

ACTION PLAN AND **POLICY RECOMMENDATIONS** FOR A HOLISTIC DEVELOPMENT OF THE PAKISTANI OLIVE VALUE CHAIN

MARCH 2023



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LIST OF ABBREVIATIONS

AICS	Italian Agency for Development Cooperation
AJK	Azad Jammu & Kashmir
AP&PR	Action Plan and Policy Recommendations
CIHEAM	Centre International de Hautes Études Agronomiques Méditerranéenne
EAD	Economic Affairs Division
GB	Gilgit Baltistan
GoP	Government of Pakistan
GRASP	Growth for Rural Advancement and Sustainable Progress
HACCP	Hazard Analysis Critical Control Point
IOC	International Olive Council
ISO	International Organisation for Standardisation
KPK	Khyber Pakhtunkhwa
M	Million
MAECI	Italian Ministry of Foreign Affairs and International Cooperation
MNFS & R	Ministry of National Food Security and Research
NARC	National Agriculture Research Council
PKR/Rs.	Pakistani Rupees
PARC	Pakistan Agricultural Research Council
PIDSA	Pakistan Italian Debt Swap Agreement
POCCSP (I)	Promotion of Olive Cultivation on Commercial Scale in Pakistan - Phase I
POCCSP (II)	Promotion of Olive Cultivation on Commercial Scale in Pakistan - Phase II/PSDP project
PPAF	Pakistan Poverty Alleviation Fund
PSDP	Public Sector Development Programme
SOP	Standard Operating Procedure
SWOT	Strengths, Weaknesses, Opportunities and Threats
USAID	United States Agency for International Development

TABLE OF CONTENTS

List of Abbreviations	4
Foreword	7
1. Background information	10
2. Production and processing	30
2.1 Cultivation	30
2.2 Processing	36
2.2.1 Olive Oil	36
2.2.2 Table Olives	38
3. Marketing	40
3.1 Marketing channel of olive	41
3.2 Domestic demand for olive oil	42
3.3 Import of olive oil	43
3.4 Constraints in market development	45
4. Legislation, certification and policies	48
5. Research, education, training and extension	51
6. SWOT Analysis	54
7. Needs and policy gaps	63
8. Strategic objectives	65
9. Action points	68
10. Conclusions	69
11. Brief recommendations	73
Annex 1	74
Annex 2	81

FOREWORD

It is a pleasure to introduce the Action Plan and Policy Recommendations (AP&PR) for a holistic development of the Pakistani Olive Value Chain. Even though agriculture is one of the government's top priorities, most agricultural products are still imported. Agriculture development based on the principles of sustainable farming can provide many benefits, from an economic, environmental and social point of view.

Cognizant of this, as an agrarian country, Pakistan is looking for ways to diversify its agriculture sector on sustainable basis. In this context, the introduction and promotion of olive as an alternative crop in the predominantly rural context of Pakistan has the potential to generate significant socio-economic rewards and benefits for the country. For instance, olive cultivation can contribute to minimizing the import bill of edible oils.

The high interest repeatedly expressed by the Government of Pakistan to the Ambassador of Italy, and to the Director of the Islamabad office of AICS, the Italian Agency for Development Cooperation (AICS), was to extend, qualify and consolidate the olive oil production and use in overall Pakistan.

This national endeavour attests the Government's uninterrupted commitment on developing the olive oil, the table olive, and the value additions products and by-products, in a value chain approach, as a source of economic diversification, rural development, and social cohesion for a food supply that aspires to the nutraceutical and organoleptic quality edible oils at the base of the population's diet.

On the grounds of the above, the Ministry of Economic Affairs, Economic Affairs Division of Pakistan requested AICS Islamabad to finance and support the project titled “OliveCulture - Holistic and Multi-professional Mechanism for a Pakistani Olive Oil Value Chain”, which had then been approved and funded by the Italian Ministry of Foreign Affairs and International Cooperation (MAECI).

The implementation of the Project has been entrusted to the International Centre for Advanced Mediterranean Agronomic Studies of Bari (CIHEAM Bari), Italy, in cooperation with the Ministry of National Food Security and Research (MNFS&R) through the Pakistan Oilseed Department (POD).

The Project aims at strengthening the Pakistani olive oil value chain at several levels in a holistic, participatory, and multifunctional way, involving institutions, businesses, farmers, youth and women, and consumers, to improve economic, productive, and qualitative performances. Particularly, the Project aims to guide and support the Pakistan Oilseed Department of MNFS&R to organise actions, make the interventions more organic and provide the appropriate know-how for its development. The Project interacts very closely and operates in coordination with the “Promotion of Olive Cultivation on Commercial Scale in Pakistan - Phase II” (POCCSP -II) and its provincial components.

The Project objectives are in line with the Pakistan government's sectoral strategy directly related to enhancing agricultural productivity, and self-reliance in agricultural commodities, to promote diversification by high-value crops and to increase small farmers' income; by providing resources, skills and information to enable farmers to be linked with consumers of prospective markets in the region. In view of the current emergency of the agricultural sector resulting from climate change, and lack of diversification and innovation, olive plantation and cultivation in Pakistan is not only envisioned as a source of generating and increasing agriculture sector revenue, but also to mitigate the adverse effects of climate change through climate-smart agricultural practices.

To achieve the result of an adequate policy support for the rural development of the olive sector, a stakeholder group has been appointed to be the core of the Pakistan Olive Oil Council (POOC), to be established in the near future, to carry out the activity "Drafting of an Action Plan and Policy Recommendations for a holistic development of the Pakistani Olive Value Chain" (AP&PR), which is of paramount importance, as it provides innovative and creative insights to attain the stated objectives by highlighting the challenges and prospects of Pakistan's burgeoning olive sector (Annex 1). A logo of Pakistan Olive Oil Council has been designed and proposed by the Pakistani Olive Stakeholder Group (Annex 2).

The activity has been overseen by Dr. Gianluigi Cardone, scientific administrator of CIHEAM Bari, and coordinated by the CIHEAM team in Islamabad.

For the drafting of the AP&PR, the Authors started to conduct a context analysis by the collection of references and data inputs, which were useful to design the SWOT analysis of Pakistan's olive sector for specific thematic areas (production, processing, marketing, governance, research, etc.). The SWOT analysis is based on the Strengths, Weaknesses (considered internal to Pakistan's olive sector), Opportunities and Threats (considered external to Pakistan's olive sector). Combining the identified strengths and weaknesses with opportunities and threats, it has been possible to identify strategies and corresponding actions for the development of the sector, relevant to policy makers and beneficiaries (farmers, food businesses and citizens).

Also, the Authors have drafted policy recommendations to achieve the objective of holistic development of the Pakistani olive value chain.

Workshops and seminars, organized by the OliveCulture Project in coordination with the POCCSP -II, and study visits in Italy, helped the drafting of the AP&PR.

However, to achieve this aim, the AP&PR underscores the crucial importance of concerted national efforts as well as continued international cooperation and support.

Indeed, it is praiseworthy that the AP&PR does not only reflect the current situation of the olive sector in Pakistan but has also contextualised the ongoing olive related efforts within the broader climatic and agricultural framework of Pakistan. It takes cognizance of the adverse effects of climate change on the agriculture sector of Pakistan and explicates the potentially positive effect of olive cultivation. Thus, it approaches the olive cultivation in Pakistan not only as a means for developing self-reliance in edible oils but also as a climate change adaptation and mitigation strategy in view of Pakistan's acute vulnerability to global climate change crisis.

The Authors have delved deeper into highlighting the various policy decisions, actions and activities undertaken for the development of the olive value chain at federal and provincial levels in Pakistan. In so doing, they serve the purpose of identifying sector specific needs and policy gaps thereby contributing towards the achievement of the holistic development of the Pakistani olive value chain.

Given Pakistan's conducive climatic conditions and availability of huge swaths of marginal lands, it recommends the provision of increasing incentives for olive cultivation and protection of olive farmers interests by developing a comprehensive olive processing and marketing strategy.

Finally, the long-term objective of the POCCSP-II Project and OliveCulture Project is to increase indigenous production of olive oil to feed the increasing population and to arrest the drain of national exchequer for oil and fats imports by cultivating the un-utilized marginal lands.

1. BACKGROUND INFORMATION

The sustainable development of the olive value chain must start from the analysis of the context, according to the dimensions of sustainability as environmental, economic and social.

From the environmental point of view, for the last two decades, Pakistan has been among the top ten most vulnerable countries on the Climate Risk Index². While the global climate crisis is literally and disproportionately destroying the ‘Global South’ in general, Pakistan has suffered the most due to climate crisis and climate change induced natural disasters in the form of extreme weather patterns like droughts or flash floods, inundating crops, houses and loss of invaluable lives in Pakistan have been wreaking havoc in general and have badly affected the agricultural sector in particular.

The devastation from the 2022 floods covered three quarters of the country, leaving close to a million people without access to safe and adequate housing. The catastrophic climate change induced floods in Pakistan early this year refocused the global attention towards this critical issue. Pakistan was a promoter at the COP27 in Sharm-El-Sheikh (Egypt) for the establishment of a dedicated “Fund for Loss and Damage” to address losses and damages in developing countries, which are particularly vulnerable to the adverse impacts of Climate Change³.

In the absence of any single technological solution to the myriad of challenges including the climate change, Pakistan needs to pursue a range of strategies. As a long-term strategy, Pakistan needs to focus on high value and better yielding crops and plants which are heat and drought resistant and suitable for cultivation across the agro-climatic zones within the country. As some of the most resilient plants to withstand extreme conditions, olive plantation and cultivation appears to be the most cost-effective strategy in the long-run and can complement climate change mitigation and adaptation strategies. Indeed, the climate crisis is a major source of strategic anxiety in Pakistan and understandably so because it exacerbates existing vulnerabilities like income inequality, food insecurity and gender inequality, thus sparking violent conflicts over scarce resources like water and cultivable land.

Although the olive plants are naturally endowed with features that make them resistant to harsh weathers and changing climatic patterns, one cannot discount the increase in losses due to climate change.

2. <https://www.usip.org/publications/2022/07/pakistans-climate-challenges-pose-national-security-emergency>

3. The 27th session of the Conference of the Parties of the UNFCCC (COP27), with a view to effectively tackling the global challenge of climate change “Sharm El-Sheikh Climate Implementation Summit”, was held in Egypt on 7th November 2022.

In anyhow, federal as well as provincial governments are encouraging olive cultivation due to availability of land and favourable environment in the country.

Most significantly, as a great source of carbon absorption, olive plantation can contribute to the achievement of clean and green ecology.

Environmentally sustainable olive oil production helps to mitigate climate change, reduce green-house gas emissions. Scientific studies have documented the positive effects of growing olive plant on the environment. In addition, the role played by the olive trees in safeguarding biodiversity, improving soil, and as a barrier to desertification cannot be ignored. There is evidence that olive trees have the capacity to fix the atmospheric CO₂ in permanent vegetative structures (biomass) and in the soil along with lowering of atmospheric temperature.

In Pakistan, there are areas characterized by water erosion and non-compatibility of some plant species with particular soils where plants cannot be sown or seeded. Moreover, around 16 million hectares of land (about 20% of the total area) are affected directly or indirectly by soil erosion. Massive olive plantation could help reduce soil erosion and desertification as well as could fetch economic benefits⁴ although areas, in some semi-arid and hilly lands of poor fertility and water erosion the feasibility of olive growing are limited.

The Government of Pakistan has prioritized the Sustainable Development Goals (SDGs) which will enable us to join the league of upper middle-class countries by 2030. Pakistan was the first country to adopt SDGs 2030 agenda through a unanimous resolution of the Parliament of Pakistan. The Government is committed to achieve its development aligned with Sustainable Development goals (SDGs). Pakistan is most vulnerable country hit by the effects of climate change that is significantly impacting food insecurity, nutritional deficiency, and unforeseen disasters. The Promotion of olive is contributing towards National Development agenda 2030 attaining Sustainable Development Goals (SDGs) including Goal 1 (No poverty), Goal 2 (Zero hunger), Goal 8 (Decent work and economic growth), Goal 12 (Responsible consumption and production), Goal 13 (Climate action), Goal 15 (Life on land), Goal 17 (Partnerships)⁵.

The Federal Government has launched different projects to promote the olive cultivation and production in the country. Encouraged by the increasing prospects of success and considering the favourable weather and climate conditions, the Government of Punjab and Khyber Pakhtunkhwa declared Potohar and Sangbhatti Areas and KPK suitable Districts, respectively as olive valleys, as well as large plantations are on-going in Baluchistan, and in Merged areas of KPK; AJK and GB are also considered for olive cultivation.

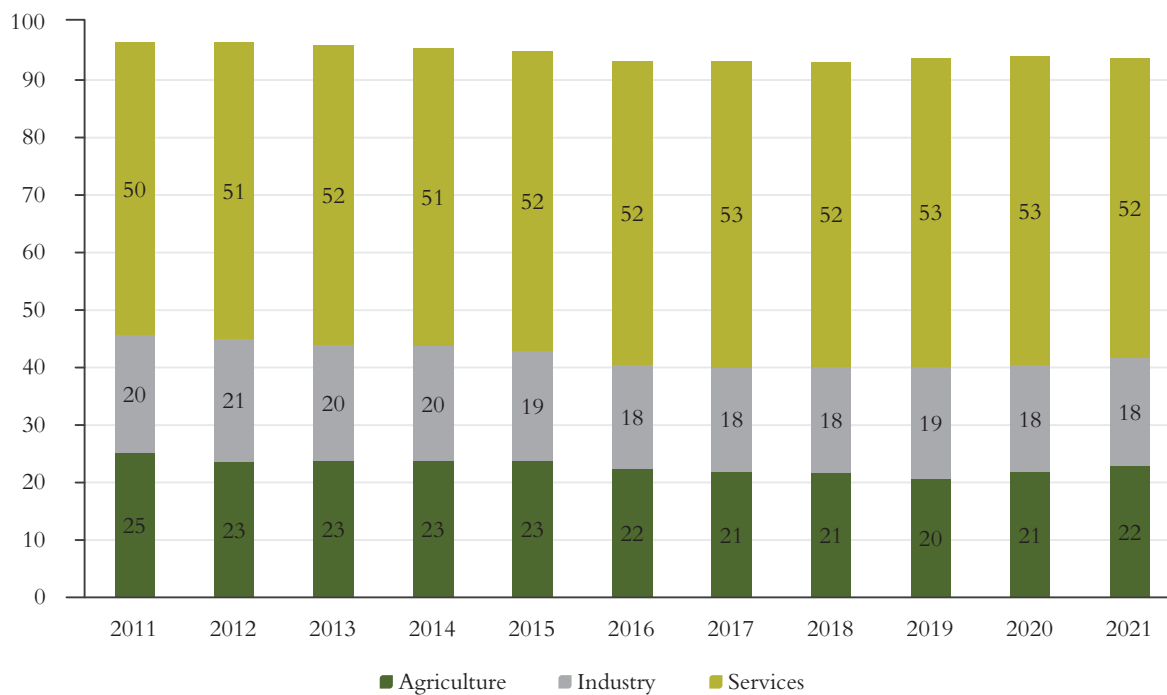
4. OliveCulture Project – Assessment of the Olive value chain in Pakistan, Project Progress, November 2022

5. National Initiative for Sustainable Development Goals

From economic point of view, during the last seven decades, Pakistan has witnessed a shift from an agrarian focus to a service led economy country. From 2011 to 2021, the services sector has replaced the agriculture sector as the dominant sector of the economy and currently contributes 52 per cent of GDP (compared with 38 per cent in 1960)⁶. During the same period, the contribution of the agriculture sector to GDP declined from 46 to 23 per cent, while that of the industrial (non-manufacturing) sector increased from 16 to 20.9 per cent⁷. In 2021, agriculture contributed around 22.96 percent to the GDP of Pakistan, 18.7 percent came from the industry, and over half of the economy’s contribution to GDP came from the services sector⁸.

Some of the major problems adversely affecting agricultural productivity in Pakistan include fixed cropping methods, dependence on certain major crops, narrow genetic pools, low quality of seeds and inefficient utilization of water and water management system. Consequently, rural areas of the country remain underdeveloped and in many instances are facing abject poverty and food insecurity even though wheat, rice, sugarcane and cotton are major agricultural products.

Figure 1: Share of different sectors in the GDP of Pakistan from 2011-2021⁹



6. Finance Division Government of Pakistan, “Highlights Pakistan Economic 2021-2022”, Islamabad, June 2022.

7. Planning Commission. "Pakistan 2025-One Nation-One vision." Planning Commission, Ministry of Planning, Development and Reform, Government of Pakistan.

