



Forstar Frozen Foods Pvt. Ltd

**MAKE IN INDIA**  
**2016**



# SEAFOOD SOLUTIONS



# About Forstar Frozen Foods Pvt. Ltd.

- Incorporated in 1992
- One of the Leading Seafood Processors & Exporter in India
- The Company has made consistent growth and consistent profits without exception during last 24 years operations.
- Turn over for last 6 years.

Financial Year	Turnover
2013-14	Rs.237.00 Crores
2014-15	Rs.313.00 Crores

# Adoption of Modern Technology

- Project includes state-of-art machinery designed to operate using ultramodern Technology.
  - Processing Equipment involves Spiral IQF & In line IQF Machine. Grading Machines, Retort etc.
  - Cold Store in multi compartment, multi products chambers with Modified Atmosphere.
  - Cold Storage will maintain the regular temperature of - 20 to -22 degrees without temperature fluctuation. This will ensure long storage while maintaining quality and freshness of the products.

# IMPORTANT SPECIES OF FISH IN INDIA

No.	Local Name	Peak Season	Distribution	Areas of Abundance
1	White Prawn	Through out the year except monsoon season	Entire West Coast and South-East Coasts of India	Kerala & Karnataka Coasts
2	Tiger Prawn	November to May	East Coast and South-West Coasts of India	West Bengal and Odisha Coasts
3	Flower Prawn	October to February	East & West Coast of India	Karnataka, Goa, Maharashtra, Tamil Nadu & Gujarat
4	Pink Shrimp	July to October	West & East Coast of India	Kerala & Karnataka Coasts
5	Brown Shrimp	November to May	West & East Coast of India	Coasts of Andhra Pradesh & Odisha
6	King Prawn	November to May	Throughout the West Coast and certain parts of East Coast	Maharashtra & Kerala Coasts
7	Marine Shrimp (Karikadi)	May to September	Both the Coasts but more in South-West Coast	Kerala & Karnataka Coasts
8	Jawala	September to March	North-West and North East Coasts of India	Maharashtra, Gujarat and Coasts of Andaman & Nicobar Islands
9	Scampi	September to November and May to July	In fresh and brackish waters along both Coasts	Lakes of West Bengal, Odisha and Kerala
10	Deep sea Shrimp	February to May	Both East - West Coasts	South - West Coasts
11	Sand Lobster	Through out the year particularly from December to January	West & South Coasts of India	Karnataka, Maharashtra, Tamil Nadu & Odisha Coasts

12	Rock Lobster	Through out the year particularly from December to January	West & South-East Coasts of India	Tamil Nadu & Maharashtra Coasts
13	Rock Lobster	Through out the year particularly from December to January	West & South-East Coasts of India	Tamil Nadu & Maharashtra Coasts
14	Rock Lobster	Through out the year particularly from December to January	West & South-East Coasts of India	Tamil Nadu & Maharashtra Coasts
15	Deep Sea lobster	Through out the year particularly from December to January	South-East and South-West Coasts of India	Tamil Nadu & Kerala Coasts
16	Mud Crab	July to October	West & East Coast of India	Coasts of Kerala, Tamil Nadu, West Bengal and Odisha
17	Sea Crab	July to December	West & East Coast of India	Off the Coasts of Andhra Pradesh, Kerala, Karnataka and Gujarat
18	Sea Crab	July to December	West & East Coast of India	Off the Coasts of West Bengal, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka and Maharashtra
19	Sea Crab	July to December	West & East Coast of India	Off the Coast of Maharashtra, Gujarat and Tamil Nadu
20	Cuttle Fish	September to January	West & East Coast of India	Palk Bay, Tamil Nadu and Coasts of Maharashtra & Kerala
21	Squid	January to March	West & East Coast of India	Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu and Andhra Pradesh Coasts
22	Squid	April to May & August to September	West & East Coast of India	Kerala Coasts

