

**Republic of Tunisia**

**Preparatory Survey for BOP business on  
Product Development of High Functional  
Tunisian Olives in Tunisia  
Final Report  
( Public Version )**

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Japan International Cooperation Agency (JICA)

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Target Locations Map for this Research



- Herbiotech Aroma, Sidi rzig, Megrine, Ben Arous 県
- Les Vergers de Tunisie, Rue Du Cuivre Z.I. BP 192 2013 Ben Arous 県
- Medolea company, Mornag, Ben Arous 県
- Tunisia American Olive Oil company, Z.I. Oued Errmal, BP 230, Le Kef 県
- Herbiotech Olive Farm, Zone Industrielle, Bouarada, Siliana 県
- Herbiotech Factory, Zaafrane, Kairouan 県
- CHO company, Route de Mahdia, Km 18, sfax 県
- Gafsa CHO Olive farm and Olive Oil factory, Gafsa 県

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## Abbreviations

APII	Agency for the Promotion of Industry and Innovation
BOP	Base Of the (Economic) Pyramid
CBS	Center of Biotechnology of Sfax
EC	Electronic Commerce
FIPA	Foreign Investment Promotion Agency
SATREPS	Science and Technology Research Partnership for Sustainable Development

# 1. Executive Summary

## 1.1 Background and Objectives of the Research and Consistency with Development Issues

### ◆ Background

According to SATREPS, the international science and technology cooperation project addressing the JST-JICA global issues and aiming at the analysis and valorization of bio-resources in arid land for regional development conducted between 2009 and 2014, Tunisian olive oil has 10 to 20 times more polyphenols content than European olive oil. Academic studies have also shown that Tunisian olive oil is rich in cancer suppression components.

While research have shown that Tunisian olive oil is a high grade product, and Tunisia ranked 1st in the world for olive oil export volume in 2015, the Tunisian olive oil industry is still encountering several issues. Due to production and bottling technology issues, Tunisian olive oil is exported in bulk, blended with European olive oil, and sold in the overseas market without being labelled as Tunisian product and at cheap prices.

There are two possible causes for this situation. First, there is a lack of technology and know-how on optimum production management from olive harvesting to oil extraction. Fruit fermentation starts once the olive fruit is separated from the branches, so the shorter the time from harvesting to extracting oil is, the better the oil will be. The lack of knowledge within small to medium farmers and refinery factories in Tunisia makes the production of good quality olive oil a difficult process, which has a big influence on the selling price as well. The second reason is the lack of product development capabilities, such as bottling, in order to sell the olive oil as a high value added product. Technology transfer and product development are necessary to increase the commercial value of Tunisian olive products.

In the Shodoshima island of Japan, there are olive oil companies with advanced processing technologies. Olive cultivation in Japan dates back to the Meiji period, over 100 years ago. The Japanese government planted olive trees in Shodoshima, Kagoshima and Mie in order to domestically self-supply olive oil used for oil pickling of sardines and tuna. However, thanks to the warm weather and little rain in the Shodoshima island, olive cultivation has continued there and Shodoshima became renowned as the birthplace of olive oil in Japan. Recently, the popularity of olive related products has increased due to health consciousness of consumers, and demand is also increasing coupled with domestic orientations. Nowadays, many industries related to olive have been formed. In addition to olive oil industries, there are also food and cosmetic industries using olive oil and craft industries using the olive tree wood. Meanwhile, the land in Shodoshima is limited and there are many steep slopes, which makes olive mass production difficult. Also, olive producers in the island suffer from natural damages caused by animals (antelope, wild boar), typhoon and diseases (weevil perforation). Thus, they import

olive products from the Milos island, Greek sister island of Shodoshima, in order to satisfy their needs for product development. Furthermore, in recent years olive cultivation has also begun in the Kyushu area, so the competition of the domestic olive industry is expected to increase in the future.

For the future development of Shodoshima olive industry, it is indispensable to procure an olive oil product that can compete with other industries, by increasing the production volume and branding the products through domestic and overseas collaborations. There are dozens of olive oil companies in Shodoshima, but among them two companies are quickly working on planning and producing unique and differentiated products from other companies;

Yamahisa Co., Ltd. (hereinafter referred to as Yamahisa) has experience in the development, manufacture and sales of olive leaves tea, olive leaves based feed for Yellowtail fish, and soy sauce blended with olive flower yeast.

Agri Olive Shodoshima Co., Ltd. (hereinafter referred to as AOS), in addition to the development of olive oil and olive oil based cosmetics, is implementing recycling-type agriculture such as using olive pomace as a feed for cattle, and has also succeeded in branding olive beef.