8. <https://www.statista.com/statistics/383256/pakistan-gdp-distribution-across-economic-sectors/>

9. <https://www.statista.com/statistics/383256/pakistan-gdp-distribution-across-economic-sectors/>

At the farm level, the high-profit margin for the whole olive plant, from seed to fruit, is beneficial. Studies have reported that olive cultivation is a profitable entity as the internal rate of return at a 10% discount rate was found to be 31%, indicating that the investment is feasible as the IRR is greater than the market rate of interest¹⁰.

Processing of olives, which includes production of oil, pickles and other by-products is aimed to enhance the income, living standard and health of youth, gender, and rural communities. The goal is to develop value chain of the olive. A lot of investment opportunities exists in this sector for the entire gamut of agriculture and especially olive value chain stakeholders.

The latest study by Pak Olive Project underlines the estimated great economic returns in the future (Table 1), about the expected income of 50,000 acres/annum has been estimated on 14.58 billion Rs./annum (on year 11 & onward), and the cumulative income based on 25 years has been estimated equal to 249.125 billion Rs.

Table 1: Expected income from 50,000 acres of olive plantation.

Title	Calculations
Average fruit Production per plant	15 kg/plant
Average oil production	12%
No of plants/acre after 05 years of plantation	108 (assuming 80% survival rate)
Average production/ acre	1,620 kg
Average oil production/ acre	195 Liters
Lowest price/ liter	Rs.1500/-
Income/ acre	Rs. 146,250/-
Average oil production/annum (50,000 acres)	10 million liters
Expected Income (50,000 acres/annum)	14.58 billion Rs./annum (on year 11 & onward)
Cumulative income based on 25 years	249.125 billion Rs.

Source: Pak Olive Project

Moreover, it can safely be said that Pakistan has great potential to fully realize opportunities for edible oil production through strengthening the capacity of public and private sectors in the areas of orchard management, nursery production, value addition, business planning and marketing of olive oil.

From the social point of view, Pakistan’s agriculture sector is a major source of employment for a significant proportion of the Pakistani labour force, but it is vital to rethink agricultural priorities and policies to improve this ‘poorly organised and inefficient’ sector and address the increasing challenges posed by climate change.

10. OliveCulture Project – Assessment of the Olive value chain in Pakistan, Project Progress, November 2022

Availability of opportunities refers to the range of livelihood options that people can avail. For Pakistan, where 64% of the population is aged under 30 years¹¹, opportunities become even more significant. The creation and expansion of employment opportunities in rural areas has remained part of the government agenda for inclusive and sustainable development, especially since 1970s¹². However, given the increase in population, labour force, rural to urban migration and rapid urbanization, more needs to be done in terms of creating more employment opportunities in rural areas to provide livelihood opportunities to an increasing labour force.

Pakistan has a large labour force that stands among the top 10 largest labour forces in the world. According to the latest Labour Force Survey FY2021, the labour force increased from 65.5 million in FY2018 to 71.76 million in FY2021¹³. To create more opportunities and prevent the migration of skilled-labour or workforce from rural to urban areas the following steps can be taken: increase in cultivated area, increase in cropped area as a result of technical change and infrastructural investments, changes in crop that emphasizes labour-intensive products, changes in pattern of landholdings towards smaller units that can engage more workforce¹⁴.

The rural areas of the country have complex economies with employment permeating across a range of industry divisions apart from agriculture.

Trends suggests economic landscape in rural areas in Pakistan is changing and there has been a persistent shift in non-farm-related employment in Pakistan, with about half the working population now involved in non-farm-based jobs¹⁵. Furthermore, people in rural Pakistan are switching from non-farm employment due to a myriad of reasons, including an increase in peri-urban agglomerations, increasing connectivity, low returns to agriculture, and scarcity of land due to skewed land ownership.

Indeed, olive cultivation can go a long way in reducing poverty and improving socio-economic conditions of Pakistan predominantly and impoverished rural population and in the development of cottage industry with the involvement of youth and gender in private sector.

Indeed, olive cultivation can go a long way in reducing poverty and improving socio-economic conditions of Pakistan predominantly and impoverished rural population and in the development of cottage industry with the involvement of youth and gender in private sector.

11. <https://hdr.undp.org/content/unleashing-potential-young-pakistan>

12. Qureshi, Sarfraz Khan, Ejaz Ghani, and Shahnaz Kazi. "Employment Generation in Rural Pakistan with a Special Focus on Rural Industrialization: A Preliminary Analysis [with Comments]." *The Pakistan Development Review* 28, no. 4 (1989): 587-602.

13. Finance Division Government of Pakistan, "Pakistan Economic Survey 2021-22", Islamabad 2022

14. Qureshi, Sarfraz Khan, Ejaz Ghani, and Shahnaz Kazi. "Employment Generation in Rural Pakistan with a Special Focus on Rural Industrialization: A Preliminary Analysis [with Comments]." *The Pakistan Development Review* 28, no. 4 (1989): 587-602.

15. Ullah, Rafi. *The Changing Rural Landscape in Pakistan: Labour Markets and Consumption Patterns*. No. 2021: 11. Pakistan Institute of Development Economics, 2021. p

It is encouraging to see Pakistan achieving great strides with respect to olive production and cultivation. However, the holistic and balanced development of olive sector requires a viable regulatory mechanism and structural support. The hitherto missing structural support will augment the global competitiveness of Pakistani olive sector by enabling it to meet international standards. Cognizant of this, the Italian experts on olive culture and members of the Pakistani Olive Stakeholder Group have envisioned and propose the establishment the proposed POOC as part of the OliveCulture Project. Indeed, the POOC is indispensable for the sustainable and balanced development of the various aspects of the olive sector (i.e., regulatory framework, quality of production, productivity, cultivar structure, sites for new plantations, pest management, marketing, profitability, etc.).

Altogether, olive is important for Pakistan in terms of international trade, rural tourism, climate change and edible oil needs which have an impact resulted in the amount of import bills. The large-scale production and promotion of olives on commercial scale can help boost rural tourism and generate much-needed revenue. However, in comparison with other Mediterranean countries, olive sector in Pakistan is still underdeveloped and requires policy measures to achieve maximum benefits.

From the historical and development point of view, while the precise origin of the olive is shrouded in mystery, recent studies appear to contest the widely-held belief about its Mediterranean origins. In an article published in 2007, Paul Vossen of the University of California Cooperative Extension expresses the belief that olives may have originated in Syria or potentially sub-Saharan Africa. Nevertheless, olives flourished and were first domesticated in the Mediterranean almost 6,000 to 8,000 years ago.

Figure 1 : One of Oil presses used in ancient times for olive oil extraction



"WE CAN SAY THERE WERE PROBABLY SEVERAL STEPS, AND IT PROBABLY STARTS IN THE LEVANT OR THE AREA THAT TODAY INCLUDES ISRAEL, PALESTINE, JORDAN, LEBANON, AND SYRIA"

said study co-author Guillaume Besnard, an archaeobotanist at the National Center for Scientific Research in France.

Moreover, the study said "People selected new cultivars everywhere, but that was a secondary diversification later"¹⁶.

As far as the existence of olives in the Sub-continent, there are several references in Buddhist religious scriptures i.e., the Tripitaka about Jaitavans (olives) but it was only in 1885 that olive plantation was experimentally initiated, albeit unsuccessfully, in Kashmir with the collaboration of Italy¹⁷. So, on the basis of the references in Tripitaka regarding the destruction of olives by Monks after purchasing lands, it is believed that the Indian-subcontinent witnessed olives as early as the Buddhist era (around 500 B.C-600 B.C)¹⁸. Realizing the various health and environmental benefits, the two South Asian countries namely Pakistan and India have been working towards the development of olive sectors which bodes well for the trade in olive at regional level.

The history of olive production or farming in Pakistan can be traced back to the 1950s when Pakistan imported grafted olive plants for plantation in different parts of the country including Kashmir, Zhob, Swat, Rawalpindi, Simla, and Kangra hills, Sargodha, and Jhelum districts.¹⁹

Later, in 1986 as part of an Italian project titled the "Fruit, Vegetable and Olive Project", the Pakistan Agricultural Research Council (PARC) planted some olives on experimental trial basis. Subsequently, a survey was conducted to ascertain the number of wild olive species "Olea cuspidata", "Olea ferrugenia" and "Olea glandeflora", which led to the discovery of over 80 million wild olive plants in Pakistan²⁰. Thus, pragmatic and evidence-based steps to grow the olive sector were taken back in the 1980s and 1990s thanks largely to the technical assistance and adaptive research schemes offered by Italy that helped in assessing the possibility of modern olive cultivation in Pakistan²¹.

16. <https://www.scientificamerican.com/article/the-origins-of-the-olive/#>

17. <https://www.oliveoiltimes.com/world/indias-new-olive-oil-sector/26530>

18. <https://www.oliveoiltimes.com/world/indias-new-olive-oil-sector/26530>

19. <https://www.paradigmshift.com.pk/olives-farming-in-pakistan/>

20. <https://agrinfobank.com.pk/frequently-asked-questions-about-olive-farming-faqs/>

21. <https://nation.com.pk/2022/06/15/italy-to-invest-e1-5-million-for-olive-cultivation-in-pakistan-italian-ambassador/>

The following Table 2 summarizes the main projects on the olive oil value chain that have been established in Pakistan, both at Central and Provincial level.

Table 2: Expected income from 50,000 acres of olive plantation.

Name of the Project	Project period	Total Budget (M PKR)	Sponsoring agency	Executing Agency	Remarks
Research & Development Project for Vegetables, Olives, Citrus and Deciduous Fruit Crops (Punjab, NWFP, Baluchistan and at NARC Islamabad)	1986-1993	216.000	Italian Cooperation	Agrotech, NARC	Import of fruit plants and olive varieties for evaluation in Pakistan
Rapid conversion of wild olive into oil bearing species	2001- 2008	186.378	Min FAL	PODB	Top-working of wild olive groves 6 small extraction units
Accelerated Promotion of olive cultivation in Khyber Pakhtunkhwa	2001- 2005	24.055	Min FAL	PODB	364-acre olive progeny orchard, production of 392,000 olive samplings, Top working 144,000 wild olives and trainings
Development of Olive Production and Processing in Balochistan	2003- 2006	33.000	Balochistan ADP	Govt. of Balochistan	Small extraction unit, top working of olive and new plantation
New Plantation of Olive cultivation in NWFP, Potohar, Balochistan and maintenance of Orchards	2005- 2008	39.000	Min FAL	PODB	111 acres olive plantation, 228,000 olive saplings, model orchards in KP (10 acre) and Pothwar (10 acre) and Balochistan (05 acre)
Promotion, production and marketing of olive oil in Pakistan	2007- 2009	60.000	Italian Govt.	PODB	Identification of suitable areas for olive cultivation in Pakistan, 400 -500 kg/hr extraction unit in Khyber Pakhtunkhwa
Development of Olive Model Farm for R&D activities at Sangbhatti Mardan	2008- 2011	37.707	Min FAL	PODB	150 acres model farms at Sangbhatti Mardan, 20,000 olive plants, plantation of 1000 mother plants

Development of Olive Production & Processing in Balochistan	2008-2011	190.000	Min FAL	ARI, Quetta	Nursery raising of 675,000 plants, (6000 acres), 03 mother orchards
Adaptation studies of new olive cultivars and standardization of its propagation and value addition techniques	2010-2014	21.970	PARB PUNJAB	BARI	Propagation & adaptation studies, value addition
Import of olive, citrus and grapes varieties	2011-2012	Not available	PAMCO	PAMCO	Import & distribution of olive, grapes & citrus plants to farmers
Governor's Fund through FATA Secretariat	2012-2018	Not available	FATA, Secretariat	Extension	Grafting of wild olive in Bajour
Promotion of olive cultivation for economic development and poverty alleviation	2012-2021	256.203	PIDSA	PARC	Olive plantation on 5,802 acres Nursery development, trainings, value addition
Plantation of 5 million Olive Saplings in Khyber Pakhtunkhwa	2013-2017	1,154.17	KP, ADP	ARI Peshawar	Plantation on 5,900 acres 2 big & 4 small oil mills
Promotion of olive cultivation on commercial scale in Pakistan	2014-2021	1 ,271.823	PSDP	PODB	Olive plantation: 13,357 acres, Trainings: 63, Specialized nurseries: 12, Olive oil extraction units: 09, Drip irrigation system: 1686 acres, Adaptability trials: 25, Mother orchards: 13
Developing Pothwar into an olive valley	2015-2022	1 ,463.274	Punjab, ADP	BARI	Olive plantation on 9797 acres, trainings, Incentives for water and high efficiency irrigation system

Establishment of Center of Excellence for Olive Research and Trainings (CEFORT)	2019-2023	283.121	Punjab, ADP	BARI	Establishment of dedicated olive research and training facilities
Promotion of olive cultivation on commercial scale in Pakistan Phase -II	2021-2024	5,014.919	PSDP	POD	Currently operational, olive plantation: 75,000 acres, 5 m grafting of wild olive, provision of olive harvesting, storage, oil testing & processing equipment and tools on matching grants to farmers/private sector, lab equipment for certification of olive oil, trainings
A Holistic and multi professional mechanism for a Pakistani olive value chain - OliveCulture Project	2022-24	300.000	Government of Italy	CIHEAM & POD	Currently operational
Professional Capacity Building and Extension in Agriculture - TVET	In process	4,000.000	Government of Italy	POD	

Note: ¹TVET is under approval by Pakistan Government

It is worth sharing that Pakistan was undeterred in its efforts to grow olives even though less than 1% of some 5.5 million olive plants top worked under a project by the federal government survived²². This dedication may be explained in terms of the fact that Pakistan imports edible oils worth USD 3.6 billion. This unsettling fact necessitated dedicated and concerted efforts to achieve self-sufficiency through alternative and increased production of olive oil which is considered the best and most blessed one because of religious beliefs and scientific reasons by the Pakistani populace²³.

In a significant development, Pakistan and Italy reached an agreement called Pakistan Italian for Development Swap Agreement (PIDSA). Under this agreement, Pakistan's debt estimated at about 100 million USD²⁴ owed to Italy that could be swapped by executing investments in particular development projects in sectors like agriculture, environment, rural development, poverty alleviation, health, education, etc.²⁵

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22. <https://www.globalvillagespace.com/pakistan-a-world-leader-in-olive-production-fiction-fact-or-a-lie/>
23. <https://tribune.com.pk/story/2364421/cooking-oil-imports-eat-up-36b>
24. <https://www.ead.gov.pk/Detail/MWUwZjA1NGMtYzg4ZS00M2I5LWI3ZDktYTlhM2UzZjU3Y2I3>
25. <https://arynews.tv/pakistan-italy-extend-debt-for-development-swap-agreement/>

In 2012- 2016, the project “Promotion of Olive Cultivation for Economic Development and Poverty Alleviation” was funded under PIDSA and implemented by PARC, which represented the first significant public investment in the country in the Olive sector, as about two thousand hectares of olive trees were planted in farmer fields and research stations ²⁶.

Then on the similar scheme a landmark project titled “Promotion of Olive Cultivation on Commercial Scale in Pakistan Phase-1 (POCCSP-I)” was launched by the Government of Pakistan, within the PSDP framework in 2014. To realise the untapped olive cultivation and olive promotion on commercial scale, Pakistan allocated PKR 2,320.27 million under this project²⁷. The following Table 3²⁸ reflects the status of Project deliverables and targets achieved under phase-1 of the POCCSP I Project- from 2014 till 2021.

Table 3: Expected income from 50,000 acres of olive plantation.

Project Deliverables	Project Target	2014-18	2018-19	2019-20	2020-21	Total achieved	%
Provision of certified, true to-type olive plants (in acres)	50,000	2,390	4,065	126	6,7773	13,357	27
Installation of drip irrigation systems at farmers sites (acres)	2,250	25	404	600	657	1,6868	75
Specialized double-shaded olive nurseries for plant propagation (units)	18	1			11	12	67
Olive oil extraction units (units)	9	0		9		9	100
Support for adaptability trials (No)	25	0	3	7	15	25	100
Support establishment of olive mother blocks-GPUs (No)	5	0	3	3	7	13	200
Plant propagation locally (No in million)	1.2	0.025	0.46	0.451	0.92	1.865	155
Training value chain stakeholders (No)	91	13	131	12	27	63	69
Up-gradation of value addition labs (No)	3		3				100
Installation of weather stations (No)	5		5				100

26. Giuliano Soncini and Riccardo Montanari, APPRAISAL OF PAKISTANI OLIVE OIL VALUE CHAIN: Key Findings and Recommendations (Islamabad August 2016), Italian Agency for Development Cooperation (AICS)

27. Pak Olive, A Project of Government of Pakistan, “Promotion of Olive Cultivation on Commercial Scale in Pakistan”, Project Report 2014-201

28. Pak Olive, Ministry of National Food Security and Research, Government of Pakistan PROJECT REPORT 2014-2021, “Promotion of Olive Cultivation on commercial Scale in Pakistan”.

