

Chapter 9: Socio-Economic



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9 Socio-Economics

9.1 Introduction

This chapter presents an analysis of the potential socio-economic impacts resulting from the construction, pre-commissioning, operation and decommissioning of the Project. In addition, mitigation measures designed to reduce, remediate or avoid potential impacts are described, and the residual impacts (i.e. impacts after mitigation measures are implemented) presented.

9.1.1 Structure of Socio-Economic Chapter

Section 9.2 draws on the project description (Chapter 5), the Scoping Stage and the stakeholder engagement process to identify potential impacts. Section 9.3 details the approach taken for the socio-economic baseline and impact assessment with regard to the spatial boundaries and defines the zone of influence for socio-economic impacts.

Section 9.4 and Section 9.5 provide quantitative and qualitative baseline data commencing with a description of the data sources used in the baseline and followed by baseline summaries related to population and demography, economy, and the regional fisheries industry.

Section 9.6 reports on the impact assessment in relation to socio-economic receptors during all Project phases from construction to decommissioning. This section presents the impact assessment at the pre-mitigation stage before presenting (if required) suggested mitigation measures and the potential residual socio-economic impacts that would result.

Section 9.8 and Section 9.9 cross refer to **Chapter 13 Unplanned Events** and **Chapter 14 Cumulative Impact Assessment**, which consider potential impacts on socio-economic receptors. Section 9.11, provides a summary of the key findings of this assessment.

9.1.2 Human Rights Due Diligence

Prior to concluding this chapter, Section 9.10 covers the Human Rights Due Diligence process that has been undertaken to complement the socio-economic impact assessment. This section explains the due diligence process that has been followed, before examining human rights issues in respect of general policies and procedures, labour and working conditions, supplier engagement, and security provision.

9.1.3 Health Impacts

The potential for health impacts has been considered following standards and guidelines for financing such as International Finance Corporation (IFC) Performance Standard (PS) 2. As the Project will not affect any communities, no assessment of community health and safety impacts has been undertaken. Occupational health and safety considerations for the workforce are addressed in Appendix 9.2: Occupational Health and Safety.

9.1.4 Relationship to other Chapters

This socio-economic chapter has taken into account the findings **Chapter 7 Physical and Geophysical Environment** and **Chapter 8 Biological Environment** to inform and evidence the assessment of socio-economic impacts. The findings of this chapter are also supported by the Fisheries Study in Appendix 9.1: Fishing Study.

9.2 Scoping

9.2.1 Impacts Identified During Scoping

A scoping exercise was undertaken in 2013 and resulted in the disclosure of a Scoping Report (Ref. 9.1) in July 2013, followed by stakeholder consultation. The aims of the scoping process were twofold: to identify the potential Project-related impacts and to seek feedback from stakeholders on the Scoping Report and identify any additional issues to be considered.

The Scoping Report identified receptors with the potential to be affected by the Project's activities. It also identified potential impacts in relation to the economy, such as fisheries businesses, marine users, commercial shipping and other vessel operators, and oil and gas exploration companies.

As stated in the Scoping Report, the Project is located offshore with no facilities located on land in Turkey. It is therefore considered that there will be no impacts to local communities or on public health as a result of construction activities.

Further, since the disclosure of the Scoping Report, it has been confirmed within **Chapter 5 Project Description** that there will be no logistics base or marshalling yard in Turkey and no requirement to use Turkish ports for waste disposal or fuelling. As such, no impacts or benefits on local communities or economy associated with the use of Turkish ports are expected to arise.

In the Scoping Report, it was stated that impacts on communities or the economy during the Operational Phase were not anticipated. However, during the stakeholder engagement process, the Turkish Petroleum Corporation (TPAO) noted that the Project Area passed through areas licensed for oil and gas exploration and development (Figure 9.5). The issue is considered in Section 9.6.3.1.

Stakeholder consultation also identified some specific concerns that had not been covered in the Scoping Report. Concerns that were raised included the potential for impacts on Turkish fisheries, safety concerns for workers and potential safety risks to Turkish coastal communities from unplanned gas leaks, explosions and accidents, the potential for adverse impacts on the environment and the Project's approach to environmental protection, amongst other issues. These concerns are discussed in **Chapter 6 Stakeholder Engagement**.

9.2.2 Post-Scoping Stage Revisions

Following the Scoping Stage, refinement of the project description and further investigation of the baseline conditions within the Study Area (defined in Section 9.3.2), it has been concluded that there will be no significant impact in relation to a number of areas and thus they have not



been assessed in detail. The impacts that have been screened out, and the rationale for excluding them, are listed in Table 9.1.

Table 9.1 Potential Impacts and Risks Screened Out of the Assessment

Potential Impact or Risk	Rationale
General	
Adverse or beneficial impacts on indigenous people during construction and operation	Given the location of the Project (a minimum of 110 km from the Turkish Black Sea coastline) indigenous peoples as defined by IFC PS7 have not been identified.
Construction and Pre-Com	missioning Phase
Increased risk of collision of vessels as a result of Project related maritime traffic	The construction spread (pipe-laying and supporting vessels) will move at very low speeds, around 2.5 km a day. This means that they can be considered stationary objects rather than ordinary vessels and other vessels can be notified of their daily position to minimise the risk of vessel collisions. The probability and implications of vessel collisions has been scoped out of the socio-economic impact assessment; it has been considered however as part of the Maritime Risk Assessment, which is presented in Chapter 13 Unplanned Events in terms of spills arising from collisions.
Impact on shipping and other vessel operators	The Project Area is crossed by a number shipping routes and may also be utilised by large commercial fishing vessels during anchovy season. However, due to the small area occupied by the construction spread (and the associated restrictions on navigation in the vicinity of the construction spread, as described in Chapter 5 Project Description) and the movement of the spread at approximately 2.5 km per day, it is expected that shipping routes or fishing vessels will not be affected as the pipe-laying spread can easily be avoided.
Risk of disruption to subsea cables	The Project does not intersect with any known subsea cables in the Turkish Exclusive Economic Zone (EEZ).
Impact on military areas	The Turkish Naval Forces carry out military exercises and fire training off the Turkish coast. During consultation, the Turkish Armed Forces have identified a firing training exercise area that intersects with the Project Area (Ref. 9.2). The precise location has not been disclosed. However, during the Construction and Pre-Commissioning Phase the impact on Navy military exercises will be temporary and localised. The Project will engage with the relevant Turkish authorities before and during construction to avoid interference with any military exercises undertaken in the Turkish EEZ during construction. Maritime authorities have also confirmed that the coordinates of the Project during construction will be marked on maps and notified to all relevant agencies to avoid exercises taking place in the Project Area. It is therefore considered there would not be an impact on the Navy and their military exercises associated with the construction of the Project.

9.3 Socio-Economic Spatial Boundaries

The Project is entirely within the Black Sea, more than 110 km from Turkey's Black Sea coastline at the closest point (the town of Sinop). Figure 9.1 shows the geographic context of the Project in relation to the boundaries of the Turkish EEZ and to Turkey.

9.3.1 Project Area

The Project Area is some 470 km in length and 2 km in width, extending along an east west orientation across the north of the Turkish EEZ. Its length is defined by the distance between the points where the four pipelines cross from the Russia and Turkey EEZ boundary to the Turkey and Bulgaria EEZ boundary. Its width is defined by the width of the initial proposed corridor in which the pipelines would be laid, which was informed by the Front End Engineering Design (FEED).

Since FEED, South Stream Transport has discussed the dimensions of the Project footprint with the relevant Turkish authorities. The Project footprint is defined as the area on the seabed encompassing the four pipelines and a safety zone either side of the outermost pipelines which precludes any third party seabed activities within this zone. As a result of these consultations, it is proposed that the pipelines will be laid within a 420 m width corridor, in agreement with the relevant Turkish authorities. The corridor accommodates the four pipelines and operational Safety Zone either side of the outermost pipelines.

9.3.2 Study Area and Zone of Influence

Socio-economic data has been collected in order to understand the potential for any socioeconomic impacts. This has included both the Project Area and the Zone of Influence in relation to the potential socio-economic impacts under consideration.

For Turkey, any socio-economic impacts, if they occurred, would occur at a national or regional level as the physical location of the Project is over 110 km from the Turkish mainland (at Sinop) and within the Turkish EEZ. As no impacts are expected on local communities or economies given this location, there are no impacts anticipated at the provincial or local scale.

The Zone of Influence, and Study Area, extends beyond the Project Area in accordance with the potential social and economic impacts of the Project, such as potential impacts on fishing, oil and gas exploration zones and marine navigation. Accordingly, impacts on social and economic receptors are assessed in relation to various zones of influence, according to the type of impact. Economic impacts, for example, if they occurred, would be experienced at a national or regional level.

9.4 Methodology and Data

Data and information for the relevant baseline characteristics have been identified and considered to inform the assessment of potential socio-economic impacts. These have primarily been collected and presented at the national and provincial levels.



Although data is available at the regional level, the two Turkish regions bordering the Black Sea, Black Sea Region and Marmara Region, both include inland (non-coastal provinces) and for this reason, data gathering has prioritised collecting data at the provincial level over the regional level.

The data and information included within this assessment in relation to these potential socioeconomic impacts have been obtained from a range of sources including secondary sources (i.e., existing data including census statistics, government or academic reports, etc.) and primary sources (i.e. new data collected through interviews and stakeholder engagement activities, as described in **Chapter 6 Stakeholder Engagement**).

Where possible the baseline characteristics section has presented data for the national and provincial levels to allow for comparison between the two. Where data is not available at either national or regional level, it is indicated.

9.4.1 Data Sources

The aim of the baseline data collection work was to obtain the required data to enable an informed and realistic assessment of the anticipated socio-economic impacts of the Project. Specifically, this information identifies and describes the current socio-economic characteristics and key trends, providing a baseline against which socio-economic impacts can be predicted, monitored and evaluated during construction, operation and decommissioning.

In Turkey, good quality social and economic statistics for national level indicators are collected and held by the Turkish Statistical Institute (TUIK). Data on regional and provincial level administrative units is also available for certain social and economic indicators. However, in the case of provincial level data, certain data sets have not been published since 2001, when TUIK discontinued publishing certain data on a provincial basis. The extent of the data that is available has been determined by contacting and visiting national government bodies and agencies.

Some socio-economic data, including for the provincial level: Gross Domestic Product (GDP) per capita (current prices) and GDP by economic activity, were not available as they are not recorded at the provincial or regional level. However, this has not compromised the impact assessment, as it was either not critical to the analysis or it was possible to obtain the data required to inform this chapter.

