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Global Agricultural Information Network

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India's Shrimp Sector Growing Steadily

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Fishery Products

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Report Highlights:

India's cultured shrimp production in FY 2014-15 was estimated at 426,500 MT while wild shrimp production was estimated at 450,000 MT. India's export of shrimp was 382,959 tons in CY 2015, up 9.8 percent from the previous year. To support its shrimp production, India mainly imports shrimp broodstock, shrimp feed, and Artemia Cysts (brine shrimp used as feed supplement).

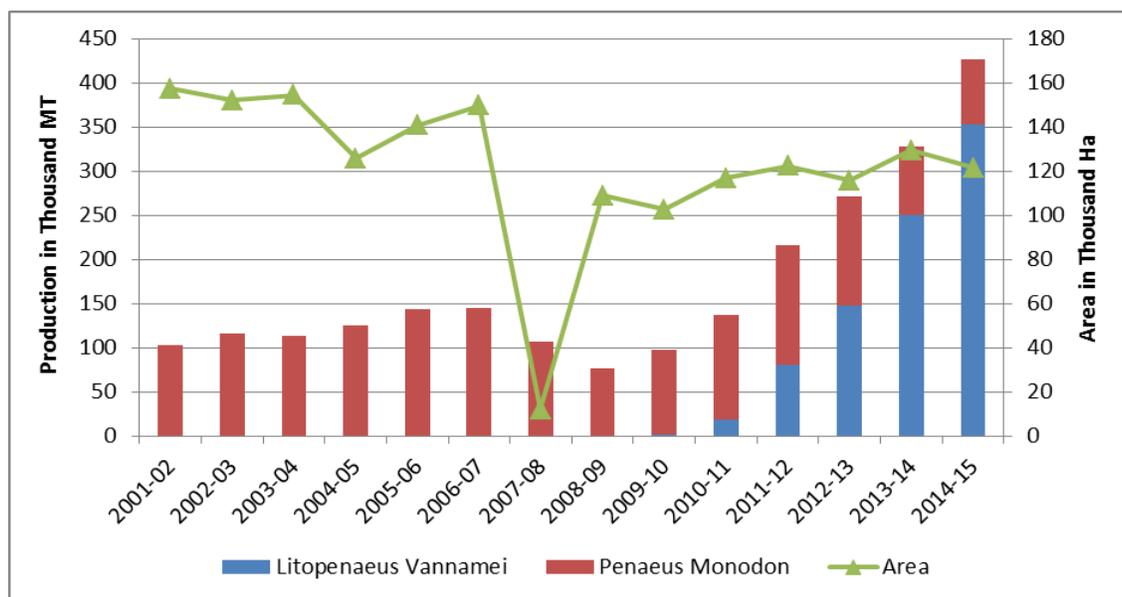
Executive Summary:

India's cultured shrimp production in FY 2014-15 was estimated at 426,500 MT while wild production was estimated at 450,000 MT. From FY 2004-05 to FY 2014-15, cultured shrimp production increased at a compound annual growth rate (CAGR) of 13 percent. India's export of shrimp was 382,959 tons in CY 2015, up 9.8 percent from the previous year. India imports shrimp broodstock, shrimp feed, and Artemia Cysts to support its shrimp production. The United States is the largest exporter of broodstock to India with exports of around \$10.8 million (constituting 98 percent of total volume) in CY 2015. Additionally, in CY2015, The United States exported to India \$15.44 million worth of Artemia Cysts, which was 97 percent of India's total imports.

Production:

India's cultured shrimp production in FY 2014-15 (April-March) was about 426,500 MT, up 30 percent from the previous year (Figure 1). From FY 2004-05 to FY 2014-15, shrimp production has grown at a compound annual growth rate (CAGR) of 13 percent. The introduction of white leg shrimp (*Litopenaeus Vannamei*, or *Vannamei*) in 2009 spurred growth in shrimp production during the last few years and displaced sales of the other major shrimp species, tiger shrimp (*Penaeus Monodon*). Farming of tiger shrimp declined once it was found to be susceptible to disease. In FY 2014-15, the production of white leg shrimp (Vannamei) rose to around 353,000 MT, which was 81 percent of the total shrimp production in India. The *Vannamei* species is preferred due to its superior traits such as fast growth rate, disease resistance, lower feed requirements, and higher survival rate. In FY 2014-15, the area under shrimp production in brackish water aquaculture was 121,600 hectares, which was up from 102,500 hectares in 2009-10. Industry sources indicate that shrimp production accounts for 20-25 percent of the brackish water aquaculture. Similarly, the wild production of Penaeid and Non-Penaeid prawns was around 450,000 MT in FY 2014-15 according to industry sources. The major marine wild species of prawns and shrimp are White Prawn (*Penaeus Indicus*), Tiger Prawn (*Penaeus Mondon*), Pink Shrimp (*Metapenaeus Dobsoni*), King Prawn (*Metapenaeus Affinis*), and Marine Shrimp (*Paraenaeopsis Stylifera*). Cultured shrimp has generally been favored for growth over wild shrimp.

