Does sustainability fit in the EU–Tunisia trade relations? Evidence from the olive oil sector

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Abstract

Trade agreements between the European Union (EU) and developing countries are often used to promote sustainable development within economic cooperation. The EU-Tunisia trade relations have a long history, starting with the Association Agreement in place and the ongoing negotiations for the new Deep and Comprehensive Free Trade Area (DCFTA) agreement, for further liberalizing the agricultural sector. This study investigates the effects on sustainability of these bilateral relations, with a focus on Tunisian olive oil value chain, considering both the current Free Trade Agreement (FTA) impacts and the future DCFTA agreement expected effects. A two-steps qualitative process consisting of a desk analysis and stakeholders' consultations has been undertaken to report socioeconomic and environmental effects, suggesting policy interventions to be considered within the negotiations framework. Main actions needed encompass an inclusive renovation of Tunisian olive oil sector, a rethinking of exports' tariff quota system to the EU, with special attention to organic olive oil, and water-efficient cultivation systems interventions.

Keywords*: Olive oil, DCFTA Tunisia, Sustainable trade, Tunisia, Stakeholders engagement, Qualitative analysis.*

1. Introduction

Preferential Trade Agreements (PTAs) are designed to promote trade and economic cooperation between participating countries by offering advantages such as reduced tariffs or other trade-related benefits. Having notably increased their prominence over the past few decades, PTAs have progressively started to include provisions that cover a wide range of trade-related policy, including policy areas such as labour rights, environment, investments, intellectual property rights, and migration. These provisions are widely recognized as possible targeted policy tools to step forward in reaching the United Nations Sustainable Development Goals (SDGs) (Dür & Elsig, 2015; Baccini, 2019; Berger *et al*., 2020).

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International trade is seen as a promoter of sensitive sustainability issues also at the EU level, where agreements are used as tools to promote sustainable development, especially with developing countries, through the regulation of their exporting performances to the EU (European Commission, 2006, 2012, and 2015). Indeed, sustainable development provisions have become an essential component of the EU's new generation of Free Trade Agreements (FTAs), which foresee a specific Trade and Sustainable Development (TSD) Chapter. FTAs with developing countries differ mainly in terms of bindingness, enforceability, and transparency (Adriansen and Gonzàlez-Garibay, 2013; Poletti and Sicurelli, 2018; Harrison *et al*., 2019).

Trade agreements between the EU and Tunisia have a long history, starting with the Cooperation Agreement (CA) signed in 1976. This was then replaced by an Association Agreement (AA) focused on the liberalization of trade, particularly industrial goods, regulatory framework harmonization, and enhancement of financial and economic cooperation (Jbili and Enders, 1996), signed by the two parties in 1995, applied from 1996, and ratified in March 1998. This agreement also served as a reference in negotiations with other countries in the EU's Southern Neighbourhood, including Algeria, Egypt, Jordan, Lebanon, and Morocco, among others (Ghesquiere, 2001). Since then, continuous negotiations about liberalizing agricultural trade have been proposed, seeking greater and reciprocal market access. To date, only products like dates and spices benefit from duty-free access, while others, such as olive oil, are subject to preferential access with tariff rate quotas. Those negotiations stopped with the political upheavals in 2010 and were only resumed in 2015 with the proposal of the new Deep and Comprehensive Free Trade Area (DCFTA) agreement (Rudloff and Werenfels, 2018), aiming at further liberalizing the agricultural and other sectors, removing customs barriers, and harmonizing standards, creating new trade and investment opportunities to better integrate the Tunisian economy into the EU market and support the local economic reforms underway (DG Trade, 2024).

Starting from a study developed within the Trade4SD Horizon2020 project[1], this research investigates the effects on sustainability dimensions of the EU-Tunisia bilateral trade relations, with a focus on the Tunisian olive oil value chain. The analysis is carried out through a comparison of the current FTA and the future DCFTA, encompassing also the views of a representative group of stakeholders of the Tunisian olive oil sector. For its analysis, the study follows a qualitative approach that compares the actual outcomes of the current agreement and projections of the future one, while also using the perceptions of local olive oil sector actors to understand their feelings about current factual developments and what they expect from the future agreement under negotiation.

The qualitative approach, despite its clear limits, suits particularly well this type of analysis since it allows to investigate through the opinions of expert stakeholders' collected by face-to-face interviews of the effects of specific trade agreements on a key sector, like olive oil in Tunisia, considering all the main relevant sustainability dimensions. These kinds of approaches have been quite successful in other contexts, mainly because they allow to identify the key actors of a local value chain and reduce, in this way, the number of questionnaires to submit and to elaborate further (Battisti *et al*. 2014; Hennink *et al*., 2017; Townsend, 2021). However, one of the main limits of qualitative approaches is, in fact, their cost and their effectiveness in covering all the sensitive parts of the value chain. Therefore, the best way is to find a reasonable balance between the numerosity of the sample and representativeness, considering that the aim is to reach expert representatives of the productive sector.

[1] The project TRADE4SD - Fostering the positive linkages between trade and sustainable development has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No. 101000551.

The study is based on two main questions: i) Is the DCFTA expected to be coherent with the effects of the already implemented EU-Tunisian FTA? ii) How are the actual and future effects on non-product dimensions perceived by stakeholders from the agricultural and olive oil sector?

The research first delves into a literature review on DCFTA expected impacts, deepening then the analysis with the comparison of two primary documents: the ex-post evaluation of the FTA impacts published by the European Commission (EC) in 2021 and the Trade Sustainability Impact Assessment (TSIA) produced in 2013 by Ecorys[2], focused on assessing the potential socio-economic and environmental effects of the future DCFTA. This first step is followed by a confrontation of different stakeholders' consultation, comparing the views collected in 2023 within the Trade4SD project activities on the DFCTA possible impacts on non-related products in the olive oil sector (i.e. resource use or workforce conditions) and those collected and underlined in the FTA ex-post evaluation of 2021. The paper is structured into six main sections: a context analysis delving into the Tunisian agricultural sector and EU bilateral trade; a literature review on the impacts of the future DCFTA; a methodology paragraph describing the comparison of both the assessments and the stakeholders' consultations; a results section presenting the primary outcomes coming from the previous desk analysis. Finally, the discussion and conclusions sections are dedicated to a structured analysis of results and formulating policy recommendations given the future negotiations scenario.

For its aims and scope, this research wishes to contribute to the existing literature on the EU-Tunisia trade relations and related socioeconomic and environmental impacts, bringing to the table the visions of some crucial stakeholders of the olive oil sector involved in the political-economic processes related to the agreement's effective implementation path. Also, the comparison between the expected impact of the future DCFTA and the current FTA's effects brings to light whether the expectations of the future agreement have already been partly fulfilled by the agreement in force to date, what difficulties persist and what is missing. The work thus enriches the debate on EU-Tunisia trade relations and may be of particular interest to policymakers and other actors involved in the negotiations to gain a more detailed overview in terms of actions to be pursued in line with the socio-economic and environmental sustainability of the parties involved.

