

Improving the quality of essential
and vegetable oils in Southern Africa:

Micro-narratives of change and progress



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION
Progress by innovation



SAEOPA
Southern African Essential
Oil Producers' Association



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List of acronyms

ABioSA	The ABS Compliant Biotrade in South(ern) Africa project, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
GQSP-SA	The Global Quality and Standards Programme – South Africa project
QMS	Quality management system
SADC	Southern African Development Community
SAEOPA	Southern African Essential Oil Producers' Association
SECO	Swiss State Secretariat for Economic Affairs
SME	Small- and medium-sized enterprises
UNIDO	United Nations Industrial Development Organization

With over 21,000 plant species, South Africa is the third-most biologically diverse country in the world, and conserving this biodiversity is high on the government's agenda. The indigenous essential and vegetable oils value chains have significant growth potential. They can contribute to South Africa realising value-added industrial growth while supporting employment creation and shared prosperity.

South African essential and vegetable oils are in high demand by significant markets, such as Germany, the Netherlands, the United Kingdom (UK), and the United States, expanding to Japan, Kenya, Spain, Switzerland, and Tanzania. South African rose geranium oil is sought after, and has a reputation for being of high quality.

However, only a fraction of the potential production of indigenous essential and vegetable oils in South Africa is currently exported to regional and international markets. The reasons for this range from difficulty in scaling up from pilot to commercial level, to meeting international legislative and buyer requirements (testing, certification, etc.).

The COVID-19 pandemic affected how the Global Quality and Standards Programme – South Africa project (GQSP-SA) interacted with the Southern African Essential Oil Producers' Association (SAEOPA – the industry association), the essential and vegetable oils industry, and other stakeholders. To engage the industry, several webinars and online training events were organised. Producers used to prefer physical events, but the lockdowns accelerated the shift to online proceedings. Over the period of lockdowns and the state of disaster, participation by industry in online events increased. The change to online events resulted in the extension of the project's geographical reach to producers who were far removed from major centres.

The essential and vegetable oil producer landscape in South Africa is hard to measure. Countless small producers supply natural extracts that are used in manufacturing candles, soap, scented products, and other cottage industries. GQSP-SA targets the larger producers that require fixed investment and have the potential to export. It is estimated that about 45 of these producers are in different stages of export readiness, with at least 15 being established exporters of essential and vegetable oils.

The early GQSP-SA studies in 2018 revealed that many producers did not fully understand and appreciate the principles of quality management at that stage. Quality was mainly associated with the quality of the end product, while the producers' main focus was on reaching sufficient volume.

At the start of the project, no national standards were available that defined the physical and chemical properties of essential and vegetable oils, whether indigenous, classic or exotic. Producers had to rely on buyers to conduct tests, as there were no testing laboratories, whether accredited or not, with the required scopes available in Southern Africa to test the physical and chemical properties of essential oils and provide a completed certificate of analysis.

Back in 2018, producers had little understanding of where and how the quality of the final oil could be affected in the cultivation, harvesting and processing stages of the plant materials, and how to consistently produce oil of high quality.

This study revealed that much has changed since the start of the GQSP-SA project.



2

Why a narrative study?

During the last few years, there have been immense changes in the essential and vegetable oils production landscape and the broader biotrade sector. Several international cooperation partners launched projects to support the industry, with the Swiss State Secretariat for Economic Affairs (SECO) funding a portfolio of four projects in support of the biotrade sector¹. In the previous three years, two SECO-funded projects, the GQSP-SA and the ABioSA projects, cooperated closely to launch and sustain a regular multi-stakeholder forum that mobilised more than 30 publicly funded support organisations into regular dialogue and joint activities in support of the biotrade sector. These events were critical in making the supporting organisational infrastructure more visible to the biotrade sector. They encouraged many different programmes to explore synergies to benefit producers and the industry at large.

Whilst much has been written about why quality is vital to the success and sustainability of an enterprise, some questions remain: Are enterprises, particularly developing and entry-level enterprises, convinced of the value of quality? If not, why not? Do enterprises regard volume for securing market access as a higher priority than the quality of the product? What are the narratives around quality, and how are they changing? How are messages from GQSP-SA and other stakeholders encouraging producers to embrace and cultivate quality improvement, and to what extent are practices changing?

This pilot micro-narrative project also intends to understand the underlying influencers, behaviours and attitudes of the essential and vegetable oils industry in respect of the quality of the oils produced.

¹ The four SECO-funded projects are: ABS Compliant BioTrade in South(ern) Africa (ABioSA), Global Quality and Standards Programme - South Africa project (GQSP-SA), Swiss Import Promotion Programme (SIPPO), and Swiss-South African Intellectual Property Project (SSAIP).

3

Research methodology

The GQSP-SA partnered with Mesopartner to capture and make sense of the micro-narratives of producers' efforts to improve the quality of the oils they produce. SenseMaker®, a mixed-methods ethnographic research tool, was used to collect micro-narratives from producers. A single-use license was procured from UK-based Cognitive Edge, which had developed the Sensemaker® software suite, for purposes of this project.

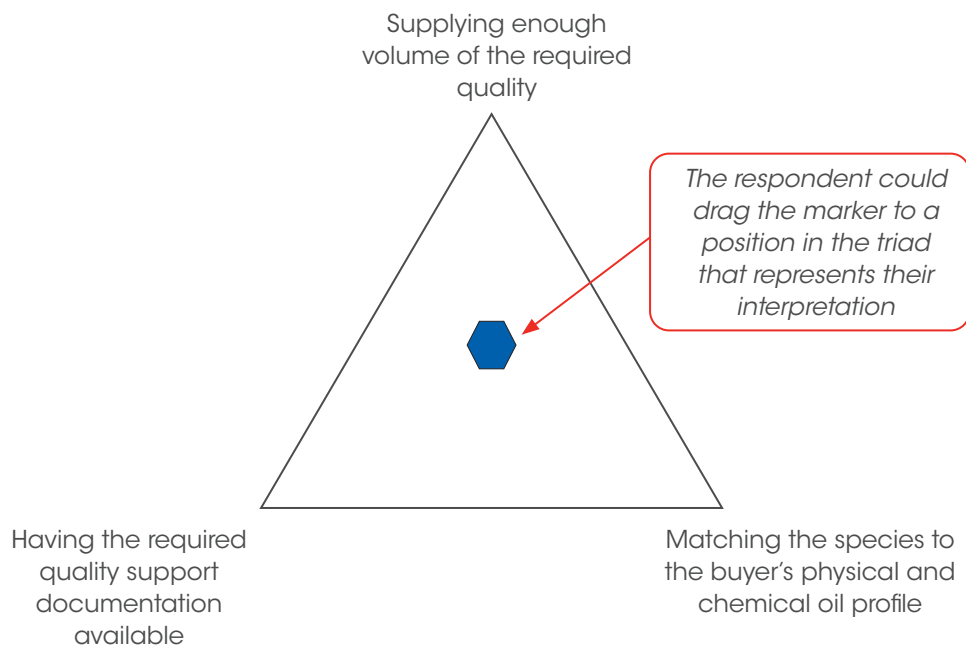
Sensemaker® is used in ethnographical research, allowing respondents to share their stories and giving meaning to their own stories, using self-signification. Self-signification means that the persons sharing stories give meaning to their own story by following prompts designed by the research team. This approach avoids the epistemic injustice of third-party or algorithmic interpretation. Cognitive Edge licensed Mesopartner to employ Sensemaker®.

An open-ended story prompt was formulated to invite respondents to share their respective stories. The respondents could share written stories of their own experience in improving the quality of the oil they produced via an internet browser or a mobile phone. In addition, the prompt encouraged respondents to attach a photo to their story to provide more context.

After sharing their stories, respondents could respond to a series of self-interpretation questions called signifiers. The signifiers were presented as triangles called "triads", with three related labels in each corner. Respondents could give meaning to each story by dragging a marker onto each triangle according to the relevance of the corners to the story. An example of one of the questions in the survey is provided below.



The buyer specifications we have to meet are mainly about...



In some of the questions, the respondents could move a slider between two poles on a line (called a "dyad"). Multiple choice lists were used to collect information on the various kinds of oils being produced, and to assess the formality of the quality management system (QMS) in place.

The signifiers were designed based on the design team's understanding of quality and their experience in supporting entrepreneurial development in the Southern African context. The final instrument consisted of four triads, three dyads, and several multi-choice questions.

To encourage the industry to share their stories, they were informed that all responses would be anonymous. Therefore, no personal metadata (including contact information), were collected during the survey.



After attending the last quality training, I was really inspired to do a holistic analysis of our entire production from our nursery, fields, processing and packaging. We have immediately improved our recording of data and ensured our batching system ensures there is enough traceability across our production. We will keep you updated on the progress of my shift.



4

Demographic findings

A total of 43 stories were recorded over a 3-month period (July–September 2022). Most stories were from South Africa (38), with three stories each from Namibia and Zimbabwe, and one from Botswana. One story was from a vegetable oil producer who operated in both Namibia and South Africa.