In the second phase of POCCSP-II which is to be completed by 2024, the government has approved 75,000 acres for olive plantation. This is being executed currently in Punjab, KPK and Merged Areas, Balochistan, and potential suitable areas of Azad Jammu & Kashmir (AJK), Gilgit Baltistan and Sindh.

The provincial government of Punjab launched a five-year project “Development of Potohar into an Olive Valley” from July 01, 2015, to June 30, 2020, and declared Potohar as ‘Olive Valley’ in August 2015. Around a million olive trees were planted on 8,000 acres²⁹ soon after the inception of the five-year project in the Potohar region. Indeed, the encouraging results acted as the catalyst and harbinger of olive experimentation, farming, and production in other areas of Punjab and across the country. Under the Olive Valley project, farmers were provided much-needed training and earning opportunities through olive oil production and plantation. As of 2021, 1.2 million olive plants have been planted in the Potohar Olive Valley while 200,000³⁰ are to be added annually³¹. Notwithstanding the crippling challenges of the corona pandemic, in the first phase of the POCCSP-I olive cultivation on around 25,000 acres has been already completed³².

The Government also offers subsidised services and goods to olive farmers in pursuit of promoting olive on Commercial scale³³. The Federal and provincial governments have supported most of the olive extractions units established so far in the country. Besides the privately-owned oil extraction units and those established by provincial governments, nine (09) imported olive oil extraction units were operational across Pakistan.

The table 4 provides details of 19 imported olive oil extraction units operational across Pakistan under the POCCSP-I & II Project by the Federal Government as well as those by Provincial governments and 6 privately owned olive oil extraction units.

29. 1 international acre is equal to the following metric unit: 0.40468564224 hectare

30. A lakh is a unit in the Indian numbering system equal to one hundred thousand (100,000; scientific notation: 10)

31. <https://www.thenews.com.pk/print/897683-potohar-olive-valley-turns-into-business-hub-for-farmers>

32. <https://dailytimes.com.pk/676951/olive-cultivation-key-to-strengthen-economy-earn-foreign-exchange/>

33. <https://tribune.com.pk/story/2348919/olive-story-how-to-harness-potential>

I Table 4: Detail of Olive Oil Extraction Units in Pakistan (Public & Private Sector)

Brand	Capacity (kg/hr)	No. of Units	Location	Phasing	Project
Pieralisi	600	03	GRS Attock, ARI Loralai and BARDC Quetta	2-Phase	Federal Project
Pieralisi	600	01	BARI, Chakwal	2-Phase	Punjab Govt.
Mori Tem	500	03	CCRI Pir Sabaq, Sanghbhatti Swat	2-Phase	ADP KPK Govt.
Alfa Lavel	500	01	ARI, Tarnab	3-Phase	Italian grant with PODB
FORMA - Mori-Tem	250	03	Zhob, Muslim Bagh, Lower Dir	2-Phase	PPAF
FORMA - Mori-Tem	250	02	BARS Kohat, ARS Abbottabad	2-Phase	ADP KPK Govt.
Kocomaz (Turkish Brand)	200	01	Israr Farm Dherai Thalash, Lower Dir	2- Phase	SMEDA
Oliomio Gold, Mori-Tem	200	01	Agriculture Research Station Khuzdar	2-Phase	ADP Balochistan
Oliomio Gold, Mori-Tem	200	01	Agri. Ext. Bajour	2-Phase	ADP KPK Govt.
Oliomio Gold, Mori-Tem	100	06	Islamabad, Chakwal, Zhob, Rakhni, Lower Dir, and Shinkhari Mansehra	2-Phase	Federal Project
Oliomio Gold, Mori-Tem	100	02	Faisalabad, Chakwal	2-Phase	Private sector USAID matching grant
Oliomio Gold, Mori-Tem	100	01	Agri. Ext. Orakzai	2-Phase	ADP KPK Govt

Note: The machine sites operated under POCCSP-I & II Project have been provided with quality testing facilities (Oxi-Tester) as well as food grade storage containers (50 litres and 25 litres).

Demonstrating its confidence in Pakistan’s potential for olive production and to help develop the olive value chain in line with global requirements, Italy has financed with a grant worth a €1.5 Million a key project named as “OliveCulture – Holistic and Multi-Professional Mechanism for a Pakistani Olive Oil Value Chain” (OliveCulture) which started its implementation on 17th January 2022. The project is implemented by the Mediterranean Agronomic Institute of Bari – CIHEAM BARI, and concerned government organisations, with Pakistan Oilseed Department (POD) of MNFS&R, as counterpart.

To this end, the Government has set an ambitious target of planting more than 50 million olive trees on marginalised lands and has been taking various facilitative measures to empower the hitherto neglected farmers. These measures include the provision of subsidies, technical training, and free-of-cost olive saplings to the farmers³⁴.

Of late, efforts toward olive production in Pakistan have gained momentum primarily driven by various endogenous and exogenous challenges and opportunities which are detailed in the SWOT section. The Barani Agricultural Research Institute in Chakwal successfully developed two olive varieties originated from exotic germplasm imported from Italy as BARI Zaitoon 1 and BARI Zaitoon 2. These varieties have great adaptability to the Potohar and adjacent plains of the Punjab as they have proved to be regular fruit-bearing varieties³⁵. Primarily four kinds of saplings, namely Frantoio, Gemlik, Sevillana and Manzanilla have been tested and tried successfully for cultivation in Potohar region. These saplings were kept at BARI Chakwal for five to six months for acclimatisation and were cared for. They remained healthy thus testifying to the fact that these varieties are suitable to be cultivated in Potohar region³⁶.

Moreover, in order to facilitate the farmers lacking resources and irrigation facilities, the Federal Government is providing olive nursery plants and drip irrigation systems.

For the obvious reason that Pakistan is not traditionally an olive producing country, currently the production of olives and olive oil still remains at a nascent stage. Nonetheless, it has already been proved that good quality olives can be grown in many parts of the country as the climate and topography is considered suitable for growing olives. Indeed, Pakistan has achieved great strides in a short span of time due to its huge, albeit, largely untapped potential and dedication in terms of developing and promoting olive cultivation, olive culture and olive supply chain. Table 5³⁷ shows existing olive plantation in Pakistan from 2012 to 2019.

34. <https://www.pbc.org.pk/wp-content/uploads/Potential-of-Olives-and-Olive-Oil-in-Pakistan-PBC-Study.pdf>

35. https://aari.punjab.gov.pk/olives_cropvarieties

36. <https://www.dawn.com/news/754766/turning-potohar-into-olive-valley>

37. <https://www.sbp.org.pk/events/2019/ACAC/Olive%20Value%20Chain%20Development-PARC.pdf>

Table 5: Existing olive plantation in Pakistan (2012-2022) - Number of plants (acres)

Provinces/ Region	PIDSA (2012-16)	PSDP (2014-21)	Olive Valley (2015-20)	5 million Olive Plants (2013-19)	Private Plantation	Total Plants (acre)
Balochistan	159,379	1,147,982	-	-	2,500	1,309,861 (10,475)
Khyber Pakhtunkhwa	265,273	538,202	-	590,000	25,000	1,418,475 (12,925)
Punjab	116,772	577,250	1,210,411	-	10,000	1,914,433 (14,617)
ICT	35,768	114,621	-	-	-	150,389 (1,215)
AJK	421	65,795	-	-	-	66,216 (507)
G.B.	2,545	30,751	-	-	-	33,296 (253)
Sindh	-	61,904	-	-	-	61,904 (460)
TOTAL (acre)	580,158 (5,802)	2,536,505 (19,410)	1,210,411 (8,965)	590,000 (5,900)	37,500 (375)	4,954,574 (40,450)

Source: POCCSP-II Project

Pakistan has set a target of producing 16,000 tons of olive oil by 2027³⁸. These lands have 11,125 acres of land on which almost 1.2 million olive plants are being grown with a higher potential to reach 5,200 tons of edible olive oil by 2024, worth 1.727 billion PKR. The total available area for olive cultivation in Pakistan is estimated at approximately 10 million acres³⁹.

In KPK, 9,391 acres of land is being used with an expected olive oil production worth 1.458 billion PKR by 2024. While in Balochistan, over 500,000 olive plants, are expected to generate an economic income of 1.160 billion PKR by the year 2024. In the same way, a substantial revenue of 71 million rupees is estimated by the plantation of 50,000 olive plants in Azad Kashmir and Islamabad, with a land coverage of 455 acres, in the next four years⁴⁰.

38. <https://www.globalvillagespace.com/olive-cultivation-in-pakistan-a-step-towards-self-reliance/>

39. <https://www.dawn.com/news/1537650>

40. <https://www.paradigmshift.com.pk/olives-farming-in-pakistan/>

Figure 2: Young olive orchard in Potohar Olive Valley



Undoubtedly, an important factor that explains Pakistan's unprecedented interest in olive production is the unflinching support of partner international agencies and foreign countries like Italy. This support has not only strengthened the Government of Pakistan's commitment to the cause of olive culture and production on large and commercial scale but have also bolstered the capacity and confidence of relevant organizations in this sector as well as helped garnered public support for the cause. Indeed, these efforts are in alignment with what has been described as the first-ever, comprehensive and citizen-centric National Security Policy of Pakistan that has at its core human security underpinned by economic security⁴¹.

Edible oil and oilseeds are among the largest food and feed imports in Pakistan. Pakistan ranks fourth among the edible oil importing countries of the world, meeting more than 90 percent requirements from import and less than 10 percent is met through domestic production. Its import reached 4,142 million tonnes during 2020-21 and it is expected that it will reach 4,772 million tonnes during 2021-2022⁴². Domestic oilseed and edible oil production have been regularly fluctuating with no sustainability in any year. The production is almost not only stagnant in some years but has decreased in some of the major crops, especially cotton and sunflower, the main contributors of edible oils in the country.

41. <https://dnd.com.pk/wp-content/uploads/2022/01/National-Security-Policy-2022-2026.pdf>

42. Govt. of Pakistan and FAO, 2022. Review of the oilseed sector of Pakistan, Confidential Report

The domestic production showed a substantial increase from year 2002-03 and a bumper crop was obtained in 2007-08 with a total production of 0.833 million tonnes of edible oil. However, due to certain factors/reasons, this momentum could not be sustained and started falling continuously (Table 6) registering a decrease by half of 2007-08 with 0.374 million tons in 2020-21.

Table 6: Edible oil production, imports, requirements and availability in Pakistan for the last 11 years (Million tons)

Year	Local Production	Import	Total availability	Local production (import ratio)	Industrial use	Availability of edible oil	Availability per capita (kg/year)
2002-03	0.641	1.558	2.199	29:71	0.110	2.089	13.99
2007-08	0.833	2.233	3.066	27:73	0.153	2.913	17.50
2012-13	0.567	2.502	3.069	18:82	0.153	2.916	15.82
2013-14	0.573	2.627	3.200	18:82	0.160	3.040	16.17
2014-15	0.556	2.967	3.523	16:84	0.176	3.347	17.46
2015-16	0.462	3.264	3.726	12:88	0.186	3.540	17.81
2016-17	0.431	3.191	3.621	12:88	0.181	3.440	16.95
2017-18	0.533	3.735	4.268	12:88	0.213	4.055	19.58
2018-19	0.477	4.041	4.518	11:89	0.226	4.292	20.33
2019-20	0.554	3.765	4.319	13:87	0.216	4.103	18.82
2020-21	0.374	4.147	4.521	8:92	0.226	4.295	19.17

Source: Pakistan Bureau of Statistics 2021

Pakistan imports edible oil worth USD 3.5 billion per annum. Though most of this is palm oil which suits the culinary habits and to date has been difficult to indigenize, amongst the Government's strategy to promote alternative local sources to reduce reliance on imports and potentially promote exports is an ambitious target of planting over 50 million olive trees on marginalized lands.

About olive oil, the Government aims to issue certifications for olive branding and marketing by the private sector. There are many small-scale olive growers in Pakistan, and some of them have started branding and selling them locally. Local producers and sellers are now marketing Pakistani as extra-virgin olive oil in the niche domestic markets⁴³. With 12,000 hectares under plantation of olive plants already, and with 4 million hectares of potential land for olive plantation, Pakistan has the potential to become a major player in the long term⁴⁴.

It is believed that olive has no competition with any crop in Pakistan⁴⁵ as current strategic interventions in the olive sector are focusing on the supply-side of the value chain i.e., enhancing the production of olives in suitable regions of Pakistan, primarily utilizing marginalized lands. This may lead to positive grower economics since these lands cannot be used for the cultivation of any other crop, but success is dependent on consumer's demand, preferences in favour of olive products and access to domestic and international markets⁴⁶.

43. <https://tribune.com.pk/story/2348919/olive-story-how-to-harness-potential>

44. <https://tribune.com.pk/story/2348919/olive-story-how-to-harness-potential>

45. Final Report, "APPRAISAL OF PAKISTANI OLIVE OIL VALUE CHAIN", Key Findings and Recommendations August 2016, Islamabad

46. <https://www.pbc.org.pk/wp-content/uploads/Potential-of-Olives-and-Olive-Oil-in-Pakistan-PBC-Study.pdf>

2. PRODUCTION AND PROCESSING

2.1 Cultivation

Pakistan has abundant land for the cultivation of olives and is an attractive country for commercial production of olives due to its suitable climate conditions, quality of the soil, and ecological diversity.

Figure 3: Olive orchard in Potohar Olive Valley



The following figure 4 illustrates the districts having currently olive cultivation in Pakistan.

Figure 4: Districts having currently olive cultivation



Production of indigenous nursery plants is encouraged under POCCS Project to reduce the current reliance on import of nursery plants. In this regard, the nursery staff will be trained under POCCS for the certification of true to type, disease free plants. A great potential exists in involving the youth in nursery raising, whereas female can be involved in value addition process.

At present, not all plants are at the fruit-bearing stage and since no baseline surveys have been conducted, official production figures for olives are unavailable. However, based on the initial plantation results, on average an olive plant produces 20 to 35 kilograms of olive fruit per year which contains more than 12 percent of oil content. Pakistan started off with the plantation scheme of 20x20 feet⁴⁷ under which 107 to 108 olive plants were planted per acre⁴⁸. The number of plants per acre was increased to 135 which is said to be in vogue in different parts of the country. Assuming, that 108 olive trees are planted per acre which produces 2,160 kilograms of olive fruit per acre, then approximately 260 kilograms of olive oil can be extracted from one acre through the olive plantation on optimal soil and water conditions, adopting the full good agricultural practices⁴⁹.

Since the POCCSP project was initiated in 2014 and plantation was carried out in different phases till 2021, the average age of olive plants varied throughout the country. The major impediment in comprehensive technical, economic, and social evaluations lied with the fact that only 17% of the sampled orchards have started fruiting at varying capacity ranging from less than 1 to 100% (it is worth-mentioning that only 3 farmers out of 670 reported 100% production). 129 farmers responded with actual picture will be clearer, once at least 50% of the farms start giving production at 100% capacity. The real impact on the society will be depicted if an assessment is planned after another 4-5 years when significantly higher number of orchards would start producing olive fruit. Once olive fruit will be available in abundance, allied facilities like extractions and value addition labs would be contributing effectively. At that stage, a better assessment seems in-sight⁵⁰.

The comprehensive evaluation of the olive plantation, initiative elaborated by the Study, highlights the overall positive impacts for the farmers, community, and local environment. Majority of the indicators considered showed positive impact of olive cultivation. Marginal lands have been utilized for olive plantation, making it attractive for the owners and farmers of such lands. 303 farmers reported that they used barren land for olive cultivation with majority who owned less than 10 acres. It has a positive impact on other vegetation as verified by the survey's respondents; thus, the expansion of this intervention will support other vegetation.

Amongst the three provinces, olives grown in Baluchistan have the highest oil extraction content of 18-20 percent, which is at par with the international standards, whereas olives grown in Punjab typically yield 12 percent oil.

