TÜRKİYE PETROLLERİ ANONİM ORTAKLIĞI

OTC OFFSHORE TECHNOLOGY CENTER

SAKARYA GAS FIELD DEVELOPMENT PROJECT – ENHANCEMENT OF SUBSEA PRODUCTION CAPACITY AND FLOATING PRODUCTION UNIT

Chapter 7.4 Social Impact Assessment

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Information Classification

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Table of Contents

TABLES

FIGURES

7.0 IMPACT ASSESSMENT

7.4 Social Components

The objective of the social impact assessment is to analyse the temporary and permanent impacts of all social aspects of the Project and to provide recommendations for measures to minimise negative impacts and enhance positive impacts.

This section of the ESIA report assesses the impacts that will result from the construction, operation and decommissioning phases of the Project's Phase 2, together with site surveys, expert assessments and emerging conditions due to the Project.

Impacts are divided into eight main categories based on the analysis of the existing conditions in the Project Area of Influence (AoI). The methodology of the impact assessment matrix used for the Social Impact Assessment (SIA), is available in Chapter 1-5 of the ESIA.

Onshore social impact assessment

- Population and Demography
- Economy and Employment
- Land Use and Land-based Livelihoods
- Ecosystem Services
- Community Health and Safety
- Infrastructure, Utilities and Services
- Gender Assessment
- Vulnerable Groups Assessment
- Human Rights Impact Assessment

Offshore social impact assessment

- Impact on fisheries
- Impacts on tourism and recreation
- Marine infrastructure
- Marine archaeology

During the field study carried out in August 2024, local communities, mukhtars, women groups of each settlement were asked about their perceptions and expectations regarding the impacts of the Project Phase 2 on the above-mentioned categories. In the following sections, the potential impacts of the Project on the AoI and mitigations for these impacts are discussed in detail.

