RICE BRAN OIL Country update – VIETNAM'S EVOLVING EDIBLE OIL INDUSTRY

THE 7TH INTERNATIONAL CONFERENCE ON RICE BRAN OIL
21st-23rd April 2023, Hyderabad, (India)

1. **Rice bran oil business in Vietnam 2022**

Oil market overview, rice bran oil position, growth and promotion

2. **Rice bran oil manufacturing**

Status, characteristics and recent improvements

Vietnam – a populous, rice production country

The Mekong Delta

North		
Population	Mil.	36.5
Rice production volume	MMt/year	4.9
Domestic demand	MMt/year	5.95

Central		
Population	Mil.	26.9
Rice production volume	MMt/year	4.5
Domestic demand	MMt/year	4.59

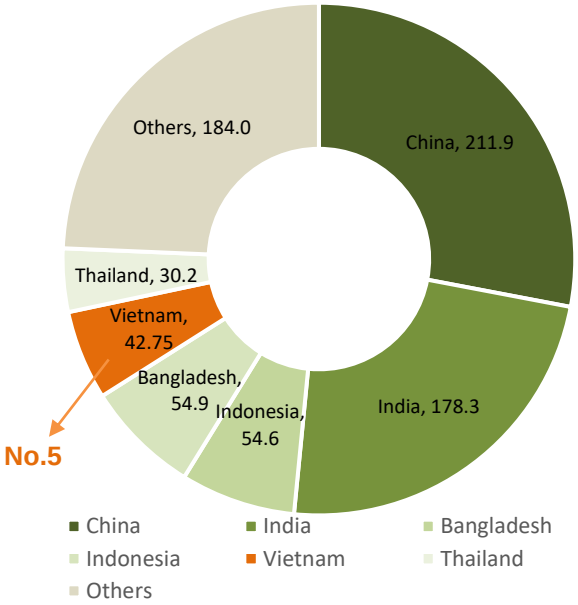
South East		
Population	Mil.	18.5
Rice production volume	MMt/year	0.70
Domestic demand	MMt/year	3.23

The Mekong Delta		
Population	Mil.	17.6
Rice production volume	MMt/year	12.5
Domestic demand	MMt/year	3.23

- Population: 99.5 millions (2022)
- Area: 331,210 km2
- Rice cultivation: 7.1 million hectares
- GDP (nominal): USD 409 billions (2022)
- GDP growth rate: 8.02% (2022)

