



1st IARBO Symposium

Safety, Nutrition And Health

Present and Prospect of Rice Bran Oil Development in India

By:

Dr. B. V. Mehta

Executive Director

The Solvent Extractors' Association of India

Mumbai, India

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Wuhan, China



Presentation Sequence

- **SEA Profile**
- **Incredible India**
- **Indian General Economy**
- **Agricultural Economy**
- **Global & Indian Rice Production**
- **Rice Bran Oil – Growth Story**
- **Benefits to the Nation in Promoting RBO**
- **Way Forward**



SEA Profile

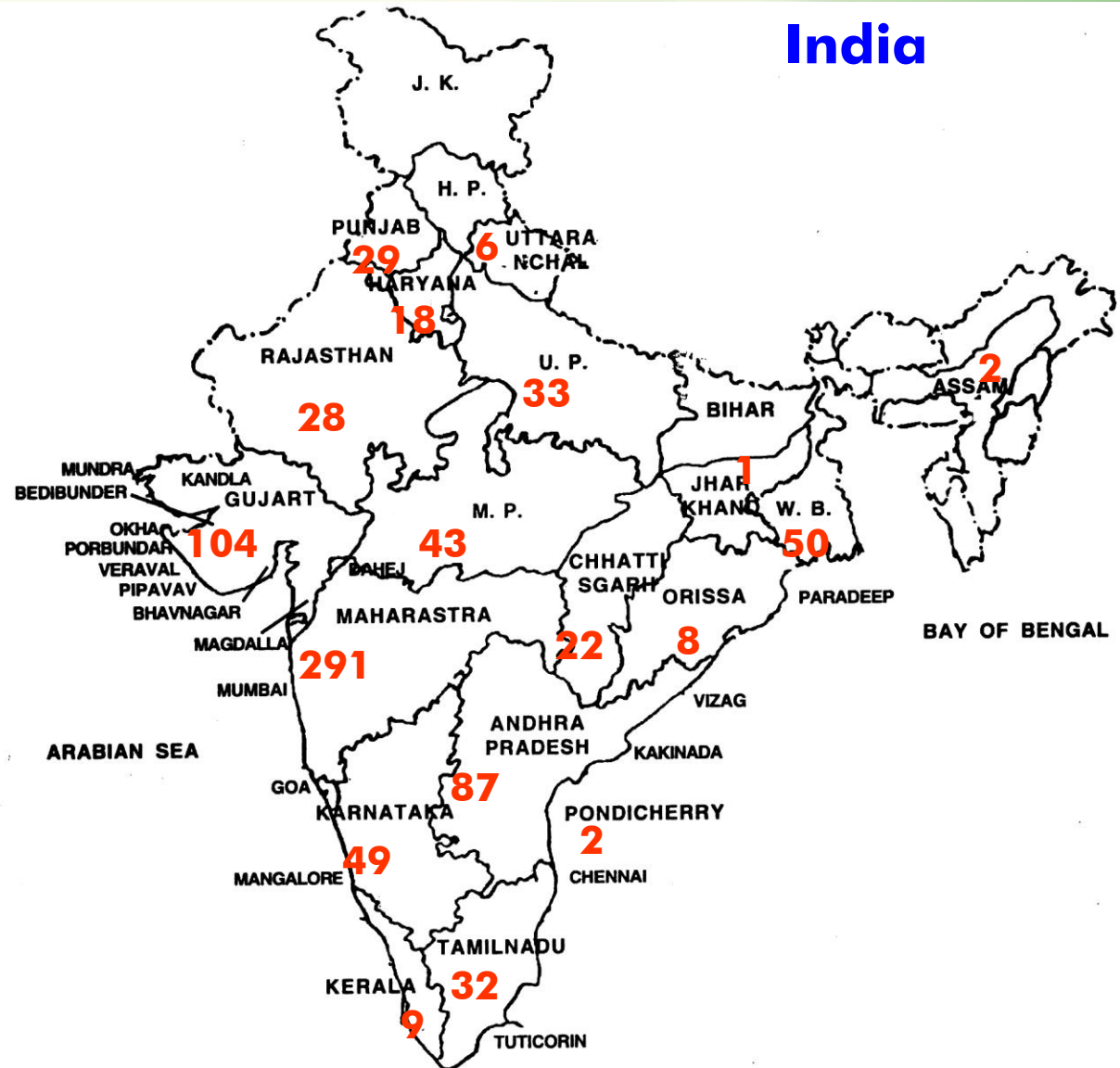
- Formed in **1963** to foster the development & growth of the **Solvent Extraction Industry in India**
- **Largest and Premier Association in the Vegetable Oil Sector in India**
- **First Association in Vegetable Oil & Oilseed sector to receive **ISO 9001** Certification in India (2004)**
- **Recognised as **NGO** and **TPO** by Government of India**
- **SEA celebrating 2013 as Golden Jubilee year**



SEA Members

Over 850 Members

- ✓ S. E. Units
- ✓ Oil Millers
- ✓ Refiners
- ✓ Vanaspati Mfgrs.
- ✓ Importers
- ✓ Exporters
- ✓ Surveyors
- ✓ Shipping Agents
- ✓ Fin. institutes
- ✓ Foreign Buyers & many more....





Incredible India



Incredible India



What People Talk About India

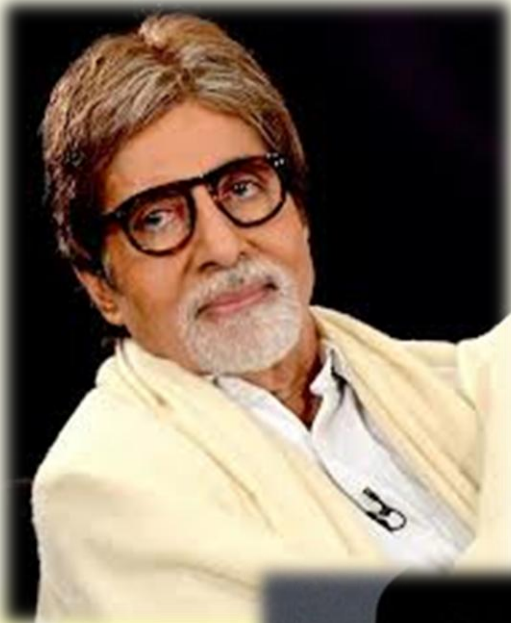
- **Second most populous nation**
 - ✓ 1.25 Bn people
- **Largest democracy**
- **Multi ethnic country**
- **Country with maximum young people**
 - **Median age is 24 years**
- **Amongst the fastest growing economies**
- **Fourth largest economy**
- **Literacy level – 65% (2012)**
- **4 B's....**



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BOLLYWOOD





BEAUTY





BRAINS.....

- **38% of doctors in USA are Indians**
- **12% of scientists in USA are Indians**
- **37% of NASA scientists are Indians**
- **31% of MICROSOFT employees are Indians**
- **27% of IBM employees are Indians**
- **17% of INTEL scientists are Indians**
- **13% of XEROX employees are Indians**