47. One foot is defined as 0.3048 meters

48. One acre is defined as 43,560 square feet, and approximately 4,047 m, or about 40% of a hectare

49. <https://www.pbc.org.pk/wp-content/uploads/Potential-of-Olives-and-Olive-Oil-in-Pakistan-PBC-Study.pdf>

50. An Impact Assessment Study, "Promotion of Olive Cultivation on Commercial Scale in Pakistan", April 2022, Khaity Technologies (Pvt) Limited

Olive cultivation is relatively new and at an early stage of development in Pakistan. There is a need to ensure widespread knowledge of good farming practices among olive farmers, in particular to improve integrated agricultural management and to increase the productivity of olive groves.

Especially those farmers turning to olive farming and cultivation for the first time need assistance and support in terms of cultivation, the application of fertilizers, pest control, pre-and post-harvest good practices, water requirements, and other aspects to ensure consistency and quality produce.

For a drought tolerant plant, supplementary irrigation is needed through high efficiency system at critical phonological stages to obtain optimum fruit yield. High efficiency irrigation system not only saves the water but also contributes towards better quality and less frequency of diseases and insect pests. Provision of subsidized Drip Irrigation System (DIS) will go a long in encouraging farmers to adopt olive cultivation and is an opportunity area for the government to consider. Large and mid-sized farms engaged in wasteful practices such as flood irrigation to grow crops like rice, and they have recklessly drained the underground aquifers using pumps to water their crops. Such inefficient water use practices have laid vast tracts of land uncultivable due to water logging and salinity.

Drip irrigation offers an opportunity for better water consumption and management. Although, there are certain maintenance issues with drip irrigation, but these can be managed through capacity building trainings on usage and maintenance of drip irrigation system. Though, only 17% of the sampled farmers had the drip irrigation system; however, most believed that it has potential for 50% savings in water, along with reducing land degradation through erosion, and desertification.

Furthermore, the contribution of renewable energy is low, however it is inched up from 2.4% to 3.02%; in any case, it is highly recommended for the entire process of olive production from the farm till transportation to have a complete 'Green Olive Production' Process.

Training and seminars are typically conducted by the Government's agriculture extension service departments; however, more effort is required for knowledge to be imparted to the farmers on the best practices of olive farming.

Farmers harvest olives using improper tools and equipment which reduces yield and affects the quality of olives. Furthermore, when sacks containing olives are stacked for transport to the oil extraction mill the olives get damaged which affects the quality of the oil. Although hand picking causes the least amount of damage to the trees, it is very labour intensive and expensive.

Regarding access to value-adding facilities (such as oil extraction units, value-addition labs, and weather stations etc.), these facilities were established and are providing services to the farmers. Findings suggest that the farmers' access to these facilities must be improved with more online access and advocacy /awareness drives, along with establishing more of these facilities.

BOX 1

Requirements for Olive Cultivation

a. Varieties

There are many varieties cultivated in Pakistan, but the following olive varieties are widely cultivated. Among these Frantoio, Arbosana, Arbequina, Coratina, Koroneiki, Leccino, Pendolino, Gemlike, Picual, Hojiblanca are prominent.

b. Soil and Climatic Requirements

A deep fertile soil and temperatures averaging 10°C but never going below -10°C are desirable. However, now high temperature tolerant varieties are available which can tolerate temperature up to 37°C. Irrigation is often necessary although the plant bears drought to a great extent. Trees need chilling (winter rest) for 60-80 days to differentiate flower buds and an average temperature of 4-7°C. About 250 hours are required in the winters depending upon the cultivars. The maximum absolute temperature should not exceed 22°C during November to February. It can tolerate gradual drop of temperature up to -10°C for a short period. The best crop production and fruit quality occurs in areas that have mild winter and long warm dry summer. The neutral and light saline soils with 5% clay particles are suitable for the crop with the best soil pH range 5.6-8.5 but it should not be less than 5 and more than 8.5. The plant requires nitrogen, but Boron deficiency could cause a serious problem during its growth.

c. Land Preparation

Soil should be well ploughed before plantation. Pits of size 2.5x2.5 feet should be dug at least one week before plantation.

d. Planting Time

Trees can be planted during spring and fall. However, fall is best if there is no likelihood of frost during winter.

e. Planting Geometry

Pakistan started off with the plantation scheme of 20x20 feet. As per the scheme, 107 olive plants were planted per acre. The number of plants per acre was increased to 135 which is said to be in vogue in different parts of the country.

Trees are planted in square with equal line to line and plant to plant distance. 18x18 feet distance yields best results, provided that are regularly pruned. There should be 135 trees in an acre, in optimal soil and irrigation conditions.

f. Irrigation Requirements

Although olive tree is hardy, it requires timely irrigation during the first two years of plantation. In Barani areas, annual rainfall ranges between 150-500 mm, but is not timely useful for the olive crop. If it does not rain, trees should be irrigated twice or thrice in a year in which case the irrigation schedule will be, in principle: (1) Before Flowering, (2) After Flowering, and (3) 30-45 days before fruit maturing. In more frequent cases, irrigation is also needed during flowering.

g. Pollination Requirements

Monoecious: Flowers borne axially along shoot in panicles, self and cross pollination occurs. Now, self-pollinated varieties are encouraged.

h. Fertilizer Requirement

The fertilization depends on the soils (the soil analysis is recommended), varieties and age of the plants. In general, 300 kg/ha of Phosphorous, 200 kg/ha of Potash, 200 of Nitrogen and sufficient quantity of FYM are required to be applied after 03 years of plantation.

i) Harvesting of fruit

Fruit matures during September/October. Harvesting can be done by following methods:

- Picking single fruits for pickle and good quality oil
- Shaking branches and collection of dropped fruit
- Mechanically shaking the trunk and branches

j. Harvesting for Pickle

Fruit is harvested when it is light green and washed with water. Then the fruit is kept in 1-2% Sodium Hydroxide (NaOH) solution for 12 hours. Afterwards the fruit is washed for 5-6 times and is kept in 8-10% sodium chloride (NaCl) solution for 14-21 days. Later on, the fruits are washed and preserved in a new prepared brine (5-6%), with a pH to be adjusted to safety value (less 4.6) by organic acids.

k) Harvesting for Oil

Fruits are harvested when the variation of colour (colour changing from green to purple). is started (September -October) . The fruit is then crushed for oil extraction.

2.2 Processing

Processing of olive which includes production of oil, pickles and other value-added products is aimed to obtain edible oil and palatable olives, to improve the profitability and living standard and health of youth, gender, and rural communities. The ultimate goal is to develop value chain of the olive. A lot of investment opportunities exists in this sector.

2.2.1 Olive Oil

Olive crop is a national need and facilitating its farmers would help increase edible oil production in the country and support national economy. Effective linkages would help to develop the whole value chain.

Figure 5: Olive oil extraction unit



The supply of olive fruit varies in different regions mainly due to different age of the plants and currently only less than 20% trees are producing fruit. Supply of olives for oil extraction will increase exponentially in future. Certain units have storage capacity within their vicinity. Also, four of the units offer possibility of value addition products. Some units help the farmers to develop different products from olive. Few units are linked with meteorological units as well and provide relevant services.

Extraction process of olive oil is given in figure 6 below in detail⁵¹:

Figure 6: Extraction Process of Olive Oil



Although the government provides olive oil extraction and processing facilities, the Khaity Technologies study ‘Impact Assessments’ recorded that 63 % of the farmers complained about the transportation costs they incur while bringing olives to the extraction facility of their choice. Olive oil is extracted and is sold at a premium price of PKR 2,500 to PKR 3,000 per litre⁵² by the olive farmers in the domestic market; the farmers are better off selling olive oil as compared to selling olive fruit. While some studies put the price of olive fruits in Pakistan at PKR 100 per/ Kg⁵³ as a matter-of-fact under the influence of market dynamics, farmers generally sell olive fruits for PKR150 to 300 per/kg.

51. Small and Medium Enterprises Development Authority, Pre- Feasibility Study, OLIVE OIL EXTRACTION UNIT, Jun 2017. <http://www.amis.pk/files/PrefeasibilityStudies/Olive%20Oil%20Extraction%20Unit%20Rs.%2012.77%20million%20Jun-2017.pdf>
 52. The Pakistan Business Council. Potential of Olives and Olive Oil in Pakistan. March 2022
 53. Punjab Economic Research Institute (PERI). Market analysis for value chain and olive oil consumption in Pakistan.

Olives need to be milled soon after harvesting, preferably within 24 hours, to ensure superior extra virgin quality of oil. At present, for most olive farmers, the oil extraction facilities are located far from their farms and many farmers share one extraction unit, therefore, extraction takes more than the recommended time limit. This negatively affects the quality of oil. Given the widespread olive farms, there is a corresponding need for an extensive network of decentralized olive oil mills close to farms or extraction facilities of bigger size. However, currently, there are only a limited number of oil extraction facilities that were mostly set up by the Pakistani government or in collaboration with international agencies for research and development. The oil extraction machines are imported, hence costly. Due to poor rural infrastructure and fragmentation of farms, it is difficult for most farmers to extract superior quality virgin oil.

Storage is also an integral part of processing but unfortunately, proper storage facilities are domestically unavailable. Moreover, the usage of unsuitable storage containers adversely impacts the quality of olives and olive oil. Pakistan currently imports non-corrosive storage containers that are only accessible to a few farmers. However, the lockable fruit baskets and non-welded stainless-steel containers for olive oil storage facilities provided to the farmers as part of the POCCSP has played role in safe transportation and maintaining the quality of the oil⁵⁴.

Managers and operators of the extraction's units also lack knowledge of best practices for handling olives and processing olive oil. To ensure good quality olive oil, it is important that managers and operators are well informed of the best post-harvest management techniques, including transportation, storage, and handling of olives prior to processing, in addition to the best practices of processing to extract extra virgin olive oil. Agriculture extension services are provided by the provincial agriculture departments. The OliveCulture Project has initiated to provide, at the starting of the crushing season 2022, hands-on training for all the managers and operators of the olive oil extraction units (public and private). As well as for the treatment/cure of the table olive. The activity will be pursued in next season.

2.2.2 Table Olives

In addition to olive oil, table olive is another value-added product that can be processed from olives in Pakistan. Table olives require special techniques for processing. The fruit variety is different, usually bigger in size, and harvesting time also varies according to the maturity stage. Processed table olives can be green or black, with or without seed, whole or sliced. Processing techniques that are presently used by the farmers are all manual with little to no machinery available for quick and efficient processing. Largely table olives are processed manually. USAID has also funded in Potohar the establishment of table olive processing units under the grant matching program in 2018, but there is a shortage of table olives. Allah Dita, an olive farmer that benefited from the USAUD program, informed that although he offers fruit grading, de-Stoning, Slicing and Drying facilities through the olive table processing machinery, there is a shortage of the fruits as they are being used for oil extraction by farmers.

54. Pak Olive, Project Report 2014-2021

Anyway, under the PSDP project three value addition labs or table olive processing units with all facilities, equipment, and chemicals have been installed at BARI Chakwal, Tarnab-Peshawar, and ARI-Quetta.

This is another opportunity area which can be focused on, given that 48% respondents (count: 276) mentioned having no access to value addition labs. And 35% (count: 200) opted for 'not applicable' and 9% (count: 54) said they have no knowledge about the labs⁵⁵.

Even though table olives have demand and future potential in the domestic market, there is very limited focus on the cultivation of olive varieties suitable for the production of table olives. Most of the table varieties that are currently grown in Pakistan are only used for oil extraction. The focus of the government and the farmers, at present, is not on table olives as a viable domestic opportunity, instead, most olive farmers are extracting oil from the olives produced. This is because oil extraction is subsidized by the Government and no such subsidy is available for the production of table olives.

Moreover, there are only few small commercial players involved in the production of table olives, and there is hardly any technology introduced. Small farmers/processors are mostly working with manual techniques for de-pitting and slicing olives and machines are unavailable for commercial manufacturing. One must consider that, unlike olive oil which has other substitutes (Palm/Soya/Canola, etc.), table olives do not have any substitute. This means that with the growing popularity of Mediterranean cuisines and dishes like pizzas, pasta, and sandwiches becoming common in Pakistan, domestic demand for table olives will increase.

55. Study by KHAITY Ai Empowered Farming in Pakistan – www.khaity.pk

3. MARKETING

There is scarce and updated information of the market and little efforts have been made so far to understand the dynamics of the diffusion, product development, supply chain, consumer preferences, and uses, demand and marketing prospects for local and regional markets, leading to missing links for product development and market integration for local olive production. In fact, the study conducted by PERI on the “Market Analysis for Value Chain and Olive Oil Consumption in Pakistan” was in 2016⁵⁶.

Indeed, a lot needs to be done with respect to the branding and certification. Branding and certification are central to the development and improvement of supply or export-oriented olive value chain in Pakistan. In this regard, the regulatory regimes published on November 4 in the Official Gazette of the EU are instructive and must also be adopted by new olive growing countries like Pakistan to achieve compliance with the international standards. These recent regulations are aimed at preventing fraud in olive marketing through enhanced awareness and knowledge by labelling to establish the quality of the olive oil, its origin and instructions for its conservation in optimal conditions⁵⁷. When seen in the context analysis of Pakistan’s olive sector, labelling and certifications emerges as a weakness given the lack of comprehensive and strict regulations. On the other hand, it also represents an opportunity for Pakistan to develop its olive sector on international lines with the help of partner countries and organizations.

Given the increasing awareness about the health benefits of agri-food products such as olives, the demand for olive oil and olive value-added products continues to rise thus providing opportunities for revenue generation from the domestic selling and export of olives.

In terms of access to market, farmers require more assistance in their access and management of the biggest barrier which is the distance.

Obviously, being new in the business of olive cultivation and production, Pakistan needs enhanced cooperation of concerned international and national actors and partners.

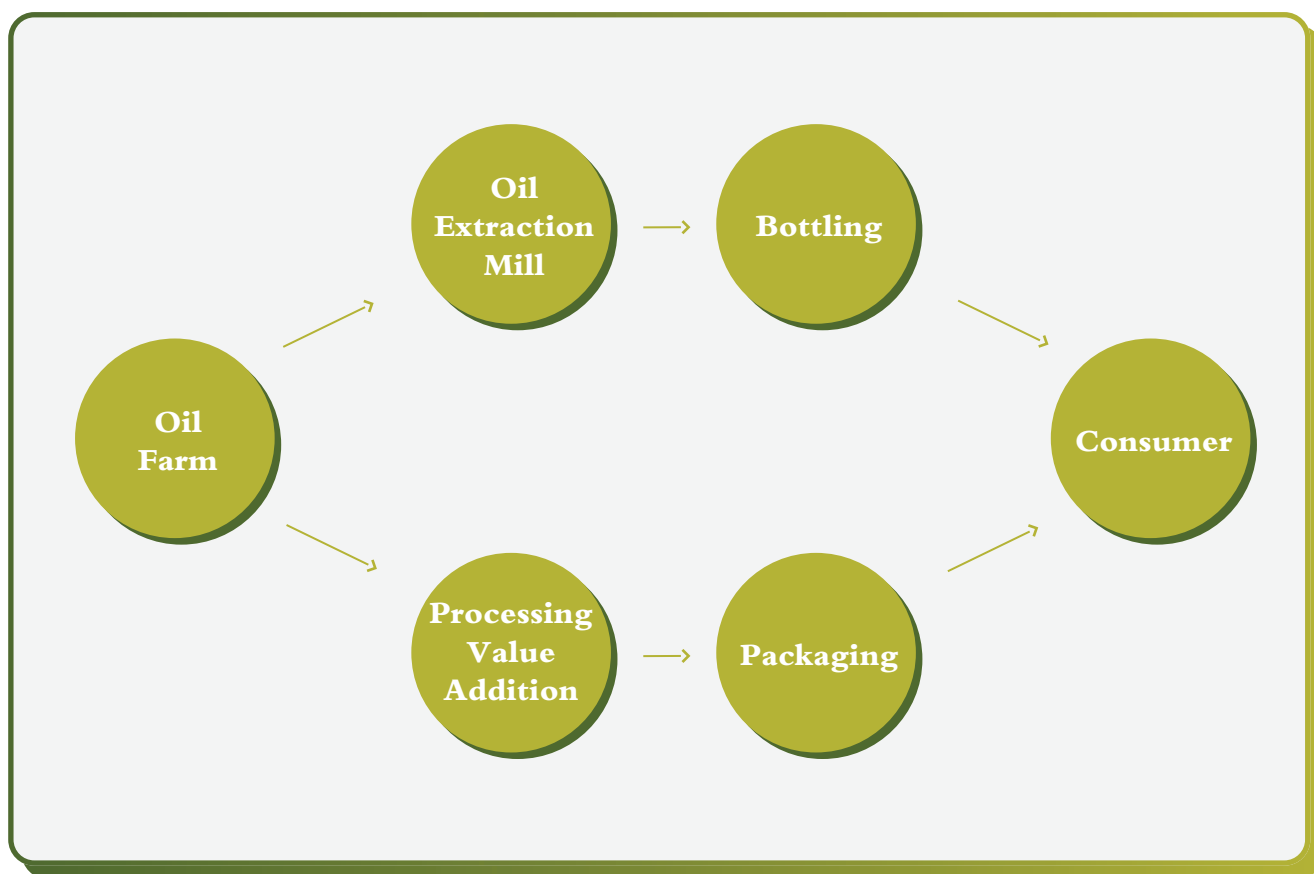
56. The Study conducted by the Punjab Economic Research Institute (PERI) was sponsored by the Italian Development Cooperation through Olive projects implemented in Pakistan.

