

Northern India's pangasius promise

Status of a fast-growing industry in northern Indian states



By:
Paramveer Singh
Aquaculture Consultant
CEO & Founder
Blue for Aqua
Aquanet Biosciences PVT LTD
Date: October, 2020

Executive summary (1/2)

- ❑ Pangasius farming is one of the fastest growing aquaculture industries in India, and northern states are among those with the fastest growth
- ❑ India is the world's 3rd largest global fish producer and 2nd largest global aquaculture producer
 - Aquaculture: 7.1 million tons/year
 - Marine capture production: 3.62 million tons/year
- ❑ Aquaculture growth: 6% annual average growth
- ❑ Export earnings from fish and fishery products totaled about USD 7.2 billion in 2017



Executive summary (2/2)

- ❑ India's pangasius industry grew exponentially in the past decade. Pangasius fish are more robust than Indian species to disease and can reach harvest weight in a shorter period of time
- ❑ India is the world's second largest pangasius farmer after Vietnam
- ❑ Carps, pangasius and other diversified high value species like freshwater prawn are highly popular in India



State	Production*
West Bengal	14%
Andhra Pradesh	56%
Bihar	19%
Total area	42900 hectares

(*) Presentation by A.B.ChMohan, Gopala Rao.K and Kavi Babu. G of Seafood Solutions at APA 19 conference

Origins of pangasius and export potential

- ❑ Pangasius culture is a relatively new sector in India's aquaculture industry, offering farmers a faster growing and hardier species
- ❑ India permitted pangasius culture in 2007 in a bid to replicate Vietnam in growing this highly versatile fish
- ❑ Andhra Pradesh is the top producer state in India, although considerable potential exists in many areas of northern India given freshwater resources in this area
- ❑ Some vertically integrated producers have emerged in Andhra Pradesh, and account for most of India's output
- ❑ Vietnam's top players have managed to consistently produce a clean and consistent white fillets. The muddier waters in some areas of northeast India and areas of Myanmar could produce similar growing conditions to the Mekong Delta in Vietnam
- ❑ India has struggled to replicate Vietnam's export quality white-colored fish, and most produce is sold on local markets
- ❑ India is also held back by limitations in the supply of fingerlings, farming quality issues, a lack of processing expertise, and a lack of cold storage infrastructure in India



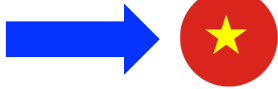
Farmers harvesting pangasius at a farm in Andhra Pradesh



Certified pangasius produce by GODACO, Vietnamise producer

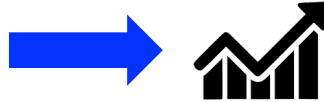
Timeline

1990s



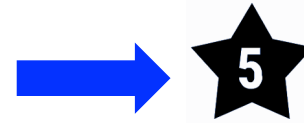
- ❑ Vietnam experimenting with farming of pangasianodon hypophthalmus, first broodstock from Lake Tonle Sap

1997



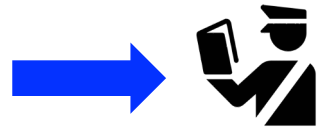
- ❑ Vietnam produced an approx of 22,000 metric tons

2002



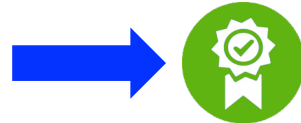
- ❑ Vietnam captured a fifth of US catfish imports by 2002

2003



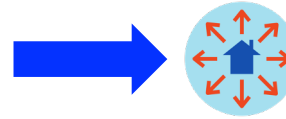
- ❑ Vietnamese exporters were charged with anti-dumping duties starting in 2003 and have been subject to annual reviews ever since