Birth Place of Lord Buddha





Indian General Economy





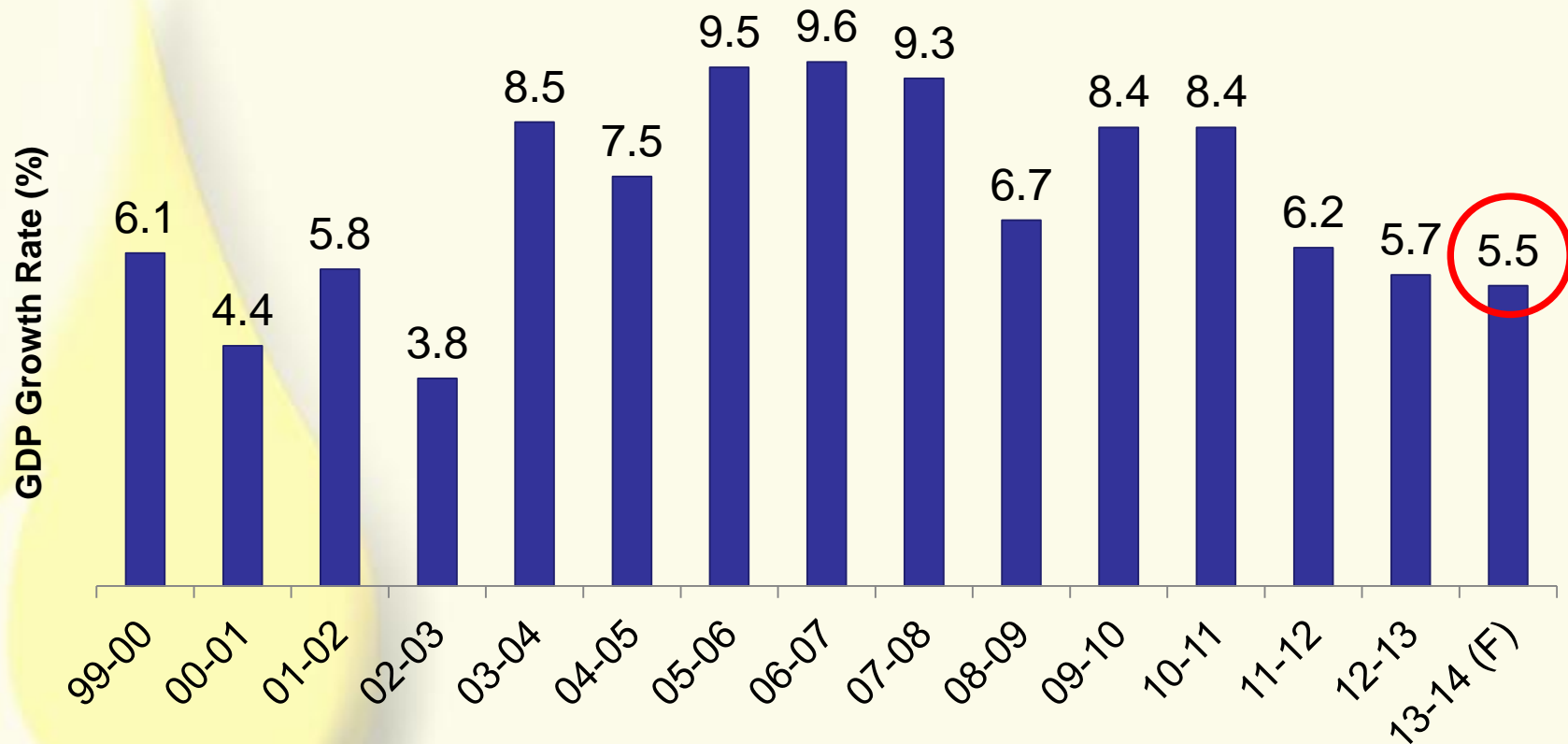
Indian Macro-economic Overview

- **India – a fast growing significant economy in spite of global slowdown**
- **Strong Macro-economic fundamentals**
- **GDP Value: Over US\$ 2.13 Trillion (Tn)**
- **Purchasing Power Parity (PPP): US\$ 5.45 Trillion**
- **Forex Reserve: US\$ 309 Bn**
- **FDI Flow US\$ 28 Bn (2013)**
- **Savings Rate 30.1% of GDP (2012-13), includes Household Savings Rate of 21.9%**





India's Overall GDP Growth



- The average GDP growth in last five years is registered at 7.1%
- For FY13-14, growth is forecasted at 5.5%



India's Agriculture Production



India is well connected with cellular phone having 903 Mn users (total telecom users stand at 931 Mn) and with the talk time rate cheapest in the world

Source: TRAI, data as on 28-Feb-2014

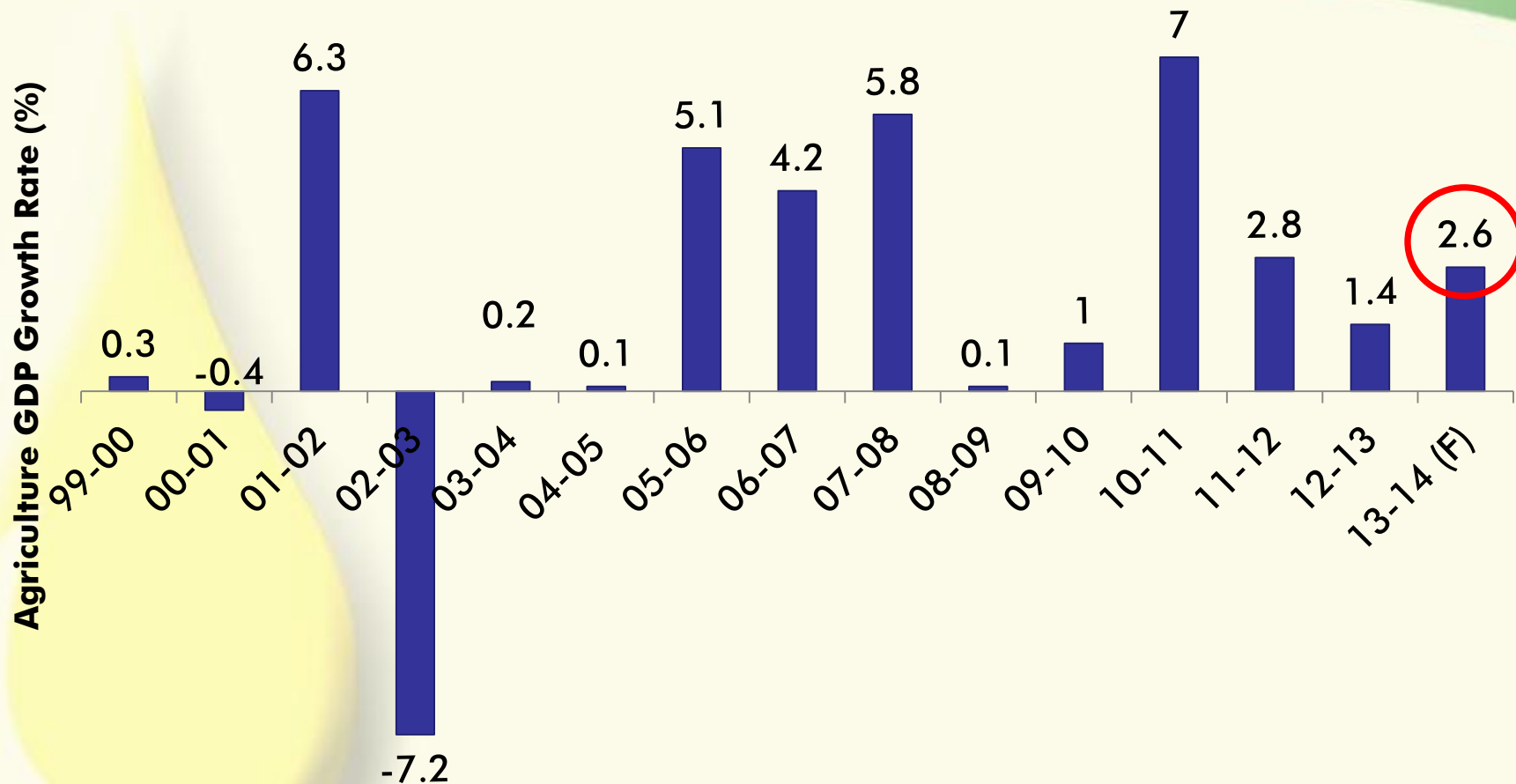


India's Ranking in the World

Area (3.3 Mn Km ²)	No. 7
Arable Land (161.7 Mn Ha)	No. 2
Irrigated land (56.0 Mn Ha)	No.1
Milk Production	No.1
Rice Production	No.2
Wheat Production	No.2
Rapeseed Production	No.2
Fruit Production	No.2
Tea Production	No.2
Sugar Production	No.2
Cotton Production	No.2
Coffee Production	No.5



Agriculture Sector GDP Growth

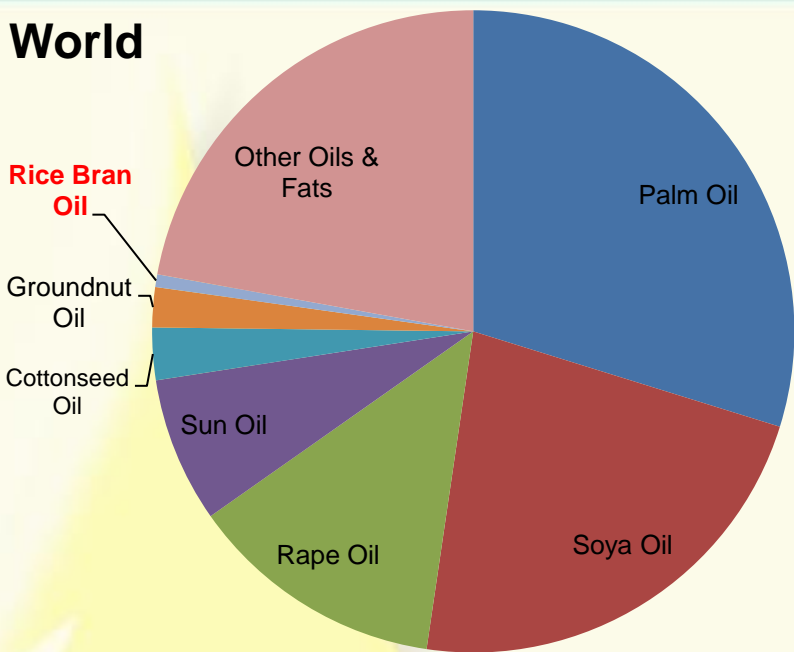


- Agriculture Sector growth depends heavily on monsoon performance
- For 2013-14, growth is forecasted at 2.6% compared to 1.4% in previous year