#### ◆ Objectives

We aim to upgrade and diversify the Tunisian olive industry through the Transfer of harvest and product development technology from Yamahisa and AOS to Tunisian industries, the Branding of Tunisian olive oil by Arenabio and Shodoshima companies, and the Transfer of technologies related to olive leaves and pomace based product development. This shall establish Tunisia's first recycled olive agriculture model case, expand the market for finished products labelled as produced from Tunisian origins, and not limit the market to raw material supply only. We target Japan, the world's fourth largest olive oil importing country, to be the launching market. Japan imports approximately 50,000 tons of olive oil annually. Most of the imports come from Italy and Spain, and approximately 100 tons of olive oil is imported from Tunisia, which is an extremely small amount and represents only 0.2% of Japan's total olive oil import volume.

We aim to develop olive oil products for Japanese consumers, develop products using olive leaves and olive pomace, and expand the annual export volume of olive related products from Tunisia to Japan by 5 to 10 times. We aim to create a substitute for Shodoshima olive oil, which is in short supply capability against a high demand in Japan, by developing and selling high-value added products using Tunisian olive oil produced through Shodoshima know-how. By doing so, we hope to answer to the Japanese market needs and establish a win-win relationship between Tunisia and Japan.

#### ◆ Consistency with development issues

Development issues in Tunisia are "Sustainable industry development ", "Measures to resolve

regional disparities", "Measures against unemployment", and "Training human resources capable of promoting domestic industries".

#### **“Sustainable industry development”**

Amid progress of promotion through improvement of productivity and profitability in agriculture, forestry and fisheries and tourism industry and improvement of infrastructure for industrial development, the tourism industry, a major industry for the Tunisian economy, has suffered immensely from the deterioration of the security situation due to terrorist activities which occurred after the Tunisian revolution. Regarding the field of olive agriculture, which is another major industry, we are aiming at a bottom-up approach of the olive industry by transferring product development techniques related to olive oil, olive leaves and pomace which would create a new economic value to the sector.

#### **“Measures to resolve regional disparities”**

Resolution of regional disparities between rural and urban areas is another challenge to face. While agriculture and mining are the major industries in rural areas, tourism, transportation and telecommunication are considered to be the major industries in urban areas. As a result, approximately 60% of the poor population is concentrated in the rural areas (especially in the northwest, mid-west, and southern areas). Many of the poor population in rural areas are agricultural workers and it is expected that they will benefit from the development of the olive industry.

#### **“Measures against unemployment”, and "Training human resources capable of promoting domestic industries"**

The high unemployment rate is a serious problem in Tunisia. The deepening of the unemployment problem among young people is said to be the main factor that led to the Jasmine Revolution. The creation of new employment positions in the current administration and the training of human resources responsible for domestic industry promotion are important challenges. In order to solve employment issues, the Tunisian Government is supporting the increase of subsidies for agricultural business operators and encouraging entrepreneurship in rural areas. The collaboration of companies receiving such support with this project would help skill up to olive industry and create new employment opportunities. The development and commercialization of high value added products other than olive oil, is also expected to create new working positions.

Furthermore, as a result of human resource development of Tunisian researchers through SATREPS, our project structure involves Tunisian researchers on functional analysis and human resources to launch a business in Tunisia. By involving Tunisian personnel as key persons in the project and building a scheme that can effectively utilize educational collaboration with Japan at the business stage, our project contributes to human resource development and unemployment countermeasures responsible for domestic industry promotion.

## 1.2 Research Outline

### ◆ Basic Policies

- (1) Thoroughly examine the involvement of the BOP in the value chain from olive production to sales, and develop a business scheme, in order to realize income improvement and creation of new jobs for BOP farmers and oli factory workers.
- (2) Thoroughly examine effective branding strategies, product appealing methods and product pricing etc., for product dissemination in overseas markets including Japan, in order to realize income improvement and creation of new jobs for BOP farmers and refinery workers.
- (3) Proceed at an early stage with investigations on business procedures and structures such as permissions and infrastructures related to the Cultivation, Production and Distribution of olive products because we believe it will have a big influence on the commercialization phase.
- (4) Utilize the results obtained in JICA's international science and technology cooperation project addressing global issues and aiming at the analysis and valorization of bio-resources in arid land for regional development (referred to as SATREPS), fully consider the cooperation with ODA loan "Borj Cedria Technopark Construction Project" and other JICA projects, and build a model of collaboration between Japanese and Tunisian industries and research.

### ◆ Method

Conduct the following research based on the basic policies mentioned above.