Primary data collection, consisting of interviews with relevant stakeholders, was conducted to supplement the secondary data.

The following sections set out the secondary (existing) data that has been obtained, the data gaps that exist and the primary data research that has been undertaken to supplement the available secondary data.

Secondary Data

Secondary data and information was obtained from relevant national bodies and agencies. This data was obtained from publically available databases and by contacting government authorities



with written requests for access to data. The TUIK website was a key source used to obtain secondary data.

Data Gaps

After the above information was compiled, analysis revealed a number of data gaps that needed to be filled in respect of the following themes:

- Some data was not available after 2001 at the provincial level;
- Information on fishing in the Project Area;
- Total regional and local gross regional product (GRP) and Gross Value Added (GVA) broken down by economic sector (e.g. fishing as percentage of regional or local economy);
- Oil and gas or minerals exploration and extraction across Turkish waters and the Turkish EEZ within the Black Sea, e.g. exploration license zones, future activities (up to 5 years) of exploration companies, and exclusion zone distance;
- Shipping routes, vessel movements and shipping traffic volumes at national, regional and local levels (e.g. shipped volumes, number of shipping movements by vessel type including tanker, dry cargo, fishing fleet, passenger and military); and
- Governing/policing of Turkish waters, including shipping control, e.g. activities of the Turkish Coast Guard (maritime security authority) or other naval or marine police or security service within the Project Area.

These data gaps were the focus of subsequent primary research, the details of which are set out below.

Primary Data Collection

In light of the data gaps that emerged from the review of secondary data, a data collection exercise was undertaken with the aim of obtaining additional secondary data by way of direct enquiries. It sought to gather qualitative and quantitative primary data to supplement the secondary data gaps as well as to ground-truth the statistical information available from secondary data sources.

Primary data was collected during stakeholder meetings with national government authorities and fisheries organisations held in 2013, including:

- Ministry of Energy and Natural Resources;
- Ministry of Transport, Maritime Affairs and Communication;
- Ministry of Food, Agriculture and Livestock;
- Turkish Petroleum Corporation (TPAO);
- Department for Navigation, Hydrography and Oceanography of the Turkish Naval Forces;
- Ministry of Interior: Turkish Armed Forces, Coast Guard Command of the Black Sea;
- Central Union of Fisheries Cooperatives; and
- East Black Sea Fisheries Cooperatives Union.

Many of the stakeholder questions and concerns to date relate to the potential for impacts on fishing and fisheries (**Chapter 6 Stakeholder Engagement**). Consequently, a supplemental Fishing Study was conducted, and further data on fish and fisheries was requested by the Project from the following stakeholders:

- Turkish Ministry of Food, Agriculture and Livestock: General Directorate of Fisheries and Aquatic Products;
- Sinop Directorate of Food, Agriculture and Livestock;
- Karadeniz Technical University Faculty of Marine Sciences;
- Middle East Technical University Faculty of Marine Sciences;
- Central Union of Fisheries Cooperatives (SUR-KOOP); and
- Karadeniz Technical University Department of Aquaculture products.

In addition, in May 2014 meetings were held with the East Black Sea Fisheries Cooperative Union and the Samsun Union of Fisheries Cooperatives to provide them with an update on the Project, and disclose the findings of the Fisheries Study (see Appendix 9.1). In addition, arrangements for future engagement activities were discussed, including for the ESIA Report and for communicating information to fishers regarding location of the pipe-laying spread during construction activities.

9.4.2 Data Assumptions and Limitations

Limitations

The following limitations apply to the data contained within this baseline:

- Where possible, a minimum of five years data has been obtained. In some cases, it has not been possible to obtain a full five years of trend series data; and
- In certain circumstances, data is not always available; however, where possible, efforts have been made to obtain qualitative data in lieu of quantitative data.

It is considered that the above limitations do not compromise the integrity of the assessments made within this chapter.

Assumptions

The following assumptions have been made in relation to issues that influence the impact assessment:

- The majority of the construction workforce required will be highly skilled and as such, it is anticipated that the contractor will bring its own specialised workforce that will be lodged on the vessels on which they work;
- There will be no landfall facilities or marshalling yards in Turkey; and
- The Project will not use Turkish ports.



9.5 Socio-Economic Baseline

This section provides a summary of the baseline methodology (including data sources and limitations), and describes the baseline socio-economic characteristics of the Black Sea coastal region. The section is structured as follows:

- Section 9.5.1: Geographic, Political and Historical Context;
- Section 9.5.2: Administrative Framework;
- Section 9.5.3: Population and Demography;
- Section 9.5.4: Economy;
- Section 9.5.5: Marine Users and Exploration Rights;
- Section 0: Vulnerable Groups; and
- Section 0: Baseline Summary and Key Conclusions.

9.5.1 Geographic, Political and Historical Context

9.5.1.1 Geographic Context

The South Stream Offshore Pipeline will extend across the Black Sea from the Russian coast near Anapa, through the Turkish EEZ, to the coast of Bulgaria near Varna. The Black Sea is bordered by several countries including, running clockwise from the Russian landfall of the South Stream Offshore Pipeline, Russia, Georgia, Turkey, Bulgaria, Romania and Ukraine.

9.5.1.2 Historical Context

The modern Republic of Turkey was created in the 1920s, and is a secular republic. Kemal Ataturk is seen as the founder of the nation. It holds a strategically important location, between Europe and Asia, giving Turkey significant influence in the region, and the Black Sea (Ref. 9.3).

Over the past decade, Turkey has developed economically into a middle-income country and is now the 16th largest economy in the world (Ref. 9.4). Turkey is an EU accession candidate country, a member of the Organisation for Economic Cooperation and Development (OECD), the G20, and is an important donor to the bilateral Official Development Assistance (ODA).

Turkey's journey to a democracy and market economy has been mixed. The army, seen as responsible for safeguarding the constitution, has toppled governments in power when it considered secular values were being challenged; although this has not happened since 1980 (Ref. 9.5) and the chances of this happening now are generally held to be remote.

9.5.1.3 Political Context

The Justice and Development Party (AKP) won a third term in 2011, with 327 seats out of 550 seats in Turkey's Parliament. Mr. Recep Tayyip Erdogan is serving his third consecutive term as Prime Minister having held that office since 2002. Mr. Abdullah Gul is President, voted by Parliament. The government holds power, but the President can veto laws and appoint officials and judges (Ref. 9.3).

Constitutional reform is a key political issue, with a range of constitutional reforms voted for by referendum in 2010 (Ref. 9.3). In September, 2010 a Referendum on constitutional reform backed amendments increasing parliamentary control over the army and judiciary. Secularist opposition has challenged the AKP with accusations of trying to create an Islamic State and questioned the authority of the party to govern. This was demonstrated by mass protests in 2013, against Prime Minister Erdogan's government and what protesters perceive as developments that threaten secular values.

9.5.2 Administrative Framework

Turkey is divided into seven geographical regions, and for the purposes of this socioeconomic chapter, the terms 'region' and 'regional' are used to refer to these regions. There are two regions that border the Black Sea; namely the Black Sea Region and the Marmara Region

Administratively, each region is divided into provinces. Accordingly, the terms 'province' and 'provincial' are used to refer to the provinces within those regions that are on the Black Sea coast. Therefore, the provinces referred to in this chapter are only those that are on the Black Sea coast, i.e., the coastal provinces within the Black Sea and Marmara regions, and not all of the provinces that form part of these two regions. Figure 9.2 below shows Turkey's provincial administrative structure.



Figure 9.2 Project-related Turkey Sector Administrative Structure

Source: Ref. 9.6

The provinces in the Marmara Region on the Black Sea coastline are (west to east along the coast): Kirklareli, Istanbul, Kocaeli, and Sakarya.

The provinces in the Black Sea Region on the Black Sea coastline are (west to east along the coast): Duzce, Zonguldak, Bartin, Kastamonu, Sinop, Samsun, Ordu, Giresun, Trabzon, Rize, and Artvin.



In addition to land based regions, the Black Sea region within Turkish territorial waters and the EEZ is divided into two fishing regions, the East Black Sea and West Black Sea. Turkish maritime agencies also commonly refer to these two fishing zones in the Black Sea: the East Black Sea Region which includes the sea off the coast of the provinces from Sinop to Artvin, and the West Black Sea Region which includes the sea off the sea off the coast of the provinces from Kastamonu to Kirklareli.

9.5.3 **Population and Demography**

The total population of Turkey in 2012 was 75.6 million, of which 50.2% were male and 49.8% were female (Ref. 9.7).

The Marmara Region coastal provinces of Istanbul, Kocaeli and Samsun are the most populated Turkish provinces on the Black Sea coast. Istanbul has a population of 13.8 million and is also the most populated province in Turkey, accounting for approximately 18% of the total Turkish population. The other three Black Sea coastal provinces in the Marmara Region (Kirklareli, Kocaeli and Sakarya) account for just under 4% of the total Turkish population, while the 11 Black Sea coastal provinces in the Black Sea Region constitute just over 7% of the total Turkish population. In total, the 15 Black Sea coastal provinces constitute just over 30% of the total population of Turkey. Sinop, the province closest to the Pipeline route, has the third lowest population of all of the Black Sea coastal provinces.

Population data for Turkey and the Black Sea coastal provinces for the year 2012, including density, are given in Table 9.2. In the Marmara Region, the provinces of Istanbul, Kocaeli, Sakarya, and in the Black Sea Region, the provinces of Düzce, Zonguldak, Samsun, Ordu, and Trabzon, have a population density that is greater than the average for Turkey (Ref. 9.8). In Kastamonu, Sinop, Artvin however, the population density is lower than the average for Turkey and other Black Sea coastal provinces. Sinop, the province closest to the Pipeline route, has the third lowest population density of all of the Black Sea coastal provinces.

Province	Population	Proportion of Total Turkish Population (%)	Population Density (Person per km²)	
Marmara Region Coasta	l Provinces			
Kirklareli	341,218	0.5	54	
Istanbul	13,854,740	18.3	2,666	
Kocaeli	1,634,691	2.2	453	
Sakarya	902,267	1.2	186	

Table 9.2 Population, 2012

Continued...