2011



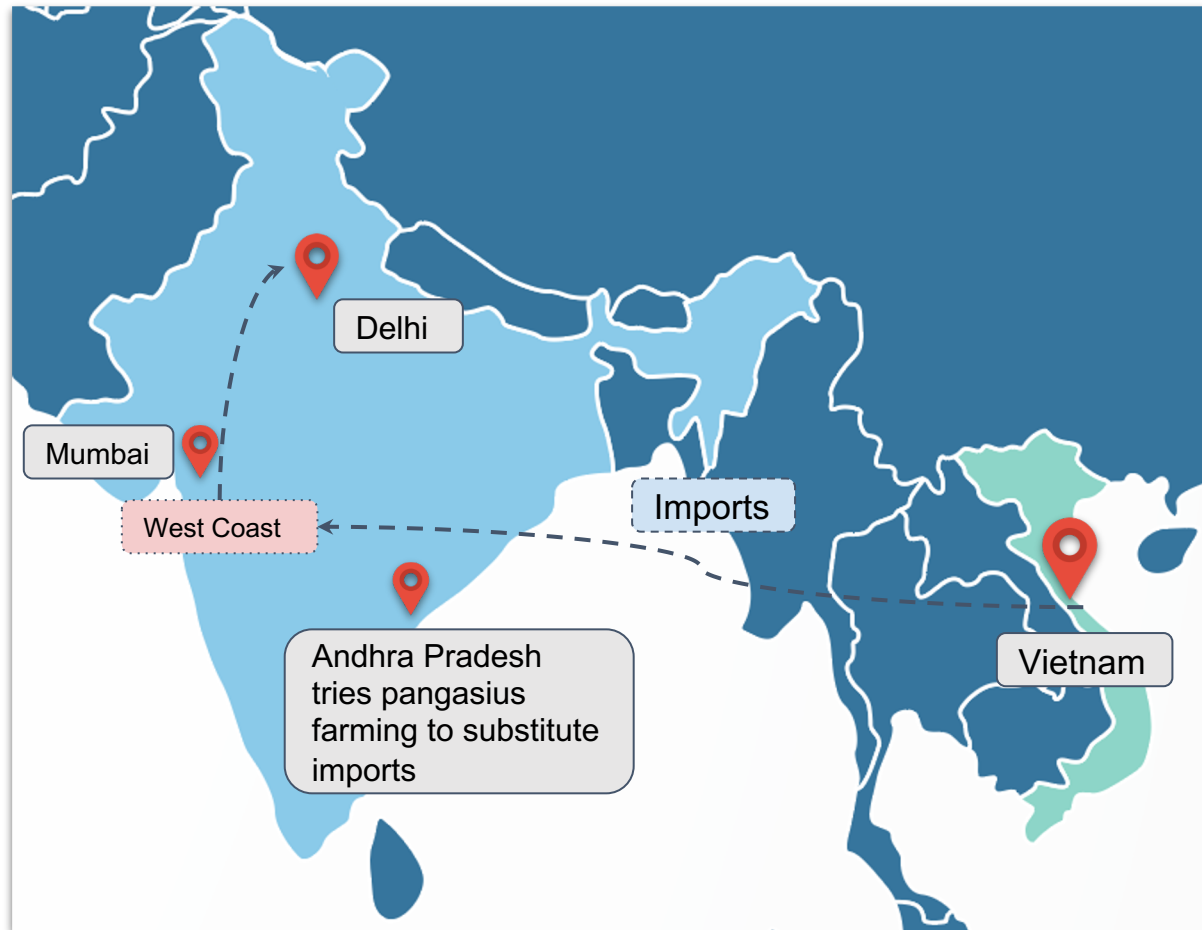
- ❑ Vietnam's strong market share crimped by 2011, German documentary highlighted substandard farming practices

2018



- ❑ Vietnam's pangasius production reached a peak of 1.27m tons in 2018, with pangasius exports surging 26.5% over the prior year to \$2.26 billion

