Prospects for Jobs
Deconstructing Turkey’s Labour Market for Refugees

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Photographs: © 2020, SPARK

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# Table of Contents

List of abbreviations .................................................................................................................. 3
Executive Summary ....................................................................................................................... 4
Introduction .................................................................................................................................. 5
Background .................................................................................................................................... 5
Methodology .................................................................................................................................. 6
Snapshot of Turkey’s Economy ...................................................................................................... 8
Sectorial predictions ...................................................................................................................... 8
  1. Şanlıurfa ................................................................................................................................. 9
  2. Gaziantep ................................................................................................................................ 12
  3. Hatay ...................................................................................................................................... 14
  4. Adana ..................................................................................................................................... 15
  5. Mersin ...................................................................................................................................... 17
  6. Istanbul ................................................................................................................................... 19
Recommendations ........................................................................................................................ 21
## List of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABİGEM</td>
<td>European Business Development Centre</td>
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<tr>
<td>AI</td>
<td>Artificial intelligence</td>
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<tr>
<td>CAD</td>
<td>Computer-aided design</td>
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<tr>
<td>CAM</td>
<td>Computer-aided manufacturing</td>
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<td>CNC</td>
<td>Computational numerical control machining</td>
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<tr>
<td>DGMM</td>
<td>Directorate General of Migration Management</td>
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<tr>
<td>EO</td>
<td>Entrepreneurs’ Organization</td>
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<tr>
<td>ILO</td>
<td>International Labour Organization</td>
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<tr>
<td>INGO</td>
<td>International non-governmental organization</td>
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<tr>
<td>İŞKUR</td>
<td>Turkish Employment Agency</td>
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<tr>
<td>KAGİDER</td>
<td>Women Entrepreneurs Association</td>
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<tr>
<td>KII</td>
<td>Key informant interview</td>
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<tr>
<td>MEKSA</td>
<td>Foundation for the Promotion of Vocational Training and Small Industry in Turkey</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
</tr>
<tr>
<td>PMI</td>
<td>Purchasing Managers’ Index</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and development</td>
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<tr>
<td>SuTP</td>
<td>Syrians under temporary protection</td>
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<tr>
<td>ŞUTSO</td>
<td>Şanlıurfa Chamber of Commerce and Industry</td>
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<tr>
<td>TOBB</td>
<td>Union of Chambers and Commodity Exchanges of Turkey</td>
</tr>
<tr>
<td>TÖMER</td>
<td>Türkçe Öğretim Merkezi</td>
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<tr>
<td>TUIK</td>
<td>Turkish Statistical Institute</td>
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<tr>
<td>TÜRKONFED</td>
<td>Turkish Enterprise and Business Confederation</td>
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<tr>
<td>TVET</td>
<td>Technical and vocational education and training</td>
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<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNHCR</td>
<td>United Nations High Commissioner for Refugees</td>
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Executive Summary

This report was commissioned to examine the current state of the labour market in selected cities across South-eastern Turkey and Istanbul, by mapping out the potential sectors in need of labour.

The report draws attention to the fact that in recent years economic turmoil and a fragile political context have hit the Turkish economy, which has resulted in a high unemployment rate and decreased the production capacity of the local economy. Deteriorating working conditions for all and currency volatility have squeezed purchasing power and have been a key determinant in decision-making processes regarding economic activities. Further investigations have also revealed that this market shrinkage coincided with an increase in regional and global political tension, hindering the regional expansion of the Turkish economy across the MENA region. However, despite the economic fluctuation in the labour market in Turkey, there is high demand for labour in certain sectors, in particular intermediate staff in niche sub-sectors. The research also indicates that new technologies have been transforming conventional production processes, creating demand for technology-driven production regardless of the economic progress of the province. The most frequently identified demands during the field visits and desk-based review are as follows:

- **Metal and Woodworking Industries**: computational numerical control machining (CNC), computer-aided design (CAD), computer-aided manufacturing (CAM).
- **Textile, Clothing, and Leather and Footwear Sectors**: the digitalization and automation of production and ambition to produce high value-added goods increase demand for the abilities to work with robotics and digital technologies and skills in designing and styling.
- **Information and Communication Technologies Sector**: programming, coding skills for web, front-end, JavaScript C++, and PLC programmers, mobile apps, AI.
- **Energy and Petrochemical Industries**: boosting demand for biochemical and process engineering and chemistry competencies especially in the Ceyhan region. Skills in renewable energy especially solar energy for product design and development, installations.
- **Pharmacological and Medical Device Industry**: as a part of Turkey’s 2023 goal demand for skills in health service, pharmaceutical and medical sectors as product developers, designers, programmers, and engineers.

With up-to-date labour market needs and sectoral concentration in South-eastern Turkey and Istanbul, the report evaluates the following potential entry points to the formal and decent labour market for SPARK’s Syrian scholars:

- Turkey’s economy has been entering a new phase through the hasty revolutionization of sectoral excellence strategies in numerous areas, including manufacturing, information, and communication, which cause mismatch between the supply and demand side of the labour market. Directing SPARK’s scholars towards information and communication technologies, equipping them with applications and programmes, and increasing their digital literacy capacity empower them to be competent candidates in the competitive labour market.
- Turkey’s recent emphasis on design and R&D units as well as promotion of cooperation between universities and businesses offers one of the most suitable points for partnership. Technology transfer offices have been developing online portals to bring together students and employees for internship and employment opportunities and to make referrals to companies.
- Business confederations headquartered in Istanbul are the determinants in upcoming development interventions during the transition period of the Syrian refugee crisis to sustainable development.
- In particular, the Istanbul Metropolitan Municipality is a key actor in overseeing migration-related activities through district municipalities. Due to well-organized units such as ISMEK and Zemin Istanbul, SPARK’s holistic approach in education and entrepreneurship can be part of the policies and strategies of the Istanbul Metropolitan Municipality.
SPARK would establish new and innovative multi-stakeholder partnerships to address skills mismatch at the regional, sectoral, or local levels, especially with newly emerging business partners (private sector and its representatives) or intermediary organizations (support organizations/development consultancy firms) that have rarely been contacted before.

Introduction

Since the beginning of the mass flows of Syrian refugees to Turkey, enabling Syrians under temporary protection (SuTP) to become self-reliant through means of livelihood has been subject to growing attention. Including the United Nations, NGOs and INGOs, and Turkish state institutions, many actors are working hard to establish livelihood mechanisms for SuTP through skill-up, match-up, scale-up, and start-up projects such as vocational training, job readiness, and social entrepreneurship programmes.

In spite of these efforts, social exclusion has become one of the biggest realities for SuTP. Given the fact that Turkey has been experiencing serious economic slowdown, conducting livelihood programmes without any reliable economic data could create undesired outcomes, such as increasing social tension and setting barriers to SuTP’s access to the market. To enhance a labour market where people are democratically involved in economic activities and freely pursue the means for economic ends, integrating livelihood programmes with contemporary economic dynamics and trends is a necessity for the success of any project.

Relying on this premise, this labour market assessment is conducted by Innovation for Development on behalf of SPARK. It is a modest attempt to offer a blueprint of Turkey’s economy with which a sustainable livelihood programme can be constructed. It highlights the human capital trends in Turkey, clarifies potential sectors and skills needed, and detects employment and internship opportunities for SuTP.

Background

Ever-increasing tension since the March 2011 demonstration in Daraa, Syria, has been forcing Syrian citizens to find refuge in neighbouring countries. Because of its proximity to Syria and its open border and open door policies, Turkey has become the country with the largest refugee population.

Throughout the Syrian crisis, two premises have been shaping Turkey’s response to the influx of Syrian refugees. First, as a member of the United Nations, Turkey signed the 1951 Refugee Convention and 1967 Protocol. Yet Turkey has been maintaining the geographical limitation to the 1951 Convention, which only grants “refugee status” to those coming from Europe. Therefore, while the number of refugees from Syria has increased, Turkey’s refugee policy has been taking a unique form during the process of ongoing efforts both to be in compliance with the international standards and to handle immigration-related matters effectively. Secondly Turkey’s perception of the crisis as a temporary phenomenon has led to the development of improvised policies creating an eclectic doxa and set of practices.