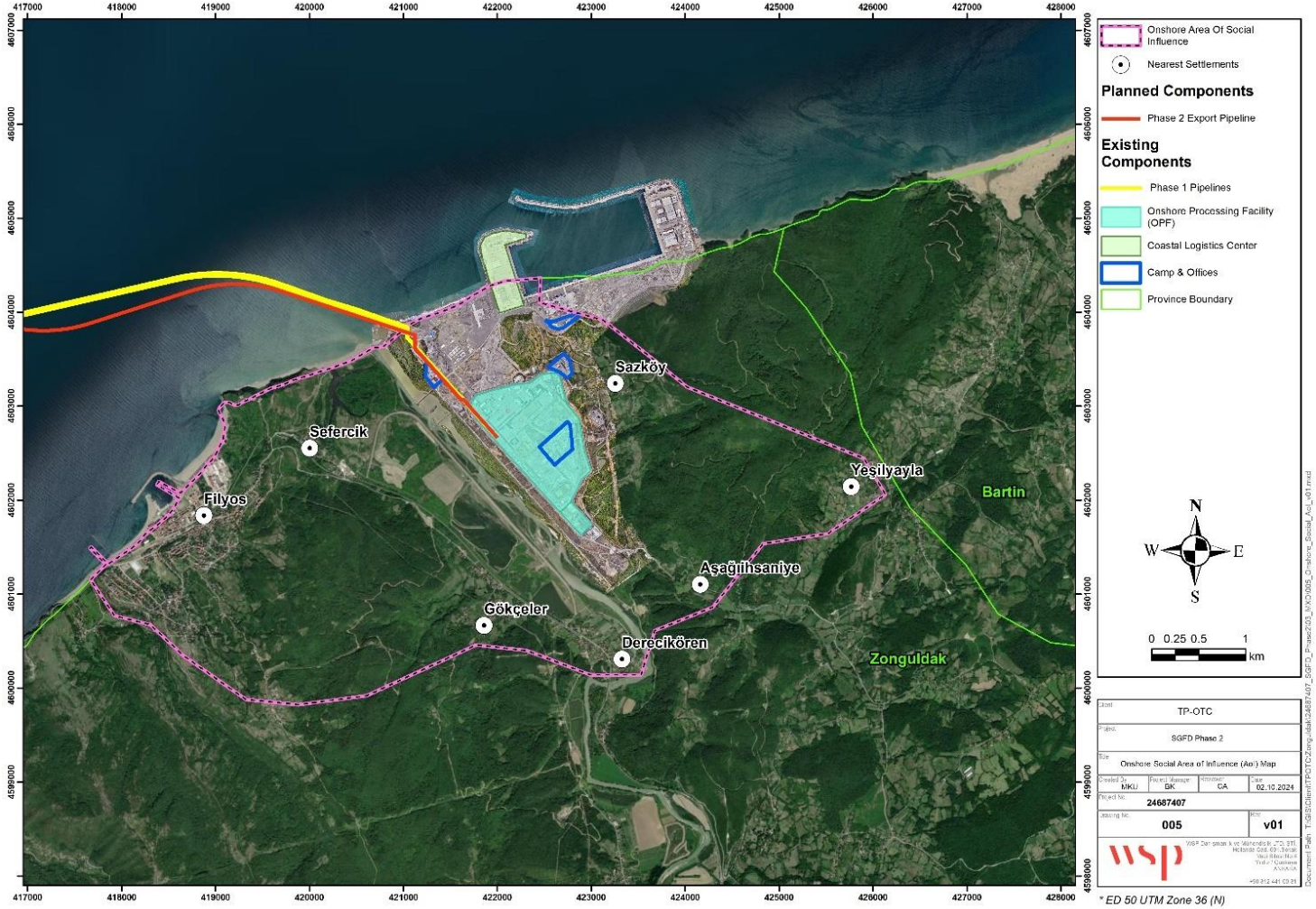

Figure 7-1 Onshore Social Area of Influence

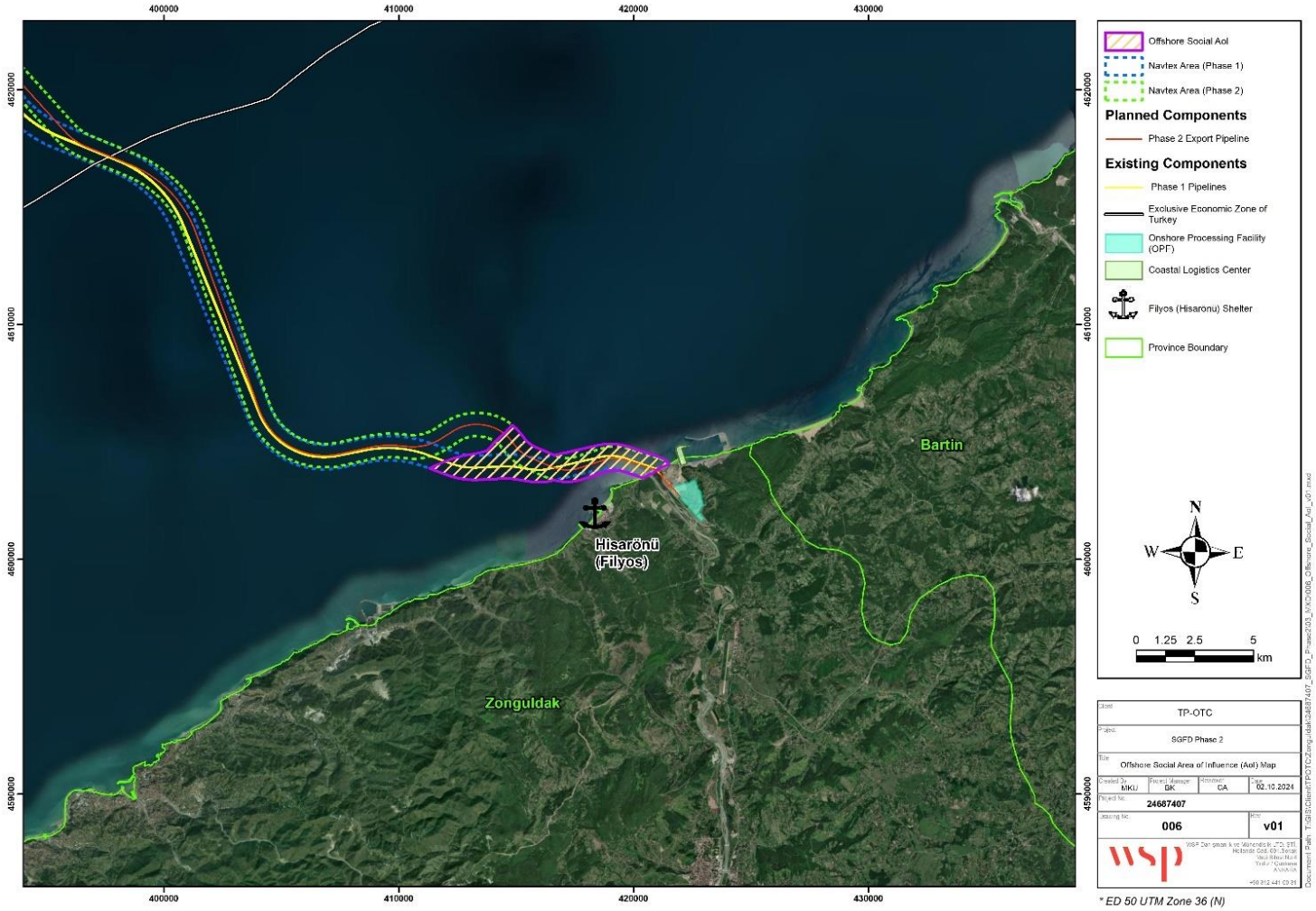

Figure 7-2 Offshore Social Area of Influence

7.4.1 Population and Demography

This section examines the potential impacts of the Project on the population and demographic structure in the settlements within the AoI. It focuses on the analysis of the potential impacts on population and demography during the Project construction and operation phases due to the population influx (influx of Project workers).

According to the information collected from the mukhtars of the settlements, there has been a slight change in the population following the Project's Phase 1. According to the statements of Sazköy, Aşağıihsaniye and Yeşilyayla Mukhtars, it is understood that the young population has returned to the villages with the increased employment opportunities. On the other hand, it is understood that there is no change in Sefercik and Derecikören while there is very little change in the population in Gökçeler village which is due to the return of retired people to the village.

When the mukhtars of Sazköy, Aşağıihsaniye, Yeşilyayla, and Gökçeler were asked whether the Phase 2 of the Project would impact the settlement populations, they responded that if job opportunities are created and local residents are prioritized, it is likely that people from other cities will move in, resulting in an increase in the population. In contrast, the mukhtars of Sefercik and Derecikören indicated that they do not anticipate any changes in the population, similar to what occurred during the Phase 1 of the Project.

The potential impacts affecting population and demography are summarised in the following sections for the construction and operation phases of the Project.

7.4.1.1 Construction Phase

7.4.1.1.1 Impact Factors

Phase 2 construction works entail the construction of the export pipeline over an estimated duration of 12 months, followed by the construction of the SPS, SURF, FPU integration, and pre-commissioning works, which will also take approximately 12 months. These activities will take place during different timeframes and will not occur simultaneously. Approximately 515 personnel will participate in onshore construction, with 24 staff dedicated to onshore operations for the FPU. Vessel capacity will reach a maximum of 2,818 crew during construction. For operations, PSVs and maintenance vessels will operate with an 18-person crew, three times a week. During FPU reactivation at Filyos Port, 1,980 workers are expected for installation. In the operational phase, 156 personnel will work, with 132 offshore on the FPU and 24 as additional onshore staff. Construction activities are expected to be conducted over 25 days each month, operating for 16 hours a day in two shifts.

Since Phase 2 includes only construction activities requiring specialization, it is anticipated that the contractors will recruit labour from outside the region. A significant portion of the workforce will be accommodated in the pre-existing camps within the TP-OTC facilities established during the Phase 1 of the Project.

During the field surveys, it was noted that there were houses rented to the Project employees, especially in Sazköy. With Phase 2, it is important to consider that the influx of outside residents seeking accommodation in neighbouring settlements could potentially lead to social unrest.

Such population influx of workers has the potential to impact the local settlements in various ways, including:

- If the workers rent houses in the settlements and are not familiar with the local culture, they may face challenges in integrating into the communities, potentially leading to conflicts.
- The proximity of workers' accommodation sites to local residences (within 100 meters) could exacerbate tensions and strain relationships between workers and local residents.

7.4.1.1.2 Mitigation Measures

To mitigate and eliminate the potential negative impacts of the Project on population, the following mitigation measures are recommended for TP-OTC and its contractors:

- Priority will be given to local people during recruitment process where applicable.
- Influx Management Plan, Community Health, Safety and Security Management Plan, Human Rights Management Plan will be updated and implemented.
- Accommodation for non-local employees will be provided preferably at the Project site or the employees will be incentivized to reside in the district or province centre rather than in the villages.
- Workers' accommodations will be maintained in compliance with the processes and standards of the IFC/EBRD's Guidance Note on Worker's Accommodation, 2009, and the basic needs of the workers will continue to be provided within the borders of the accommodation to limit the interaction of the workers with the local communities to prevent the pressure on the local utilities and the services.
- Accommodation will be fully contained with meals, entertainment, canteen, medical clinic etc. Workers will not need to go into communities and if they pass through communities to get to the site at the beginning and end of their shift, they will be discouraged from interacting negatively with community residents.
- Measures will be implemented to mitigate environmental impacts associated with increased population, such as waste management programs, and pollution control measures, to preserve the natural ecosystem and quality of life for residents.
- Cultural awareness, code of conduct and ethic training will be provided to workers to prevent any cultural conflicts.
- Stakeholder Engagement Plan (SEP) will be updated as required and regular consultations with the local communities will be conducted in accordance with the SEP.
- The community grievance redress mechanism (GRM) established for Phase 1 will be implemented for Phase 2 to effectively address and resolve any concerns or complaints raised by local residents, including the anonymous complaints and necessary measures will be taken accordingly.

7.4.1.1.3 Residual Impacts

Table *7-1* below presents the assessment of the impact factor, sensitivity and reversibility of the impact on population component and the extent to which the impact can be mitigated by the measures to be taken.

Based on the baseline conditions of the assessed component, the project characteristics and actions, as well as the proper implementation of the mitigation measures proposed above, a potential **low negative impact** is expected on population and demography during the construction phase of the Project.

The rationale behind the assessment: Construction phase of the Project is expected to be completed approximately in 12 months and the duration of the impact is assessed as medium. During the construction phase, population increase related with the Project will be highly frequent. Since the population influx will be limited with the workers accommodations and rental houses, the geographical extend of the population impact is expected to be local. Considering the Phase 1, local community is used to temporary population change in the area, the sensitivity of the component is assessed as medium-high. According to the construction time

frame, reversibility of this impact assessed as short-mid term. With the implementation of the proposed mitigation measures, residual impact value will be low.

Table 7-1 Residual impact assessment matrix for population and demography during construction

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Population increases during construction	Duration:	Medium	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Highly frequent					
	Geo. Extent:	Local					
	Intensity:	Medium					

7.4.1.1.4 Monitoring measures

Monitoring on the following issues will verify the effectiveness of mitigation measures taken on the Project's impacts on population and demography:

- Stakeholder engagement activities and consultation records of the communities in parallel with the SEP,
- Number and frequency of the grievances of the communities, actions taken for the resolving process and number of repeated complaints,
- Local employment records,
- Population of the settlements, and monitoring the population changes from legal registers,
- Training records of the employees about cultural awareness and code of conduct.

7.4.1.2 Operation Phase

7.4.1.2.1 Impact Factors

During the operation phase of the Project, a total of 156 personnel is planned to be employed, with 132 working on the offshore FPU and 24 added to the existing OPF staff. Production activities will continue as they currently do, operating 30 days a month for 12 months, 24 hours a day in three shifts. This will not cause a significant population increase.

The existing campsite areas will be used as accommodation during the operation phase of Phase 2.

It is anticipated that the Project will remain in operation for 25-40 years. The operating period of the Project depends on natural gas production in the Sakarya Gas Field and may extend following new explorations.

Since the operation period will be long, it is highly possible that there will be some initiatives to meet the needs and expectations of the employees, especially in the district centre. This may lead to a new population increase in the region as a result of the Project.

7.4.1.2.2 Mitigation measures

In addition to the mitigation measures listed for the construction phase, the following mitigation measures will be implemented to mitigate the potential impacts on population during the operation phase:

- Encouraging local institutions to co-operate on possible rapid development in the region.
- Encouraging local suppliers to meet Project needs.