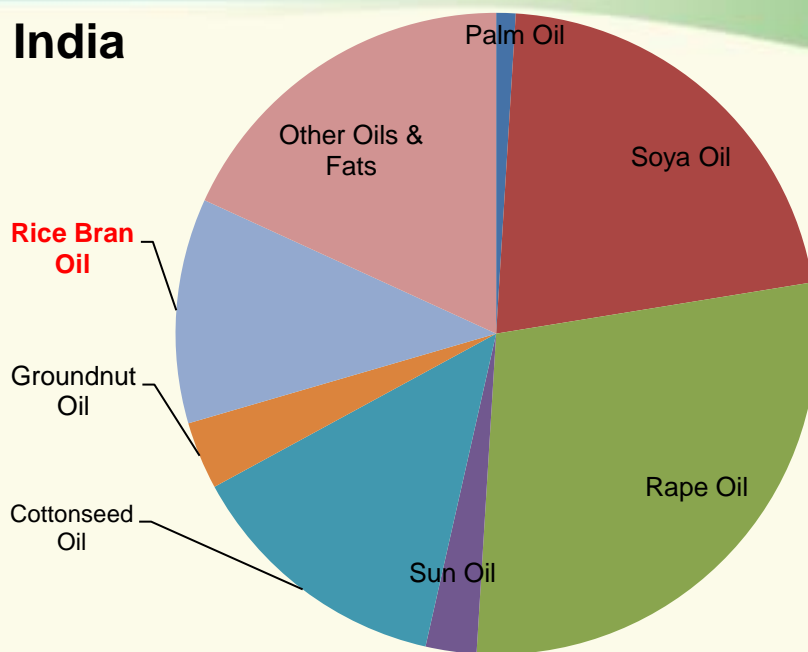


World & India Production of Oils & Fats 2012-13

World



India



World	Oil & Fats (Quantity in MnT)	India
55.95	Palm Oil	0.08
42.29	Soya Oil	1.76
24.26	Rape Oil	2.34
13.74	Sun Oil	0.21
4.95	Cottonseed Oil	1.11
3.78	Groundnut Oil	0.28
1.20	Rice Bran Oil	0.93
41.59	Other Oils & Fats	1.49
187.40	TOTAL	8.20

Major Vegetable Oils produced in India are Rapeseed Oil, Soybean oil, Cottonseed Oil, Rice Bran Oil & Groundnut Oil

Source: Oilworld 2013 & SEA Data Bank for India



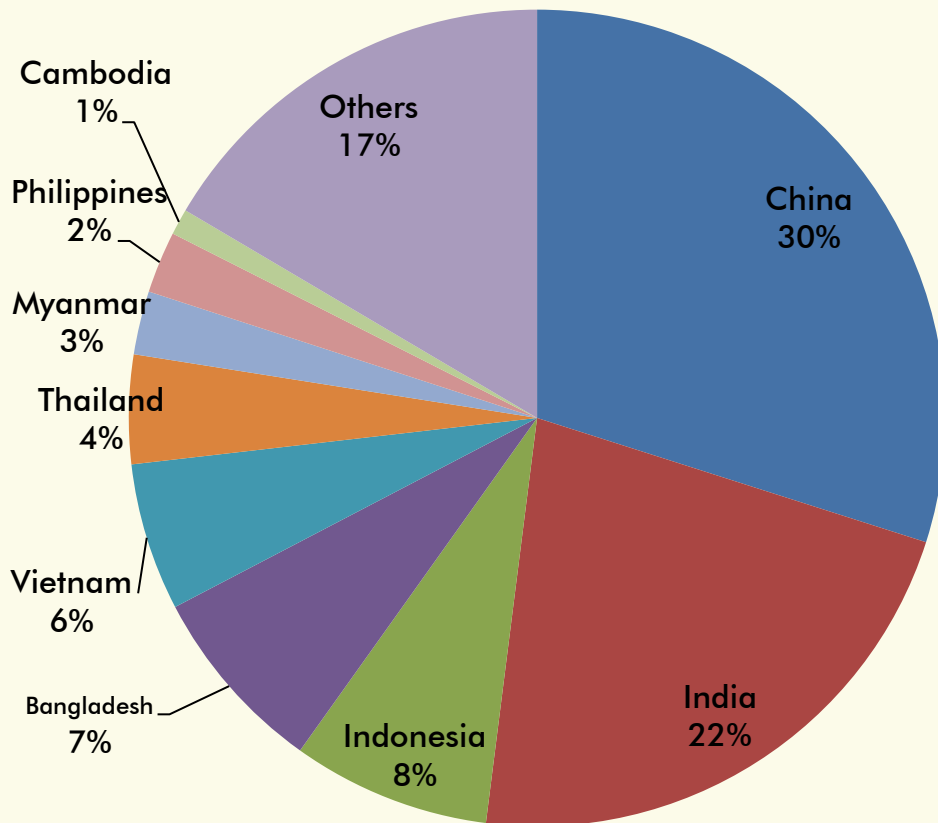
Global and Indian Rice Production



Global Rice Production (2013-14)

Country	Qty '000 MT	%
China	1,42,300	29.9
India	1,05,000	22.1
Indonesia	37,355	7.9
Bangladesh	35,590	7.5
Vietnam	27,800	5.8
Thailand	20,500	4.3
Myanmar	11,957	2.5
Philippines	11,640	2.4
Cambodia	4,900	1.0
Others	78,531	16.5
World Total	4,75,573	100

Global Rice Production (Qty '000 MT)



Source : USDA

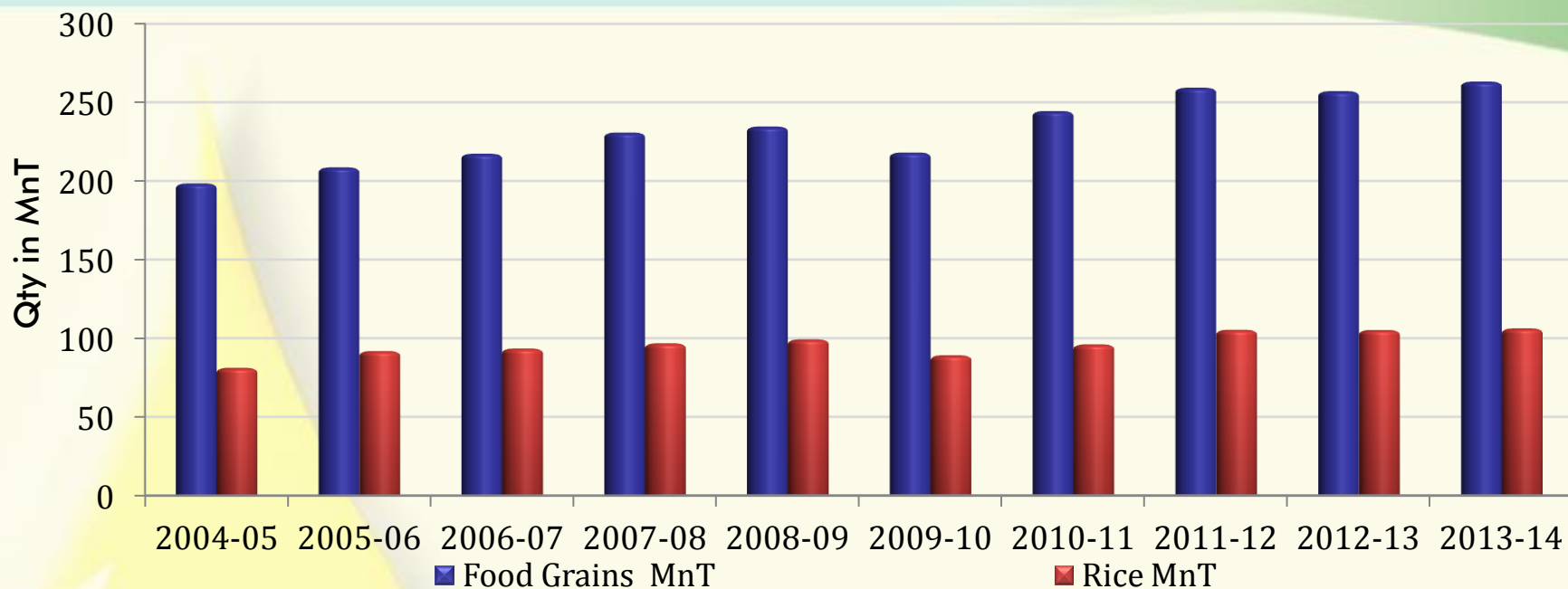


Rice Production – Global vs Indian

Year	World Production (MnT)	India's Production (MnT)	India's Share (In %)
2001-02	399	93.34	23.39
2002-03	380	71.82	18.90
2003-04	390	88.53	22.70
2004-05	405	83.13	20.53
2005-06	423	91.79	21.70
2006-07	427	93.35	21.86
2007-08	438	96.69	22.08
2008-09	459	99.18	21.61
2009-10	457	89.09	19.49
2010-11	449	95.98	21.38
2011-12	456	104.32	22.88
2012-13	463	103	22.25
2013-14	476	105	22.06