- (1) Understand the investment environment/business environment (various policies/institutions, infrastructure, related facilities etc.)
  - A Political and Economic situation
  - B Various policies and legal system concerning foreign investment
  - C Various policies and legal system concerning this business model.
  - D Current Market situation (quality of olive oil, market prices, olive cultivation, harvest, extraction process, etc)
  - E Overview of target consumers, consumer needs survey
  - F Establishment situation of existing infrastructure (electricity, roads, water supply etc.) and related facilities
  - G Social and cultural aspects (cultural acceptability and social impact of target projects)
- (2) Implementation of preliminary examination for product development
  - A Selection of small-scale olive farmers and oil factories
  - B Oil quality analysis and evalutaion
  - C Market research of competitor products



- D Development of prototypes for the Japanese market (products outline, organization of processes necessary for commercialization, cost and selling price calculation, etc.)
- (3) Pilot implementation of technology and know-how transfer to local partners
- A Planning and implementation of technical guidance plan for partner farmers and oil factory workers (cultivation, harvesting, manufacturing, packaging, etc)
  - B Product prototype manufacturing by local workers
  - C Verification of the situation after technical guidance, Follow up
- (4) Investigation about the preparation and establishment of a joint venture
- A Investigation of various legal systems toward the establishment of a joint venture company
  - B Checking the legal procedures concerning foreign investment
  - C European market and other overseas market research
  - D Investigation for development of sales channels
- (5) Formulation of a business plan scheme
- A Plan for procurement of raw materials and equipments
  - B Formulation of a sales channel plan
  - C Formulation of a sales plan for each company involved in this project
  - D Formulation of plans for personnel and human resource development
  - E Financing plan formulation
  - F Financial analysis (budget plan, business cash flow, profitability analysis (IRR etc.))
  - G Formulation of project implementation schedule
- (6) Examination and verification of development effects
- A Situation of the target BOP  
(population, household, social class, lifestyle, economic activity, etc.)
  - B Setting indicators related to development tasks to be solved through BOP business
  - C Collecting and analyzing baseline data (current situation) on the set development indicators
  - D Scenario of development effect after BOP business implementation
  - E Setting target values for development issues indicators
- (7) Examination of possible cooperation with JICA project
- A Examination of possible cooperation with JICA project

- B Project scheme (ODA loan, Technical cooperation, Japan Overseas Cooperation Volunteers etc.)
- C Specific collaborative project contents (Application of results obtained in SATREPS project "analysis and valorization of bio-resources in arid land for regional development" , and ODA loan "Bordj Cedria Technopark Construction Project" etc.)
- D Schedule for implementation of collaborative project
- E Prediction of collaboration effect

### 1.3 Business Prospect at the Present Stage and Basis for Judgment

#### 1.3.1 Proposed Business Model

The proposed business models at the present stage are as shown across Figure 1.3-1a to Figure 1.3-1d.

##### 1)Olive Oil (Figure 1.3-1a)

This business model has a potential to be commercialized. Based on this business model, olive oil is procured from partner local companies and exported to Japan through a logistics company affiliated to these local companies. In Japan, Arenabio acts as the import company, and sells olive oil through AOS, trading companies, and major domestic food manufacturers, etc.

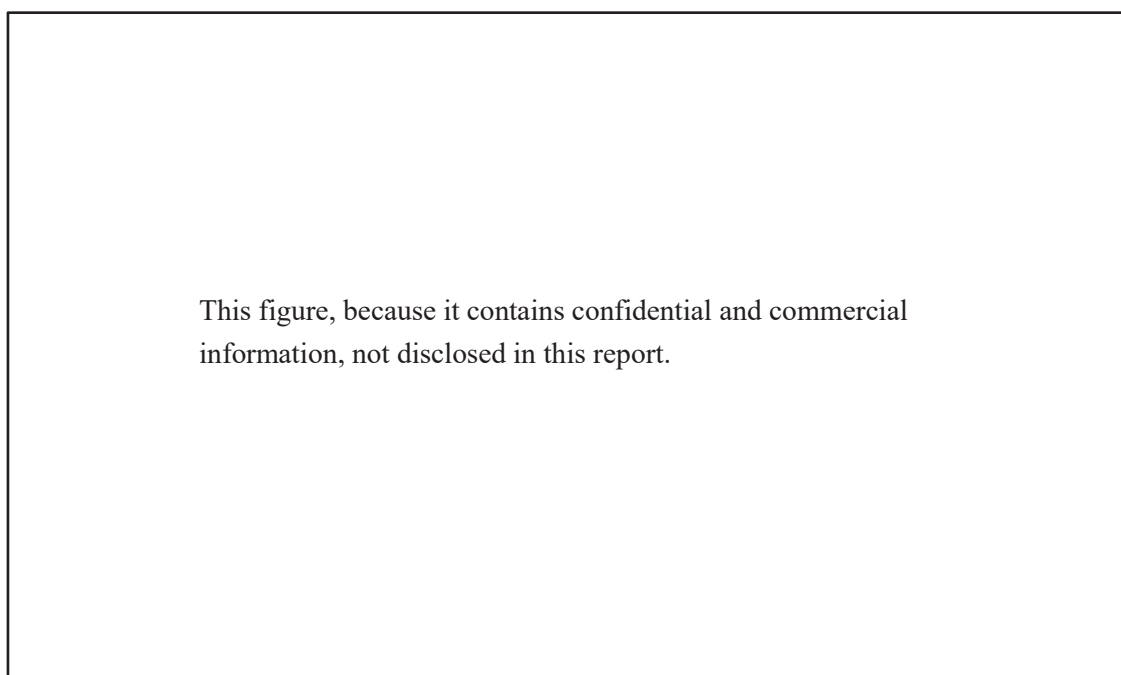


Figure 1.3-1a Proposed Business Model Plan (related to olive oil)

