



**SHARE OF INFORMAL SECTOR AND LOOSE OIL IN
THE EDIBLE OIL/GHEE MARKET OF PAKISTAN**

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List of abbreviations

FATA	Federally Administered Tribal Area
FBR	Federal Board of Revenue
FFP	Food Fortification Programme
GB	Gilgit Baltistan
HIES	Household Integrated Economic Survey
HORECA	Hotel/Restaurants/Catering (Food Service Industry)
KPFSHFA	Khyber Pakhtunkhwa Food Safety and Halal Food Authority
MT	Metric Tonnes
NNS	National Nutrition Survey
PCSIR	Pakistan Council for Scientific Research
PFA	Punjab Food Authority
PSEA	Pakistan Solvent Extractors' Association
PSQCA	Pakistan Standards and Quality Control Authority
PVMA	Pakistan Vanaspati Manufacturers Association
SFA	Sindh Food Authority

1 Executive Summary

A rapid market assessment of the availability of edible oil in different regions of Pakistan was conducted. The purpose of this assessment was to support the Food Fortification Programme (FFP), regulatory authorities and government institutions in Pakistan, in assessing the market availability of loose and unrefined oil. The findings will also support regulatory authorities at the Federal and Provincial level to formulate their strategies for an effective ban on the sale of loose oil, and to recommend ways to increase the fortification of vitamin A and D in edible oil and ghee.

The methodology adopted for this rapid assessment included primary and secondary data collection. Primary data collection consisted of in-depth interviews with different stakeholders, including regulatory authorities, edible oil processors, wholesale dealers and sale persons of leading edible oil brands, across the provinces. Secondary data sources included a key document and relevant literature review. A predesigned set of questions were used to obtain information for the quantification of edible oil being sold under different categories of price and quality. The data was collected around five categories of edible oil sorted primarily by quality including; premium brands, popular/regional brands, partially refined and packed brands (referred to as the formal sector) and unrefined but packed brands and loose oil (referred to as the informal sector).

According to the assessment, the total available raw edible oil from local and imported sources in Pakistan was estimated to be around 4.319 million MT for the year 2018. After accounting for the exports of edible oil to Afghanistan and the usage by the soap and the paint industries, the net available edible oil and ghee in Pakistan during the year 2018 was 4.090 million MT/year for the consumption, with the total share of the formal and the informal sector estimated at 71.8% and 28.2% respectively. Furthermore, the net share of premium brands was 26%, popular/regional brands 30.4%, partially refined and packed brands 15.4%, unrefined but packed oil 16.2%, and loose oil 12%. The findings further suggest that KP province is contributing maximum volume of loose oil (29.6%) followed by the interior areas of Sindh (22.7%), Karachi (14.2%), South Punjab (13.5%) and Baluchistan (13.3%). North and Central Punjab are contributing least towards loose oil, even with the higher volume of sale among all other regions.

The qualitative findings identified some of the key factors influencing the informal market sector for oil and ghee and encouraging the sale of loose oil. In north and central Punjab, the informal sector poses less of a problem as a result of stricter government regulations. In contrast, the regulatory authorities in other provinces are not well organized in controlling the sale of loose edible oil which encourages the industry to work around the loopholes in the regulations to continue the practice of loose oil sales. Moreover, the dynamics of the oil market combine to encourage an informal sector in which oil is sold to low-income consumers with no refining or value addition. The presence of low quality/informal sector edible oil then has a knock-on effect on the formal sector, forcing it to produce cheap quality brands alongside their premium and popular segment to match the prices and compete. The market failures thus combine to fuel the supply of cheap and low-quality edible oil. Moreover, the lack of awareness among the general consumer about the health implications of loose oil is also one of the major reasons for its presence in the markets, particularly in the regions of low literacy.

Finally, the government has a major role to play in regulating the sale of loose oil. The regulatory bodies in Sindh, KP, and Baluchistan need to implement the same strict monitoring and control measures as employed in Punjab to control the sales of loose oil in their provinces. Moreover, the imports of raw material to the country need to be regulated through a need-based mechanism for imports by processors and traders to create greater transparency and accountability. The major processing facilities for oil and ghee are in Port Qasim region of Karachi, and these facilities supply edible oil to the rest of the country. Efforts can be focused on this region for regulating the imports of raw material and the sale of loose oil to other wholesale markets.

Key limitations of this assessment are that the findings are based on the given information provided by the wholesale dealers and other stakeholders of the edible oil market and are not based on the exact quantification. The scope of the findings is also limited to the informal sector market areas of South Punjab, KP, Interior Sindh and Karachi. Moreover, due to the time constraints, only limited stakeholders and areas were targeted for data collection.

2 Introduction and Context

To reduce Vitamin A deficiency (VAD) and Vitamin D deficiency, the Food Fortification Programme (FFP) started to support edible oil fortification with vitamin A and D in May 2017. The vitamin A fortification of oil was mandatory since 1965 Pakistan Pure Food Rules, however, its implementation by food regulatory bodies remained very weak. The FFP worked with regulatory bodies to amend standards for oil fortification and set up a range for a mandatory fortification of oil with 33,000 to 45,000 IU/kg of vitamin A and 3,000 to 4,500 IU/Kg of vitamin D. A premix supply chain system was also established to ensure constant supply to the mill. The programme trained staff from 121 functional oil mills (out of around 135 mills in the country, i.e. \approx 90% of total mills) on fortification processes and internal quality with a regular on the job coaching and provided testing kits to ascertain levels of fortification.

Despite the targets for fortification having been either achieved or substantially exceeded, a potential risk was identified in the mid-line evaluation of FFP concerning the potential of fortified oil to benefit the poorest. Currently, oil fortification standards appear to apply to packaged oil and not to 'loose oil' which can be bought in smaller quantities and is cheaper. This has potential equity implications as lower-income groups, which have higher rates of micronutrient deficiency are likely to consume cheaper "loose" oil that likely remains unfortified (OPM Mid-Term Evaluation Report, 2019). It was recommended in the report to verify the extent of which loose oil is being produced and sold in the market to identify the adaptations that will be required as well as any related activities that will need to be carried out to achieve the intended programme impact. The current report has been commissioned by FFP to help achieve this objective.

3 Relevant Review of Literature

"loose oil" refers to unrefined oils sold in bulk to institutional users, like hotels, baking and catering industry, or to household consumers without consumer-ready packaging or name branding. At the household level, this reflects the needs of predominantly low-income consumers, who typically make frequent, relatively small, purchases from neighbourhood shops using their reusable containers or sometimes instant packaging by the loose oil sellers¹.

3.1 Factors affecting quality

When present in loose form, edible oil and ghee are subject to spoilage due to environmental factors such as the presence of oxygen, moisture, heat, and light, which can affect their quality and stability. The presence of oxygen leads to oxidation and formation of hydroperoxides and peroxides and then aldehydes and ketones resulting in off odours due to oxidative rancidity. These reactions increase in rate and intensity in the presence of light and heat. Very often, the oil manufacturers add antioxidants to refined oil to extend the shelf-life of the product. Another important factor, which contributes to the deterioration of oil is moisture. Even a very small amount of moisture can be detrimental for oil as hydrolysis of triglycerides results in the formation of glycerol and free fatty acids. Moreover, off-flavours

occur due to hydrolytic rancidity. The loose oil sold in the informal sector is especially vulnerable to these quality limiting factors, ultimately leading to low-quality edible oil and ghee for the end-consumer².

3.2 Fortification efficacy

Loose oil with poor quality results in reduced efficacy of vitamin A and D fortification in edible oil. The Egyptian study found an increase in vitamin A decay once the peroxide levels in oil were more than 2 milliequivalents of active oxygen per kilogram and recommended that before any national fortification program is implemented, the losses of vitamin A due to the quality of cooking oil be estimated³³. It is therefore essential to take measures to forbid the production and sale of highly oxidised cooking oils with reduced fortification efficacy.

3.3 Health implications of loose oil

Consumption of loose edible oil can lead to cancer, liver damage and cardiac arrest as such oils are heavily adulterated. Edible oil normally oxidises during storage and this oxidation process depends on both inherent as well as external factors like storage temperature, air (oxygen) concentration, and light. Therefore, loose oil is more prone to deterioration, that may decrease the nutritional quality and safety due to degradation products, resulting in harmful effects on human health. The loose oxidised oils could possess the altered physical appearance of the oil with darkening in colour, making it harmful for human consumption. In addition to loose edible oil and ghee, the producers are supplying low quality, unrefined edible oil and ghee (presented as packed but unrefined in this study) in the consumer market. This low-quality edible oil and ghee carry higher free fatty acids, peroxide value (POV), and other elements detrimental to health. In particular, the ghee produced from the hydrogenation of substandard oil poses the most alarming threat of trans fatty acids. Moreover, the non-traceable brands of poor-quality oil are more likely to contain higher than prescribed levels of trans fatty acids and free fatty acids and pose greater risks to consumer health.