As mentioned, the qualitative approach followed could be seen as limiting the potential of the research, albeit justified by the desire to bring out stakeholders' views on EU-Tunisia trade agreements. Building on these initial results, future analyses could involve quantitative analyses of the sustainability indicators framework, integrating and enhancing the current results, which we consider quite solid and satisfying.

2. Background

The Tunisian agricultural sector faces several socioeconomic and environmental challenges. As reported by Rudloff (2017, 2020), Tunisian agriculture is responsible for 10% of GDP and plays a stabilising role in economic crises by securing the population's food supply. In the past, Tunisia has witnessed violent demonstrations against rising food prices (e.g., bread), which gave the agricultural sector great economic and social significance with direct social stabilization effects.

The last 30 years have seen a distinct fall in the agricultural employment share, from 23% (1991) to 14% (2022), with the fruit and vegetable sector being pivotal in terms of employment due to its labour intensity (ILO, 2024a; EC, 2021). In rural areas, it still represents a major employer for young people (CFYE, 2022), half of which are, however, day labourers without a proper contract (Rudloff, 2020) reflecting the sector's seasonality and precarity in a country with a general youth unemployment rate at almost 38% in 2019 (ILO, 2024b).

[2] Ecorys is an economic research and consulting company based in Europe (https://www.ecorys.com/).

Agricultural productivity seems to be poor for technical and demographic reasons, such as low mechanisation, scarce quality seed and a growing older rural population. The sector growth is limited by a series of market structure characteristics, including export monopolisation by some farms and limited access to market possibilities for traditional small ones. Also, production and marketing infrastructure is reported to need to be improved in some areas, turning into additional criticalities along the supply chains (Rudloff, 2020). In 2023, according to the last World Bank Economic Monitor (2024), Tunisia's economic recovery almost stopped. This was due to rigid financing conditions, slow reform implementation processes and a severe drought highlighting the country's urgency to adapt to climate change, which forced the government to implement irrigation restrictions.

The agricultural sector was, indeed, the main driver of this general slowdown, with a decline of 11% resulting in reduced harvest and significant production losses, like the case of wheat, one of the key elements of the local diet. With import compression and reduced supply in domestic food markets, inflation remains high, especially for food. It is then evident that, in addition to several economic challenges, Tunisian rural areas must deal with the increasing consequences of climate change affecting the agricultural sector, in terms of water-scarcity, vulnerability to droughts and overall rainfall variability (Verner *et al*., 2018). These threats could reflect in the long run into the interruption of some main agricultural products' cropping cycle and in the worsening of Tunisia's food security in terms of quantity and quality of agrifood (Oussar *et al*., 2021). As underlined by the World Bank Group (2023), the agriculture sector, being the main consumer of water plays a pivotal role in improving irrigation efficiency to reduce water demand, also through nature-based solutions and climate-smart practices.

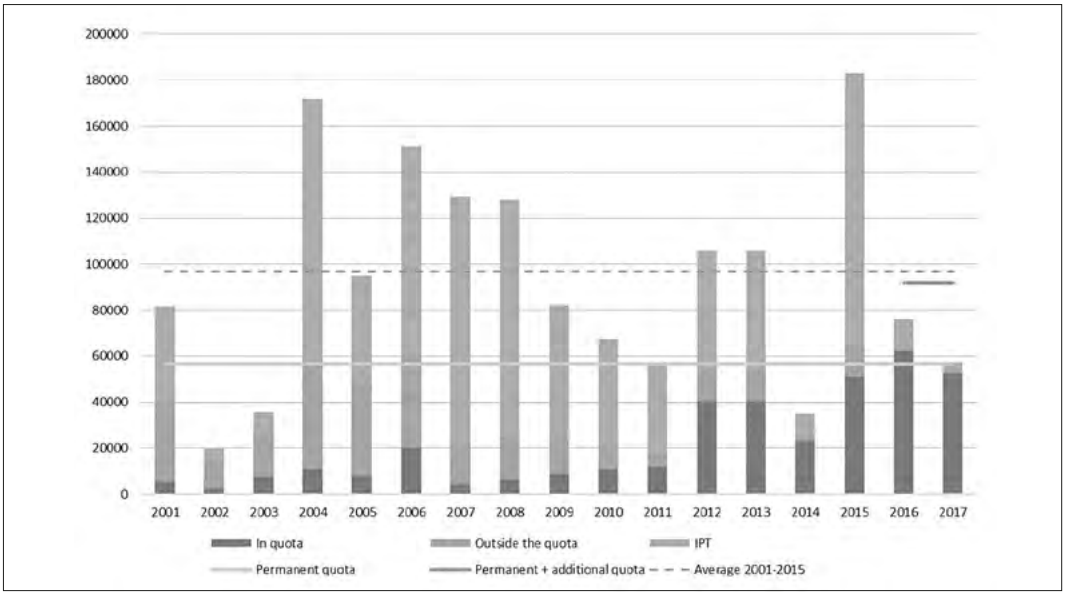
Among the main sectors of Tunisian agriculture, olive oil makes the country the 3rd most important exporter in the world (FAO, 2023), following other Mediterranean countries like Spain and Italy. A study by Kurtoğlu *et al*. (2023) aimed at predicting countries leading olive oil production globally between 2024-2027 shows that Spain, Greece, Turkey, Morocco, and Italy will lead, accounting for 65.96% of the world's production level, followed by other exporting countries, Tunisia included, with 7% estimated production contribution.

The cultivation of olive trees in the country represents 20% of the workforce in the agricultural sector, with olive oil production accounting for 80% of local exported food production, with 2 billion TND (638.844.000 USD)[3] in export income on average per year (CFYE, 2022). Tunisian olive area occupies one-third of the country's total arable land, with increasing expectations over the coming years (USDA, 2023; FAO, 2023). Olive oil exports play a crucial role in Tunisia's trade balance. Over the last decade, Tunisia exported on average 168,000 tons of olive oil, contributing to nearly 40% of the primary sector's export revenue (Jouili, 2023). At the end of April 2024, the National Observatory of Agriculture (ONAGRI) estimates show that olive oil represents 65.7% of the share in total food exports. The average export price reached 27.37 DT/kg (7,40 USD/Kg)[4], recording a growth of 81.0% compared to the previous year.

Olive oil, considered as a "sensitive" Mediterranean product by the EC, stands out as a prime example of intensive trade interactions between the EU and Tunisia (European Commission, 1997). The EU has been by far the largest olive oil importer from Tunisia in the last decade: from April 2022 to March 2023, EU imports from Tunisia amounted to 119,804 tonnes, 77.9% of total extra-UE imports of olive oil (IOC, 2023). Tunisian olive oil enters the EU market through three main export channels, notably Inward Processing Traffic (IPT), most-favoured-nation (MFN) tariff and tariff quota. With the IPT, Tunisian olive oil is used as a cost-effective additive to increase the volume of bulk goods in Eu-

[3] Exchange rate as at 30/12/2022 corresponding to the data publication date.
[4] Exchange rate as at 30/04/2024 corresponding to the data publication date.

Figure 1 - EU imports of virgin olive oil from Tunisia from 2001 to 2017 (tons).