23	Octopus	September to January	West & East Coast of India & off Lakshadweep	Off Lakshadweep Coast
24	Green Mussel	July to November	East & West Coast of India and Port Blair	Coasts of Kerala, Karnataka, Ratnagiri, Gulf of Kutch and Kakinada Bay
25	Clam	July to November	West & East Coast of India	Along the Coasts of Kerala, Karnataka, Goa, Maharashtra and Kakinada Bay
26	Clam	July to November	West Coasts of India	Kerala, Karnataka, Goa Coasts
27	Clam	July to November	West and South-East Coasts of India	Coasts of Kerala, Karnataka, Goa and Maharashtra
28	Blood Clam	July to October	South-East Coasts of India	Kakinada Bay in Andhra Pradesh
29	Oyster	August to February	South-West and South-East Coasts of India	Tamil Nadu Coast
30	Pearl Oyster	Throughout the year except monsoon season	South-East Coast of India	Tamil Nadu
31	Whelk	Throughout the year	East Coast	Tamil Nadu
32	Gaint African Snail	Post-monsoon period(june to october)	Andaman & Nicobar Islands	Andaman & Nicobar Islands & West Bengal
33	Indian Dog Shark	September to April	West & South Coasts of India	Gujarat and Maharashtra Coasts
34	White cheeked shark	September to April	West and South-East Coasts of India	Gujarat and Maharashtra Coasts
35	Black tip shark	Throughout the year particularly from September to April	West & East Coast of India	Coasts of Kerala, Maharashtra and Gujarat

36	Hammer Head shark	January to May	South-East Coasts of India	Port Novo (Tamil Nadu Coast)
37	Guitar fish	December to May	South-East Coasts of India	Tamil Nadu Coast
38	Whip Tail sting ray	December to May	East Coasts of India	Tamil Nadu
39	Javanese cow ray	January to May	South-East Coasts of India	Cape Comorin (Tamil Nadu Coast)
40	Silver pomfret	September to January	North, Middle-West and North-East Coasts of India	Maharashtra, Gujarat and Odisha Coasts
41	Chinese pomfret	August to December and March	East & West Coasts of India	Maharashtra and Gujarat Coasts
42	Black pomfret	August to December	West & East Coast of India	Maharashtra & Gujarat Coasts
43	Indian mackerel	August to November	South, Middle-west and South-East Coasts of India	Karnataka & Kerala Coasts
44	Seer fish (Spanish mackerel)	October to December	West and East Coasts of India	Coasts of Tamil Nadu, Kerala and Karnataka
45	Seer fish (Streaked Spanish mackerel)	October to December	West & East Coast of India	Maharashtra & Gujarat Coasts
46	Seer fish (Spotted spanish mackerel)	October to December	West & East Coasts of India	Gujarat, Maharashtra, Kerala & Andamans Coasts
47	Black king fish	All around the year	East & West Coasts of India	Tamil Nadu and Kerala Coasts
48	Little tunny	October to May	South-West Coasts of India	Kerala, Lakshadweep and Andaman Coast
49	Yellowfin Tuna	October to January	East & West Coasts of India	Lakshadweep, Andamans, Gulf of Mannar and Ratnagiri Coasts
50	Big eye tuna	Throughout the year particularly from October to January	South-West and East coaswts of India & Lakshadweep	Lakshadweep Islands, Gulf of Mannar, Vizhinjam, Ratnagiri Coasts

51	Skipjack tuna	October to May	Off West and East Coasts of India	Andamans & Lakshadweep Islands
52	Oriental Bonito	April to May & July to August	East Coasts of India	South West Coast of India
53	Snapper	September to January	West and East Coasts of India	Malabar Coast of Kerala
54	Snapper	September to January	South-West & South East Coasts of India	Kerala & Tamil Nadu Coasts
55	Blood red snapper	September to December	South-East Coasts of India	Tamil Nadu Coasts
56	Black spot snapper	September to January	West & East Coasts of India	Kerala Coasts
57	Emperor red snapper	September to January	West & East Coasts of India	Kerala Coasts
58	Tiger Perch	September to January	Indo west Pacific	All along the Coast of India
59	Reef cod	August to December	West & East Coasts of India	Off Kerala Coast
60	Malabar Reef cod	August to December	South-East Coasts of India	Tamil Nadu Coasts
61	Reef cod	August to December	West & East Coasts of India	Kerala Coasts
62	Areolated cod	August to December	South-East Coast of India	Tamil Nadu Coast
63	Croaker	October to May	East & West Coasts of India	Maharashtra & Gulf of Mannar Coasts
64	Croaker	October to March	West & East Coasts of India	Kerala & Karnataka Coasts
65	Croaker	October to March	West & East Coasts of India	Kerala & Karnataka Coasts
66	Croaker	October to March	West & East Coasts of India	Kerala & Karnataka Coasts
67	Blotched croaker	October to March	West & East Coasts of India	Tamil Nadu Coast
68	Tiger toothed croaker	October to March	West & East Coasts of India	Kerala & Maharashtra Coasts
69	Drab croaker	October to March	West & East Coasts of India	Kerala & Maharashtra Coasts