Province	Population	Proportion of Total Turkish Population (%)	Population Density (Person per km²)						
Black Sea Region Coastal Provinces									
Düzce	346,493	0.5	135						
Zonguldak	606,527	0.8	184						
Bartın	188,436	0.2	91						
Kastamonu	359,808	0.5	27						
Sinop	201,311	0.3	35						
Samsun	1,251,722	1.7	138						
Ordu	741,371	1.0	125						
Giresun	419,555	0.6	61						
Trabzon	757,898	1.0	162						
Rize	324,152	0.4	83						
Artvin	167,082	0.2	23						
Black Sea coastal provinces total	22,949,592	30.3	-						
TURKEY	75,627,384	100	98						
Source: Ref. 9.7			Complete.						

Over the five year period to 2012, the national population has grown at an average of 1.39% per annum. There is however a distinct difference between the averages for the coastal provinces in the Marmara and Black Sea regions respectively, with the former displaying a cumulative population growth rate over the five year period more than five times higher than the latter (Table 9.3). One notable exception is the province of Düzce, which borders on the Marmara Region, where the population has increased by a total of 6.97% over the same five year period (Ref. 9.8).



Provincial Grouping	2008	2009	2010	2011	2012	Total 2008 to 2012
Marmara Region coastal provinces – average	1.29%	1.67%	2.49%	2.70%	1.69%	9.84%
Black Sea Region coastal provinces – average	0.70%	0.87%	-0.02%	-0.22%	0.51%	1.84%
Turkey (Total)	1.32%	1.46%	1.60%	1.36%	1.21%	6.95%

Table 9.3 Population Growth Rate per Annum

Source: (Ref. 9.8)

One reason contributing to the slower overall rate of population growth in the Black Sea Region coastal provinces over the last five years is that most of the provinces have experienced negative net migration, or only relatively low levels of positive net migration. This stands in contrast to the four Marmara Region coastal provinces, particularly Istanbul, Kocaeli and Sakarya provinces, which have experienced consistently positive net in-migration. Once again, Düzce province stands out as an exception to this pattern. The net migration numbers of the Black Sea coastal provinces are presented in Table 9.4.

Table 9.4 Total Net Migration, 1975 to 2012

Province	2007 to 2008	2008 to 2009	2009 to 2010	2010 to 2011	2011 to 2012	Total 2007-8 to 2011-12		
Marmara Region Coastal Provinces								
İstanbul	26,675	39,481	102,583	121,782	30,461	877		
Kırklareli	- 462	- 883	756	150	1,316	320,982		
Kocaeli	23,018	12,033	15,124	13,244	11,405	74,824		
Sakarya	3,434	3,711	1,621	3,904	4,670	17,340		
Black Sea Region Coastal Provinces								
Düzce	1,810	2,706	927	574	-147	5,870		
Zonguldak	- 1,891	- 4,443	- 7,555	- 7,836	-8,408	-30,133		
Bartın	2,093	462	- 957	- 1,059	-185	354		

Continued...

Province	2007 to 2008	2008 to 2009	2009 to 2010	2010 to 2011	2011 to 2012	Total 2007-8 to 2011-12
Kastamonu	772	- 1,523	- 1,611	- 459	407	-2,414
Sinop	827	4	1,060	- 580	-2,094	-783
Samsun	- 5,229	- 707	- 9,407	- 8,305	-9,312	-32,960
Ordu	- 3,739	- 961	- 8,345	- 10,509	21,645	-1,909
Giresun	1,550	- 2,597	- 3,040	- 2,288	166	-6,209
Trabzon	- 1,109	10,394	- 7,416	- 13,588	-3,614	-15,333
Rize	- 572	- 2,147	- 1,749	- 2	-1,541	-6,011
Artvin	- 1,960	- 1,341	- 873	0	-326	-4,500
Artvin	- 1,960	- 1,341	- 873	0	-326	-4,500

Source: Ref. 9.9

Complete.

9.5.4 Economy

9.5.4.1 Gross Domestic Product

Turkey is an upper middle income country, with a GDP of US \$789 billion, making it the 17^{th} largest economy in the world, ranked behind Indonesia and ahead of the Netherlands (Ref. 9.10).

The Turkish economy has experienced largely continuous economic growth over the ten year period from 2002 to 2012, except during 2009 in the aftermath of the global economic crisis (Ref. 9.11). Growth restarted rapidly after the 2008 global financial crisis, and ensuing recession in 2009, at 9.2% in 2010 and 8.8% in 2011 (Ref. 9.12). After suffering falls in national per capita GDP (Turkish Lira) in 2008 and 2009, per capita GDP (measured in fixed prices using 1998 as the base year) has increased from 1,346 in 2009 to 1,609 in 2013 (Table 9.5). In current prices, the 2013 figure equates to 20,531 Turkish Lira.

The latest available data at provincial level (2001) shows that the majority of the Black Sea coastal provinces in the Marmara Region have a higher GDP per capita in comparison to Turkey (in its entirety), while the majority of the Black Sea coastal provinces in the Black Sea Region have a lower GDP per capita in comparison to Turkey (in its entirety) (Ref. 9.13).

More recent figures at the provincial level for GDP per capita are not available. However, other metrics such as population growth (Ref. 9.7), internal net migration (Ref. 9.8), sectoral employment trends (Ref. 9.14), indicate that despite regional development policies, regional socio-economic disparity between the regions continues to exist in Turkey. This is supported by a study that shows the Black Sea Region remains below the country's average for economic and social indicators and development (Ref. 9.14). In response to this imbalance, the government is



implementing public investment policies to attract private sectors to 'underdeveloped' regions, to create regional development. However, the same study also identifies economic and social indicators which show that the 'underdeveloped' regions in Turkey are in the Black Sea Region, as well as, eastern, south-eastern and central Anatolia (Ref. 9.14).

	Per Capita Gross Domestic Product					
Year	Current Prices, Turkish	Fixed Prices, base year	Real Growth Rate			
	Lira	1998, Turkish Lira	(%, year-on-year, using 1998 fixed prices as base)			
1998	1,124	1,124	-			
2003	6,809	1,143	-			
2007	12,018	1442	3.4			
2008	13,378	1,434	-0.6			
2009	13,223	1,346	-6.1			
2010	15,023	1,450	7.5			
2011	17,484	1,552	7.2			
2012	18,846	1,565	0.8			
2013	20,531	1,609	2.8			

Table 9.5 Per capita GDP in Turkey between 1998 and 2013

Source: Ref. 9.13

9.5.4.2 Economic Sectoral Composition

The five largest economic sectors in Turkey in 2012 as measured by their share of GDP were manufacturing (24.4%), transport, storage and communication (9.9%), wholesale and retail trade (12.7%), financial services (12%), and agriculture (9.0%) (Ref. 9.15).

9.5.4.3 Employment

Turkey's labour market is characterised by low activity and labour productivity rates, especially among women and youth. In 2011, 50% of the working-age population was in employment, which is approximately 20% below the OECD average (Ref. 9.3). Following the global financial crisis, unemployment reached 14% in 2008; however, the unemployment rate in 2011 had fallen to 9.8%, below 10% for the first time since prior to 2008 (Ref. 9.16).

Of those who were employed in Turkey in 2011, 22.7% were employed in agriculture, 27.2% were employed in industry and 50.1% were employed in the services sector. Similar to national

trends, the services sector is the largest employer within most Black Sea coastal provinces including Istanbul. Agriculture, however, accounts for a greater share of employment in in Kastamonu, Ordu and Giresun provinces (46%, 53% and 49%, respectively). The distribution of employed population and rates by economic activity in Turkey and the Black Sea coastal provinces is provided in Table 9.6.

Province	Total Employed Population	Number Employed by Sector			% of Total Employment				
		Agriculture	Industry	Services	Agri- culture	Industry	Services		
Marmara Region Coastal Provinces									
Istanbul	4,565,000	31,000	1,677,000	2,857,000	0.7	36.7	62.6		
Kırklareli	140,000	35,000	43,000	62,000	25.0	31.0	44.0		
Kocaeli	502,000	22,000	221,000	258,000	4.4	44.1	51.5		
Sakarya	281,000	71,000	89,000	121,000	25.2	31.7	43.2		
Black Sea Coastal Provinces									
Düzce	130,000	42,000	43,000	45,000	32.1	33.3	34.6		
Zonguldak	220,000	58,000	67,000	96,000	26,2	30.4	43.5		
Bartın	69,000	25,000	18,000	26,000	36.3	26.5	37.2		
Kastamonu	156,000	82,000	20,000	54,000	52.8	12.7	34.5		
Sinop	77,000	27,000	20,000	30,000	35.2	26.0	38.8		
Samsun	434,000	169,000	90,000	175,000	38.9	20.8	40.3		
Ordu	282,000	138,000	57,000	88,000	48.8	20.1	31.1		
Giresun	153,000	70,000	26,000	56,000	46.1	17.0	37.0		
Trabzon	281,000	103,000	55,000	123,000	36.7	19.5	43.8		
Rize	108,000	39,000	26,000	43,000	36.3	23.8	39.9		
Artvin	73,000	29,000	11,000	33,000	40.1	14.7	45.2		
TURKEY	24,320,000	5,531,000	6,605,000	12,184,000	22.7	27.2	50.1		

Table 9.6 Employed	Population and Rates by	y Economic Activity,	2011

Source: (Ref. 9.17)

Note: Population 15 years of age and over.

Complete.



Fisheries

The fisheries sector is a sub-sector of the agricultural sector in Turkey and accounts for approximately 0.16% of the total employed population. This equates to 0.7% of the total agriculture sector workforce (Ref. 9.18 and Ref. 9.19).

In the Black Sea fishing region, 16,486 workers were engaged in fishery operations in Turkey in 2011; this represents approximately 44% of the total workforce engaged in fishery operations in Turkey, and 0.22% of the total employment in this region (including Istanbul) (Ref. 9.20).

Full time workers account for approximately 96% of fishery workers in the Black Sea fishing region. This figure does not include those employed in secondary activities such as processing, packaging, marketing and distribution, manufacturing of fish processing equipment, net and gear making, ice production and supply, boat construction and maintenance (Ref. 9.20).

9.5.5 Marine Area Use and Rights

Activities within the marine area of the Turkish EEZ and territorial waters are primarily associated with commercial shipping, resource exploration and fishing. The following sections provide an overview of the Turkish administrative structure governing the marine area (Section 9.5.5.1), shipping (Section 9.5.5.2), oil and gas exploration and exploitation (Section 9.5.5.3), and fisheries (Section 9.5.5.4), including the current status of activities and the groups and organisations involved. There are no sub-sea cables or pipelines in the Turkish EEZ that intersect with the Project Area.