Source: CREA 2019.

ropean olive oil. Since European importers have no obligation to add the specific olive source on labels, the Tunisian origin is lost. This channel is then preferred by importers who can use bulk oil, adding value through their bottling and branding (Grumiller *et al*., 2018a; Raza *et al*., 2022), even though this represents the cause of the low European consumer awareness of Tunisian olive oil quality (Arfaoui *et al*., 2022) which affect market preferences. The MNF, rarely used due to IPT preference, is the channel for exports falling outside the established quota or IPT, with a tariff ranging from 31-32% depending on olive oil quality (Grumiller *et al*., 2018a; GIZ, 2019). The preferential tariff quota governing olive oil exports to the EU has a zero-duty rate for the first 56,700 tons of virgin other than lampante olive oil arriving in the EU. On exported quantities exceeding this limit a tariff of €1.245 per kg applies (Grumiller *et al*., 2018b; CBI, 2024). Only oil produced entirely in Tunisia and from olives grown locally benefits from these tariffs, meaning that Tunisia cannot import Algerian or Libyan olive oil and reexport it to the EU.

Autonomous emergency trade measures have also been introduced by the EU after 2015 to support the local economic slowdown, providing for an additional annual zero-duty tariff quota of 35,000 tons for both 2016 and 2017, provided that the annual quota of 56,700 tons was previously fully allocated. Only 30% of the additional quota was allocated during 2016 (approximately 10,400 tons), whereas in 2017 the temporary quota was not allocated at all. Notably, the allocation of quotas does not necessarily correspond to actual imports. Indeed, in 2016 only 2,557 tons were imported under the additional quota, that is 7.3% of 35,000 tons, and 0% in 2017 (Ben Rouine, 2018a). Considering imports under quotas, those subject to the payment of the duty (outside the quota), and those that occurred in IPT in both years, the total imports of Tunisian virgin olive oil stood at only 76,000 tons and 57,300 tons respectively, a quantity significantly lower than the average imports of the previous 15 years (96,000 tons, period 2001-2015) (Figure 1).

It thus emerges that the additional quota did not increase EU imports, as these are influenced by other factors, such as the level of domestic production both in the EU and Tunisia, which affects imported volumes, and relative prices, which affects the choice of the customs regime utilized (CREA, 2019). Additionally, the EU

Table 1 - Partial list of regulations applicable to olive oil import in the EU.

Regulation's name	*Target*	*Reference*
EU-Tunisia Agreement (Euro-Mediterranean) (1998)	Tariff	L 97/2
Commission Regulation (19/12/2006)	Contaminants	(EC) 1881/2006
Commission Delegated Regulation (18/05/2016), Commission Implementing Regulation (18/05/2016)	"AGRIM certificate" (authorization to import from third countries)	(EU) 2016/1237, (EU) 2016/1237
Commission Delegated Regulation (29/07/2022)	Oil origin	(EU) 2022/2104

Source: Authors' elaboration.

legal provisions are applied to imported goods, including contamination criteria (EC, 2006) related to pesticide residue, microbiological contaminants, and other chemical substances. In this context, EU regulations are essential because of their direct effect over the national rights of members states (Boutayeb, 2020).

Some of the existing EU regulations for olive oil import have been collected to provide an overview of applicable standards. Complying with these rules is a challenge in terms of production, which, on the one hand, encourages Tunisian olive oil exporters to improve product quality but, on the other hand, deals with the technical difficulties and structural capacity of local exporting companies (Table 1).

In line with those identified by Grumiller *et al*. (2018b), various challenges faced by the Tunisian olive oil sector can be found at the upstream and downstream of the supply chain, touching the three sustainability dimensions in different ways. Environmental issues are mainly related to climate change affecting the region with weather and temperature variations which automatically affect water and arable land use (Lavie *et al*., 2023). It is worth noting that almost the entire Tunisian olive grove matures through rainwater and without fertilizers, suggesting the need for developed and innovative irrigation technologies which could efficiently prevent the unpredictability of the harvest (Fernández-Lobato *et al*., 2022; Radhouane, 2018). This kind of difficulty, together with the lack of proper equipment and reliance on adequate agricultural methods, also contributes to low productivity rates and high volatility of olive production, which causes an even stronger dependence on the EU market. Social challenges are particularly pronounced among smallholder farmers, who make up the majority of the workforce but struggle against competition from large monoculture olive farms, which account for over 60% of the total olive cultivation area (Jouili, 2023). Smallholder farmers often face precarious working conditions, limited access to social protections, and inadequate incomes, which are compounded by the unpredictability of olive production and low productivity levels (Rudloff, 2020; Raza *et al*., 2022). Economically, the sector remains highly dependent on exports to the EU market. Tunisian exporting companies struggle to increase export value added because of the predominantly purchase of Tunisian oil in bulk without a proper indication of origin, as set by the EU regulation N. 29/2012, which allows European olive oil manufacturers to label bottles containing Tunisian olive oil simply as "not of European origin" which cause the lack of European consumers' awareness regarding Tunisian olive oil value (Jouili, 2023).

3. Literature review on DCFTA's estimated impacts

Negotiations between the EU and Tunisia for the establishment of the new trade agreement were launched in Tunis on 13th of October 2015. Procedures have been implemented so far (Table 2), and talks are still ongoing to move towards a complete and official agreement, even though the signature is still missing (DG Trade, 2024).

Agricultural trade liberalization is then still far from being achieved, placing tariff liberalization and non-tariff measures (NTMs), sanitary and phytosanitary standards (SPS), as well as technical barriers to trade (TBT) at the centre of the

Table 2 - DCFTA negotiations procedures from 2015 to date.

Year	*Achievement*	*Scope*
2015	Launch of negotiations between EU-Tunisia	Creation of new trade and investment opportunities and better integration of the Tunisian economy into the EU single market.
2016	First round of negotiations	Discussion on asymmetry of liberalization; progressivity of liberalization and relative local economic support; regulatory approximation in the priority areas identified by Tunisia.
2017	Technical round	Further technical discussion carried out in Brussels.
2018	Second and third full rounds of negotiations	Discussions carried out in Tunis and Brussels (May and December).
2019	Fourth round of negotiations	Discussions covered a wide range of issues including agriculture, services, and sustainable development. Tunisia reiterated its request to provide urgent measures in favor of some of its strategic sectors, such as olive oil and textiles, among others.
2021	EU Trade Policy Review	In the new EU Trade Policy Review, the modernization of trade and investment relations with Tunisia are discussed to better adapt them to today's challenges.
2024	Talks	Consultations are still on going in view of a future agreement signature.

Source: Authors' elaboration from DG TRADE (2024 and 2024a).

DCFTA negotiations since the first round (Raza *et al*., 2022). The EU proposal for a TSD Chapter within the DCFTA wishes to ensure that sustainable development commitments are aligned with multilateral governance on these issues by incorporating them into the international consensus.

Numerous studies have then investigated the possible trade liberalization impacts arising from a future DCFTA effective implementation. Some of these are presented hereby, grouped according to the topics covered in terms of economic, social and environmental impacts. For exhaustivity and specificity of analysis, the authors added two further categories found in the analysed literature: one related to the socioeconomic concerns raised by local civil society organizations and groups of interest and another concerning the link between trade and SDGs.

