farmers lack scale to procure energy sources and mix

BROILER FEED SALES ARE LARGELY IN FULL FEED FORM

Illustrative broiler feed sales - Example of largest poultry feed player in AP/TL (INR M)



BRANDED PLAYERS ALSO OFFER DIFFERENT PRODUCT TYPES FOR DIFFERENT LIFECYCLE NEEDS

Product type		Description	Lifecycle relevance	Features/Utility
Full Feed	Mash	• **Finely ground,** mixed feed	• Finisher	• Provides **well-balanced diet** • Not considered to be palatable
Full Feed	Crumbs	• Mixed feed is crushed to a **consistency coarser than mash**	• Pre-Starter, Starter	• Popular due to **feeding convenience** • High likelihood of consumption by chicks
Full Feed	Pellets	• Mash feed mechanically converted into **high density pellets**	• Finisher	• **Increased digestibility** over mash feed • Typically results in a **better growth rate** compared to mash • Considered to be very palatable
Concentrate		• Contains **high density of specific nutrients**	• Starter to Finisher	• Provides concentrated sources of **necessary nutrition** • Added to energy (and sometimes protein) source to get compound feed

Source: World's Poultry Science Journal, National Centre for Biotechnology Information, US Food & Agriculture Org.

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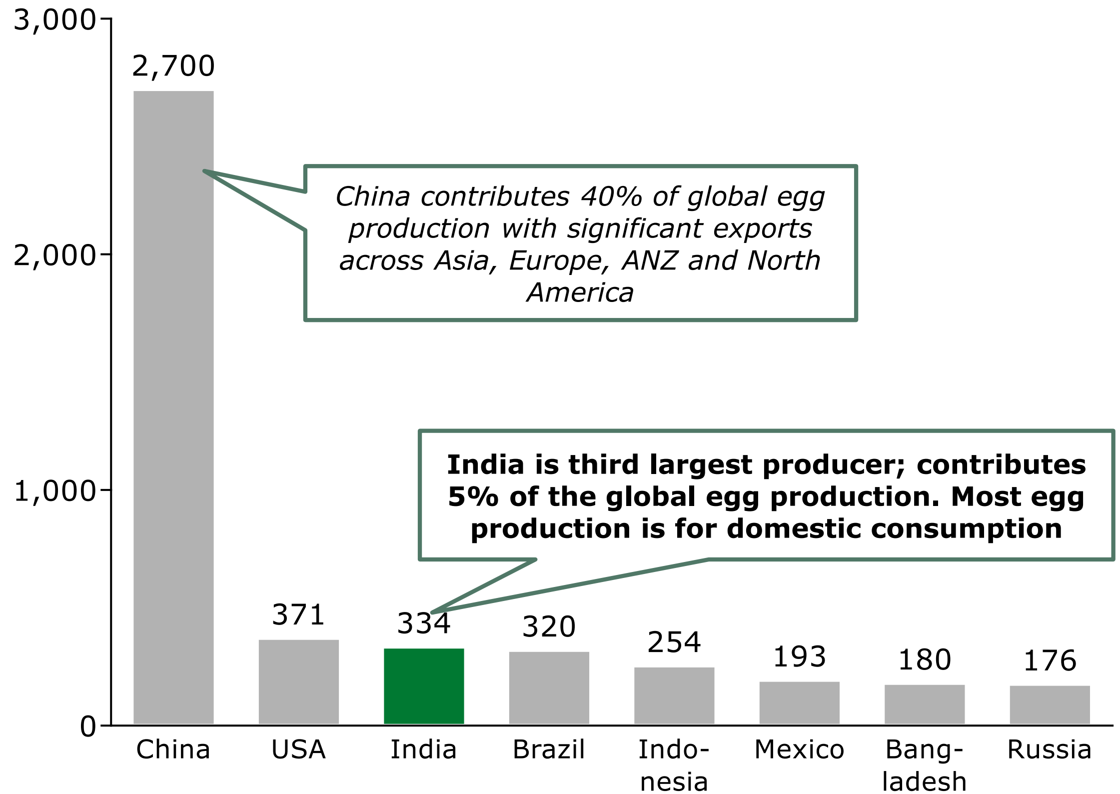
India has the world's third-largest population of layer birds; annual layer feed requirement of 13M tons

INDIA HAS BEEN GROWING THE FASTEST AMONG LARGE PRODUCERS AT ~6% PER ANNUM OVER THE LAST 5 YEARS

Number of egg producing layer birds in FY17 (millions)



	China	USA	India	Brazil	Indo-nesia	Mexico	Bang-ladesh	Russia
Annual growth rate (5 Yr CAGR)	2%	2%	6%	3%	NA	4%	6%	3%

