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Today’s presentation comprises 4 sections followed by a Q&A session

<table>
<thead>
<tr>
<th>Timing</th>
<th>Duration</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:35</td>
<td>5 mn</td>
<td>Industry Overview— Trends in Nutrition</td>
</tr>
<tr>
<td>2:40</td>
<td>5 mn</td>
<td>Trends of Oil &amp; Fats Market in India—Drivers and Challenges</td>
</tr>
<tr>
<td>2:45</td>
<td>10 mn</td>
<td>Supply Demand in India—Present and Forecast</td>
</tr>
<tr>
<td>2:55</td>
<td>5 mn</td>
<td>Summary &amp; Key Takeaway</td>
</tr>
<tr>
<td>3:00</td>
<td>5 mn</td>
<td>Q&amp;A</td>
</tr>
</tbody>
</table>
The Global 360 Degree Snapshot of Oils & Fats Industry in India

1. **MARKET SIZE (2015)**
   - Consumption—25 million tonnes oils of which >40% coming from Palm oil and Soybean oils

2. **CAGR (2015-2020)**
   - Avg. Per Cap—15 Kg/Yr
   - Urban >20 Kg/Yr
   - Rural <8 Kg/Yr

3. **PER CAPITA CONSUMPTION**
   - Today
   - 2025

4. **KEY DEMAND SECTORS**
   - Food Service Sector
   - Packaged Foods and
   - Retail

5. **KEY SUPPLIERS**
   - Bunge, Ruchi, Adani
   - Wilmar, Cargill

6. **NUTRITION & FORTIFICATION**
   - Only 10-15% of edible oil is fortified
   - Vitamin deficiency data is not updated in India.

7. **DRIVING FACTORS**
   - High Disposable Incomes
   - Frequency of Dining out
   - Consumer awareness
   - Big Players Initiative
   - Govt Subsidies at various levels

8. **FUTURE PROSPECTS**
   - The global oils consumption is likely to increase 50% by 2025
   - Less imports will have more control of oils to be fortified
   - Govt may push for SMEs to take up fortification seriously with subsidies.

Source: USDA, SEA, Giract

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PAST EXAMPLES
- Fortification of Iodine in Salt
- Wheat Fortification with Vitamin D
- Fortification of Vitamins in Oils
Unmet Needs for fortification of Oils & Fats in India
–Awareness, ROI, Technical and Govt. Support

- More than 20% accounts to unorganized sector (highly fragmented) mainly food service sector
- 40% of Oils sold are in loose/unbranded formats

- Create awareness among consumers
- Impact of vitamin deficiency in India (Lack of recent data).
- Availability of vitamin premix at subsidy
- Setting targets for % fortification in unorganized sector

- Fortified oils are marketed as a premium product
- 8-10 paise for fortification of 1 litre oil is not economical with just 0.5-1 rupee margin.

- Transparent package lead to degradation in the present of light
- High dosage incur additional cost.
- SMEs feel the effectiveness of vitamins are lost during cooking and storage

- 51% of the consumed in India are imported.
- Govt intervention to curb imports and ensure fortification is a challenge
Impact of Vitamin A & D deficiency on Health pushes the need for fortification of Oils than ever before.

- A few programmes have been fairly successful (National Prophylaxis Programme against Nutritional Blindness)
- Supplements of Vitamin A is toxic in high doses, especially in Children
- In some cases, higher dosages lead to adverse effect including retarded brain development under the age of 3.

Need to reduce impact of Vitamin Deficiency

- > 80% of healthy people are Vitamin D deficient in the range of 12-18 ng/ml in blood (Normal>30 ng/ml).
- While the cost of fortified food items will be more than unfortified foods, it will still be lower than supplementation.

- Negligible toxicity favors food fortification as compared to supplementation.
- Hence our efforts must focus on sustainable food based approaches to combat vitamin A and D deficiency.
- Fortification does happen with omega 3 and Oryzanol for health benefits.
Lessons from Past on Fortification of Oils

**IODISATION OF SALT**
- Fortification of salt with iodine under the Micronutrient Initiative
- > 75% households consume salt with adequate amounts of iodine
- 10% consume with inadequate amount of iodine
- About 15% do not have access to iodized salt

**FORTIFICATION OF VANASPATI**
- Vanaspati mandated with Vitamin A and D fortification in 1953
- Current mandate of 700 IU and 56 IU for every ounce of Vanaspati has been a successful program

**WHEAT FLOUR FORTIFICATION**
- About 2 mio tons of wheat flour is currently fortified in states such as Delhi, Gujarat, Rajasthan, Madhya Pradesh, Andhra Pradesh, Kerala, and West Bengal
- 12-15% of total industrial milled wheat flour is fortified with iron and folic acid.