In terms of economic impacts, an overall local growth for Tunisia is predicted by most studies considered by Rudloff (2020), arising mainly from tariff reduction. In these scenarios, the agricultural sectors most benefitted seem being olive oil and fruit and vegetable, while cereals, milk and meat would be those negatively affected. When considering the positive effect of trade liberalization, the role of NTMs in stimulating trade should also be considered, the effects of which are often sidelined in studies because of the difficulty in modelling them. In this regard, only one study (Gasiorek and Mouley, 2019), among those cited in Rudloff's work, explicitly considers the dismantling of NTMs through a partial equilibrium model to picture the separate and aggregate effect of tariffs and NTMs changes. Results highlight that liberalisation based only on tariffs reduction would likely to put more burden on Tunisia with declining outputs, since the EU has already liberalised its tariffs. Whereas, as also stressed by Grumiller *et al*. (2018), potential significant gains would arise for the African country if the DCTFA significantly reduces non-tariff barriers between the two parties, implying adjustment costs that specific structural and adjustment policies should accompany.

Different opinions come from the study of Ben Rouine and Chandoul (2019) according to which in both tariffs and NTMs interventions, the greatest liberalization effort would be borne by Tunisia. Indeed, from the tariff point of view, the EU protects its internal market mostly through internal support policies which keep internal prices artificially low compared to the tariff regime. On the other side, the rapprochement of Tunisian legislation with the community acquis has prohibitive costs. The European SPS system is one of the most complex and rigorous, more stringent than international standards. Tunisia should, therefore, comply with international standards to allow a better diversification of

the market and favour an approach more suited to the real local agricultural sector's conditions.

A CGE model powered by interviews with Tunisian exporters to the EU and agricultural producers has been used by Raza *et al*. (2022) to assess the regulatory approximation under DCFTA, estimating the costs of compliance with the new standards and simulating the effects on the agricultural and food sectors in Tunisia. A full harmonization with EU standards seems to bring a negative impact on local agricultural value added, with greater effects on sectors serving mainly the internal market, even if accompanied by bilateral tariff liberalization. These circumstances could be changed by a strong productivity increase which, at the same time, would also put pressure on other sectors and on natural resources, for example for the absorption of the workforce abandoning agriculture or the greater demand for water in export-oriented production. This aspect also relies on the need to well understand "*the trade-offs between agricultural trade liberalization and the goals demanded by SDG 2*" (Raza *et al*., 2022) and brings us to the other impact categories on environmental and social effects.

In fact, the same authors also underline the need to build a Tunisian negotiation position coherent with a strategic vision of sustainable agricultural development, aiming at achieving SDG 2 objectives of ending hunger, achieving food security and improved nutrition and promoting sustainable agriculture. In these terms, a critical vision is offered by Ayeb (2018) who stress how the already evident food import dependency of Tunisia would be worsened by the DCFTA and the exposition to the European competitors on a freer market, invoking radical reforms to Tunisian agricultural policies based on achieving food independence, reducing rural and urban social marginality and decreasing local environment exposure to climate change consequences.

A combination of positive and negative environmental effects of DCFTA implementation are stressed by Rudloff (2020), reporting ambiguous outcomes in terms of trade-ecology relations. In fact, if an increase in CO_2 emissions, water and plastic consumption and use of pesticides is underlined by the available literature, on the other hand, a loss of profitability could possibly result in the abandonment of crops in ecologically fragile and/or low-yielding areas. This would lead to, for example, a decrease in Tunisian cereal production and a consequent valuable push for the ecosystem, since it represents one of the main factors of soil degradation.

Delving into the social sphere, Lejmi (2020, 2021) stresses the need to better include the protection of socio-economic rights in the DCFTA and, in relation to the SPS harmonisation, underly its possible role as a lever for human capital improvement through the training of farmers, farm workers and qualified personnel, but also a chance to move towards a more digitalized agriculture. The importance of pursuing the creation of structured accompanying policies, underlined by Grumiller *et al*. (2018) in economic terms, is also mentioned in terms of social impact since the adjustment process resulting from trade liberalization produces negative effects for the less competitive agricultural sectors and their workers.

The same authors also give some important insights regarding linkages between trade and sustainable development, a topic examined by Tröster *et al*. (2018) as well. Studies highlight the need to consider the geopolitical specificities of Tunisia and adapt trade policy accordingly. Short-term benefits and safeguarding of socio-territorial cohesion should be central to Tunisian trade liberalization to help the country's political transition and contribute to its economic and democratic consolidation. What is underlined is that the EU currently favours the dialogue approach over hard conditionalities when promoting human rights and labour standards. According to the authors, for economic growth to be truly inclusive and consider the rights of the most vulnerable groups of workers (especially women), greater ownership of the EU institutions in the SD chapter within the DCFTA would be needed, together with greater support for cooperation between the EU and the civil society of the partner country. Another aspect to consider is the promotion of employment that pays decent wages and promotes good working conditions. In this regard, trade policymakers need to assess the impact of trade liberalization on public budgets, since tariff liberalization reduces public income precisely at the time when

additional funds are needed to alleviate the costs of social adjustment in sectors most negatively exposed to structural changes, for example those who have been displaced by the increase in imports. This is possible, again, through specific social and employment policies in partner countries, which often do not exist or do not have adequate resources, like the Tunisian case. Therefore, temporary budgetary support should be provided if needed, as well as domestic resource mobilization promoted.

Tying in with the aspect of civil society inclusion in the dialogue on DCFTA, the current analysis allowed the identification of Tunisian scepticism towards a DCFTA that hinders reaching an agreement considered unbalanced and trapping Tunisia in low value-added activities, according to Rudloff and Werenfels (2018) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ, 2019). The authors note a lack of knowledge about the agreement itself and its content both in civil society and business, as well as a lack of participation of Tunisian academics in public discussion to assess the possible impacts of the DCFTA. "*Tunisia is not ready for the DCFTA*" is the title of a joint position document signed in May 2018 by a group of NGOs[5] and again "*DCFTA risks reducing Tunisia's political leeway to face its social and economic challenges*" (FTDES *et al*., 2018), suggesting taking time to reflect and evaluate, while recommending several possible adjustments to the negotiation process. Yemmen & Marzouki (2024) also highlight how the DCFTA has raised concerns in Tunisia with some groups feared about the European product competition coming from the liberalization, as well as about the impact on some economic sectors, jobs and state sovereignty.

4. Methodology

Since the agreement is still under negotiation, this study aims at delving deeper into sustainability effects of EU-Tunisia trade relations, understanding if and how the new DCFTA is expected to be coherent with the registered effects of the current agreement, and how stakeholders evaluate its impacts specifically on non-related products in the olive oil sector. The methodology of research is focused on a two-step qualitative analysis.

The first step consists of a desk analysis comparing two main documents: the TSIA produced in 2013 by Ecorys – focused on assessing the potential economic, social and environmental impact of the future DCFTA – and the Ex-post Evaluation of the impact of the current agreement published by the EC in 2021 – focused on assessing trade chapters' main objectives' achievement. The comparison among the main results is the baseline on which this study builds its conclusions on specific policy interventions to be implemented in the DCFTA negotiation framework and key aspects that should be considered within the future agreement.