Andhra Pradesh becomes major producer



Origins of Indian pangasius farming

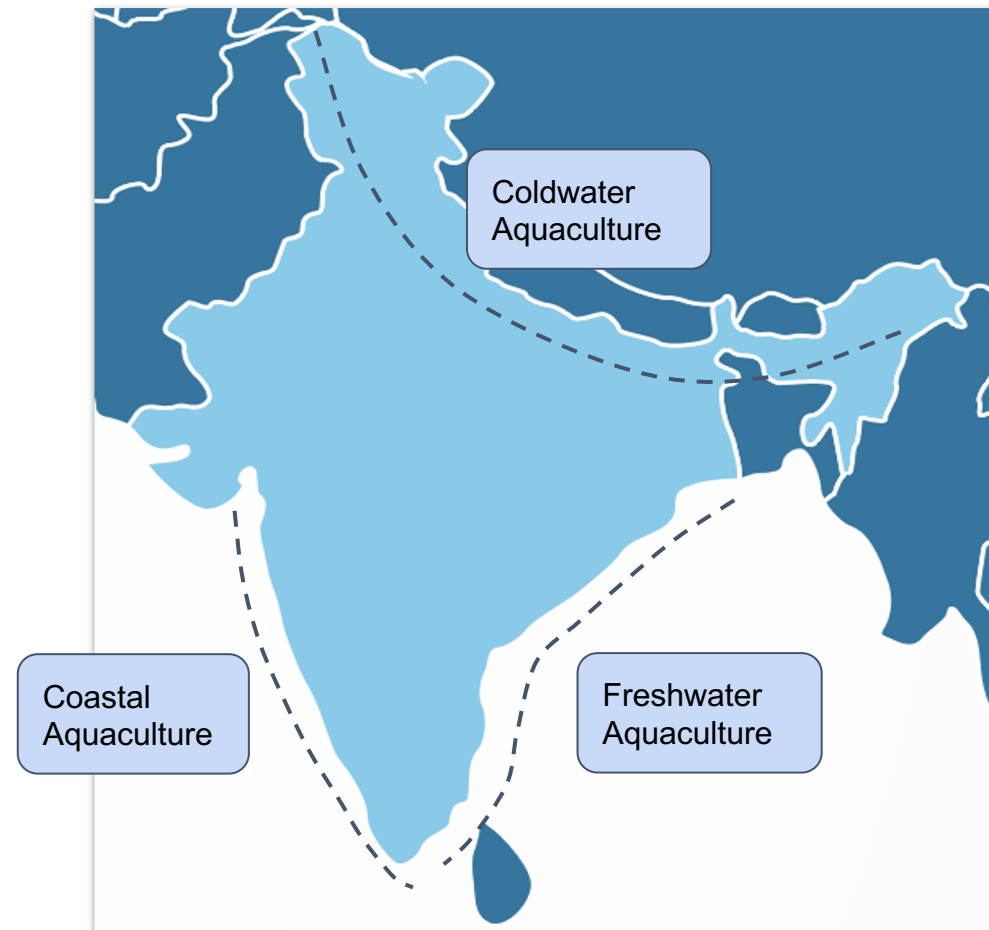
- ❑ Indian shrimp importer West Coast started to sell Vietnamese fillets in Delhi and Mumbai
- ❑ National aquaculture producers started to grow the species in a bid to emulate the Southeast Asian country
- ❑ Bangladesh's pangasius industry precedes the Indian industry.
- ❑ India and Bangladesh are now the No. 2 and No. 3 producers of pangasius worldwide, although neither has a significant export presence

Freshwater Aquaculture has a lot of potential

Randall Brummett, Senior Fisheries and Aquaculture Specialist at World Bank says:

- ❑ India only uses 3.52 million hectares of reservoirs, which is 40% of total capacity; and 2.34m hectares of ponds
- ❑ India could double pangasius and tilapia production by only harvesting "modest" 4t per pond hectare, Brummett said
- ❑ The World Bank aims to partner with the private to promote more aquaculture in Bangladesh, India and Pakistan
- ❑ The World Bank and the government are working on "cluster" farming groups to strengthen farming practices and encourage development
- ❑ That could ultimately allow farmers to access institutional finance, the World Bank said

"The farmers will have to have trust in the system that we are trying to develop," **Brummett said.**



India's Food Revolutions

India developed its food industry by going through different “revolutions” and aquaculture is currently a top focus in India’s so-called Blue Revolution

- ❑ The seafood industry push was preceded by the Green Revolution which made the country self-sufficient in wheat

1960s

Green revolution



- ❑ The white revolution was a national effort that converted India into the world’s largest milk exporter

1970s

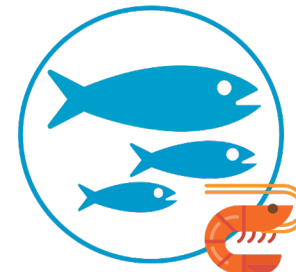
White revolution



- ❑ Blue revolution was designed to promote aquaculture and achieve self-sufficiency fish protein