At the beginning of the Syrians crisis, Turkey granted the status of “temporary protection” to Syrians. However, this status lacked legal, political, and contextual clarity. As the number of refugees has been rising, reaching more than one and a half million in 2014, Turkey revised its legal and administrative tools. The Law on Foreigners and International Protection was passed in April 2013 and came into force in April 2014. With the Temporary Protection Regulation of October 2014 Turkey eventually defined the legal status of refugees and provided rights including respect of the non-refoulement principle, access to health and welfare services, access to education, and access to services for people with special needs. Turkey established the Directorate General of Migration Management (DGMM) as a regular and permanent agency responsible for policies and strategies related to migration.1

Starting from the second half of 2014, the political developments in Syria, especially the expansion of the Islamic State, brought serious consequences: exacerbating the humanitarian situation and forcing Turkey to rethink its approach to Syrian refugees. The number of Syrians fleeing to Turkey skyrocketed 1

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and reached about two million in October 2015 and three million in June 2017. The Syrian refugee population also started to move towards Europe, which prompted cooperation between the EU and Turkey. The Turkey Joint Action Plan in October 2015 and the EU Turkey statement in March 2016 were declared. The agreements led to the establishment of the Facility for Refugees in Turkey (FRIT) accompanied by the EU Regional Trust Fund in Response to the Syrian Crisis (Madad Fund). According to these agreements, the EU would provide financial assistance to support the Syrian refugee population in Turkey. In return, Turkey would halt the movement of refugees towards Europe. These agreements are also a sign of Turkey’s new refugee paradigm. Turkey began to focus more on long-term solutions and common action and integration of refugees into Turkey’s economy.

Currently, Turkey hosts the largest SuTP population, which numbers 3,576,659 according to the January 2020 data, released by the Directorate General for Migration Management. Although most SuTP live in urban areas, only 31,185 people have work permits. The widespread informality and low-quality jobs cause problems for the economy of Turkey and force SuTP to live in unbearable conditions. Turkey works in cooperation with INGOs and UN institutions to relieve the burden on the labour market. Employment, entrepreneurship projects, and advocacy for transitions to the formal labour market are a significant component of FRIT II. In Turkey’s recent discourse, agricultural means as a sustainable livelihood source for refugees has become the focus of interest regarding the integration of refugees.

Methodology

The present research aims to find concrete answers to the following questions:

1) What are the economic and human capital trends in Turkey?
2) Which sectors currently absorb labour and which are likely to see increases in employment?
3) What are the top ten skill sets required by function in the value chain, by type of firm, by region?
4) What occupations, education levels, and skills levels are possessed by the workforce in the selected cities? What types of training are offered by which institutions in the same geographical area in which SPARK operates?
5) What are the institutional relationships, barriers, and opportunities for promoting change?
6) Which policies affect the labour market and what are their implications for reform?
7) What are the target population characteristics and dynamics (by segment)? What are the entry points for SPARK beneficiaries? How can alignment be improved through system changes and policy reforms?

For these purposes, two different methods are utilized in the labour market assessment: desk research and key informant interviews from a market-driven perspective to detect market trends and needs. First, extensive desk analysis is carried out to draw a sectoral outline of the economy of Turkey and detect potential actors for face-to-face interviews. Desk research heavily relies on statistical data reports from the Turkish Statistical Institute (TUIK), Ministries, Directorates, and Chambers. The most recent publications on the Turkish economy and SuTP are also reviewed. The selection of key informants for interview is done in accordance with the sectoral profile of SPARK beneficiaries and the most prominent actors in the sectors that have growth potential.

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3 https://ec.europa.eu/neighbourhood-enlargement/news_corner/migration_en
6 Data from the press briefing https://www.ntv.com.tr/ekonomi/bakan-pekcan-turkiyede-15-bin-159-suriyeli-sirket-var,RTL47cjOKib4YUu7f_Uu3g
7 https://ec.europa.eu/neighbourhood-enlargement/news_corner/migration
The most challenging aspect of the study was detecting potential sectors and sub-sections which are expected to grow and offer opportunities for employees and entrepreneurs. At the beginning, by convention, the prospective industries were planned to be determined through the measurement of the increase in the number of employees from 2017 to 2018. However, as a result of the slowdown in Turkey’s economy, there is a decrease in almost all sectors. In place, Turkey’s development policies such as the 11th Development Plan for the 2019-2023 Period and 2023 Industry and Technology Strategy are studied to provide information for predictions. Given the fact that the development plans and strategies have a political texture, the information is cross-checked with the reports of Chambers and development agencies for verification purposes.

The second method deployed to obtain in-depth knowledge of Turkey’s economy is key informant interviews. The data covered in the labour market assessment were collected through 37 interviews conducted in Şanlıurfa, Gaziantep, Hatay, Mersin, Adana, and Istanbul in that order, from December 2019 to January 2020. These cities are selected under the supervision of SPARK for three reasons: first, these cities are the major destination for refugees, located on migration pathways, and hosting most of the refugee population in Turkey. Secondly, SPARK beneficiaries are registered in these cities or enrolled in the universities there. Lastly, these cities offer many opportunities to SuTP to create their own livelihood mechanism because of their thriving economies.

The informants in these cities are asked to respond to semi-structured questionnaires to detect market demand. The questionnaire consists of the following questions:

1) Which sectors need qualified staff the most?
2) What are the top 10 professions that the market needs?
3) For which professions does the market need vocational training?
4) Which sectors do you predict to grow in the coming years?

* Consult Table 1.
Snapshot of Turkey’s Economy

After experiencing a recession in late 2018, Turkey has been striving to restore sustainable growth. Despite an expansionary fiscal policy, rapid credit provision by state-owned banks, and favourable external financing conditions, Turkey’s economy is expected to grow by only 0.2% this year.10 Growth is predicted to rebound to 3% in 2020, accelerating further to 4% in 2021. The depreciation of the Turkish lira, which lost more than 40% of its value against the USD in 2018, supported its external balances in 2019. While export market shares rose because of competitiveness gains, there was a sharp decline in imports.11

Turkey has a young and educated population, which puts it in an advantageous position in the global market. According to the data released in October 2019, Turkey’s labour force reached 32,740,000 people, of which around 28,440,000 are employed. This means that 13% of the Turkish labour force is unemployed. The most severe challenge, however, is youth employment: the youth unemployment rate and broad unemployment rate hit all-time highs of 27.2% in August 2019.12

According to the data released by TUIK in 2018, Turkey’s labour force with higher education numbered around 7,700,000, which is a positive factor. Yet 12-13% of the educated labour force is unemployed.13 The clearest outcome is the brain drain among highly educated young people, which has been exacerbated for the last three years. Among a variety of issues, such as the pressure of unemployment on educated people, working conditions, and political and economic instability, the lack of sufficient job opportunities for educated labour force pervades the political discourse.14

Sectorial predictions

Suffering from the recession in 2018, Turkey’s economic sectors experienced serious meltdown in 2019, making it difficult to predict the trends in Turkey’s labour market. Turkey’s labour force increased by 82,000 people in October in comparison to the same month of the previous year, while the labour force participation rate decreased 0.7% to 53.0%. Construction is one of the most adversely affected sectors: the number of people employed in the construction sector fell to 1,638,000 in October 2019, from 1,992,000 in 2018, indicating a decrease of 21%.15 In the agricultural, industrial, and service sectors, however, there is a low level of increase in employment. In agriculture and manufacturing, 185,000 people make up the labour force, while only 65,000 people are employed in the service sector.16

Given that Turkey’s economy is in turmoil, the assessment of Turkey’s employment trends is a challenging endeavour. Alternatively, the 11th Development Plan of Turkey, ratified in June 2019, outlines a road map for Turkey’s social and economic development and highlights the industries which have high potential to grow.16 Turkey’s Five-Year Development Plan starts with the provision that, in the global economy, cheap labour-based competition is replaced with production based on high technology and innovation to create competitive advantages. Therefore, a manufacturing-oriented approach would shape Turkey’s industrial policies with priority given to strategic products, high-technology, and export-oriented investments. For the industrial sectors, Turkey would put emphasis on the chemical, pharmaceutical and medical device, electronics, electric machinery/equipment manufacturing, automotive, and rail vehicle manufacturing industries. In the chemical industry, the production of value-added eco-friendly, competitive, and sustainable products is the primary aim.