- Develop corporate social responsibility projects to support local enterprises and local procurement from communities.

7.4.1.2.3 Residual Impacts

By the proper implementation of the mitigation measures recommended above, the potential impact on the population and demography during the operation phase is expected as **positive and low.**

The rationale behind the assessment: Since 156 people will be permanently employed during the operation phase, this section has been evaluated based on the contributions that will be bringing to the local community during the operation phase. The operation period is long, with the impact which is the benefits of population is moderately frequent. During the surveys, it was observed that there is a high expectation for community development programs in between the local people, so the sensitivity assessed as medium, with the short-term reversibility. Considering the lower number of workers during the operation phase especially compared to construction, residual impact value will be low in positive way.

Table 7-2: Residual impact assessment matrix for population and demography during the operation phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Enhancement Effectiveness	Residual Impact Value
Benefit of the population during operation	Duration:	Long	Medium	Short-term	**Negligible**	Medium	**Low**
	Frequency:	Moderately frequent					
	Geo. Extent:	Local					
	Intensity:	Low					

7.4.1.2.4 Monitoring measures

Monitoring and regular reporting on the following issues will verify the effectiveness of mitigation measures taken on the Project's impacts on population and demography:

- Stakeholder engagement activities, consultation register and feedback and concern records of the communities in parallel with the SEP.
- Number and frequency of the grievances and requests of the communities, actions taken for the resolving process and number of repeated complaints.
- Local employment and procurement records.

7.4.2 Economy and Employment

This section examines the potential impacts of the Project on the local economy and employment within the AoI. It assesses how the construction and operation phases may affect local employment, local procurement and overall economic development in the region.

This section is analysed for two different periods, including the changes in Phase 1 and the expectations for Phase 2.

Local Employment

During the mukhtar interviews, when asked whether job opportunities in the region had changed over the past three years, the mukhtars of Sazköy, Aşağıihsaniye, and Yeşilyayla reported an increase, attributing it to TP-OTC. Derecikören and Gökçeler noted no change, while Sefercik highlighted an increase, particularly for women, since there are no alternatives.

In response to whether Phase 2 would create employment for villagers, the mukhtars of Sazköy, Aşağıihsaniye, Yeşilyayla and Gökçeler stated that villagers would return from other cities and city centre if jobs became available, viewing this as a positive development. On the other hand, Derecikören and Sefercik stated that there was no employment from their villages in Phase 1 and none expected in Phase 2.

A summary of household responses to the question “Has Phase 1 impacted job opportunities in your household?” asked during the household interviews are summarised in Table 7-3.

Table 7-3 Changes in job opportunities in HH base with Phase 1

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	5	1	16	4	0	26
Aşağıihsaniye	9	2	10	2	0	23
Yeşilyayla	4	0	3	1	0	8
Sefercik	3	0	13	1	0	17
Derecikören	11	0	6	0	0	17
Gökçeler	8	0	12	2	0	22
Total	40	3	60	10	0	113

In response to the question regarding whether the positive and negative changes occurred during the construction or operation periods, it was reported that only positive changes were experienced in the region during Phase 1. This change was almost equally effective during the construction and operation phases.

Table 7-4 Distribution of positive impact by project periods

Positive Effect Distribution					
Settlement	Construction	Operation	Both	No Answer	Total
Sazköy	3	2	0	0	5
Aşağıihsaniye	1	5	0	3	9
Yeşilyayla	1	0	0	3	4
Sefercik	1	1	0	1	3
Derecikören	1	2	0	8	11
Gökçeler	2	1	0	5	8
Total	9	11	0	20	40

However, in response to the question, “Do you think that Phase 2 will have an impact on job opportunities in your household?”, while there were positive responses, the answer of “no change” was also notably frequent. In Table 7-5, the answer to this question is given by the settlements.

Table 7-5 Changes in job opportunities in HH base with Phase 2

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	5	1	15	3	2	26
Aşağıihsaniye	10	2	9	2	0	23
Yeşilyayla	6	0	1	1	0	8
Sefercik	5	0	11	0	1	17
Derecikören	9	0	5	0	1	15
Gökçeler	8	0	9	2	1	20
Total	43	3	50	8	5	109

The breakdown of those who responded that there will be a positive change in job opportunities during Phase 2, according to the project periods, is given in Table 7-6.

Table 7-6 Distribution of positive impact by project periods for Phase 2

Positive Effect Distribution					
Settlement	Construction	Operation	Both	No Answer	Total
Sazköy	0	3	0	2	5
Aşağıihsaniye	1	5	0	4	10
Yeşilyayla	1	0	0	5	6
Sefercik	1	2	0	2	5
Derecikören	1	2	0	6	9
Gökçeler	1	1	0	6	8
Total	5	13	0	25	43

Table 7-7 presents the vacant positions available in the Project affected settlements, as determined during the household surveys.

Table 7-7 Present skills and occupations in the settlements

Neighbourhood	Engineer	Driver	Machinery Operator	Construction Worker	Profession of Const. Worker	Unskilled Worker	Cook	Technician	Profession of Tech.	Cleaner	Security Guard	Officer	Other	Profession of Others	TOTAL
Sazköy	1	3	0	1	Stone worker	1	1	0	0	3	0	2	9	Teaman-Welder-Worker-Medical-Miner-Anaesthetist	21
Aşağıihsaniye	0	4	0	1		3	3	0	0	5	0	1	6	IT Specialist-Business Admin-Miner-Port Operation	23
Yeşilyayla	0	1	0	0	0	1	4	1	Electrician	0	0	0	0		6
Sefercik	0	1	0	0	0	0	1	1	Electrician	2	0	1	5	Computer Tech.-Worker-Catering worker-Business Admin	11
Derecikören	1	1	0	2	Electrician - Welder	2	4	1		2	1	1	3	Kindergarten teacher-Worker-HS Specialist	23
Gökçeler	0	1	0	1	Electrician	7	1	0	0	3	2	0	3	Railway operator-HS Specialist-Local Media Expert	23
TOTAL	2	11	0	4		14	14	3		15	3	5	26		107

Local Procurement

When asked whether purchasing power has changed during this process, the mukhtars of Sazköy and Aşağıihsaniye reported an increase, attributing it to the regular income of those employed. Conversely, the mukhtars of Yeşilyayla and Derecikören stated that the economy is worsening, leading to a decrease in purchasing power, while the mukhtar of Gökçeler did not provide a response.

The mukhtar of Sazköy also mentioned that a construction contractor and minibus provider benefited from the Project , and the mukhtar of Yeşilyayla added that the electrical materials were supplied by a villager from Yeşilyayla. Other than these examples, no other villagers benefitted from the Project's procurement opportunities.

In response to the question, "Are there any products/services that can be procured from your household? Has the Project bought products from you so far?", the answers to the question are given in Table 7-8.

Table 7-8 Products/services received from households

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	0	10	16	0	0	26
Aşağıihsaniye	1	6	16	0	0	23
Yeşilyayla	1	2	5	0	0	8
Sefercik	2	1	14	0	0	17
Derecikören	5	1	11	0	0	17
Gökçeler	2	1	19	0	0	22
Total	11	21	81	0	0	113

In Phase 1, most villagers reported that there was no change in local procurement, while it was seen that there was an expectation of those who gave a negative answer to this question.

When asked, "Are there products/services that can be obtained from your household? If not, are there any products that can be purchased?", villagers stated that there are services and products available for both the construction and operation phases of the Project.

Table 7-9 Products/services can be purchased from households

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	4	5	17	0	0	26
Aşağıihsaniye	3	5	15	0	0	23
Yeşilyayla	1	2	4	1	0	8
Sefercik	2	1	14	0	0	17
Derecikören	4	1	1	0	0	6
Gökçeler	1	1	20	0	0	22

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Total	15	15	71	1	0	102

7.4.2.1 Construction Phase

7.4.2.1.1 Impact Factors

Due to the short duration of construction phase of the Project and the fact that it is only at offshore, the employment opportunities that will be created locally will be minimal and not have a large impact as in Phase 1.

Since the construction works will be generally in the maritime region, the employment will largely be for labour force with certain qualifications and will be supplied from outside the region. In addition, a number of workers will be necessary for associated activities, such as the catering of workers, cleaning services in the construction camp and security services.