Due to the low representation from South African Development Community (SADC) member states beyond South Africa, and the fact that most of the regional producers draw on the South African institutional infrastructure, the results of the regional producers will not be discussed separately.

5

PART 1:

Looking at the data through four lenses

Four questions provide valuable analytical lenses to make sense of data. The first three of these lenses are captured in the survey instrument as dyads with a slider with the following poles:

- the self-description of the oil producer: *"young and still finding our way"* or *"established and well on our way."*
- the primary clients are *"mainly local"* or *"mainly international (beyond Southern Africa)."*
- the assistance received to improve oil quality *"had little effect"* or *"the assistance received to improve oil quality made a big difference."*

The fourth lens that proved helpful in interpreting the data was from the multi-choice question probing how producers tested the quality of their oils.

5.1 The self-description of the producers: "young and finding our way"

Because the production of indigenous essential and vegetable oils is still an emerging industry in Southern Africa, it was decided not to enquire about the age of entrepreneurs.

Instead, the producers could indicate their self-assessed stage of development or level of confidence in improving the quality of the oil they produce, by dragging a slider between two poles on a scale, from *"young and still finding our way"* to *"established and well on our way."*

Most respondents identified as *young and still finding their way*.

For the remainder of this publication, these two groups are shortened to "younger" and "more established".

5.2 The producers identify with the international market

Respondents could drag a slider along a scale from *"mainly local"* to *"mainly international (beyond Southern Africa)"*. Most producers identified with *"serving international"* buyers on the scale.

This result was unexpected, as the research team expected only the established producers to be focused on the international market.



5.3 The assistance received to improve oil quality is effective

To test whether the assistance provided had been effective, the respondents could position a slider between the poles: *"the assistance received to improve oil quality had little effect"* and *"the assistance received to improve oil quality made a big difference"*.

The overwhelming majority of respondents indicated that the assistance received to improve the quality of their oils had made a significant difference.

Although GQSP-SA is not the only organisation supporting quality improvement, it is the main provider of assistance to improve the quality of essential and vegetable oils in Southern Africa.

This finding suggests that the producers drawing on support from GQSP-SA and its network of supporting organisations, derive mainly positive benefits from those entities' support.

5.4 Most producers are developing their own in-house quality management systems (QMS)

In this question, the producers could indicate the formality of their QMS from a multi-choice list. The results are shown in Figure 1.

The majority (70%) of respondents indicated they used an in-house QMS that was not certified, while only 7% reported having a certified QMS.

Of concern is that 23% of producers reported that they did not have a QMS at all. Of this group, eight indicated that they were young and still finding their way, while two indicated that they were already established. Surprisingly, four established producers (without QMS) exported 100% of their oil to overseas countries.

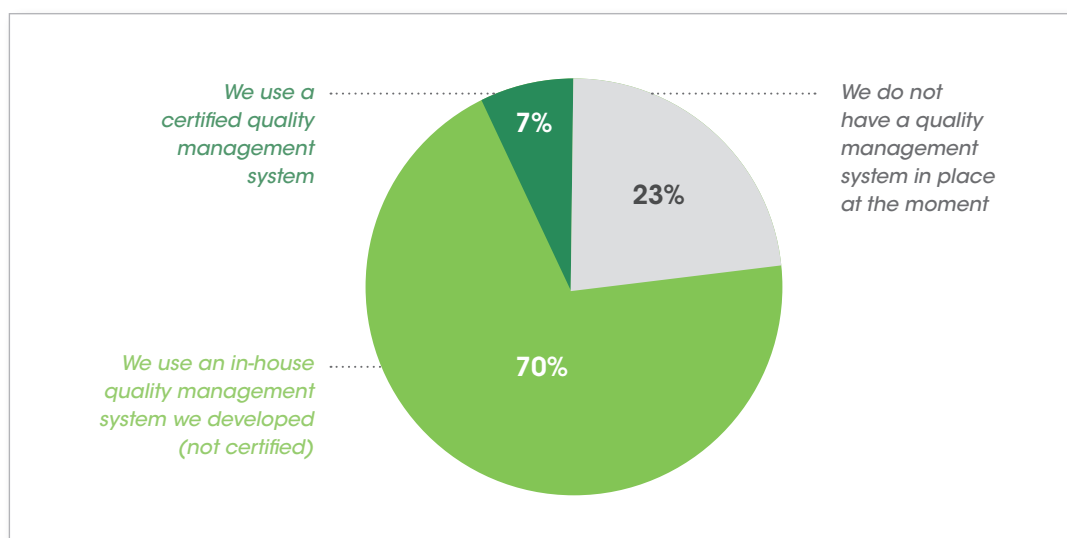


Figure 1: Formality of the QMS in place

It is not a given that all producers should strive to have a certified QMS in place, unless their customers require it. A certified QMS could be too expensive for many of the smaller producers to achieve and maintain. However, there needs to be sufficient evidence of process monitoring to ensure the production of consistent quality oil. This in-house QMS should cover at least the critical control points illustrated in Figure 5.

The finding that 70% of producers had an internal QMS system, indicates that many are now paying more attention to their systems and procedures, particularly in respect of quality. The areas that producers were paying attention to, are discussed in detail in section 6.3.

Producers' understanding of quality

Producers' perception of quality is described in this section.

6.1 Quality is mainly about ...

For most respondents, quality was mainly about establishing a process that ensures a consistent quality of the oil (Figure 2).

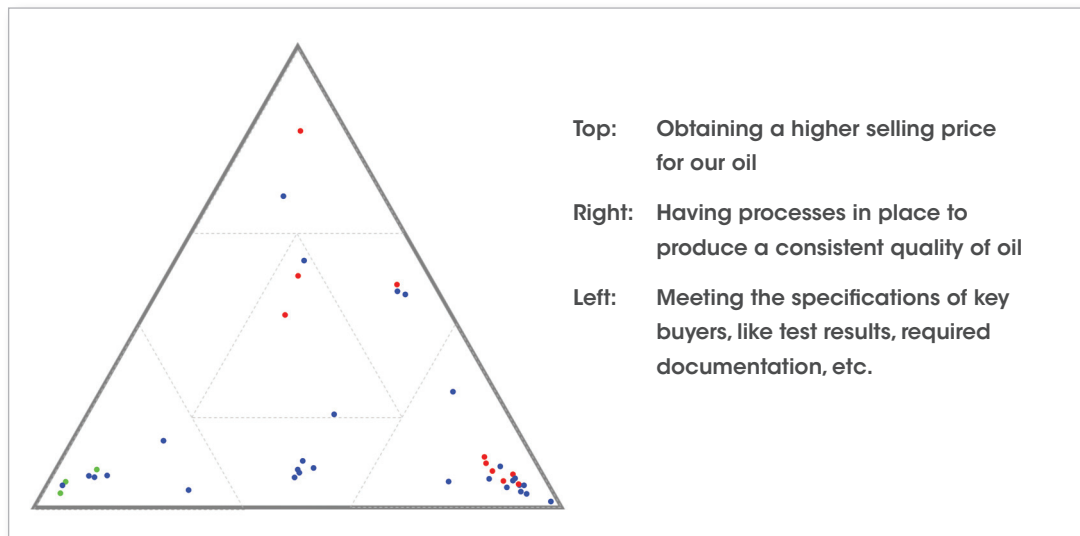


Figure 2: What quality is about

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I am of a view that improving quality of the oils should be a continuous process, because failure to do that will result to customers withdrawing their support.



When assessed through the formality of the QMS, it was gleaned from the data that respondents:

- Without a QMS (red dots), mainly focused on processes (60% of responses).
- The respondents that used an in-house QMS (blue dots), concentrated mainly on processes (45%) and buyers' specifications (21%).
- Companies with a certified QMS (green dots), only paid attention to meeting the specifications of key buyers (100%).

6.2 The buyer's specifications are mainly about ...

At the aggregate level, the responses in Figure 3 are evenly spread across the corners of the triangle, with a slight majority at the bottom left and towards the top. This indicates that getting the required quality support documentation in place and meeting the volume requirements, were slightly more important than matching the species to the physical and chemical oil profiles required by the buyer.



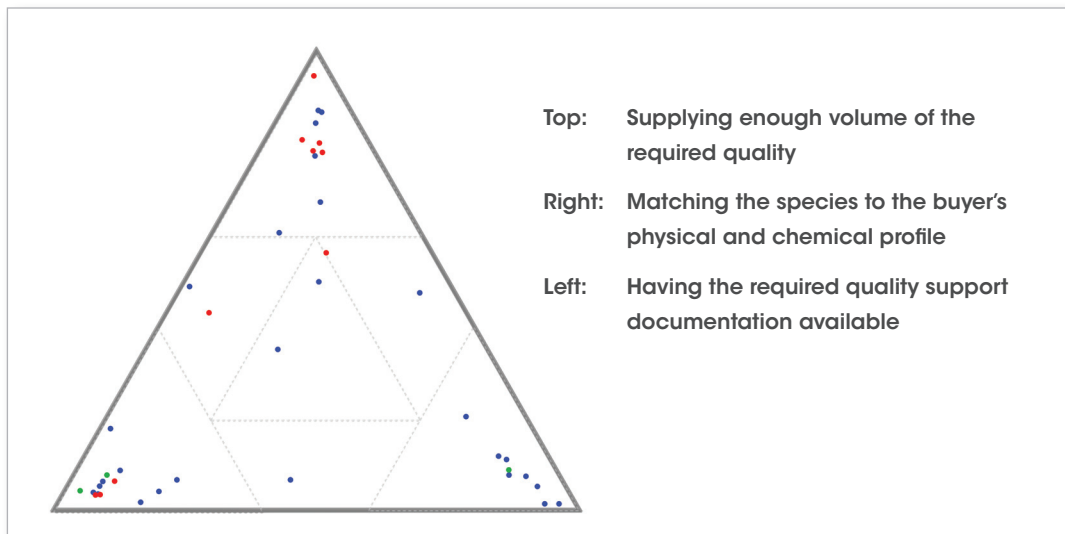


Figure 3: What are meeting buyers' requirements about?