1990s +

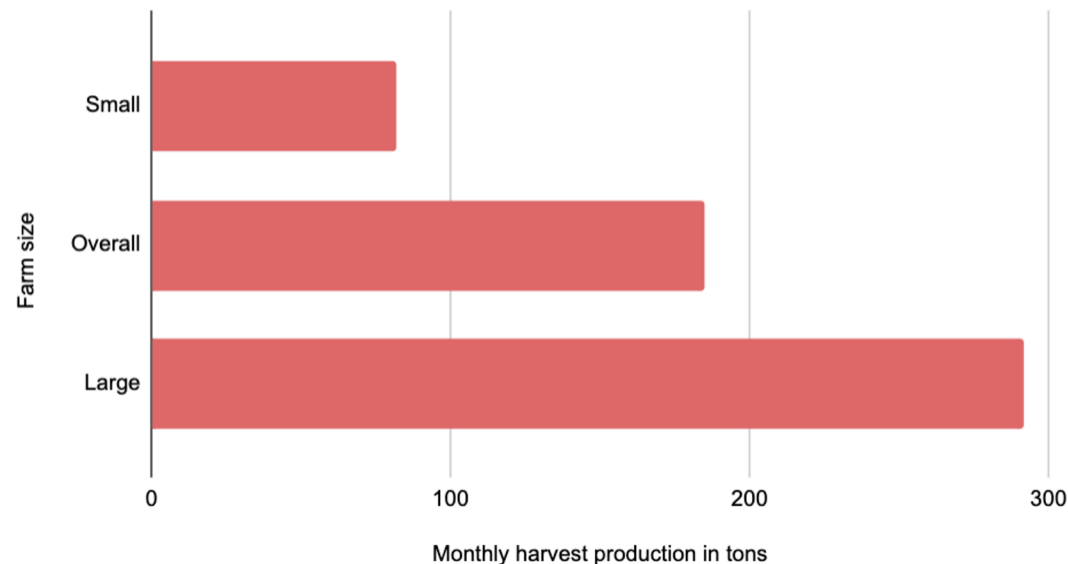
Blue revolution



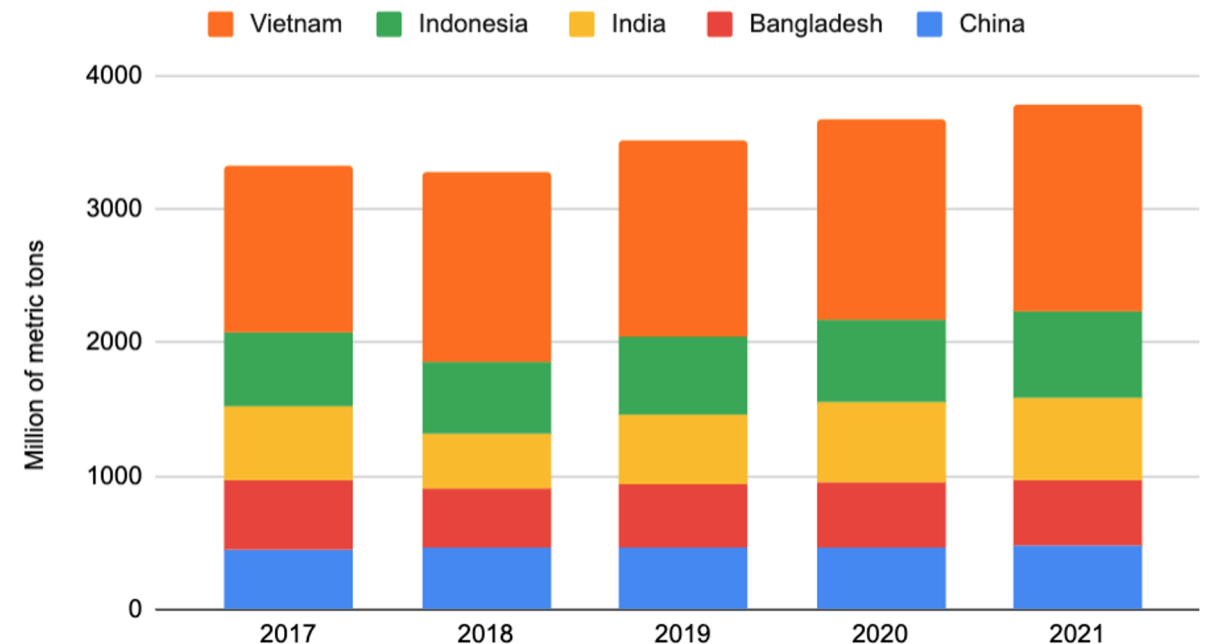
On the way to being the biggest producer