3.4 The situation of loose oil sale and actions taken in other countries

The challenge of loose oil sales is also prevalent in South Asian countries including India and Bangladesh. In India, edible oil is primarily sold in the loose form (89%) whereas a small percentage (11%) is sold in branded and packaged form⁴. The state government imposed a ban on the sale and distribution of loose edible oil as per the provisions of Food Safety and Standards in 2011. However, the ban was revoked in 2013 as the infrastructure required for packing edible oil was not in place which was encouraging the industry to hike prices due to the costs involved in packing the edible oil (TOI, 2013). A study found that up to 85 percent of the loose edible oil sold in the Indian market is adulterated, thus posing health risks to the consumers⁵.

Similarly, in Bangladesh loosely packed edible oils constitute 75% share of the market whereas the remaining 25% share is taken by the bottled edible oils⁶. Majority of the edible oil in the country is traded through two major wholesale commodity markets that commonly practice future markets trading/speculations to influence prices of edible oil. To control the prices and reduce loose oil sales, the government introduced "The Essential Commodities Marketing and Distributor Appointment Order 2011". Under the order, the government introduced the system of strict monitoring of oil prices, distribution through government authorities, and required that all oil should be sold in packed form in drums or jars with detailed information on price and production. However, a study of the impact of the law showed that the order was not very effective in controlling the loose oil market⁷.

3.5 The situation of loose oil and actions taken in Pakistan

The sale of loose edible oil is also prevalent in Pakistan. The Fortification Assessment Coverage Toolkit (FACT) survey in 2017 found about 15% of the 2,081 households interviewed country-wide reported purchasing oil/ghee that was not in its original packaging, which includes the 'loose' oil (OPM, 2017). Both the federal and provincial authorities are introducing laws to curb the menace of loose oil trade.

The provincial authorities in Punjab, Sindh, KP, and more recently, Baluchistan have placed a ban on the sales of loose edible oil, but the implementation of the ban is in its initial stages in most of the provinces. The PSQCA introduced their Monitoring and Controlling Policy of Cooking Oil and Vanaspati Ghee in January 2018. As per this policy, only branded and labelled cooking oil and ghee can be sold in the market while loose, non-branded and non-labelled oil and ghee is prohibited for sale. Moreover, according to PSQCA sources, imported oil is also regularized to avoid its misuse, and ensuring its sale to the manufacturer for further processing. Although in place, the results are not convincing to control this informal trade of oil due to several implementation constraints.

4 Objectives of the research study

The goal of the study is to estimate the total amount and percentage share of the unrefined/loose edible oil, coming through the informal sector. The specific objectives of the study include are to

1. Estimate the amount of unfortified loose oil and ghee emanating from the informal sector and available in the supplier market throughout different provinces of Pakistan.
2. Estimate the total quantity of edible oil and ghee, coming both from local as well imported sources, and being produced by formal sector i.e. oil and ghee processing industries registered with regulatory authorities of Pakistan and the PVMA.
3. Identify the major sources and key determinants of loose oil and ghee being sold through the informal market and the loopholes allowing such sales despite the ban on loose oil sale by regulatory authorities.
4. Prepare a set of recommendations on how best to assist the food regulatory bodies and other government departments to regulate the informal sector as part of the existing ban.

5 Methodology

The study was based on a rapid assessment including data collection from primary as well as secondary sources. The details of the methodology are as follows:

5.1 Primary Analysis

Meetings and interviews were conducted with key stakeholders of the oil and ghee industry, as well as market, for primary data collection for the study. The interviews were designed to gain insights into the following:

- Market assessment and quantification of availability of edible oil
- Potential customers of loose/non-branded oil
- The sale channel of loose/non-branded oil from import to consumer
- Per capita consumption of edible oil and ghee in Pakistan
- Possible options to reduce the sale of loose/non-branded oil & ghee

The target stakeholders interviewed for the study included:

- Government and regulatory authorities
- Industry, trade associations, edible oil and ghee processors and suppliers
- Wholesale dealers and salespersons of the edible oil market

Three sets of interview guides were prepared, one for each of the stakeholder category. A total of 87 interviews took place, of which a full breakdown by the target audience is shared as Annex-1. These guides are available in Annex-2, Annex-3, and Annex-4. The fieldwork of the study took place in December 2019.

The data for the study was collected for 5 quality tiers of edible oil and ghee brands including premium brands, popular/regional brands, partially refined and packed brand. The description of each of these categories is given in the table appended in Annex-5. For the report, the **formal sector** refers to the oil and ghee processing industries registered with regulatory authorities and the PVMA. Whereas, the **informal sector** refers to the loose oil being sold in open containers as well as the branded oil-packed by the industry without refining and sold through undocumented channels.

5.2 Secondary Analysis

The secondary data on the dynamics of the edible oil and ghee market were collected and analyzed by reviewing the literature from online sources as well as published reports. The online review was focused on following parameters of the study:

- Production and consumption patterns of edible oil globally and in Pakistan.
- Production capacity and volume of edible oil and ghee by the formal sector in Pakistan
- Import volume of edible oil in Pakistan; safety and quality status of edible oil and ghee sold and consumed in the market.
- Market situation of loose oil and actions were taken by other countries
- Market situation of loose edible oil in Pakistan, including the current practices and sales channels for loose edible oil/ghee in the open market.
- Detrimental effects of the consumption of unsafe and loose oil on public health.

The secondary data about the consumption, production, import and regulations of loose edible oil and ghee in Pakistan were collected from different national and international resources and desktop review including but not limited to:

- Documents of State Bank of Pakistan
- Economic Survey of Pakistan
- National Nutrition Survey (2018)
- Household Integrated Economic Survey (HIES) 2015-16
- Online Research Literature
- State Bank of Pakistan export volume of edible oil from Pakistan to Afghanistan
- Pakistan Bureau of Statistics Publications

5.3 Market Segmentation

The market for primary data collection was segmented into 6 regions including South Punjab, North & Central Punjab, KP, Karachi, Interior Sindh and Baluchistan. The market segmentation plan for the study is presented in Figure 1.

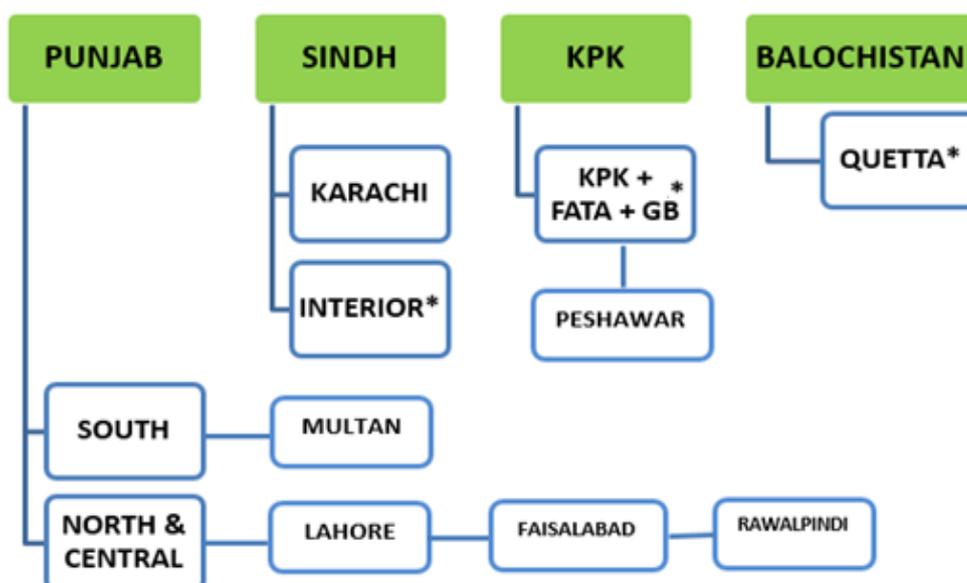


Figure 1: Market Segmentation Plan for Primary Data Collection

5.4 Study Limitations

This report reflects a rapid assessment conducted from November to December 2019. The report is based on the information received from the interviewees during this period. The report should be read with the following caveats in mind:

- The findings are based on the given information and estimates provided by the wholesale dealers and other stakeholders of the edible oil market and are not based on the exact quantification.
- Due to time constraints, only limited stakeholders and areas were targeted with questionnaires for data collection.
- The scope of the findings is limited, regarding the informal sector to the loose oil market area of South Punjab, KP, Interior Sindh and Karachi.
- One of the major constraints observed during the field interviews was the unwillingness of wholesale dealers to talk about the sources of loose oil. Respondents were largely apprehensive, and therefore most of the responses were carefully guarded.
- Another constraining factor was the limited availability of loose oil trade-related data across the value chain. There is almost no information available on its distribution across various segments. It has been difficult to derive meaningful data related to the loose oil trade even from the online and annual reports of PVMA and other stakeholders.