Figure 1. India: Cultured Shrimp Production Rising



India's largest cultured shrimp production is in the state of Andhra Pradesh, which is followed by West Bengal, Tamilnadu & Puducherry, Gujarat, and Odisha. Tiger shrimp (*Penaeus Monodon*) are farmed in the states of West Bengal, Odisha and Kerala, while the *Vannamei* species is preferred in the states of Andhra Pradesh, Gujarat, Tamil Nadu and Odisha. Andhra Pradesh produces around 65 percent of the total shrimp production in India (Figure 2). Although most of India's shrimp production is exported, its broodstock is imported. According to industry sources, India imports specific-pathogen-free (SPF) *Vannamei* broodstock from USA, Indonesia, Thailand and Singapore, with the United States being the dominant exporter to India: U.S. sales reached \$10.8 million (98 percent of total Indian broodstock imports) in Calendar Year (CY) 2015. In addition to broodstock, Artemia Cysts, which are used as live feed during the larvae raising operations in shrimp hatcheries, are imported as well. In CY 2015, 97 percent (\$15.44 million) of India's Artemia Cysts were imported from the United States.

Figure 2. India: Andhra Pradesh is the Largest Cultured Shrimp Producing State

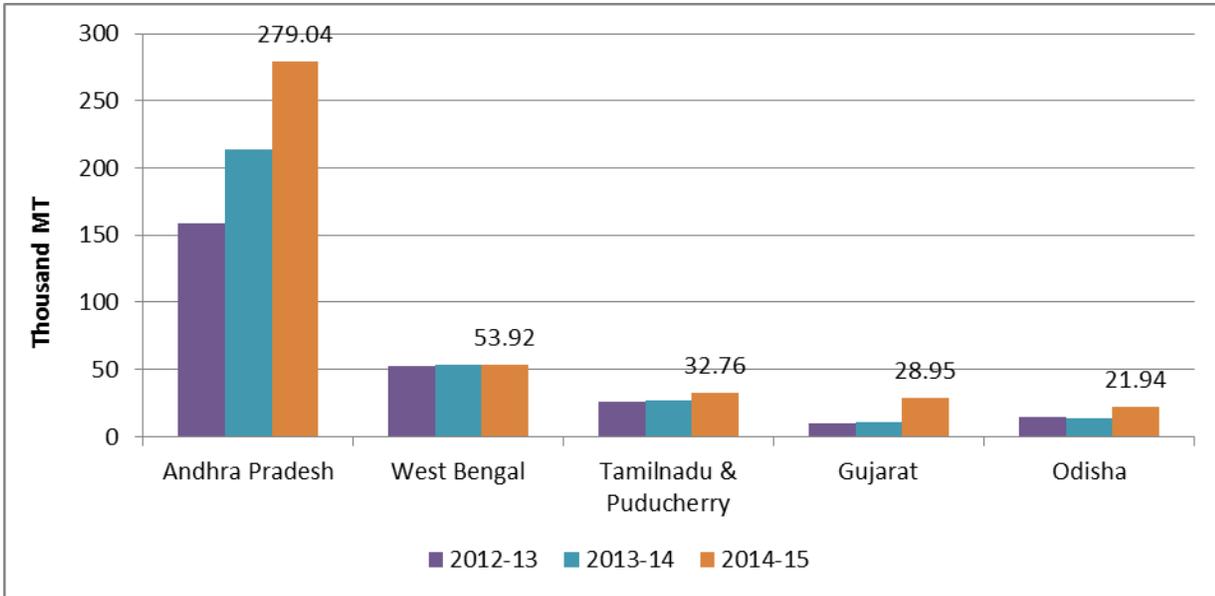
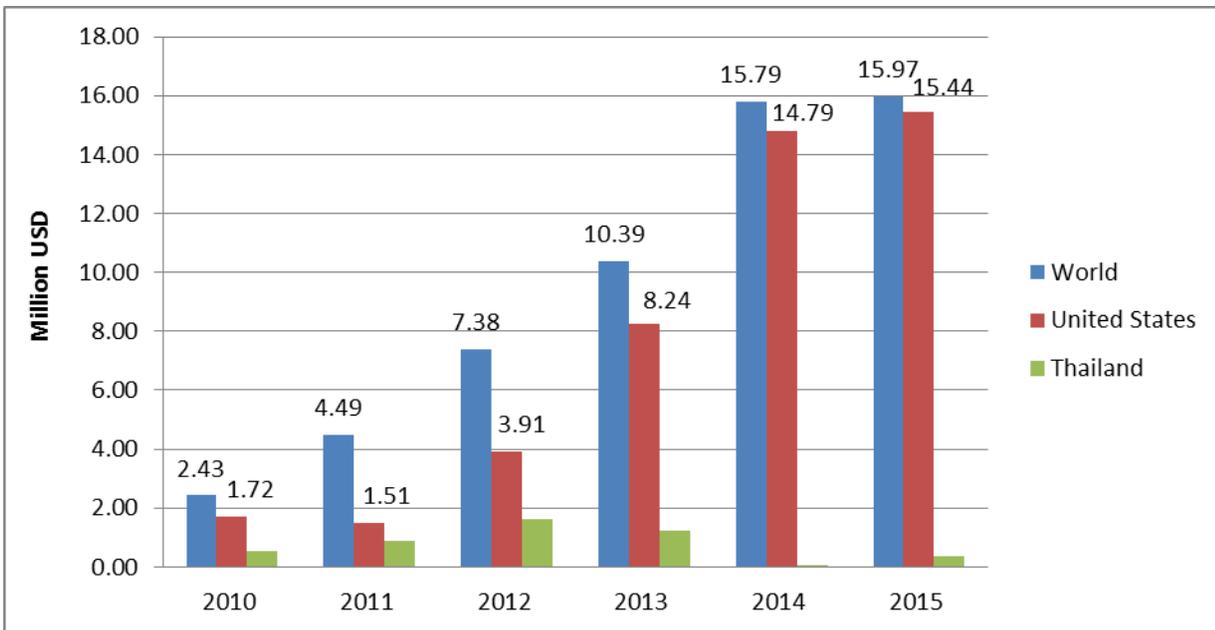