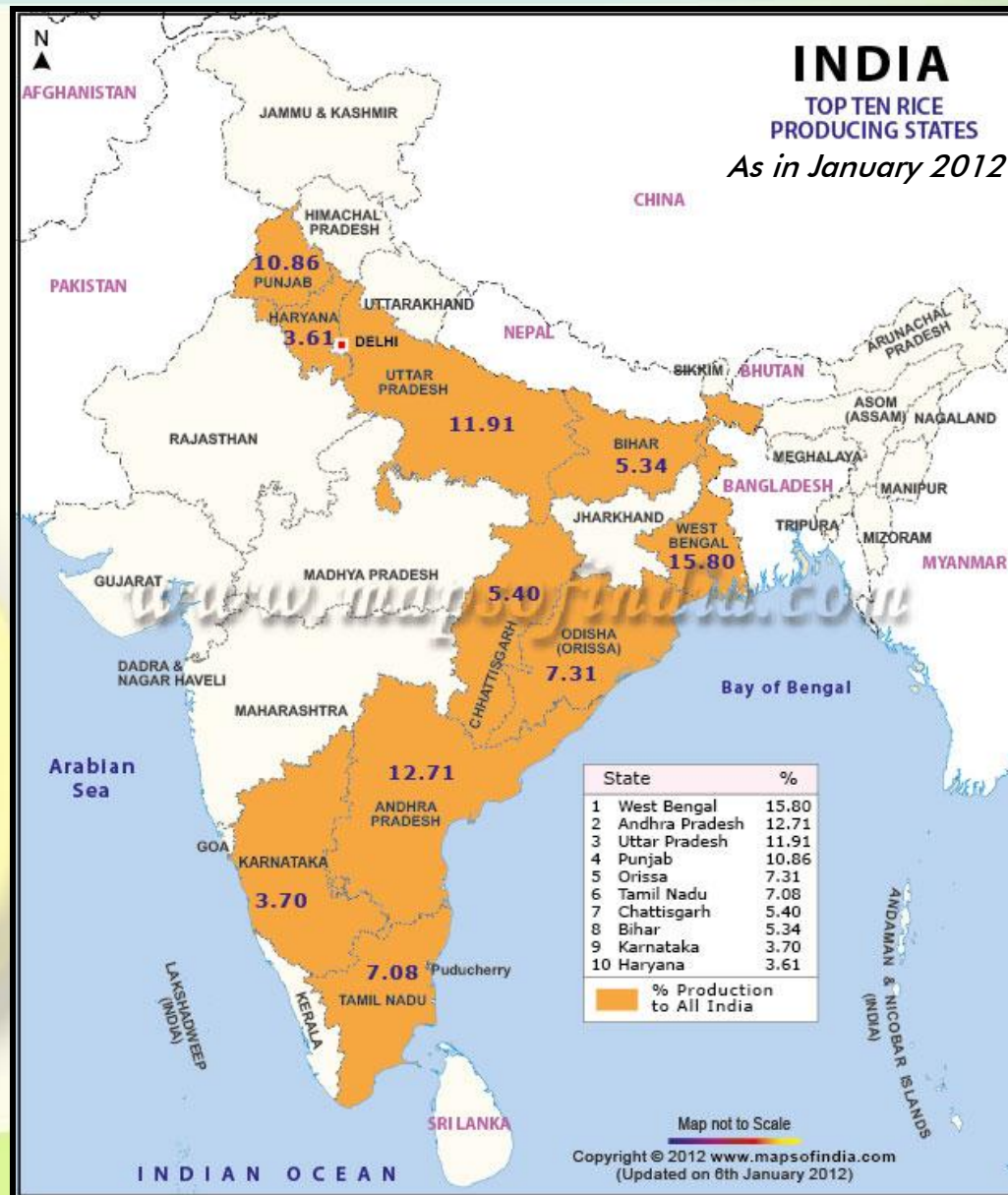
Production of Food grains & Rice in India



Year	Food Grains, MnT	Rice, MnT	%
2004-05	198.4	81.1	40.9
2005-06	208.6	91.8	44.0
2006-07	217.3	93.4	43.0
2007-08	230.8	96.7	41.9
2008-09	234.6	99.2	42.3
2009-10	218.1	89.1	40.8
2010-11	244.5	96.0	39.3
2011-12	259.3	105.3	40.6
2012-13	257.1	105.2	40.9
2013-14	263.2	106.2	40.3



Top Ten Rice Producing States in India





Rice Bran Oil in India...

.... A Growth Story



What is Rice Bran Oil (RBO)?

..a Unique Cooking Oil

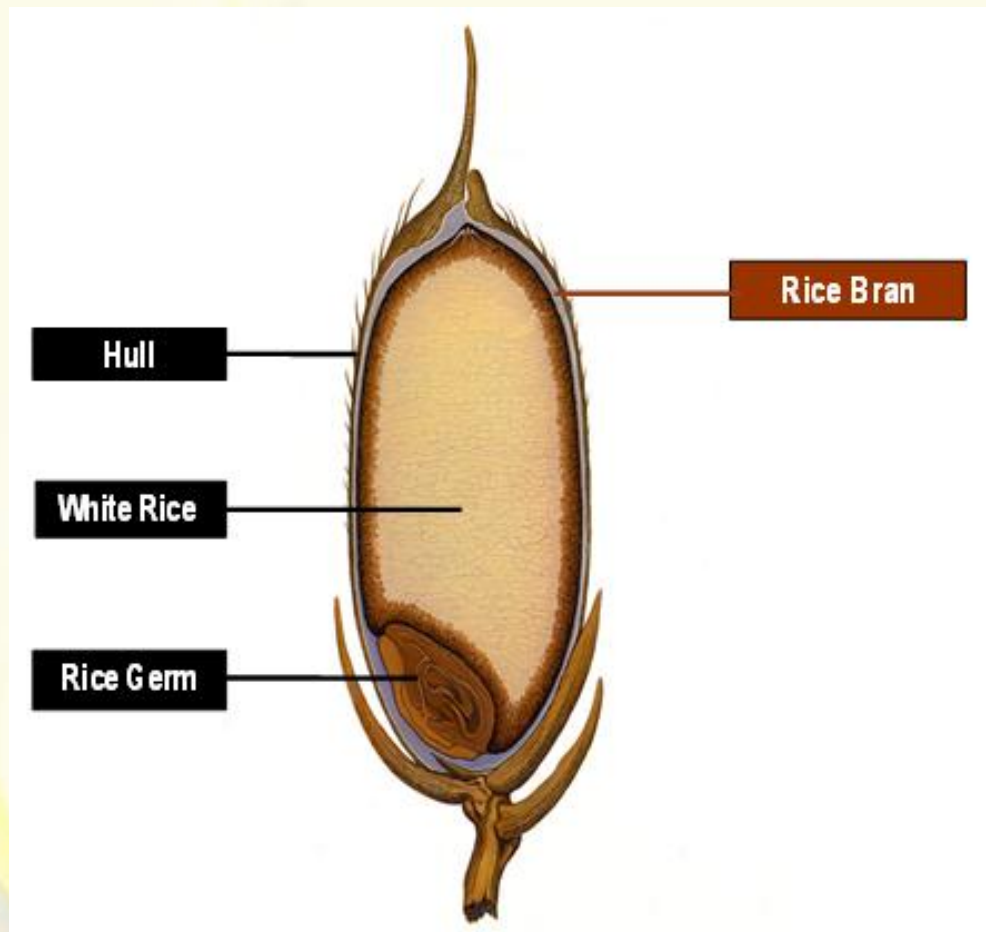
Produced

From Rice Bran





What is Rice Bran?