According to the OECD (2010), the Sustainability Impact Assessment (SIA) is a process for assessing the effects of proposed policies, strategies, plans, or programs before they have been formulated (ex-ante). Considered by the EU as a strong method to evaluate trade negotiations (European Union, 2016), SIA methodology is based on the full integration of the three sustainability aspects, the use of a variety of tools and methodologies to capture qualitative features, and stakeholders' involvement. The TSIA produced in 2013 was based on two methodological elements: quantitative and qualitative analyses for economic, environmental, and social assessments and stakeholder consultations. To assess the impact of the DCFTA, a Computable General Equilibrium (CGE) model was developed based on a tariffs' reduction simulation scenario effects for the agricultural sector (an 80% reduction in tariffs in Tunisia on imports from the EU and a 95% reduction on agricultural tariffs in the EU on imports from Tunisia) as tariffs on industrial goods were previously eliminated under the AA. Moreover, the expected impact of the DCFTA assumes regulatory approximation in sectors such as SPS and

[5] Forum Tunisien pour les droits économiques et sociaux (FTDES) – CNCD-11.11.11 – International Treatment Preparedness Coalition (ITPC) MENA – Euromedrights – Transnational Institute (TNI).

Table 3 - Tunisian stakeholders interviewed in the framework of the Trade4SD project.

Stakeholder typology	*Category*	*N.*
Agricultural holdings	Small-scale farmer	1
	Smallholder producers (Agricultural advisor at the Olive Institute)	1
	Large olive oil producer (Director)	1
Supply chain operators	Public company (ONH) (Chief Executive and Director)	2
	Private retailer (Commercial)	1
	Packtech (CEO)	1
	Olive oil exporter (Business)	1
	Exporters' union (CEPEX)	1
Stakeholders dealing with sustainability issues	International organization (FAO Tunisia)	1
	Irrigation systems expert (Agriculture expert at the Ministry of Agriculture)	1
	Academic researcher (Agronomist)	1
Policymakers	Representative of the Minister's office (Chief of Staff at the Ministry of Agriculture)	1
	Development and production departments (Director General of the Development Department at the Ministry of Agriculture, Director of the Plant Production Department at the Ministry of Agriculture)	2
	Organic production department (Director of the Organic Production Dept at the Ministry of Agriculture)	1
	Total	16

Source: Authors' elaboration.

TBT. The results of the CGE model were complemented by additional quantitative and qualitative social and environmental analyses.

The study conducted in 2021 by the Center for Social and Economic Research (CASE), Ecorys, and the Euro-Mediterranean Forum of Institutes of Economic Sciences (FEMISE) covers the ex-post impact evaluation of the trade chapters of the Euro-Mediterranean Association Agreements (Euro-Med FTAs) with six partners, Tunisia included, to deeply investigate trade performances between those countries and the EU, observing specifically economic, social, and environmental aspects. Various methods have been used to conduct the analysis, from literature review to descriptive statistics, economic modelling and case studies on specific sectors, together with stakeholders' consultations. The second step of the research is based on an evaluation of inputs coming from a group of olive oil sector stakeholders interviewed in 2023 as part of the Trade4SD project activities and the consultations' results collected in the EC document of 2021. To maintain the homogeneity of results, the authors only focus on agricultural stakeholders' inputs coming from the ex-post evaluation as well. Tunisian agricultural stakeholders interviewed by the Trade4SD team have been identified in collaboration with the Tunisian Olive Oil Board (ONH). In-person meetings have been organized with 16 stakeholders (Table 3) during the first months of 2023 (Jan-Feb). Within the interviewed group, the research team has reached the so-called thematic saturation (Hennink *et al*., 2017), a concept developed by Glaser and Strauss (1967) as theoretical saturation (Hennink & Kaiser, 2022), used in qualitative research as an indicator establishing that a sam-

ple is adequate for the studied phenomenon and that data collected have captured the diversity, depth, and nuances of the topics studied, demonstrating content validity (Francis *et al*., 2010). The objective of the survey conducted in Tunisia within Trade4SD was, indeed, to analyse views of stakeholders mainly involved in export activities and the relationship with the EU.

Table 3 provides a detailed list of the stakeholders interviewed, classified by typology, category, and number. Participants were asked about different topics, including olive value chain challenges and organic olive oil evolution, the current agreement and the next DCFTA discussions, trade relations, and sustainability. Because of this study's aim, only inputs related to the last two topics have been considered for comparison with stakeholders' outcomes coming from the ex-post evaluation.

5. Main results from evaluations and stakeholders' views comparisons

This section outlines the main outcomes coming from the compared analysis of the two assessments (Table 4) and the stakeholders' consultations' comparison (Table 5).

Table 4 presents three macro categories, each one collecting the main key findings coming from the FTA ex-post evaluation and the ex-an-

Table 4 - Comparison of main results of DCFTA ex-ante effects and FTA ex-post impacts for Tunisia, divided by sustainability's macro-category.

Macro category	*Specificities*	*2013*	*2021*
Economic Impact	Increase in national income (GDP, Total Welfare)	x	x
	Increase in vegetable oil exports	x	x
	Improvement in citizens' purchasing power	x	x
	Transition from a traditional agriculture-oriented structure to a modern industrialized economy	x	x
	Growth in export diversification		x
	Increase in live animals import from EU		x
	Increase in agricultural products tariffs		x
Environmental Impact	Increase in air pollution in the long run (emissions pollutants)	x	
	Small impact on GHG emissions		x
	Difficulties in assessing waste and water issues (with both positive and negative effects depending on sectors)	x	x
	Increase in land use	x	
	Decrease in land use		x
	Worsening of animal welfare		x
Social Impact	Increase in welfare	x	x
	Negative turn in female employment and gender gap (agricultural sector included)	x	x
	Positive but modest impacts on income and consumer prices	x	x
	Increase in workers purchasing power	x	x
	Decrease in wage distribution	x	x
	Marginal increase in skilled wages compared to low skilled ones	x	x
	No significant impact on social security and social dialogue	x	x
	Reallocation of jobs among sectors	x	x
	Stable employment trends		x
	Increase in access to food		x
	Decline in general poverty	x	
	Increase in employment and labor standards	x	

Source: Authors' elaboration.

te DCFTA expected impact evaluation. The sign "x" in the last two columns of the table indicates if the topic found is covered in both assessments or in one of them only.

Concerning the first macro category, even if some essential aspects have been investigated, both as current effects of the FTA and expected impacts of the future agreement, like the increase in national income in terms of GDP and welfare, the ex-post evaluation presents some inputs not identified in the ex-ante assessment of the new agreement. This suggests some improvements made in these years, for instance, in export diversification growth, but at the same time, some worsening like the increase in live animal imports from the EU and a rise in agricultural products tariffs experienced by Tunisia.