6 Findings

6.1 Assessment of total available edible oil in Pakistan

The total available raw edible oil from local and imported sources in Pakistan was estimated to be around **4.319** million MT for the year 2018. After accounting for the exports of edible oil to Afghanistan and the usage by the soap and the paint industries, the net available edible oil and ghee in Pakistan during the year 2018 was **4.090 million MT/year** for the consumption in the country. The summary of total and net availability of edible oil from 2014 to 2018 is presented in Table 1.

6.1.1 Imported edible oil and fractions

According to the data from the Customs Department, Federal Board of Revenue and State Bank of Pakistan, around 3.009 million MT of edible oil and fractions was imported to Pakistan in 2018. Out of this import volume, around 5% was comprised of soybean oil, whereas the rest of 95% was comprised of soft fractions (Olein, RBD, Palm oil; 92%) and hard fractions (Stearin; 3%) of palm oil. Moreover, Pakistan also imported 0.176 million MT of packed edible oil during 2018, raising the total imported edible oil figure to 3.185 million MT.

It is observed that the import of edible oil and its fractions increased in 2018 compared to previous years. There appear to be multiple factors driving this change particularly increase in population size, expanding urbanization, shifts in consumer preferences towards eating out and purchasing of processed and fast foods. The change in the import of raw oil to Pakistan is also influenced by the local/indigenous production, prices of oilseeds and duties and taxes on imported oils. The recent increase in imports of edible oil has also led to increase in the share of informal sector market particularly due to competition within the food and restaurant industry that leads to restaurants use of bulk unrefined cheaper oil products.

Table 1: Total and net availability (million MT) of edible oil from local and imported sources in Pakistan during the year 2014-2018 ^a					
OIL FRACTIONS	2014	2015	2016	2017	2018
a. Imported edible oil and fractions					
Soya bean oil & its fractions	0.117	0.050	0.140	0.091	0.155
Palm oil & its fractions	0.120	0.143	0.107	0.123	0.117
Palm stearin	0.057	0.054	0.085	0.069	0.084
RBD palm oil	1.037	0.985	1.204	1.053	0.947
Palm olein	1.051	1.216	1.324	1.362	1.694
Palm kernel/babassu oil	0.011	0.009	0.011	0.011	0.011
Total	2.392	2.456	2.871	2.709	3.009
b. Oil extracted from imported oilseeds					
Soya bean	0.000	0.012	0.110	0.128	0.387
Rapeseed	0.181	0.440	0.275	0.335	0.348
Sunflower	0.027	0.037	0.004	0.014	0.009
Total oil extracted from imported seeds	0.209	0.490	0.389	0.476	0.743
Imported oil + oil of imported oilseeds	2.601	2.946	3.259	3.185	3.752
Refining losses (~3%)	0.078	0.088	0.098	0.096	0.113
Refined imported edible oil	2.523	2.857	3.161	3.090	3.639
Imported crude edible oil (packed)	0.102	0.156	0.157	0.149	0.176
Total available imported edible oil	2.625	3.013	3.318	3.239	3.816

Table 1: Total and net availability (million MT) of edible oil from local and imported sources in Pakistan during the year 2014-2018⁸

c. Oil Extracted from Local Oil Seeds					
Oil extracted from local oil seeds ⁹	0.573	0.546	0.462	0.450	0.503
Total available edible oil	3.198	3.559	3.780	3.689	4.319
d. Exports and Industrial Consumption					
Export to Afghanistan ¹⁰	0.230	0.183	0.134	0.105	0.095
Used by soap industry ¹¹	0.057	0.054	0.085	0.069	0.084
Used by paint industry ¹²	0.050	0.050	0.050	0.050	0.050
Net available edible oil	2.861	3.272	3.481	3.456	4.090

The breakdown of the total available edible oil is explained below:

6.1.2 Edible oil extracted from imported oil seeds

In addition to the imported crude and packed edible oil, according to State Bank of Pakistan, Pakistan also imported oilseeds amounting around 3.018 million MT during 2018, which resulted in the extraction of around 0.743 million MT edible oil, raising the total edible oil volume from imported sources to 3.928 million MT. After excluding the average refining losses (of around 3%), this figure is estimated to be around 3.815 million MT for 2018.

6.1.3 Edible oil extracted from local oil seeds

Complementing the imported volume of edible oils, Pakistan also produced around 0.503 million MT¹³ of oil from indigenous oil seeds, making the total availability of edible oil in Pakistan 4.319 million MT during the year 2018. Moreover, out of 0.503 million MT edible oil produced from indigenous oilseed crops during 2017-18, 0.386 million MT was from cottonseed, 0.066 million MT from mustard seed, 0.040 million MT from sunflower and 0.011 million MT from canola seeds¹⁴.

6.1.4 Exports and Industrial Consumption

In 2018, the total exports of edible oil to Afghanistan were 0.095 Million MT¹⁰, whereas the soap and the paint industries used 0.084 Million MT and 0.050 Million MT of oil respectively.

6.1.5 Comparison with OPM Mid-term Evaluation

As per the calculations presented in Table 1, the net available edible oil and ghee in Pakistan during the year 2018 was **4.090 million MT/year** for the consumption in the country. Before excluding the amount of edible oil going to non-edible use as well export to Afghanistan, total available edible oil in Pakistan is **4.319 million MT in 2018**, which aligns closely with the top-down estimate of 4.25 million MT, calculated in the midterm evaluation report of FFP. This amount is also comparable to the amount of total available edible oil in 2018 quoted by PVMA in its Annual Edible Oil Conference 2018 i.e. 4.30 million MT.

6.2 Estimated Market Availability of Edible Oil in Pakistan

6.2.1 Total Market Availability of Edible oil

According to the information collected from market stakeholders during the study, the total availability of edible oil in Pakistan in 2018 was estimated to be 3.483 million MT. The results in Table 2 summarize the estimated percentage share of edible oil sold at different tiers of quality, with their cumulative placement in formal and informal sectors across the different regions in Pakistan.

Table 2: Estimated availability (Million MT/Year) of edible oil from different categories in different regions of Pakistan based on the assessment findings (2018)						
Regions	Formal sector			Informal sector		Total
	Premium	Popular	P. Refined packed	Unrefined packed	Loose	
Regional Market Availability						
South Punjab	0.130	0.167	0.088	0.084	0.062	0.530
North + central Punjab	0.392	0.478	0.290	0.200	0.031	1.390
KP	0.066	0.181	0.103	0.143	0.136	0.630
Baluchistan	0.015	0.036	0.033	0.027	0.061	0.173
Karachi	0.064	0.071	0.043	0.059	0.065	0.302
Interior Sindh	0.044	0.135	0.071	0.104	0.104	0.458
Total	0.711	1.068	0.627	0.618	0.459	3.483
Consumption by Industry						
Partial share to Horeca¹²	0.252	-	-	-	-	0.252
Share to institutions¹²	0.100	-	-	-	-	0.100
Total Availability	1.063	1.068	0.627	0.618	0.459	3.835
Undocumented*	-	0.183	-	0.041	0.031	0.255
Net Total Availability	1.063	1.251	0.627	0.658	0.490	4.090

*Undocumented amount is the amount of edible oil that could not be calculated through our assessment study and is distributed among informal and formal sector components as per their respective share, after discussion with stakeholders

The methodology and calculations for the estimation are explained below:

a. Regional Market Availability

The estimated regional share of the informal edible oil market was based on information collected through interviews and meetings with wholesale dealers situated in “Galla Mandis”¹⁵ of each major city of all provinces. Depending upon the size of the market, the average number of wholesale dealers in the major cities is around 100, with the average monthly sale of 100 tons of edible oil and ghee. For the study, at-least 10 wholesales dealers of each market were interviewed, with special consideration to the major sellers of edible oil in the specific market. As per the data, 3.483 million MT edible oil was available for sales in 2018 across the markets in the six regions covered in the study.

b. Consumption by Industry

In addition to the regular wholesale and retail market channels of distribution, the industry also sells edible oil and ghee to some institutions (army, police, schools, and hospitals) and Horeca (food service industry) directly, which were not counted during this assessment. The institutional demand in 2018 was estimated to be 0.100 million MT whereas 0.543 Million MT were estimated to be consumed by Horeca (OPM, 2018). Based on the information provided by dealers, the study assumed that 50% of the Horeca channel is being operated directly through the industry, while the rest of 50% low-level Horeca buyers purchase edible oil and ghee through wholesale dealers. Therefore, we may consider around 0.252 million MT is going to Horeca directly from industry or distributor and was not included in the wholesale market assessment calculations. When the Horeca and institutional purchase volume is added, the total availability of edible oil and ghee in Pakistan raises to 3.835 million MT/year.

c. Estimated Share of Formal and Informal Sector

Based on the data, the estimated shares of the formal sector and informal sector, contributing to the edible oil market, were 71.8% and 28.2%, respectively. Among the 71.9% share of the formal sector; premium, popular, and partially refined packed brands contribute 27.5, 27.9 and 16.4%, respectively. Whereas the 28.1% share of the informal sector is distributed between unrefined packed brands (16.2%) and loose oil (12%). The major share of the formal sector is dominated by premium and

regional/popular brands, which are supposed to comply with fortification standards, along with the partially refined packed brands.