##### 2) Olive Leaves (Figure 1.3-1b)

This business model has a potential to be commercialized. Dried olive leaves are procured from local partner companies and exported to Japan through a logistics company affiliated to these local companies. Arenabio will be the import company in Japan, and olive leaves will be sold through Yamahisa and trading companies.

This figure, because it contains confidential and commercial information, not disclosed in this report.

Figure 1.3-1b Proposed Business Model Plan (olive leaves)

3) Olive Pomace (Figure 1.3-1c)

This business model shall be realized only if we can solve the pomace drying equipment issues and guarantee a constant production volume. In this business model, dry olive pomace is procured by local companies and exported to Japan through a logistics company affiliated to these companies. Arenabio will be the import company in Japan, and olive pomace will be sold to customers through Yamahisa and major trading companies.

This figure, because it contains confidential and commercial information, not disclosed in this report.

Figure 1.3-1c Proposed Business Model Plan (olive pomace)

4) Other cosmetic raw ingredients etc. (Figure 1.3-1d)

This business model is still under consideration. By discovering the existence of local production of other plants' oils, in addition to olive oil, which can be used as cosmetic ingredients, we are planning to start marketing for these oils. The raw materials will be procured from local manufactureres and exported to Japan through local logistics companies. Arenabio will be the import company in Japan, and these ingredients will be sold to cosmetic manufacturers through major trading companies.

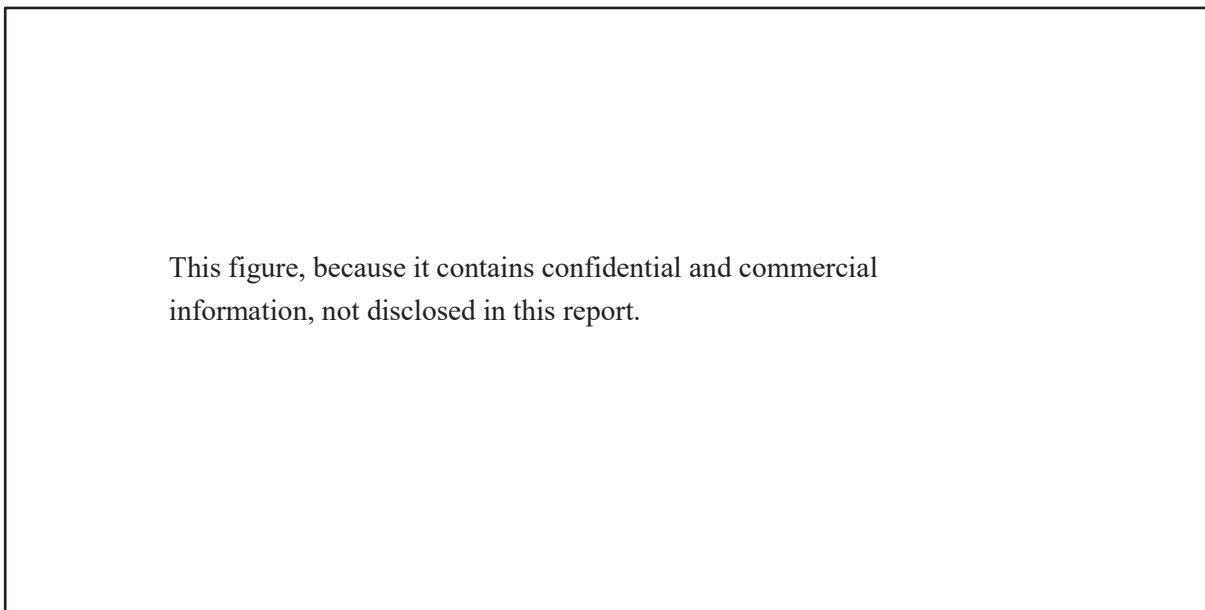


Figure 1.3-1d Proposed Business Model Plan (cosmetic ingredients)

### 1.3.2 Business Prospect and Judgment Grounds

The four main criterias for considering this project are; 1) Identifying the production area and qualified farmers of high grade olive (high polyphenol content); 2) Scrutinizing the needs of the Japanese market and developing a customer base; 3) Selecting business partners; and 4) Contributing to solving local development issues. Since there are still issues to be addressed as described in "1.4.2 Remaining issues and countermeasures for commercialization", it is necessary to continue the study, but we expect the business to succeed once those issues are resolved.