During the construction phase of the Project, neither direct nor indirect economic opportunities are expected to arise at the regional level. Considering the nature of the Project, procurement and subcontractor needs will be met through the global procurement market. However, efforts will continue to procure services and products, especially for the needs of employees, from the local region.

7.4.2.1.2 Mitigation and Enhancement Measures

The following mitigation measures will be implemented to mitigate the negative impacts on economy and employment, and enhance the positive impacts:

- Formal and transparent recruitment process will be implemented to avoid discrimination and provide equal opportunities to the applicants.
- The mukhtars of the settlements will be informed about the recruitment opportunities of the Project (announcements, banners) to reduce the requirement of the non-local labour force.
- Where applicable, vocational training will be provided to local people to maximize the local labour force.
- A project specific grievance mechanism for workers will be established and implemented.
- Before the procurement, local suppliers will be identified, and priority on purchases will be given to goods and services from local businesses.
- Capacity development will be offered to local businesses.
- Equal procurement opportunities will be provided to local small businesses.
- An equal tender process will be applied.
- All subcontractors will be monitored with regard to compliance local employment and local procurement requirements.

7.4.2.1.3 Residual Impacts

The construction phase will require a frequent demand for both a workforce and goods, materials, and services.

It is anticipated that the labour and material requirements of the Project will be sourced from the regional level (geographic extent), with the intensity of the impact factors expected to be medium and low, respectively. In

view of the expectations of local communities, the component sensitivity of the impact is assessed as medium-high. It is estimated that the impact will be reversible within a mid-term timeframe.

The Project is expected to employ 2,500 workers during the construction phase, with a significant impact on the demand for a skilled workforce. Based on the baseline conditions of the assessed component, the Project characteristics and actions, as well as the proper implementation of the enhancement measures proposed above, a **high positive impact** in demand for goods, materials, and services as well as workforce is expected.

The rationale behind the assessment: With the proposed mitigation and enhancement measures, the Project is expected to create a high residual impact in the region on workforce and procurement. It was observed during the site visit that there is a demand from the local people for training programs to improve the skill levels of the workforce. Also the small businesses are willing to increase their capacities with the support of TP-OTC.

Table 7-10 Residual impact assessment matrix for economy and employment during the construction phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Enhancement Effectiveness	Residual Impact Value
Demand for workforce	Duration:	Medium	Medium-high	Mid term	**High**	Medium-high	**High**
	Frequency:	Frequent					
	Geo. Extent:	Regional					
	Intensity:	Medium					
Demand for goods, materials and services	Duration:	Medium	Medium-high	Mid term	**Medium**	Medium	**High**
	Frequency:	Moderately frequent					
	Geo. Extent:	Regional					
	Intensity:	Low					

7.4.2.1.4 Monitoring measures

Monitoring measures will be implemented to assess the effectiveness of the mitigation and enhancement measures, including:

- Employment records of contractors and subcontractors,
- Local employment and procurement records,
- Grievance registers,
- Records of provided vocational trainings for employees,
- Records of implemented and planned capacity building programs for local suppliers.

7.4.2.2 Operation Phase

7.4.2.2.1 Impact Factors

The impact factors from the Project activities potentially affecting economy and employment during the operation phase are listed in this section.

Extraction of the natural gas will provide an important economic contribution to national economy.

In the operation phase of the Phase 2 Project, it is planned to employ a total of 156 personnel, of which 132 of them will work on the offshore FPU and 24 of them will be additional to the current personnel of existing OPF. These employment positions will be permanent and will likely involve skilled positions.

In parallel with the long-term procurement opportunities, the Project is expected to attract more investors in the Project region.

7.4.2.2.2 Mitigation and enhancement measures

The following mitigation and enhancement measures will be implemented to mitigate and enhance the impacts on economy and employment during the operation phase of Phase 2:

- The Project will continue to implement human resource policies and procedures in compliance with the IFC PS-2 on Labour and Working Conditions. Such policies are expected to provide more predictable employment opportunities for direct and indirect employees.
- Employment Policy Statement of the Project will be reviewed and revised according to the Project Standards, updated and implemented for the Project.
- The Project will develop tools and plans that guarantee employee rights, comply with IFC PSs and ILO conventions, and provide a human rights-respectful work environment. Employment Policy Statement of the Project will be implemented. All existing management plans pertaining to the employee and human rights will be updated.
- Equal opportunities for the local applicants will be provided during recruitment processes.
- On the job and vocational training programmes will be provided especially for the local employees to increase the skilled personnel and encourage the promotion.
- Local supplier survey will be done and capacity building programs will be implemented to support the local economy by procuring locally.
- Small businesses and the women entrepreneurs will be identified and supported to create and employment procurement opportunities for the locals and the vulnerable.
- Grievance mechanism will continue be implemented.

7.4.2.2.3 Residual Impacts

Table 7-11 below summarizes the impact assessment on economy and employment during the operation phase.

It is foreseen that the SGFD Project will remain in operation for 25-40 years. The operating period of the Project depends on natural gas production in the Sakarya Gas Field and may extend following new explorations. Based on the baseline conditions of the assessed component, the Project characteristics and actions, as well as the proper implementation of the enhancement measures proposed above, **high positive impact** in demand for goods, materials, and services, **very high benefit** to economy and **low positive impact** in demand for workforce is expected.

The rationale behind the assessment: The economy and employment impacts during the operation phase is considered a positive impact with medium to high sensitivity, underlined by the frequency of economy and employment being raised during consultation. The impact is, long term and will extend beyond the local area.

Table 7-11: Residual impact assessment matrix for economy and employment during the operation phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Enhancement Effectiveness	Residual Impact Value
Benefit to national economy	Duration:	Long	High	Long term	**Very High**	Medium-high	**Very High**
	Frequency:	Highly frequent					
	Geo. Extent:	Transboundary					
	Intensity:	Very high					
Demand for workforce	Duration:	Long	Medium-low	Short-Long term	**Low**	Medium-low	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Regional					
	Intensity:	Low					
Demand for goods, materials and services	Duration:	Long	Medium	Long term	**High**	High	**High**
	Frequency:	Moderately frequent					
	Geo. Extent:	Regional					
	Intensity:	Low					

7.4.2.2.4 Monitoring measures

Monitoring measures will be implemented to assess the effectiveness of the specified measures, including:

- Employment records of contractors and subcontractors
- Local employment and procurement records
- Grievance registers
- Number of skilled local employees supported by training programs
- Number of supported local businesses and women entrepreneurs by capacity building programs
- Records of implemented and planned capacity building programs for local suppliers.

7.4.3 Land Use and Land-based Livelihoods

This section assesses the impacts of the Project on lands, land use, and land-based livelihoods for the potential impacts of Phase 2.

The mukhtars of the settlements within AoI were asked the following questions regarding land use and land-based livelihoods, (i) any effects to livelihoods during land acquisition process, (ii) any effects to the incomes from animal husbandry and the agriculture, (iii) any loss on pasture lands due to Project.

Except the mukhtar of Yeşilyayla, all other mukhtars responded “no” to the questions mentioned above. The Yeşilyayla mukhtar explained that animals often graze near the road. Following the improvement of the roads around Yeşilyayla by the Special Provincial Directorate, the village has become a preferred route, increasing its usage due to improved transportation convenience. The increased traffic poses a challenge for the shepherds, requiring them to be more alert and careful while guiding the animals across the roads.

Households were asked whether the Project would affect their lands temporarily or permanently, and the responses are given in Table 7-12.

Table 7-12: Anticipated project impacts on land use

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	2	7	12	5	0	26
Aşağıihsaniye	1	4	14	1	0	20
Yeşilyayla	0	0	6	1	0	7
Sefercik	0	1	12	0	0	13
Derecikören	0	1	8	3	0	12
Gökçeler	1	2	10	1	0	14
Total	4	15	62	11	0	92

Table 7-13 provides the distribution of respondents by settlement who indicated that “there will be a negative impact on land use.”