When assessed through the formality of the QMS, the following were found:

- Respondents without a QMS (red dots), focused mainly on volume (50%), with documentation coming second at 30%. This group of respondents did not mark the bottom right as significant, possibly implying that those producers did not know the value of that activity, or that it was not an issue.
- Producers with an in-house QMS (blue dots), were balanced between the triangle's three corners. The implication is that even though, collectively speaking, they marked all three corners almost equally, individual producers had specific priorities.
- Producers with a certified QMS (green dots), primarily paid attention to supporting documentation (67%) and then on matching the physical and chemical oil profiles (33%). None of these producers indicated that supplying the required volume was a priority.



"I have learned that it is imperative for management of any organisation to be focused on continuously promoting the culture of quality and quality improvement in our enterprises in the way that customer needs present and future are key, customer satisfaction, adherence to customer specifications, adherence will build a long-lasting relationship with the customer."

Producers' understanding of quality

6.3 Knowing where to focus to improve the quality of oil produced

As shown in Figure 4, training courses or webinars (43%) were most producers' most important source (43%) of knowledge on this subject.



Figure 4: Knowing where to focus

When assessed through the formality of the QMS, it was observed that:

- Producers without a QMS (red dots), had to rely more on their own research (30%), using a service provider (20%), or by doing their own research and a service provider (10%). Again, most markers were often placed near the corners, indicating that their stories had a specific focus represented by a label. Only two producers placed markers between the corners, indicating that they somehow had to balance competing demands.
- Those with an in-house QMS (blue dots), depended more on events, training and webinars (52%). However, many markers were still placed deep in the other corners, indicating divergent priorities. In this graph, a few markers were placed in the centre and left side of the triangle, indicating that some producers were balancing the priorities of the labels.
- Producers with a certified QMS (green dots), relied more on service providers (67%) or their own research (33%).

“

We are revamping the distillation facilities with what we learned in mind. Previously, we couldn't identify quality checkpoints, not to mention developing the record forms of each checkpoint. We are equipped. We do have forms now and we will apply this skill in all sections of our operations.



6.4 Challenges overcome to improve the quality of oil produced

The design of this question was inspired by the GQSP-SA training programme, "Creating value through quality performance". During this course, trainees have to identify quality control points at each stage of their production process, from start to finish. The course helps producers to put their own QMS in place by paying attention to the different control points during the various processes. People often think of quality as something that happens at the end of a production process, and not as an overall approach that is integrated into all operations of the enterprise. The course material draws attention to at least 16 quality control points across the cultivation/harvesting and the oil processing processes. The control points have been condensed into twelve areas to make the list easier to navigate in the survey.

The results in Figure 5 are split between the "younger and still finding our way" and the "established and well on our way" self-assessment poles.

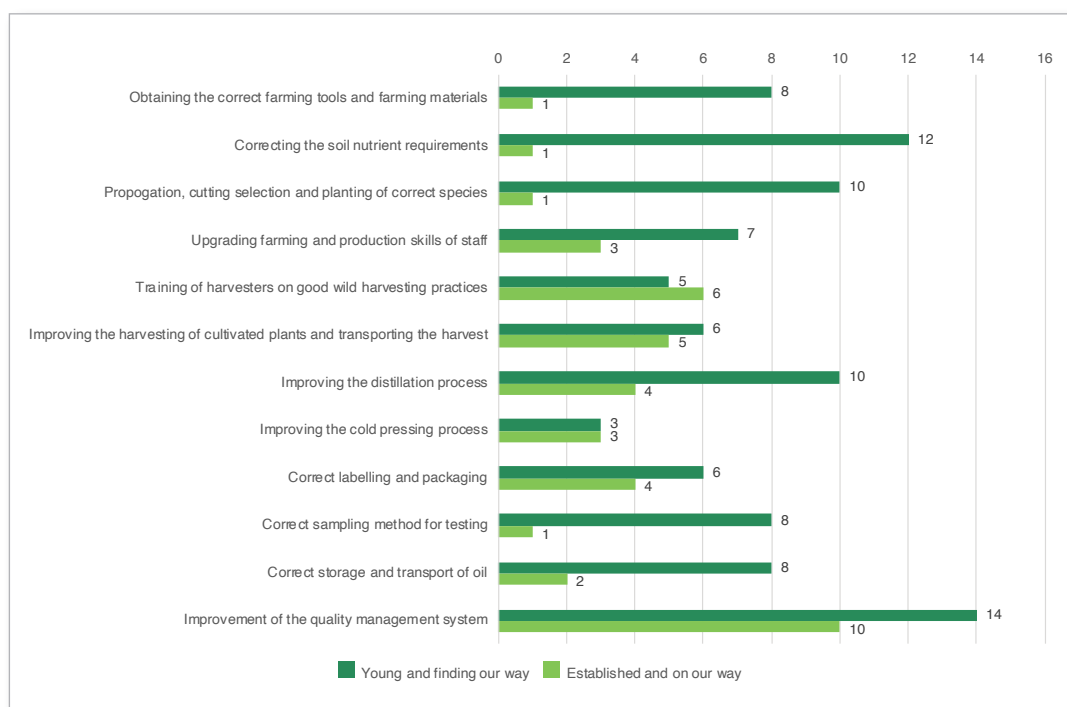


Figure 5: Challenges overcome to improve the quality of oil produced

As expected, the results show that younger enterprises are still focused on addressing issues on a broad front. Younger producers are still trying to get the correct farming equipment and materials, select the correct species, and correct the soil nutrient requirements.

The more established producers are mostly not so much concerned with farming tools, materials, species selection or soil nutrient requirements. Their stories are mainly about directly improving their QMS, training harvesters, and improving the distillation process. In other words, they concentrate more on adding value and consistency, while the younger producers are still trying to get the essentials in place.

Producers' understanding of quality

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Quality starts from the soil

Previously, I used to propagate and produce seedlings in an open area as I didn't have the resources to build a nursery. The mortality rate was too high; over 60%. With the little I got from selling seedlings, I got a net shade and started producing and the mortality rate is only 2% or less. With that I realised that for us to produce quality seedlings, we need a certain temperature, a suitable environment and good maintenance. Our business management system is being changed for better results and best quality system. Quality starts from the soil, then good cultivation practices and maintenance before processing. I learned from my own experience and I'm now practising the best way of cultivating with what I have.



6.5 The effectiveness of quality improvement attempts by producers

This question followed up on the previous question producers' efforts to improve the quality of oil produced. In Figure 6, the majority (70%) of respondents claimed that the quality of their oil improved. The aggregate result means that the producers appeared satisfied that their efforts to improve the oil quality had improved – in whichever way they assessed this progress.



Figure 6: In-house QMS - Effect of improvement effort



Most of the producers with an in-house QMS (blue dots), placed their markers towards the top of the triad. A few selected the bottom-right corner (access more profitable markets), with a few isolated markers between the corners.

Producers without a QMS (red dots), tended to select the top (38%) or bottom left (38%) of the triad.

Finally, the three producers with a certified QMS (green dots), selected the top (67%) or the bottom left (33%).

Overall, only two respondents without a QMS indicated that their sales revenue had increased. In everyday stories about quality, there is often an implied correlation between producing a consistent quality of oil and being able to charge more for this higher-quality oil. The stories collected during this survey did not show this correlation.

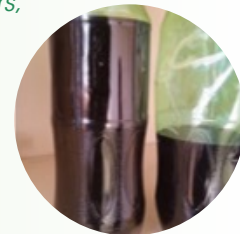
It is unclear from the stories how producers without a QMS knew their quality had improved, although the stories made mention of assessments of colour and fragrance.



I'm in the essential oil industry specialising in rose geranium production and value addition. My problem was in producing quality oil during harvesting time. Through SAEOPA and UNIDO that took us under intensive quality training, we managed to produce the best geranium oil ever in South Africa.



On packaging, we were using many plastic containers, our oils were contaminated especially when stored for longer periods. After training, we use glass and stainless steel for small quantities and fluorinated plastic drums for bigger volumes and now quality is maintained over long time.



"Small SMEs benefit from training" and "Alterations to the design of my distilling equipment led to an increase in the overall yield and quality of my essential oil".