In this regard, Turkey plans to make more investments, provide incentives in Ceyhan Energy Specialized Industrial Zone, and construct petro-chemical facilities in the Çukurova region, which will be clustered for the chemical and energy industry. In the pharmaceutical and medical device industries, start-ups will be funded, simulation centres will be constructed, and R&D would be promoted, in order to construct value chains for competitive pharmaceutical and medical products.17

12 Data from TUIK via http://www.tuik.gov.tr/PreHaberBultenleri.do?id=33777
13 Data from TUIK via http://www.tuik.gov.tr/PreHaberBultenleri.do?id=33777
14 Data from TUIK via http://tuik.gov.tr/PreHaberBultenleri.do?id=30711
15 Data from TUIK via http://www.tuik.gov.tr/ustMenu.do?metod=temelist
In the electronics industry, R&D and production activities in electronic communication networks and infrastructure, especially in 5G, will be encouraged. In Istanbul, Ankara, and Izmir Electronic and Communication Development Zones would be established.18

In the automotive industry, technology and production capabilities in areas such as sensors, batteries, fuel cells, and software will be improved. There would be incentives in the battery industry for electric cars. For already existing industries such as textiles, clothing, and leather, furniture fashion design and branding would be encouraged for high value added products.19

Turkey is planning to widen its support for R&D and design centres, the respective numbers of which are 1,227 and 358, in which 67,477 people with university degrees are employed.20 In 2018, Turkey’s research and development expenditure was 1.03% of GDP. Turkey plans to spend 1.8% of its total GDP for R&D and design in upcoming years. To achieve this goal, Turkey, through the Ministry of Industry and Technology, gives incentives to companies including tax exemption, stamp duty exemption, and R&D grants.21

Turkey regards the mismatch in vocational education and industry as one of the most serious problems of its growing economy. Therefore, Turkey’s development strategy puts special emphasis on the empowerment of the labour force to respond to the industrial demand for competent labour. In this respect, Turkey’s vocational training strategy tries to integrate vocational training and higher education with businesses. In 2020, through the Skill Inventory Project conducted by IŞKUR, the skills of the Turkish labour force will be mapped. This map will be used to revise the education system in accordance with the need of Turkey’s industry. In this respect, the number of vocational high schools in organized zones will be increased.22 To embrace the current development trends in technology and to transform industry into a digital world, Turkey will reinforce the digital skills of its labour force, especially in the manufacturing industry. In this context, Turkey will encourage the development of indigenous digital products and systems and promote their improvement and monetization. Through the Digital Transformation Programme, Turkey plans to construct an industrial cloud platform for SMEs through which they would adopt the Internet of things. The cybersecurity of industrial enterprises will be reinforced and protective measures for production plants and supply chains will be implemented. Ecommerce will be promoted through incentives and training programmes especially to boost exports.23

I. Şanlıurfa

<table>
<thead>
<tr>
<th>Şanlıurfa</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Sectoral total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>5 984 479</td>
<td>5 372 670</td>
<td>13 189 142</td>
<td>24 546 291.60</td>
</tr>
<tr>
<td></td>
<td>24.38%</td>
<td>21.89%</td>
<td>53.73%</td>
<td></td>
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<tr>
<td>2018</td>
<td>7 431 440</td>
<td>6 032 799</td>
<td>15 695 199</td>
<td>29 159 439.51</td>
</tr>
<tr>
<td></td>
<td>25.49%</td>
<td>20.69%</td>
<td>53.83%</td>
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</table>

Hosting 428,306 SuTP with 2,035,809 Turkish inhabitants, Şanlıurfa has the fourth largest refugee population with 21.04%.25 Yet its GDP per capita is just $3,431, significantly below Turkey’s average ($9,693).26 The city is located on the Harran Plain, one of the most significant agricultural plains in Turkey. As

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20 Data from the Ministry of Industry and Technology, via https://agtm.sanayi.gov.tr/
21 Data from the Ministry of Industry and Technology via https://www.sanayi.gov.tr/?lang=tr
24 Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
25 Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
a result of this agricultural significance, peanuts, cotton, wheat, and animal husbandry occupy a significant place in its economy. Its industry also heavily relies on agricultural production and the share of the textile and food sectors in the total manufacturing industry is high.

Şanlıurfa is classified within the 6th region according to the Regional Investment Incentive. The Regional Investment Incentive Scheme offers special support to the companies in six regions, which are grouped according to their socio-economic characteristics, for certain industries identified in line with the competitive potentials and economic scales of these regions. Companies operating in the Şanlıurfa region receive privileges such as VAT exemption, customs duty exemption (90%), SSP support, land allocation, interest rate support, and income tax withholding support as a result. Consequently, Şanlıurfa has become a magnet for companies and encouraged entrepreneurs to pursue new business opportunities. Both the Şanlıurfa Chamber of Commerce and Industry and İSKUR expect a significant increase in the number of large companies in Şanlıurfa.

For instance, the shoe-making company Flo, where more than one thousand people are employed, installed production facilities to receive benefits from the Regional Investment Incentive Scheme. This move also increased other entrepreneurs’ interest in the shoe-making industry. In order to accelerate the development of the shoe-making industry, the Şanlıurfa Industrial Zone Directorate in cooperation with Şanlıurfa Chamber of Commerce and Industry (SİTSO) has been building a Shoe-making Industrial Region for 13 factories where more than 3,500 people are expected to be employed. The textile industry has been following a similar pattern. Although Şanlıurfa is an important cotton producer, cotton is processed in Gaziantep. With the help of the incentive Scheme and the Directorate and Chamber Plan, the Chamber plans to make Şanlıurfa a textile centre in the region. To achieve this, they have been constructing the Textile Industrial Region, where ready-to-wear enterprises would be clustered.

The lack of value added production is the main concern regarding the city. The shoe-making and textile industries suffer from low quality production as a result of sub-contracting manufacturing of imitated products. Companies are encouraged to create their own brands and markets with innovative products, processes, and operations. Yet the lack of qualified employees in various manufacturing processes especially in automated machines and product design slows the growth pace of companies. Qualifications for computer-controlled machine tools such as CNC for wood and metals and computer-based textile machines are in high demand. Designers for the shoe-making, ready-to-wear, and metal (model machinist) industries are also needed for product development. The manager of a sandpaper and buffing materials company, Akif Saraç, pointed out the difficulty in finding qualified employees for computer-based textile machines in his factory. The demand for skilled workers in the mentioned areas is also verified by İSKUR. Workers who have the ability to use computer-based and computer-aided machines such as CNC, turning and textile machines, professional designers for the textile industry, shoe-makers, gas welders, and accountants are the workers who are most desired by companies who applied to İSKUR. In addition to these skills, because of technological transformation and incentives for Technology Development Zones, Şanlıurfa’s economy also needs software developers, programmers for R&D units and start-ups, and especially employees who can develop new marketing strategies for e-commerce.

Employer 1: Şanlıurfa
Egebant Sandpaper and Buffering Materials was established in 1969. It sells the products of 3M, Klingspor, Naxoflex, sandpapers, Scaol and 3M self-adhesive tapes, safety products, and Dynabrade air-supported hand tools. Egebant’s head office and main factory building are in Kocaeli province. It has invested in the east of Turkey and created employment opportunities with its second factory in Şanlıurfa to benefit from the Regional Investment Scheme. The company employs more than 400 people.

The interview is conducted with Akif Saraç, the manager of Egebant, which is owned by his brother in law. Mr. Saraç claims that the biggest problem in Şanlıurfa is that the labour force has difficulty in adapting to workplace culture. They have a limited sense of job-related concepts such as working

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28 KII, Aytaç İZGORDÜ Deputy General Secretary of Şanlıurfa Chamber of Commerce and Industry
29 KII, Aytaç İZGORDÜ Deputy General Secretary of Şanlıurfa Chamber of Commerce and Industry and Şertaç İŞIK, MEKSA Regional Director
30 KII, AKIF SARAÇ, The manager of a sandpaper and buffing materials company, Ege Bant
31 KII, Halil KARAN, Şanlıurfa İSKUR Job and Training Consultant
32 KII, Yusuf BAL, HARRAN UNIVERSITY Technopark Deputy General Manager
hours, shifts, and the importance of completing tasks on time. He adds that some workers consciously broke the machines. He says that the company opened a factory in Şanlıurfa because of Regional investment Scheme incentives and the owners want to give something back to their hometown. Yet, in spite of the large supply of labour, the company could not find qualified workers.

The skills the company needs vary from the ability to work automated computerized machines, such as sewing machines, to competency in chemistry and engineering. Yet Mr. Saraç claims that they could not find competent candidates for low or high quality vacancies. Currently the company works with Urfa Vocational and Technical Anatolian High School to hire new graduates. He asserts that the company currently does not employ Syrians. However, they plan to hire a number of Syrians.

Yet he brings up two concerns. While youth unemployment among the Turkish population is high, hiring Syrians can elicit a negative reaction locally. Secondly, the language barrier and cultural codes can impede the integration process of Syrian and Turkish workers, which may impair the harmony in the factory.33

Şanlıurfa does not have sufficient qualified employees for its developing industries. As a result of this, ŞUTSO and MEKSA have been actively working to train the labour force in Şanlıurfa. ŞUTSO has been contributing to the formation of the Şanlıurfa Technology Development Centre (ŞUTGEM), which will start to operate next year as a vocational training centre and SMEs support centre. Relying on the market needs assessment, the Centre will provide training programmes in turning machine (lathe) plastic injection, CNC, and metal processing.34 MEKSA also conducts studies in the field in order to assess the market needs in Şanlıurfa. On the basis of this study, MEKSA Regional Director Sertaç Işık stated the need for skills in the metal industry (especially welding), textile industry (especially designers and shoe-making designers), CNC (operators and programmers), tourism (receptionists and housekeepers), and solar energy sectors.35 The data collected through key informant interviews in Şanlıurfa overlap with the İŞKUR Şanlıurfa Labour Market Report, where companies advertise for jobs involving textile machines, model machines (woven ready-made clothing and home textiles), software, and metal processing.36

Employer 2: Şanlıurfa
Consumer Management Center (CMC) is a private company operating in Turkey since 2000. It has about five thousand employees and has workplaces in Istanbul, Malatya, Urfa, Rize, Bayburt, and Van. CMC specializes in outbound services such as telemarketing, telesales, payment management, inbound services, technology and support services, social media management, and BPO services. Its employees mostly have at least an associate degree or higher certificate.