Table 7-13: Distribution of anticipated negative impacts by project periods

Settlement	Construction	Operation	Both	No Answer	Total
Sazköy	5	0	0	0	5
Aşağıihsaniye	3	0	0	0	3
Yeşilyayla	0	0	0	0	0
Sefercik	1	0	0	0	1
Derecikören	0	0	0	0	0
Gökçeler	2	0	0	0	2
Total	11	0	0	0	11

Based on the responses to the question, “Will your income from agriculture be affected due to the Project?”, who expressed concerns about a negative impact are primarily worried about the construction phase.

Table 7-14: Anticipated project impacts on income from agriculture

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	1	7	6	9	1	24

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Aşağıihsaniye	0	4	13	5	1	23
Yeşilyayla	0	2	4	1	1	8
Sefercik	0	1	5	9	1	16
Derecikören	0	4	4	9	0	17
Gökçeler	0	0	6	16	0	22
Total	1	18	38	49	4	110

A significant portion of respondents stated that the possibility of their income from livestock farming being affected by the Project is not relevant to them.

Table 7-15: Anticipated project impacts on income from animal husbandry

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	1	3	4	16	0	24
Aşağıihsaniye	1	5	9	8	0	23
Yeşilyayla	0	0	2	6	0	8
Sefercik	0	2	3	12	0	17
Derecikören	0	4	6	6	1	17
Gökçeler	0	0	5	17	0	22
Total	2	14	29	65	1	111

7.4.3.1 Construction Phase

7.4.3.1.1 Impact Factors

For the Phase 2, the existing acquired lands during the Phase 1 will be used, and no additional land acquisition, expropriation, or renting will take place.

The current camps will be used for the employees.

The existing roads will be used in the construction phase of the Project and no link road is planned.

7.4.3.1.2 Mitigation measures

The following mitigation measures will be implemented to mitigate the potential impacts on land use and land-based livelihoods due to the Project:

- While no expropriation is planned, the Project will always ensure that engagement and consultation will be conducted to inform landowners and users that may be impacted in the AoI, about the planned construction activities.

- Coordination with the villagers especially about the road conditions will be established to prevent the animals from the unwanted hazards.
- SGFD will implement the following measures as necessary and as applicable to protect shepherds and villagers from traffic:
  - Cattle Crossing Signs: Install warning signs well in advance to alert drivers about potential animal crossings, ensuring they reduce speed.
  - Speed Bumps or Rumble Strips: Place speed-reducing measures near crossing areas to slow down vehicles.
  - Dedicated Cattle and Pedestrian Crossings: Construct designated crossing paths, allowing pedestrians and cows to move safely without disrupting traffic.
  - Lighting and Reflective Markers: Use reflective markers or additional lighting to enhance visibility, especially at night.
  - Fencing and Gates: Erect fences along road sections with frequent crossings, guiding cows to safe, designated crossing points.
  - Temporary Roadblocks or Traffic Signals: Employ roadblocks or temporary traffic signals during scheduled crossings to halt vehicles.
  - Supervised Crossings: Arrange for a person or vehicle to assist with crossing during peak times, ensuring both pedestrians, cows and drivers are safe.
- Compensations, land damages and other expropriation related grievances of the villagers related to Phase 1 will be monitored and addressed.
- Grievance mechanism will be implemented to collect grievances related to land use.

7.4.3.1.3 Residual impacts

Table 7-16 below summarizes the assessment of potential Project impacts on land use and land-based livelihoods.

The rationale behind the assessment: Since there will be no land acquisition for Phase 2, the impact of this component is considered negligible.

Table 7-16: Residual impact assessment matrix for land use patterns during the construction phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Changes in land use	Duration:	Medium	Low	Short-term	**Negligible**	High	**Negligible**
	Frequency:	Concentrated					
	Geo. Extent:	Local					
	Intensity:	Negligible					

7.4.3.1.4 Monitoring measures

The following issues shall be monitored to assess the true effects of the Project on land use and livelihoods during the construction and verify the effectiveness of the mitigation measures:

- Stakeholder engagement records including land users in the settlements,
- Land and livelihood related grievance records.

7.4.3.2 Operation Phase

Considering the nature of the Project, no impacts on land use and land-based livelihoods are expected during the operation phase. Issues related to land acquisition from Phase 1 will be addressed and largely resolved. However, some monitoring and livelihood restoration activities may continue during the operation phase, as a part of the corporate social responsibility projects.

7.4.4 Ecosystem Services

Fishery

During the field interviews, both the people living in the AoI, and the members of the fishery co-operative were asked for their views on Phase 2 of the Project.

According to responses from the local communities residing in the settlements within the AoI, the number of those who say it is not related with them about the possibility of the income obtained from fishing being affected by the Project is quite high.

Table 7-17: Anticipated project impacts on income from fishing

Neighbourhood	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	0	3	2	19	0	24
Aşağıihsaniye	0	0	2	20	0	22
Yeşilyayla	0	0	1	7	0	8
Sefercik	0	1	2	13	0	16
Derecikören	0	0	1	15	0	16
Gökçeler	0	0	0	22	0	22
Total	0	4	8	96	0	108

Tourism

Based on the information collected during household interviews in AoI, almost all respondents think that the Project's impact on tourism is not related with them. Since there are a few villagers has rent their houses to the Project employees, the one respondent in Sazköy answer this question as positive.

Table 7-18: Anticipated project impacts on income from tourism

Neighbourhood	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	1	0	1	22	0	24

Neighbourhood	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Aşağıihsaniye	0	0	3	20	0	23
Yeşilyayla	0	0	1	7	0	8
Sefercik	0	0	0	17	0	17
Derecikören	0	0	1	14	1	16
Gökçeler	0	0	1	20	1	22
Total	1	0	7	100	2	110

Since the boundaries of the Project site are well defined, there is no direct impact on touristic areas such as Filyos city centre and there are no touristic areas around the project area, no negative impact on tourism is expected.

On the contrary, it was also observed in Phase 1 that especially the Project employees and their families contributed positively to tourism by visiting touristic areas and facilities in the region.

Participants were asked some questions about cultural heritage assets, the replies are given in Table 7-19 and Table 7-20.

“Will intangible cultural heritage such as traditional arts, traditions and customs be affected by the project?” The answers to the question are presented in Table 7-19.

Table 7-19 Anticipated project impacts on intangible cultural heritage

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	1	0	8	12	3	24
Aşağıihsaniye	1	2	9	10	0	22
Yeşilyayla	0	0	3	5	0	8
Sefercik	0	0	6	11	0	17
Derecikören	0	1	4	11	1	17
Gökçeler	0	1	9	12	0	22
Total	2	4	39	61	4	110

Table 7-20 Anticipated project impacts on cultural and spiritual areas

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	0	5	5	14	0	24
Aşağıihsaniye	0	3	10	10	0	23
Yeşilyayla	0	0	7	0	1	8
Sefercik	0	1	3	13	0	17

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Derecikören	0	1	5	11	0	17
Gökçeler	0	0	5	17	0	22
Total	0	10	35	65	1	111

7.4.4.1 Construction Phase

7.4.4.1.1 Impact Factors

According to the fishers, the impact factors resulting from the Project's activities are as follows:

- fish cannot be seen due to lights emissions of operation,
- the increasing sea temperature and the effect of global warming are reducing the number and species of fish.

In addition to the existing Phase 1 safety corridor of 500 m on either sides of the Phase 1 SURF, there will be an additional safety corridor established during the construction of the Phase 2 export pipeline. The 500 m corridor on either sides of the export pipeline will be announced by NAVTEX announcements. The restrictions and conditions for the safety corridor is as follows:

- Anchoring is restricted
- Marine activities including fishing (using trap nets and rods) and diving are restricted.

Following restrictions will continue to be announced by NAVTEX:

- Cruising 2 km distance from the Project vessels
- Approaching 500 m to the Port

Varius vessels will be used for all the activities concerning the offshore section of the Project. When dealing with a vessel, the leakage of small amounts (i.e., negligible, but still present) of contaminants (mostly oily and greasy) from the engines is considered "physiological" and inevitable. Contaminants of such typology are mostly insoluble in water and tend to remain on the surface, potentially affect the fishing activities.

Vessels are expected to be the main responsible for the emission of underwater noise during the pipelaying.

During the construction phase, pipelay activities are operations that are performed continuously. Therefore, night working, and the use of artificial light, will be required for the construction and port area. According to the results of the interviews with the fisheries, it was underlined that the artificial light of the port is affecting fishing activities adversely.