Varieties of oils produced and process functions

The GQSP-SA project is focused on oils produced from several indigenous species in the Southern African region.

However, the survey included the major indigenous oils, major classic and exotic oils, and minor classic and exotic oils because the production of these major and minor classic oils is important in the industry. Respondents could select multiple options from three multi-choice lists.

In the narratives, three producers mentioned oils in their stories that were not on the lists used for the survey (indigenous ginger oil, moringa oil, vetiver grass oil, and resurrection bush essential oil).

7.1 Indigenous oils

The results for the respondents who had selected indigenous oils are shown in Figure 7, with a split between “younger” and “more established” producers.

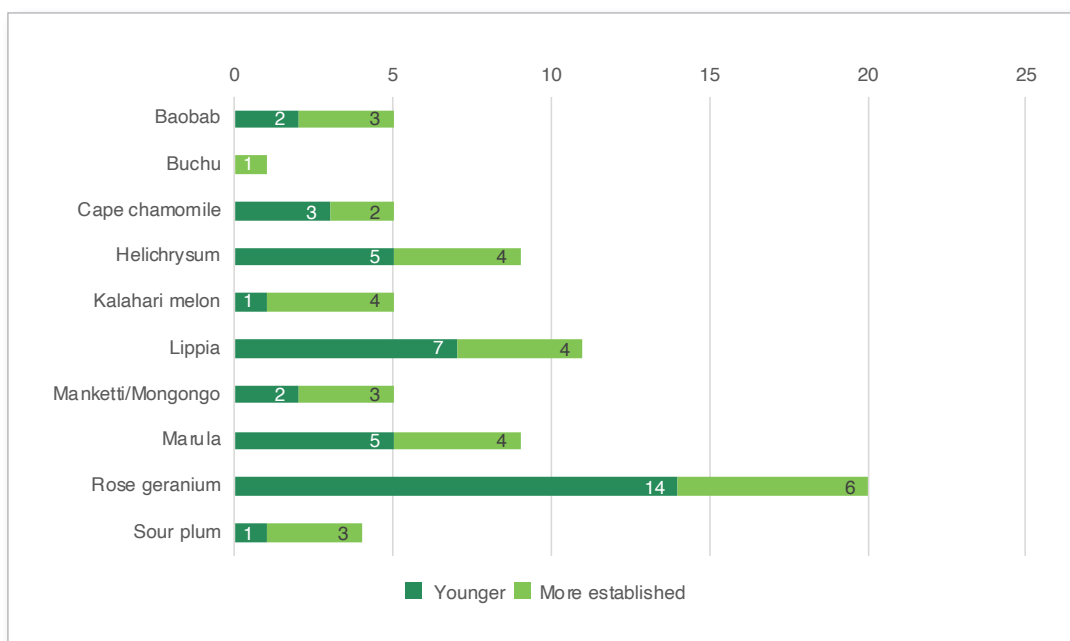


Figure 7: Indigenous oils produced by companies, as per self-description

Most of the respondents produced rose geranium and *Lippia* oils.

Several producers of indigenous species also selected some of the major and minor exotic oils, which are discussed in the next section.

“

When we were doing check or critical checkpoint we found that external checkpoint has a fundamental influence to the final product.



7.2 Major and minor exotic oils

The respondents who selected oils from the major classic and exotic oils list, are shown in Figure 8. There were more established producers in *Tagetes* and *Eucalyptus*, but in the remainder of the species, the differences between the self-assessed stage of the producers are not that large.

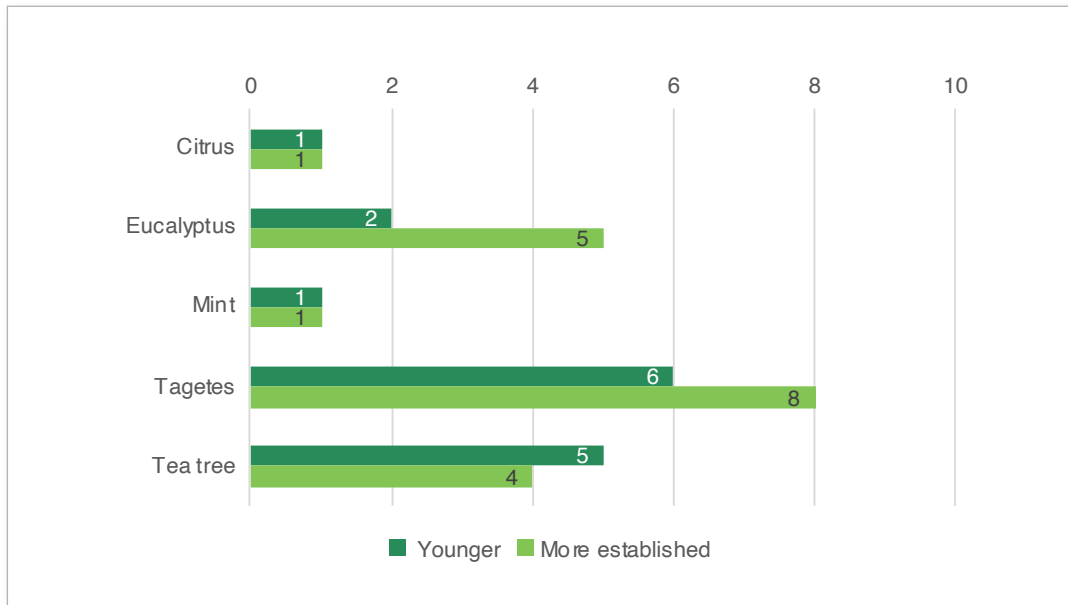


Figure 8: Major classic and exotic oils produced

The results of the respondents who selected oils from the minor classic and exotic oils list, are depicted in Figure 9. The results show a large concentration of younger producers involved with rosemary/sage and lavender. In all the species in this list, the more established producers were in the minority.

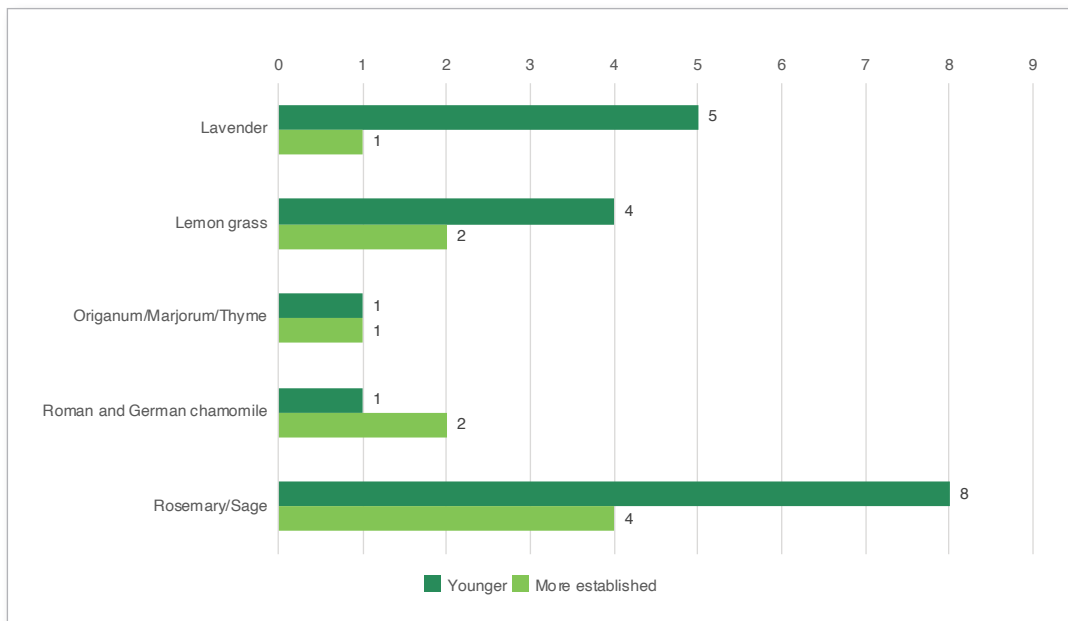


Figure 9: Minor classic and exotic oils produced

Varieties of oils produced and process functions

7.3 Functions performed in the enterprise

The following two questions collected information about the internal functions and systems present in the producer's operations.

The oil processing functions performed depend on the species used to produce the oil. Wild harvesters collect material in forests or open fields. Other producers cultivate their plants and then harvest those crops. There are two post-harvesting processes, namely:

- distillation and packaging of essential oils, and
- cold pressing and packaging of vegetable oils.

Figure 10 displays the results of the different functions. Whether companies are younger or older is immaterial, as the process steps are the same. However, the plant species determines whether the material is cold pressed or distilled.