In the course of the interview, Bakır Küçük, Procurement Specialist at CMC, says that CMC is expanding its operation in Şanlıurfa to benefit from the Regional Investment Scheme. Yet the company could not find enough qualified labour. The needs for employees vary from who have skills in telemarketing and telesales to technical knowledge of inbound services. Yet Mr. Küçük says that university graduates in Şanlıurfa prefer to work in other cities. He adds that his company can hire qualified Arabic-speaking employees for their Arabic-speaking consumers if they use outsourced services.37

Şanlıurfa hosts a large number of SPARK’s beneficiaries studying in the civil, mechanical, and electrical engineering, architecture, and accounting departments of Harran University. Taking into account the size and quality of Şanlıurfa’s economy and the economic slowdown, matching graduates with businesses is difficult. Şanlıurfa Technopark, under the governorship of Yusuf Bal, plans to increase the number of tech companies and start-ups where 79 SPARK beneficiaries who graduated from the electrical engineering and computer science departments could be employed in upcoming years.38

Some companies demand accountants, as mentioned by Halil Karan, Şanlıurfa İŞKUR Job and Training Consultant.39 Therefore, SPARK beneficiaries who graduated from Accounting and Tax Practices have the opportunity to be employed in Şanlıurfa. For civil engineering, however, because of the shrinkage in

33 KII, Akif Saraç, The manager of a sandpaper and buffing materials company, Egebant
34 KII, Aytaç İğdır Poyraz, Deputy General Secretary of Şanlıurfa Chamber of Commerce and Industry
35 KII, Sertaç Işık, MEKSA Regional Director
37 KII, Bakır Küçük, Procurement Specialist at Consumer Management Center
38 KII, Yusuf Bal, Harran University Technopark Deputy General Manager
39 KII, Halil Karan, Şanlıurfa İŞKUR Job and Training Consultant
the construction sector, job opportunities are very limited, as stated by the Chairperson of Şanlıurfa TOBB Young Entrepreneurs Board İbrahim Halil Yırtar, who also runs a construction company.\(^{40}\)

Promotion of design and R&D centres in the food and manufacturing industries by the Chamber of Industry and Commerce more likely creates opportunity for SPARK beneficiaries especially in engineering, computer science, agricultural machinery, and technologies engineering. Yet it is predicted that the economic slowdown will limit the investment in R&D.\(^{41}\) Yet the current demand for skills that just require a TVET Diploma is immense. It is probable that SPARK beneficiaries enrolled in computer programming would work as CNC operators and programmers. SPARK’s scholars enrolled in the Textile, Clothing, Shoes, and Leather programme and the Textile Technology programme have a chance to be employed in the textile and shoe-making industries.\(^{42}\) Because of the demand from the tourism sector, as mentioned by MEKSA Regional Director Sertaç İşik, two scholars studying Tourism and Travel Services at Harran University can be employed.\(^{43}\)

2. Gaziantep

Gross domestic product by provinces by kind of economic activity, current prices, 2017-2018 (TL)\(^{44}\)

<table>
<thead>
<tr>
<th>Gaziantep</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Sectoral total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2 287 256.30</td>
<td>23 364 961.69</td>
<td>23 580 436.74</td>
<td>49 232 655</td>
</tr>
<tr>
<td></td>
<td>4.65%</td>
<td>47.46%</td>
<td>47.90%</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>3 756 931.60</td>
<td>28 856 632.00</td>
<td>28 550 343.02</td>
<td>61 163 907</td>
</tr>
<tr>
<td></td>
<td>6.14%</td>
<td>47.18%</td>
<td>46.68%</td>
<td></td>
</tr>
</tbody>
</table>

Gaziantep, with 2 028 563 citizens and its diverse production, is an important economic hub where about 454 181 SuTP live.\(^{45}\) The city has one of the most powerful economies in the southern part of Turkey by GDP, which reached about 61 million TL in 2018. The industrial sector has the highest share in GDP, with 47.18%, which is followed by the service sector, with 46.68%.\(^{46}\) Its diverse industrial production developed due to agricultural products produced in Gaziantep and neighbouring cities. Food production includes wheat flour, pasta, noodles, semolina, vegetable oils, margarine, pistachio processing, and other nut processing. The textile industry in Gaziantep is mainly concentrated on the production of raw materials and semi-finished products. Acrylic, polypropylene, and polyester yarns, machine and tufting woven carpets, non-cotton polypropylene bags, knitwear, and knitwear clothing are the most notable products.

The metal and machinery industry in Gaziantep has developed based on the food, textile, and plastic industries where mill machinery manufacturing for bulghur, pasta, and flour; and carpet sub-industry machines needed for carpet shaving, bobbin, and thread fixing machines form the backbone of Gaziantep’s metal and machinery industry. Shoe, leather, and processed leather production are another important economic activity, which empower its chemical industry, especially in the production of faux leather and glue. A Footwear and Sub-industry Specialized Zone is planned to be established, which would provide employment opportunities for up to ten thousand people.\(^{47}\)

For a fully fledged industry Gaziantep’s economy needs technological innovation and a qualified labour force. Technological transformation in Gaziantep’s industry increases the demand for qualified employees who are capable of using computer-based machines in the textile and food industries such as CNC and milling for wood and industries, card machine operators, and bobbin winding

\(^{40}\) KII, İbrahim Halil Yırtar, the Chairperson Şanlıurfa TOBB Young Entrepreneurs Board
\(^{41}\) KII, Aytaç İzgörür Deputy General Secretary of Şanlıurfa Chamber of Commerce and Industry
\(^{42}\) KII, Aytaç İzgörür Deputy General Secretary of Şanlıurfa Chamber of Commerce and Industry
\(^{43}\) KII, Sertaç İşik, MEKSA Regional Director
\(^{44}\) Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
\(^{45}\) Data from Directorate General for Migration Management January 2020, https://www.goc.gov.tr/gecici-korumas5638
\(^{46}\) Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
\(^{47}\) KII Mehmet Güller, the Coordinator of Gaziantep MEKSA
The universities have also become active centres for vocational training and match up activities. Hasan Kalyoncu University Technology Transfer Office plans to give vocational courses in 2020, which are highly demanded in Gaziantep’s industry, such as programming, cybersecurity, CNC, and milling machines. During the interview held with Technology Transfer Office Coordinator Cengiz Helvacıkara, he mentioned that Gaziantep’s industry wants a qualified labour force in the biomedical industry and solar energy, which would make a significant contribution to its economy in the near future. He also emphasized the need for web developers and programmers for the gaming industry and added that Gaziantep’s industry could absorb many welders and CNC and milling machine operators. In order to respond to the needs of Gaziantep’s industry, the Technology Transfer Office (TTO) plans to provide a service that matches recent graduates from Gaziantep University with employees by expanding its scope of cooperation with the Directorate of Gaziantep Organized Industrial Zone. The TTO will organize regular meetings with employees and refer recent graduates to them.

Gaziantep University is also developing programmes to empower the labour force. During the interview, Ekrem Tekin, the Coordinator of Gaziantep University Technopark, said that innovative companies with R&D had trouble finding qualified employees. He mentioned that in the textile, food, machinery, and software sectors there are demands for skilled employees. He added that the biochemical industry and solar energy industry are expected to grow in Gaziantep due to the incentives expected to be provided by the State. Because of digital transformation and promotion of exports, e-commerce is quite popular in Gaziantep. Ekrem Tekin said that the demand for professionals who have online marketing and process management skills, therefore, is on the rise. Sirac Ekin, İSKUR Provincial Manager, confirmed this analysis; he implied that some companies could not find qualified employees for e-commerce.

When compared with other cities in the region, Gaziantep also has a significant number of tech companies invested in R&D and design, which increase the need for people who graduated from technical universities. Gaziantep has ten companies with R&D units operating in the food and textile industries and two textile companies with design centres, and the number is predicted to rise. Around 90 tech companies have been working with Gaziantep University Technopark, where software developers, front-end developers, PLC programmers, engineers, and designers are the most desired employees.