Figure 3. India: United States comprise largest share of Artemia Cysts Imports



Industry sources indicate that demand for shrimp feed has grown with the spurt in cultured shrimp production during the last few years. The CY 2015 shrimp feed sales volume was estimated at around 800,000 MT according to industry sources. Extruded floating feed has become more popular with farmers than pelleted feed. Its advantages include better feed conversion ratio, improved digestibility, and near-zero wastage. According to industry estimates, the total current production capacity for shrimp feed manufacturing is around 1.33 million MTs per annum. Shrimp farms generally get feed conversion ratios ranging from 1.4:1 to 1.8:1.

Although industry growth in the last five years has been phenomenal, industry sources indicate that

challenges exist in the form of diseases such as white spot virus, enterocytozoon hepatopenaei (EHP), running mortality syndrome, and white feces. Some of the other diseases faced by the industry include salmonella, hystria, and drug residues. High water temperature in summer and mineral imbalances, which are common in shrimp culture areas low on salinity, also affect production. Meanwhile, known development needs include additional infrastructure such as quarantine facilities and broodstock multiplication centers. These would enable consistent supply of specific pathogen-free broodstock to the shrimp farms.

Consumption:

India's annual per capita fish and shrimp consumption is estimated at around 6 Kg, which is low in comparison to the global per capita fish consumption average of around 18 Kg. Shrimp consumption alone in India was estimated at around 500,000 MT for FY 2014-15. More than 70 percent of the fish and shrimp harvested is sold fresh; the rest is dried, smoked or processed. The domestic fish market, which receives more than 80 percent of production, is highly unorganized. Currently crushed ice is the principal means of reducing spoilage and the insufficient cold chain infrastructure is a major challenge for widespread distribution of fish and other aquaculture products across the country. In turn, limited availability limits consumption growth. Greater availability of seafood products in coastal regions naturally results in greater consumption, but so also does the growing awareness about the health benefits of fish: quick service and multi cuisine restaurants are promoting that awareness to drive consumption in those areas.