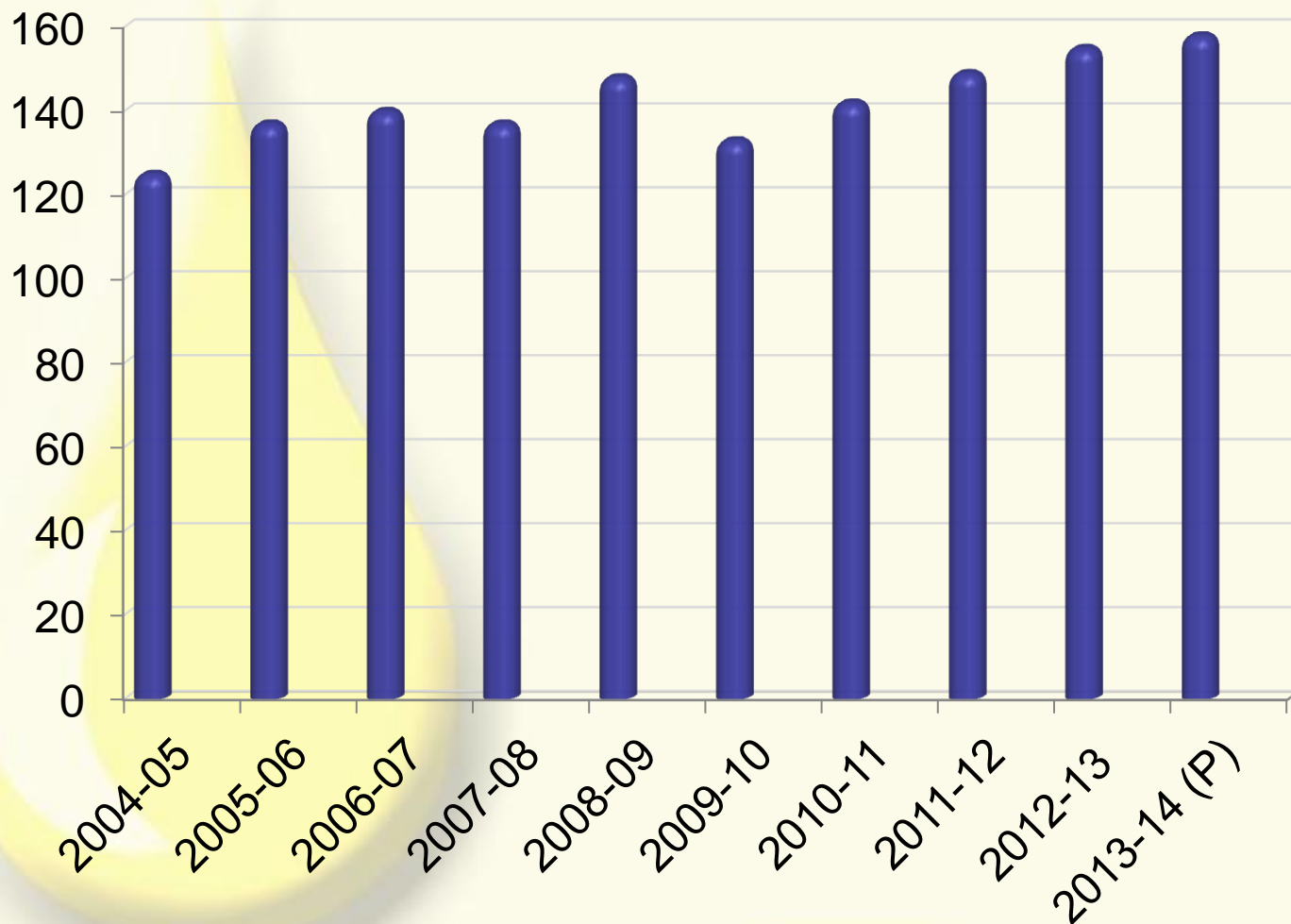


Rice Bran is an oily layer in between the paddy husk and the white rice



Paddy Production in India

Qty in MnT



Year	Qty in MnT
2004-05	125
2005-06	137
2006-07	140
2007-08	137
2008-09	148
2009-10	133
2010-11	142
2011-12	149
2012-13	155
2013-14(P)	158

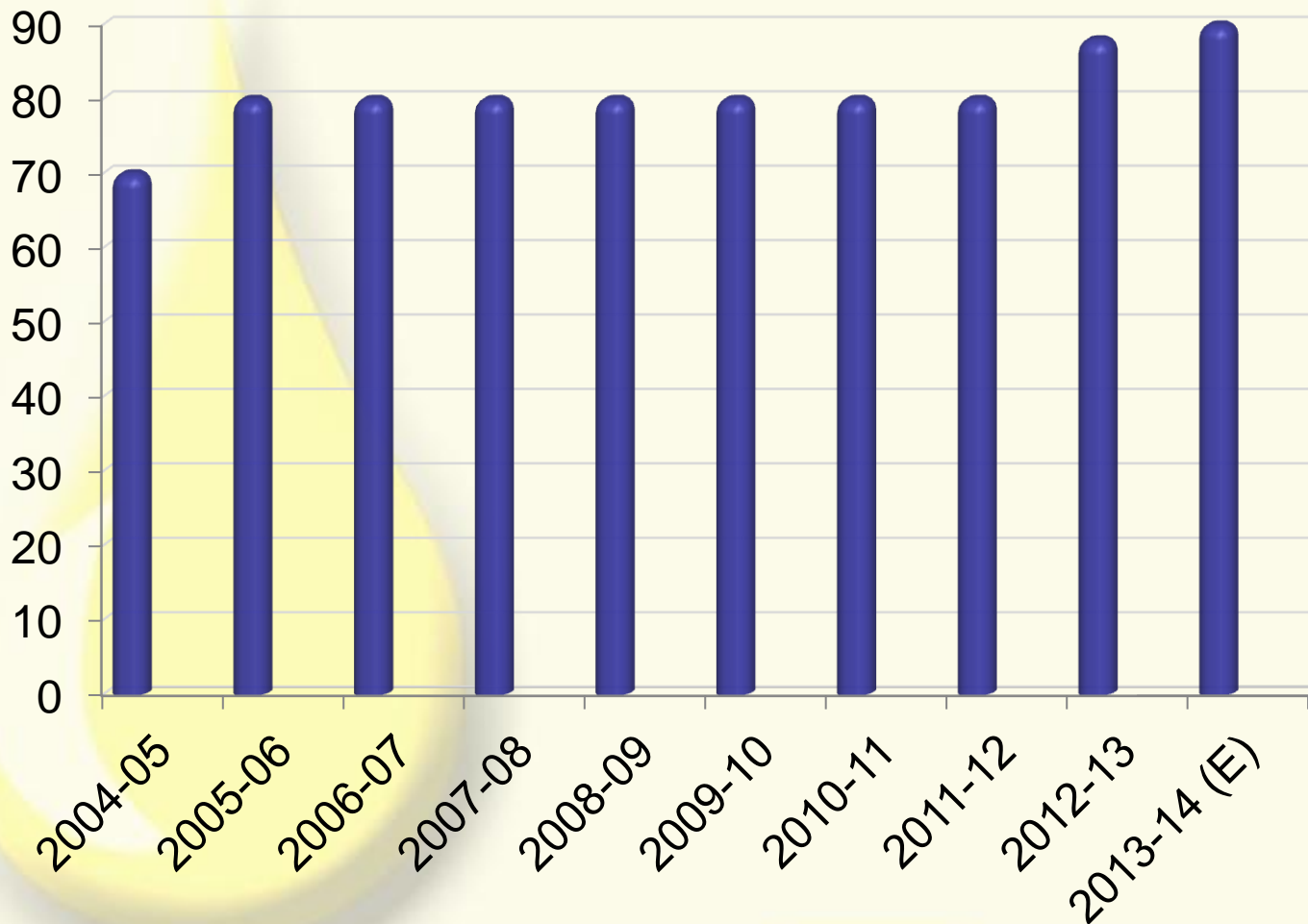


➤ **Paddy Production increased by 125 MnT to 158 MnT in 10 years**



Rice Bran Potential in India

Qty in MnT



Year	Qty in MnT
2004-05	7.50
2005-06	8.22
2006-07	8.40
2007-08	8.22
2008-09	8.88
2009-10	7.98
2010-11	8.52
2011-12	8.94
2012-13	9.30
2013-14(P)	9.48