Source: CLFMA data, FAOstats, Statista, DAHD, Market inputs, Management interviews

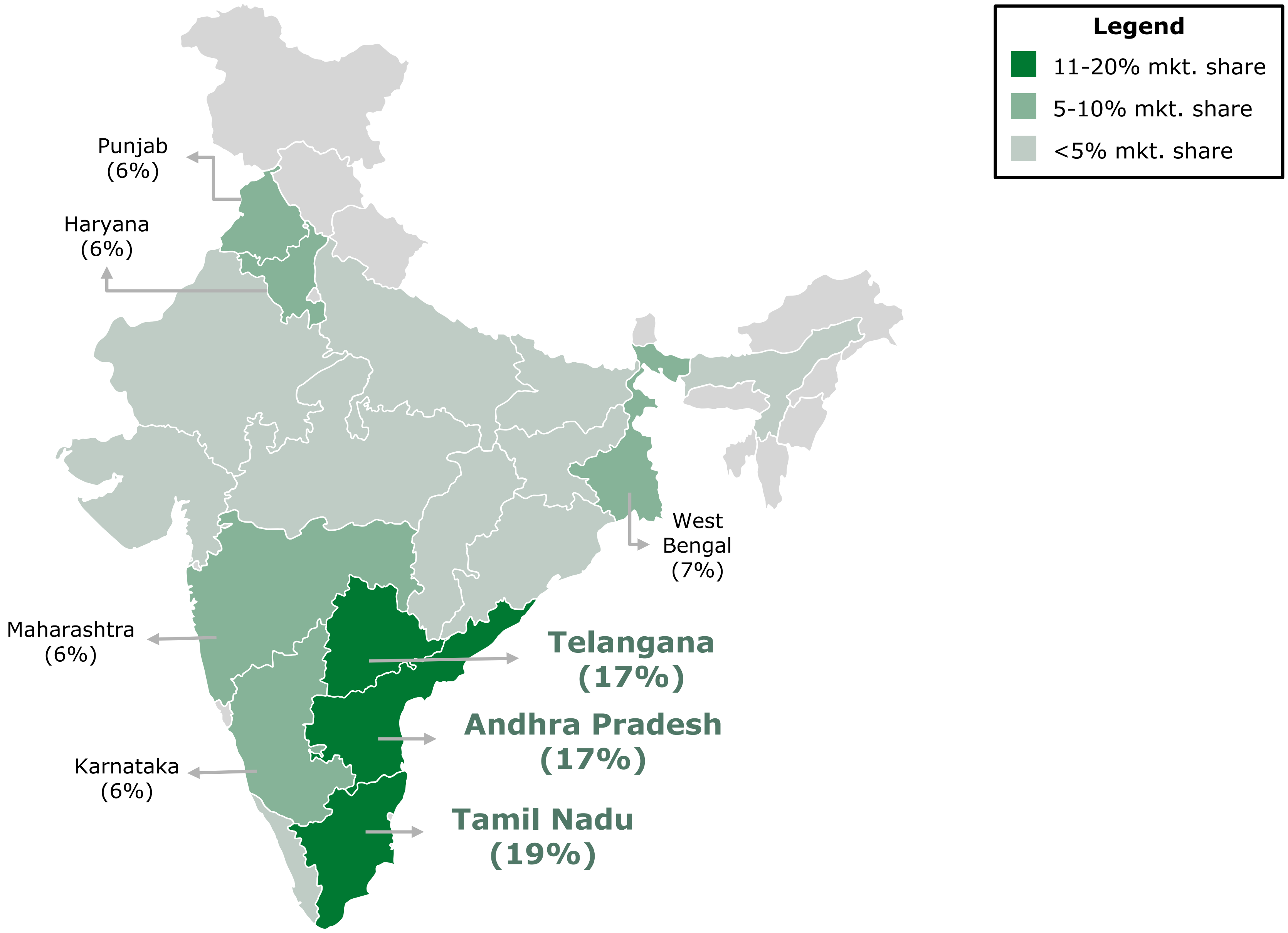
...AND HAS FY17 LAYER FEED REQUIREMENT OF 13M TONS

334M **Egg laying birds in the country**

13M **tons of feed required** (40 kg feed/ bird/ year)

$4 Bn **Rupees total value of layer feed consumed** (full feed cost of INR 23/ kg); concentrate market of ~$1.5 Bn

Indian layer industry is largely concentrated in three states, accounting for 50%+ share of total industry



Source: CLFMA data

Industry dominated by large integrated farmers; only 40% market uses branded feed