57. https://www.eldiario.es/castilla-la-mancha/agroalimentaria/nueva-normativa-europea-comercializacion-etiquetado-aceite-oliva_1_9701896.html

3.1 Marketing channel of olive

The value chain concept is quickly gaining acceptance as a viable and profitable strategy in agricultural and food systems. Agricultural and food production can achieve sustainable development goals by systematically integrating social, environmental, and economic factors into all value chain processes and activities⁵⁸. It is important to identify the various channels to determine which one is best for both farmers and consumers. There is a shortage of proper agricultural markets in underdeveloped nations like Pakistan. A study titled “Economics and Marketing of Olive in Punjab”⁵⁹ was conducted in the Potohar to study the cultivation and marketing system of olive. The study determines the trade flows of the Olive Supply Chain as shown in Figure 7.

Figure 7: Flows in Olive Supply Chain

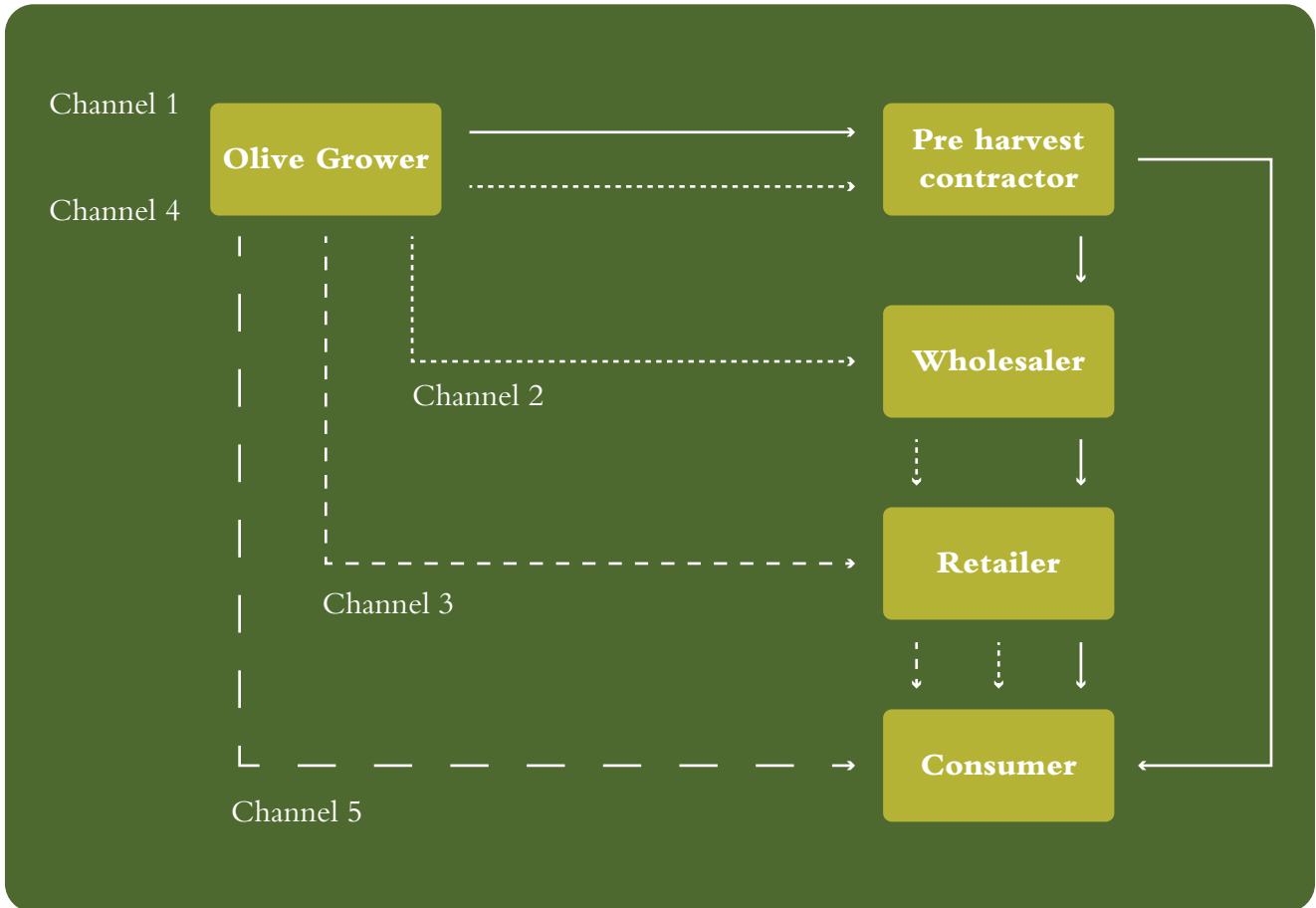


58. <https://journal.unhas.ac.id/index.php/fs/article/view/13293/7114>

59. Shoaib Akhtar et al. (2021). Economics and Marketing of Olive in Punjab, Pakistan. *Journal of Economic Impact* 3 (3) 2021. 202-208 <https://www.researchgate.net/deref/https%3A%2F%2Fdoi.org%2F10.52223%2Fjei3032110>

Based on focused group discussions of farmers, agricultural extension agents, commission agents, retailers, and consumers, the study determines the existing marketing channels in Potohar, which is given below as Figure 8.

Figure 8: Identification of Marketing Channels in Olive Supply Chain



3.2 Domestic demand for olive oil

The import of olive oil is increasing steadily each year.

Notwithstanding their awareness of the relatively more health benefits of using olive, 70 % of non-olive users said they simply could not afford.

Olive oil is not used as a staple cooking oil in Pakistan. Local cuisines, that require deep frying and high oil usage, are reliant on mostly palm oil, sunflower oil, and canola oil. Monthly consumption of olive oil per household, having a monthly income of around PKR 100,000 is only 2 kg. Despite being one of the largest per capita consumers of edible oil, the use of olive oil has been limited due to the following factors:

- **Lack of awareness**

There is low health consciousness in Pakistan in general, in addition to low awareness of the health benefits of olive oil and health issues caused by the consumption of other cooking oils.

- **Price and availability**

The consumer in Pakistan is price sensitive and prefers cheaper cooking oils. This bodes well with the fact that local cuisine uses a large amount of oil for cooking/ frying and most consumers cannot afford expensive oil in large quantities. Several restaurants and ‘dhabas’ (local restaurants) across Pakistan use cheap oil and butter. Whereas, most olive oil is imported, expensive, and not readily available other than at high-end superstores in the metropolitan cities.

3.3 Import of olive oil

To meet the domestic demand, most of the olive oil is imported by Pakistan. From a total import bill of USD 3.6 billion of edible oil, USD 3.4 billion worth of palm oil was imported in 2021, whereas USD 13 million worth of olive oil was imported, representing only 0.36 percent of total edible oil import⁶⁰. This means that the demand for olive oil in Pakistan is significantly low as compared to the popular and highly consumed palm oil.

Although Pakistan is one of the leading per capita consumers of cooking oil (estimated at around 22 kg per person annually), only 4,488 tons of olive oil was imported by Pakistan as compared to around 3.1 million tons of palm oil, that is 94.6 percent of Pakistan’s total edible oil import 2021⁶¹. Approximate per capita consumption of olive oil in Pakistan is 0.017 kilograms annually, which is very low as compared with countries like Greece, Spain, Italy, Morocco and Turkey, which are the leading producers of olive oil in the world. This also implies that the countries with high domestic consumption of olive oil are those who have invested in the olive sector the most.

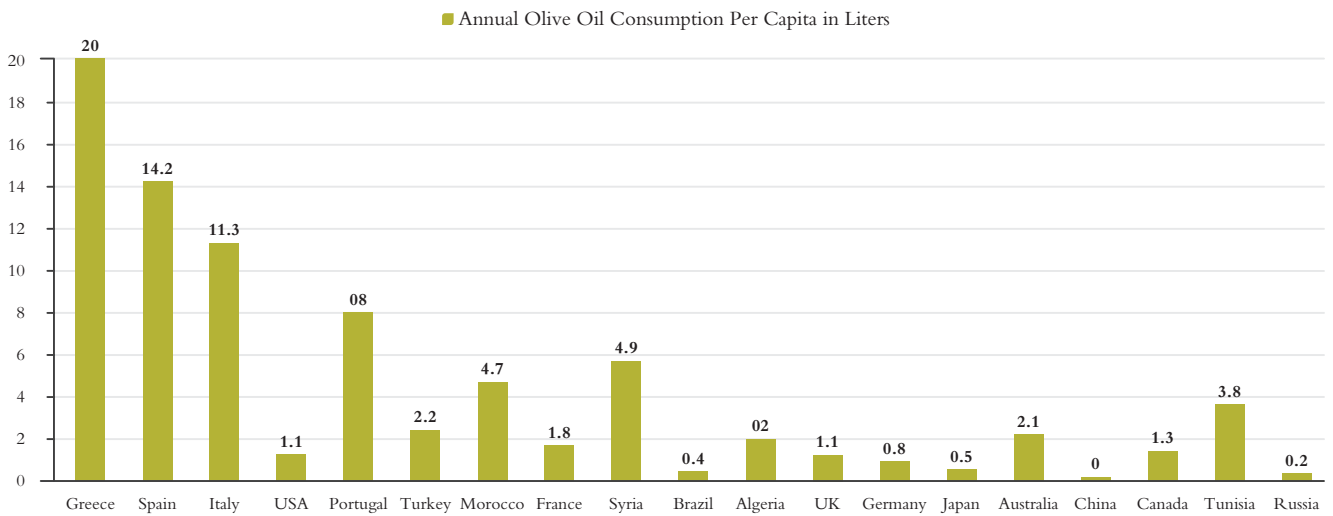
The figure 9⁶² below shows the per capita consumption of olive oil in different countries in the world.

60. ITC Trade Map

61. ITC Trade Map

62. Centra Foods. Who in the world consumes the most olive oil?

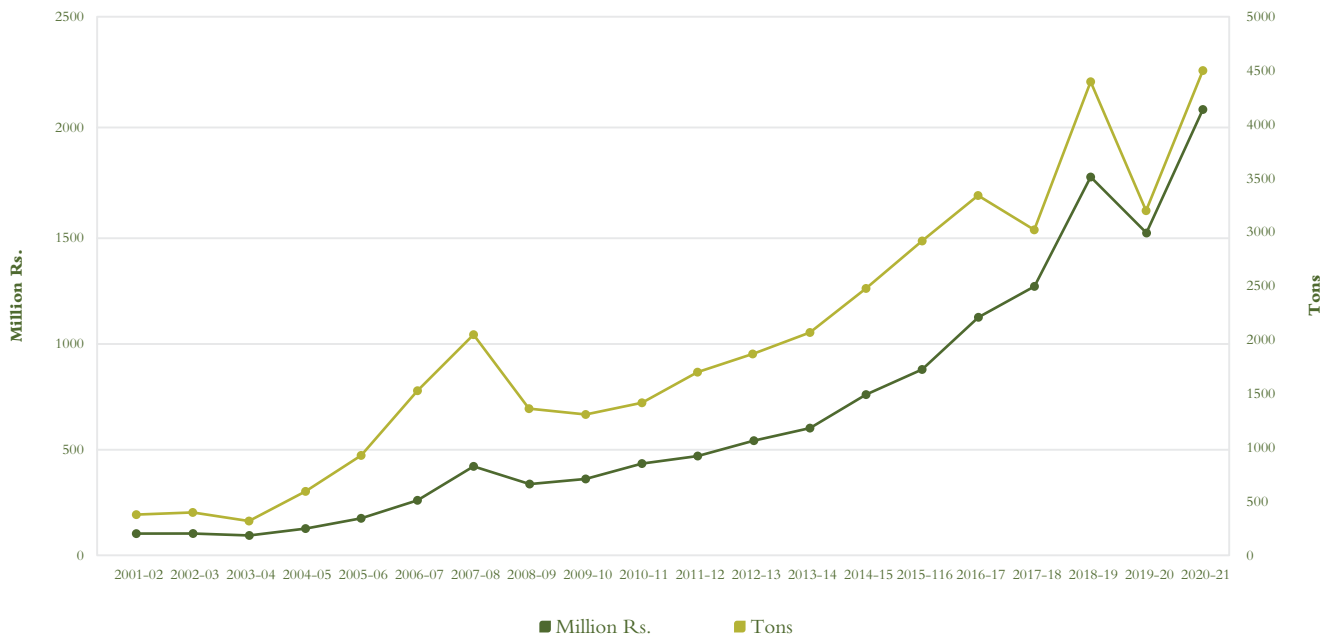
Figure 9: Consumption of olive oil per capita in the World



Source: IOC forecast reports November 2013;
Population data: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html>

Despite low domestic consumption of olive oil, it is encouraging to see that demand for olive oil in Pakistan over the last decade has increased, importing from PKR 36 million (253 tons), in 2001-2002, to PKR 2,107 million (4,590 tons) in 2020-2021.

Figure 10: Import of olive oil in Pakistan



Source: Pakistan Bureau of Statistics 2020-21

The figure 10 above illustrates the rising trend of olive oil import by Pakistan from 2001-02 to 2020-21.

As depicted in the figure above, the consumption of olive oil has increased in Pakistan over time. This can be attributed to the increasing preference for a healthier diet, growing awareness in consumers regarding the benefits of olive oil, and wider penetration of international cuisines in Pakistan that use olive oil as a key ingredient.

Furthermore, the increasing consumption of olive oil provides opportunities for commercial players to enter the market segment for olives and capture the segment of customers that are currently using imported olive oil⁶³. Another opportunity lies in capturing export markets, however, as a relatively new development, research on the olive cultivation and marketing remains limited to a few research studies and reports which have been cited throughout this writeup. Thus, there is little market research conducted to assess the true potential of Pakistani olive oil in the international markets which represent a weakness and an opportunity to focus on by concerned stakeholders, researchers and agriculture businesses.

3.4 Constraints in market development

The main constraints in market development have been identified as follows:

a. Lack of cost-effective packaging

Retail packaging of olive oil needs to be appropriate in order to preserve the quality. Olive oil bottles are usually made of glass, to avoid corrosion, and tinted to avoid oil exposure to sunlight. In Pakistan, most of the time there is a shortage of new glass bottles, therefore retailers and processors are forced to sell extra virgin oil in used bottles. Glass bottle manufacturers do not sell empty bottles less than a minimum number, which is generally more than what is required for the limited olive oil production and sale. Plastic bottles are also being used to package olive oil, which is detrimental for the quality.

b. Insufficient branding of Pakistan's olive

Few efforts have been made so far for promoting national olive oil, barring an annual Olive Festival in Punjab where some processors and retailers have an opportunity to market and sell their products. Some efforts have been made to explore the international markets or participate in trade shows and exhibitions where oil produced in Pakistan can be displayed and sampled, although it is not possible, in principle, to export products that are not complying with international standards.

c. Absence of market linkages

Another weak area is the absence of business linkages among farmers, processors, wholesalers, and retailers. Currently most of the giant retail chains do not sell locally produced olive oil, which is either being sold through word of mouth, small organic food shops, or online through social media platforms (Facebook pages).