9.5.5.1 Marine Administrative System

Overview of Administrative System

Key ministries and departments with maritime administrative responsibilities in Turkey are the following:

- Ministry of Interior:
 - Coast Guard Command of the Black Sea Region.
- Ministry of Transport, Maritime Affairs and Communications:
 - General Directorate of Coastal Safety;
 - General Directorate of Maritime and Inland Waters;
 - General Directorate of Maritime Trade; and
 - General Directorate of Shipyards and Coastal Structures:
 - i. Department of Navigation Safety and Maritime Security.
- Ministry of Food, Agriculture and Livestock:
 - General Directorate of Food and Aquatic Products.
- Ministry of Environment and Urbanisation:

- General Directorate of Environmental Management: Department of Maritime and Coastal Management.
- Turkish Naval Forces:
 - Department of Navigation, Hydrography and Oceanography.

9.5.5.2 Shipping

The Turkish Black Sea coastline is approximately 1,700 km long and includes several important port cities including Istanbul, Zonguldak, Samsun, Trabzon and Rize. Within the Black Sea, maritime cargo transportation includes transport of containers, general cargo, liquid and dry bulk, roll-on roll-off, and rail ferry goods (Ref. 9.21).

Shipping Traffic

The Bosphorus is a busy strait carrying on average between approximately 3,000 and 4,500 ships (i.e., one ship equates to one trip north or south bound through the strait) per month (Ref. 9.23). The number of ships sailing through the Bosphorus Strait displays considerable variance, although there is a tendency for the number of ships to be lower during winter (Figure 9.3).



Figure 9.3 Shipping traffic through the Bosphorus Strait (January 2009 to April 2013)

Source: Ref. 9.23



Shipping Routes

The key commercial shipping routes within the Turkish EEZ connect between the ports of Istanbul, Samsun and Trabzon and numerous routes are known to cross the Turkish EEZ between neighbouring Black Sea countries.

The Black Sea is a major transport route for many of the Black Sea countries, with the majority of shipping traffic occurring between the following shipping hotspots:

- Bosphorus shipping junction (Istanbul);
- North-western harbour agglomeration (Odessa);
- Kerch Strait shipping junction; and
- North-eastern harbour agglomeration.

Figure 9.4 shows the major shipping transport routes in the Black Sea.

9.5.5.3 Oil and Gas Exploration

The Turkish Petroleum Corporation (TPAO) is responsible for the exploration of petroleum and natural gas in Turkey. TPAO has identified a large area of the Turkish EEZ in the Black Sea that could potentially be utilised for exploration and defined several exploration license areas, some of which overlap with the Project Area. Figure 9.5 shows TPAO's exploration license areas in the Black Sea.

TPAO has confirmed to South Stream Transport that there are no existing oil and gas explorational drilling or development activities taking place within the Project Area.

TPAO has, however, advised of two possible oil and gas exploration and production projects which may be brought forward over the next three years, namely the Tuna Prospect, in the northwest of License Area 3921 and the Şile Prospect in License Area 3920 (Ref. 9.24). These areas are shown in Figure 9.5.

TPAO is planning to undertake 3D seismic surveys as part of the 'Tuna Prospect' project in the northwest of licence area 3921 (near the Romanian EEZ) which may begin either at the end of the 2014 or in 2015. Further site surveys of this area may occur in 2015 or 2016. Depending on the findings of these surveys, an exploration well may be drilled in 2016 (Ref. 9.24).

Pre-drilling surveys may also be conducted north of licence area 3920 (near the Bulgarian EEZ) in 2015. Depending on the results of these surveys, an exploration well may be drilled in 2016. If a discovery is made in license areas 3920 and 3921, drilling of developmental wells may begin by 2017. The precise locations of the 3D seismic and site survey areas, or potential drilling locations has yet to be determined.

TPAO has also indicated that if oil or gas is discovered in the 'Tuna Prospect' license area 3921, it may be necessary to construct a pipeline(s) to carry the hydrocarbons south, thus potentially intersecting the Pipeline during the Operational Phase of the Project.



Figure 9.4 Shipping and Navigation Routes in the Black Sea

Source: Ref. 9.22



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9.5.5.4 Fisheries

Turkey is the biggest fishing nation in the Black Sea and has accounted for up to approximately 90% of all landings (catch) by volume and value of all the Black Sea nations since the early 1990s (Ref. 9.25). The fisheries sector, including inland fisheries, aquaculture and secondary sectors (e.g. processing and manufacturing) represents approximately 0.3% of Turkey's GDP. The workforce employed in fisheries in the Black Sea coastal provinces and Istanbul, represents 0.2% of total employment (Ref. 9.18 and Ref. 9.26). Workers in this sector range from paid crew members on fishing vessels, to partners and household members of fishermen, working without pay.

In Turkey, there are four sectors of commercial fish production: marine fisheries, aquaculture, inland fisheries, and other marine products (e.g. crustaceans and molluscs). Marine fisheries account for the largest proportion of fish production and are the focus of this section.

Fishing Regions

Turkey's main marine fishing regions are: Mediterranean Sea, Black Sea, Aegean Sea, and Sea of Marmara. Of these regions, the Black Sea accounts for the largest proportion of production, representing 77% of Turkey's total national catch in 2011.

The Black Sea region is divided into two fishing regions: the East Black Sea and West Black Sea. The East Black Sea region includes the coastal provinces from Artvin to Sinop, and the West Black Sea region is comprised of coastal provinces from Kastamonu to Kirklareli. Of the total Turkish fishing catch in 2011, 68% was caught in the Eastern Black Sea and 9% was caught in the Western Black Sea (Ref. 9.27). The Eastern Black Sea region accordingly accounts for approximately 88% of all fish caught by Turkey in its Black Sea fishing regions (Ref. 9.27).

There are public and private fishing enterprises, ranging from large commercial companies, to small-scale and artisanal ventures. Of the Turkish fishing ports on the Black Sea Coast Trabzon, Zonguldak and Samsun are the most popular provinces in the Black Sea for fishing, having both fishermen and vessel licences (Ref. 9.28). Sinop, whilst a smaller port, is also a hub of fishing activity during the anchovy wintering period. Fishers come from other regions during anchovy season to base themselves in Sinop and to a lesser extent, Samsun. Therefore, fisheries related stakeholder engagement targeted the main fishing towns on the Black Sea coast of Samsun, Trabzon and Sinop.

The main Black Sea fishing cooperatives and public operators are shown in Table 9.7 (Ref. 9.18). The areas mentioned in the Table are also shown in Figure 9.6.



Province	Operators
Düzce	Private: Akçakoca Fishery Cooperative
Zonguldak	Public: Ministry of Agriculture and Rural Affairs and Kozlu Municipality Private: Bozhane Fishery Cooperative and Alaplı Fishery Cooperative
Bartın	Public: Kurucaşile Municipality Private: Tarlaağzı and Gömü Villages Fishery Cooperative
Kastamonu	Public: Ministry of Agriculture and Rural Affairs, Abana Municipality, Gemiciler Village Mukhtar, İnebolu Municipality and Doğanyurt Municipality
Sinop	Public: Ministry of Agriculture and Rural Affairs and Ayvancık Municipality
Samsun	Private: Terme Fishery Cooperative, Küplüağzı Village Fishery Cooperative and Ereğli- Çınarcık-Canik Town Fishery Cooperative
	Public: Ministry of Agriculture and Rural Affairs
Ordu	Public: Gülyalı Municipality
	Private: Boztepe Kumbaşı Güzelyalı Kirazlimanı Neighbourhood Fishery Cooperative and Medreseönü Fishery Cooperative
Giresun	Public: Görele Municipality
	Private: Giresun Fishery Cooperative
Trabzon	Private: Of District Centre and Eskipazar District Fishery Cooperative, Araklı Fishery Cooperative, A. Merkez Fishery Cooperative, Fener Village Fishery Cooperative and Büyükliman Fishery Cooperative
	Public: Arsin Municipality
Rize	Private: Fındıklı Fishery Cooperative, Ardeşen Fishery Cooperative, Fındıklı Fishery Cooperative and PazarKirazlık Fishery Cooperative
	Public: İyidere Municipality
Artvin	Private: Park Maritime and Hopa Port Operations, Hopa Fishery Cooperative and Arhavi Fishery Cooperative

Table 9.7 Fisheries Along the Turkish Black Sea Coast (By Province)



Figure 9.6 Fishing Areas in the Turkish Black Sea

Fish Stocks and Fishing Grounds

The Project is located in an area where water depths exceed 2,000 m. In these areas only pelagic fishing¹ can take place. Pelagic fishing in the Black Sea includes commercial species such as European anchovy (*Engraulis encrasicolus*), sprat (*Sprattus sprattus*), and Black Sea horse mackerel (*Trachurus mediterraneus ponticus*). Fishing is a substantial source of revenue for Turkey and other Black Sea countries.

Demersal (or bottom) fishing takes place along Turkey's coastline in waters up to a maximum of 150 m depth. In deeper waters, anoxic conditions prevent the occurrence of any commercially important demersal species (Ref. 9.29). Fishing grounds are concentrated in the shallower waters of the continental shelf (including feeding, breeding, wintering and spawning grounds), and are largely constrained by the rapid increase in depth along the continental slope to depths of more than 2,000 m (refer to Appendix 9.1). As such, most fishing occurs in coastal waters, and the 150 m depth contour can be used as a proxy boundary for the majority of Turkish fishing activity as this is the region in which commercially important fish species over winter near the Turkish coast.

¹ Pelagic fishing relates to fishing activities which are focussed near the surface of coastal and open ocean waters. This does not include fishing activities focussed on bottom or demersal fish stocks, which include bottom trawling.



Statistical data on the number of fishing vessels, if any, operating in or around the Project Area is not available. However, consultations with Turkish fisheries to date have indicated that it is rare for fishing vessels to operate at such distances from the Turkish Black Sea coast (Ref. 9.30) as fishing activity is concentrated in shallower coastal waters, with the possible exception of large commercial vessels. As most fishing is done through artisanal or small-scale efforts the economics of travelling further from shore, combined with the fact that fish stocks are concentrated in coastal waters, indicate that these fishers do not fish in the Project Area.

Large commercial vessels may, on occasion, fish up to 50-60 miles from the coast during anchovy season (Ref. 9.34). However, there is no indication from fisheries that pipe-laying activities would impact fishing in the Project Area. Rather, fisheries noted that there may be maritime health and safety implications if pipe-laying activities were to coincide with anchovy season, as lighting from the pipe-laying vessel may attract anchovy which could result in these larger fishing vessels following the anchovy to the pipe-laying vessel. However, fisheries concurred that the Project's maritime safety measures were appropriate to ensure no accidents arise. As such, this risk has been scoped out from further consideration (refer to Table 9.1).