Culture of pangasius in India has grown over the years and become popular among fish farmers in several states. Production is estimated at around 400,000 to 425,000 metric tons per year

- ❑ Freshwater aquaculture production including pangasius will represent 62% of global aquaculture production by 2030, according to the United Nations' Food & Agriculture Organization (FAO) in its 2019 annual report



India and Indonesia are the biggest producers after Vietnam
Pangasius production by country



Status of the industry during the pandemic

- ❑ COVID-19 will have laid waste to a prediction by experts canvassed by the Global Aquaculture Alliance that India's pangasius production will increase by 8% in 2020
- ❑ The slump in market demand across India has led to farmers deciding to grow local carp species and Vietnamese koi
- ❑ Disruptions in the supply of seed from West Bengal has also influenced farmers decisions not to stock ponds with pangasius

Aquaculture farmers of Andhra Pradesh stare at heavy losses despite rise in production



Recent testimonies of pangasius farmers throughout the India

Covid-19 has caused difficulty in the transport and selling of fish seeds. Business is very low. Breeding has been suspended. Demand and supply chain has suffered.

- Pangasius farmer from West Bengal

We are facing critical losses since February due to COVID-19 pandemic. We have sold fish for lower prices.

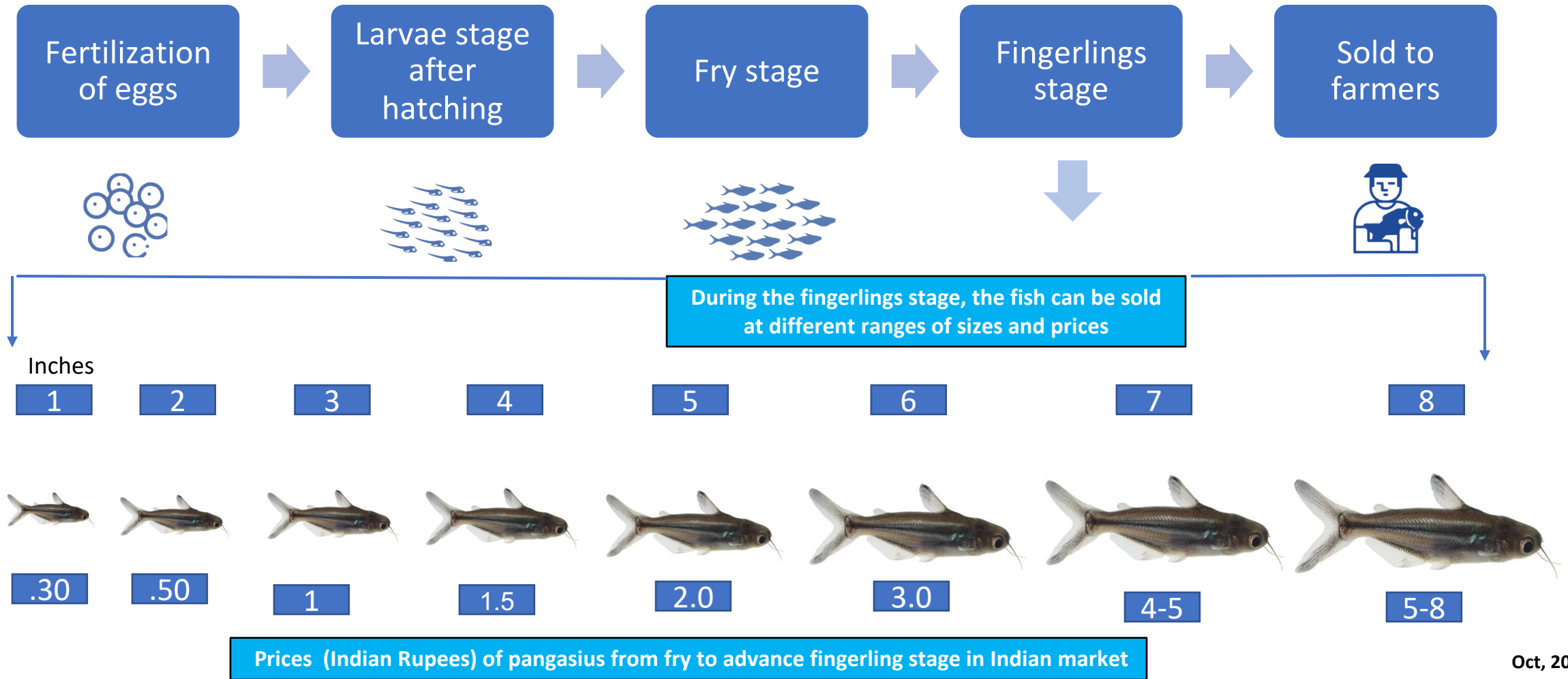
- Pangasius farmer from Andhra Pradesh