- 1) Identification of high garde olive (high polyphenol content) production areas and farmers  
According to previous SATREPS research presentations, it was found that the Oleuropein content of Chetoui olive variety is higher than other olive varieties.  
Meanwhile, because agricultural products can vary depending on weather, production area,

harvest time, harvest year, there was no data that supports this "high grade" aspect. During our research, we have visited approximately 20 farms and refinery plants in Tunisia, confirmed the quality control process from olive harvesting to oil extraction and bottling, and conducted sample evaluations.

Furthermore, we have conducted olive oil quality evaluation and polyphenol data analysis for olive oil judged to be suitable for marketing in Japan. In Table 1.3-2, we have compared the indicators of the freshness of Tunisian olive oil (acid value, acidity, peroxide value) to that of Shodoshima olive oil, which is recognized as the finest olive oil in Japan, and as a result, we have found out that some Tunisian olive oils meet the "premium olive oil" quality standards. The "Standard reference value" and "Premium reference value" mentioned in the indexes of Figure 1.3-2 were based on "Kagawa prefecture's olive oil quality evaluation standard" (Table 1.3-1). "Standard" olive oil, recognized internationally as extra virgin olive oil and "Premium" olive oil, referring to higher quality extra virgin olive oil, are two standards based on international norms that are used for olive oil produced from olives cultivated in Kagawa Prefecture in Japan.

Also, it was found that Chetoui variety olive oils have 2 to 3 times higher polyphenol content than Shodoshima olive oil, as shown in Figure 1.3-3 and Table 1.3-3. However, since the polyphenol content value was lower than the initially expected value, we have judged that the impact of this data on marketing will be small, and have decided to refrain from describing the product as "rich in polyphenols" (not to mislead consumers). Meanwhile, when negotiating business deals with distributors and oil manufacturers, the facts that the Tunisian olive oil is several times higher in polyphenol content compared to Shodoshima olive oil and the bitter and spicy taste characteristics are becoming good selling arguments. And we have found a positive response from major companies who are considering the use of Tunisian olive oil.

Table 1.3-1 Kagawa Prefecture's Olive Oil Quality Evaluation Standards

Item		Extra Virgin Olive Oil	
		Standard	Premium
Chemical Analysis (measuring the quality and oxidation degree of olive oil)	Acidity (Free fatty acid)	0.8% or less	0.30% or less
	Acid value	1.60 or less	0.60 or less
	Peroxide value	20meq/kg or less	15meq/kg or less
	Ultraviolet absorption (K232)	2.50 or less	2.50 or less
	Ultraviolet absorption (K270)	0.22 or less	0.22 or less
	Ultraviolet absorption ( $\Delta K$ )	0.01 or less	0.01 or less
Sensory Evaluation (Method for evaluating quality of Olive oil using through the five senses of a human)		Median of defect value: 0 Median of fruitiness: greater than 0	Median of defect value: 0 Median of fruitiness: greater than 1 Median of spiciness or bitterness: greater than 0

※ The evaluation process for this standard should take place during the olive oil production period (period between extraction and bottling).

Table 1.3-2 Analysis of Olive Oil from Tunisia and Shodoshima

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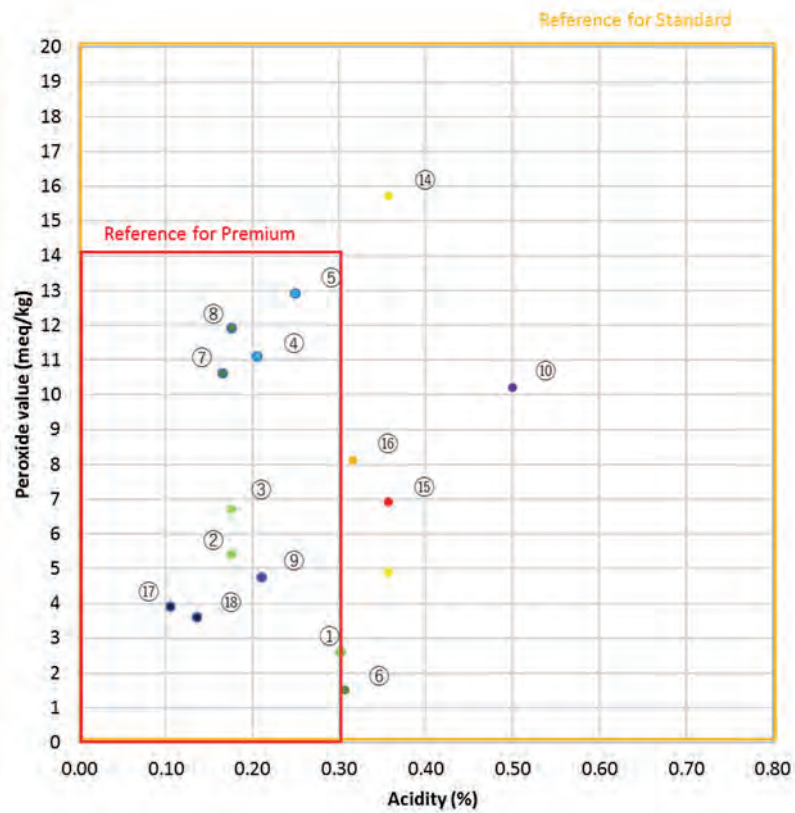