Fleet

The Turkish fishing fleet is mostly artisanal (86%), with the majority of Turkish vessels less than 10 m in length (80%), and under 10 gross tonnage (83%). More than half of the vessels (60%) use engines that are less than 100 horse power. A large proportion of vessels (85%) operate without hired crew (Ref. 9.18). However, the majority of catch is caught by the larger commercial vessels (refer to Appendix 9.1 for more information on the Turkish fishing fleet) (Ref. 9.18).

Anchovy

Engagement with fishing cooperatives and unions, as well as government and academic authorities, has highlighted the importance of the anchovy within Turkish fisheries. Turkey is responsible for approximately 93% of all anchovy caught in the Black Sea (Ref. 9.26 and Ref. 9.31), and in 2011, anchovy accounted for 62% of all marine fish caught by Turkish fleets in the Black Sea (Ref. 9.18).

There are two distinct types of anchovy fished in the Black Sea, and the migration route of the European anchovy is of greatest relevance to the Project (both relative to the other species of anchovy, and other fishing target species generally), as it directly crosses the proposed Pipeline route. In addition to the main anchovy migration route from the north-western continental shelf through the Central Black Sea into Turkish waters (see **Chapter 8 Biological Environment)**, a new branch of European anchovy migration has also developed starting from Bulgaria and entering Turkish waters through the Western Black Sea coast around February. European anchovy are mobile and will avoid sources of disturbance; however, some disturbances such as noise and light may impact their behaviour.

9.5.6 Vulnerable Groups

IFC PS1 - Assessment and Management of Environmental and Social Risks states that it is necessary to identify individuals and groups that may be directly and differentially or

disproportionately affected by the project because of their disadvantaged or vulnerable status. Individual or group vulnerability is a pre-existing status that is independent of the Project and may be reflected by a disability, low incomes, an existing low level of access to key socioeconomic or environmental resources or a low social status that limits the ability to adapt to change. Therefore, vulnerable individuals and groups are potentially more susceptible to adverse impacts or have a more limited ability to take advantage of beneficial impacts.

As the Project is located over 110 km from the nearest point of land on the Turkish Black Sea coast, no direct impacts on Turkish communities are expected. Using guidance provided in IFC PS1, small-scale and artisanal fishers are the only potentially vulnerable group that has been identified with respect to the Turkish Sector. This group may be vulnerable because they are likely to have fewer financial resources, including savings and/or access to credit, which in turn could make them vulnerable to economic fluctuations if their fishing activities or harvests were to be adversely affected by the Project (including by potential unplanned events such as a fuel spill).

Potential impacts on fishing and fishers are assessed in Section 9.6 below, with due consideration to the vulnerability of these people to potential changes. Additionally, potential impacts on fish are assessed in **Chapter 8 Biological Environment**. Potential impacts on fishing and fishers are also addressed in the context of unplanned events (such as a fuel spill) in **Chapter 13 Unplanned Events**.

People working in the fishing industry (particularly small scale and artisanal operations) may have low or variable (and unreliable) incomes. Fisheries workers with low incomes in turn are more likely to have fewer financial resources to rely on and are less likely to have savings and/or access to credit, which in turn can make them vulnerable to economic fluctuations. Fisheries workers along the Turkish Black Sea coast could fall into this vulnerable group category given the artisanal vessels account for approximately 86% of the Turkish Black Sea fleet and 80% of vessels are less than 10 m in length. Eighty-five percent of vessels operate without hired crew, 9% have between one and four members of crew and 5% of vessels have more than five crew members. The percentage of employees that do not receive a wage is 46%; around 30% are crew working in exchange for fish caught and 16% unpaid family members or partners (Ref. 9.18).

In 2011, the Eastern Black Sea was the highest yielding region in terms of fisheries (Ref. 9.27). In 2011, the region accounted for approximately 88% of Turkey's Black Sea catch and approximately 68% of Turkey's total national catch (Ref. 9.27). Therefore, fisheries related stakeholder engagement targeted the main fishing towns on the Black Sea coast of Samsun and Trabzon.

During the Project Development Phase, Trabzon was identified as an important town to visit and engage with key marine research institutes and fisheries cooperatives. In August 2013, a meeting in Trabzon was attended by representatives from the East Black Sea Fisheries Cooperative Union which is based in Trabzon. Additional meetings were held in May 2014 with the East Black Sea Fisheries Cooperative Union in Trabzon and the Samsun Union of Fisheries Cooperatives.



9.5.7 Baseline Summary and Key Findings

This section provides a summary of key findings and observations arising from the preceding baseline in respect of Turkey and the Black Sea coastal provinces.

9.5.7.1 Turkey

The main observations arising from the baseline in relation to Turkey is as follows:

- Turkey is the 16th largest economy in the world, ranked behind Indonesia and ahead of the Netherlands;
- Since the 2008 global financial crisis, and ensuing recession in 2009, GDP growth in Turkey has recovered rapidly at 9.2% in 2010 and 8.8% in 2011;
- Turkey is by far the biggest fishing nation in the Black Sea, accounting for approximately 80% to 90% of all landings since the early 1990s. Of Turkey's total catch, 77% is from the Black Sea, and Turkish commercial vessels are responsible for approximately 93% of all anchovy caught in the Black Sea;
- The fisheries sector, including inland fisheries, aquaculture and secondary sectors (e.g. processing and manufacturing) represents approximately 0.3% of Turkey's GDP;
- The fisheries sector accounts for approximately 0.7% of the total population employed in the agriculture sector and 0.16% of the total employed population;
- Marine usage within the Turkish EEZ is primarily associated with commercial shipping, resource exploration and fishing;
- The key commercial shipping routes within the Turkish EEZ connect between the ports of Istanbul, Samsun and Trabzon and numerous routes cross the Turkish EEZ on their routes to and between other Black Sea coastal countries; and
- TPAO has identified a large area of the Turkish EEZ in the Black Sea that could potentially be utilised for petroleum or natural gas extraction.

9.5.7.2 Black Sea Coastal Provinces

The main observations arising from the baseline in relation to the Turkish provinces along the Black Sea Coast (not including Istanbul) are as follows:

- In total, the 15 Black Sea coastal provinces constitute just over 30% of the total population of Turkey. Sinop, the province closest to the Pipeline route, has the third lowest population of all of Black Sea coastal provinces;
- There has been a slower overall rate of population growth in the coastal provinces within the Black Sea Region over the last five years compared to the national average, as the Black Sea coastal provinces have experienced a negative net migration, or only relatively low levels of positive net migration;
- The Black Sea Region remains below the country's average for economic and social indicators and development;

- In the Black Sea fishing region, 16,486 workers were engaged in fishery operations in Turkey, in 2011; representing approximately 44% of the total workforce engaged in fishery operations in Turkey, and approximately 0.2% of the total employment in this region (including Istanbul); and
- The Black Sea (combining the two designated fishing regions, West Black Sea and East Black Sea) accounts for the largest share of national fishing production, with 77% of Turkey's total catch in 2011. The majority of Turkey's Black Sea catch (87%) is caught in the Eastern Black Sea region.

9.6 Impact Assessment

This section presents the results of an assessment of the potential for impacts on the existing socio-economic environment arising from Project-related activities. **Chapter 5 Project Description** and the baseline socio-economic characteristics (Section 9.5) have been used to assist the assessment of potential socio-economic impacts. This assessment has been informed by the impact assessment methodology described in **Chapter 3 Impact Assessment Methodology**, with specific socio-economic criteria defined in this section.

9.6.1 Impact Assessment Methodology

9.6.1.1 Socio-Economic Impact Assessment Criteria

Context and Overview

This section examines the impacts associated with the Project, including economic, fishing and commercial ship transportation-related impacts, and future exploration of resources in the Project Area.

The need for an assessment of socio-economic effects results from the potential for the Project to generate impacts upon the economy, assets and facilities, or navigational safety experienced by various receptors.

The methodology specific to socio-economics presented in this section builds upon the general assessment methodology summarised in **Chapter 3 Impact Assessment Methodology**. The methodology is then developed specifically in relation to effects on socio-economics arising from the construction, operation and decommissioning of the Project, as is further outlined below.

Project Activities Relevant to Socio-Economics

The Project Description is presented in **Chapter 5 Project Description**. The elements of the Project relevant to this socio-economic impact assessment are set out below.

Construction and Pre-commissioning Phase

Pipe-laying for the Project is planned to commence at the border of the Russian and Turkish EEZ, and will be the continuation of the construction of the Russian Sector of the South Stream



Offshore Pipeline. The Project ends at the boundary between the Turkish and Bulgarian EEZs. The main activities relevant to this assessment include:

- Surveying of the Pipeline route; and
- Offshore pipe-laying.

During construction, offshore pipe-laying is accomplished by the sequential alignment, welding and lowering of pipe segments from a pipe-laying vessel. The pipelines will be laid directly on the seabed. The installation of the pipeline in the Turkish EEZ will require deep water pipelaying vessels which are dynamically positioned (e.g. not anchored) and may use either the S-Lay or J-Lay methods.

The pipe-laying operation will be performed on a 24-hour basis. As described in **Chapter 5 Project Description,** a navigational Safety Exclusion Zone is proposed of 2 km radius (1.1 nautical miles (NM)) centred on the pipe-lay vessel.

There will be no onshore or associated facilities in Turkey. No temporary facilities will be constructed in Turkey and no Turkish ports will be used during the Project. Materials and equipment will be delivered to marshalling yards in Bulgaria or Russia via rail or sea. If delivered by sea from Asia or Europe via the Mediterranean Sea, up to five handysize (a size class of vessel) bulk carriers of 36,000 tonnes capacity per month are anticipated. These vessels will enter the Black Sea through the Bosphorus Straits.

Operational Phase

The permanent Project footprint on the seabed will be 420 m in width (encompassing the presence of the four pipelines and associated safety zone, in which no other activities may occur) extending across the entire Pipeline route within the Turkish EEZ, i.e. 470 km. The Project footprint has been agreed with the relevant Turkish authorities.

Overview of Receptor Groups

The key receptor groups that may be affected by the Project can be broadly divided into three categories:

- Fishers and fishing organisations or companies; and
- Oil and gas exploration companies.