Paddy cultivation, rice production and rice bran availability

World paddy production



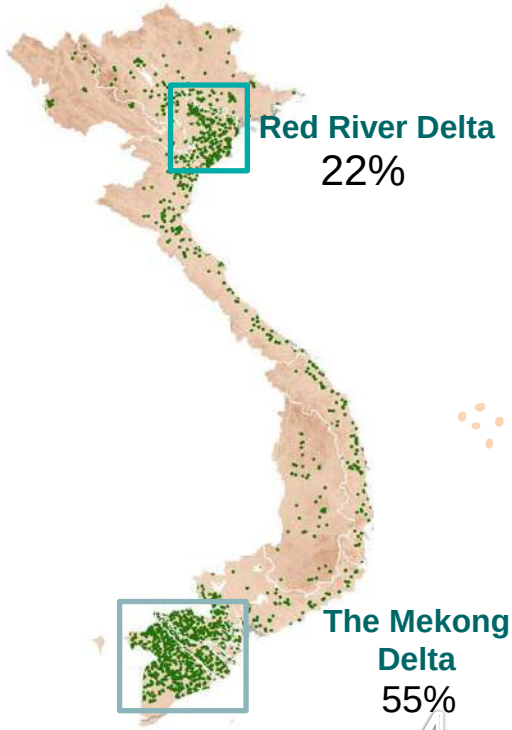
Source: FAO-2020, unit: mil tons

Vietnam: ranked No.5 in world rice production

Paddy production in Vietnam 2022

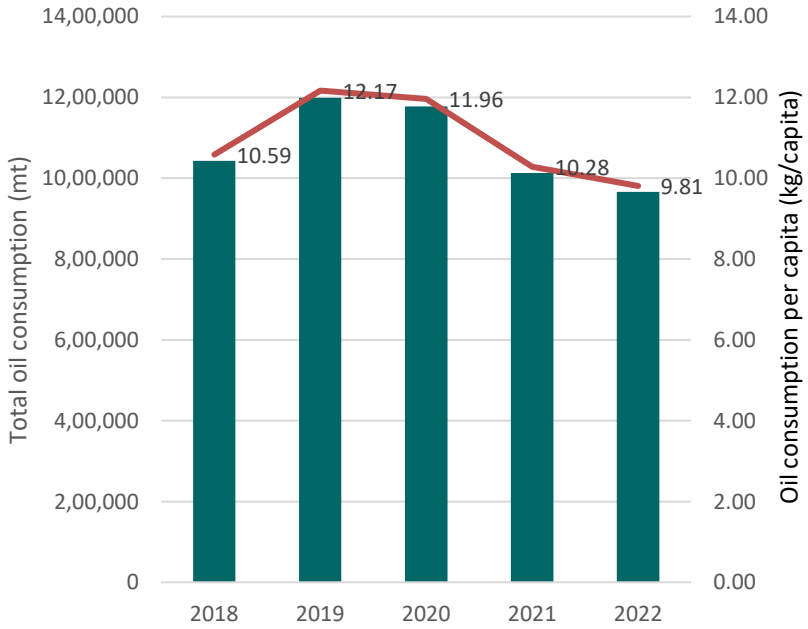
Paddy cultivation area	7.1 mil hectare
Paddy production	42.7 mil tons
Paddy for rice production	38.7 mil tons
Rice production	22.6 mil tons
Rice bran availability	3.7 mil tons

Concentrated cultivation area



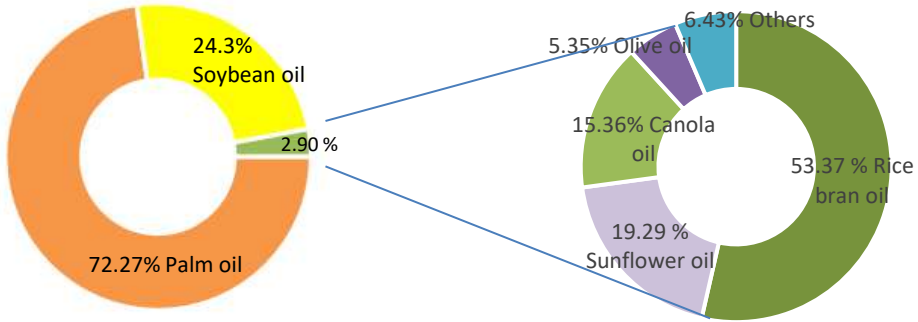
Rice bran oil: The third largest vegetable oil consumed.

Vegetable oil consumption



Oil consumption by oil types

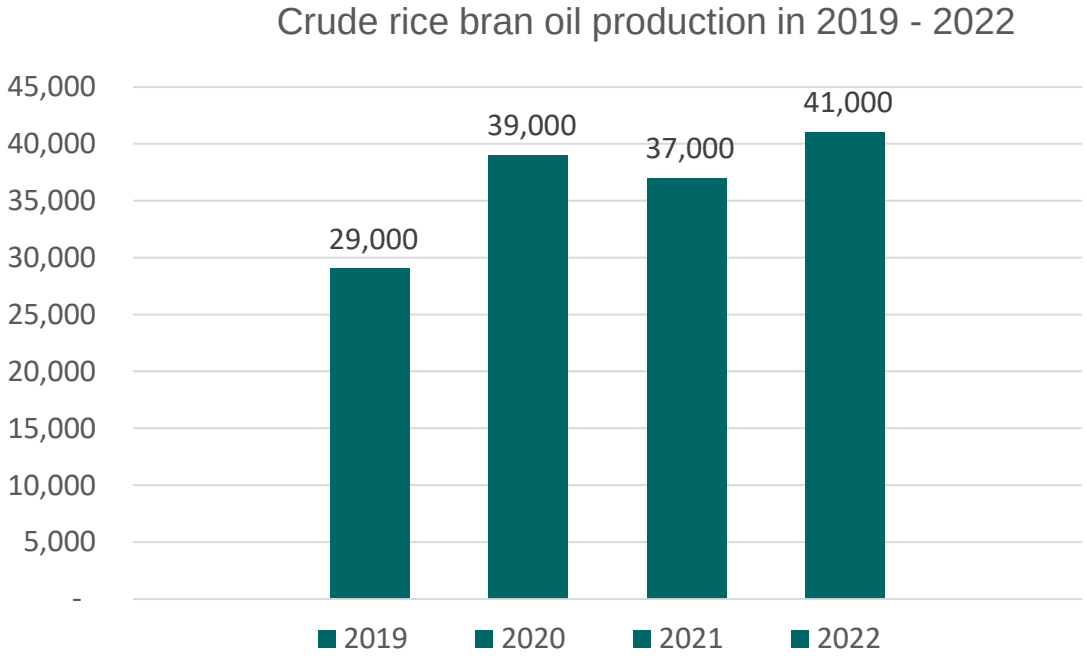
Total cooking oil consumption (mt)	2018 1,043,000	2019 1,199,000	2020 1,178,000	2021 1,013,000	2022 966,000
Palm oil (mt)	770,000	898,100	841,600	722,800	703,000
Soybean oil (mt)	240,000	267,000	291,000	253,000	235,000
Rice bran oil (mt)	**11,700**	**14,300**	**21,200**	**20,900**	**15,000**
Sunflower oil (mt)	10,400	12,400	15,900	8,200	5,400
Canola oil (mt)	5,900	3,700	4,600	4,500	4,300
Olive oil (mt)	1,400	1,500	2,000	1,800	1,500
Others (mt)	3,600	2,000	1,700	1,800	1,800