63. The Pakistan Business Council. Potential of Olives and Olive Oil in Pakistan. March 2022

d. Absence of quality standards and testing facilities

Currently, olive farms and processors have not acquired any certifications such as GAP (Good Agricultural Practices), HACCP, or ISO⁶⁴. There are hence no traceability standards, which are required in the international market. The olive oil is usually not tested before sale and it is uncertain whether it qualifies as a virgin or extra virgin oil. Labs and testing facilities are limited and expensive for the processors to test the quality of their product. However, the Promotion of Olive Cultivation on Commercial Scale in Pakistan – Phase II/PSDP (POCCSP-II) Project has the provisions for the establishment of the needed laboratories and sensory rooms, as well as the Olive Culture Project is supporting the activity by designing the premises and by providing training to the technicians.

e. No participation of commercial players from the private sector

None of the large food processing companies have entered the olive market due to the lack of consistent and good quality supply of olives. Edible oil processors in Pakistan currently require anywhere between 100 to 400 tons of olive oil per annum, which is difficult to source. This is why large retail and wholesale chains in Pakistan do not sell locally produced olive oil. Private sector investments in olive growing, milling, and storage should lead to an increase in volumes of high-quality extra virgin olive oil that has a potential in the domestic and export market.

f. No demand-side strategy

Despite the encouraging results so far obtained in the country by the government with focus on the supply-side strategy, very little market-based research has been conducted so far as previously mentioned. Existing consumer demand for olive oil and its value-added products is very limited in the domestic market.

Olive cultivation is considered a strategic intervention to convert degraded/ marginal lands into productive olive groves. It will not only help increase indigenous edible oil production in the country but will also mitigate climate change issues and provide sustainable livelihood to rural communities in regions where opportunities outside agriculture are limited. Further, highly productive agricultural lands and freshwater resources are limited and are primarily utilised for traditional food and cash crops.

64. HACCP stands for Hazard Analysis Critical Control Point, ISO stands for International Organisation for Standardisation

4. LEGISLATION, CERTIFICATION AND POLICIES

Regarding the policies, the need to set up a national framework for olive-oil value chain was identified few years ago⁶⁵. The risk of not having such a framework is that several components of the value chain are in some cases lacking or developed in isolation, dispersed and do not benefit of existing knowledge and past experiences. The involved sectors span from sapling production/import to cultivars choice, plantations, phyto-sanitary aspects, pest control, harvest, processing options, commercialisation, quality standards, legal issues, monitoring, research, etc.

The Pakistan Government has mobilised relevant organisations established for the purposes of research and development in the agriculture sector to fully realise the potential of olive production in the country to achieve the objectives of self-reliance in edible oils and climate change related mitigation and adaptation goals as discussed in the preceding sections. In this regard, the formation of an ‘Olive Advisory Council’ was proposed by POCCSP (II) Project in order to address the bottlenecks in olive value addition as well as to promote olive cultivation across the country to exploit the existing production potential.

The recently created Pakistani Olive Stakeholder Group is composed of representatives from Pakistan Chambers of Commerce, Pakistan Business Council, Academia, women and men entrepreneurs, researchers and progressive growers, which shall provide inputs for the formulation of an appropriate mechanism.

The establishment of the Pakistani Olive Stakeholder Group under the MNFS&R has been finalized through the Italian Project OliveCulture. The proposed Pakistan Olive and Oil Council would be established with the approval of the MNFS & R preferably through an Act of Parliament or a Presidential Ordinance as occurred in several other similar contexts like the establishment of Pakistan Tobacco Board. The proposed Council would be responsible for matters relating to quality, standards and certification in the olive sector, besides providing guidelines for policy formulation. The Pakistani Olive Stakeholder Group has drafted the PAKISTAN OLIVE AND OLIVE OIL COUNCIL: ESTABLISHMENT AND REGULATIONS comprising of 22 Articles along with their subsections explicating the purpose, scope, structure and duties of the Council (see Annex 1).

65. Giuliano Soncini, Riccardo Montanari, Domenico Bruzzone (2016). APPRAISAL OF PAKISTANI OLIVE OIL VALUE CHAIN, Key Findings and Recommendations, Final Report. Agenzia Italiana per la Cooperazione allo Sviluppo (AICS), Ministero degli Affari Esteri e della Cooperazione Internazionale (MAECI), Islamabad, August 2016

Due emphasis has been given for the strengthening of capabilities of both private and public sectors for the nursery raising, value addition, marketing etc. Private sector will be encouraged for business in entire value chain. Therefore, focus has been given for creating an enabling environment through training and capacity development of private sector for production of local nursery plants.

The last political initiatives launched by the structures of Government are summarized as follows:

- The Ministry of Commerce’s Strategic Trade Policy Framework (STPF) 2020-25 (MoC, 2021) envisages that in collaboration with the provincial governments along with the related private sector stakeholders, will work towards the mechanization of the agriculture sector as well as integrate and upgrade the agriculture sector into the global value chain and Agri-businesses, participating in the production processes in the entire value chain. It is a governmental support to Olive-oil supply and value chain, as olive sector is an integral part of agriculture, hence could avail the benefit of this trade policy.
- The M/o National Food Security and Research (MNFSR) describes policy measures in coordination with provinces to improve market intelligence, marketing access and regulations, grading and packaging practices, promote the use of ICTs to transfer market information to producers, promote farmers’ marketing systems and establishment of e-marketing of agriculture products. Market niche is in expansion with positive trend of demand of olive oil.
- The Ministry of Commerce has launched a national brand-building strategy/ initiative called “Emerging Pakistan”. This initiative will focus on supporting traders, investors, individuals, tourists, corporations, and firms in developing and acquiring brands. The olive oil processors could avail this opportunity of branding their product. Medium and long-term support from international donors is an additional prospect for olive sector development.
- The government under Ministry of Commerce has implemented an act to recognize and protect the geographical indications for public interest and to advance the economic reform and development of the least developed areas. This act is called as Geographical Indications (Registration and Protection) Act, 2020. It identifies goods, including agricultural goods, natural goods or manufactured goods originating or manufactured or produced in a territory, region or locality as determined by the country. Registering the local olive and olive oil in corroboration with this act provides an opportunity to enter the global value chain.
- The rural development policy options of the Ministry of National Food Security & Research aim to the introduction of the olive oil supply and value chain in some of the poorest Districts of the country, involving local community, waste/marginal lands (more than 7 million hectares) where cash crops cannot be cultivated but could be successfully planted with olive trees.

5. RESEARCH, EDUCATION, TRAINING AND EXTENSION

As an agricultural country Pakistan has a good number of educational, research and training institutes. Yet, as the old adage goes that there is always room for improvement in terms of quality and quantity, especially today when innovations and research are in continuous progress. Currently, the agriculture sector employs around 45% of the total workforce and accounts for 24% of the national GDP. A number of public-private organisations, firms/ companies and agriculture institutes/ universities are engaged in research focusing on the socio-economic and environmental benefits of olive cultivation.

Figure 11: An olive farmer and a researcher exchanging knowledge and information



In this regard, some pertinent organisations are working in research at the Centre and across the federating units of Pakistan as follows:

- National Agricultural Research Centre, Islamabad
- Barani Agricultural Research Institute, Chakwal
- Agricultural Research Institute, Tarnab, Peshawar
- National Tea & High-value crop Research Institute, Shinkiari, Mansehra
- Agricultural Research Institute, Sariab, Quetta
- Balochistan Agricultural Research & Development Centre, Quetta
- Department of Agriculture, Muzaffarabad
- Mountain Agriculture Research Centre, Juglot, Gilgit

In an effort to realise Pakistan’s potential for olive cultivation and production, the government has been taking several facilitative measures as part of POOCSP Project. In complementing Table 2, following activities have been carried out:

1. Provision of certified, true-to-type olive plants (all were imported),
2. Installation of drip irrigation systems at the farmer’s sites,
3. Specialized double-shaded olive nurseries for plant propagation,
4. Installation of Olive oil extraction units,
5. Support to provincial departments for conducting adaptability trials of new exotic varieties,
6. Support in the establishment of olive mother blocks–GPUs,
7. Plant propagation locally,
8. Training to the value chain stakeholders,
9. Up-gradation of olive value-addition labs,
10. Installation of weather stations.

Most significantly, as an integral part of the POOCSP, the training and capacity development program were conducted for stakeholders comprising farmers, investors, processors, researchers, and extension agents. During the 63 training more than 4370 farmers/stakeholders were given hands-on training to enhance their capacities with regards to best practices in olive farming, pruning, nursery establishment, and fruit processing, packing, and marketing during 2014 to 2021. To this end, local resource persons having mastery on the subject matter were employed⁶⁶.

The OliveCulture Project during its first season has trained through Italian Specialist, from September to November 2022, 241 beneficiaries (scientists, technicians, farmers and women) on Good Agricultural Practices (GAP), as well as N. 360 technicians and stakeholders on Olive Oil and Olive Table processing. By providing theoretical and practical sessions in Balochistan, Khyber Pakhtunkhwa including the New Merged Districts, and Punjab⁶⁷.

66. Pak Olive, PROJECTREPORT2014-2021

67. OliveCulture Project – Project Progress as per Approved 1st Annual Work Plan – November 2022

Research, development, and training of stakeholders are being conducted through specialized dedicated institutions like CEFORT (Center of Excellence for Olive Research and Training) established by the Government of Punjab at BARI Chakwal with technical support of USAID Pakistan. An increasing number of people are getting hands-on training and experience in olive farming, nursery raising, value-addition, brand development, and marketing of the product.

The emphasis on evidence-based decision-making currently necessary for governments and organizations puts a greater focus on reliable data collection, database and statistics. The role of measuring and monitoring activities, results and progress towards development goals and targets, also the improvement of the value chain, is fundamental. It is unclear if a proper system of monitoring and evaluation was set up and is still working, which type of information was/is collected, if it is standardised and, finally, if collected figures are processed.

6. SWOT ANALYSIS

The SWOT analysis has been in vogue for decades and is one of the most widely used method or strategic assessment tools for the development, assessment, and implementation of a strategy. The SWOT is an acronym of Strengths, Weaknesses, Opportunities and Threats. These four elements are used to form a 4-box method for assessing the viability of a strategy and initiative in a particular context. Therefore, contextual knowledge is a vital and integral part of the SWOT analysis.

By employing this four-pronged framework of internal strengths and weaknesses, and external opportunities and threats, the SWOT not only offers a clear picture of a particular context but also provides unique insights for an effective implementation of a strategy. It goes without saying that policy makers, business, corporations and individuals employ the SWOT analysis method as a simple approach to set realistic targets by helping in identifying the various internal strengths and weaknesses and external threats and prospects. Therefore, the strengths and weaknesses with respect to the olive sector in Pakistan are considered internal to the sector, representing the current situation, while the opportunities and threats are classified as external (e.g., presented by the environment external to the thematic area) and represent a possible future.

The SWOT analysis of the whole Pakistani olive supply chain is structured in four thematic areas:

1. Production and processing (nursery, farm, mill, etc.), regarding technical and environmental aspects
2. Marketing, about commercial aspects
3. Legislation, certification, and policies, regarding administrative, financial and development support
4. Research, education, training, extension service, regarding scientific support, teaching, exchange of knowledge, technical assistance, etc.

It was prepared by the stakeholders' group (Pakistani Olive Stakeholder Group) through several working sessions together with Dr. Cardone, then validated through an online work meeting.

Matrix for each thematic area:

- A. Production and processing (Table 7)
- B. Marketing (Table 8)
- C. Legislation, certification, and policies (Table 9)
- D. Research, education, training, extension service (Table 10)

Table 7: SWOT Matrix on Production and Processing

Strengths

Internal, present

1. Millions of wild olive oil plants (more 80 mln) already exist in Pakistan which proves its suitability for olive cultivation.
2. Olive plantation offers a unique opportunity to utilise the waste/marginal/virgin lands of Pakistan where cash crops cannot be cultivated.
3. Olive oil yield in some of the geographical regions of Pakistan is very promising.
4. Potential to increase the productivity (yield/ha) by applying GAP/SOP in field and processing.
5. Some capacity and infrastructure to produce seedlings already existing.
6. Olive growing mitigates climate change, increases biodiversity and carbon sinking, reduces soil erosion and desertification, improves landscape, and reduced water consumption by irrigation.
7. Increasing efficiency of water irrigation, by micro-irrigation systems.
8. Public Sector (Federal and Provincial) establishes olive oil extraction facilities.
9. Feasibility of organic farming.
10. Potential profitability of olive farms, depending on good practices, facilities, investments, etc.

Weaknesses

Internal, present

1. Insufficient olive growing surface despite the increasing demand of olive oil.
2. Overall, low productivity depending on non-adoption of good agricultural practices, and shortage of water irrigation, particularly in growing resulted in high mortality of olive saplings in farm.
3. Scarce supply of inputs (e.g., fertilizers, pesticides, water) and expensive.
4. Scarce knowledge of good farming practices among technicians, olive farmers and olive processors.
5. Inconsistent good quality supply of olives, unavailable to processors.
6. Fragmentation of farms which increases operative costs.
7. Scarce use of appropriate mechanization and tools in field for cultivation and harvesting.
8. Olive growers rarely use plastic box and often take more than 48 hours to transport the olives from the field to the processing unit.
9. Olive processing mills are often located at long distances and do not meet the demands of farmers.
10. Lack of clusters for farmers (cooperation and association).
11. Lack of awareness of potential development of olive sector.

12. Scarce focus on table olives, in fact they are often processed to make olive oil and only few farmers process table olive unfortunately.
13. Scarce focus on reuse of vegetation waste and by-products (pomace, pallets, etc.) from processing units.
14. Scarce attention on no-food products from olives (e.g., soap, skin cream) and on olive wood
15. No olive organic farming, and production of organic olive oil and preserved table olive.
16. Pakistan is not traditionally an olive producing country, currently the production of olives and olive oil is relatively new and at an early and growing stage of development in Pakistan.
17. Storage facilities are domestically unavailable.

Opportunities

External, future

1. Nursery plants are encouraged under the project Promotion of Olive Cultivation on Commercial Scale in Pakistan (POCCS)
2. Suitable areas for olive growing are vast (over 4 million hectares), particularly in Baluchistan, Khyber Pakhtunkhwa, Potohar Punjab, New Merged Districts, where the soil and weather conditions are favourable. Even a few areas of Sindh province are naturally suitable for Olive cultivation which are Ghorakh Hill Station, District Dadu, Umarkot in Tharparkar District.
3. Pakistan's agriculture sector is a major source of employment for a significant proportion of the Pakistani labour force, particularly good availability of workers in olive rural areas.
4. More initiatives for the resilience to climate change in the World.

Threats

External, future

1. Continuous discovery of new emerging pests and diseases on agricultural sector.
2. Discovery of new technological innovations may not be easily and timely received and adapted by the Pakistani research system.
3. Limited support for farming from Research & Innovation System (weather stations, laboratories, extension services, etc.).
4. Scarce availability of inputs and machine tools that are also more and more expensive.
5. Climate change may negatively impact the crops cycle, particularly in Pakistan which is among the top ten most vulnerable countries on Climate Risk Index.
6. Groundwater resources may be depleted by a large expansion of the irrigated crops.
7. Loss of skilled labour, for migration of people from rural to urban areas, from Pakistan to more developed countries.

Table 8: SWOT Matrix on Marketing

Strengths Internal, present	Weaknesses Internal, present
<ol style="list-style-type: none">1. Already established plantations once in production could cover the current consumption of olive oil in Pakistan.2. Introducing Pakistan's national brand under name of "PakOlive" as Geographical Indication.3. New recipes of certain value-added products i.e., Olive Pickel, Jam, Biscuits, Cake, Olive Morrabba etc., which has also been shared with the private sector for marketing.4. Some private entrepreneurs are doing business of olive products.	<ol style="list-style-type: none">1. Low quality of olive oils produced in some areas by some farmers.2. High demand of domestic olive oil, therefore, it is scarcely available in domestic market.3. Limited consumer demand for olive oil and its value-added products in the domestic market, as well as table olives.4. Olive oil purchasing is mainly used by restaurant industry and a few consumers from the upper/middle income groups.5. Lack of cost-effective packaging.6. Absence of quality standards and testing facilities, particularly necessary to export.7. Scarce consumer's awareness of the quality of olive oil and the origin of production.8. Distribution system is also inefficient.9. Inadequate participation of commercial players from the private sector in marketing domestically produced olive oil.10. Insufficient knowhow and awareness concerning olive oil marketing/selling dynamics.11. No demand-side marketing strategy.