Specific receptors and resources may vary depending on the type of impact/event. Socioeconomic impacts could directly affect individuals, organisations or groups who are users or beneficiaries of socio-economic resources, for example by restricting access to a particular area, or they could affect physical assets or ecological resources used by these groups.

Accordingly, receptors which could experience a socio-economic impact in one or more of these ways as a result of the Project are identified and described in Table 9.8 which shows the key receptors in respect to economic related impacts.

Table 9.8 I	Potential	Receptors	by	Impact	Туре
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Impact type	Receptors	Applicable Phase		
		Construction and Pre-Commissioning	Operational	
Socio- economic- related impacts	Fishers and fishing organisations or companies	✓		
	Oil and gas exploration companies	\checkmark	\checkmark	

Receptor Sensitivity Criteria

The concept of sensitivity attempts to reflect the degree of response to a change in baseline conditions by a receptor. This degree of response may range from being very susceptible to change (and having little resilience) to being able to absorb or adapt to change (being very resilient).

Within the socio-economic context, receptor sensitivity is difficult to define as it varies significantly within and between individual receptors for any given impact. The degree of sensitivity of a socio-economic receptor is based on an individual's abilities to adapt to changes and maintain their livelihood and health (i.e. resilience) and, in situations where an impact may result in a loss or reduction of access to a resource, their ability to access an alternative resource that provides the same service (e.g. a livelihood or employment, recreation, etc.). Sensitivity can also refer to 'vulnerability', and is not uniform. For example, not all fishers or fishing communities are equally vulnerable.

In this assessment, sensitivity is a stakeholder's resilience or capacity to cope with sudden changes or shocks to the stakeholder or on the resource(s) used by a stakeholder. There are a range of variables that can determine a stakeholder's sensitivity and should be considered:

- Age, gender, race, religion;
- Land rights and ownership;
- Employment/unemployment/income;
- Livelihood strategies (and livelihood alternatives);
- Location/isolation;
- Public services, e.g. health access and quality;
- Access to, and use of, natural resources including water;
- Food security;
- Education/skills;
- Health or disability;



- Support networks; and
- Marginalisation (e.g. degree of access to services and formalised rights).

As described in Section 9.6.2, there is a very limited scope for Project impacts on socioeconomic receptors. Due to the distance of the Project from the coast (more than 110 km) and the depth of the water along the Pipeline route (more than 2,000 m), the potential for interaction between the Project's activities and existing socio-economic receptors is minimal. As such, the potential impacts and receptors of interest to stakeholders have been identified and described below, although a quantitative assessment has not been undertaken. Receptor sensitivity has been assessed qualitatively.

Magnitude of Impacts

The magnitude of an impact is a measure of the degree of change in the baseline environment as a result of a development leading to positive or negative effects on socio-economic receptors. This baseline could refer to a diverse range of dimensions (i.e. financial, physical or emotional). As described in **Chapter 3 Impact Assessment Methodology**, impact magnitude considers factors such as the duration, frequency, reversibility, and extent of an impact. Additionally, certain criteria may take precedence over others and in some cases only certain criteria may be applicable depending on the type of impact being assessed.

It is also noted that impacts and outcomes associated with the Project may be either direct or indirect in nature. However, these characteristics, while important to recognise and understand in terms of the application of mitigation measures, do not affect impact magnitude and are not directly considered in the socio-economic impact magnitude criteria.

Given the limited scope for Project activities to impact socio-economic receptors, the assessment of the potential magnitude of impacts in this chapter takes a more qualitative approach as with receptor sensitivity.

9.6.1.2 Impact Assessment Methods

Identifying and Assessing Impact Magnitude

Potential changes to the existing baseline socio-economic characteristics of the Study Area, or within a wider zone of influence, may arise as a result of the activities of the Project. The Project activities are described in **Chapter 5 Project Description**.

The potential for adverse socio-economic impacts has been assessed in Sections 9.6.2 and 9.6.3 by taking into account the receptor and the characteristics of each impact (including their extent, duration, frequency and reversibility). For beneficial impacts, the beneficial nature of the impact has been noted but the magnitude of the impact and the sensitivity of the receptor has not been explicitly identified.

Identifying Mitigation and Assessing Residual Impacts

As described in **Chapter 5 Project Description**, the Project design process has incorporated a number of design principles and measures to reduce overall impact. These are defined as design control measures. As a result, to the extent practicable, this chapter has assessed the potential for impacts based on a Project design that has already incorporated these design controls.

Within the respective impact assessment sections below for each phase of the Project, following the initial pre-mitigation impact assessment, a set of receptor-specific mitigation measures and other Project enhancement measures have been identified. These are explained in detail below.

Following assessment of the mitigation measures, the overall significance of the impacts, taking into account the mitigation measures, has been reassessed to arrive at the residual impact. The reassessment has applied the same methodology used to undertake the original pre-mitigation assessment.

9.6.2 Impact Assessment: Construction and Pre-Commissioning Phase

This section identifies the potential impacts and risks to socio-economic receptors that may arise in association with the Construction and Pre-Commissioning Phase of the Project.

Due to the distance of the Project from the coast (more than 110 km) and the depth of the water (more than 2,000 m), the potential for interaction between the Project Activities and existing socio-economic receptors is minimal. However, two potential impacts and receptors of interest to stakeholders are described below, including the potential impact on fishers and fisheries, and the potential impact on oil and gas exploration.

9.6.2.1 Assessment of Potential Impacts

Potential Impact on Turkish Fisheries due to Construction Activity

Given the concerns that were raised and the importance of the issue expressed by stakeholders, as well as the identified vulnerability of fishers (including small-scale and artisanal fisheries), a specialised Fishing Study was undertaken (Appendix 9.1) to assess the status of fisheries and fishing communities in the Black Sea, and how these could be affected by the Project. The outcomes of this study concluded that there is no potential for impacts on Turkish fisheries:

- Firstly, the Fisheries Study has shown that the Turkish fishing fleet, which mostly comprises small vessels with limited range, concentrates their fishing efforts in waters relatively close to the Turkish coast and approximately 100 km from the Project Area. Although statistical data on fishing activity in the Project Area could not be sourced, qualitative data gathered during consultations with fisheries representatives has confirmed that no significant fishing activity occurs in the Project Area. As such, there is very little to no likelihood of interaction between the pipe-laying vessel spread and fishing vessels;
- Second, it has shown that any significant impact on fish migration routes and patterns across the Black Sea is unlikely, including for the key species targeted by Turkish fishing fleet. This includes European anchovy which accounts for the largest share of the Turkish fishing catch and which has been identified as having migration routes that intersect the Project Area in Turkey's EEZ. In the event that the anchovy migration across the Pipeline route was to coincide with construction, the relative size of the sea area disturbed by the



construction process would be insignificant in comparison to the approximate width of the migration route, and as such the migration would not be disturbed; and

• Whilst fisheries raised the possibility of construction activities in the Bulgarian Sector impacting fish migration routes through the western continental shelf into Turkish waters, the fishing study similarly concluded that impacts would not be significant enough to disrupt fish migrations. Since fish do not inhabit the deep anoxic waters of the Black Sea, sediment plumes from pipe-laying activities near the seabed would not result in loss of habitat, whilst fish would It is therefore considered that there is no potential for impacts on the resource (target species fish stocks), on catch levels, or on the fishing effort expended, as a result of the Project during the Construction and Pre-Commissioning Phase. Even considering the potential vulnerability of fishers (including small-scale and artisanal fisheries), it is unlikely that there will be any discernible change in fishing industry revenues, incomes or livelihoods associated with the fishing industry, including the anchovy fishery.

It is therefore considered that there is no potential for impacts on the resource (target species fish stocks), on catch levels, or on the fishing effort expended, as a result of the Project during the Construction and Pre-Commissioning Phase. In the Bulgarian Sector, given the limited area that the construction activities in offshore and nearshore sections of the South Stream Offshore Pipeline will occupy, and the temporary nature of the construction activities, no significant transboundary impacts to fish stocks and fisheries in Turkey are expected. Even considering the potential vulnerability of fishers (including small-scale and artisanal fisheries), it is unlikely that there will be any discernible change in fishing industry revenues, incomes or livelihoods associated with the fishing industry, including the anchovy fishery.

These conclusions were presented to fisheries representatives in both Trabzon and Samsun in May 2014 (see **Chapter 6 Stakeholder Engagement**) who confirmed they do not anticipate any impacts on their activities because of the distance of the Project offshore and the limited potential to impact anchovy migration.

The potential for an unplanned event, such as a leak or spill of fuel from a construction vessel to impact fish stocks, and in turn, fisheries and potential vulnerable groups in the Black Sea, is discussed in **Chapter 13 Unplanned Events**.

Potential Impact on Oil and Gas Exploration due to Construction Activity

The Project Area intersects with an oil and gas exploration block licenced to TPAO. However, due to the relatively small area occupied by the pipe-laying spread during construction, and the movement of the spread at approximately 2.5 km per day, any possible interactions would be temporary and localised.

Consultation with TPAO in 2013 established that exploration drilling activities are not expected to occur within the Project Area during the Construction and Pre-Commissioning Phase of the Project. Therefore, no potential impact of construction activities on TPAO's exploration activities is identified. South Stream Transport will engage with TPAO prior to and during construction with regard to construction schedules and work progress reports to coordinate planned activities in the Turkish EEZ. Further information on TPAO's future planned activities is included in **Chapter 13 Cumulative Impacts**.

It is therefore considered that there would be no impacts on oil and gas exploration, arising from the construction of the Project.

9.6.2.2 Management Measures

The above assessment has concluded that there will be no socio-economic impacts associated with the Construction and Pre-Commissioning Phase of the Project. Nevertheless, as a precaution, the following measures, in relation to the IFC mitigation hierarchy in **Chapter 3 Impact Assessment Methodology**, will be implemented during the Construction and Pre-Commissioning Phase.

Ongoing Stakeholder Consultation

South Stream Transport will continue a programme of stakeholder engagement and consultation throughout the Construction and Pre-Commissioning Phase. These engagement activities will be designed to facilitate dialogue with relevant stakeholders, including those potentially affected by the Project, or who are concerned about or interested in the Project. These activities will allow potential impacts, issues and concerns to be identified early on and addressed in an expedient manner. These activities will also inform relevant stakeholders of upcoming construction activities, as well as Project activities that have been completed, and provide advance warning of any anticipated changes. Engagement measures will include:

- The coordinates and timing of temporary marine exclusion zones will be communicated to vessel operators through the routine channels of the appropriate maritime authorities (refer to Section 9.5.5.4); and
- Additional meetings with fishers, as required, to further explain the temporary exclusion zones and address questions and concerns.