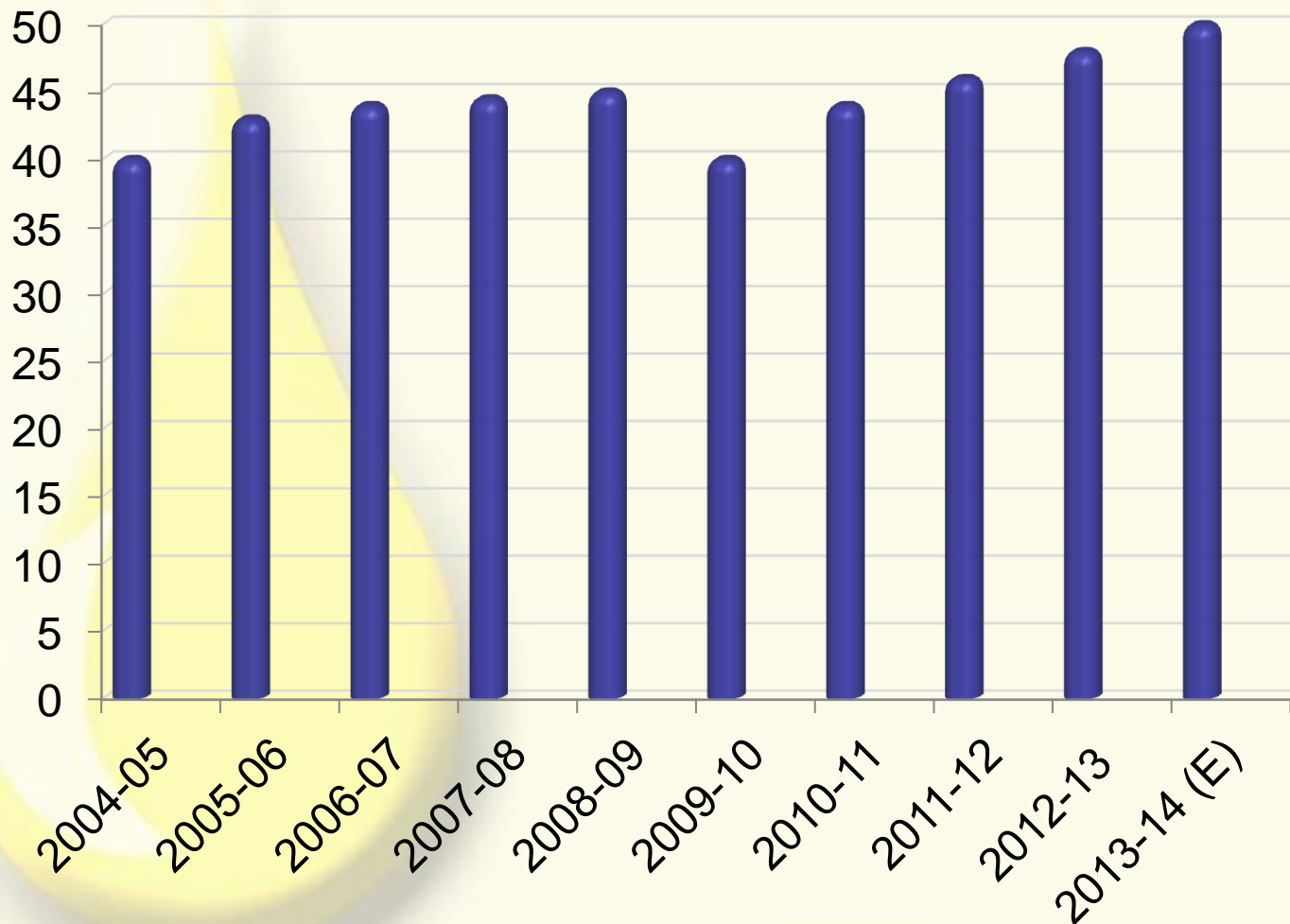


➤ **Average Recovery 6.0% from Paddy. Rice Bran Potential in India is close to 9.5 MnT**



Rice Bran Processing in India

Qty in MnT



Year	Qty in MnT
2004-05	4.0
2005-06	4.3
2006-07	4.4
2007-08	4.4
2008-09	4.5
2009-10	4.0
2010-11	4.4
2011-12	4.6
2012-13	4.8
2013-14(P)	5.0

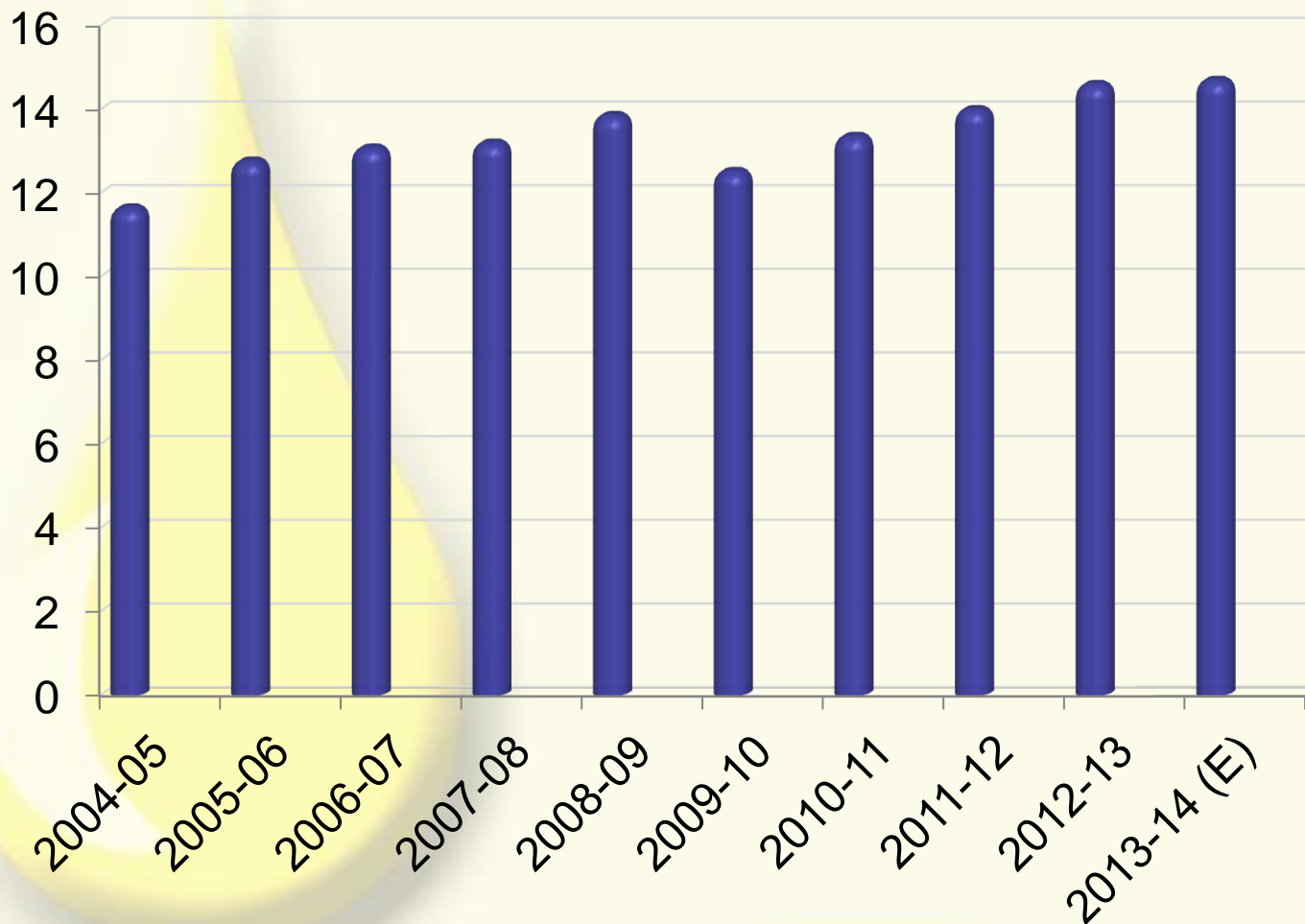


➤ **Currently India is processing about 5 MnT of Rice Bran**



Rice Bran Oil Potential in India

Qty in MnT



Year	Qty in MnT
2004-05	1.28
2005-06	1.40
2006-07	1.43
2007-08	1.40
2008-09	1.51
2009-10	1.36
2010-11	1.45
2011-12	1.52
2012-13	1.58
2013-14(P)	1.61