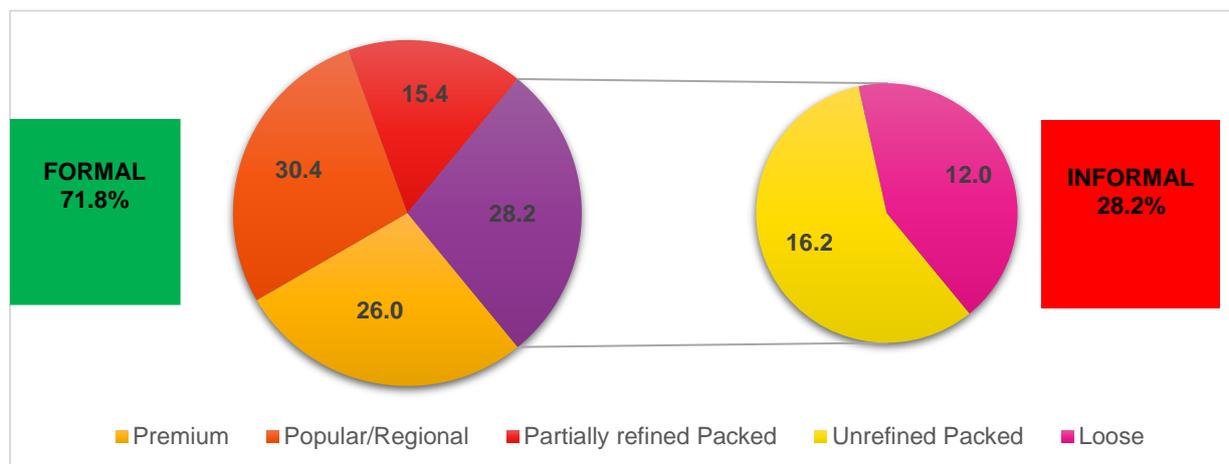
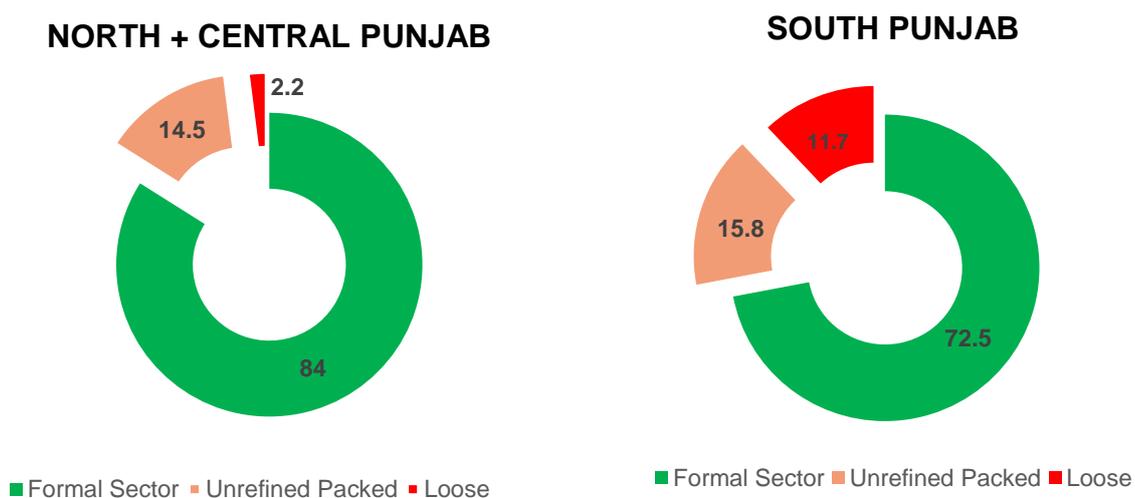


Figure 2: Estimated market share (%) of edible oil from formal and informal sectors in Pakistan

d. Comparison – The estimated share of the formal and informal sector within different regions

The graphs below (Figure 3) present the estimated proportions of the informal sector of the regional edible oil markets of different provinces. The following observations can be made from the graphs:

- Baluchistan's informal sector is estimated at 52% of their overall market share followed by the interior Sindh where the informal sector contributes to an estimated (46%) of the total market.
- The Punjab province, particularly, North and Central Punjab market is dominated by the formal sector component. These results are supported by the information provided by the provincial regulatory authorities related to the enforcement of ban on loose oil in the market. PFA has rigorously worked in the recent past to implement the loose oil ban in the province.
- The share of the informal sector in South Punjab is estimated to be 27.5% indicating the need for strong monitoring and control by the government.



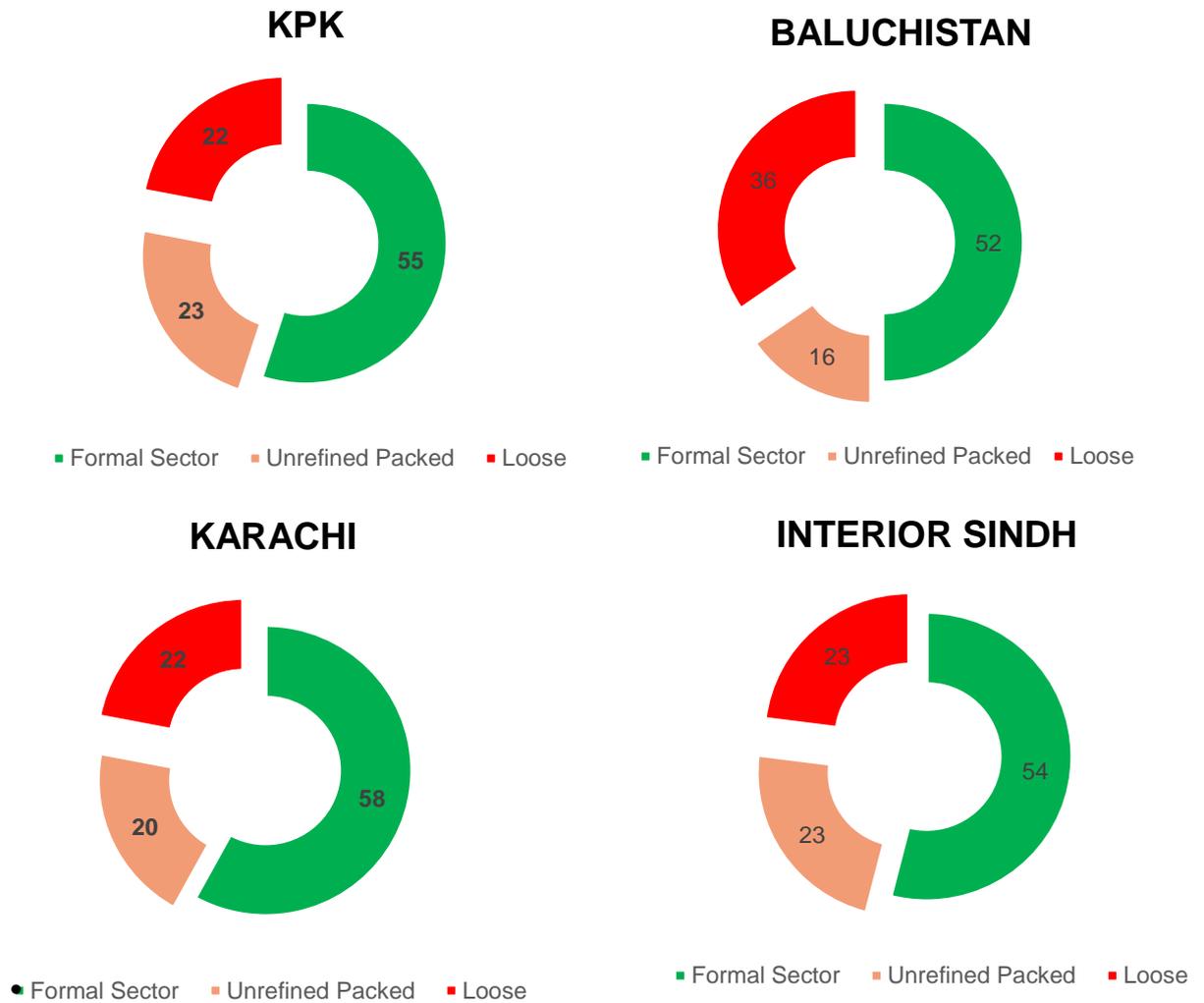


Figure 3: Estimated share formal and informal sector within different regions

e. Estimated Region-Wise Contribution to Loose Oil

The estimated region-wise share of loose oil in the national loose oil supply is presented in Figure 3. Following observations can be made from the graph:

- KP province is contributing maximum volume of loose oil (29.6%) following interior Sindh (22.7%).
- Karachi (14.2%), South Punjab (13.5%) and Baluchistan (13.3%) possessed almost similar figures of loose oil share in national edible oil supply.
- North and Central Punjab are contributing least towards loose oil, even with the higher volume of sale among all other regions.

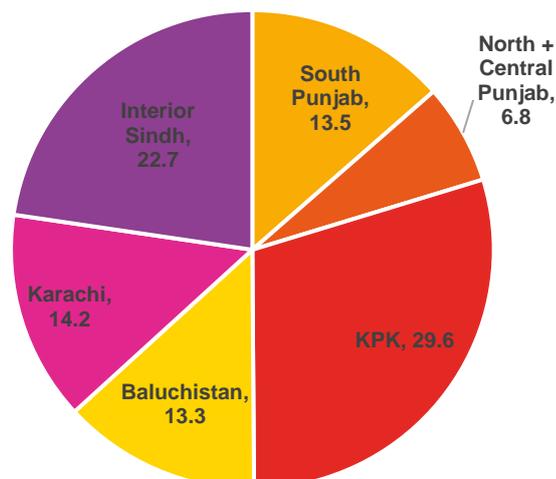


Figure 4: Estimated region-wise share of loose oil in the national loose oil supply

f. Comparison - Estimated Regional-Wise Contribution to Unrefined Packed Oil

The estimated region-wise share of unrefined packed oil in the national loose oil supply is presented in Figure 4. Following points should be noted while observing the graphs:

- North and Central Punjab has the highest contribution (32%) to the national supply of unrefined packed oil. The total contribution of Punjab in the national edible oil supply is 1.93 million MT, which is almost 50% of the total estimated national edible supply. Therefore, the contribution of 32% for this component is still very low compared with other provinces.
- KP contributes the second-highest percentage (23%) to the national loose oil supply, followed by Interior Sindh (17%) and South Punjab (14%).

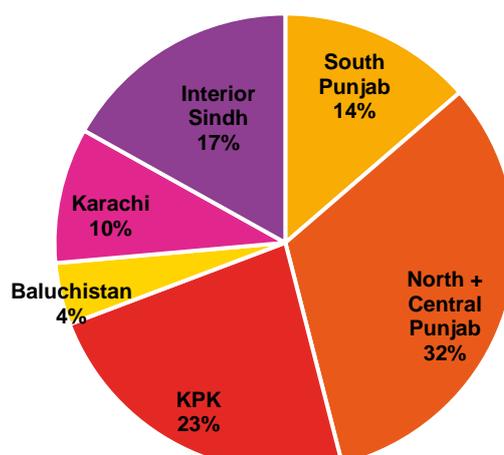


Figure 5: Region-wise share of unrefined packed oil

6.3 Factors Driving the Sales of Loose Oil

6.3.1 Regulations

At the time of the study, all the provinces except for Baluchistan had placed a ban on the sale of loose oil through approved regulations of the scientific panel. (Baluchistan officially notified the ban on sales of loose oil in February 2020). However, only Punjab has made progress in implementing the ban and taking actions against non-compliant traders in the market, whereas the ban implementation is at very initial stages in other provinces like KP and Sindh. Similarly, whilst the PSQCA has introduced the Monitoring and Controlling Policy of Cooking Oil and Vanaspati Ghee (Loose Oil), this policy still needs to be fully implemented.

Table 3: National and Provincial Regulations on Loose Oil	
PSQCA	<ul style="list-style-type: none"> • Pakistan's food imports are regulated by the federal government and the import standards are regulated through PSQCA. PSQCA has a head office in Karachi, the main hub of edible oil imports as well as the distribution of loose oil component to the rest of the country. Therefore, following the review of provincial regulatory authorities, PSQCA is also supervising the loose oil ban in the county, however, its implementation is weaker than the provincial authorities. • The matter of strengthening the position of PSQCA as a national standardization body was discussed in the meeting of Council of Common Interests (CCI) on 29th Jan 2020, where it was decided that the regulations and standards will be formulated by PSQCA, while the implementation will be supervised by the provincial regulatory authorities and district government. This decision will make PSQCA more important for the loose oil ban regulations and the responsibilities of PSQCA have increased to update the rules and regulations across the provinces which could lead towards discouraging low-quality edible oil market in the country.
Punjab	<ul style="list-style-type: none"> • The Punjab Food Authority (PFA) shared that they had conducted extensive operations in the major areas where the sales of loose oil were high. PFA also collected market samples of different tiers of edible oil and ghee for testing them for qualitative and safety parameters. According to the results, Punjab Food Authority (PFA) has declared 103 edible oil and vanaspati ghee brands unfit for human health and the authority has stopped their production and distribution until they meet the food standards. • In South Punjab, the traders and brokers of the edible oil market, who are mainly responsible for the sale of loose and unrefined edible oil, are only registered with the local market committees and are not licensed by relevant Food Authorities due to which they don't completely come under the umbrella of regulations by PFA.
Sindh	<ul style="list-style-type: none"> • The ban on loose oil in Sindh is in the initial stages due to which millers face limited possibilities of sanctions for supplying unfortified oil (OPM Mid Term Evaluation Report, 2019). • The weak regulations in Sindh have encouraged other edible oil processors in Punjab to shift their units to Sindh and they are actively selling low quality and unrefined and loose oil for outlets in other provinces. • The Sindh Food Authority has been working with the Loose Oil Association¹⁶¹⁶ to encourage them to shift their scope of work towards packaging, though positive developments in this regard might take some more time and efforts.
KP	<ul style="list-style-type: none"> • The major constraint for KP Food Authority is the lack of operational force, which they are now recruiting as per information provided by the Additional Director General (Technical). • The traders in KP have been taking advantage of the loopholes in the weak regulations on the ban on loose oil. The traders introduced reusable packaging for loose oil to abide by the packaging restrictions of the Provincial Food Authority. The KP food authority is well aware of this practice and they have started reaching out these wholesale dealers.
Baluchistan	<ul style="list-style-type: none"> • Specifically, for Baluchistan, we could reach only limited participants, mainly from industry because the Baluchistan Food Authority (BFA) was still in the process of enactment in 2019 and is operating on a comparatively very smaller scale than Punjab, KP and Sindh Food Authorities. BFA is still working with non-technical staff, appointed on deputation basis from other civil service departments. • The control of loose oil and other low-quality brands reaching the consumer is much weaker in Baluchistan compared to other provinces and requires more stringent vigilance of authorities in this region. However, BFA is acquiring the expertise of other authorities to strengthen its wings for the control of the informal sector in the edible oil. • In addition to loose oil coming from the Karachi area, Baluchistan region is also facing the issue of smuggled edible oil from Iran, which is adding to the problem in Baluchistan. Although an exact quantity couldn't be verified the consultant was informed that supplies

	<p>from Iran are in the consumer market of edible oil in Baluchistan, which will need the special attention of the BFA in future.</p> <ul style="list-style-type: none"> • Baluchistan Food Authority was not as functional as other provincial authorities at the time the questionnaires were completed during this study, however, by subsequently as a result of FFP advocacy, the Baluchistan Food Authority also imposed a ban on the manufacturing, storage, marketing, selling and purchase of loose oil and ghee throughout the province with effect from February 3, 2020, vide notification No.BFA/Dir. Operations/55. The notification also mentioned that the manufacturing and selling of such substandard edible oil/ghee is punishable under the Baluchistan Food Authority Act 2014. Therefore, it is expected that the implementation of the ban on loose oil would progressively be ramped up by the authority under this notification.
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6.3.2 Bulk Imports of Edible Oil

Pakistan is highly dependent upon imports of bulk oil mainly coming from Malaysia (Palm oil and fractions) and North and South America (Soybean seeds) with only 11.5% of total available edible oil are emanated from local sources, mainly cottonseed, canola, mustard and sunflower¹⁷. According to the representatives of Loose Oil Association and Pakistan Solvent Extraction Association (PSEA), these imported bulk quantities arrive at Port Qasim in Karachi and are directly transported to the oil processing industry, mainly situated in the Port Qasim area.