Gaziantep offers many opportunities for entrepreneurs: chambers and universities provide incubation mentorship services but investment opportunities for enterprises are limited. It is expected that in the pharmaceutical and medical device industries there would be more start-ups. Gaming and cybersecurity are other areas where the number of enterprises is predicted to increase. Gaziantep has solar panel enterprises because its location provides high productivity in solar energy. Entrepreneurs are encouraged to develop innovative ideas for solar energy production and storage. The Women Entrepreneurship Centre was established to support female entrepreneurs.

Ten SPARK beneficiaries enrolled in the textile engineering, fashion, and textile design programme most probably will be employed in Gaziantep’s textile industry as engineers and designers. SPARK graduates who majored in industrial engineering, mechanical engineering, metallurgy, and materials engineering can find opportunities in Gaziantep’s manufacturing industry. SPARK beneficiaries from electric and electronic engineering have a chance to be employed in companies operating in Gaziantep Technopark, where demand for engineers is high. While there is just one SPARK beneficiary studying computer programming, the biggest demand in Gaziantep’s economy is in the computer-based and computer-aided areas. Programmers for PLC, web and front-end developers, programmers for games, and other areas where the number of enterprises is predicted to increase. Gaziantep has solar panel enterprises because its location provides high productivity in solar energy. Entrepreneurs are encouraged to develop innovative ideas for solar energy production and storage. The Women Entrepreneurship Centre was established to support female entrepreneurs.

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46 Mehmet Ragg Kaleoğlu, Technological Change in Turkish Manufacturing Industry: The Case of Gaziantep City, September-December 2017 Volume 2, Issue 6
47 KII, Cengiz Helvacıkara the Coordinator of Technology Transfer Office, Hasan Kalyoncu University
50 KII, Cengiz Helvacıkara the Coordinator of Technology Transfer Office, Hasan Kalyoncu University
51 KII, Ekrem Tekin, the Coordinator Gaziantep University Technopark
52 KII, Ekrem Tekin, the Coordinator Gaziantep University Technopark
53 KII, Sirac Ekin, İSKUR Gaziantep, Provincial Manager
54 KII, Ekrem Tekin, the Coordinator Gaziantep University Technopark
55 KII, Cengiz Helvacıkara the Coordinator of Technology Transfer Office, Ekrem Tekin, the Coordinator Gaziantep University Technopark
56 Elif Berdo, Project Officer of Gaziantep Chamber of Industry
and CNC operators and programmers are the most demanded employees. For the construction sector related jobs, such as architecture and civil engineering, which account for the largest share of SPARK beneficiaries, the employment opportunity is low because of the general economic trend in Turkey. For students from the food engineering department, as the food industry in Gaziantep has a remarkable capacity, it can easily absorb new graduates.

3. Hatay

<table>
<thead>
<tr>
<th>Hatay</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Sectoral total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2 874 981.00</td>
<td>11 652 697.14</td>
<td>21 389 420.17</td>
<td>35 917 098.32</td>
</tr>
<tr>
<td>2018</td>
<td>2 990 643.66</td>
<td>14 896 974.67</td>
<td>26 356 139.80</td>
<td>44 243 758.12</td>
</tr>
</tbody>
</table>

Hatay hosts the third largest SuTP population, around 440 116 people. Taking into account that Hatay’s population is 1 609 856, the portion of SuTP is extreme, 21.47%. The biggest share in the Hatay economy is the service sector, which accounts for around 60% of total GDP, followed by industry and agriculture.

Hatay is the leading city for the iron and steel production sector, including rolled sheets, plates, billets, and coils, in which around 12 000 people are employed. Yet, because of security issues, companies refrain from employing SuTP. However in sub-industries where metal workers and welders and CNC operators and programmers are demanded, SuTP can be employed. In Hatay, there are also many companies in the wood industry. The sector produces furniture and accessories for the Turkey’s market and exportation. For effective and profitable production, the wood processing sector requires competent employees. The skills for computer numerical control, computer-aided manufacturing, and computer-aided design are highly demanded. Therefore, CNC counter and lathe CNC bandsaw operators and CNC programmers for woodwork can easily find a job. Additionally, in recent years the Hatay furniture industry has been in need of upholsterers.

The city also has a shoe-making industry, where production is carried out by semi-mechanized production processes. To boost the industry, the Antakya Chamber of Commerce and Industry is contributing to the construction of a Leather Production Centre, which is expected to open in 2020. The Centre will provide technical support to businesses to develop leather products and introduce new technologies to the leather industry. It also promotes high value added production by encouraging companies in branding. Because of these developments the leather and shoe-making industry needs workers who have the ability to work with machines and knowledge of leather processing, design, and marketing.

The Antakya Chamber of Commerce and Hatay Mustafa Kemal University Technology Transfer Office regard the lack of productivity and high profitability as the most significant problem affecting the city. The Chamber responds to this problem by increasing the number of competent employees to empower businesses. In this regard, in cooperation with Hatay Governorship the Chamber plans to found a vocational course centre in 2020, which will provide training in CNC, gastronomy,

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57 Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
58 Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
60 Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
61 KII, Samet Fırat Soyluem the Coordinator of Hatay ABIGEM
62 KII, Ecem Gaye Yeşil, Project Coordination Manager of Antakya Chamber of Commerce and Industry
63 KII, Ecem Gaye Yeşil, Project Coordination Manager of Antakya Chamber of Commerce and Industry
woodwork, shoe making, automotive, and construction. Hatay Mustafa Kemal University Technology Transfer Office focuses on vocational training and R&D, which are numbered just two recently. The coordinator of the Technology Transfer Office, Cemil Kürêkçi, states that in order to boost their number, the University would systematically refer qualified graduates to the companies that have growth potential. The Technology Transfer Office intends to found laboratories to increase the number of proficient employees. The laboratories will train people as CNC operators and lifting operators, which are highly demanded in the manufacturing and service industries.

Hatay produces 60% of Turkey’s filters thanks to the demand created by the automotive industry and the supply of sheet metal in Hatay, which is used as the main raw material in filters. Since Hatay hosts many companies producing filters for cars, many skilled workers could be employed there with the help of the University. Based on the study the University conducted, the Hatay industry needs designers and operators in woodwork, shoe-making designers and leather specialists, steel designers, experts in e-commerce and imports, and software developers.

Despite its crucial role in certain manufacturing sectors, it can be said that Hatay has a weak entrepreneurial network. Hatay Mustafa Kemal University Technopark does not have a proper building for start-ups. Currently start-ups are using containers. There is a lack of co-working spaces, seminar rooms, or other facilities to train entrepreneurs. The city does not have a maker lab, which would be vital for entrepreneurs to produce their prototypes. The University regards the construction of a building for start-ups and entrepreneurship as its priority. İskenderun Technical University, a newly established public university, is also working to create an ecosystem for entrepreneurs in Hatay. Although it does not have a Technopark, the University organizes entrepreneurship events to promote entrepreneurial spirit and develop networks. Antakya Chamber of Trade and Industry responds to the needs for entrepreneurship through partnership with the Hatay European Union Business Development Centre (ABİGEM). ABİGEM provides incubation and pre-incubation services to classical entrepreneurs and SMEs. In cooperation with the Chamber, it also organizes entrepreneurship training programmes.

A significant portion of the SPARK beneficiaries enrolled in Hatay Mustafa Kemal University study in departments related to agriculture, including field crops, plant production, soil science and plant nutrition, agricultural economics, and engineering. Although Hatay has Amik Plain, agricultural production accounted for just 6.67% in 2018 of GDP, which dropped from 8% in 2017. Additionally, the agriculture-based industry is weak. Only Progen Tohum A.Ş. invests in R&D in cooperation with Hatay Mustafa Kemal University. That being said, Cemil Kürêkçi, Coordinator of the Hatay Mustafa Kemal University Technology Transfer Office, expects an increase in the number of companies in the agricultural manufacturing industry. Because of its proximity to the Mediterranean Sea and the Syrian border, 27 SPARK beneficiaries enrolled in or who graduated from International Trade and Logistics programmes could be employed in the Hatay logistic industry, which still makes a significant contribution to Hatay’s economy in spite of the conflict in Syria. Although there are a limited number of SPARK beneficiaries enrolled in computer science, there is a huge market for programmers, developers, CNC operators, and designers.