Palm oil and soybean oil are dominating the market, accounting for ~ 96% of total consumption volume.

Rice bran oil is No.1 in the high-end segment

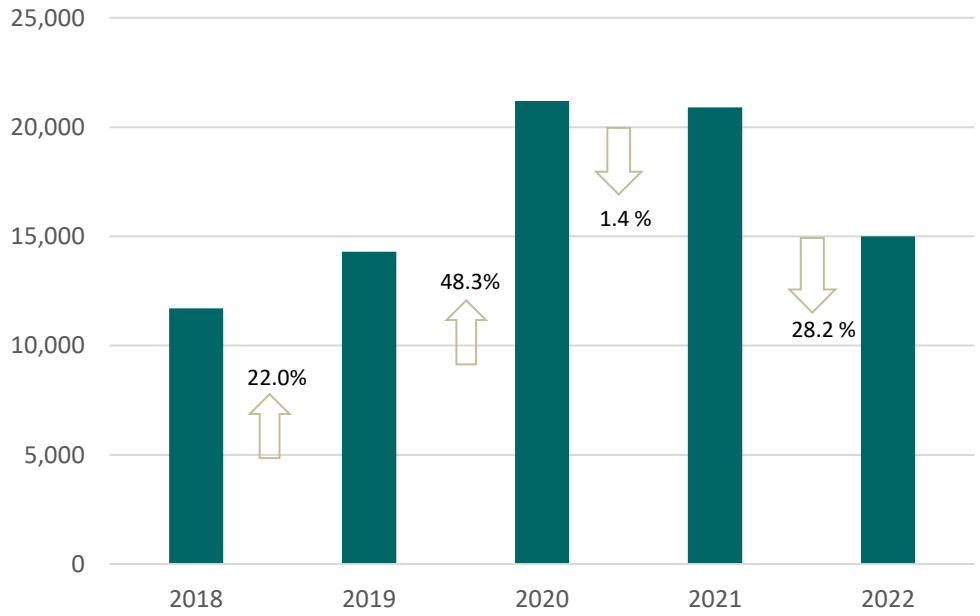
Crude rice bran oil production (in metric tons)



The rice bran oil industry in Vietnam is growing and expanding, potentially due to increasing demand and improvements in production technology

Rice bran oil for food usage

The production volume of rice bran oil for cooking and food industrial uses saw a significant increase from 2018 to 2020, but decreased in 2021 and 2022, which may be attributed to the impact of COVID-19 on the industry



Rice bran oil consumption volume (mt)

Featured products in cooking

Food industry applications

- Milk production.
- Bakery.
- Snack foods.
- Mayonnaise.

Rice bran oil promotion activities

TVC AIRING

Maximize brand awareness about the amazing nutrient from Rice bran oil via the largest media platform.

PR & DIGITAL

Promote outstanding benefits of gamma oryzanol & RBO for heart health via Social post, KOL sharing, online news, banner ads network...

OOH – LCD/Frame

Increase brand awareness indoor & outdoor

SUPERMARKET BRANDING

Invest in supermarket display & offer the good promotion to increase the trial & consideration of products.