Interviews with Port Qasim Authority representative and the major wholesale dealers in the market of Karachi revealed that in addition to these large-scale edible oil processors, some small-scale traders are also involved in the direct import of bulk edible oil. As these traders or processors have very low cash flow capacity, they normally team up (usually 10-15 traders) to place a combined order for import of bulk edible oil. This entire results in fragile edible oil prices and disturbed market flow of edible and oilseeds. The fact that traders can import bulk edible oil, without having the means to process it at a processing plant, means that they are willing to sell their commodities at very low prices, as they are not adding any value. During the market assessments, cases were also identified of traders selling at prices close to import prices and making their margins purely from differences in credit terms between 45 days import credit and 30 days selling credit.

6.3.3 Price Competition

The oil/ghee market in Pakistan is highly competitive. In addition to encouraging the low-income consumer, the presence of low quality/informal sector edible oil also necessitates the formal sector to produce cheap quality brands alongside their premium and popular segment to match the prices. While the prices of loose oil are lower than other packed brands, the sales of loose oil allow mills to avoid costs such as the cost of packaging (PKR6/kg for pouches of oil and PKR10/kg for cans of oil), cost of fortification (\$2) and the government sales tax (27%) (OPM, 2018). The concern was also raised by Secretary PVMA during the interviews who shared that the presence of low-quality untraceable brands has deteriorated the edible oil market as the cost-competition has encouraged the edible oil processors to shift their practices from complete refining to partial or no refining to compete with the market.

6.3.4 Market Demand for Low-Price Edible Oil

The meeting with regulatory authorities and wholesales dealers revealed that the major customers of loose edible oil were the catering industry (wedding and event halls and institutional eateries), low-income customers, and local retailers, driven by its lower price in comparison to packaged alternatives. The customers and retailers were mainly from rural areas and urban suburbs with limited awareness of

the health implications of adulterated and unsafe loose oil. Moreover, the farmers from rural areas were making their daily food purchases on credit (as their income is driven by crop-harvesting) due to which they were eventually paying higher prices for the purchases of low-quality oil. The demand for low-quality unrefined products in the market encouraged the processors, traders and wholesale dealers to supply edible oil without any value addition.

6.3.5 Price Regulations

It was observed in the meetings and interviews with edible oil processors that while the industry is willing and ready to cooperate with the authorities on the ban on the sale of loose oil, there are concerns on the regulations of import prices of edible oil and ghee by the government. Recently, the Ministry of Industries in Punjab segmented the Vanaspati ghee into 3 tiers as follows¹⁸:

- Vegetable ghee manufactured with 100% RBD palm oil (PKR 140-170/Kg)
- Vegetable ghee manufactured with the addition of soft oil 8-10% (PKR 171-175/Kg)
- Vegetable ghee manufactured with the addition of soft oil 20% (PKR 176-180/Kg)

Although the price regulation by Punjab government was a good initiative to regulate the formal sector and discourage the informal sector, as it could help the regulatory authorities to monitor the level of processing and the quality of end product related to the addition of liquid oils during the hydrogenation process. However, PVMA had the reservations on the new tiers of prices as these new prices were formulated based on import costs from six months back without taking into account the fluctuations in the dollar conversion rates, thus reducing the profit margins for the millers and making it unfeasible to supply quality edible oil and ghee in the consumer market. Similar concerns were voiced by wholesale dealers, who were of the view that the price fixation will encourage the low-quality players to work more aggressively with low prices compared with their premium counterparts. This will require the wholesale dealers to sell the quality brands with very low-profit margins, which will push the market to bend more towards informal side. However, as per the latest information collected from PVMA, the Supreme Court of Pakistan has issued the stay order on the implementation of this new price regulation policy in Punjab till the matter is resolved with PVMA.

7 Recommendations

The government has a major role to play in banning the sale of loose oil. Some of the key recommendations for government partners to make the ban more effective includes:

7.1 Regulations on Imports

- Currently, there is no existing mechanism to cross-check and triangulate the imports of edible oil with the actual requirements in the country. The Trade Development Authority of Pakistan (TDAP) under the Federal Ministry of Commerce is responsible for trade regulation of edible oil imports. Therefore, TDAP could better coordinate and supervise this process after consultation with stakeholders from public and private sectors.
- To ensure that only high quality and fortified edible oil and ghee is produced in the country, there is a need to introduce a monitoring mechanism to regulate import of raw oil by processors and link it to their production capacity and requirement in the country. For this, the federal import regulatory body should ensure that the quantity of raw edible oil and oilseeds imported should be sanctioned according to the installed capacity of the mills as verified by PVMA and the PSQCA and this would help reduce oversupply ending up in the informal sector.
- Apart from addressing the health concerns to consumers, there is an added incentive for regulators to address this problem because edible oil sold in loose form often results in loss of revenue to the government as producers do not pay sales on the value-added services.

7.2 Role of Food Regulatory Authorities

- The strict actions taken by food authorities in central Punjab have played a major role in controlling the sales of loose edible oil in the region. However, it was observed that strict implementation is possibly weaker in the south Punjab area, that could be enhanced through the operational coordination of Punjab Food Authority with other supporting departments, like municipal corporation committees, which regulate the prices of consumer goods.
- There were some ambiguities on the formulation of standards and their implementation between the federal food regulatory authority i.e. PSQCA and provincial food authorities, which has now settled in the final decision of council for common interests meeting on Jan 29, 2020, that mandated PSQCA as a federal standardization body whereas the implementation will be with provincial regulatory bodies and district governments. FFP can share this study and recommendations with the PSQCA to reinforce the need for notification of ban on the sale of loose oil and direct provincial authorities for strict implementation.
- As Karachi is the first entry point of loose oil and the Sindh Food Authority is working closely with the Loose Oil Association, they can play a major role in bringing the work of the Oil Association into the formal sector. During the meetings with the association, it was noted that they would be willing to adopt formal practices of packing if regulatory authorities could convince them somehow to do so with minimal changes in their current expenses.
- Moreover, in South Punjab the Punjab Food Authority should expand its operations to ban the non-registered traders and regulate the sales of wholesale dealers. The other provincial authorities can also work collaboratively with municipal governments and authorities in their respective regions to curtail the sale of loose & unrefined edible oil as these authorities have sufficient local resources and perceived legitimacy in the region.

7.3 Quality Assurance in edible oil and ghee processing sector

- Many quality control issues are currently being debated in the edible oil industry, for example trans-fatty acids, free fatty acids, etc. These are important and complicated matters that require

the overall attention of edible oil processors and authorities. Although the major edible oil processing industries are implementing the Hazard Analysis of Critical Control Points (HACCP) based quality assurance program in their manufacturing procedures there are smaller processing units or those either due to lack of commitment or seeking cost savings that do not. Therefore, there is a need through the strict imposition of regulations and monitoring to bring these processors, often selling low-quality brands, into comprehensive HACCP based programs with properly traceable conformity assessment procedures. The efforts of FFP have already helped raise the quality control standards of the edible oil industry, but future support would be usefully targeted towards specifically addressing low quality producers in the market. Governments authorities, both federal and provincial regulatory, have the principal role in establishing and implementing edible oil quality control standards and FFP will highlight this issue again and emphasise the need for authorities, both at the provincial and federal level, to initiate a comprehensive campaign to address.

7.4 Price regulation for enhanced value addition

- Edible oil is sold at different prices linked to the level of value-added by the processors as well as the existing imported prices of these commodities. Currently, the government, both at the federal and provincial level has no existing mechanism to regulate the prices and link these prices to the level of value addition by the processors. Therefore, the low-priced brands could be the target of regulatory authorities to find out the level of value addition they are incorporating. Moreover, strict vigilance on those who are selling at lower prices could help the authorities to force value addition and eradicate these brands from the market.