Covid-19 has caused difficulty in seed transportation which results in bad seed quality. Almost 80% seed lost with deadly diseases. Stocking is very low. Demand and supply chain has suffered.

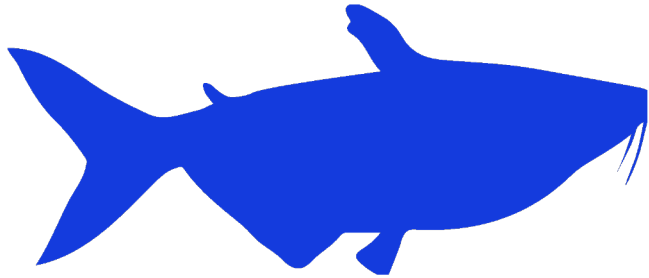
- Pangasius farmer from Punjab

Fingerlings production

- ❑ Hatcheries in West Bengal provide seed to Indian farmers, Bangladesh also supplies the Indian market



Whole fish market



Status in the north

- ❑ Certain northern states like Uttar Pradesh earn better pricing because access to highly populated markets such as Delhi
- ❑ Others states such as Punjab, Himachal Pradesh and Haryana have stopped pangasius farming for now because of razor thin margins
- ❑ Industry experts that pangasius farming should recover as pangasius fish cope better in ponds with sub-standard water quality and grow to market size quicker than Indian carps and Chinese carps.
- ❑ Price of fish in northern India also impacted with the stock that came from Andhra Pradesh in north India on lower prices with 60-70 rupees /kg.

Trade and pricing

- ❑ Prices for farm gate whole fish vary depending on the state, the operational cost implied in transport and feed, and average harvested size
- ❑ Average national prices farm gate whole fish were of 85.1₹/Kg in 2019 -- a little higher than the average in 2018 which averaged 78.5₹/Kg
- ❑ Other species are gaining market rapidly, the vietnamese koi could replace pangasius farming in Punjab and Haryana since more farmers are starting to switch to this species in ponds, Biofloc and RAS systems