The latter aspect is of particular interest, since after the FTA implementation, Tunisia did not negotiate additional protocols on agricultural products exported to the EU, contrary to what other countries did, so charges imposed have increased from 3.8% in 1996 to 4.1% in 2018, making the African country the one with the highest remaining tariffs on agricultural products. This is crucial to be considered in new agreement negotiations, as the expected gain in national income coming from the future DCFTA is primarily based on the reduction of NTMs in commodities and the decrease in agricultural tariffs. At the same time, third countries importing goods from Southern Mediterranean Countries (SMCs) have lowered tariffs, representing a potential basis for exports reorientation.

Also, EU exports of live animals to SMCs have increased following FTA's implementation, with a +71% for Tunisia. This turns into a drawback in animal welfare, with poor transport and slaughtering conditions on site, the effects of which are also to be found at the environmental level.

The agricultural sector was expected to be the biggest winner of the new agreement, especially with the vegetable oils sector, projected to gain the most significant effect in value added. Working in the same direction as these estimations, the current FTA effects show increased Tunisian vegetable oil exports, with additional benefits in processed food and fishery. Both exports and imports from the EU have expanded, with an exception during the years of crisis. They followed a huge increase in 2015 due to the exceptionality of the olive crop year and the subsequent turning of Tunisia into the major exporter of olive oil worldwide.

Overall, the country emerges as being the most stable in terms of exports compared to the other SMCs assessed, performing well in terms of primary agricultural products, processed agri-food goods and fishery, with a volatile growth registered in all categories and with the horticultural sector acting as the most promising.

In both assessments, the Tunisian economy appears to be transitioning from a traditional agriculture-oriented structure to a modern industrialized paradigm. This paradigm should include an increase in the production and export of processed agricultural goods, which were not yet registered in the analysed period and should, therefore, be of key importance in the current negotiations.

Both the current and future agreements seem to register positive and negative environmental effects simultaneously. First, the long-run forecasted increase in air pollution due to the possible implementation of the DCFTA. Even though the FTA ex-post evaluation confirms this progress, population growth and economic-energy development are identified as the main drivers of it, whereas the contribution of the FTA in this sense is considered slight. In fact, its role is tough to be calculated, also because both reductions and increases of pollutants depend on the type and entity of sectors which have been impacted the most by the agreement in these years.

The new DCFTA is also expected to cause an increase in land use intensity, whereas the current effects on land and biodiversity pressures seem register a decrease due to the contraction faced by most of primary sectors, an analogous situation to what happens also in Morocco and Egypt.

The general economic activity improvement in Tunisia could imply more household waste production. As it happens for the emissions calculations, the net effect of the future DCFTA on waste production is challenging to estimate, considering the several driving forces at play.

The same happens when assessing the effects of the current agreement on waste and water scarcity, about which stakeholders also have mixed

opinions. Indeed, what emerges is a commonly positive idea of the current agreement's effects on the environment, despite some negative impacts, mainly due to the increase in production and development of some sectors. Nonetheless, the interactions with the EU spark a series of technological and policy improvements that could positively change the local picture.

Deepening the social dimension, on average, the effects of the current agreement seem to have matched the expected positive and negative impacts of the future DCFTA. Findings make clear the bond that social aspects have with economic ones, bringing out issues that can easily be addressed to the economic dimension as well.

Despite an increase in welfare of about 1.5% (corresponding to 600 million EUR or more than 679 million USD[6]), a reported decline of around 0.3% of consumer prices, and an increase in workers' purchasing power, female employment and the gender gap seem to have worsened after the Arab Spring years, also in the agricultural sector.

Although remarkably similar, high-skilled wages in the country seem to have increased marginally more compared to low-skilled ones, which has implied a worsening in wage distribution.

The effect of the current agreement on employment and labour conditions is expected to be small. In fact, total employment remained constant over the period analysed, even though job reallocations occurred among sectors. This was also forecasted in case of a DCFTA implementation, with expected reallocation of workers between sectors and related difficulties for vulnerable groups. The issue of cross-sectoral reallocation is a key point to be monitored and addressed.

The current and future agreements do not seem to have specific effects on social dialogue and social protection. Concerning poverty, instead, while a general reduction through the increase in income levels is expected after the DCFTA implementation, no evidence regarding the link with the agreement in place is registered to date. Regarding human rights, the overall effect of the DCFTA in Tunisia is expected to be small, but positive.

Agricultural and olive oil sector stakeholders' views have been gathered to complement the theoretical considerations with direct opinions, allowing the identification of issues and priorities to be addressed and giving more clarity to the study. Table 5 summarizes the main stakeholders' outcomes in terms of bilateral trade relationships and perceived impacts of the current FTA and the future DCFTA. It is worth noting that the stakeholders directly interviewed in 2023 represent actors closely involved with economic and political activities related to the ongoing negotiations on the new agreement not yet in force, thus not including other actors in the olive oil supply chain – such as the labour force – who will encounter specific impacts once the agreement will enter into force. As done in Table 4, the sign "x" in the last two columns of the table indicates if that opinion is found both in Trade4SD interviews and in the FTA ex-post assessments, or only in one of them.

Concerning the EU-Tunisia trade relationships, Trade4SD interviews find correspondence with almost all the issues raised by stakeholders from the FTA ex-post evaluation.

Major impediments to European market access for Tunisian olive oil refer to quota governance and distribution of import licenses among European importers (notably Italian and Spanish), identifying the EU as the partner applying the most constraining NTMs. What additionally emerges from Trade4SD interviews is that export volumes vary according to climatic fluctuations in both Europe and Tunisia, as well as several other factors that conditionate the olive oil sector's development. Examples are the fluctuations in prices and quantities demanded on the Italian and Spanish markets, since Tunisian oil has long been regarded as a mean to adjust quantities produced in Europe. To expand market horizons also for bottled olive oil, some young Tunisian entrepreneurs are developing new markets which demand high quality, and which are positioned on the high-end.

Agricultural stakeholders generally agree on the EU's importance as a major and strategic part-

[6] Exchange rate as at 31/12/2021 corresponding to the publication year of the document.

Table 5 - Tunisian agricultural stakeholders' engagement results coming from the analysis of the ex-post evaluation of 2021 and the interviews conducted in TRADE4SD project framework in 2023.