Effort of local manufacturer to promote rice bran oil awareness and achieved high consumption (3rd) after Palm oil and soya bean oil, and as the top choice for a healthy oil.

2. Rice bran oil manufacturing 2022

Status, characteristics and recent improvements

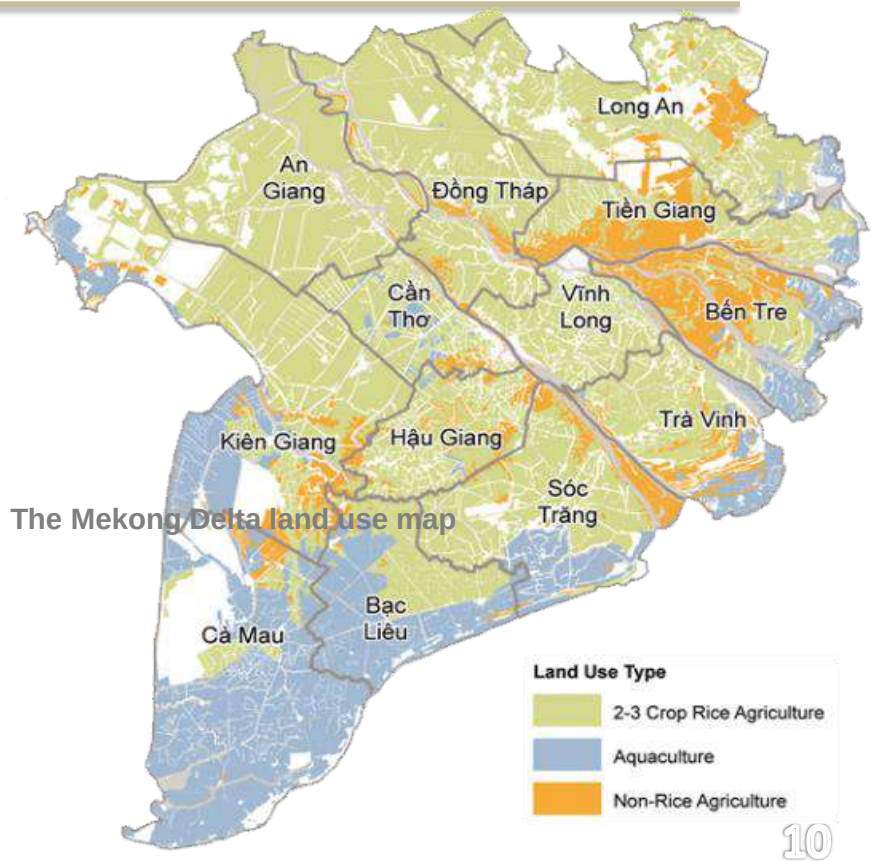
Rice bran sourcing area and utilization

In Vietnam, the Mekong Delta region has most advantage as potential area for production of rice bran oil.

- The Mekong Delta accounts for 55% of rice bran availability in Vietnam.
- Most concentrated rice milling plants area in the country.

Rice production in the Mekong Delta	12.5 mil MT
Rice bran production	2.0 mil MT
Crude rice bran oil potential	280 KMT
CRBO production in 2022	41 KMT
Current utilization	15%

Current utilization is still low!