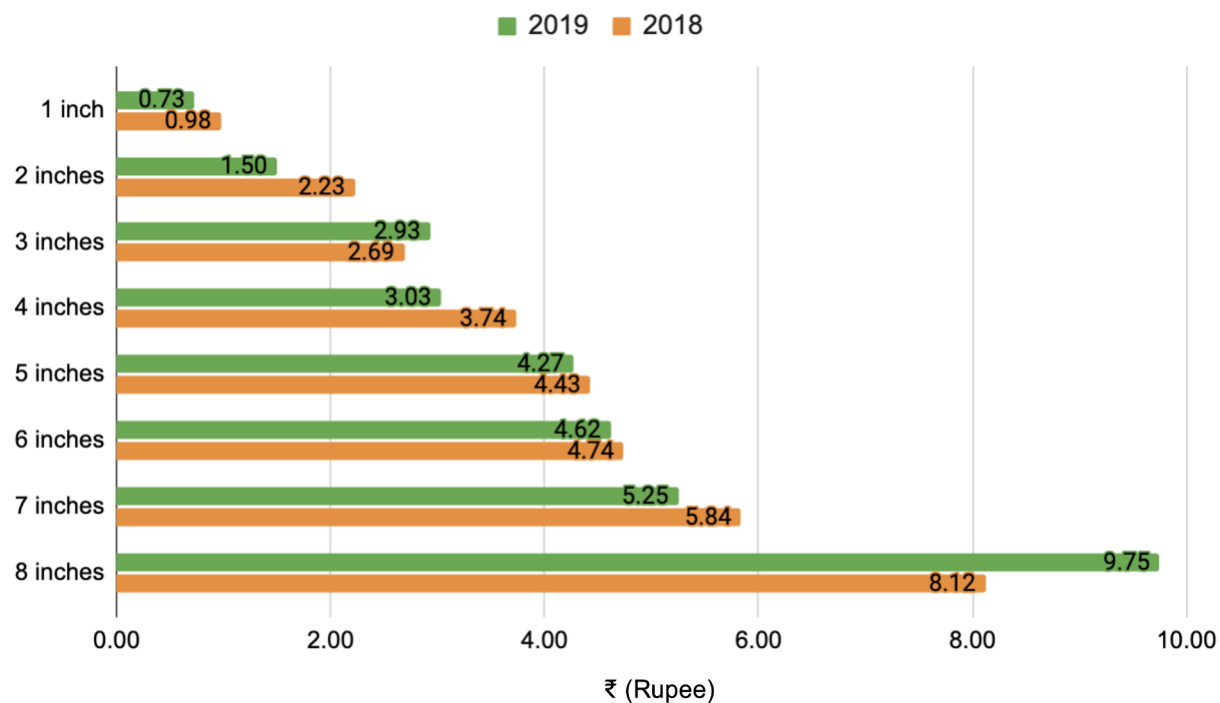


Vietnamese Koi is becoming popular due to its higher price value and growth rate

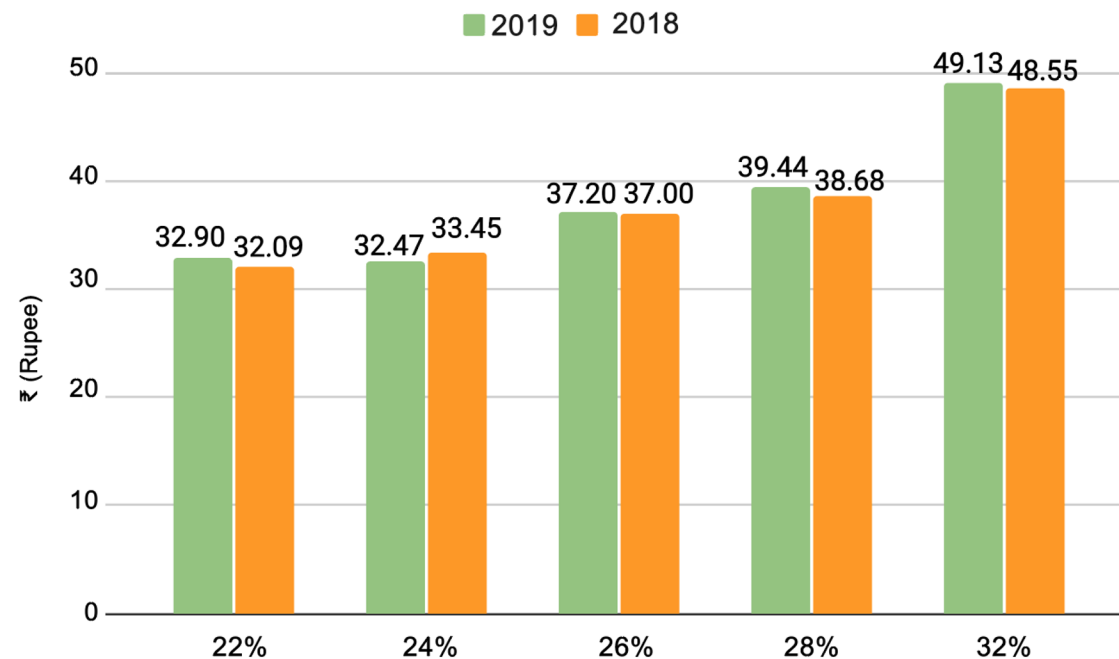
Operational costs

- Fingerlings and floating feed represent the main costs of production

Evolution of fingerlings and floating feed prices in 2019 and 2018



Pangasius fingerlings price per unit



Floating feed price per kg

Pangasius fish feed prices and suppliers

- ❑ Pangasius requires commercial feed to achieve expected growth-to-market-size rates
- ❑ Floating feed is sold according to protein percentage levels of 24%, 26%, 28%, 32% and 40%
- ❑ Indian farmers often opt for cheapest feed options or will even devise their own mixes to save costs
- ❑ Prices for floating feed can vary depending on the brand and the protein/fat percentage per kilo. (35-55)
- ❑ Farmers in Uttar Pradesh have declared to produce their own feed because they can't afford current prices of floating feed
- ❑ CPF is considered a costly feed brand while Indian IB (Indian Broiler) offers very cheap prices
- ❑ Neospark considered as costly brand (Medicine) while Aquanet offers very reasonable prices

Using commercial feed is a challenge for most farmers used to carp farming



Indian producers are manufacturing higher quality floating fish feed pellets, many options can be found in sacks from 25 to 50 kilograms

Popular brands of floating feed and fish medicine company for pangasius and other freshwater species

The Pangasius fingerlings trade



- ❑ Pangasius fingerlings come from the wetland areas of West Bengal and Bangladesh, due to the tradition of feeding juvenile fish with live feed such as rotifers and larvae
- ❑ Most of the fingerling supply that enters India is illegally transported over the West Bengal border with Bangladesh and sold to farmers for higher prices
- ❑ This supply can be cut off with one-off events such as COVID-19 or sudden border disputes (this was in the build-up to the re-election of Narendra Modi in 2019)
- ❑ Bangladesh is seen as ahead of India in breeding expertise because of government subsidies and the active presence of key aid groups such as the WorldFish program