- **Bangladesh** Govt banned loose oils which accounts to 75% of edible oil as there was no price regulation.
- To curb price fluctuations, Govt banned loose oils and set up a committee to approve prices
- The time delays in several processes left major oil producers to shut operation and the economy was hit
Examples of Fortification of Oils--USA, Canada and Sweden

**USA and Canada**
- Fortification of milk with vitamin D-- Mandatory in Canada (Canadian Food and Drug Regulations). About 400 IU of vitamin D is added to 250 ml of milk.
- Margarines with vitamin D in Canada (530 IU per 100 grams) is mandated. Other foods where fortification is permitted are meal replacement, nutrition supplements, & formulated liquid diet
- Addition of vitamin D to fluid milk in the US started in 1930s and is followed till date
- Other food manufacturers have an option of fortifying food with vitamin D unlike milk that must be fortified

**Sweden**
- The Swedish National Food Agency (NFA) proposed to increase the number of foods to be fortified with vitamin D
- Currently, only milk and margarines are subject to mandatory fortification in Sweden. However, the NFA has proposed to fortify rice and oat milk, butter, cooking oil, yogurt and soured milk
- It has also proposed to increase the amount of vitamin D added to milk; about 3.5 – 5 micro grams of vitamin D are added to 1 litre of milk while the agency has increased that figure to 10 micro grams/litre
- The agency suggested 20 micrograms of vitamin D for 100 grams of cooking oil.
- This measure was undertaken to curb the incidence of rickets as 67% of their population were exposed to the risk of vitamin D deficiency, according to a study published in 2011
Drivers and Challenges in Oils & Fats Market in India

Drivers:
- Availability of Vitamin premix at a subsidy
- High Disposable Incomes / frequency of dining out
- Successful Fortification of products in the past

Challenges:
- Foodservice is a promising sector due to increase of convenience food
- High dependence on imported oil
- Tapping the unorganized market (loose oil, unbranded oils in tins and sachets)
- Despite the rule of mandatory fortification in force, not implemented. Eg: Gujarat.

Note: Length of the arrow indicates the intensity
Palm Oil dominates and with Soybean and Canola together accounts >50% of total edible oil supply. Bulk of the oils goes into the retail segment.

Supply Sector (2015)

<table>
<thead>
<tr>
<th>Oil Type</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Palm Oil</td>
<td>32%</td>
</tr>
<tr>
<td>Soybean Oil</td>
<td>19%</td>
</tr>
<tr>
<td>Sunflower Oil</td>
<td>12%</td>
</tr>
<tr>
<td>Rapeseed/Canola</td>
<td>10%</td>
</tr>
<tr>
<td>Cottonseed Oil</td>
<td>9%</td>
</tr>
<tr>
<td>Peanut/Groundnut Oil</td>
<td>6%</td>
</tr>
<tr>
<td>Tallow/Lard</td>
<td>5%</td>
</tr>
<tr>
<td>Rice bran oil</td>
<td>4%</td>
</tr>
<tr>
<td>Peanut/Groundnut Oil</td>
<td>2%</td>
</tr>
<tr>
<td>Others (Coconut)</td>
<td>1%</td>
</tr>
</tbody>
</table>

Demand Sector (2015)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Bakery</td>
<td>51%</td>
</tr>
<tr>
<td>Food Processing</td>
<td>23%</td>
</tr>
<tr>
<td>Food Service</td>
<td>19%</td>
</tr>
<tr>
<td>Retail</td>
<td>7%</td>
</tr>
</tbody>
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The organized sector comprising of leaders including Ruchi, Adani Wilmar & Bunge account to >35% of the total edible oils & fats
Food service sector >7.0 % CAGR is attributed to high disposable incomes, change in home cooking habits and access of fast food chains.
## Consumption of Oil Types across Demand Sectors

<table>
<thead>
<tr>
<th>Demand Sector</th>
<th>Sub Sectors</th>
<th>Penetration of Oils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakery</td>
<td>Artisanal</td>
<td>Mainly Palm Oil (&gt;70%) followed by Tallow/Lard and Sunflower Oil</td>
</tr>
<tr>
<td></td>
<td>Industrial</td>
<td></td>
</tr>
<tr>
<td>Food Processing</td>
<td>Snacks</td>
<td>Mainly Palm oil (&gt;50%), Butter, Sunflower and Soybean.</td>
</tr>
<tr>
<td></td>
<td>Confectionary (Choc)</td>
<td>Palm oil (&gt;50%), Cotton seed Oil and Rapeseed oil, Butter and Tallow.</td>
</tr>
<tr>
<td></td>
<td>Other Foods (RTE, RTC)</td>
<td>All oils</td>
</tr>
<tr>
<td>Food Service</td>
<td>Food Service (Commercial)</td>
<td>Palm (about 50%), Sunflower and Rapeseed Oil</td>
</tr>
<tr>
<td></td>
<td>Food Service (Contract)</td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>Retail (Oil in produced form)</td>
<td>Palm (about 30%), Sunflower and Soybean Oil, Rice bran, Peanut.</td>
</tr>
</tbody>
</table>
Vegetable Oils sold in Bulk, Semi-Speciality & Speciality