4. Adana

<table>
<thead>
<tr>
<th></th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Sectorial total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2017</strong></td>
<td>5 728 748.91</td>
<td>18 135 918.55</td>
<td>31 405 460.22</td>
<td>55 270 127.68</td>
</tr>
<tr>
<td></td>
<td>10.37%</td>
<td>32.81%</td>
<td>56.82%</td>
<td></td>
</tr>
</tbody>
</table>

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65 KII, Ecem Gaye Yeşil, Project Coordination Manager of Antakya Chamber of Commerce and Industry
66 KII, Cemil Kürêkçi, Coordinator of Hatay Mustafa Kemal University Technology Transfer Office
67 KII, Cemil Kürêkçi, Coordinator of Hatay Mustafa Kemal University Technology Transfer Office
68 KII, Mahmut Güle, the Coordinator of Hatay Mustafa Kemal University Technopark
69 KII, Samet Fırat Soydemir the Coordinator of Hatay ABİGEM
70 Data from TÜİK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
71 KII, Cemil Kürêkçi, Coordinator of Hatay Mustafa Kemal University Technology Transfer Office
72 KII, Mahmut Güle, the Coordinator of Hatay Mustafa Kemal University Technopark
73 Data from TÜİK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
74 Data from TÜİK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
Gross domestic product by provinces by kind of economic activity, current prices, 2017-2018 (TL)\(^{74}\)

<table>
<thead>
<tr>
<th></th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Sectorial total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>6 542 974.58</td>
<td>21 606 552.34</td>
<td>36 494 699.77</td>
<td>64 644 226.69</td>
</tr>
<tr>
<td></td>
<td>10.12%</td>
<td>33.42%</td>
<td>56.45%</td>
<td></td>
</tr>
</tbody>
</table>

Adana is home to 2 463 949 people, of which 243 824 are SuTP.\(^{75}\) The city has a vivid and developed economy. It has access to the Mediterranean Sea and is located at the centre of Turkey’s Mediterranean Region, which makes it a regional hub for the Turkish economy. The city is the centre for Turkey’s crude oil pipelines: the Iraq – Turkey Crude Oil Pipeline, which transports crude oil produced in Iraq to the Ceyhan Marine Terminal; and the Baku – Tbilisi – Ceyhan Main Export Crude Oil Pipeline, carrying crude oil produced in Azerbaijan to Ceyhan Marine Terminal.\(^{76}\) As a result of this, the city has developed a petrochemical industry where about 100 chemical manufacturing companies operate.\(^{77}\) To meet the country’s needs for intermediate chemical goods and increase its exports, the Ceyhan Petrochemical Industrial Zone has been established, which is planned to be completed in 2023 as a part of the Ceyhan Energy Specialized Industrial Zone.\(^{78}\) The city is expected to be a centre for energy production as well. There are 52 companies in the energy sector, four of which are specialized in biomass, and 33 companies work on hydroelectrics and 15 companies are thermal energy producers. The city plans to increase its solar energy production capacity.\(^{79}\) Çukurova University has been enthusiastically prompting entrepreneurs and consumers to create a market for solar energy production and consumption. Therefore, it is possible that many engineers and technicians will be employed in the energy sector in Adana.\(^{80}\)

The automotive industry and its sub-industries are one of the leading sectors in Adana’s manufacturing industry. Yet due to the recent developments engulfing Turkey’s economy, the Adana automotive industry has been seriously damaged. For instance, TEMSA, Turkey’s leading bus producer, employing more than 5 000 people, halted its operation in 2019 due to financial problems. Because of the economic slowdown in Turkey’s automotive industry in general, Adana’s automotive industry and its car maintenance and repair industry have shrunk.\(^{81}\)

Employee 1: Adana

Hüseyin el Cuma was born in 1967, in Afrin, Syria, and moved to Aleppo in pursuit of a better life. He got married there and lived as a farmer. In 2015, when the ISIS armies advanced, with his seven children and wife he migrated to Adana, where his relatives had lived in the 1930s. In the early months, he got food support from the Turkish Red Crescent and did a few daily jobs. He heard of the United Nations’ courses on horticulture in cooperation with Adana Metropolitan Municipality. He successfully completed a course and as a reward for his success he was temporarily employed in Adana Metropolitan Municipality as a worker. However, because of his age he could not find another job after that. He took another course on carpentry at MEKSA funded by ILO; there he also got an entrepreneurship certificate. In 2019, with the help of a UNDP grant he opened a small shop, where he sells plants and provides carpentry services.

During the interview, Hüseyin el Cuma mentioned that the biggest challenge he faces in the labour market is the language barrier. Despite spending about 4 years in Turkey and attending language courses, he has difficulty communicating with Turkish speakers. He is a native Kurdish speaker and develops his business network among Kurdish people in Adana.\(^{82}\)

\(^{74}\) Data from Directorate General for Migration Management January 2020, [https://www.goc.gov.tr/gecici-koruma5638](https://www.goc.gov.tr/gecici-koruma5638)

\(^{75}\) Republic of Turkey Ministry of Foreign Affairs, [http://www.mfa.gov.tr/turkiye_nin_enerji_stratejisi.tr.mfa](http://www.mfa.gov.tr/turkiye_nin_enerji_stratejisi.tr.mfa)

\(^{76}\) Data from the report released by Adana Chamber of Industry, January 2020, [http://www.adaso.org.tr/WebDosyalar/Yayinlar/RokamliarlaAdana%20Adana%202019%20mk.pdf](http://www.adaso.org.tr/WebDosyalar/Yayinlar/RokamliarlaAdana%20Adana%202019%20mk.pdf)

\(^{77}\) KII, Gülnihan Özdemir, Adana Chamber of Industry Project Office Coordinator

\(^{78}\) Data from the report released by Adana Chamber of Industry, January 2020

\(^{80}\) KII, Hamdi Soydan, the Administrative and Financial Manager of Çukurova University Technopark

\(^{81}\) KII, Sertaç ışık, MEKSA Regional Director and Hamdi Soydan, the Administrative and Financial Manager of Çukurova University Technopark

\(^{82}\) KII, Hüseyin el Cuma, Adana
Adana is the marketing and distribution centre of Çukurova Agricultural Region, where cotton, wheat, corn, soybeans, barley, grapes, and citrus fruits are both produced and transformed into finished goods thanks to its advanced food industry. Omnia Nişasta, producing corn syrups and native corn starch, and Pilyem Oğuz Gıda are the notable companies in this field.\textsuperscript{83}

The companies with R&D and design centres have been increasing in recent years, numbering twelve and eight, respectively. The Harran University Technology Transfer Office and Adana Chamber of Industry have been working closely with companies and encouraging them to find R&D and design centres. The Adana Chamber of Industry runs an internship programme that directs skilled university graduates to R&D and design departments of companies.\textsuperscript{84} The companies located in the Technopark have difficulty finding qualified employees such as developers and programmers of artificial intelligence, software developers, and designers for the solar energy and metal industries. Adana’s economy in general demands an educated labour force for the food, textile, plastic, metal, and electronic industries.\textsuperscript{85}

To enhance Adana’s economy, the Adana Vocational Training Centre will be constructed in cooperation with the United Nations Development Program and Adana Chamber of Industry with financial support from the European Bank for Reconstruction and Development (EBRD). The Centre is planned to target both the demand and the supply sides of the economy by creating strong and functional links with other complementary initiatives, such as the Innovation Centres and the SMEs Capability Development Centre. To meet the technological transformation in Adana and increasing demand for computer automated machines in the metal, food, textile industries, the Centre will provide vocational training to increase the supply of CNC operators and programmers, machine operators, stylists, and designers for the textile industry, knitting machine operators, and welders.\textsuperscript{86} In spite of the large number of entrepreneurs, Adana has a weak entrepreneurship network. The Çukurova Technology Transfer Office and Entrepreneurship Ecosystem Association work to create mechanisms to allow entrepreneurs to thrive. The newly established Adana Entrepreneurship Centre has been providing entrepreneurship and marketing training programmes. Yet it currently does not have certain substantial facilities, such as a maker lab. Some start-ups use the network of the Entrepreneurship Ecosystem Association to market and develop their products instead. The ties between the university and industry and investors are also weak. Nevertheless, because of its diverse and advanced economy, Adana has a market for entrepreneurs to develop businesses especially in energy, medicine, chemicals, and agriculture.\textsuperscript{86}

The number of SPARK beneficiaries registered in Adana province is just five; they are studying in the civil engineering, electric and electronic engineering, and laboratory and veterinary health departments, all of which can be easily directed to decent jobs. Nevertheless, Adana has the potential to provide employment opportunities to a great number of university graduates. Its developing petrochemical industry can employ chemists, processing engineers, and chemical engineers. Electric and electronic engineers and technicians can be easily employed in its automotive industry. For computer-related areas there is a tremendous market, from software development to PLC and gaming. Because of would-be incentives in the pharmaceutical and medical device industries many graduates from medical schools and engineering departments will be employed in the companies in Adana. The Adana food industry can hire many graduates from food engineering and agriculture-related departments.