70	Ghol	August to March	North-West Coasts of India	Gujarat and Maharashtra Coasts
71	Scad	January to June & Sept. to Nov.	West & East Coasts of India	Kerala, Tamil Nadu and Andamans Coast
72	Horse mackerel	September to November	South-East Coast and West Coast of India	Kerala and Tamil Nadu Coasts
73	Leather skin	September to January	East & West Coasts of India	Andhra, Tamil Nadu and Kerala Coasts
74	Malabar Trevally	October to February	East & West Coasts of India	Tamil Nadu & Kerala Coast
75	Trevally/Parava	October to February	East & West Coasts of India	Maharashtra, Kerala and Tamil Nadu Coasts
76	Black banded trevally	Throughout the year	West & East Coasts of India	Kerala & Tamil Nadu Coasts
77	Ribbon Fish	July to April	East & West Coasts of India	Andhra, Tamil Nadu, Kerala, Maharashtra and Gujarat Coasts
78	Ribbon Fish	July to April	West & East Coasts of India	Maharashtra, Kerala, Andhra Pradesh and Tamil Nadu Coasts
79	Cat fish	September to March	West Coasts of India	Karnataka, Goa, Maharashtra Coasts
80	Gaint Marine cat fish	March to June and September to October	East & West Coast of India	Maharashtra Coasts
81	Indian oil sardine	August to December	South-West Coasts of India	Kerala & Karnataka Coasts
82	Deep Bodied sardinella	August to December	South-West Coasts of India	Kerala & Karnataka Coasts
83	Hilsa ilisha	August to December and February to May	North-West and North East Coasts of India	Maharashtra, Gujarat and Odisha Coasts
84	Commerson's Anchovy	October to April	East & West Coast of India	Maharashtra, Karnataka and Kerala Coasts

85	Indian Halibut	July to september	East & West Coast of India	Maharashtra Coasts
86	Sole	July to september	West & East Coasts of India	
87	Sole	September to March	West & East Coast of India	
88	Barracuda (Gaint sea pike)	September to March	East & West Coast of India	Kerala & Tamil Nadu Coasts
89	Indian goat fish	August to February	East Coast of India	Tamil Nadu & Andhra Pradesh Coasts
90	Dark band goat fish	August to February	East Coast of India	Tamil Nadu & Andhra Pradesh
91	Indian salmon	September to December	North-East and North West Coasts of India	West Bengal, Gujarat and Odisha Coasts
92	Bombay Duck	September to June	North-West Coast of India	Maharashtra & Gujarat Coasts
93	Sea bass	August to February	Coastal waters, estuaries and lagoons entering brackish water	
94	Tilapia	August to February	Fresh and brackish waters	
95	Long spine sea-bream	August to February	East and West Coasts of India	Andhra Pradesh, Tamil Nadu and Gujarat Coasts
96	Japanese Thread fin bream	August to February	East and West Coasts of India	Andhra Pradesh, Tamil Nadu and Gujarat Coasts
97	Emporer Bream	Throughout the year	East Coast of India	Gulf of Mannar
98	Spade fish	August to January	East and West Coasts of India	Andhra Pradesh, Tamil Nadu and Gujarat Coasts
99	Pearl spot	May to November	An estuarine form found along the south-west and Odisha Coasts	Lakes of Kerala & Karnataka
100	Grey Mullet	August to February	East & West Coast of India	South west Coast , North East Coast