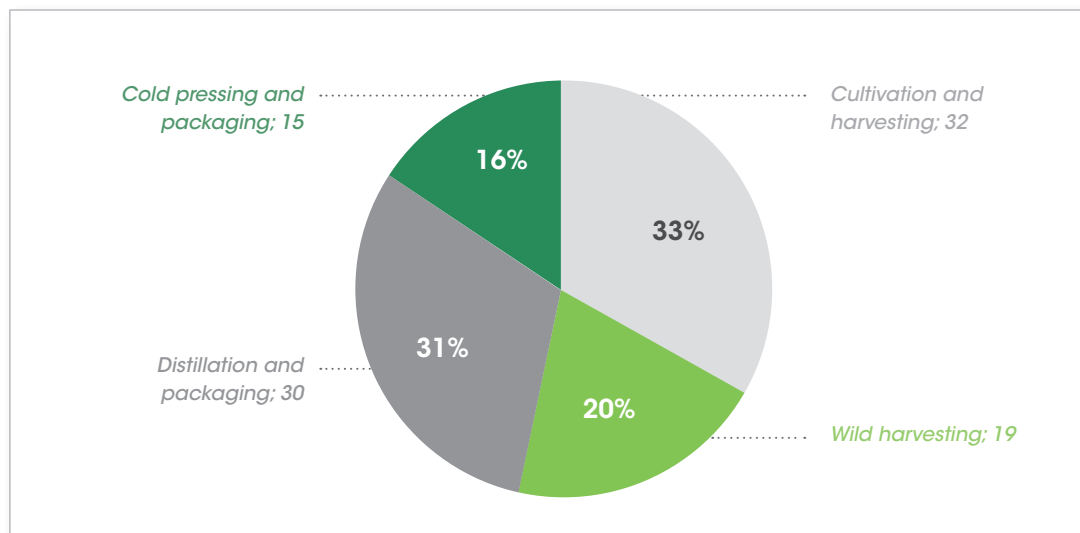


Figure 10: Functions performed in the production of oil

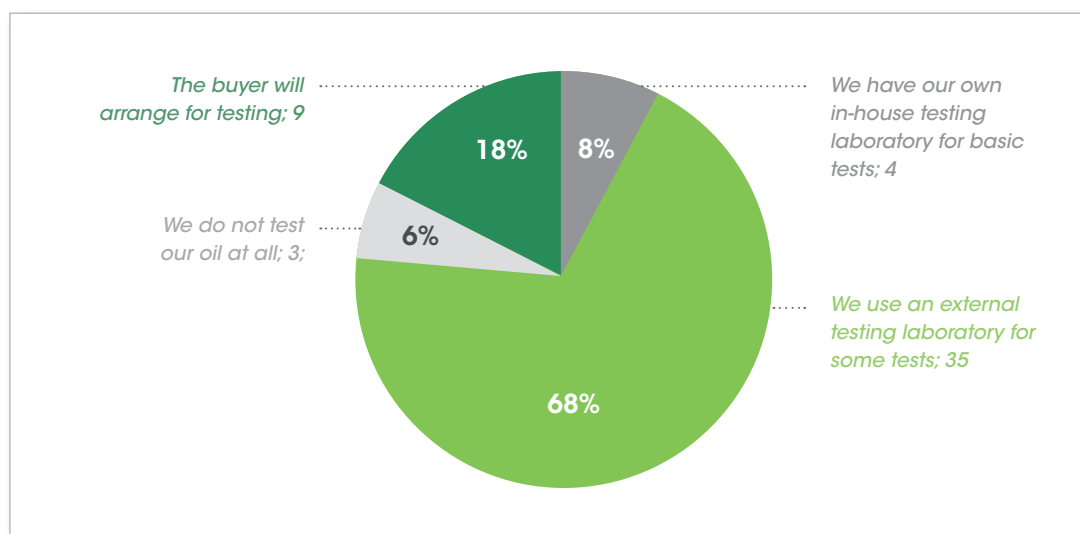


Figure 11: Testing the quality of oil (overall results)



7.4 How producers test the quality of the oil produced

Figure 12 shows that most producers (68%) used an external testing laboratory for some tests. Only 18% relied on buyers to arrange do the testing, while 8% indicated they used their in-house testing laboratory for basic tests. Only 6% indicated that they did not test their oils at all.

It is noteworthy that the producers with in-house laboratories still had to send their samples to an external laboratory for some tests. Four producers with their own in-house QMS had their own laboratories, while two with a certified QMS relied on an external laboratory for testing.

Figure 12 compares the results between the younger and the more established respondents.

Due to the high investment costs involved in establishing an internal laboratory, it was surprising to see that four producers (two established and two younger producers), had indicated that they used in-house testing laboratories for basic tests.

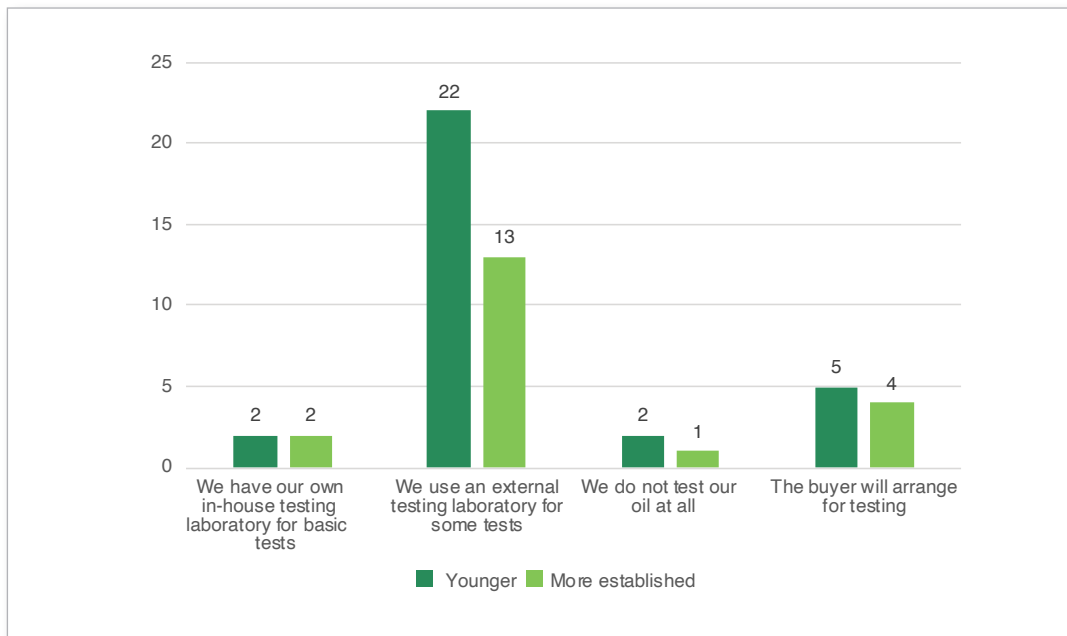


Figure 12: Testing the quality of oil - split by age

Nine producers relied on buyers arranging for testing (four established and five younger producers).



The organization is very much satisfied because the nonconformance was detected from the quality check point.



This final section of the publication describes the more advanced analysis conducted on the data and the micro-narratives to better understand counterintuitive patterns and findings.

For instance, the finding that many of the self-described younger producers intentionally targeted international markets, was unexpected and warranted further investigation.

8.1 International orientation and stage of the producer

Crossing the results from two different dyads into a heatmap graph provides interesting results (Figure 13). The vertical axis ranges from "young and still finding our way" at the bottom, to "established and well on our way" at the top. The horizontal axis ranges from "mainly local" on the left, to "mainly international" on the right.

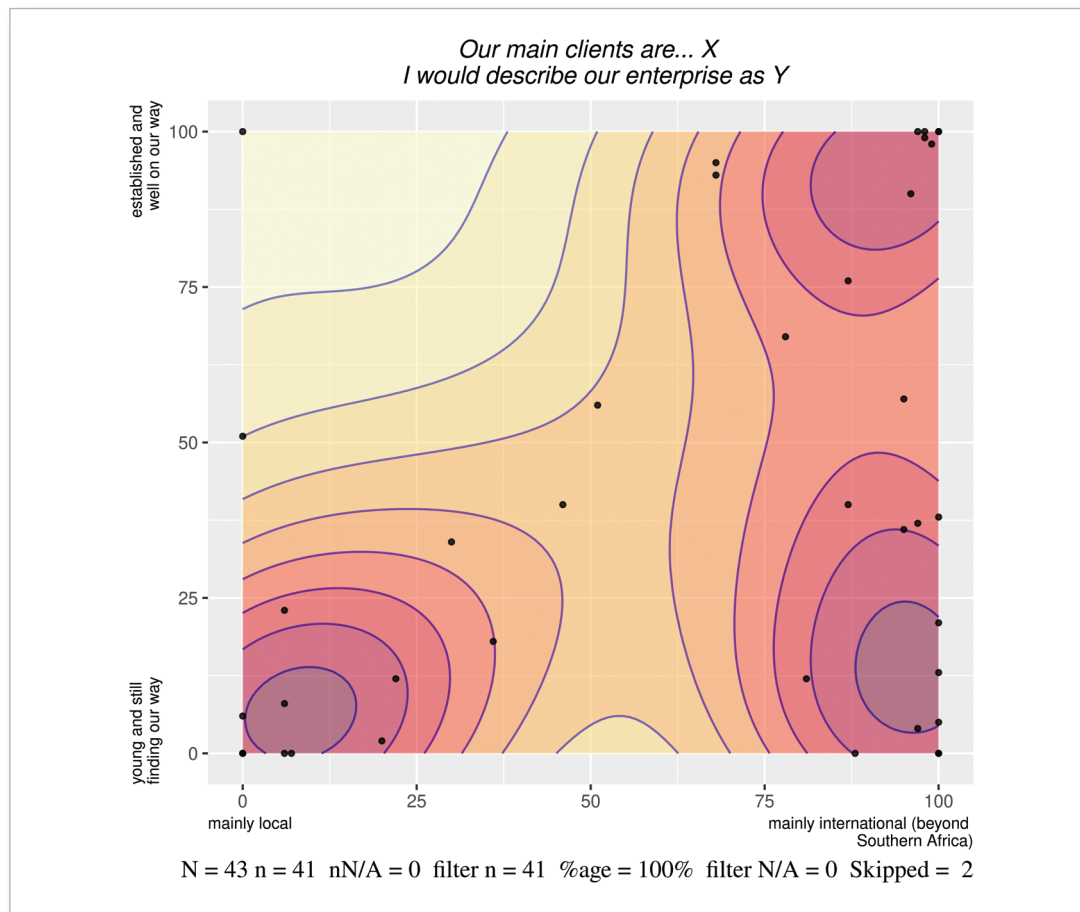


Figure 13: Market orientation and stage of development

The results in Figure 13 show three concentrations on the heatmap:

- At the bottom left is a concentration of younger producers serving mainly local markets.
- At the bottom right is a concentration of younger producers mainly supplying to international markets.
- The top right corner shows a concentration of more established producers serving mainly international markets.

It is significant to note the large number of younger producers already targeting the international market, and that very few established producers target the local market.



8.2 Assistance received and stage of the producer

Another heatmap combination is possible by combining the assistance received to improve the quality oil dyad with the self-assessed stage of the producer dyad. In Figure 14, the vertical axis ranges from "assistance had little effect" at the bottom, to "assistance made a big difference" at the top. The horizontal axis ranges from young and "still finding our way" on the left, to "established and well on our way" on the right.

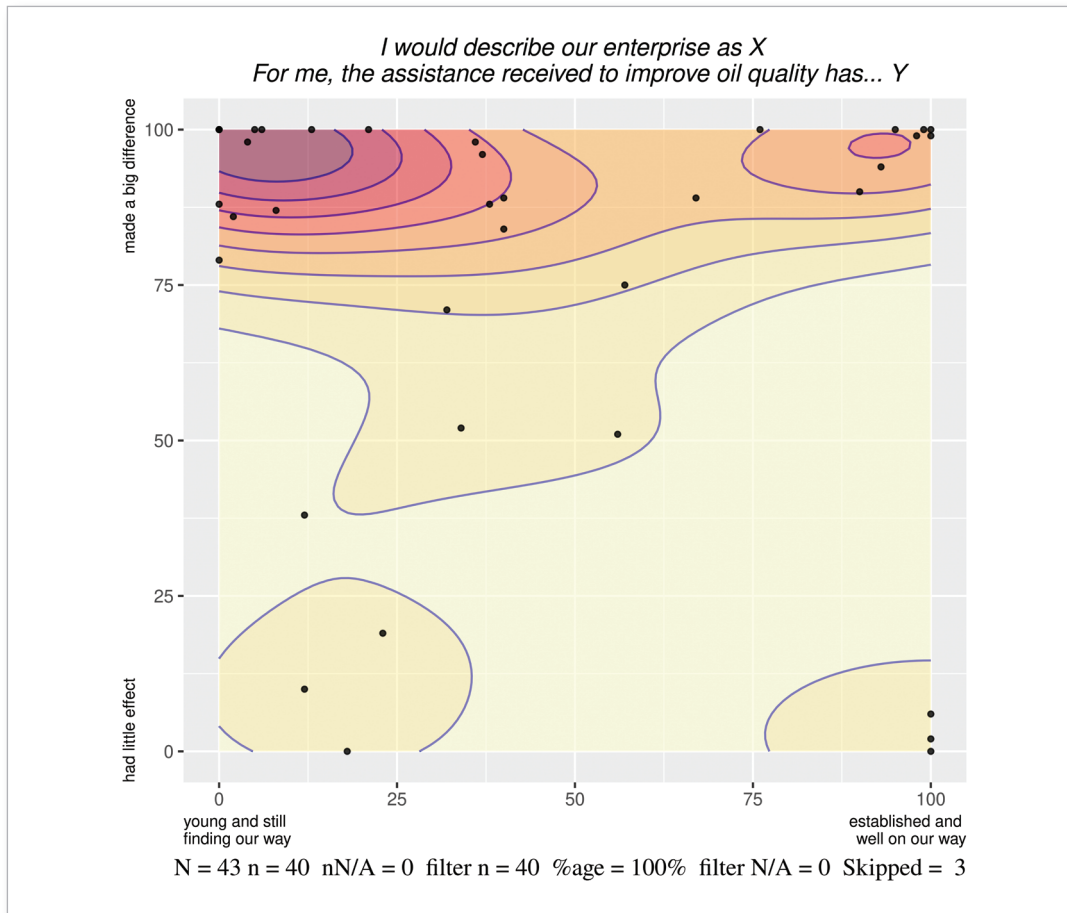


Figure 14: Effect of assistance received and producer stage

Two strong clusters are shown at the top of the heatmap. This indicates that both the younger and the more established producers reported that the assistance received to improve their oil quality made a substantial difference. On the top left, a large concentration of younger producers experienced the technical assistance as having made a significant difference. Towards the top right, a concentration of established producers indicated that the assistance received had made a major difference in their enterprises as well.

In the bottom half of the heatmap, two clusters of producers expressed that the assistance they had received, had a limited effect. Three younger producers (bottom left) and three established producers (bottom right) stated that the assistance did not help them much. To understand their situation, the stories of these six outliers were analysed. The stories of the three dots in the bottom-right corner revealed that:

- Two established producers expressed satisfaction with the quality of the oils they produced, and indicated that they did not need any assistance.

- The third established producer desired farming equipment to expand production – and expected supporting organisations to grant these to the producer.
- The three established producers in other signifiers indicated that they primarily relied on their experience and own research, and that they did not draw upon experts or events for assistance.

From the stories on the bottom-left, it was gleaned that:

- One of the producers already had a certified QMS and relied entirely on their own experience and online research.
- A second producer had installed filtration equipment, and was still working toward reducing wastage. They had an in-house QMS.

8.3 Assistance received to improve the quality of oil and international orientation

A final heatmap was created by combining the assistance to improve the oil quality results with the market the producers served (Figure 15).

The vertical axis ranges from the "assistance had little effect" at the bottom, to the "assistance made a big difference" at the top. The horizontal axis ranges from serving "mainly local" markets on the left, to serving "mainly international" markets on the right.

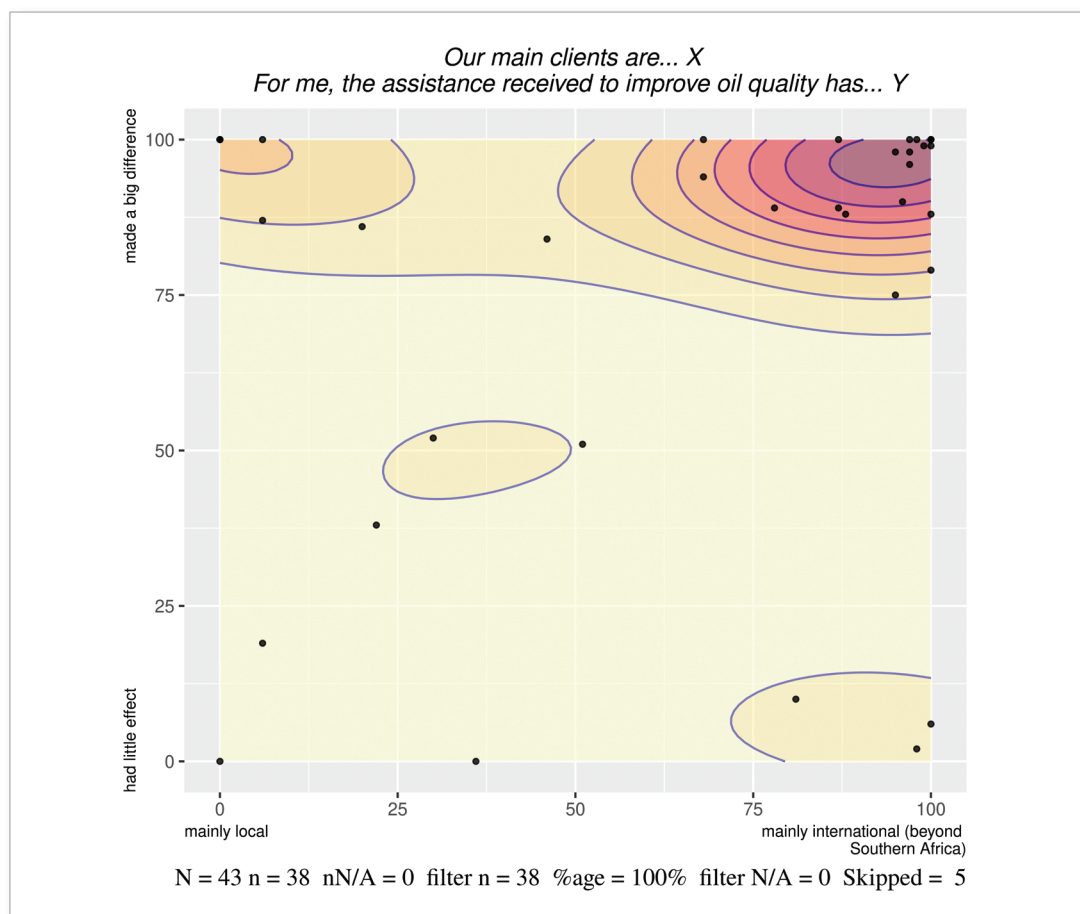


Figure 15: Assistance received and market orientation



Most of the responses are in the top half of the heatmap, indicating that the assistance received made a substantial difference for most respondents. There is one dominant cluster in the top right corner, where the producers supplying international markets indicated that the assistance received made a major difference. The small cluster in the top left represents a few producers targeting local markets, who affirmed that the assistance made a big difference. In the bottom right is a small cluster of producers, mainly targeting international markets, who advised that the assistance received did not have much effect.