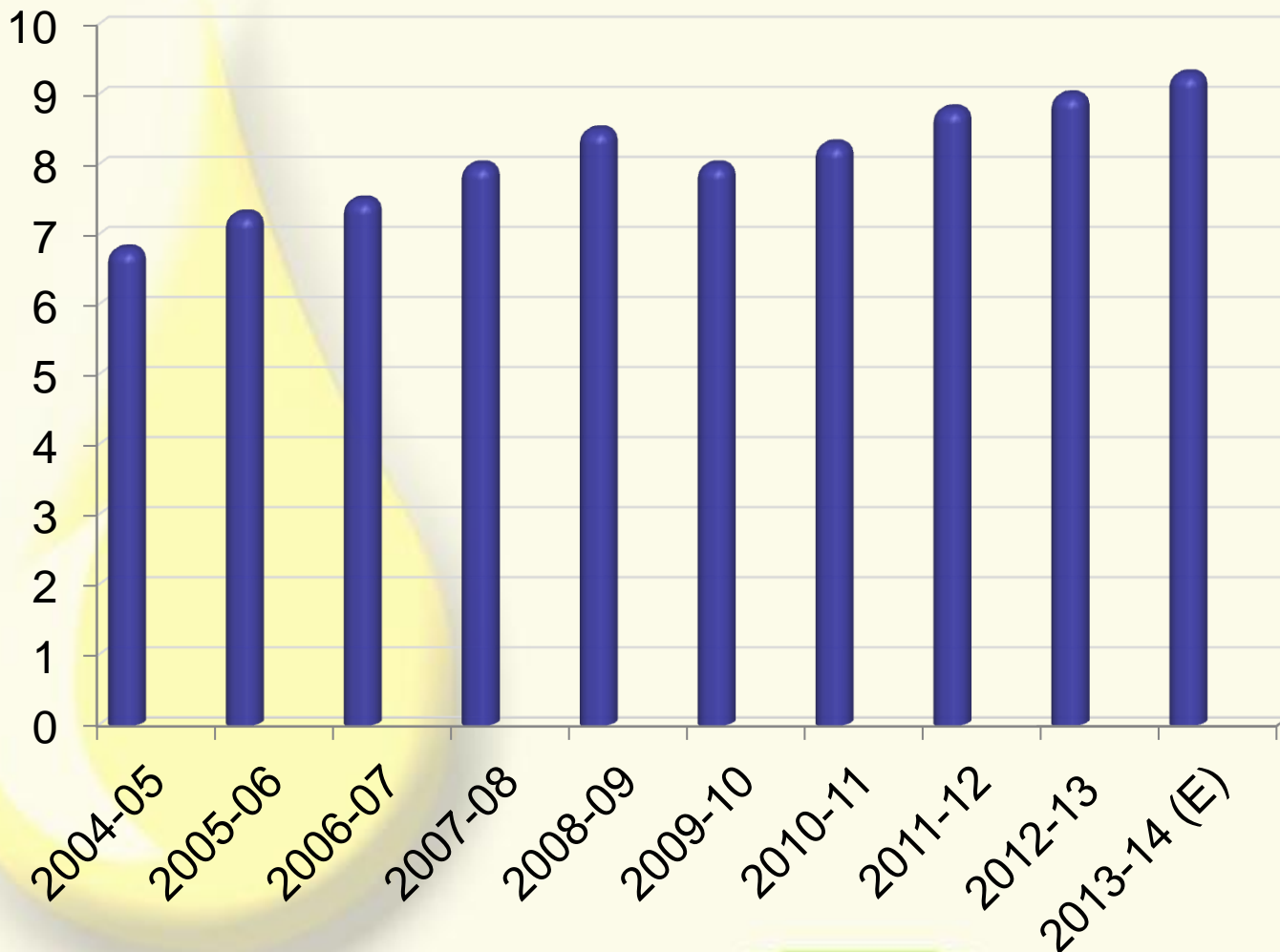


➤ **Average RBO Recovery of 17% from Rice Bran. Current potential of RBO is close to 1.6 MnT**



Rice Bran Oil Production in India

Qty in MnT



Year	Qty in MnT
2004-05	0.68
2005-06	0.73
2006-07	0.75
2007-08	0.80
2008-09	0.85
2009-10	0.80
2010-11	0.83
2011-12	0.88
2012-13	0.90
2013-14(P)	0.93

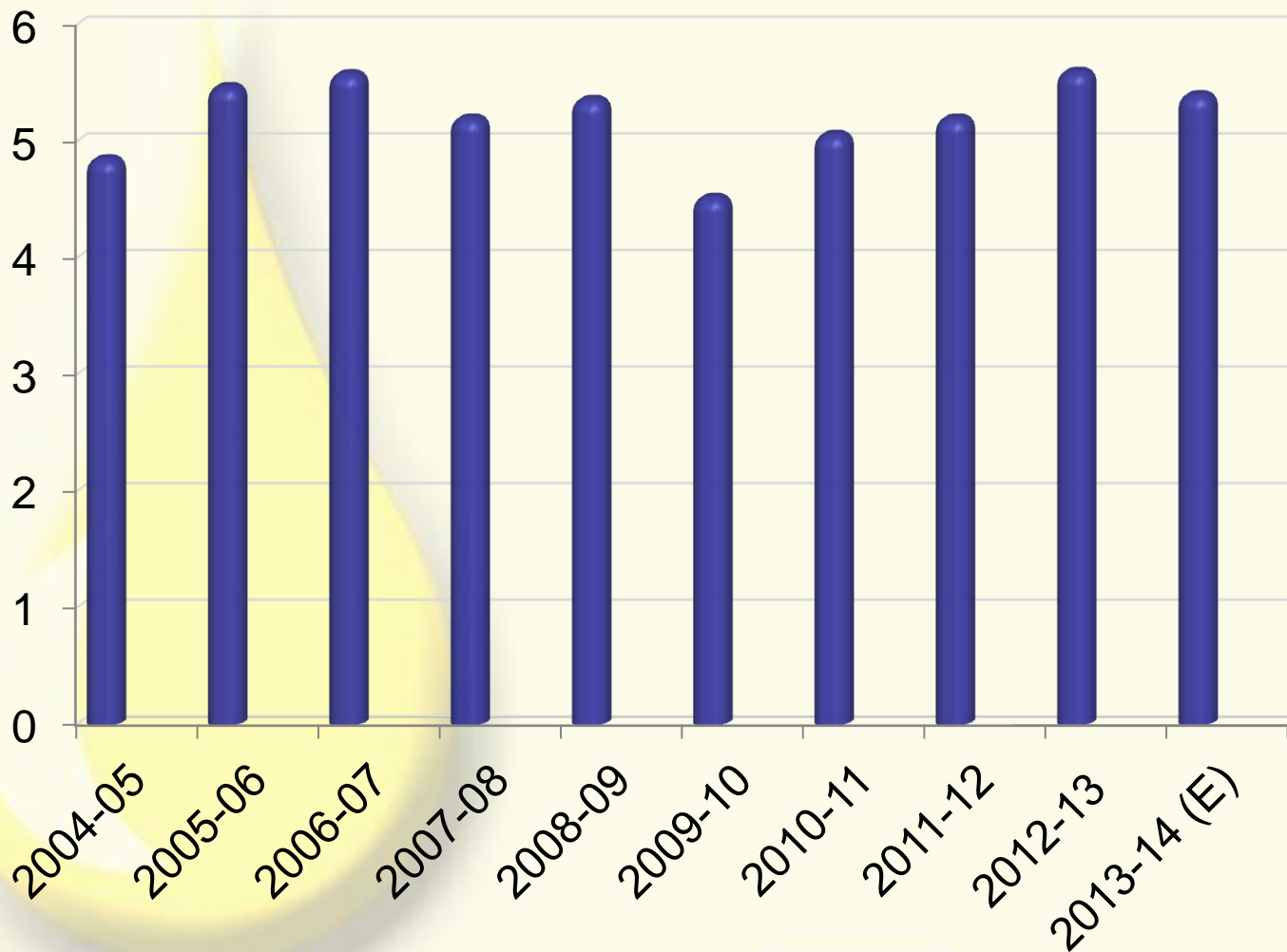


➤ India is producing about 900,000 Tonnes of Rice Bran Oil



Untapped Potential of RBO in India

Qty in MnT



Year	Qty in MnT
2004-05	0.60
2005-06	0.67
2006-07	0.68
2007-08	0.60
2008-09	0.66
2009-10	0.56
2010-11	0.62
2011-12	0.64
2012-13	0.68
2013-14(P)	0.68





RBO – Production & Potential in India

2013-14

Paddy Production	158 Mn Tonne
Rice Production	106 Mn Tonne
Rice Bran Potential	9.48 Mn Tonne
Rice Bran Oil Potential	1.61 Mn Tonne
Rice Bran Processing	5.00 Mn Tonne
Rice Bran Oil Production	0.93 Mn Tonne
Untapped Potential for RBO	0.68 Mn Tonne

Average Recovery (estimated for India):

- Paddy to Rice → 67% recovery
- Rice to Rice Bran → 6% recovery
- Rice Bran to Rice Bran Oil → 17% recovery



World Potential & Actual Production of Rice Bran Oil (2009) By Food & Agricultural Organization (FAO), UN

Country	Production of Rice Bran Oil in '000 MT	
	Potential	Actual
Bangladesh	370	2
Brazil	80	15
Cambodia	60	10
China	1470	90
India	1252	800
Indonesia	490	-
Japan	70	61
South Korea	44	11
Myanmar	249	101
Pakistan	50	5
Philippines	110	-
Thailand	230	45
USA	80	-
Vietnam	300	11
Others	480	32
World	5335	1183