101	Blue spot grey mullet	August to February	East and West Coasts of India	South-West Coasts, Vembanad lake and North-East Coasts
102	Milk fish	August to December	Coastal waters including lagoons	Gulf of Mannar
103	Dusky-finned bulleye	August to December	East Coast of India	Andhra Pradesh, tamil Nadu and Kerala Coasts
104	Silver sillago	May to December	East Coast of India	Andhra Pradesh, Tamilnadu & Kerala Coasts
105	Lizard fish	Throughout the year	East Coast of India	Gulf of Mannar
106	Indian conger eel	January to July	East and West Coasts of India	Gujarat and Maharashtra Coasts
107	Fresh water eel	September to November and April to May	East Coast of India	Gangatic estuaries, Bay of Bengal and Andaman Islands
108	Fresh water catfish	August to February	Western ghats	Waynad, Bhavani river system
109	Silver carp		Fresh water fishery	
110	Parrot fish	Throughout the year	East Coast of India	Gulf of Mannar
111	Catla	All season	Back waters of Kerala	South West Coast of India
112	Jelly fish	March to June	West and East Coasts of India	Tamil Nadu and Kerala Coasts
113	Bech-de-mer (Sea cucumber)	April to August	South-East Coast of India	Tamil Nadu Coast
114	Sea urchin	Throughout the year except monsoon season	South-West and South-East Coasts of India	Quilon to Cape Comorin

# SHRIMP AND SCAMPI PRODUCTION IN INDIA

# Tiger Shrimp production

No.	State		2010-11	2011-12	2012-13	2013-14	2014-15
1	W. Bengal	AUC	47,588	48,558	48,410	48,730	48848
		EP	40,725	45,999	52,581	53,049	53526.26
2	Orissa	AUC	5,324	8,597	6,256	5,523	5392
		EP	7,520	10,901	14,096	11,075	10075
3	Andhra Pradesh	AUC	42,055	35,274	15,020	2,522	2190
		EP	49,030	51,081	25,948	2,883	2962
4	Tamil Nadu & Pondicherry	AUC	2,281	5,360	6,293	343	37.84
		EP	4,020	12,097	17,220	916	73.3
5	Kerala	AUC	11,788	12,809	12,917	12,719	13230.15
		EP	8,075	8,138	5,175	3,360	3643.18
6	Karnataka	AUC	1,715	650	240	94	688.65
		EP	2,090	609	180	56	498.73
7	Goa	AUC	306	53	30	53	6.8
		EP	320	51	48	14	16.1
8	Maharashtra	AUC	830	1,098	1,047	817	126.2
		EP	1,120	1,721	2,010	1,083	177.5
9	Gujarat	AUC	1,966	1,971	1,992	1,375	880.78
		EP	5,675	4,869	6,045	4,362	2183.82
	<b>Total</b>	<b>AUC</b>	<b>1,13,853</b>	<b>1,14,370</b>	<b>93,110</b>	<b>72,177</b>	<b>71400.42</b>
		<b>EP</b>	<b>1,18,575</b>	<b>1,35,466</b>	<b>1,23,303</b>	<b>76,798</b>	<b>73155.89</b>

# Pacific White Shrimp production

No.	State		2010-11	2011-12	2012-13	2013-14	2014-15
1	W. Bengal	AUC	0	0	0	130	326
		EP	0	0	0	479	395
2	Orissa	AUC	0	25	46	485	2340
		EP	0	100	436	2907	11866
3	Andhra Pradesh	AUC	2739	7128	20198	49764	37560
		EP	16913	75385	133135	210639	276077
4	Tamil Nadu & Pondicherry	AUC	34	397	1511	5087	5037.1
		EP	109	2863	8595	26281	32687.87
5	Kerala	AUC	0	0	0	0	5.8
		EP	0	0	0	0	11.75
6	Karnataka	AUC	0	72	154	157	124.76
		EP	0	232	484	517	623.2
7	Goa	AUC	0	0	1	29	27.2
		EP	0	0	15	67	88.2
8	Maharashtra	AUC	94	127	439	908	1274.51
		EP	508	941	1503	3291	4901.04
9	Gujarat	AUC	64	88	366.71	707	3545.4
		EP	717	1195	3348.19	6326	26763
	Total	AUC	2931	7837	22715.71	57267	50240.77
		EP	18247	80717	147516.2	250507	353413.1

# Scampi production

No.	State		2010-11	2011-12	2012-13	2013-14	2014-15
1	W. Bengal	AUC	3,355	4,385	280	3,200	4773
		EP	2,258	2,906	174	2,744	3448.51
2	Orissa	AUC	517	743	136	742	1565
		EP	475	513	54	454	598
3	Andhra Pradesh	AUC	864	485	48	80	695
		EP	688	475	6	21	688
4	Tamil Nadu & Pondicherry	AUC	455	437	-	207	125
		EP	141	285	-	59	24.55
5	Kerala	AUC	302	161	-	4,869	2149.49
		EP	150	52	-	151	185.25
6	Karnataka	AUC	-	-	49	7	0
		EP	-	-	60	3	0
7	Goa	AUC	-	-	-	-	0
		EP	-	-	-	-	0
8	Maharashtra	AUC	20	33	2,919	69	Reservoir
		EP	9	38	3,332	84	1835.45
9	Gujarat	AUC	-	-	-	-	Reservoir
		EP	-	-	-	-	1210
	Total	AUC	5,512	6,244	-	9,175	9307.49
		EP	3,721	4,269	-	3,545	7989.76