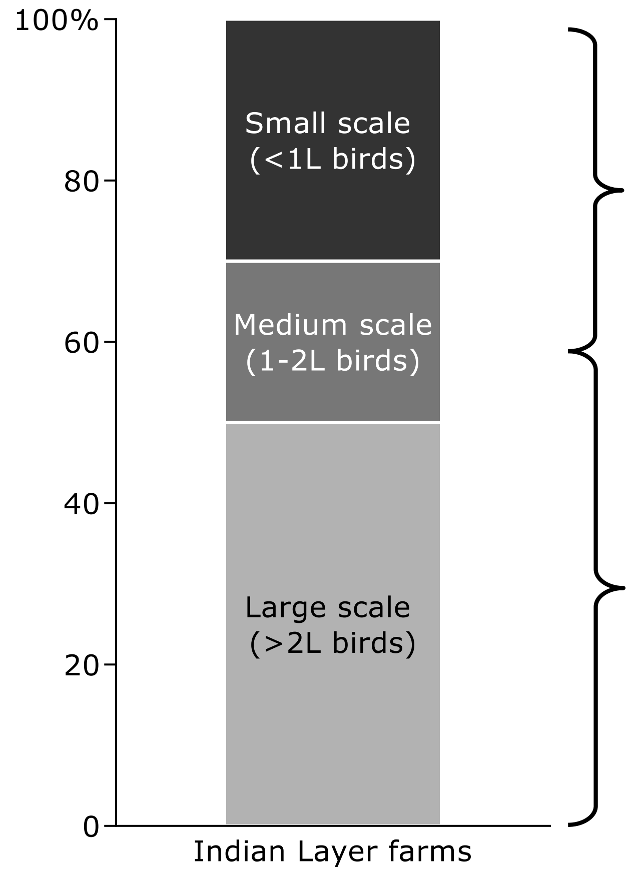
LAYER INDUSTRY REQUIRES HIGH INVESTMENT, HAS LONG RECOVERY TIMES AND RISK…

Key characteristics of layer industry

- **High upfront investments**
  - Build bird cages
  - Setup egg collection mechanisms
- **Long gestation periods**
  - Egg laying does not begin for first 20 weeks of bird lifecycle
- **Large risk**
  - Risk of mortality of birds
  - Risk of disease
  - Risk of low egg yield

…LEADING TO DOMINATION BY LARGER FARMS THAT CAN INVEST AND ABSORB RISK…

% contribution to layer feed market



…WHO BUY ONLY CONCENTRATE OR ENTIRELY MAKE THEIR OWN FEED

~40% of the market typically uses branded concentrate or full feed due to lack of scale to produce own feed

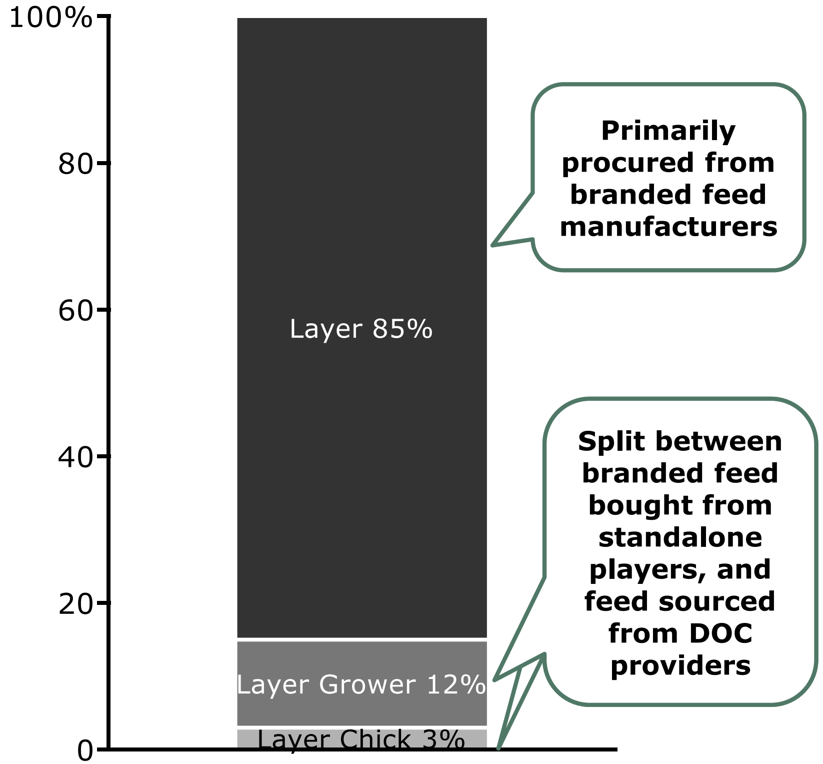
~60% of the market typically manufactures own feed due to scale economics and desire to control cost and quality