Opportunities

External, future

1. Olive oil is a niche market that has a potential to grow because of the positive trend of consumer's demand of olive oil, by more attention to healthier diet.
2. The government also offers subsidised services and inputs to olive farmers in pursuit of promoting olive on commercial scale.
3. Increase of domestic demand for table olives with the growth of fast-food and restaurant industry.
4. The present ban on imports is an opportunity for the domestic olive oil producers to fill the market gap and replace the imported olive oil with the locally produced olive on the retail shelves.

Threats

External, future

1. Import of olive oil mainly from Spain, Italy and Turkey almost covers the current Pakistani demand, but not the potential and increasing domestic demand.
2. Cultivation of olives in Pakistan's neighbouring countries like Afghanistan, India, and Iran is another source of concurrency, competitiveness and increasing import of olive oil.
3. Limited demand of organic products in Pakistan.
4. Low income for domestic household doesn't permit the sufficient consumption of olive oil (olive oil costs more than seed oils).
5. Declining World purchasing power due to rising inflation, the relatively costly olive oil and olive products pose serious threats to the international olive market.
6. Seed oil is more competitive than olive oil.
7. Edible oil and oilseeds are among the largest food and feed imports in Pakistan.
8. Low health consciousness, in general, and low awareness in consumers of the health benefits of olive oil and health issues.
9. Too much inflow and import of non-certified olive oil is a serious threat to locally produced olive oil.
10. Increasing of cost of inputs (fertilizer, fuel, energy, etc.)

Table 9: SWOT Matrix on Legislation, Certification, and Policies

Strengths

Internal, present

1. Olive oil sector is under consideration to be given priority in the agricultural policies at National and Provincial level, therefore increasing public/private investments addressed to the sector (from growing to consumption).
2. Important medium and long-term financial and technical support from international donors to olive sector.
3. Olive cultivation can go a long way in reducing poverty and improving socio-economic conditions of Pakistan predominantly and impoverished rural population and in the development of cottage industry with the involvement of youth and gender in private sector.
4. Olive oil is considered the best and most blessed one because of religious beliefs and scientific reasons by the Pakistani population. The
5. Promotion of olive production contributes towards National Development Agenda 2030 attaining Sustainable Development Goals (SDGs) including Goal 1 (No poverty), Goal 2 (Zero hunger) Goal 8 (Decent work and economic growth), Goal 12 (Responsible consumption and production), Goal 13 (Climate design), Goal 15 (Life on land), and Goal 17 (Partnerships)

Weaknesses

Internal, present

1. Currently, olive farms and processors have not acquired any certifications such as GAP (Good Agricultural Practices), HACCP, ISO, Organic Agriculture, Geographical Indication.
2. No functional certification system concerning olive plants propagation complying with international standards.
3. Absence of operative key legislation and regulatory framework concerning traceability, quality requirement, food safety, development policy, marketing.
4. Unavailable a comprehensively documented feasibility and business plan for medium to large investments.
5. Lack of free services and government facilities for the carriage/ transportation of olive oil leading to increasing cost of production and dissatisfaction of olive farmers with sale price.
6. Lack of establishment and experience in small farmers' association and cooperation.
7. Scarce development to multidisciplinary farming as tourism and handcraft.
8. Lack of a National Strategic Plan for the development of olive sector
9. Table olives are not given consideration by the government and farmers as a viable domestic opportunity.

Opportunities

External, future

1. International projects by international agencies, organizations, and foreign countries offer a great opportunity to increase the local production of edible olive oil.
2. Rural development policy options for the increasing and improving the olive oil supply and value chain, particularly inside suitable lands.
3. Prospective certification and recognition of IOC will go a long way in helping Pakistan gain access to the lucrative global olive oil market.
4. Ministry of Commerce, Ministry of National Food Security and Research, Ministry of Planning have just launched Programmes and initiatives on the development of food value chains and supply chains.

Threats

External, future

1. Govt. facilities like loans and subsidies are not being provided to the small entrepreneurs.
2. Govt. doesn't purchase farmers' production when they have market problems in selling their crops.
3. Villages in Pakistan are not attractive lacking daily life facilities like hospital, standard schools, markets, post office.
4. Global and national economic crisis causes lower incomes which reduce the consumer's purchase of more expensive food products such as EVO in respect of seed oils.
5. In Pakistan, foreign companies are having monopoly, and own interest and not to Pakistani economy.
6. Rural people are moving towards cities, therefore urban areas are increasing, and utilized agricultural area is being reduced (urbanization).
7. Political instability slows foreign and national investors, such as in the emerging olive sector.
8. Govt. facilitates imports by eliminating tariffs and duties on all oilseeds.
9. Rural areas of the country remain underdeveloped and in many instances are facing abject poverty and food insecurity.

Table 10: SWOT Matrix on Research, Education, Training, Extension service

Strengths Internal, present	Weaknesses Internal, present
<ol style="list-style-type: none">1. Local public research and education institutes dedicate human resources and structures to growing olives and to processing.2. Presence of an institutional network of international research and education Organizations operating in olive sector.3. Training and seminars are typically conducted by the Government's departments.	<ol style="list-style-type: none">1. Not complete knowledge of the characterises of local and international varieties, particularly on their quality and adaptation to several rural areas.2. Low knowledge of the good practices in farming, processing and marketing.3. Scarce knowledge and awareness of the health-nutritional value of EVO.4. Lack or unavailability of trained and skilled workforce to carry out various functions i.e., pruning, harvesting, drip irrigation system, etc.5. Few relievable local data, not yet organized and systematized on cultivation techniques, cultivars performances, olive oil costs of production, and absence of good monitoring systems.6. Limited market research conducted to assess the true potential of Pakistani olive oil in the domestic and international markets.

Opportunities

External, future

1. Awareness and guidance through social media platforms for farming and marketing are on the rise.
2. Good communication tools (TV, Radio, and Internet) are useful to disseminate information and training the farmers through campaigns and programmes.
3. Vast knowledge and research available internationally on olive farming and processing which can be used by Pakistani farmers.

Threats

External, future

1. Continuous discovery of new emerging pests and diseases on olive plants.
2. Discovery of new technological innovations may not be easily and timely received and adapted by the Pakistani research system.
3. Limited support for olive farming from Research & Innovation system (weather stations, laboratories, extension services, etc.).

7. NEEDS AND POLICY GAPS

According to the SWOT analysis and in order to the thematic areas, the most important needs and policy gaps for the Pakistan olive sector from farm to fork are as follows:

a. Production and processing

- a. Increase the olive growing area on olive areas, moreover on marginal and virgin lands, also to mitigate climate change
- b. Certify the phytosanitary status and variety of olive tree seedlings and reduce mortality in the field
- c. Improve the yields in field and in mill
- d. Increase the availability and affordability of inputs (pesticide, fertilizer, water, etc.) and machines
- e. Improve the quality of the olives, the olive oil and the pickled olives
- f. Improve the storage and packaging technologies
- g. Produce organic olives and organic olive oil certified by certification body
- h. Foster a homogeneous territorial distribution of oil mills in olive areas
- i. Improve the mechanization system
- j. Increase and improve the production of no-food products and by-products (soap, wood, etc.)
- k. Improve the farm profitability by decreasing costs and/or increasing revenues

b. Marketing:

- a. Reduce the import of seed oils
Increase the knowledge and awareness of consumer on health benefits of olive oil to promote
- b. demand
- c. Boost the consumption of olive oil and tables olives, particularly domestic ones

c. Legislation, Certification, and Policies

- a. Develop new key legislation and update the existent regulatory framework, to establish the registration of business, and to ensure compliance with international olive and olive oil related standards (sanitary, quality, trading, export, etc.)
- b. Improve the certification system, particularly about international quality scheme (GAP, HACCP, ISO, etc.) and organic agriculture
- c. Encourage the horizontal and vertical cooperation in supply chain and value chain
- d. Establish the multidisciplinary of agriculture considering tourism and handcraft
- e. Increase the subsidies for quality production
- f. Increase credit to farmers

- g. Halt the migration of the population, in particular of young people and the skilled workforce, from rural to urban areas
- h. Boost international cooperation and investments from public and private donors
- i. Establish the proposed Pakistan Olive and Olive Oil Council
- j. Draft a national olive strategic plan, and a national action plan for organic agriculture

d. Research, education, training, extension service

- a. Boost the knowledge and adaptability about different varieties to diverse regional conditions
- b. Improve the knowledge of good practices on farming, processing, transport, trading, marketing
- c. Increase the spread of quality standards and certification system
- d. Develop geographical indications
- e. Assess and improve the sustainability (environmental, economic and social) of the domestic olive oil sector, and research on local adaptation of domestic and international varieties
- f. Enhance the availability of trained and skilled workers
- g. Boost the extension service to transfer the good practices and innovations to local operators

8. STRATEGIC OBJECTIVES

The most important strategic objectives for the holistic development of the Pakistani olive Value Chain sector are described below for each thematic area, according to the methodology, that intends to combine the identified strengths and weaknesses with the opportunities and threats to define the strategic objectives for each thematic area:

a. Production and processing

- a. Increase the olive growing area using the suitable areas for olive cultivation particularly in Baluchistan, Khyber Pakhtunkhwa, Potohar Punjab, New Merged Districts, where the soil and weather conditions are more favourable to olive orchards and less to other cash crops, also considering the high availability of workers. Moreover, the increase in the area planted with olive groves can mitigate the increasing of the effects of climate change.
- b. Improve knowledge, experience and know-how about olive oil and table olives production at farm, processing, trade level.
- c. Improve and modernize mechanization and equipment for more effectiveness and competitiveness in farming, processing transport, storage, packaging and marketing.
- d. Increase the new techniques and tools for the more efficiency of water irrigation (smart irrigation systems), considering water as increasingly scarce and expensive input of production.
- e. Increase organic farming as a pathway for mitigation climate change.
- f. Improve the profitability of farmers, consequently the income of workers to foster the reduction of migration of people from rural areas to urban area and/or other countries.
- g. Foster the cooperation among farmers to improve the business.
- h. Encourage the cooperation among operators in supply chain to improve the management and competitiveness.

b. Marketing:

- a. Increase the consumption of olive oil and table olives considering the current production and the suitable areas for olive cultivation, moreover, taking in account the positive trend of consumer's demand of healthier foods, and the increasing public support in promotion.
- b. Improve the quality of olive oil through certification and standardization on farm and mill scale to respond to the demand of healthier diet and to be more concurrency than imported olive oil and seeds oils.
- c. Promote the brand "PakOlive" to reduce the concurrency and competitiveness of imported olive oil products, and to improve the quality standards.
- d. Promote new recipes of certain value-added products to respond to consumers' demand.
- e. Modernize the marketing techniques and strategies to increase the added value.

c. Legislation, Certification, and Policies

- a. Draft and implement a National Strategic Plan for the development of olive sector.
- b. Update legislation and implement an efficient national framework for the organic sector (e.g. National Action Plan for Organic Agriculture).
- c. Improve the regulatory framework for plant propagating material (i.e. seedlings), quality standards (e.g. organic farming, geographical indications, Global Gap), certification system (genetic and sanitary plant, and quality products), food safety, traceability, import, export.
- d. Establishment of the Pakistani Olive Oil Council, to address all the regulatory, certification and policy issues pertaining to the olive sector.
- e. Develop a joint approach bringing together the Ministry of Commerce, Ministry of National Food Security and Research, Ministry of Planning, Development and Special Initiatives, Ministry of Federal Education and Professional Training, to optimize the programmes and financial resources for the development of the value chain and supply chain in the olive sector.
- f. Take more advantage of the increasing financial resources by international agencies and foreign countries for local investments in olive sector at public and private levels.
- g. Increase subsidies to the actors of olive value chain and the setting-up cooperatives among the operators horizontally and vertically.
- h. Develop the multidisciplinary agriculture as tourism and handcraft to mitigate the migration of rural population to urban area and foreign countries.

d. Research, education, training, extension service

- a. Boost the research, education and training system, based on new and efficient structures (e.g., laboratories), and more and valid human resources.
- b. Develop the extension service system to transfer knowledge and information to operators along the supply chain, also using new ITC systems.
- c. Enhance the partnership among International, National and Research Centers.
- d. Set-up a National efficient data collection system.

9. ACTION POINTS

The most important strategic objectives for the holistic development of the Pakistani olive Value Chain sector are described below for each thematic area, according to the methodology, that intends to combine the identified strengths and weaknesses with the opportunities and threats to define the strategic objectives for each thematic area:

- a. Subsidies for inputs and tools at cultivation and processing scale (seedlings, eco-friendly pesticides, fertilizers, herbicides, pheromones, nets, plastic boxes, glass bottles, stainless steel cans, etc.).
- b. Investments in physical assets for development, modernization and adaptation (plantation, operating equipment and machinery, agricultural vehicles, irrigation system, reservoir, cistern, storage, farm shop, solar panel, country road, etc.).
- c. Subsidies for organic agriculture (conversion, control and certification, marketing).
- d. Promotion of extra virgin olive oil and pickled olives (fairs, seminars, conference, education campaigns in schools, information campaigns, promotion materials, etc.).
- e. Support to transfer of knowledge to olive operators involving training system, extension service, ITC system.
- f. Support to research and innovation (experimental and demo fields, laboratories, smart farming, agriculture 4.0, digital transformation, etc.).
- g. Establishment of producer cooperatives or association in the frame of value chain.
- h. Financial support for entrepreneurs as capital investor in agricultural improvements (i.e. subsidized loans, micro-credit, tax refunds).
- i. Investments in agritourism, olive parkland, handcraft, renewable energy to boot the multifunctionally of olive farming.
- j. Establishment of a certification system for genetic and sanitary propagating material, and quality products (register, control, labelling, certificate, etc.).

10. CONCLUSIONS

Even with the challenges in the production and processing of olives, it is expected that olive plantations will lead to positive income generation and increase employment opportunities. There are various reasons for anticipating a positive impact on the livelihoods of the olive farmers, which are as follows:

- a. Olives are grown on land that is under-utilized. There is no opportunity cost for the farmers for other crops. These are mostly marginalized lands where no other crop can be cultivated.
- b. The government has subsidized several major costs of cultivation. In the POCCSP II Project the farmers are paying a share, on the cost of irrigation, technical trainings, and harvesting and pruning tools (in some cases).
- c. The government has initially provided free of cost olive oil extraction facility to the olive farmers, where they can extract olive oil and sell it at a premium price. The OliveCulture Project is providing training and expertise for the management and the operators.

The aforementioned reasons have had a positive impact on the olive farmers by incentivizing olive cultivation. If the farmers can produce good quality olives at optimum yields, and the demand for locally produced olives increase, Pakistani olive sector can then expect to see a long-term economic viability for the farmers, processors and traders.

However, the demand-side of the olive value chain should not be ignored. In case, the supply exceeds the demand for olives, the price of local olives might reduce in the domestic market, thus potentially reducing the farmer's income. Improving the quality of Pakistani olive oil and boosting the consumer perception of the high healthy value of olive oil will increase the demand and rule out the risk of market imbalance between supply and demand.

Pakistan's venture into the olive sector is a recent phenomenon. Predictably, the development of the olive sector is confronted with considerable challenges underscoring the need for unflinching external cooperation in terms of technology and knowledge sharing as well as concerted efforts, reforms and initiatives internally to establish a comprehensive olive sector regulatory framework and regime and to develop mass awareness about the environmental, socio-economic, and health benefits of olive cultivation and consumption.

Cognizant of this, the Pakistani Olive Stakeholder Group have envisioned and proposed the establishment of the Pakistani Olive Oil Association/Council. The support to the political decision maker will augment the global competitiveness of Pakistani olive sector by enabling it to meet international standards. Indeed, the proposed POOC is indispensable for the sustainable and balanced development of the various aspects of the olive sector (i.e., regulatory framework, quality of production, productivity, cultivar adaptation, establishment of new plantations, pest management, certification, labelling, packaging, marketing, import and export, etc.).