Ongoing and future stakeholder engagement activities are described further in the Stakeholder Engagement Plan for Turkey. Ongoing stakeholder engagement will also serve as a means of monitoring impacts on potentially affected stakeholders, such as Turkish fisheries, to ensure that the actual level of impact is not greater than predicted. If impacts are identified and verified, these will be a priority for resolution which will be agreed in consultation with affected stakeholders.

Grievance Procedure

South Stream Transport has developed a grievance procedure for the South Stream Offshore Pipeline, which will guide the management of grievances throughout the Project lifecycle. The Grievance Procedure is referred to in **Chapter 6 Stakeholder Engagement** and further described in the Project Stakeholder Engagement Plan.

The Grievance Procedure will be implemented by South Stream Transport in partnership with its contractors and will ensure that grievances are brought to the attention of the appropriate Project staff and addressed in an appropriate and timely way, following a standard procedure of investigation, analysis, and resolution. It will also ensure that resolutions are documented and communicated to the appropriate stakeholders.



The Grievance Procedure includes reference to a Compensation Management Framework, to ensure that cases requiring some form of compensation are evaluated consistently and equitably.

Compensation Management Framework and Livelihood Restoration Framework

South Stream Transport will develop a Compensation Management Framework as part of the overarching environmental and social management programme to ensure that claims or events requiring compensation are evaluated consistently and equitably. Forms of compensation will be determined on a case-by-case basis, and may include monetary or in-kind restitution, and/or livelihood restoration measures. As part of the process of implementing the Compensation Framework, South Stream Transport will engage with the affected stakeholders in order to identify appropriate compensation or restoration measures.

Although impacts on fishers and fishing activities are not anticipated, in the unlikely event that an impact occurs, the Compensation Management Framework will apply. South Stream Transport will also develop a Livelihood Restoration Framework which would apply in the event that fishing livelihoods are affected. The Livelihood Restoration Framework will define the process by which additional mitigation, compensation and supporting measures will be developed and applied in order to repair, re-establish, and restore livelihoods affected by the Project (including impacts related to unplanned events).

9.6.2.3 Summary

Table 9.9 summarises the results of the assessment of the potential for impacts during the Construction and Pre-Commissioning Phase.

Table 9.9 Summary Table of Potential for Socio-Economic Impacts (Constructionand Pre-Commissioning Phase)

Impact	Receptor	Assessment conclusions	Management Measures*
Potential impact on Turkish fisheries due to construction of offshore pipeline within the Turkish EEZ	Fishers (including small-scale and artisanal fisheries)	No impact	On-going Stakeholder Engagement Grievance Procedure Compensation Management Framework Livelihood Restoration Framework
Potential impact on oil and gas exploration due to construction activity	ΤΡΑΟ	No impact	On-going Stakeholder Engagement Grievance Procedure

* As there are no impacts or significant impacts, the stated measures are proposed in place of mitigation

9.6.3 Impact Assessment: Operational Phase

This section identifies the potential impacts to socio-economic receptors that may arise in association with the Operational Phase of the Project.

As for the Construction and Pre-Commissioning Phase, the potential for interaction between the Project Activities and existing socio-economic receptors is minimal. However, one potential impact of interest to stakeholders is described below, comprising the potential impact on oil and gas exploration due the establishment of the exclusion zone on the seabed during operations.

9.6.3.1 Assessment of Potential for Impacts

Potential Impact on Oil and Gas Exploration due to Pipeline Exclusion Zone

The Project Area intersects several TPAO exploration licence blocks. It is possible that future oil and gas exploration or development activities in the Turkish EEZ could be impacted by the Project due to the presence of the pipelines and associated operational exclusion zone.

As part of the design process, South Stream Transport has liaised with the TPAO regarding the width of the Pipeline corridor (the permanent Project footprint) so as to reduce any potential impact the exclusion zone may have on TPAO activities. As a result of these consultations, it is proposed that the pipelines will be laid within a 420 m width corridor, in agreement with the relevant Turkish authorities. Due to the narrow width of the Pipeline corridor, no impact on the feasibility of potential oil and gas exploration or development activities is anticipated.

There is also the potential that future pipelines developed by TPAO would need to cross the Project Area depending on their location and route. Pipeline crossings are not uncommon, and are relatively straightforward from a technical standpoint; therefore, it is not considered that the Project has the potential to impact the feasibility and development of a potential future pipeline, if proposed by TPAO. No potential impact on oil and gas development is anticipated.

In the event of potential future interactions between the Project and TPAO's oil and gas exploration or development activities, South Stream Transport will engage with TPAO to establish the necessary protocols and agreements. Any simultaneous operations will be agreed mutually to ensure safe construction and operation of any overlapping activities or infrastructure. South Stream Transport will make reasonable efforts to ensure that simultaneous operations agreements, risk assessments and interfaces will be implemented prior to the commencement of any TPAO activities. To this end, South Stream Transport and TPAO have agreed to a minimum six-month advance notification period prior to the start of any works.

Regular liaison will be undertaken with the TPAO throughout the Operational Phase of the Project (Table 9.10). In addition, the Grievance Procedure will be available to all stakeholders, including the TPAO.

9.6.3.2 Management Measures

The above assessment has concluded that there will no socio-economic impacts associated with the Operational Phase of the Project. Nevertheless, as a precaution, the following measures will be implemented.



Grievance Procedure

South Stream Transport will continue to implement the Grievance Procedure throughout the Operational Phase, with any necessary revisions to ensure it is appropriate to this phase of the Project. As during construction, the Grievance Procedure will ensure that complaints and grievances are brought to the attention of the appropriate Project staff and addressed in an appropriate and timely way, following a standard procedure of investigation, analysis, and resolution. It will also ensure that resolutions are documented and communicated to the appropriate stakeholders. The Grievance Procedure is referred to in **Chapter 6 Stakeholder Engagement** and further described in the Stakeholder Engagement Plan.

Throughout the Operational Phase, South Stream Transport will implement a Grievance Procedure appropriate to this phase of the Project. This will continue to provide all stakeholders with a formal means of submitting grievances to South Stream Transport. The Grievance Procedure will ensure that grievances follow a standard procedure of investigation, analysis, and resolution. The Grievance Procedure is referred to in **Chapter 6 Stakeholder Engagement** and further described in the Stakeholder Engagement Plan.

Ongoing Stakeholder Engagement

South Stream Transport will continue a program of stakeholder engagement throughout the Operational Phase. These engagement activities will be commensurate with the level of activities and will inform stakeholders of any upcoming activities or anticipated changes. The stakeholder engagement activities are described in **Chapter 6 Stakeholder**.

9.6.3.3 Summary

Table 9.10 summaries the results of the assessment of the potential for impacts during the Operational Phase of the Project.

Table 9.10 Summary Table of Potential for Socio-Economic Impacts (Operational Phase)

Impact	Receptor	Assessment Conclusions	Management Measures*
Potential impact on oil and gas exploration due to the physical presence of pipelines on the seabed within licence blocks	ΤΡΑΟ	No impact	On-going Engagement Grievance Procedure

* As there are no impacts or significant impacts, the stated measures are proposed in place of mitigation.

9.7 Decommissioning Phase

Decommissioning of the South Stream Offshore Pipeline will be carried out according to prevailing international and national legislation and regulations and best practices regarding environmental and other potential impacts. It is envisaged that the process of developing detailed decommissioning management plans may be staged, initially outlining potential options

and studies required for discussion with the regulatory authorities, and finally leading to agreed plans prior to the commencement of decommissioning.

Two options are available: namely, in situ decommissioning or pipe removal. *In situ* decommissioning involves cleaning the pipeline and filling it with seawater, after which the pipeline will remain in place as a static feature of the marine environment. The receptors and degree of impact are thus the same as those for the Operational Phase. In comparison, removal of the pipeline is a similar operation to pipe-laying, but in reverse. The receptors and degree of impact will thus be similar to those identified for the Construction and Pre-Commissioning Phase.

Impacts that may be associated with decommissioning will be assessed as part of the process of developing decommissioning management plans and are not assessed in this ESIA Report.

A careful record and archive of construction and operation activities will be maintained in a suitable format for future users of such information. It will include any special mitigation measures that were applied retrospectively, in addition to those identified prospectively in this impact assessment. It will also record all unexpected events that occurred during the Construction and Pre-Commissioning and Operational Phases of the Project.

9.8 Unplanned Events

Potential socio-economic impacts from unplanned events during the various phases of the Project are addressed in **Chapter 13 Unplanned Events**.

9.9 Cumulative Impact Assessment

9.9.1 Construction and Pre-Commissioning Phase

The potential for cumulative socio-economic impacts during the Construction and Precommissioning Phase has been considered and is detailed in **Chapter 14 Cumulative Impact Assessment**.

9.9.2 Commissioning and Operational Phase

The potential for cumulative socio-economic impacts during the Operational Phase has been considered and is detailed in **Chapter 14 Cumulative Impact Assessment**.

9.10 Human Rights

According to United Nations (UN) Guiding Principles on Business and Human Rights (Ref. 9.32), companies should respect Human Rights in projects and operations by seeking to prevent or mitigate potential Human Rights issues that may be caused directly by a Company's projects or operations, or by project partners and suppliers. According to IFC Performance Standard 1, "*each of the IFC Performance Standards has elements related to human rights dimensions that a project may face in the course of its operations. Due diligence against these Performance Standards enables companies to address many relevant human rights issues in its project."* The



UN Guiding Principles, the IFC Performance Standards and other International Labour Organisation (ILO) standards are the benchmark for guiding companies in ensuring respect for Human Rights.

Turkey is a signatory and party to many International Human Rights Conventions and Legislation which are detailed in **Chapter 2 Policy, Regulatory and Administrative Framework**.

Due to the fact that Human Rights factors are most usually linked with socio-economic factors, this section of the chapter discusses the findings of the Human Rights Due Diligence process.

9.10.1 Due Diligence Process

As discussed in the aforementioned sections, there are no significant socio-economic triggers which would necessitate a Human Rights Impact Assessment separate from the ESIA Report. South Stream Transport undertook a voluntary Human Rights Due Diligence complementary to the environmental and social risks and impact identification process to ensure that the Project does not infringe upon the human rights of others. The Due Diligence process also allows the Project to ensure there is a system in place to proactively monitor potential issues and concerns throughout the Project's lifecycle.