5. Mersin

<table>
<thead>
<tr>
<th>Mersin</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Sectorial total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>65 809 906.92</td>
<td>12 135 856.43</td>
<td>30 795 722.29</td>
<td>49 512 485.64</td>
</tr>
<tr>
<td></td>
<td>13.29%</td>
<td>24.51%</td>
<td>62.20%</td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{83} KII, Esra Özden, the Chair Entrepreneurship Ecosystem Association
\textsuperscript{84} KII, Gülhan Özdemir, Adana Chamber of Industry Project Office Coordinator
\textsuperscript{85} KII, Gülhan Özdemir, Adana Chamber of Industry Project Office Coordinator
\textsuperscript{86} KII, Esra Özden, the Chair Entrepreneurship Ecosystem Association
\textsuperscript{87} Data from TUIK via http://www.tuk.gov.tr/UstMenu.do?metod=temellist
Gross domestic product by provinces by kind of economic activity, current prices, 2017-2018 (TL)\textsuperscript{87}

<table>
<thead>
<tr>
<th>Mersin</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Sectorial total</th>
</tr>
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<tbody>
<tr>
<td>2018</td>
<td>7 107 444.71</td>
<td>13 966 172.01</td>
<td>38 355 474.86</td>
<td>59 429 091.58</td>
</tr>
<tr>
<td></td>
<td>11.96%</td>
<td>23.50%</td>
<td>64.54%</td>
<td></td>
</tr>
</tbody>
</table>

Mersin is home to 1 814 468 people, with 207 923 SuTP.\textsuperscript{88} As an important commerce and logistic centre in the Mediterranean Region, Mersin’s economy heavily relies on its service sector, which accounts for about 65\% of its total GDP.\textsuperscript{89} Despite the economic slowdown, the service sector makes up the largest portion of Mersin’s economy and it continued to increase from 2017 to 2018.\textsuperscript{90} Mersin has remarkable industrial production from petrochemical and metal industries to food and woodwork. The city also has rich material resources including chromium, copper, iron, quartzite, aluminium, barite, and dolomite, some of which are processed in Mersin and exported to Europe.

Mersin International Port occupies a significant place in the economy of Mersin with its extensive transportation network in its hinterland. Mersin Chamber of Commerce and Industry Project Manager Fevzi Filik says that, thanks to the Port, Mersin has an advanced logistic industry where around three thousand companies have been operating. This massive industry provides employment opportunities to many people, especially truck drivers. This logistic sector has also been triggering the growth of the automotive repair and maintenance industry, where companies express the need for bodywork mechanics, engine repairers, and painters.\textsuperscript{91}

Tourism is another area in the service sector which has a significant share in the economy of Mersin as a result of having some of the most famous beaches in the world, such as Anamur and Silifke. Yet, since graduates from the school of tourism and hotel management of Mersin University prefer to work in high-paid jobs in the Antalya and Aegean regions, there is a tremendous demand for qualified employees in the tourism industry in Mersin. Hotels and entertainment agencies in Mersin need competent cook apprentices, waiters, receptionists, and housekeepers.\textsuperscript{92}

Mersin has a metal manufacturing industry including the production of equipment and machines, employing about 8 000 people.\textsuperscript{93} In this sector, there is a shortage of welders and CNC and milling operators.\textsuperscript{94} According to the survey conducted by the Mersin Technology Transfer Office, Mersin’s industry needs aluminium and steel welders, metal cutting operators, hydraulic and pneumatic power system workers, turning machine maintenance workers, CNC workers, CNC programmers, milling cutter operators, and plastic injection machine workers.\textsuperscript{95} Because of the significance of the port, Mersin is constructing the Marine Simulation Training Centre, which will give training for underwater welders and marine operators.\textsuperscript{96} To match skilled employees with companies, Technoscope has an online portal named ABC Portal through which new graduates can find internship and employment opportunities. The most demanded labourers for high tech companies which invest in R&D are web developers, programmers, designers, and electronic engineers.\textsuperscript{97}

Many food and beverage companies operate in Mersin. Yet the lack of food brands limits the profitability of the food industry. Mersin University with Mersin Entrepreneurship Centre and its Food Lab encourages food entrepreneurs to develop creative products for the food industry.\textsuperscript{98} The chemical and petrochemical industry of Mersin, with around five thousand people, developed owing to the ATAŞ

\textsuperscript{89}Data from TÜRK via http://www.tuk.gov.tr/UstMenu.do?metod=temelist
\textsuperscript{90}KII, Fevzi Filik, Mersin Chamber of Commerce and Industry Project Manager
\textsuperscript{91}KII, Mesut Uzman, the Coordinator of Mersin University Technology Transfer Office
\textsuperscript{92}KII, Melike Nazan Ergüç, the Project Coordinator of Technoscope
\textsuperscript{94}KII, Fevzi Filik, Mersin Chamber of Commerce and Industry Project Manager
\textsuperscript{95}KII, Mesut Uzman, the Coordinator of Mersin University Technology Transfer Office
\textsuperscript{96}KII, Melike Nazan Ergüç, the Project Coordinator of Technoscope
\textsuperscript{97}KII, Kili, Mersin Chamber of Commerce and Industry Project Manager
\textsuperscript{98}KII, Mesut Uzman, the Coordinator of Mersin University Technology Transfer Office
Petroleum Refinery, which evolved into a petroleum products storage facility. The industry is expected to grow in the coming years as a result of State incentives in the Çukurova Region.99

To achieve high value added production, the city has been developing a structure that empowers SMEs. The Mersin Chamber of Commerce and Industry is building a SMEs Support Center, which will provide consultancy and R&D and design support to SMEs. In the Organized Industrial Zone, in cooperation with UNDP, the Chamber also contributed to the construction of model factories to empower SMEs. As a State policy, companies are supported to found R&D and design units. Currently there are eight companies with R&D centres and just one with a design centre.100

Mersin has an integrated entrepreneurial network. Technoscope is home to 22 starts-up working in cybersecurity, medicine etc. The centre organizes quarterly demo-days. The Technoscope building has TEB Entrepreneurship House, which provides services to entrepreneurs from incubation to business development. Mersin University also has a Youth Entrepreneurship Centre. The Centre plans to organize workshops, seminars, hackathons, and panels periodically. The Centre has a maker lab and a food lab to help entrepreneurs to produce prototypes.101

SPARK beneficiaries enrolled in the tourism faculty and food department of Mersin University have a high chance of being employed in related sectors through the help of the Mersin University Technology Transfer Office. Mersin’s economy has advanced industry for high-tech manufacturing with start-ups operating in Technoscope, where graduates from computer science, information technologies, electronic engineering, and electronic communication technology have the opportunity to find internship and employment opportunities. The transportation industry of Mersin can hire many SPARK beneficiaries from the economics, logistics, and automotive departments as administrative and technical personnel.

6. Istanbul

<table>
<thead>
<tr>
<th></th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Sectoral total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2017</strong></td>
<td>1 076 031.34</td>
<td>263 671 772.40</td>
<td>597 104 806.46</td>
<td>861 852 610.20</td>
</tr>
<tr>
<td>0.12%</td>
<td>30.59%</td>
<td>69.28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2018</strong></td>
<td>1 330 662.26</td>
<td>306 340 662.21</td>
<td>726 866 279.87</td>
<td>1 034 537 604.34</td>
</tr>
<tr>
<td>0.13%</td>
<td>29.61%</td>
<td>70.26%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Istanbul is Turkey’s most populous city, with 15 067 724 Turkish residents, and it is home to the largest SuTP population, which numbers 480 077, according to the data released by the Directorate General for Migration Management.103 Istanbul is Turkey’s economic capital and the biggest industrial centre as well. The city has one billion TL GDP alone, which accounts for about one third of Turkey’s total GDP.104 It is home to business confederations, which will be determinants for the transition from the Syrian refugee crisis to sustainable development. Because of this massive industrial capacity, prediction of the labour force, its market trends, and assessing its industrial policies require special attention.

For manufacturing sectors, PMI data of Istanbul, through which growth and shrinkage of the manufacturing industry are predicted, have a positive outlook, with a 52.6 score in December 2019.