# Shrimp (Tiger & Pacific Shrimp) Production

No.	State		2010-11	2011-12	2012-13	2013-14	2014-15
1	W. Bengal	AUC	47,588	48,558	48,410	48,860	53947
		EP	40,725	45,999	52,581	53,528	57369.77
2	Orissa	AUC	5,324	8,622	6,302	6,008	9297
		EP	7,520	11,001	35,294	13,982	22539
3	Andhra Pradesh	AUC	44,794	42,402	35,218	52,286	40445
		EP	65,943	1,26,466	1,59,083	2,13,522	279727
4	Tamil Nadu & Pondicherry	AUC	2,265	5,757	7,804	5,430	5199.94
		EP	4,129	14,960	25,815	27,197	32785.72
5	Kerala	AUC	11,788	12,809	12,917	12,719	15385.44
		EP	8,075	8,138	5,175	3,360	3840.18
6	Karnataka	AUC	1,715	722	394	251	813.41
		EP	2,090	841	158	573	1121.93
7	Goa	AUC	306	53	31	82	34
		EP	320	51	63	81	104.3
8	Maharashtra	AUC	924	1,225	1,486	1,725	1400.71
		EP	1,628	2,662	3,513	4,374	6913.99
9	Gujarat	AUC	2,030	2,059	2,359	2,082	4426.18
		EP	6,392	6,064	9,393	10,688	30156.82
	Total	AUC	1,16,784	1,17,301	1,15,825	1,29,444	130948.7
		EP	1,36,822	2,16,283	2,70,819	3,22,684	434558.7

# Total shrimp & Scampi production

Species		2010-11	2011-12	2012-13	2013-14	2014-15
Tiger Shrimp	AUC	113853	114370	93110.43	72177	71400
	EP	118575	135466	123302.7	76798	73155
L Vannamei	AUC	2931	7837	22715.71	57267	50240
	EP	18247	80717	147516.2	250507	353413
Scampi	AUC	5511.72	6244	3432	9175	9307.49
	EP	3721	4269	3625	3545	7989

# Marine Product Exports

Item	Values	2013-14
Fr. Shrimp	Quantity in tonnes	301435
	Value In Crore	19368.3
	US\$ Million	3210.94
Fr. Fin Fish	Quantity in tonnes	324359
	Value In Crore	4294.81
	US\$ Million	708.63
Fr. Cuttlefish	Quantity in tonnes	68577
	Value In Crore	1386.98
	US\$ Million	228.13
Fr Squid	Quantity in tonnes	87437
	Value In Crore	1731.94
	US\$ Million	284.6
Dried items	Quantity in tonnes	67901
	Value In Crore	998
	US\$ Million	167.89