The goals of the Project's Due Diligence process are to:

- Identify, prevent, mitigate and account for actual or potential Human Rights impacts;
- Ensure policies and processes to manage Human Rights issues are in place;
- Express commitment to respect Human Rights through a policy endorsed by senior leadership;
- Ensure communication takes place with stakeholders about how issues will being addressed; and
- Ensure a grievance mechanism is in place to enable stakeholders to raise any Human Rights.

A Human Rights register was produced which identified the various elements of the Project and their interaction with actual or potential Human Rights impacts. Wherever possible, Human Rights mitigation and monitoring efforts tie into the Project's existing corporate standards, policies, and procedures as outlined in the Environmental and Social Management Plan (**Chapter 16 Environmental and Social Management**). A summary of the potential impacts and related Project responses are provided below.

The Due Diligence process recognises that the Human Rights risks may change over time as the Project evolves from the Construction and Pre-Commissioning Phase into the Decommissioning Phase. As such, the Project's Human Rights Due Diligence is an iterative process whereby business operations and operating context will be examined on a regular basis.

9.10.2 General Policies and Procedures

During the Due Diligence process, all corporate and Project policies, plans and procedures were reviewed to ensure a commitment from the senior level of management to protect and manage Human Rights. In addition, contractual language was reviewed to ensure that business relationships, including subcontractors and supplier relationships, are bound by the same policies and procedures.

South Stream Transport abides by its Corporate Social Responsibility and Sustainability Policy which outlines the Company's Guiding Principles, which with respect to human rights, include:

"...respecting internationally recognised Human Rights in our own operations, and promoting the respect of the aforementioned rights with regard to activities assigned to or carried out with Business Partners and in our relationships with stakeholders"

In addition, the Company commits to respecting the UN Global Compact Principles which are:

"...the protection of international human rights; rights to free association, collective bargaining, and employment non-discrimination; protection and preservation of the environment; and elimination of corruption, including bribery and extortion".

Commitments to these Guiding Principles are further stressed in the Health, Safety, Security, Environment and Corporate Social Responsibility policies (HSSE and CSR) requirements outlined for all contractors and suppliers. This ensures that respect for Human Rights is part of contractual relationships and adhered to in direct business activities.

9.10.3 Labour and Working Conditions

Considering Project activities will be completed offshore, there are no socio-economic receptors on land in Turkey, the Due Diligence process focused on labour and working conditions. Workers are an important group of stakeholders who may be subject to a range of direct impacts, potentially both positive and adverse, in terms of access to employment, the terms and conditions of that employment, and their health, safety and welfare whilst working on the Project.

Considering the Project has a robust Health, Safety, Security and Environment – Integrated Management System (HSSE-IMS), the Due Diligence process did not identify any potential impacts in relation to labour and workforce Health and Safety. Instead, it focused on four primary themes in regards to Project labour and working conditions which, if not properly addressed, could lead to Human Rights impacts:

- Measures to support a diverse workforce and prevent discrimination;
- Understanding which employment and labour laws at sea apply to the Project;
- Processes and measures to ensure safe working conditions; and
- Sufficient processes are in place to ensure no use of forced, compulsory or child labour (either directly or in supply or processing chains).



In order to mitigate for potential risks and impacts on the Project Workforce, it was determined that the Project will adopt the following policies and practices:

- 1. Human Resources Policy: The formulation and implementation of a Human Resource Policy addressing all the requirements of IFC PS2 will mitigate these risks (and potential impacts). The Human Resources Policy will be implemented via South Stream Transport's ESMP (**Chapter 16 Environmental and Social Management**);
- 2. Working Relationship: The underlying agreements for all working relationships will be documented by South Stream Transport, and its contractors and subcontractors, and communicated to the Project workforce. All workers will be informed about their working conditions and terms of employment and entitlements to wages and other benefits. All workers will be provided with a written contract containing this information in an appropriate language and/or method;
- Working Conditions and Terms of Employment: South Stream Transport, and its contractors and subcontractors, will respect the agreed working conditions and terms of employment of the Project workforce (including wages and benefits, hours of work, overtime arrangements and overtime compensation, leave for illness, maternity, public holidays and annual leave);
- 4. Workers Organisations: South Stream Transport, and its contractors and subcontractors, will allow workers to form and join workers' organisations of their choosing and to bargain collectively in accordance with Turkish national law;
- 5. Non-Discrimination and Equal Opportunity: South Stream Transport, and its contractors and subcontractors, will base the employment relationship on the principles of equal opportunity and fair treatment and ensure that no employment decisions (including those related to recruitment and hiring, compensation, working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement and discipline) are made on the basis of personal characteristics unrelated to inherent job requirements;
- 6. Grievance Procedure: South Stream Transport will implement a fair and transparent Grievance Procedure for the Project workforce and contractors to allow them to raise reasonable concerns related to working conditions. South Stream Transport, and its contractors and subcontractors, will inform workers about the mechanism when they are hired and (again) when they commence work on the Project site or vessels and ensure that the mechanism is easily accessible. The Grievance Procedure will be supported by an appropriate level of management, and address concerns promptly through an understandable and transparent process providing feedback to those concerned without any retribution. Additionally, the grievance mechanism will not impede access to other juridical remedies or arbitration procedures; and
- 7. Child or Forced Labour: The minimum age of employment in Turkey is 16. In accordance with South Stream Transport's and its contractors' and subcontractors' hazard identification and safety risk management procedures, all parties will ensure that (a) no persons will be employed that are under the age of 16 and (b) no persons employed between the ages of 16 and 18 will be employed in hazardous work in a manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's

education or be harmful to the child's health and physical, mental, spiritual, moral or social development. All work of persons between the ages of 16 and 18 will be subject to an appropriate risk assessment and regular monitoring of health, working conditions and hours or work. Procedures for appropriate risk assessment, regular health monitoring, and for defining working conditions and hours of work for South Stream Transport, contractor and subcontractor employees more generally are addressed in Appendix 9.1. South Stream Transport, and its contractors and subcontractors, will not employ forced labour.

9.10.4 Black Sea Coastal Provinces

All Project activities for Turkey will be offshore. There will be no marshalling yard and no need to use Turkish ports for waste disposal, which means there will be no socio-economic receptors onshore. Therefore, there are no direct Human Rights impacts associated with Communities. South Stream Transport has initiated a Stakeholder Engagement Plan as outlined in **Chapter 6 Stakeholder Engagement** which ensures consultation with Turkish stakeholders, as well as implementation of a Project Grievance Procedure to ensure a timely and appropriate response to concerns raised by Black Sea coastal communities and that potential impacts are addressed accordingly.

9.10.5 Supplier Engagement

The Due Diligence process has focused on the fact that Human Rights impacts can be linked to Project activities as a result of the behaviour of parties with which the Project is associated, not only direct impacts caused by South Stream Transport. This is particularly relevant because construction of the Project is likely to be undertaken entirely by contractors and subcontractors. It was therefore determined that there could be a potential risk of harmful child labour taking place within the supply chain if not properly managed.

To avoid potential impacts in the supply chain, all mitigation requirements set out above under labour and working conditions will apply to South Stream Transport's contractors, subcontractors, and direct supplier requirements. Considering that the primary contractor for offshore pipeline work in the Turkish EEZ will be an internationally recognised company, it is likely that adherence to the aforementioned requirements set forth by South Stream Transport will not be a concern, although it will be monitored.

South Stream Transport, and its contractors and subcontractors, will also assess its primary supply chain on an on-going basis to ensure that no child labour or forced labour is used by its primary suppliers.

9.10.6 Security Provision

The Due Diligence process examined several factors associated with security provision following the guidance set out in the Voluntary Principles on Security and Human Rights (Ref. 9.33). It was determined that there is minimal risk of conflict which could affect the security environment offshore and it is unlikely that any security forces on board vessels, would be required. However, South Stream Transport will use its contractual process to ensure that provisions are



in place for the conducting of background checks on security staff, as well as monitoring of performance.

Policies, plans and procedures to protect the safety and security of the workforce and Project stakeholders are documented in the HSSE-IMS.

9.11 Conclusions

9.11.1 Summary of Impact Assessment

This assessment has reviewed the potential for socio-economic impacts associated with the Project.

In relation to the Construction and Pre-Commissioning Phase, this chapter has considered the potential for impacts on fishing and on oil and gas exploration. The potential for impacts on Turkish fisheries has been investigated through a specialised Fishing Study (Appendix 9.1); this study has shown that Turkish fishing activity is concentrated in coastal waters that are approximately 100 km from the Project Area. Additionally, no impacts on anchovy (or other fish) migration routes in the Black Sea are anticipated. Accordingly, no impacts on Turkish fisheries are expected as a result of the construction of the Project.

The assessment also examined the potential for impacts on oil-and-gas exploration during the Construction and Pre-Commissioning Phase. However, it has been established through consultation with the licence holder (TPAO) that exploration drilling activities are not currently planned within the Project Area during the Construction and Pre-Commissioning Phase. Therefore, construction activities are not anticipated to impact on TPAO's potential exploration activities.

Accordingly, there will be no significant socio-economic impacts during the Construction and Pre-Commissioning Phase of the Project.

In relation to the Operational Phase, this chapter has considered the potential for impacts on oil and gas exploration and development due to the presence of the operational pipeline, and the associated Operational Safety Zone. While the Project Area intersects with TPAO exploration licence blocks, due to the narrow width of the Project Area, there is no expected impact on the feasibility of future oil and gas exploration or development activities occurring in the vicinity of the Project Area.

Accordingly, there will be no significant socio-economic impacts during the Operational Phase of the Project.

9.11.2 Overview of Management Measures

Although the Project is considered unlikely to result in significant socio-economic impacts, the following measures will be put in place to help manage stakeholder perceptions of any issues and to provide for a mechanism for identifying and handling any unexpected issues or impacts, should they arise.

- A range of construction management and environmental and social management processes and procedures to avoid, or where avoidance is not possible, minimise the potential for adverse impacts;
- Ongoing stakeholder engagement during construction of the Project to inform and update stakeholders about planned construction activities and the construction programme;
- A Grievance Procedure to allow for prompt, transparent and satisfactory handling of grievances raised by stakeholders, including from within the Black Sea coastal communities;
- A Compensation Management Framework to ensure that claims or events requiring compensation are evaluated consistently and equitably; and
- A Livelihoods Restoration Framework to define the process by which additional mitigation, compensation and supporting measures will be developed and applied in order to repair, reestablish, and restore livelihoods affected by the Project (including impacts related to unplanned events).



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