Unfortunately, the agriculture sector of Pakistan has long been suffering from stagnation and lack of innovation due to a multitude of factors. Some of the dominant internal factors adversely affecting the agriculture and hence also the olive cultivation include but are not limited to the following:

- The high olive mortality and low productivity caused by the scarcity of irrigation sources and services, adequate fertilizers and pesticides (inputs).
- The lack of true-to-type disease free plants of certified varieties free of cost or at affordable prices has been yet another factor besetting the olive sector.
- The limited olive orchards which can be grown on a large acreage of available marginal lands.
- The lack of political stability leading to inconsistency and non-implementation of policies.
- The insufficiency of processing and oil extraction units to increase olive production to help avoid possible losses due to delays in olive processing and oil extraction given that olive is a perishable and sensitive fruit.
- The scarcity of scientific knowledge among farmers and the general populace at large about smart agriculture and agronomic best practices, over-reliance on traditional, out-dated and costly methods of farming and agriculture.
- The limitation of modern technology that can ensure olive farmers earn satisfactory income from olive cultivation.
- The shortage of high-quality research and feasibility studies with regards to agronomic best practices in general and with regards to olive cultivation.
- The deficiency of pertinent information on various olive varieties with regards to their compatibility with the climate conditions of different regions.
- The scarcity of a trained workforce can have an adverse effect on olive production and value-chain development.
- The lack of adequate support system and mechanism in place to expedite marketing, and sales of olive oil and other related products is another major cause of concern.
- The missing of the buyer-seller linkage represents a weakness point in olive sector, particularly for farmers since many newly developed olive producers have reached the fruit-bearing stage.

The lack of a comprehensive regulation mechanism for olive value chain development has left the trade and business in olive to the mercy of market forces. In view of the foregoing issues and challenges like the lack of access to reliable, relevant and up-to-date information about agronomic best practises in general as well as the provision of variety of olive related services like farm management trainings, plants at affordable prices or preferably free of cost, it is vital for the Government to adopt a comprehensive and evidence-based strategy aimed at protecting the olive farmers.

Intense and concerted efforts by the Government are needed to make use of the suitable waste/marginal land for producing edible oil by growing olives to address the alarming situation of the economy and to combat import bills.

Pakistan's olive promotion strategy has to be balanced between growing more olives while also increasing its demand, to establish a market for olive products. At the moment, locally produced olive oil is priced higher than the imported products, as olive producers are striving to achieve economies of scale to correct the price point for the local product. What will be important is for the consumer demand for locally sourced olive oil to increase, for a price equilibrium to be established vis-a-vis imported edible oils.

As part of the strategy, the concerned authorities and stakeholders should encourage and incentivize research on olive cultivation and production. There is a dire need to develop research-based relevant qualitative data and information as an end in itself, in addition to its value for investment opportunities in the olive sector. Indeed, well-researched and well-documented material on olive in Pakistan is much needed for local and overseas Pakistanis for business planning and decision-making.

Considering that olive is a new crop in the Pakistani market, the Government is required to establish a proper mechanism to protect the interest of olive farmers.

Finally, it would not be an exaggeration to say that Pakistan can become one of the leading countries to trade in Olive. Indeed, the country is naturally endowed with diverse and conducive climate conditions for olive cultivation besides having vast swathes of marginal wastelands that can be converted into olive-producing lands. The potential of Pakistan with respect to olive cultivation and production can be gauged from the fact that around 10 million acres of land is available and have already been identified for olive cultivation while more than 40,000 acres is already under olive cultivation in the country. Pakistan's agrarian economic base coupled with its important geo-strategic location at the crossroads of civilizations and trade-routes makes it the most attractive and potential player in the olive sector.

11. BRIEF RECOMMENDATIONS

Finally, in addition to advising on the implementation of the above specific action points, brief recommendations are suggested to policy makers as follows:

- a. Raise awareness of great opportunity of the growing olive sector for the environmental, economic and social sustainable development, according to the SDGs of Agenda 2030 of United Nations.
- b. Establishment of the Pakistani Olive Association / Council recognized by Government and IOC, as a key point for the sustainable and balanced development of the various aspects of olive sector.
- c. Encourage the partnership among the International Foundation and Organizations, the Departments of Pakistani Ministries, the donors, the National and Regional Research centers, the Organization of producers.
- d. Promote the advantages of olive oil for human health, and the benefits for the environment as increasing the biodiversity and mitigating climate change.
- e. Foster the public and private investments and grants for the sustainable development of the olive value chain.
- f. Sharing, implementation and monitoring this Action Plan and its action points.

ANNEX 1

FIRST DRAFT

Establishment and Regulations of Pakistan Olive and Olive Oil Council (POOC)/Advisory Group (AG)

Compiled By

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ACT OF PARLIAMENT

Year 2023, Pakistan

WHEREAS it is expedient to establishment and regulations of Pakistan Olive and Olive Oil Council/Advisory Group for the purposes hereinafter appearing;

AND WHEREAS the Provincial Assemblies of Balochistan, Khyber Pakhtunkhwa (KPK / NWFP), Punjab and Sindh have passed resolutions under Article 144 of the Constitution of the Islamic Republic of Pakistan to the effect that Majlis-e-Shoora (Parliament) may suitably amend the aforesaid Act;

It is hereby enacted as follows:—

1. Title and Commencement:

1. This Act may be called the Pakistan Olive and Olive Oil Council/Advisory Group establishment and regulations Act, 2023.
2. It shall come into force at once.

2. Purpose and Scope:

The purpose of this act of Parliament and regulation is to establish Pakistan Olive and Olive Oil Council (POOC)/Advisory Group (AG) of an inter-institutional committee and to determine the legal status, principles, advisory procedures, duties and powers, financial and matters relevant to develop and implementation of integrated plan for the rural strategy for the olive sector and strategic interventions along the entire olive oil value chain in the country.

3. Set-up of Pakistan Olive Oil Council (POOC)/Advisory Group (AG):

- a. The Pakistan Olive and Olive Oil Council/advisory group shall have its headquarter in Islamabad. It shall become a legal entity upon the approval of the M/o National Food Security and Research (MNFSR) act of Parliament.
- b. The Pakistan Olive and Olive Oil Council/advisory group shall function as a statutory body under Pakistan Oilseed Department (POD) of the MNFSR.
- c. The legislative body shall be comprised of members representatives of the Olive Value Chain covering olive farmers/producers, olive traders, Olive oil processing industry, professionals and concerned ministries. These members shall have the authority of the Board of Directors. The term of the office of the Board of Directors shall continue until the first General Assembly meeting.

4. Activities of the Pakistan Olive and Olive Oil Council/Advisory Group

The POOC/AG shall carry out the following activities for the purposes of Article-1;

- a. Submit all the decisions taken annually to all relevant stakeholders.
- b. Develop plans, implements plans, collects data and determine a common strategy within the framework of the developments in olive and olive oil sector.
- c. Carries out researches and investigations on olive and olive oil and related sectors at national and international level and transfers these to relevant stakeholders in the Olive value chain.
- d. Carries out activities to improve the production, consumption and trade of olives and olive oil.
- e. Cooperate with organizations that perform similar activities in other countries.
- f. Takes urgent functional measures according to the conjuncture of olive and olive oil related sectors and monitors the results.
- g. Regarding the purpose and field of activity; organizes meetings, symposiums, panels, seminars, conferences, congresses and workshops, promotes olive and olive oil originals and by-products and establishes advisory groups to participate in all these activities.
- h. Contribute to the determination and implementation of the necessary policies for the realization of high-quality production, standardization and certification, monitoring of the market and development of quality control systems in the Olive sector.
- i. To ensure necessary measures taken and implemented, including production planning and diversification of production, in order to solve the structural problems of the olive sector, meet the needs and increase the international competitiveness.
- j. Within the framework of production and industrial activities in the sector, the environment, public health, protection of producer, consumer rights and rural development to ensure the necessary measures.
- k. Organize campaigns and promote the consumption of the product encouraging product branding. Contribute to the determination and application of national and international rules for the trade of olives and olive oil products and by-products.
- l. To inform the olive and olive oil producers and consumers about organic farming and good agricultural practices and to encourage production and consumption.
- m. To increase the marketing power of olive and olive oil and finished products at national and international level, take measures to improve the continuity, profitability, trade, consumption and standardization of the industry and to ensure the reconciliation of all segments of the sector in the determination of national policies.
- n. Coordination and Collaboration with other allied Ministries and International organizations to carry out subject related activities beneficial to the public sector as well as to the Olive sector.

5. Membership of the POOC/AG, Suspension & Termination of Membership:

- a. Producers, traders, industrialists, merchants, chambers of commerce & trade, professional & public associations that are in the field of olive and olive oil, research institutions and teaching universities can be members of the POOC/AG.
- b. The memberships of the members who do not comply with the aims of the POOC/AG and fail to fulfil their membership obligations despite two consecutive written observations shall be suspended by the Board of Directors for at least one to three months. An Appeal against the decision can be submitted to the Board of Directors within seven days of the notification. The final decision on appeal must be made within fifteen days after its submission. The suspended member / members of the Council cannot take benefit from any activities of the Council and cannot vote during the suspension period.
- c. The Council membership ends;
 - i. Leaving voluntarily
 - ii. Death
 - iii. Failure to fulfil the obligations specified in the regulation
 - iv. Violation of the rules set by the POOC/AG
 - v. Offences against the security of the State & the constitution
 - vi. All others punitive offenses
- d. The decision to terminate the membership of the Council shall be taken by the Board of Directors. An Appeal against the decision can be submitted to the Board of Directors within seven days of the notification. The final decision on appeal must be made within fifteen days after its submission.

6. Bodies of the POOC/AG

The POOC/AG shall be composed of the following bodies;

- a. General Assembly
- b. Board of Directors
- c. Supervisory Board
- d. Research and Advisory Committee

7. Formation and meetings of the POOC/AG General Assembly

- a. The General Assembly of the POOC/AG shall be constituted by the participation of representatives from specified groups mentioned in Article 5 (a).
- b. The General Assembly of the POOC/AG shall hold its ordinary meetings once a year upon the invitation of the Board of Directors. The General Assembly of the POOC/AG may also be called for an extraordinary meeting upon the written request of the Board of Directors or one fifth of the members. The Decisions of the General Assembly shall be taken by the absolute majority of the attendants.
- c. The suspended member /members & those who do not pay their membership fees may not vote at the General Assembly.
- d. At least ten days before the meeting, all members of the General Assembly shall be informed in writing about time, place and agenda of the meeting.

8. Duties and Powers of the General Assembly:

- a. Authorizes the Board of Directors to cooperate with organizations that perform similar activities in other countries.
- b. Elects the members of the Board of Directors and the Supervisory Board.
- c. Discusses the Annual & Audit Reports.
- d. Decides on the release of the accounts of the Board of Directors and the Supervisory Board.
- e. Negotiates and decides the budget.
- f. Decides on the revenues and expenses of the POOC/AG.
- g. Determines entry and annual fees.
- h. Decides to open representative offices in Pakistan and abroad.
- i. Determines the daily allowance amount and principles to be paid to the members.
- j. Appoint members of the Research and Advisory committee.
- k. Decides on other matters authorized by law.
- l. Authorizes the Board of Directors regarding financial matters.

9. Formation and term of office of the Board of Directors:

- a. The Board of Directors shall be elected by the General Assembly from among the group specified in Article 5(a). It consists of XY members and one opted member. The term of office of the Board of Directors is three years. In case the Board of Directors becomes vacant, the substitute member is appointed as a member of the Board of Directors in order to complete the remaining term of the member.
- b. The Board of Directors shall appoint a chairman, a deputy chairman and a secretary. The division of duties among the members will be decided in the first meeting. The term of office of the chairman and his deputy is limited to two consecutive terms. They cannot be re-elected as chairman or vice chairman unless a term passes.
- c. Register members shall carry out the secretarial services related to the of the POOC/AG mandate as described in Article-4.
- d. Conduct the General Assembly meeting within three months following the establishment.
- e. Represent the POOC/AG until the General Assembly meeting.

10. Board meetings:

- a. The Board of Directors convenes at least once a month and decisions are taken by majority vote of the participants.
- b. The Board of Directors cannot take decisions that will cause economic disadvantage of Olive sector.
- c. Except the extraordinary meetings, the Board of Directors shall determine the agenda of the ordinary meetings at least three days before the meeting and notify the attendees in writing.

11. Duties of the Board of Directors:

- a. Meet at least once a month, evaluates the developments in the olive and olive oil and related sectors for the purposes of the Council and takes decisions on the strategies to be implemented, implements them, monitors the results, conducts and represents the POOC/AG activities.
- b. Prepares the Annual Report and submits it to the General Assembly.
- c. Personnel recruitment if required.
- d. Prepares the budget and submits it to the approval of the General Assembly.
- e. Performs regular collection and follow-up of entrance fee and annual fee.
- f. Submits a report to the Agricultural Steering Committee at least once a year, if required.
- g. Implement the decisions taken by the General Assembly and monitor the results.
- h. Manages financial matters of the Council.
- i. Takes & make final all decisions regarding membership.
- j. Calls the General Assembly for ordinary or extraordinary meeting.
- k. Determines the agenda of the meetings of the Board of Directors in line with the proposals coming from within or from the members of the Council.
- l. Suggests to the General Assembly about the daily allowances to be given to the members of the Board of Directors, Supervisory Board, Research and Advisory Board and the amount of travel allowance and payment principles.
- m. Establish the secretariat and the cadres to carry out the technical affairs to assist the General Assembly in the coordination and realization of the Council's activities, calls the Research and Advisory Board for a meeting, decides the reports prepared by the Research and Advisory Board and applies for information and opinions when necessary,

12. Payments to be made to the members of the Board of Directors:

Members of the Board of Directors shall be paid daily allowance determined by the General Assembly for their duty travels inside/ outside Pakistan. The amount of payment is included in the Council's budget. Members of the Board of Directors may not be paid under a different name.

13. Formation and term of office of the Supervisory Board

The Supervisory Board shall be selected by the General Assembly. It consists of XY members. The term of office of the members is limited to three years. The vacant memberships are filled by the same procedure and these members complete the remaining period.

14. Duties and Powers of the Supervisory Board:

- a. To supervise the activities and expenditures of the Board of Directors.
- b. To submit an audit report to the General Assembly.
- c. Calling the General Assembly for an extraordinary meeting when necessary

15. Payments to the members of the Supervisory Board:

Members of the supervisory Board shall be paid daily allowance determined by the General Assembly for their duty travels inside / outside Pakistan. The amount of payment is included in the Council's budget. Members of the Supervisory Board cannot be paid under a different name.

16. Formation, Duties and Powers of the Research and Advisory Committee:

- a. The members of Research and Advisory committee shall be selected by the General Assembly among the research organizations, teaching universities & specialized professional members. It consists of a total of XX members. The term of office is three years. New vacancies are brought to the vacant memberships by the same procedure. Newly appointed members complete the remaining period. The members of the Research and Advisory committee elect a chairman and a vice chairman among themselves. The term of office of the chairman and his deputy is limited to two consecutive terms. They cannot be re-elected unless a period has passed.
- b. The Research and Advisory committee convened upon the invitation of the Board of Directors and informs the Board of Directors by expressing its opinions on the relevant areas of the Council.
- c. The Research and Advisory committee shall prepare its annual report & submit it to the Board of Directors.

17. Payments to Research and Advisory Committee members

The members of the Research and Advisory Committee shall be paid daily allowance determined by the General Assembly for their duty travels inside / outside Pakistan. The amount of payment is included in the POOC/AG's budget. Members of the Research and Advisory committee cannot be paid under a different name.

18. Revenues of the POOC/AG

The revenues of the POOC/AG are as follows;

- a. Entrance fee and annual fee.
- b. Fees charged for services rendered.
- c. Donations and other incomes, funds and aids provided from nationally & internationally.
- d. Revenues from consultancy services.
- e. Advertisement, promotion and publication revenues.

19. POOC/AG Expenses

The expenses of the POOC/AG are as follows;

- a. Education, advertising, promotion and publication expenses.
- b. Allowance and travel payments.
- c. Office expenses.
- d. Other costs.

20. Book/Record Keeping

The POOC/AG shall keep the following books;

- a. Income–expense book.
- b. Asset registry.
- c. Member registry.
- d. Audit book.
- e. Decision book.
- f. Incoming–outgoing document registry.
- g. The books shall be certified within seven days following the establishment and shall be renewed in the first week of each financial year.

21. Check/Supervision

- a. The supervision of the POOC/AG shall be carried out by the supervisors appointed by the M/o National Food Security and Research (MNFSR) act of Parliament.
- b. It is ensured that their criticisms and recommendations are complied with.

22. POOC/AG Promulgation

- a. This Regulation shall enter into enactment on the date of its publication.
- b. The provisions of this Act shall be executed by the M/o National Food Security and Research (MNFSR) act of Parliament.

ANNEX 2

Proposed new Logos of Pakistan Olive and Olive Oil Council (POOC)/Advisory Group (AG)





ACTION PLAN AND **POLICY RECOMMENDATIONS** FOR A HOLISTIC DEVELOPMENT OF THE PAKISTANI OLIVE VALUE CHAIN



ITALIAN AGENCY
FOR DEVELOPMENT
COOPERATION