Following the completion of the construction phase and before the operation of the pipelines, all the pipes will be hydrotested by pumping liquids. The hydrotest fluids are planned to be discharged deep sea, in correspondence to the SPS site, where they may cause alteration of the seawater quality. Nevertheless, as previously discussed, this alteration is not expected to affect marine life, since the discharge point is located in the anoxic water layer, where no life exists. Minor leakage of contaminants from vessels may be anticipated.

Additionally, the impact factors for fish will consequently apply to fisheries. These are detailed in Chapter 7.3.2.3.1 Biological Impact Assessment / Fish / Construction Phase

7.4.4.1.2 Mitigation measures

The following mitigation measures shall be implemented to mitigate the effects of the impact factors.

- Regular and timely engagement with local fishers and other users of local harbours and ports in order to discuss and agree on NAVTEX area.
- Timely communication of the security zone to local fishers and other users of local harbours and coordinating the practical consequences of such security zone.
- Regular and timely communication to local fishers and other users of local ports and harbours about construction activities and the routes and frequency of Project vessels.
- SGFD's existing Livelihood Restoration Plan will be updated for the Phase 2. Impact on fishers' livelihoods will be monitored at intervals identified in the Livelihood Restoration Plan. Impacts will be mitigated and addressed according to the LRP.
- TP-OTC will ensure that all it's vessels and the vessels in its supply chain including the contractors will comply with the following:
  - All vessels will be compliant with MARPOL.
  - All vessels will comply by the maritime traffic requirements and regulations enforced by the Port.
  - Outdated engines to be avoided in favour of recent and well-maintained ones.
  - In case of any leakage fishers will be informed.
  - Outdated propellers to be avoided in favour of recent and well-maintained ones, possibly anti-cavitation.
- Training will be provided to fishers on COLREG and Basic Navigation and Safety Rules for Small Vessels.
- Light emissions will be focused within the Project Area boundaries.
- Unnecessary lighting will not be used, including lights in unused areas, decorative lighting, or lighting that is brighter than needed for the task being carried out.
- In order to prevent pollution during hydrotesting, mitigation measures identified in Sections 7.1 and 7.2 will be implemented.
- The mitigation measures listed in Chapter 7.3 Offshore Physical and Biological Components Impact Assessment will be implemented.

7.4.4.1.3 Residual impacts

Based on the baseline conditions of the assessed component, the Project characteristics and actions, as well as the proper implementation of the mitigation measures proposed above, a potential **low negative impact** is expected on ecosystem services during the construction phase.

The rationale behind the assessment: Due to the compliance with relevant standards of the impact factors, even using a precautionary approach, the residual impact values are not expected to cumulate to a higher impact value. Therefore, the average residual impact value is low for the overall impact.

Table 7-21: Residual impact assessment matrix for impact on fisheries during the construction phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation effectiveness	Residual impact value
Minor leakage of contaminants into water	Duration:	Medium	High	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Low					
Handling of and resuspension of sediments	Duration:	Medium	High	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Medium					
Emission of underwater noise	Duration:	Medium	High	Short-term	**Low**	Medium	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Medium					
Emission of light	Duration:	Medium	High	Short-term	**Low**	None	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Project footprint					
	Intensity:	Medium					
Emission of contaminants into marine water	Duration:	Short	High	Short-mid-term	**Low**	Medium	**Low**
	Frequency:	Infrequent					
	Geo. Extent:	Local					
	Intensity:	Low					
Discharge of wastewater	Duration:	Medium	High	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Frequent					
	Geo. Extent:	Local					
	Intensity:	Negligible					
Presence of working and moving vessels	Duration:	Medium	High	Mid term	**Medium**	Medium	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Medium					

7.4.4.1.4 Monitoring measures

The following monitoring measures shall be implemented to assess the true effects of the project on plankton during the construction and verify the effectiveness of the mitigation measures.

- Marine Traffic Management in cooperation with Port Authority
- Compliance with COLREG
- Grievance Records

- The number of affected fishers
- Nature of compensation for all the affected fishers by the Project.
- Measures for improving livelihood standards of fisheries
- The number of conflicts between fisheries
- The number of conflicts between fishers and workers before and during the restriction process
- The number of vulnerable fishers faced with decreasing living standards.
- The number of grievances registered through the grievance mechanism.
- The number of grievance cases addressed.
- Percentage of closed grievances where PAPs indicate their satisfaction with the grievance process.
- The number of persons engaged during the implementation of the Project focused on women fishers (if any).
- The number of beneficiaries from the livelihood improvement programmes

7.4.4.2 Operation Phase

7.4.4.2.1 Impact Factors

According to the fishers, the impact factors resulting from the Project's activities are as follows:

- fish cannot be seen due to lights emissions of operation,
- the increasing sea temperature and the effect of global warming are reducing the number and species of fish.

In addition to the existing Phase 1 safety corridor of 500 m on either sides of the Phase 1 SURF, there will be an additional safety corridor established during the operation of the Phase 2 export pipeline. The 500 m corridor on either sides of the export pipeline will be announced by NAVTEX announcements. The restrictions and conditions for the safety corridor is as follows:

- Anchoring is restricted
- Marine activities including fishing (using trap nets and rods) and diving are restricted

Following restrictions will continue to be announced by NAVTEX:

- Cruising 2 km distance from the Project vessels
- Approaching 500 m to the Port

Additionally, the impact factors for fish will consequently apply to fisheries. These are detailed in Chapter 7.3.2.3.2 Biological Impact Assessment / Fish / Operation Phase

7.4.4.2.2 Mitigation measures

- Mitigation measures listed for the construction phase in Section 7.4.4.1.2 and those listed in Chapter 7.3 Offshore Physical and Biological Components Impact Assessment will be implemented.

7.4.4.2.3 Residual impacts

The table below summarizes the impacts caused by the identified impact factors on the component assessed.

Based on the baseline conditions of the assessed component, the project characteristics and actions, as well as the proper implementation of the mitigation measures proposed above, a potential **low negative impact** and **low positive impact** (as detailed in Section 7.3.2.3.) is expected on fisheries during the operation phase.

Table 7-22: Residual impact assessment matrix for fish during operation phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Minor leakage of contaminants into water	Duration:	Long	High	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Frequent					
	Geo. Extent:	Local					
	Intensity:	Low					
Emission of underwater noise	Duration:	Long	High	Short-mid-term	**Medium**	Medium	**Low**
	Frequency:	Frequent					
	Geo. Extent:	Local					
	Intensity:	Low					
Emission of electromagnetic fields (EMF)	Duration:	Long	High	Short-term	**Low**	None	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Project footprint					
	Intensity:	Negligible					
Discharge of produced water	Duration:	Long	High	Short-mid-term	**High**	Medium-high	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Medium					
Discharge of wastewater	Duration:	Long	High	Short-mid-term	**Medium**	Medium	**Low**
	Frequency:	Frequent					
	Geo. Extent:	Local					
	Intensity:	Negligible					
Presence of working and moving vessels	Duration:	Medium	High	Mid term	**Medium**	Medium	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Medium					

7.4.4.2.4 Monitoring measures

- Monitoring measures listed for the construction phase in Section 7.4.2.2.4 and those listed in Chapter 7.3 Offshore Physical and Biological Components Impact Assessment will be implemented.

7.4.5 Community Health and Safety

This section assesses the potential impacts of the Project on community health and safety. To gain a more comprehensive understanding of the potential impacts, the local communities' expectations regarding the Project's impact on health and safety were collected.

During the interviews with the mukhtars, it was determined that main concerns are related to traffic, dust and noise impacts.

During the household surveys, the Project's potential impacts were thoroughly assessed, starting with the question: "Does the project affect the health of anyone in your household? If so, how?". The responses are given in Table 7-23.

Table 7-23: Anticipated project impacts on community health

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	0	6	19	1	0	26
Aşağıihsaniye	2	6	12	2	0	22
Yeşilyayla	0	1	7	0	0	8
Sefercik	0	1	14	1	0	16
Derecikören	0	1	14	2	0	17
Gökçeler	0	2	19	1	0	22
Total	2	17	85	7	0	111

Mostly the nearest settlements Sazköy and Aşağıihsaniye replied this as in negative way.