Rice Bran Oil Potential in World

Qty in MnT

Country	Rice Production	Rice Bran Potential	Rice Bran Oil Potential
China	142	11.36	1.70
India*	105	9.48	1.61
Indonesia	37	2.96	0.44
Bangladesh	36	2.88	0.43
Vietnam	28	2.24	0.34
Thailand	21	1.68	0.25
Myanmar	12	0.96	0.14
Philippines	12	0.96	0.14
Cambodia	5	0.4	0.06
Others	79	6.32	0.95
World Total	476	39.26	6.06

Average Recovery (estimated for the world):

- Rice to Rice Bran → 8% recovery
- Rice Bran to Rice Bran Oil → 15% recovery

*Average Recovery (estimated for India):

- Rice to Rice Bran → 9% recovery
- Rice Bran to Rice Bran Oil → 17% recovery



Rice Bran Oil - Indian Scenario (1/3)

- **The First Rice Bran processing plant in India was set up in 1964 in Andhra Pradesh. States like Punjab, Haryana, West Bengal and other rice growing states followed the suit with close to 70 plants being established by 1990**
- **During 1990–2000, the Government of India undertook the modernisation programmes of the rice mills in India for quality upgradation of rice and rice bran**
- **Until 1995, RBO produced in India was mainly used in soap manufacturing and product mix of vanaspati manufacturing**
- **Since 1998, SEA, jointly with TMOP & CSIR launched campaign to encourage production and use of RBO as a Healthy Cooking Medium**
- **SEA in its crusade to encourage the production and use of Rice Bran Oil as 'Health Oil', has organised 13 National Seminars and a number of regional workshops in the last fifteen years**
- **In 2001, SEA took a six-member delegation to Japan to study the latest technology in RBO processing**



Rice Bran Oil - Indian Scenario (2/3)

- **From the year 1995 onwards, RBO started to be used in Edible purpose in Vanaspati & Blended Oil**
- **In the year 2001, the Government of India sponsored Research and Development for developing cost-effective pre-treatment technologies for Physical Refining of Rice Bran Oil**
- **Regional Research Laboratory, Trivendrum developed a pre-treatment process of simultaneous degumming and dewaxing**
- **Indian Institute of Chemical Technology, Hyderabad developed enzymatic degumming process**
- **Grant-in-aid assistance was given by the Government of India to set up Physical Refining Units based upon newly developed technologies**
- **Over 40 Units were set up in the recent past throughout India with the grant-in-aid assistance from the Government**



Rice Bran Oil - Indian Scenario (3/3)

- **From the year 2005 onwards with the awareness campaign it was accepted as a very good healthy cooking oil**
- **In the year 2008, Health Ministry amended Food Standards of Refined Rice Bran Oil – Unsap Matter raised from 3% to 4.5% to maintain oryzanol**
- **By 2010 – Many RBO & Blended RBO Brands entered into the market**
- **SEA has organized number of seminars, workshops and Doctors and Dietitians meet in last 15 years to create awareness**
- **SEA conducted mass “consumer awareness” campaigns from April 2013 to highlight virtues of Rice Bran Oil which achieved tremendous success**
- **These efforts have gone a long way in encouraging the production of good quality refined Rice Bran Oil & progressively increasing its consumption as a ‘cooking oil for the Health of Entire Family’**
- **I can now proudly say that, India produces the best quality of Rice Bran Oil and has emerged as the largest producer of this oil in the world**



Leading Manufacturers & Marketers of Refined Rice Bran Oil in India

Leading Manufactures and Marketers of Refined Rice Bran Oil

M/s. Ricela Health Foods Ltd., Dhuri (Punjab)
M/s. BCL Industries & Infrastructures Ltd, Bathinda (Punjab)
M/s. A. P. Refinery Pvt. Ltd., Dhuri (Punjab)
M/s. A. P. Organics Ltd, Dhuri (Punjab)
M/s. Ravindra Solvent Oils Pvt. Ltd., Vijayawada (Andhra Pradesh)
M/s. Ammireddy Oils Ltd., Anaparthi (Andhra Pradesh)
M/s. 3F Industries Ltd., Tadepalligudam (Andhra Pradesh)
M/s. Sri Venkatarama Oil Inds.Ltd, Samalkot (Andhra Pradesh)
M/s. Sethia Oils Ltd., Kolkata (West Bengal)
M/s. Habib Agro Industries, Mandya (Karnataka)
M/s. Kamal Solvent Extractions P. Ltd., Rajnandgaon.(Chhattisgarh)
M/s. Maheshwari Solvent Ext.Ltd., Gondia (Maharashtra)
M/s. Abhay Solvents Pvt.Ltd., Koppal (Karnataka)
M/s. Sethia Oil Industries Ltd., Sitapur (Uttar Pradesh)
M/s. Balgopal Food Products (P) Ltd.,Bargarh (Orissa)
M/s. Sri Anjaneya Agro-Tech Pvt. Ltd., Harihar (Karnataka)
M/s. PBS Oil Industries Ltd., Dhamtari(Chhattisgarh)
M/s. SKM Animal Feeds and Foods (India) Ltd.,Erode (Tamilnadu)
M/s. Agrawal Oil Extractions Ltd, Raipur (Chhattisgarh)
M/s. Bhatinda Chemicals Ltd., Bathinda (Punjab)
M/s. Malar Solvent Extraction(P)Ltd, Pudukkottai (Tamilnadu)
M/s. Modi Naturals Limited, Pilibhit (U.P.)
M/s. Siddaganga Oil Extractions Pvt. Ltd.,Tumkur (Karnataka)
M/s. Satyakala Agro Oil Products Ltd.,Ganguru (Andhra Pradesh)
M/s. Vaighai Agro Products Ltd.,Madurai (Tamilnadu)
M/s. Harwin Agro Enterprises (P) Ltd.,Pudukkottai (Tamilnadu)
M/s. The Gowthami Solvent Oils Ltd.,Tanuku (Andhra Pradesh)



Leading Marketers of Refined / Blended Rice Bran Oil

M/s. Adani Wilmar Ltd., Ahmedabad (Gujarat)
M/s. Marico Ltd, Mumbai (Maharashtra)
M/s. Kamani Oil Industries Pvt. Ltd.,Mumbai (Maharashtra)
M/s. ITC Ltd.,Secunderabad (Andhra Pradesh)
M/s. Vimal Oil & Foods Ltd, Ahmedabad (Gujarat)
M/s. N. K. Proteins Ltd, Ahmedabad (Gujarat)

Note: This is not an exhaustive list and there are many more producers / marketers of Refined Rice Bran Oil



Benefits to the Nation in Promoting RBO

- **It can help in protecting the health of the people from diseases. According to Cardiologists' Society of India, 30% of India's population is prone to cardiac problems. Since every 1% reduction in Cholesterol, reduces the risk of heart attack by 2%, Rice Bran Oil can become a boon for the people**
- **It helps to reduce the imports of edible oil and at the same time helps to bridge the demand-supply gap of edible oils in India when its full potential is exploited**
- **Rice Bran Oil promotion will give better realisation for Paddy to the farmers**
- **Higher capacity utilisation of rice milling and solvent extraction thereby leading to larger employment opportunities**



Status of Rice Bran Oil in the World

- ◆ Japanese call it **Heart Oil**
- ◆ In USA, it is being sold as **World's Healthiest Oil**
- ◆ In Europe, RBO has acquired the status of **Functional Food**
- ◆ It is accepted as a **Premium Cooking Oil** in Japan, Thailand and in India



Way Forward

- ◆ **Identify the ways and means to explore full potential of RBO**
- ◆ **Create awareness and educate people the Health benefits of Rice Bran Oil**
- ◆ **Focus on value added products from Rice & its by-products**
- ◆ **Finalisation of the Codex standards for RBO**
- ◆ **Bring all Rice producing countries under umbrella of IARBO**
- ◆ **Share information and statistical data on Rice Bran Oil**
- ◆ **Create a dedicated website for RBO under IARBO**



And So , To Conclude . . .

Nature's Gift to Mankind

Rice Bran Oil

A Nutritionally Superior Edible Oil

**Providing immense benefits for the heart and
for general health**

**A healthier alternative to your existing cooking
Medium for a "Healthy, Happy Family"!**



Thank
You



Dr. B. V. Mehta
Executive Director

The Solvent Extractors' Association of India

A Premier Association of Vegetable Oil Industry & Trade in India

ISO 9001:2008 Organisation

142, Jolly Maker Chambers No. II, 14th Floor, 225, Nariman Point, Mumbai 400 021

Tel: (+91-22) 2202 1475. 2282 2979, Fax.: (+91-22) 2202 1692

Email: solvent@mtnl.net.in , Website: www.seaofindia.com