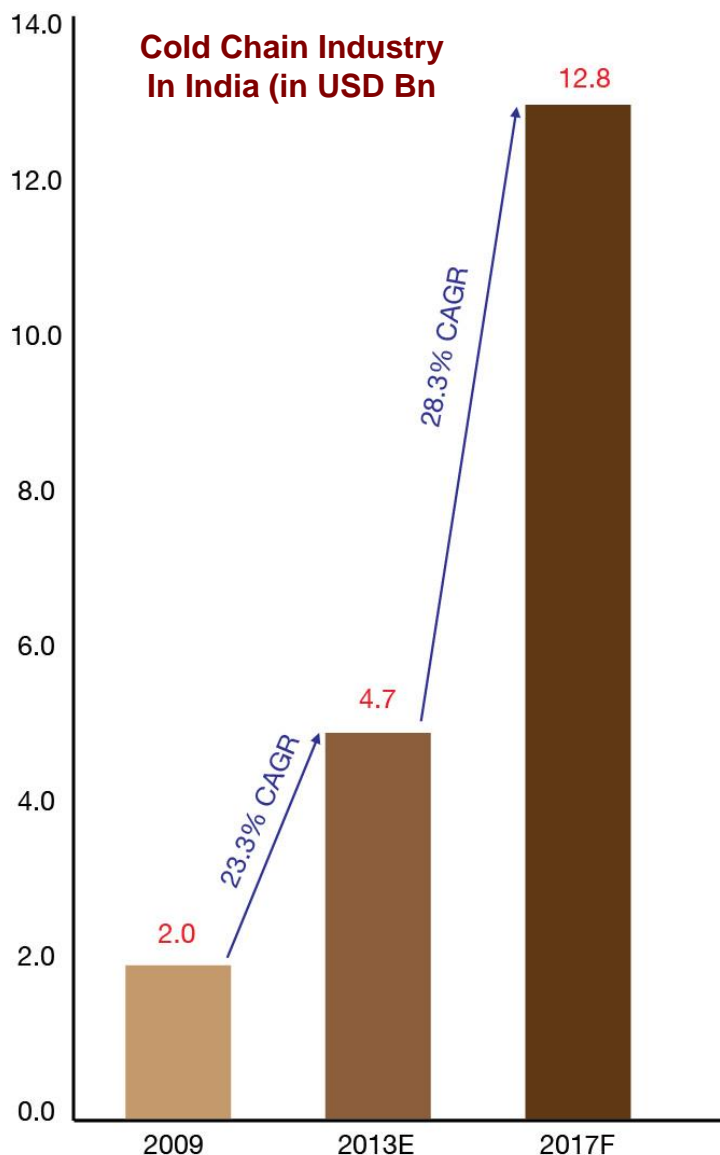
# Marine Product Exports

Item	Values	2013-14
Live items	Quantity in tonnes	5080
	Value In Crore	281.85
	US\$ Million	46.7
Chilled items	Quantity in tonnes	19755
	Value In Crore	527.84
	US\$ Million	88.48
Others	Quantity in tonnes	109212
	Value In Crore	1623.5
	US\$ Million	272.34
<b>Total</b>	<b>Quantity in tonnes</b>	<b>983756</b>
	<b>Value In Crore</b>	<b>30213.26</b>
	<b>US\$ Million</b>	<b>5007.7</b>