Table 7-24: Distribution of anticipated negative impacts according to project periods

Negative Impact Distribution					
Settlement	Construction	Operation	Both	No Answer	Total
Sazköy	4	0	0	2	6
Aşağıihsaniye	4	0	0	2	6
Yeşilyayla	0	0	0	1	1
Sefercik	1	0	0	0	1
Derecikören	1	0	0	0	1
Gökçeler	1	1	0	0	2
Total	11	1	0	5	17

Most participants have concerns related to dust impacts during the construction phase. Responses given to the question: "Will the Project affect your household in terms of dust?" are given in Table 7-25.

Table 7-25: Anticipated project impacts of dust

Settlement	Positive	Negative	No Change	Not relevant	Don't Know	Total
Sazköy	0	11	14	1	0	26

Settlement	Positive	Negative	No Change	Not relevant	Don't Know	Total
Aşağıihsaniye	0	11	12	0	0	23
Yeşilyayla	0	0	8	0	0	8
Sefercik	0	5	12	0	0	17
Derecikören	0	4	11	2	0	17
Gökçeler	0	4	18	0	0	22
Total	0	35	75	3	0	113

Likewise, the perception regarding the negative effects of noise is very high.

Table 7-26: Anticipated project impacts of noise

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	0	11	14	0	0	25
Aşağıihsaniye	0	8	15	0	0	23
Yeşilyayla	0	1	7	0	0	8
Sefercik	0	6	10	1	0	17
Derecikören	0	4	12	1	0	17
Gökçeler	0	3	19	0	0	22
Total	0	33	77	2	0	112

According to the responses to expected pollution impact due the Project, Sazköy has major negative anticipations compared to the other settlements.

Table 7-27: Anticipated project impacts of pollution

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	0	10	14	2	0	26
Aşağıihsaniye	0	6	17	0	0	23
Yeşilyayla	0	0	8	0	0	8
Sefercik	0	3	14	0	0	17
Derecikören	0	1	13	3	0	17
Gökçeler	0	2	20	0	0	22
Total	0	22	86	5	0	113

Table 7-28 shows that the villages that are on the route of Project's access road have concerns about the traffic safety and load. The villagers from the other settlements expect no change on traffic due to the Project in Phase 2.

Table 7-28: Anticipated project impacts on traffic

Neighbourhood	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	1	14	11	0	0	26
Aşağıihsaniye	0	14	9	0	0	23
Yeşilyayla	0	6	2	0	0	8
Sefercik	0	2	14	0	0	16
Derecikören	0	3	14	0	0	17
Gökçeler	0	3	18	1	0	22
Total	1	42	68	1	0	112

"Does the Project affect your household in terms of the safety of the people in your household? If so, how?" Responses to the question show that concerns are primarily related to traffic issues.

Table 7-29: Anticipated project impacts on community safety

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	3	8	15	0	0	26
Aşağıihsaniye	3	8	12	0	0	23
Yeşilyayla	1	0	7	0	0	8
Sefercik	0	2	14	1	0	17
Derecikören	1	0	15	1	0	17
Gökçeler	0	1	21	0	0	22
Total	8	19	84	2	0	113

"Will the people working on the project have an impact on your household?" The question was evaluated by the participants as having positive effects.

Table 7-30: Anticipated project impacts of influx of workers

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	2	1	22	0	0	25
Aşağıihsaniye	6	5	12	0	0	23
Yeşilyayla	3	0	5	0	0	8

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sefercik	5	0	12	0	0	17
Derecikören	4	1	12	0	0	17
Gökçeler	4	1	16	0	0	21
Total	24	8	79	0	0	111

7.4.5.1 Construction Phase

7.4.5.1.1 Impact Factors

Since land preparation during the construction period is confined to a rather small area compared to Phase 1 and mostly in the landfall area, fallout and dust generation is not expected.

Exhaust emissions, vibration or noise can be expected in areas close to the road during the passage of material transport vehicles. The closest settlement to the Project Site is Sazköy, where the closest structure/building is approximately 300 meters away.

These emissions can have direct effect on the health conditions of people in proximity to the construction site and along the roads used by Project vehicles, as it is well established that pollutants can lead to episodic and chronic diseases.

Construction activities will generate an increased traffic compared to the current situation for the transport of workers, goods and materials. Accidents can occur particularly along roads in villages and in residential areas, where there are more pedestrians, animals and vehicles using these roads.

The arrival of workers from other parts of the country and from abroad may increase the possibility of spread of communicable diseases both among workers and within the local community, due to increased interactions between workers and local population.

In terms of safety and security, the presence of workers can generate tensions and disturbance with local communities, due to the interactions between workforce and people. These disturbances may affect women and vulnerable groups more than others.

Since there is a current security system at the Project site and a 3rd party and gendarmerie points at the main gates major security incidents are not expected.

7.4.5.1.2 Mitigation measures

The following mitigation measures shall be implemented to mitigate the impacts related to community health and safety:

- In order to reduce the exhaust emissions from the construction machinery and equipment, the legal limits will be obeyed. Compliance with the legal limits will be regularly checked and related management plans of the Project will be implemented. Mitigation measures listed in Section 7.1 Onshore Physical Impact Assessment will be implemented for pollution prevention.
- Noise measurements will be done regularly at the settlements within the AoI.
- Health screening of all workers prior to beginning of work and on a periodic basis will be performed.

- Induction training and periodic training to all workers on Health & Safety aspects and on communicable diseases will be provided.
- Community Health, Safety and Security Management Plan will be updated include the measures indicated in this section and additional measures that may emerge from engagement with stakeholders.
- Emergency Preparedness and Response Management Plan will be updated according to changing site conditions.
- Meeting with the stakeholders will be organized to inform them about the updates and implementation of the CHSS Plan, ERP, and Grievance Management system.
- Women meetings will be organized separately to take feedback from women.
- Grievance mechanism will be implemented to collect and resolve issues regarding community health and safety.
- Traffic Management Plan and road risk assessments will be kept up to date considering the latest Project schedule, both in accordance with ISO 39001. Implement Traffic Management Plan, will be implemented with indication of the measures that shall be enforced to reduce impacts generated by traffic and to increase safety for workers and local communities. The Plan will include the measures indicated above and additional measures that may emerge from engagement with stakeholders.
- Within the context of the SEP, inform local authorities, local communities on the progress of activities and in particular on the schedule of activities that will entail closures/limitations of roads and interruption of infrastructure networks; possible changes to limit impacts on local communities will be agreed and implemented.
- SGFD will implement the following measures as necessary and as applicable to protect shepherds and villagers from traffic:
  - Cattle Crossing Signs: Install warning signs well in advance to alert drivers about potential animal crossings, ensuring they reduce speed.
  - Speed Bumps or Rumble Strips: Place speed-reducing measures near crossing areas to slow down vehicles.
  - Dedicated Cattle and Pedestrian Crossings: Construct designated crossing paths, allowing pedestrians and cows to move safely without disrupting traffic.
  - Lighting and Reflective Markers: Use reflective markers or additional lighting to enhance visibility, especially at night.
  - Fencing and Gates: Erect fences along road sections with frequent crossings, guiding cows to safe, designated crossing points.
  - Temporary Roadblocks or Traffic Signals: Employ roadblocks or temporary traffic signals during scheduled crossings to halt vehicles.
  - Supervised Crossings: Arrange for a person or vehicle to assist with crossing during peak times, ensuring both pedestrians, cows and drivers are safe.