Main stakeholders' results collected through desk analysis and interviews	*2021*	*2023*
Quota governance and distribution of import licenses are considered major impediments to EU market access for Tunisian olive oil.	x	x
Export volumes vary according to climatic fluctuations in Europe and Tunisia.		x
The olive oil sector is conditioned by several factors, including fluctuations in prices and quantities demanded from the EU side.		x
Young entrepreneurs are developing new markets for bottled oil.		x
The EU market is considered a major and strategic one, representing a potential element for ecological transition.	x	x
Tunisian oil is not fully recognized by consumers because it is not mentioned on the labels of the sold olive oil bottles.		x
Environmental concerns on water scarcity and desertification, with the request of adopting new water-efficient irrigation methods.		x
Need to improve agronomic strategies encouraging the adoption of crop adaptability techniques.		x
Production intensification is seen as the main liberalization risk, for resources use and small producers' marginalization.		x
Skepticism among farmers about DCFTA and feeling that the agricultural sector has not fully benefitted from the FTA.	x	x
Stakeholders are unsure about environmental impact of the increased agricultural production.		x
DCFTA should contain measures supporting a sustainable transition and climate change adaptation techniques.	x	x
Need to enlarge the export market, which may represent an opportunity for modernizing production techniques.		x
Need an expansion of quota and/or the introduction of a specific quota for organic olive oil; the EU market demand can be a driver for investment in this sense.	x	x
Policymakers pointed out that often EU control, permission, certifications, importation licenses and administrative procedures are heavy and time-consuming obstacles to EU market access.	x	x
Awareness about the DCFTA's potential for sustainability investments and minimization of environmental impact which reflects the views on the current FTA contributions on the same topic.	x	x
Competitiveness based on compliance with voluntary sustainability standards and regulations; the most problematic NTMs in place for agricultural sector are Sanitary and Phytosanitary (SPS) standards.	x	x
Valorization of sustainability efforts, in particular certified organic production systems, is needed together with national efforts in supporting organic and quality labels.	x	x

Source: Authors' elaboration.

ner for Tunisia, and this relation could represent a potential vector for a needed ecological transition. Despite the exported volumes, the lack of a fully recognition among European stakeholders of Tunisian oil due to the missing information on oil origin in labels remain an issue.

Environmental concerns deriving from a possible DCFTA implementation emerge particularly with water scarcity and desertification, according to the interviewed stakeholders, who advocate for new water-efficient irrigation methods and the improvement of agronomic strategies to offset the loss of productivity and possible changes in fruit and oil quality, at the same time encouraging the adoption of techniques able to enhance crop adaptability. Starting from the fact that some stakeholders believe that the agricultural sector has not fully benefitted from the current FTA because of the strict standards imposed by the EU, not perfectly fitting within the local agricultural context,

production intensification coming from a DCFTA implementation is seen as negatively affecting natural resources use and small-holders farmers' market position. The skepticism of farmers about the effects of DCFTA is accompanied by the idea that supportive measures will be needed once the agreement is adopted.

Other measures needed from stakeholders' point of view relate to climate change adaptation techniques for the olive oil value chain. According to the ex-post assessment opinions, Tunisian farmers lack the resources to invest in developed equipment that would allow increased productivity and fair competition with European counterparts. The expansion of the export market seems to also be an opportunity for the modernization of production techniques.

Other inputs have been collected in the interview in relation to the need for an expansion of the quota and/or the introduction of a specific quota for organic olive oil. This aspect also emerged from the ex-post evaluation consultations, where a stakeholder observed the investment in organic olive oil because of the European market demand.

Policymakers pointed out that all the procedures including controls, permissions, certifications, licenses and other administrative procedures are reported as heavy obstacles to market access. In fact, health and safety certifications enabling exports to the EU are conceived as time and money consuming for local businesses. The most problematic NTMs remain the Sanitary and Phytosanitary standards for the agricultural sector.

Some regrets emerge from companies about the commercial relations with European importers, which do not allow to value sustainability efforts in production, particularly for organic production systems. This aspect is reflected in the ex-post evaluation consultations, which underline that quality and organicity of Tunisian olive oil needs to be better supported at state level in terms of policies and labels.

There is also awareness about the significant opportunity for sustainability enhancements and investments to improve production and minimize environmental impact that DCFTA could offer, for instance reducing the impact of waste and finding reuse solutions or optimizing the use of irrigation water. This feeling is also stressed by independent experts on the current FTA effects who assumed that its environmental impact has been mostly positive, because of the improved local management systems and modifications in operational strategies.

Concerning waste, mixed views are collected: some stating an increase due to more activity and transport, others identify some reductions due to environmental and efficiency performance.

6. Discussion

Tunisian-EU liberalization of agricultural trade presents issues which are not limited to the inadequate upgrading of the sector in general but lie above all in the almost total asymmetry (natural and structural) between the two competing agricultural economies. Although some significant steps forward have been made thanks to the current FTA, the proposed DCFTA could offer greater opportunities for integrating sustainable development considerations thanks to its broad regulatory scope of many economic sectors, agriculture included. In this process, the participation of all stakeholders, civil society included, is pivotal to ensure a comprehensive inclusion of not only economic but also social and environmental needs to be addressed.

For the olive oil sector, as suggested both by literature and stakeholders, the major risk of liberalization lies in the needs to intensify specific production processes, leading to two main issues: a strong and growing pressure on already compromised natural resources, like water, and the marginalization of small farmers and producers, who already face problems due to the competition from major exporting companies and lack of proper technical and financial means.

Based on the desk study and stakeholders' consultation analysis, some policy interventions or sector strategies covering all three sustainability dimensions are needed in the Tunisian olive oil sector. These should be considered in the framework of the ongoing negotiations for the establishment of the new DCFTA.

Looking at the economic dimension, it is evident that the current tariff quota system, together with the preference on other channels, especially

IPT, is affecting the potential of the olive oil sector, hindering production exports and value-added benefits. Even though the EU remains the main destination for olive oil exports, as resulted both from literature and interviews, one of the major challenges arises with the predominantly purchase of Tunisian olive oil in bulk and then blended with European oils. This severely limits Tunisia's ability to add value and creates consumers' ignorance about the origin of the olive oil they use, mixed with the European originating one.

Moreover, as Grumiller *et al*. (2018a) pointed out, a part of the bottles used for packaging are imported for quality maintenance reasons, burdening producers' costs. This is also underlined in Trade4SD interviews, where young producers who are trying to upgrade production and increase the share of branded products face difficulties and advocate for support. The elimination of quota could then enhance an increase of both bulk exports and bottled oil exports to the EU, ensuring an increase in value-added also from this market and not only from exports to third or emerging countries importing Tunisian oil. Furthermore, the increase in domestic consumption of olive oil should be an aspect not to be ignored.

As stressed by Ouertani and Dhraief (2022), the domestic use of olive oil in Tunisia is much lower than the average in the other major producing countries like Italy or Greece, and this is due to the historical attitude of Tunisia to focus on olive oil promotion primarily on foreign markets. At the same time other vegetable oils are imported and locally refined, packed and then sold on the market at a lower price compared to the olive one, which remains purchased mainly in bulk based on family reserves or directly from olive mills. Promoting domestic sell of bottled oil could serve as a lever for building a solid domestic formal olive oil trade, boosting quality assurance, meeting local consumers' needs in terms of taste and food safety, increasing citizens fair access to high-quality olive oil and local distribution companies added value, thus reducing the reliance on imported vegetable oils.

It is worth remembering that, as underlined by Fernández-Lobato *et al*. (2022) Tunisian olive plants are cultivated with reduced inputs use, without irrigation, and with only small quantity of fertilizers, most of which are organic and used in extensive cultivation. Thus, as also stressed by stakeholders, the organic quality of Tunisian agricultural products is high and should receive a more robust support at State level as well as in the envisaged DCFTA, focusing on ensuring compliance with required standards throughout the entire value chain.