Figure 1.3-2 Distribution Chart for Analysis of Olive Oil from Tunisia and Shodoshima

Table 1.3-3 Polyphenols content of Olive Oil from Tunisia and Shodoshima

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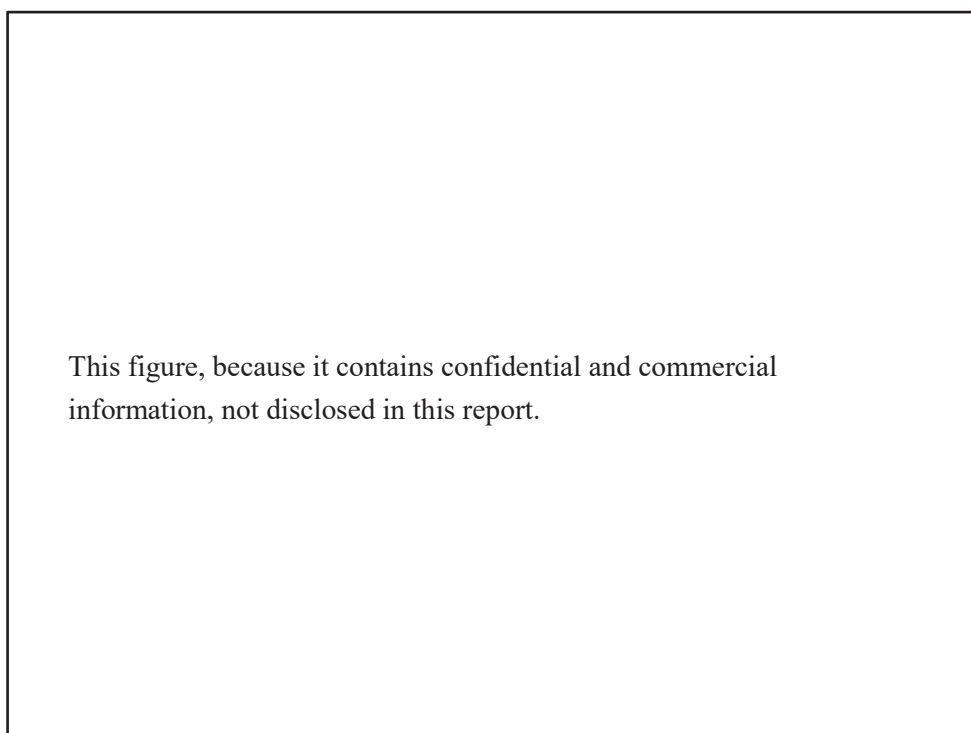


Figure 1.3-3 Polyphenols Content of Olive Oil from Tunisia and Shodoshima



## 2) Japanese Market Needs Research and Customers Base Development

During the reserach period, by means of two trial imports, we have conducted tasting events at department stores, business negotiations with wholesalers and distributors, sales at our own website, exhibit sales at exhibitions, etc. As a result, we now have a clear vision about the required olive oil taste and flavor, the various needs of each company, the story in the BOP (from harvest to production) as well as women's time-consuming business story, which will lead us to a customer base development.

### 【Olive Oil】

Among Tunisian olive varieties, the Chetoui variety in the north and the Chemchali and Chemlali varieties in the middle and south are completely different in taste and flavor. At the beginning of the marketing process, we have struggled because many consumers and industry professionals did not appreciate the bitter and spicy taste of Chetoui olive oil. However, having received a high appreciation from some experts towards chetoui olive oil, we are planning to use the bitterness factor as a strong selling argument instead. The customers' response to chetoui olive oil is as follows. This olive oil has received a high review from an olive oil sommelier and a major company is considering its commercialization. The olive oil sommelier is also considering to sell this product in his self-managed shop. He has appreciated the green fresh apple aroma and the freshness of green kiwi and grass scents of the olive oil, and believes that the attitude of the manager of the oil factory is trustworthy.