Oils sold in different formats

- The major staple liquid oils refined from single raw material (excluding olive, avocado, sesame & exotic oils) supplied in bulk/ packaged.
- Simple Frying Blends (2 oils) sold in bulk without packaging and based on specifications
- Palm olein

66% Bulk Oils

15% Semi-Speciality Oils

15% Specialty Oils

- Palm oil fractions (excluding olein)
- Packed fats. Sophisticated or customised Frying Blends (including HORO/Olein)
- Specialty Fats (includes enzymatic interesterified/hydrogenated)

Product Categorization

- CBE (Cocoa butter equivalent) and components (shea, illipe, mango fats)
- Infant formula oils, added value fats (eg: Omega 3), Olive oil, enriched oils, Virgin oils,
- Low SAFA hardstocks
Oil Consumption Trend across Indian States

**Up North**

- Uttar Pradesh, Delhi and Punjab consume a considerate amount of poori, samosa, pakoras, etc. – food that is deep fried
- Gujarat, Bihar and Rajasthan use considerable amounts of oil for deep frying purposes than for generic cooking purposes
- West Bengal, Assam, Arunachal Pradesh, etc. seem to consume a lot of fish, which is part of their staple diet. They eat baked fish or cooked fish that contains lesser amount of oil.

**Down South**

- Tamil Nadu and Andhra Pradesh use oil for generic purposes than for deep frying as most of their food – rice, vegetables, idly, dosa, etc. do not require deep frying
- The use of coconut oil is highly specific to southern states such as Kerala, which uses coconut nut for cooking and frying purposes
- Karnataka, Kerala, Andhra Pradesh, Maharashtra and Goa consume a significant amount of fish that are deep fried.
# Import Duty Structure of Oils in India (2015)

<table>
<thead>
<tr>
<th>Edible Oil</th>
<th>Import Duty</th>
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<tbody>
<tr>
<td>Refined Palm Oil &amp; RBD Palmolein</td>
<td>15.45</td>
</tr>
<tr>
<td>Refined Rapeseed Oil</td>
<td>15.45</td>
</tr>
<tr>
<td>Refined Sunflower Oil &amp; Other Oils</td>
<td>15.45</td>
</tr>
<tr>
<td>Refined Soybean Oil</td>
<td>15.45</td>
</tr>
<tr>
<td>Vanaspati (Hydrogenated Fat)</td>
<td>12.03</td>
</tr>
<tr>
<td>Crude Sunflower Oil</td>
<td>7.73</td>
</tr>
<tr>
<td>Crude Rapeseed Oil</td>
<td>7.73</td>
</tr>
<tr>
<td>Crude Palm Oil &amp; Crude Olein</td>
<td>7.73</td>
</tr>
<tr>
<td>Degummed Soybean Oil</td>
<td>7.73</td>
</tr>
</tbody>
</table>

- Reduction in import duty for fortification will be an important step towards achieving higher % rate of fortification
- Trade off between cheaper to expensive oils for fortification must be well understood
Key Conclusions

- **Food Service Sector is the fastest growing sector** followed by other foods segment which include RTE, RTC and street foods and they are mainly driven by cheaper oil supply (palm oil) and high disposable incomes.

- Educating small and medium producers regarding the concept of fortification from both a technical and economic perspective is one of the most vital steps to be undertaken.

- The involvement of the big private players is critical in such awareness programmes on fortification.

- The rich get 2518 kcal while the poor receive only 1679 kcal/day as opposed to the government designated 2400 kcal/day of nutrition.

- More oil to protein ratio is attributed to increased intake of processed foods such as chips, biscuits and snacks

- The packaged food market in India is likely to witness double digit growth rates in the next 4-5 years

- As the market is highly deregulated, intervention of the government is critical in implementing the concept of oil fortification

- Stepwise implementation strategy with quarterly review process by state governments will be important.

- Subsidy per litre of fortification with tax/duty reduction can motivate proactive fortification by SMEs.
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