# INDUSTRY SNAPSHOT

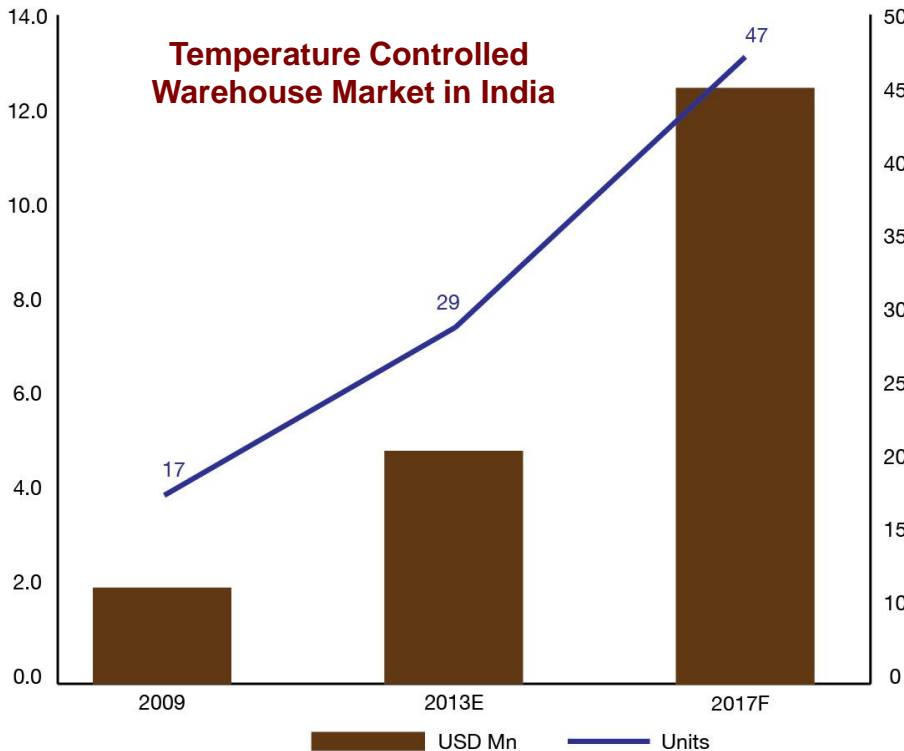
## INDIAN COLD CHAIN INDUSTRY

## Cold Chain Industry In India (in USD Bn)



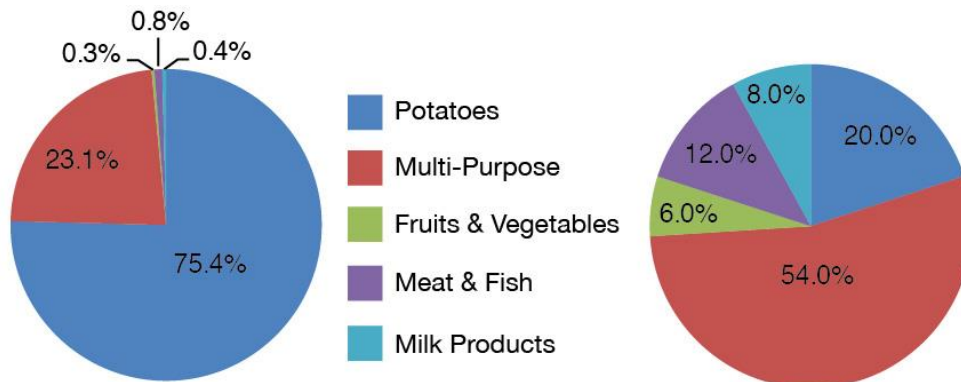
**Indian Cold Chain Industry is expected to grow at a CAGR of ~ 28% over the next 4 years and reach a market size of ~ USD 13 BN in 2017 and is largely unorganized in nature. Thereby, presenting a great opportunity for foreign companies**

- Growing annually at 28% the total value of cold chain industry in India is expected to reach ~ USD 13 billion by 2017 through increased investment, modernization of existing facilities, and establishment of new ventures via private and government partnerships
- India's cold chain industry is still evolving, not well organized and operating below capacity
- The Indian cold chain market is highly fragmented with more than 3,500 companies in the whole value system
- Organized players contribute only ~8%-10% of the cold chain industry market
- Most equipment in use is outdated and single commodity based
- Need for cold chain-
  - 11% of the world's total vegetables' production is accounted by India alone but India's share in global vegetable trade is only 1.7%
  - 127 Million Tones of milk was produced in 2011-12, but cold storage capacity is only available for 70,000-80,000 Tones of milk
  - 20%-30% of Fish produce is annually wasted in India
  - ~25,000 unregistered slaughter houses are present in India, Which generally lack chilling facilities



Cold stores are the major revenue contributors of the Indian Cold Chain industry and are majorly used for storing potatoes. However, the market is gradually getting organized and focus towards multi purpose cold storages is rising