For these reasons, three main economic policy recommendations have been developed:

1. Deep reform of the tariff quota system for olive oil exports to the EU, with special attention to Tunisian organic oil, for increasing the overall volume of exports and enhancing the proportion of higher-value and processed export products.
2. Promotion of national marketing and branding strategies for bottled oil exports and domestic selling as a lever for building a solid formal olive oil trade, boosting quality assurance, meeting local consumers' needs in terms of taste and food safety, increasing citizens fair access to high-quality olive oil and local distribution companies added value, thus reducing the reliance on imported vegetable oils.
3. Strengthened efforts in promoting the organicity and quality of Tunisian agricultural products through certification schemes, to drive olive oil exports and meeting the rising demand and attention among European consumers for organic products.

From an environmental perspective, as stressed in the previous sections, the impacts of climate change in Tunisia mainly concern arable lands and water resources, with a rising incidence of drought.

Water scarcity, in particular, is a critical issue that threatens the long-term sustainability of agriculture in Tunisia. The country's water resources are being depleted at an alarming rate, with the country already classified as experiencing absolute water scarcity and groundwater levels continuing to decline due to over-extraction (Chebil *et al*., 2019). These challenges affect farming activities in terms of profitability.

Several strategies and actions have been implemented in the country to deal with water

scarcity, such as precise and alternative irrigation techniques (DGPA, 2020; UNDP, 2022), sustainable high-density planting methods (Larbi *et al*., 2017), wastewater treatment systems (MA, 2018; FAO, 2015), as well as farmers' participation in water resource governance (Bied-Charreton *et al*., 2006; Ballet *et al*., 2009). The National Water Program (MA, 2022), which encompasses desalination plants powered by solar energy, dam construction, water reservoirs, and urban water collection, is a step in this direction. However, additional efforts are needed to promote water-efficient cultivation systems and ensure the inclusion of all farmers in the value chains (Chebil *et al*., 2019), as emphasized by stakeholder consultations and interview results. Addressing these aspects within the framework of the new DCFTA would contribute to overcoming farmers' scepticism about its effects at the farm and local market levels.

In this regard, three environmental policy actions have been elaborated:

1. Global transformation of the Tunisian agricultural and food trade model should be encouraged, leveraging both larger and smallholder farmers through specific public policies in support of locally sustainable agricultural development.
2. Focused interventions on water-efficient cultivation systems dedicated to farms of all sizes.
3. Nationally supported measures enabling olive oil value chain stakeholders to manage the sustainable transition required for the sector with the appropriate financial, technical, and marketing-related resources.

The social dimension is deeply intertwined with both the economic and environmental challenges faced by Tunisia's agricultural sector, particularly the olive oil supply chain. The transformation of this sector has occurred within a sociopolitical context marked by instability and ongoing processes of democratic consolidation (Grumiller *et al*., 2018a). As Tunisia continues its path toward democracy, it is crucial to recognize the vulnerabilities of rural communities, which often bear the brunt of these economic and environmental shifts. As highlighted in the interviews, small producers struggle with limited resources and market access, leaving them ill-equipped to manage the ecological transition necessary for sustainable farming practices. Stakeholders emphasized that any reform must promote not only economic growth but also territorial and social cohesion, with specific attention to rural areas and small producers who lack the means for managing a sustainable food system transition. This requires policies that bridge the rural-urban divide, ensuring that rural areas benefit from improved infrastructure, education and market access (Grumiller *et al*., 2018a). Furthermore, empowering smallholders through capacity-building initiatives, access to financial resources and technical training would enable them to engage fully in ecological and technological advancements to cope with the effects of climate change (Ballet *et al*., 2009).

Thus, three social policy recommendations have been drafted:

1. Promotion of a national stable economic growth, based on territorial and social unity.
2. Counteract of spatial inequalities in terms of production and food security, with a bottom-up approach, inclusive of all farmers and producers' needs, avoiding risks of marginalization.
3. Olive oil sector's transformation into an inclusive segment, driven both by exports and domestic production, with an equitable benefits' sharing.

7. Conclusions

The topic of sustainability in trade relationships is dominating the international debate for fairer links among areas and countries. A broader renewed multilateral approach is advocated, since environmental and social aspects of sustainability cannot be solved on a unilateral or bilateral basis. Indeed, only through the diffusion of fairer and more inclusive commercial rules, attentive to the diversity of local agri-food systems, domestic economies and social systems, we could avoid the upheaval of the socio-economic and environmental unbalances with which many territories coexist today (Ferroni, 2024; World Economic Forum, 2021; Gallagher

and Kozul-Wright, 2019). Stakeholders perceive them as being further undermined by uneven international trade relations, which remain in place to maintain economic and political interests, often at the expense of the local dimension of production.

From the analysis conducted in this study, several challenges can be easily traced back to all three areas of sustainability. Economic, environmental and social issues of the Tunisian agri-food system and, in particular, of the agricultural sector, must necessarily be taken into consideration so that a future bilateral trade agreement defined as "deep and comprehensive" can lead to tangible benefits for both the parties involved. The current DCFTA negotiations should be then seen as the great opportunity to promote the EU's commitment in establishing trade relations based on multilateral needs and interests, to enhance the European market access for Tunisian olive oil and to comprehensively upgrade the local olive oil sector.

In this context, the EU's role could be pivotal in areas where cooperation can provide the greatest benefits to the local olive oil industry. By meeting the needs raised by the value chain stakeholders, the EU could contribute to decreasing the disparities that generate the current asymmetry of the two sector economies.

Sustainable and affordable agricultural practices working on the efficient use of water, the reuse of wastes and appropriate cultivation methods could be promoted also by conducting field studies and context research envisaging the direct collaboration of smallholder farmers and local value chain stakeholders. This would serve as leverage both for farmers, who would be active participants in the process of changing their sector and local economy, and for local government, which would have additional information at its disposal to enable the shaping of need-based sectoral policies. These terms also include all the efforts in terms of economic and technical support needed by farmers to cope with the ecological transition required to face the ongoing climate issues that are challenging the Mediterranean and North African regions.

The transformation of the local olive oil sector into an inclusive and structured one could be also supported by fostering the coordination of farmers into groups or cooperatives. Farmer-based organizations could serve as opportunities for fostering interests at both local and national political levels, bringing to attention the challenges of the sector and especially the great opportunities that high-quality local production can seize. Establishing connections among various stakeholders in the value chain could bring positive impacts not only on productivity and quality standards of olive oil, but also in terms of brand promotion and strengthening of the identity of Tunisian oil. Because of its importance to the national economy, boosting the sector would generate spillover effects on the country's overall economy, taking Tunisia a step closer to the SDGs alignment and contributing to reaching a symmetrical participation in bilateral trade with the EU.

Considering a framework of sustainability indicators and studying the causality between trade agreements' effects and the three dimensions of sustainability, this study could open further developments and perspectives, which could include quantitative analyses of the impacts of EU-Tunisia trade agreements on the olive oil sector, but also a broader involvement of sector's stakeholders through interviews or questionnaires aimed at investigating the views of female and male workers, for instance, not included in the current analysis for the aforementioned reasons. By employing appropriate methodologies that combine quantitative and qualitative data analysis (such as text mining and sentiment analysis), the perceptions of local actors involved in the reference supply chain could be utilized to validate what has been quantitatively analysed.

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