Also, AOS and Hokkaido Olive Club have decided to use the mild taste Tunisian oil which is a blend of Tunisian Chemchali variety and Spanish Arbequina variety both cultivated in the middle south of Tunisia, because it is easy to consume and can be used for processed food products. This olive oil was used by AOS to create their own brand "Tunio", and is sold at Shodoshima souvenir shops, on the Internet, and in Tokyo and Osaka exhibitions. Furthermore, Ginza Suzunoya Co., Ltd. (hereinafter referred to as Suzunoya), a developer of food products, started developing a collaboration products line using Hokkaido specialty ingredients and Tunisian olive oil, to be launched as the Hokkaido Olive Club. More than 10 Hokkaido seafood and agricultural products companies are already involved in the development process of the Hokkaido Olive Club project. The products will be sold at hotels and wineries in Hokkaido and high-end supermarkets in Tokyo.

First of all, as mentioned above, we will use our Tunisian partner companies' products to inform the customers that Tunisia is one of the world's leading olive growing countries and can provide distinctive high quality olive oil. By improving the awareness towards Tunisian olive oil, we expect to increase the consumption of olive oil from Tunisia. In addition, we will continue to search for oils with a high content of polyphenols (10 to 20 times higher than oils from Europe), and will consider to develop high value added products that utilize polyphenol data as a marketing material.

### **【Olive Leaves】**

Before the start of this project, Yamahisa has been developing feed for olive yellowtail using olive leaves from Kagawa prefecture. And has started selling olive leaves feed, imported as a trial in 2015, to the same customers.

### **【Olive Pomace】**

A feed maker approached by Yamahisa expressed their hope to use olive pomace for livestock feed experimental development. We aim that this deal will result in the import of few tons during 2017. Now, through trading companies and European networks, we are having business negotiations with 2 to 3 feed manufacturers and food related companies.

### **3) Selection of Business Partners**

Our marketing in Japan showed that customers and handling volumes are different for each product category. As a result, we have decided to select a business strategy and partner companies for each product.

#### **【Olive oil manufacturing partners】**

We plan to collaborate with several companies. Since the Japanese market needs in Japan are starting to be noticeable, we have proposed a contract for exclusive sales rights in Japan to the selected local partners.

Currently, we are reviewing together the contents of the contract documents.

#### **【Olive leaves manufacturing partners】**

Throughout the study period, we have imported and analyzed olive leaves during two harvest seasons. To ensure a stable supply of high polyphenols content, Yamahisa has transferred technology know-how to local partner manufacturers. We are also considering investing in local partner companies, in order to establish a stable supply system on the Tunisian side.

#### **【Olive pomace manufacturing partners】**

Currently there are no machines in Tunisia able to dry and transform olive pomace into feed, so at this stage olive pomace cannot be processed for feed. In order to procure drying machines of olive pomace in compliance with customer's needs in Japan, a minimum order quantity of several hundreds of tons is required. We have engaged in business negotiations with Japanese feed manufacturers through Yamahisa and major trading companies, and there is a need to use this product for experiments.

### **4) Contribution to Local Development Challenges**

There are three major local development challenges.

### **"Sustainable Industry Development"**

By reaching the Japanese market, export volume of olive oil can be expanded, and new industries can be created in Tunisia by giving an economic value to raw materials other than olive oil, such as olive leaves and pomace. By transferring new techniques and know-how to Tunisian companies, we expect that the olive industry will be developed as a sustainable industry.

### **"Resolution of Regional Disparity"**

The manufacturers considered to become our business partners have plantations and factories in the northwestern, central and southern regions of Tunisia where the poverty rate is high. Once able to conduct continuous transactions with the manufacturers, it will lead to stabilization of revenue, which is likely to have a positive impact on the working conditions and environment of the workers. If we can prepare a structure where products other than olive oil can be manufactured, this will lead to the creation of new employment opportunities, and the annual income of workers is expected to increase.

### **"Unemployment Countermeasures" and "Development of Human Resources Responsible for Domestic Industry Promotion"**

One of our Tunisian business partners is a female entrepreneur, hiring local women and offering employment opportunities. Also, two companies are ventures launched through the support of the Tunisian government, one of whom is actively engaged in the employment of young personnel under the age of 35, teaching them technical skills, and has established a system for continuous employment for technical staff. By transferring Japanese technology and sharing Skill-up methods and added value product manufacturing know-how with these managers, we are contributing to training human resources who are responsible for promoting domestic industries.

Furthermore, the growth of these companies will probably contribute to the promotion of employment of young people and female workers and create countermeasures against unemployment. Also, the two Tunisian people who have studied in Japan and now participating as members in this BOP research project, will also contribute to the development of human resources responsible for domestic industry promotion.