8.4 The formality of the QMS

The level of formality of the QMS also proved valuable as an analytical lens in the earlier parts of the publication (section 6). Figure 16 shows the level of formality in the indigenous oils sector.

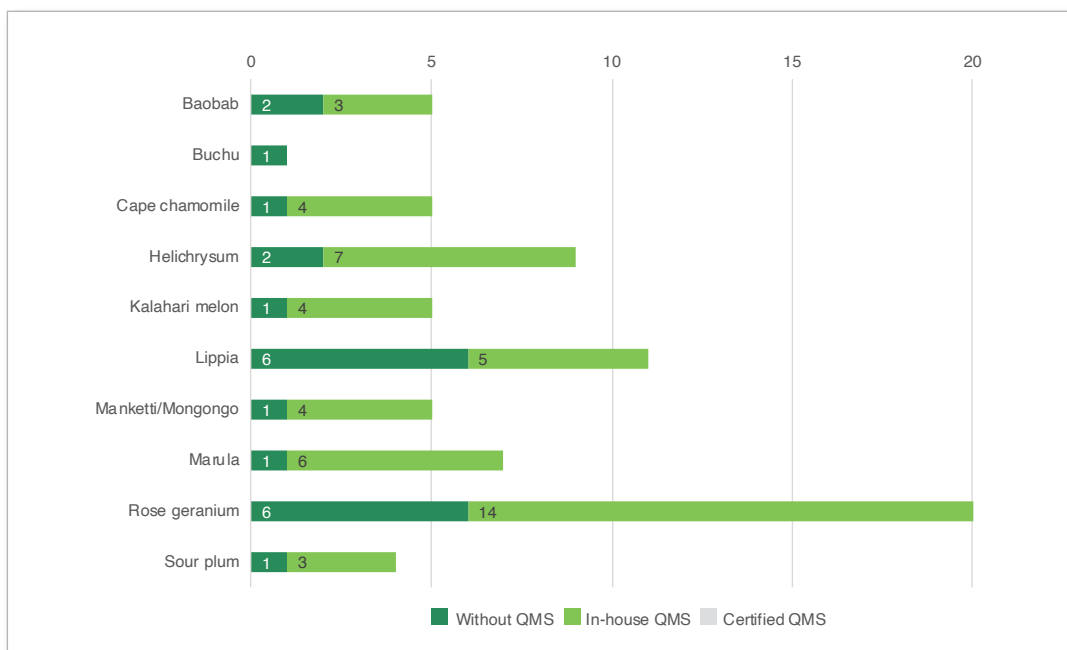


Figure 16: Formality of QMS for indigenous oils

“*The quality management system in measuring and recording data for reference and future legacy, has always been a problem which now, after the training, I can say it’s a story of the past. Being able to go back and reference and file procedures makes our work easy to produce the same and improved timeless product which will make our products.*”



Closer scrutiny of some patterns

The two producers with a certified QMS are both focusing on rose geranium. A third producer, also with a certified QMS, produces moringa oil (not an indigenous oil). An in-house QMS is dominant for all the indigenous oils produced.

In the major classic and exotic oils, the in-house QMS configuration is also dominant (Figure 17). There are no producers in this sector with a certified QMS.

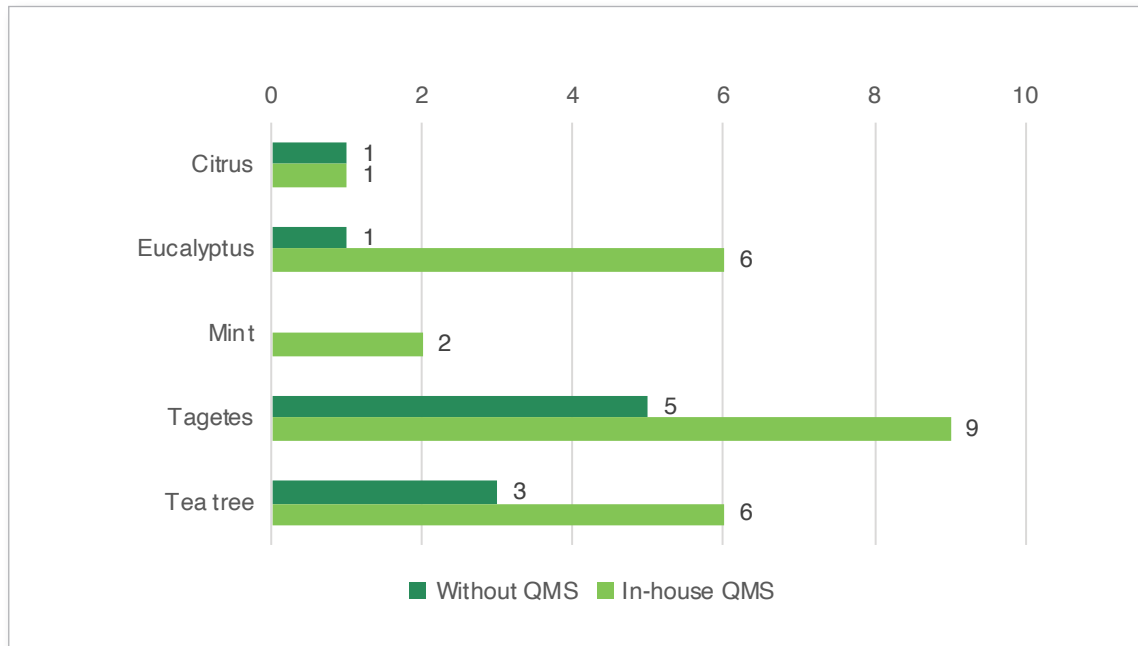


Figure 17: Formality of QMS for major classic and exotic oils

Most producers of the minor classic and exotic oils relied on an in-house QMS they had developed. The results are shown in Figure 18.

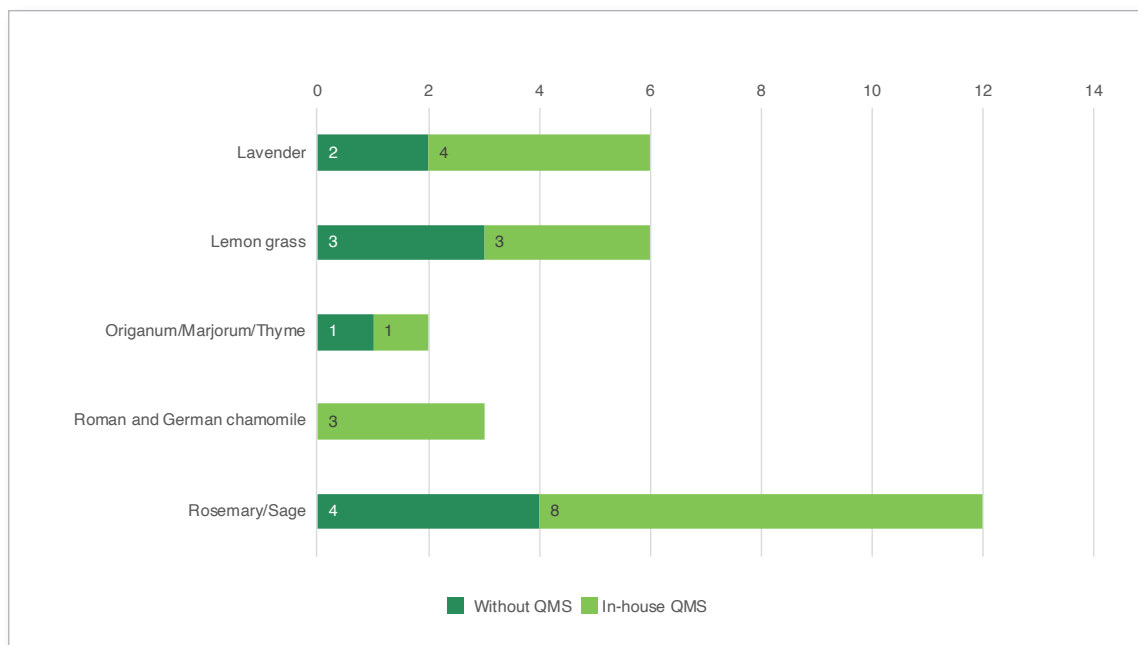


Figure 18: Minor classic and exotic oils



8.5 Categorising the stories according to seven ISO 9001 principles

The ISO 9001 international standard for quality management identifies seven principles to help management put quality at the heart of their organisation. The table below categorises the stories into seven principles by the research team, based on a judgement of the story and what it meant.