Pangasius common disease during culture

- ❑ Most of the farmers in northern India suffer 10-30% fish seed mortality due to disease outbreak from injury and transportation stress
- ❑ The most common bacterial diseases observed are red spot disease caused by motile *aeromonas septicaemia*, BNP (Bacillary Necrosis of Pangasius) caused by *Edwardsiella ictaluri* and parasitic infection of *Trichodina* spp and *Epistylis* spp.
- ❑ These infections cause loss of appetite in fish, making them weak and leading to an increase in mortality rates and reduced growth rates
- ❑ Northern Indian farmers have incurred heavy losses of up to 70% mortality by stocking pangasius in colder temperatures. Better education is required for farmers to transition from traditional Indian species



Photos from several northern India farms during 2020

Pangasius trading problems ...

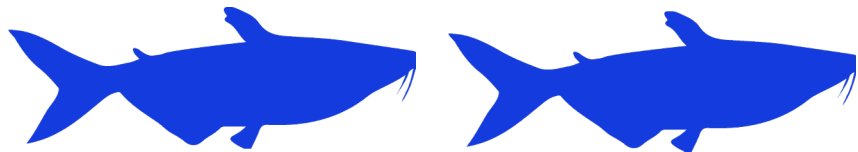


- ❑ Pangasius farmers face hurdles in selling market sized fish because demand in many states is minimal with low prices.
- ❑ Many farmers have to look outside of their native region for a better market and higher prices, which drives causes issues with freshness and increases transportation costs
- ❑ In the Indian market, pangasius prices vary according to the size of fish during harvesting. Based in our survey in 2019 the average price per kilo rounded the 85.1₹/Kg and in 2018 prices averaged 78.5₹/Kg respectively.

Challenges for pangasius farming in northern India

- ❑ There are no pangasius hatcheries in northern India which leads to bad and costly seed
- ❑ There is only one season (summer) because of the colder temperatures
- ❑ Few well developed fish markets and price fluctuations due to lack of cold storage
- ❑ Costly fish feed and medicine for the production of pangasius because it requires high protein value meal
- ❑ Consumers used to buying only live fish
- ❑ Andhra Pradesh are lower cost than northern states, northern states can't compete when AP stocks more pangasius fish
- ❑ Lack of proper guidance towards farmer regarding its stocking, feeding and farm management
- ❑ New species market development which has good growth rate and price value.





Thank you