7.5 Focus efforts on areas with geographic concentrations of oil processing facilities

- As shown in Annex 5, the major edible oil processing facilities are situated in Karachi, especially near the Port Qasim area. Facilities in the Karachi area produce on average outputs of approximately 40,000 MT per month as opposed to 7,000-30,000 MT in other areas of the country which not only brings about efficiencies of scale for the producers but would potentially ease the technical and financial costs of fortification.
- This also represents an opportunity for the government to efficiently focus their regulatory efforts such as inspections and enforcement by targeting both the main ports of entry and concentrated areas of production

7.6 Knowledge gap and lack of coordination among institutions

- There is a need for stronger coordination across government departments and other key organisations and influencers including research institutes, academia and industry in highlighting the issue and the public health risks.
- During this study, it was observed that consumers were often unaware of the negative health implications of consuming loose edible oil. Although regulatory authorities have taken actions to try and control loose oil sales the need for greater consumer awareness about the risks of consuming loose oil should be highlighted more. The regulatory authorities, in collaboration with health professionals, media groups and civil society organisations, should initiate more extensive consumer awareness campaigns to raise the profile of this issue. Moreover, the healthcare burden generated through the consumption of loose oil is also worth mentioning for the decision-makers.

Annexure 1: Stakeholders Interviewed

No.	Name	Position	Organization	Location
Government and Regulatory Bodies				
1	Mr. Sarfraz Ahmad	Deputy Director	PSQCA	Faisalabad
2	Mr. Amir Aslam	Deputy Director (Intelligence & Investigation),	FBR	Faisalabad
3	Ms. Naila Ahmad	Deputy Director (Economic Policy Review Department)	State Bank of Pakistan	Faisalabad
4	Ms. Ayesha Muqaddas	Deputy Director (Operations)	Punjab Food Authority	Faisalabad
5	Mr. Hammad Bhugio	Director (Technical)	PSQCA	Karachi
6	Mr. Falaksher	Director	Customs	Karachi
7	Mr. Ghulam Mustafa Dogar	Addl. Director General (Technical)	Punjab Food Authority	Lahore
8	Dr. Shahzad Ahmad	Director (Technical)	PSQCA	Lahore
9	Mr. Imtiaz Ahmad Abro	Director (Operations)	Punjab Food Authority	Lahore
10	Dr. Muhammad Farhan	Deputy Director (Operations)	Punjab Food Authority	Lahore
11	Dr. Abdul Sattar Shah	Director (Technical)	KP Food Safety and Halal Food Authority	Peshawar
12	Dr. Umair Sattar	Deputy Director (Operations)	Punjab Food Authority	Multan
13	Mr. Mahtab Ali	Deputy Director (Operations)	Punjab Food Authority	Rawalpindi
Industry/Traders/Associations				
14	Major Umar Islam	Secretary	PVMA	Islamabad
15	Mr. Sardar Fahad Khan	Secretary	Karachi Restaurants Association	Karachi
16	Mr. Farhan Ahmad	Chairman	Loose Oil Association	Karachi

17	Mr. Kamran Ali	Secretary	Loose Oil Association	Karachi
18	Lt. Khram Zia	Food Procurement Incharge	Pakistan Navy	Karachi
19	Mr. Sheikh Shafi	Sales Manager	Unity Foods	Multan
20	Mr. Malik Yousaf	National Sale Manager	ACPL (Pvt.) Ltd	Lahore
21	Mr. Mazhar Hussain	Director ACPL, Faisalabad	ACPL (Pvt.) Ltd	Faisalabad

List of respondents for primary data collection from different regions

No.	Province	Region	City	No. of Wholesale dealers*	No. of Salespersons**
1	Punjab	South Punjab	Multan	10	1
2		North + Central Punjab	Lahore	10	3
3			Faisalabad	8	2
4			Rawalpindi	8	2
5	KP	KP	Peshawar	7	1
6	Baluchistan	Baluchistan	Quetta	-	1
7	Sindh	Karachi	Karachi	10	2
8		Interior Sindh	Sukkur	-	1
Total				53	13

*Wholesale dealers are the sellers of edible oil for both formal and informal sector, and sitting the major "galla mandi" of each city

** Salespersons are the sales team people of different major brands and possess vast experience of edible oil market, from both formal and informal sector

Annexure 2: Loose/non-branded oil and ghee supplier questionnaire

SUMMARY: The tool kit is about the supplier/distributor who is involved in the sale of loose/non-branded oil & ghee. The tool kit is divided into three parts which is about; i) sources & price of branded as well as loose/non-branded oil & ghee, ii) customer types and sale volume of loose/non-branded oil & ghee in comparison with branded ones, and iii) supplier and customer awareness about the quality of the loose/non-branded oil & ghee.

Tag: Branded and loose/non-branded oil & ghee: Sources; consumer types, quality dynamics, sale volume

Date: ----/----/----

Serial No: -----

-

Name: -----

Contact: -----

-

Business name: -----

Address: -----

City/District/Province: -----

DETAILS OF SOURCES OF LOOSE/NON-BRANDED OIL & GHEE IN MARKET

1. What type of edible oil/ghee you are selling?
 - a. Premium Brands oil/ghee
 - b. Popular/regional branded oil/ghee
 - c. Partially refined packed (Karachi quality)
 - d. Loose oil/ghee
 - e. Unrefined packed (Karachi quality)
2. What are the names of oil/ghee brands you are selling?
----- What are your sources of branded oil & ghee?
 - a. Industry
 - b. Open market
 - c. Broker
 - d. Distributor
3. What are your sources of loose/non-branded oil & ghee?
 - a. Industry
 - b. Open market
 - c. Broker
 - d. Distributor
4. Is the facility of self-packaging existing with the supplier?
 - a. Yes
 - b. No
5. If yes, What kind of packaging the supplier is using for self-packaging of loose edible oil & ghee?
 - a. Tin
 - b. Pouch
 - c. Bucket
 - d. Plastic bottle
6. What are the hygienic conditions of the premises where loose edible oil & ghee is packaged and sold?
 - a. Perfect
 - b. Better
 - c. Poor
 - d. Extremely poor
7. In case of loose/non-branded oil & ghee what are the bulk transport procedures and containers?

DETAILS OF SALE VOLUME & CUSTOMER TYPES OF LOOSE/NON-BRANDED OIL & GHEE

1. What is your total monthly sale of edible oil & ghee (Liter/Kg)?

2. What is your monthly sale of different quality tiers of oil and ghee (Litre/Kg)??
 - a. Premium Brands oil/ghee -----
 - b. Popular/regional branded oil/ghee -----
 - c. Partially refined packed (Karachi quality)
 - d. Loose oil/ghee -----
 - e. Unrefined packed (Karachi quality)
3. Which type of customers buy from your sale point?
 - a. Lower-income Household
 - b. Catering people
 - c. Small scale frying business (Pakora, Jalebi, etc.)
 - d. Others (-----)
4. What is the price range for different quality tiers of oil and ghee (litre/Kg)?
 - a. Premium Brands oil/ghee -----
 - b. Popular/regional branded oil/ghee -----
(Karachi quality) -----
 - c. Partially refined packed (Karachi quality)
 - d. Loose oil/ghee -----
 - e. Unrefined packed
5. In your opinion what is the main reason, customer buys loose/non-branded oil & ghee?
 - a. Low price
 - b. Accessibility
 - c. Others (-----)
6. In your opinion how many dealers are there in your region and loose/non-branded oil & ghee?
7. What would be the average monthly sale of each dealer in your region?

DETAILS OF QUALITY DYNAMICS OF LOOSE/NON-BRANDED OIL & GHEE IN MARKET

1. Does the self-packaged loose oil & ghee label depict presence of vitamin A and D fortification?
 - a. Yes
 - b. No
2. What visible difference you could detect in physical appearance of loose oil & ghee, when compared with branded ones?
3. What are the storage conditions (Temperature, Humidity, etc. of sale point)?
4. What do you know about the quality parameters of oil/ghee?
5. Did any regulatory authority ever visit your sale point?
6. What facilities you expect from government to improve the sale of branded oil/ghee?
7. What are your comments about the overall comparative sale of loose/non-branded oil & ghee with branded ones?

Annexure 3: Government Regulatory Authorities Questionnaire

SUMMARY: The tool kit is about the government institutions and regulatory authorities including Punjab Food Authority, Sindh Food Authority, KP Food Safety and Halal Authority, and Pakistan Standard and Quality Control Authority, who are involved in formulation and implementation of ban on loose oil and strict vigilance of informal sector of this commodity. This interview will be intended to extract the information about the current status of loose oil ban implementation, the gaps in implementation and the possible solutions to achieve this target.