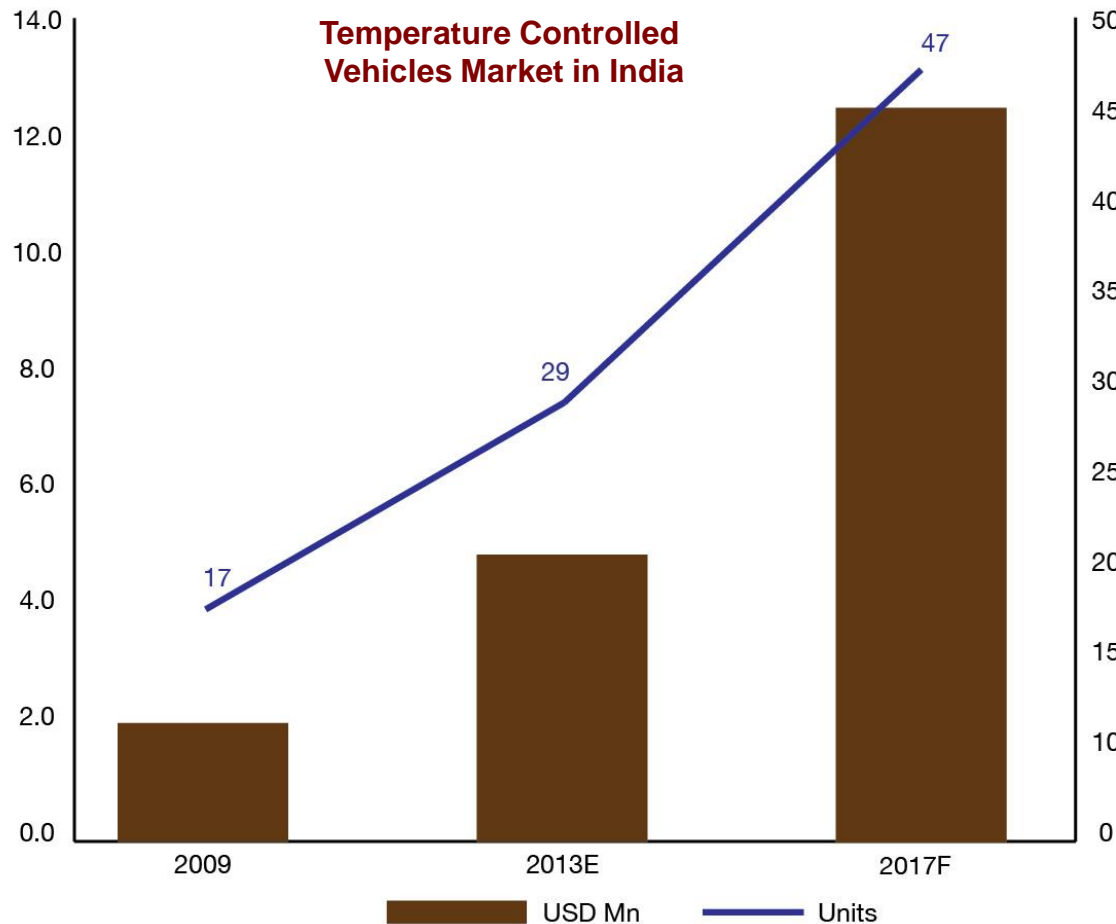
- There are ~5,381 number of total cold chain storages in India with 95% of total storage capacity under private players.
- ~36% these cold storages in India have capacity below 1,000 MT
- 65% of India's cold chain storage capacity is contributed by the states of Uttar Pradesh and West Bengal
- With the current capacity only less than 11% of what is produced can be stored
- Cold storage capacity is expected to grow at ~13% per annum on a sustained basis over the next 4 years, with the organized market growing at a faster pace of ~20%
- Key growth drivers include growth in organized retail and food service industry, government's initiatives, rising export demand for processed and frozen food



**Cold Storage Price Volume Analysis**

- Huge variation in the share of potatoes storage capacity and revenue generation
- Share of multipurpose cold storages is low in storage capacity but high in revenue generation
- There is growing focus towards multi-purpose cold storages

India offers great market potential for cold chain logistic solution providers, including refrigerated transport



- According to industry estimates, approximately 104 million metric tons of perishable produce is transported between cities each year
- Of this figure, about 100 million metric tons moves via non-reefer mode and only four million metric tons is transported by reefer
- Even though, India has about 250 reefer transport operators (mostly small & non integrated firms) that transport perishable products and >30,000 refrigerated vehicles currently ply in India
- Majority of the refrigerated vehicles (~80%) are utilized for milk and milk products transportation
- The high cost of transportation is a major challenge for refrigerated vehicles market
- Key growth drivers include meat products export, rising demand for confectionary, frozen food etc.

The Government of India recognizes that development of cold chain is an essential next step in upgrading India's food processing industry and therefore offers many incentives for promoting growth.

100% FDI

FDI allowed through automatic route

Infrastructure Status

Since 2011-12, cold chain has been given the Infrastructure status

Viability Gap Funding

Up to 40% of the cost

Monetary & Tax Benefits

5% concession on import duty, service tax exemption, Excise duty exemption on several items. Subsidy of over 25% to 33.3% on the cold storage project cost.

Establishment of National Centre Cold Chain Development

Established in 2011, to look into matters related to cold chain infrastructure

Growing Emphasis On Food Parks & Integrated Cold Chain Development

Proposed financial outlay for cold chain infrastructure & food parks of ~USD 335 Mn & USD 650 Mn respectively. Over 50% - 70% capital grant on projects

# Cold Store Costing

Temperature	Indian Rupees (INR)
-20° c	35000 / MT
0° c	25000 / MT

# Cold Store Costing

Temperature	Indian Rupees (INR)
-20° c	35000 / MT
0° c	25000 / MT