Source: CLFMA data; Dept. of Animal Husbandry, Dairying and Fisheries reports; Management interviews

Even within branded segment, external sourcing of feed is mainly during laying period

FEED IS EXTERNALLY SOURCED LARGELY IN LAYER STAGE…

Split of layer feed market across lifecycle stage



…WITH QUALITY & CREDIT BEING IMPORTANT PURCHASE CRITERIA

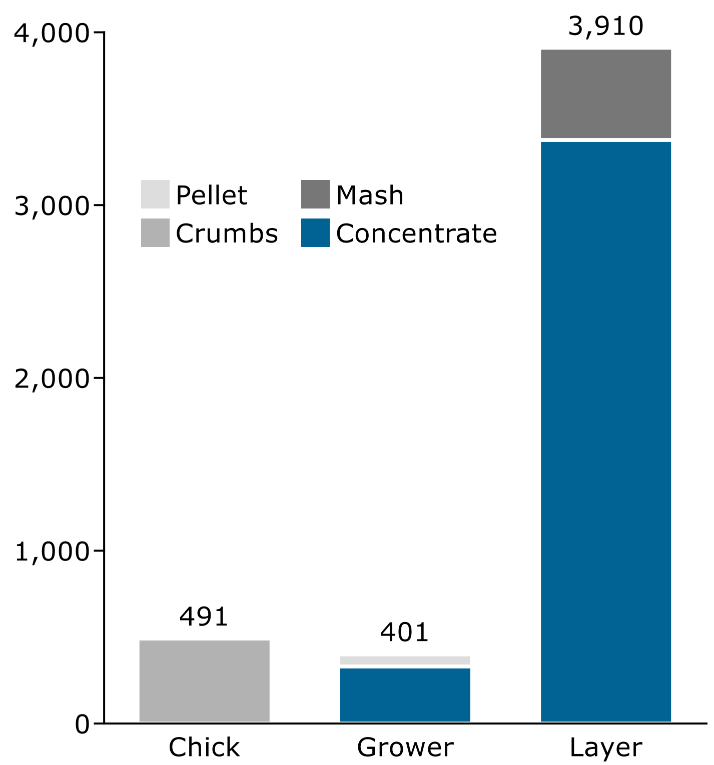
ANIMAL LIFECYCLE	TYPICAL NUTRITION PERIOD	CUSTOMER BEHAVIOR	SHARE OF BRANDED PLAYERS
LAYER CHICK (~3% of feed volume)	• 0-8th week	• **Feed** typically purchased from **integrated players,** who provide DOC as well	• 55-60% of market is organized
LAYER GROWER (~12% of feed volume)	• 9th -20th week	• **Feed** typically purchased from **integrated players,** who provide DOC as well • **40% concentrate** typically bought (rest is the energy source – mixed directly by farmers)	• ~50% of market is organized
LAYER (~85% of feed volume)	• 21st – 72nd week	• **35% concentrate** (protein + additives) typically bought • **Product quality & credit** are important inputs to buying decision	• Primarily branded feed

Source: World's Poultry Science Journal, National Centre for Biotechnology Information, US Food & Agriculture Org.

Within external feed, most volumes procured are of layer concentrate

LAYER FARMERS LARGELY PROCURE CONCENTRATE FROM BRANDED PLAYERS

Sales of Layer Feed (INR M) - Illustrative example of largest feed player in AP/TL



HOWEVER, BRANDED PLAYERS ALSO OFFER OTHER PRODUCT TYPES ACROSS LIFECYCLE REQUIREMENTS OF THE BIRD

Product type		Description	Lifecycle relevance	Features/Utility
Full Feed	Mash	• **Finely ground,** mixed feed	• Layer	• Provides **well balanced diet** • Not considered to be palatable
Full Feed	Crumbs	• Mixed feed is crushed to a **consistency coarser than mash**	• Chick	• Popular due to **feeding convenience** • High likelihood of consumption by chicks
Full Feed	Pellets	• Mash feed mechanically converted into **high density pellets**	• Grower	• **Increased digestibility** over mash feed • Typically results in a **better growth rate** compared to mash • Considered to be very palatable
Concentrate		• Contains **high density of specific nutrients**	• Grower, Layer	• Provides concentrated sources of **necessary nutrition** • Added to an energy (and sometimes protein) source to get compound feed

Source: World's Poultry Science Journal, National Centre for Biotechnology Information, US Food & Agriculture Org.

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Thank you