Tag: Branded and loose/non-branded oil: rules and standards, implementation status, gaps in implementation

Date: ---/---/---

Serial No: -----

Name: -----

Contact: -----

Designation: -----

Institute: -----

Address: -----

City/District/Province: -----

1. What is the current status of ban on loose oil by your provincial authority?

2. What type of edible oil is being sold in the informal sector market?
 - c. Branded
 - c. Tier-2 brands
 - d. Loose/non-branded
 - d. Others (-----)
3. What could be the annual availability (million MT) of different tiers of Brands in your area?
 - d. Premium Brands -----
 - c. Loose -----
 - e. Mid-tier/Popular/regional brands -----
 - d. Karachi -----
4. What is the number sealing done on the basis of adulterated or loose oil sale during this year?
5. Are the suppliers/distributors of non-branded oil (Karachi quality) registered with your authority?
6. In your knowledge, what could be the other major sources of loose/non-branded oil?
7. What are the hygienic conditions of the premises where loose edible oil is packaged and sold?
 - a. Perfect
 - b. Better
 - c. Poor
 - d. Extremely poor
8. Does authority monitor the supply of loose/non-branded oil from Karachi to informal market of your area?
9. Does authority collect the samples of non-branded oil samples coming directly from Karachi processing units without complete processing?
10. If inspected by authority what were the results for compliance of these Karachi processed oil samples?
11. What is the response of loose/non-branded oil suppliers/distributors after loose oil ban in your jurisdiction?
12. Is data available for the localized packed brands, which is the major portion of loose/non-branded oil market?
13. In your opinion what could be the major sources of loose/non-branded oil in the informal market?

14. What solution do you suggest for monitoring and controlling the operation of informal sector of edible oil?
15. Does the locally packed non-branded oil label depict presence of vitamin A and D fortification?
 - a. Yes
 - b. No
16. What facilities government authorities could provide to suppliers/distributors of informal sector to improve the sale of branded oil?
17. What are your comments about the overall comparative sale of loose/non-branded oil with branded ones?

Annexure 4: Edible Oil and Ghee Processors

Questionnaire

SUMMARY: The tool kit is about the oil and ghee processors (leading brands, tier-2 brands and processors of Karachi brand oil), who are involved in processing of edible oil both from local as well as imported sources. This interview will be intended to extract the information about the total production of edible oil; production share of branded, tier-2 and loose/non-branded oil.

Tag: Branded and loose/non-branded oil: production volume, types of brands

Date: ----/----/----

Serial No: -----

-

Name: -----

Contact: -----

Business name: -----

Address: -----

City/District/Province: -----

What brand (s) of edible oil and ghee is being processed at your unit?

1. What are your raw materials?
 - a. Imported oilseed
 - b. Imported Olein
 - c. Local oilseeds
 - d. Imported Palm oil
2. What products are produced from each stream and how much?
3. What is annual production of your branded oil and ghee?
4. What is the volume of imported edible oil and fractions by your industry?
5. Is imported oil directly transported to your industry from port?
6. What could be the annual market share (%) of loose/non-branded oil compared with branded one in your area?
7. What is your opinion about the quality differences of branded and loose/non-branded oil?
8. In your knowledge, what could be the other major sources of loose/non-branded oil?
9. What facilities government authorities could provide to suppliers/distributors of informal sector to improve the sale of branded oil?
10. What are your comments about the overall comparative sale of loose/non-branded oil with branded ones?

Annexure 5: Categorization of Oil and Ghee Brands

No.	Category	Description	Price Range
<i>Formal Sector</i>			
1	Premium brands	The brands of high quality and sold nationally and considered as completely refined, bleached, deodorized, and fortified after imports.	200-220 PKR/Kg.
2	Popular/Regional brands	Also called second-tier or regional brands, which are leading brands in specific regions and considered to be completely refined, bleached, deodorized and fortified after imports.	180-195 PKR/Kg.
3	Partially refined and packed brands (Karachi Quality Brands)	These are low-quality brands partially refined and packaged mainly in the facilities around the Port Qasim Karachi. These brands could be considered from the formal sector of edible oil processing; however, in some cases, these are not properly documented by the processing industry for the food regulatory and tax authorities.	165-175 PKR/Kg.
<i>Informal Sector</i>			
4	Unrefined but packed brands	These are the poor quality and low-priced edible oil brands packed without any value addition such as refining, bleaching, deodorization, and fortification, and packed on the demand of the wholesale market. There are different traders, either running oil processing units or just receiving packed oil from units located in Port Qasim area in Karachi. These are sold through brokers to wholesale dealers in wholesale markets of different cities around the country.	155-165 PKR/Kg.
5	Loose oil	This is transported directly from the port as loose oil in "bozels" (a common term used for oil tanker) to the broker and then wholesalers in different cities, where they sell to consumers. This sector also includes some of the edible oil extracted from indigenous sources like solvent extraction units or small-scale grinding units, however, the amount is negligible.	145-160 PKR/Kg.

Annexure 6: Geographical segmentation of edible oil processing units

The information on the locations and production capacity of edible oil processing in different regions was gained through interviews with PVMA and Pakistan Solvent Extractor's Association (PSEA). The findings are presented in Table 5 and are summarized below:

a. Industrial Oil Processing Units:

- There are a total of 103 registered industrial oil processing units across Pakistan with the processing capacity of around 4.635 Million MT/year.
- Among these units, 30 are based in Karachi with the installed capacity of 1.715 Million MT/year, representing around 40% of the total national processing capacity.
- Following Karachi, the second large number of industrial units are in North and Central Punjab (around 30% of total installed production capacity), particularly in the Lahore area.
- Many of the major oil processing units in other regions have installed their base units in Karachi as well to reduce the freight charges of imported oil and for cost efficiencies.

b. Solvent Extraction Units:

- Solvent extraction units are the oil extraction facilities producing additional edible oil from local as well as imported oilseeds of sunflower, soybean, canola and mustard seeds.
- The Solvent Extraction Units supply their edible oil to the wholesale market, which further distributes the oil to either consumers for non-edible or edible purposes, or to the industrial units utilizing this oil for mixing in imported oil and RBD.
- These local crushers/units constitute a very small percentage of the total market production of edible oil in the country.
- There are a total of 56 solvent oil extraction units in Pakistan, with a majority located in South Punjab (26) and Karachi (19) regions.

Geographical segmentation of edible oil processing units and their installed capacity in different regions of Pakistan

Regions	Industrial edible oil processors				Solvent extraction units*
	No. of Units	Total installed capacity (Million MT/Year)	% of National installed capacity	Average Unit size (MT/Year)	No. of Units
South Punjab	12	0.428	9.2	38000	26
North + Central Punjab	35	1.370	29.6	44519	7
Karachi	30	1.815	39.2	29025	19
Interior Sindh	8	0.232	5.0	60515	4
KP	16	0.712	15.4	39155	0
Baluchistan	2	0.076	1.6	35683	0
Total	103	4.635	100	44996	56

*These units are in addition to the major industrial processors of that area

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- ⁵ K Prasad. 2016. Consumer Behaviour Towards Brand Preference Among Edible Oil Users. *Indian Journal of Research*, 5(8): 155-157.
- ⁶ The local manufacturers have many wholesale buyers concentrated in these two-commodity market and the wholesalers pay and take a Delivery Order (DO) for a future date with quantity information only. The wholesalers sell the DOs to retailers or to any other traders and the bearer of DO finally take the delivery.
- ⁷ RA Choudhury and MC Costa. 2012. Impact of Government Law on Edible Oil Supply Chain in Bangladesh Perspective. *Int. J Sup. Chain. Mgt*, 1(1): 33-38.
- ⁸ Import Bill of Edible oil and its fraction in Pakistan during 2014-2018. State Bank of Pakistan figures for total imports of edible oil and fractions to Pakistan
- ⁹ Conference Report, Pakistan Edible Oil Conference (PEOC) 2018, held on 19th January, 2019, Karachi, Pakistan
- ¹⁰ Export Bill of Edible oil and its fractions from Pakistan during 2014-2018. State Bank of Pakistan figures for total exports of edible oil and fractions to Afghanistan during the year 2014-18
- ¹¹ Palm stearin is used in soap industry
- ¹² Evaluation of the SNIP Food Fortification Programme – Midterm Evaluation Report, 2019
- ¹³ PVMA Pakistan Edible Oil Conference (PEOC) 2018
- ¹⁴ Pakistan Oil Development Board (PODB), Pakistan Bureau of Statistics, 2018
- ¹⁵ Galla Mandis are informal trading markets of food and non-food consumer items
- ¹⁶ Loose Oil Association is comprised of around 60 major traders of loose oil based in Karachi. This association is registered with the Karachi Municipality but not as a National Association.
- ¹⁷ Notification issued by Directorate General Industries, Prices, Weights & Measures, Punjab Government, Lahore, dated 09-11-2019, vide No. DD (PR) 2-2/2019.
- ¹⁸ Pakistan Solvent Extractors Association is a registered body of edible and non-edible oil extraction units comprising of around 71 members.