**Sustainable Industry Development**

- Main industries are Agriculture, forestry and fisheries and Tourism
- Tourism Industry suffered from security deterioration due to terror activities after the revolution.
- We aim to bottom-up the olive sector, by developing new products with high economic value such as products related to olive leaves

Skill up of olive related technology

Development of high added value products other than olive oil

**Regional Disparity Resolution**

- Agriculture and mining industries in rural areas, Tourism Telecommunication Transport industries in urban areas
- Especially, about 60% of the poor population is concentrated in the Northwest, Midwest, and Southern areas
- Most of the poor population in rural areas are agricultural workers. The development of the olive sector is expected to have a positive effect on this issue.

Companies located in the Northwest and the Midwest regions where the poverty rate is high

**Unemployment - Countermeasures: Development of Human Resources: Responsible for Domestic Industry Promotion**

- The high unemployment rate is a serious issue
- Especially among young people (one of the causes leading to the revolution)
- As a countermeasure to employment, the government is increasing the support and subsidies as well as corporate support in rural areas

Companies that benefit from the support of government subsidies

Most of the employees are young people under the age of 35 from poor regions

## 1.4 Future Business Plan

### 1.4.1 Future Business Plan

The future plans to develop this business are as shown in Table 1.4-1. Currently, each product is in the marketing stage, and we plan to market and sell all of the target products simultaneously. We plan to make a decision on business development for each product between the fall of 2017 and the spring of 2018. The business plan for olive oil is as follows;

a. Product development by major companies

Both small and big business deals are under consideration.

b. Product development by Hokkaido Olive Club

Currently, 15 Japanese companies have agreed to launch the Hokkaido Olive Club and are developing processed products using Tunisian olive oil.

In 2017-2018, we aim to increase the number of participating companies by 2 to 3 times, and are preparing the products to be sold at tourist spots in Hokkaido and in department stores and high-end supermarkets in the metropolitan area.

c. Cosmetic Ingredients

For the commercialization of the cosmetic ingredients, partner distributors are targeting the same customers as olive oil. Also, the Tunisian manufacturers of olive oil are producing cosmetic ingredients as well. As a result, there is a synergistic effect on both manufacturing side and sales side. By increasing the total export volume from Tunisia to Japan, we are expecting in the future a reduction in logistics' cost. We will continue marketing with the aim of reaching good results in 2017-2018.

d. EC and Retail Sales, etc.

We will continue sales at our website and at retail stores.

Regarding olive leaves, we plan to increase the supply to existing customers and search for new customers. Regarding olive pomace, we will continue marketing. Also, a feed manufacturer has confirmed that it will use olive pomace for experiment purposes during 2017. In 2017, based on the marketing results of each product, we will decide whether or not a full-scale business development is possible.

### 1.4.2 Remaining Business Issues and Proposed Solutions

We have summarized the remaining business issues and proposed solutions in Table 1.4.2. Overall, reduction of logistics cost is a necessary measure for the further development of this

project. When the products of multiple manufacturers are all shipped in the same container, export procedures become complicated, and additional expenses other than transportation expenses occur (warehouse storage fee while waiting for the container), resulting in a high export cost. Therefore, regarding olive oil, we have established that the most cost-effective way is as follows. In case the export volume from one supplier is 20 tons or less, the merchandise should be shipped by sea independently by the supplier himself. In case the export volume from one supplier is less than 300L, then it should be shipped by air. Furthermore, negotiations on logistics costs can improve if we can schedule container shipping on regular routes between Tunisia and Japan.

Regarding olive oil, there is a problem with bottled products. There were defective items such as liquid leakage and bottle cap spinning and unable to open. These problems have affected the some business negotiations. Tunisian oil manufactureres import bottles from Italy because they are not able to procure good quality bottles in the local market. However, there are still difficulties to produce a finished product suitable for Japanese customers. In order to cope with such issues, we have considered packaging products in Japan, and have developed mini-size packs in Japan. Furthermore, regarding 2016-2017 harvest season oil, we have decided not to import bottles, but to import instead oil packed in 1L tins and 3L sealed packs. Henceforth, we would like to use packaging methods and sizes according to customer's needs in Japan. In addition, together with our Tunisian partners we will continue to search for high-grade olive oil containing polyphenols 10 to 20 times higher than average olive oil.

Regarding olive leaves, since there is still an issue in keeping high oleuropein content in dried leaves, we will check and manage the technology and quality aspects of the production process while preparing to be in time for shipment to Japan in the next season.

Regarding olive pomace, we will examine the market response to the existing naturally dried pomace, and decide whether it is necessary to invest in drying equipments. Once we can confirm market needs and volume, we plan to introduce drying machines exclusive to olive pomace.

Table 1.4-1 Future Business Plan

This table, because it contains confidential and commercial information, not disclosed in this report.

Table 1.4-2 Remaining Issues

This table, because it contains confidential and commercial information, not disclosed in this report.