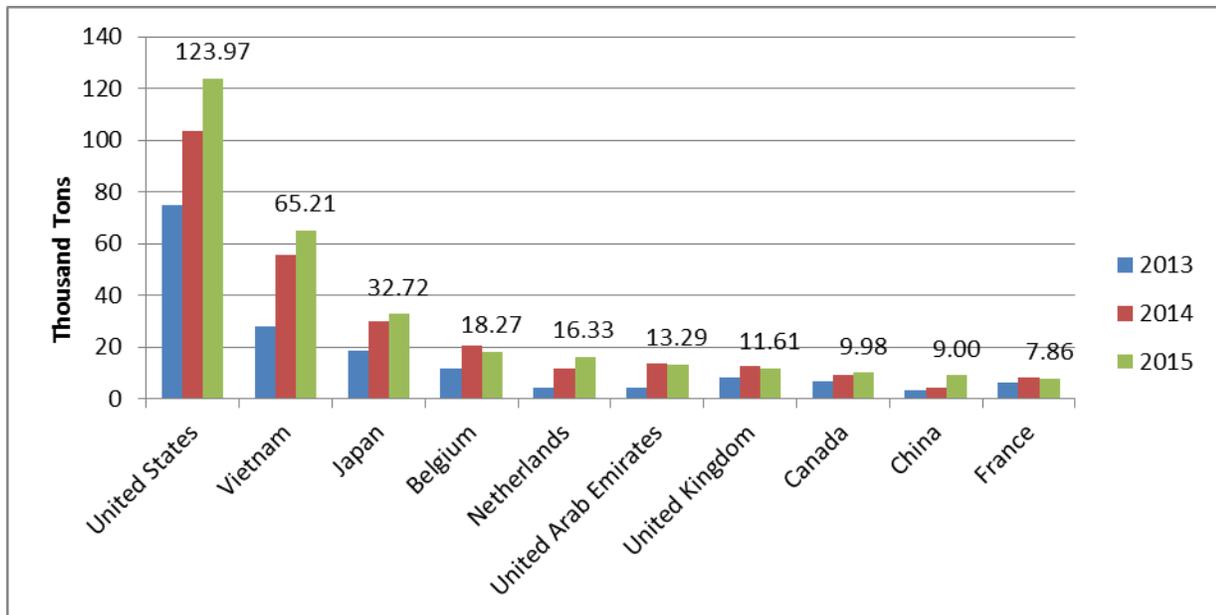
Trade:

Exports

From CY 2010 to 2015 shrimp export volume increased at a compound annual growth rate of 15.8 percent. India's shrimp export volume reached 382,959 Tons in CY 2015 (equivalent to \$3.19 billion), an increase of 9.8 percent from the previous year's volume, and the figures for 2016 show an increase of 13.3 percent year on year. This growth resulted both from the introduction of *Litopenaeus Vannamei* shrimp in 2009 and from the decline in competing exports from East Asian and South-east Asian countries due to early mortality syndrome (EMS) beginning in 2013.

In CY 2015, 97 percent (369,583 Tons equivalent to \$3.07 billion) of Indian shrimp exports were frozen. The United States is the largest market for Indian frozen shrimp, followed by Vietnam, Japan, Belgium and Netherland. The frozen shrimp exports to United States were 123,971 Tons (equivalent to \$1.17 billion) in CY2015, up 19.6 percent from CY 2014 (Figure 4). India's imports of shrimp are negligible, but feed imports are significant: in CY 2015, India imported about \$48 million of shrimp feed from Vietnam, Thailand, Malaysia, and Indonesia.

Figure 4. India: Frozen Shrimps Exports (HS Code: 030617)



Policy:

GOI's Marine Products Export Development Authority (MPEDA) regulates aquaculture production, which includes shrimp. Through a variety of policies and activities, MPEDA supports aquaculture production, development of processing infrastructure and value-addition, and establishing standards for quality control and market promotion. MPEDA provides financial and technical assistance for establishment of shrimp farms, hatcheries, disease diagnostic laboratories, processing infrastructure, cold chain, and effluent treatment units. GOI's Food Safety and Standards Authority of India (FSSAI) define standards for fishery products, including shrimp, through the [Food Safety and Standards Regulations](#) (FSSR 2011).

The veterinary health certificate required for exports is issued by GOI's Export Inspection Council (EIC) under Ministry of Commerce and Industry. EIC also regulates traceability and antibiotic residue for shrimp products. For importation of *Vannamei* broodstock and *Artemia* Cysts, the required sanitary import permit is issued by the Department of Animal Husbandry, Dairying, and Fisheries (DAHDF) and the veterinary health certificate is certified by an exporting country's competent authority. India's basic import tariff is 30 percent for shrimp products, 10 percent for *Vannamei* broodstock, and 5 percent for *Artemia* cyst.