99 KII, Fevzi Filik, Mersin Chamber of Commerce and Industry Project Manager
100 KII, Fevzi Filik, Mersin Chamber of Commerce and Industry Project Manager
101 KII, Berna Aysen, the Coordinator of Youth Entrepreneurship Centre

102 Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
104 Data from TUIK via http://www.tuik.gov.tr/UstMenu.do?metod=temelist
while the PMI data of Turkey indicate a decrease in the manufacturing industry, staying below the 50 threshold.105

Istanbul has a specialized zone for leather manufacturing, named Istanbul Leather Organized Industrial Zone, where more than 40,000 are employed.106 During the interview, Istanbul Chamber Industry Project Officer Sinem Kovaci said that when she visits businesses employees complain about the insufficient number of designers for leather and leather products.107

Istanbul’s metal and automotive industries are concentrated in the Istanbul Anatolian Side Organized Industrial Zone. Creating employment opportunities for more than 20,000 people and export products for the Directorate of the Zone, which has an employment board, can be used to refer employees to decent jobs. In the course of the interview Ms. Kovaci mentioned that CNC, mill machine operators, and programmers for the metal industry are highly demanded. She added that there is a shortage of gas welders in those industries.108

Being one of the most prominent tourist attractions, Istanbul has more room for growth in the tourism industry. An informant from United Work says that the tourism industry in Istanbul has an increasing potential for SuTP to be employed. Due to the flow of Arabic-speaking tourists into Turkey in large numbers, hotels in Istanbul need qualified Arabic-speaking employees. Receptionist, public relation specialists, house keepers are in-demand professions in the market. The opportunities for SuTP are promoted by the growth in Istanbul’s health industry, which can provide many opportunities for SuTP as well. Due to the thriving health industry in Istanbul and the increase in the number of Arabic-speaking people who benefit from this industry, private hospitals demand Arabic-speaking employees. The dental treatment and hair implantation sectors especially need employees trained in health science or services.109

Istanbul, with 62 universities and six technological development zones, has significant capacity in information and communication technologies and potential to be an adventurous destination for technology companies for start-ups in the global market. Turkey’s information and communication technology industry has reached 131.7 billion Turkish lira in 2018, with a remarkable growth rate of 15%.110 Invest in Istanbul, a platform established for the purpose of promoting the investment opportunities in Istanbul coordinated by Istanbul Development Agency in partnership with the Governorship of Istanbul, Istanbul Metropolitan Municipality, Istanbul Chamber of Commerce, and Istanbul Chamber of Industry, places special emphasis on information and communication technologies. Invest in Istanbul expects the growth in cybersecurity solutions, cyber forensic solutions, consumer electronics, and online gaming to direct its capacity to empower these sub-industries. It can be inferred that developers, programmers, and business developers would be in demand.

SuTP are involved in labour intensive and machine intensive production processes. Yet informality and child labour pervade the whole industry.112 Since Turkish citizens do not want to work in the textile industry due to the harsh working conditions, Syrians have been replacing Turkish citizens and, as a result, their vulnerabilities are exploited by employees.113 Yet SuTP could find decent jobs in the textile industry; most of the employees demanded in the textile industry are people who have the ability to work with textile machines. Ms. Kovaci verifies this information on the grounds that some textile companies told her that they could not find operators for linking machines.114

Because of the magnitude of Istanbul’s economy, the governorship and municipalities are strongly involved in the labour market. The Metropolitan Municipality plays an active role in labour market policies in Istanbul. It conducts projects with “the employment-based progress vision”, including organizing boot camps for programmers and supervising internship programmes for recent graduates. During the interview, Eylem Durmuş, the Head of Zemin Istanbul, said that the municipality can offer internships opportunities in information processing and geographic information systems to refugees.115

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105 PMI of Istanbul for December 2019, Istanbul Chamber of Industry Turkey PMI® Manufacturing Index
106 Data from the official website of Istanbul Leather Organized Industrial Zone http://www.ideriosb.org.tr/kurumsal
107 KII, Sinem Kovaci, Istanbul Chamber Industry Project Officer
108 KII, Sinem Kovaci, Istanbul Chamber Industry Project Officer
109 KII, Yasin DEMİRDAQ Funding Specialist at United Work
111 Suriyeli Göçmen Emeği Istanbul Tekstil Sektörü Araştırması, p. 99, the Report Metal Industrialists Union, 2017
112 KII, Arda SATI, Secretary General & Board Member of TURKONFED
113 KII, Yasin DEMİRDAQ Funding Specialist at United Work
114 KII, Sinem KOVAÇI, Istanbul Chamber Industry Project Officer
115 KII, Eylem Durmuş, the Head of Zemin Istanbul
She added that the Municipality organizes meet-ups in cooperation with Yıldız Technical University, Boğaziçi University, and Istanbul Technical University.

SPARK does not have beneficiaries enrolled in universities in Istanbul. Yet five beneficiaries studying in architecture, anaesthesia, mechanical engineering, and computer programming departments are registered in Istanbul. Those can be easily employed, taking into account the size of Istanbul’s economy. Istanbul can offer many opportunities to other SPARK beneficiaries. In health and related industries, a significant number of the 173 SPARK scholars who studied in anaesthesia, operating room services, midwifery, nursing, medical laboratory techniques, medical documentation and secretariat, healthcare management, psychological, and physiotherapy departments can be employed. Because of the high number of institutionalized companies, 85 SPARK beneficiaries in business administration, TVET and bachelor level, can be hired. For the scholars in programming and electric and electronic engineering, Istanbul has six development zones and thriving ICT industries.

Recommendations

Digital transformation creates new markets which configure the existing economic structure and raise demand for new skills and products. Computer-aided and computer-based production replace labour intensive production, especially in the metal and woodwork industries. Traditional skills that are needed for wood and metal processing and design are increasingly being replaced by semi/fully automated machines. Therefore, skills for computational numerical control machining (CNC), computer-aided design (CAD), and computer-aided manufacturing are becoming the most demanded.

The textiles, clothing, leather, and footwear sectors, in which thousands of people are employed, are leading industries in the economy of Turkey. Yet Turkey’s labour intensive production has been experiencing technological transformation; new materials, digitalization, robotics, and automation put pressure on traditional forms of production. Sewing machines, sewbots, knitting machines, 3D printers, robotic arms, and laser cut automated machines reduce the production cost, increase productivity, and shape the future of work in the textile, clothing, leather, and footwear industries. In this framework, the labour market in Turkey has developed two new directions. First, a highly skilled and trained workforce able to operate robotics and digital technologies is highly demanded. Second, Turkey’s production has already moved on to innovative designs, fashion styles, and products and invested in R&D and design centres for high value-added production. Therefore there is a massive market for designers, stylists, textile engineers, and chemists.

With respect to information and communication technologies, Turkey is striving to be a hub for entrepreneurs and tech companies, presenting itself as a gateway to the Middle East and the MENA region. Turkey currently has 130 000 programmers and plans to boost the number to 500 000 by 2023 in order to be competitive in the ICT market. It also encourages entrepreneurs to found businesses in ICT sectors through incentives in Technology Development Zones and grants to specific sectors. The jobs demanded in ICT sectors are web developers, front-end developers, JavaScript C++ and PLC programmers, mobile app developers, and AI programmers.

Although Turkey is an important producer in agriculture, its processed food industry is weak. Turkey plans to empower its food industry, and companies in the processed food industry are on the rise. Companies invest in product development and branding and marketing especially in Gaziantep, Hatay, and Sariyer. Therefore, the need for food engineers, technicians, and engineers in agricultural machinery and technologies is on rise in these cities.

Due to urbanization and its growing industries, Turkey’s need for energy has been rising. Turkey is responding to its energy needs in two ways. First of all, it is diversifying its energy sources in natural gas and petroleum. In the Ceyhan region, where two petroleum pipelines end, Turkey plans to cluster energy production within the Ceyhan Energy Specialized Industrial Zone. The Ceyhan region will also be a centre of the petrochemical industry. Therefore, the need for engineers, professionals, technicians, and engineers in chemical industries has the chance to be employed in Adana in the

117 “The future of work in textiles, clothing, leather and footwear” ILO Working Paper No. 326
118 Turkey’s 2023 Industrial Strategy from the Ministry of Industry and Technology via https://www.sanayi.gov.tr/strategi
near future. Second, Turkey is investing in new technologies in renewable energy and promoting sustainable energy production. Solar energy production is one of the priorities of Turkey’s 2023 development strategy. The Kalyon Grup will install Turkey’s first solar photovoltaic panel factory in 2020, which will substantially reduce the cost of solar energy. Professions in solar panel installation for private usage, solar farms for mass electricity production, and solar energy-based product development are in high demand. Some vocational training institutions such as MEKSA have initiated training programmes involving solar panels.

The Turkish pharmaceutical sector is ranked 16th in terms of market value and 36th in terms of the clinical research conducted and the volume of pharmaceutical exports. Turkey’s 2023 goal is to make Turkey one of the world’s top ten economies in health services. As for competitive pharmaceutical and medical products, the State will fund start-ups and promote R&D. In Gaziantep, Adana, Mersin, and Hatay there are companies developing products in the pharmacological and medical device industry which demand employees.

As the economic and financial centre of Turkey, Istanbul has the most significant actors that can accelerate the economic integration of refugees and proliferate the number of livelihood models, which can be used for further projects. In that sense, the Istanbul Metropolitan Municipality, Turkish Enterprise and Business Confederation (TURKONFED), and Turkish Industry and Business Association (TUSIAD) are willing to work with youths or refugees through their entrepreneurship support mechanisms or networking event series in which SPARK can enrich the quality of ongoing interventions.

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120 Republic of Turkey Ministry of Foreign Affairs, http://www.mfa.gov.tr/turkiye_nin enerji stratejisi.tr.mfa