ISO Principle	Stories in this category
1. Engagement of people: Competent, empowered and engaged people at all levels throughout the organisation are essential to enhance its capability to create and deliver value	0
2. Customer focus: The primary focus of quality management is to meet customer requirements and to strive to exceed customer expectations	3
3. Leadership: Leaders at all levels establish unity of purpose and direction and create conditions in which people are engaged in achieving the organisation's quality objectives	1
4. Process approach: Consistent and predictable results are achieved more effectively and efficiently when activities are understood and managed as interrelated processes that function as a coherent system	1
5. Improvement: Successful organisations have an ongoing focus on improvement	21
6. Evidence-based decision making: Decisions based on the analysis and evaluation of data and information are more likely to produce desired results	13
7. Relationship management: For sustained success, an organisation manages its relationships with interested parties, such as suppliers	0
Stories not related to a principle.	5

The table discloses that most of the stories related to continual improvement. This is not surprising, as the GQSP-SA is focused on providing technical assistance to producers to improve the quality of the oil produced. Also, the survey's opening prompt and several triads explored how producers were improving their processes.

The category with the second highest number of results is evidence-based decision-making. This would make sense for those producers who have made progress in designing an internal QMS that provides them with data to help set priorities for improvement.

What is noteworthy, is the concentration of results in the two categories where GQSP-SA focused its support. The survey design did not specifically test for the role of leadership, or how engaged people in the organisations were, or how relationship management was done.



We used to have a problem with cleaning our oil. Recently we installed a filtration system which includes settling funnels and a 10 micron plate filter. This has greatly improved the quality of our final product.



Going forward: More stories like this ... fewer stories like that

The objective of this study was to collect narratives about how producers experience the role of quality in supporting the sustainability of the enterprise, and about their perception of how the quality of the product impacts market access.

Now that the narratives and self-interpretation analysis have been concluded, it is possible to consider ways that GQSP-SA could shape the landscape or options of producers to reduce the kinds of stories that are not so desirable, and amplify the kinds of stories that are promising and hopeful. Changing some stories might require minimal effort from GQSP-SA – a tweak in communications or a different emphasis during a training event might do very well. However, changing some stories might require coordinated actions involving different stories. Many stories will change over time as more producers become established, the industry grows, and the quality infrastructure improves.

“

We implemented an automated system in our laboratory for sample testing to avoid human error. A gas chromatography auto-injector was installed – it is now possible to obtain more accurate results when using auto-injection rather than manual injection. The auto-injector maintains the same injection speed at all times whereas the manual injection speed varies; this disturbs the accuracy of the GC results, and the retention time can be affected.

We also installed an auto sampler on our GC which means that we can analyse samples 24/7 and this saves time.

Another QC improvement: we found that some new drums contained contaminants, even though they were brand new, so we now rinse out all new drums before decanting oil into them for export.

“

The quality management system in measuring and recording data for reference and future legacy, has always been a problem which now, after the training, I can say it's a story of the past. Being able to go back and reference and file procedures makes our work easy to produce the same and improved timeless product which will make our products.



This research survey focused on producers' narratives about their efforts to improve the quality of the essential and vegetable oils they produce. Although the study population is small, the survey seems to have reached most of the known producers.

Producing indigenous essential and vegetable oils in Southern Africa is a relatively new industry. The specific focus on improving quality throughout the oil production process is also very new. The survey revealed that producers are rapidly improving quality on various fronts.

Several oils, like rose geranium, are already sought after internationally. The results show that most of the respondents are rapidly progressing with upgrading various areas of their enterprises' cultivation/harvesting and distillation/cold pressing processes.

In the past, quality was mainly thought of as the quality of the final product rather than as an enterprise-wide management approach. In this survey, most respondents indicated that quality was mainly about establishing a process that would ensure high quality oils consistently. Many respondents specifically mentioned the quality control points GQSP-SA was championing and advocating through webinars and training events. Producers reported having overcome challenges at many different quality control points in producing their oils. Most reported that their efforts to improve the quality of the oil they produced were paying off, irrespective of whether they were still finding their way or already established.

Most respondents indicated that they were already targeting international markets, despite still finding their way. Even if not all the producers were already shipping their products to international buyers, they were paying attention to meeting the buyer's requirements and putting the correct supporting quality documentation in place. The local market appeared not to be very lucrative to most respondents, despite the vast potential of substituting imported oils.

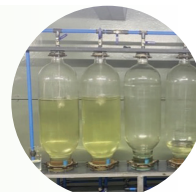
The stories revealed that most producers are already drawing on the quality infrastructure that GQSP-SA is supporting. Most producers reported the assistance they received to improve their oil quality as having made an enormous difference. The events, training courses or webinars proved to be essential sources of information about where producers had to focus their efforts to improve quality in their respective enterprises. However, a handful of producers still relied on their own experience and research to improve the quality of oil produced. Only a few producers with a certified QMS reported using experts or service providers to assist them in improving the quality of their oils.

Given the expense of setting up an in-house test laboratory, the availability of external laboratories to provide testing services is critical to the growth of the industry. Most producers indicated they were already using external testing laboratories for some tests. Only a few producers reported not testing their oil. Four producers had in-house testing laboratories for basic tests, which were used in conjunction with external laboratories.

The findings revealed essential differences in priorities by sub-groups of producers that were often deemed homogenous (either established or emerging, certified or not, exporting or supplying local markets).

“

“We installed a filtration system in our packaging plant. This has ensured that our oils are clean of any material greater than 10 micron”



Conclusion

The producers claim that their efforts to improve the quality of their essential and vegetable oils are effective. They were addressing issues at various control points in their operations that improved their oil quality. Many producers were using evidence from their QMS to implement and measure improvements. Most of the producers were engaged in developing and implementing an in-house QMS.

Both emerging and established producers reported that the assistance received to improve the quality of their oils, had made an enormous difference. The events, training courses or webinars were valuable in assisting producers with information on areas they could focus on to improve the quality and consistency of the oils they produced. The importance of focusing on the complete production process as a means to produce a consistent quality of oil, was frequently mentioned in the stories.

The research revealed differences in priorities within groups often assumed to be homogenous. Producers at different stages of development were focused on different challenge areas. Many of the producers who were still finding their way, were prioritising correcting soil nutrient requirements, propagation, cutting selection and planting of the correct species. In contrast, the established producers indicated that those were no longer their priorities, as they mostly focused on training harvesters, improving their distillation/pressing processes, and correct labelling and sampling. However, irrespective of their stage of development, almost all the producers had in common their focus on improving their quality management systems. Also, most producers shared the importance of international markets for their oils.

The research shows that this emerging industry is increasingly drawing on the technical quality infrastructure available or being developed in South Africa. Most producers were already using laboratories for some tests. Many producers focused on putting the correct supporting documentation in place, or matching the species to the buyer's physical and chemical profiles.

The survey collected many stories that GQSP-SA and SAEOPA (and other stakeholders) would want to hear more of in the future, and a few stories that one would want to hear less about. The stories reveal valuable details of how producers identified challenges in different areas of their enterprises, and how they assessed progress.

The industry appears to be beginning to recognise the role of standards, quality assurance, accreditation, and metrology in facilitating trade. By emphasising the fundamental pillars of the business, these producers should find it easier to increase the volumes of consistent quality oils, and secure new markets.

“

We found that oil standing for more than a year had more oxidation that we expected whilst standing in bottles. With some test results it came down to oil being in contact with metal. This was strange for us as we moved over to what we thought was all stainless steel. When we went through our process line from pressing to bottling, we found that the connections used were not stainless steel but galvanised. Further, there were rust present inside these connections, which has added to the problem. All our connections were with Stainless steel 304.



Notes



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Directorate of Technical Cooperation and Sustainable Industrial Development (TCS)

Division of SME Competitiveness, Quality and Job Creation (TCS/SME)

Competitiveness, Quality and Compliance Unit (TCS/SME/CQC)

Vienna International Centre, Wagramer Strasse 5

P.O. Box 300, A-1400 Vienna, Austria

 <https://www.unido.org/>

SAEOPA

PO Box 462, Newlands, 0049, South Africa

111 Coral Road, Lynnwood Glen.

 karen@saeopa.co.za / secretary@saeopa.co.za

 www.saeopa.co.za

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The objective of the GQSP South Africa (GQSP-SA) project is to strengthen the quality and standards compliance capacity to facilitate market access for SMEs in the essential and vegetable oils value chain destined for food, health and cosmetic markets.

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