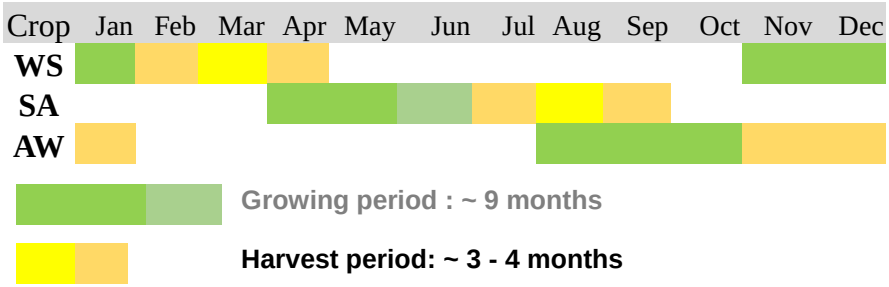
The Mekong Delta land use map

Rice bran oil production facilities in the Mekong Delta 2022

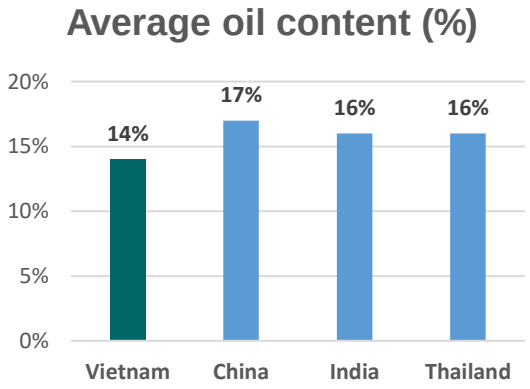
Facilities	Total capacity (Annum)	Average utilization
Rice bran stabilization plants	~ 1,100,000 ton	26%
Extraction plants	~ 650,000 ton	49%

Low utilization due to short time crop season and unable to stock up rice bran for oil extraction during off season time.

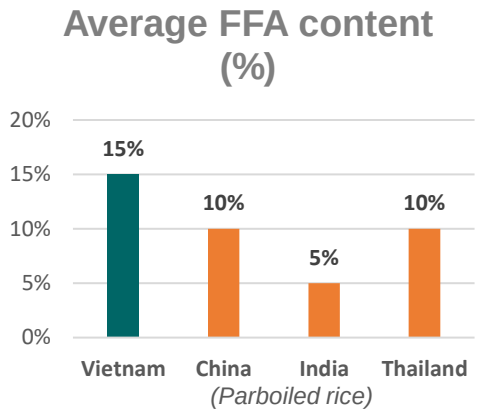
Rice plant/harvest time in the Mekong Delta



Characteristics of Vietnam rice bran



Low oil content



High FFA content

- Small rice mills (90% of rice mills) need stock up time.
- Long transportation time due to poor infrastructures.

FFA control

- Rice millers run at 30% of capacity due to crop season.
- Not able to stock up rice bran for operation in peak off seasons.

Utilization

- Over polishing to suit local consumer preference.
- Many rice varieties.

Oil content

Production challenges and solution

Challenges!

01 **Rice millers:** low capacity and scattered

02 **Transport:** Hiccups logistics

03 **Poor rice bran quality (high FFA & low oil content)**

04 **Processing:** Low yield, high processing cost, inferior quality

Solution

1 Sourcing solution

2 Technological improvements

3 Value adding by-products

Improving rice bran oil production utilization and quality.

Short harvest period
→ Low utilization in off-peak season

Stabilize raw rice bran in collection center to stock up high volume to increase extraction utilization during off-peak season

Bad rice bran quality due to poor logistics system, low parboiled rice availability

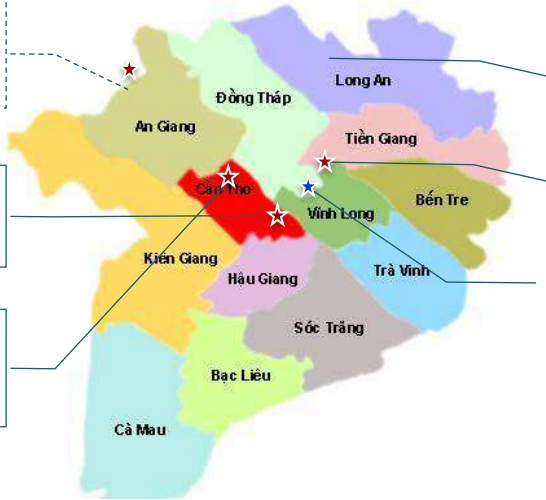
Set up rice bran collection centers in strategic areas to shorten collection time and improve rice bran quality

Rice bran collection centers location

Phu Tan, An Giang

Sa Dec, Dong Thap

Thot Not, Can Tho



Long An

Cai Be, Tien Giang

Hung Phu, Can Tho

Rice bran collection center

Process improvement – Extraction and neutralization

Local consumer preferred low oil color → Chemical refining process required.

Competitive oil yield and manufacturing cost → Miscella chemical refining process applied.

Stabilization – Extraction – Neutralization Plants Complex

Miscella refining plant

Desolventizer plant

Technology improvement - Refining and winterization

Modern refining and winterization technology:

- achieve good refining yield
- low refined oil color for consumer preference




Fully automated processes:

- reduce manpower cost, variable cost.
- ensure consistent oil quality





Q&A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