- Before the construction and operation, local communities will be informed about the restrictions to entering the construction and operation sites.
- Security personnel will patrol the site to prevent any unauthorized access.
- Conflict Management Training will be provided to armed security personnel.
- All security personnel will be trained on and adhere to the provisions of:
  - the Law No. 5188 on Private Security Services, which regulates the provision, licensing, and oversight of private security services in Türkiye, establishing the legal framework for private security companies, personnel, and their duties;
  - IFC Good Practice Handbook, Use of Security Forces: Assessing and Managing Risks and Impacts; Guidance for the Private Sector in Emerging Markets (Feb.2017)
- All vessels will operate according to the following standards. TP-OTC will ensure these standards are communicated to contractors and suppliers, and enforced through their contracts, with penalties or other remedies applied in cases of non-compliance.:
  - MARPOL (International Convention for the Prevention of Pollution from Ships). (1973/1978). International Maritime Organization.
  - SOLAS (International Convention for the Safety of Life at Sea). (1974). International Maritime Organization.
  - COLREG (International Regulations for Preventing Collisions at Sea). (1972). International Maritime Organization.
  - ISM Code (International Safety Management Code). (1998). Part of SOLAS, International Maritime Organization.
  - ISPS Code (International Ship and Port Facility Security Code). (2004). Part of SOLAS, International Maritime Organization.
  - STCW (International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers). (1978, as amended). International Maritime Organization.
  - MLC (Maritime Labour Convention). (2006). International Labour Organization.
  - Ballast Water Management Convention (BWMC). (2004). International Maritime Organization.
  - ILO Conventions Related to Maritime Employment. Various dates. International Labour Organization.
  - Load Lines Convention (LLC). (1966). International Maritime Organization.
  - Tonnage Measurement Convention (ITC). (1969). International Maritime Organization.
  - SAR (International Convention on Maritime Search and Rescue). (1979). International Maritime Organization.
  - IBC Code (International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk). (1983). International Maritime Organization.

- Polar Code (International Code for Ships Operating in Polar Waters). (2017). International Maritime Organization.
- AFS Convention (International Convention on the Control of Harmful Anti-Fouling Systems on Ships). (2001). International Maritime Organization.
- CLC (International Convention on Civil Liability for Oil Pollution Damage). (1969, as amended). International Maritime Organization.
- IMDG Code (International Maritime Dangerous Goods Code). (1965, as amended). International Maritime Organization.
- Hong Kong Convention (International Convention for the Safe and Environmentally Sound Recycling of Ships). (2009). International Maritime Organization.
- Torremolinos Protocol (International Convention for the Safety of Fishing Vessels). (1993). International Maritime Organization.

- Training will be provided to local sea users and fishers on COLREG and Basic Navigation and Safety Rules for Small Vessels.

7.4.5.1.3 Residual impacts

Table 7-31 below summarizes the potential impacts on community health and safety and security during the construction phase. Based on the baseline conditions of the assessed component, the Project characteristics and actions, as well as the proper implementation of the mitigation measures proposed above, the residual impacts are assessed as negligible and low.

The rationale behind the assessment: The overall assessment is determined as low. Different parameters were assessed for community health and overall impact determined as low with the combination of the factors.

Table 7-31 Residual impact assessment matrix for the community health and safety and security during the construction phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Dust emissions	Duration:	Medium	Medium	Short-mid-term	**Low**	Medium-high	**Negligible**
	Frequency:	Infrequent					
	Geo. Extent:	Local					
	Intensity:	High					
Exhaust emissions from vehicles and construction machinery	Duration:	Medium	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	High					
Vessel exhaust emissions	Duration:	Medium	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	High					
	Duration:	Medium	Medium		**Low**	Medium-high	**Negligible**

Emissions of vibration	Frequency:	Infrequent		Short-mid-term			
	Geo. Extent:	Local					
	Intensity:	Low					
Increase and modification of onshore traffic	Duration:	Medium	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	High					
Immigration of workers and other people	Duration:	Medium	Medium	Long term	**Medium**	High	**Negligible**
	Frequency:	Infrequent					
	Geo. Extent:	Local					
	Intensity:	Low					
Presence of Security Personnel	Duration:	Medium	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	High					

7.4.5.1.4 Monitoring measures

In addition to the monitoring measures pertaining to construction phase, listed in the Section 7.1 Onshore Physical Impact Assessment, the following monitoring measures shall be implemented to verify the effectiveness of the mitigation measures during the construction phase:

- Verification of number and outcome of periodic checks performed to vehicles to ensure that they are properly maintained and that all the safety devices are working properly,
- Registers of the percentage of drivers that have been provided with induction training on traffic safety,
- Registers of number of speed limit infractions identified among drivers,
- Registers of dust, noise, and vibration tracking systems,
- Registers of workers that are subject to health screening,
- Registers of the percentage of workers that are provided with appropriate PPEs, based on their position,
- Registers of the percentage of workers that are provided with induction training and periodic training on Health & Safety aspects,
- Registers of the number, type and outcomes of training and awareness raising campaigns among local communities on health and safety risks, and emergency response of the Project,
- Implementation of the Traffic Management Plan and registers of the traffic related incidents/near misses,
- Verification of the number, type and outcomes of support activities implemented for vulnerable groups,
- Verification of number, type, attendance and outcomes of stakeholder engagement activities,
- Registers of type, resolving status and recurring of the grievance related with community health, safety and security.

- Number of security personnel trained
- Grievances related to security and resolutions.

7.4.5.2 Operation Phase

7.4.5.2.1 Impact Factors

The main sources of air and noise emissions resulting from operations will be from the FPU and PSVs which are elaborated in Chapter 7.3 Offshore Impact Assessment.

During the operation phase, limited traffic will be generated by the Project due to the staff, contractors and suppliers, entering and exiting the site daily. Marine traffic will be generated by PSVs and maintenance vessels.

Considering the number of workers involved in this phase, which is determined as 156, it is unlikely that there will be an increase in the spread of communicable diseases. Likewise, considering the numbers involved, it is not expected that the presence of workers will add pressure to the existing health system in the AoI or generate particular tensions or disturbance with local communities.

Presence of security will continue during the operation phase.

7.4.5.2.2 Mitigation measures

- Mitigation measures listed in Section 7.4.5.1.2 will also be implemented in the operation phase.

7.4.5.2.3 Residual impacts

Table 7-32 summarizes the impacts caused by the identified impact factors on the component assessed.

The rationale behind the assessment: Effects on community, health safety and security were evaluated based on the total effect of several different factors. From this perspective, the residual impacts will be negligible with the mitigations to be taken.

Table 7-32 Residual impact assessment matrix for Community Health, Safety and Security during the operation phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Exhaust emissions from vehicles	Duration:	Long	Medium-low	Short-mid-term	**Low**	Medium-high	**Negligible**
	Frequency:	Highly frequent					
	Geo. Extent:	Local					
	Intensity:	Low					
Vessel exhaust emissions	Duration:	Long	Medium-low	Mid term	**Low**	Medium-high	**Negligible**
	Frequency:	Concentrated					
	Geo. Extent:	Local					
	Intensity:	Low					
Increase and modification of onshore traffic	Duration:	Long	Medium-low	Short-mid-term	**Low**	Medium-high	**Negligible**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Low					

Immigration of workers and other people	Duration:	Long	Medium	Long term	**Medium**	High	**Negligible**
	Frequency:	Infrequent					
	Geo. Extent:	Local					
	Intensity:	Low					
Presence of Security Personnel	Duration:	Medium	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	High					

7.4.5.2.4 Monitoring measures

Monitoring measures listed in Section 7.4.5.1.4 will also be implemented in the operation phase. Additional monitoring measures shall be implemented on the following issues during the operation phase to verify the effectiveness of the mitigation measures:

- Verification that the environmental monitoring management plans are updated and implemented,
- Emission, dust, noise, and vibration records are tracked and followed,
- Traffic Management Plan is updated and implemented,
- Verification that the traffic incidents register is compiled correctly and that lessons learned measures are implemented,
- Records of drivers that have been provided with induction training on traffic safety,
- Records of workers that are subject to health screening,
- Verification of the percentage of workers that are provided with appropriate PPEs, based on their position,
- Verification of the percentage of workers that are provided with induction training and periodic training on Health & Safety aspects,
- Records of the number, type and outcomes of targeted measures to reduce traffic related incidents that may be caused by the Project,
- Records of the number, type and outcomes of targeted measures implemented to ensure the protection of vulnerable groups like elderly, people with disabilities and children from risks that may be caused by the Project,
- Verification that the Community Health and Safety Management Plan is updated and implemented,
- Verification that the Emergency Preparedness and Response Management Plan is updated and implemented,
- Verification of the cooperation and coordination activities performed with local health facilities to minimize impacts on health centres,
- Records of the number, type and outcomes of support activities implemented for vulnerable groups,
- Records of number, type, attendance and outcomes of stakeholder engagement activities,

- Records of type, resolving status and recurring of the grievance related with community health, safety and security.

7.4.6 Infrastructure, Utilities and Services

This section assesses the Project's potential implications on the local infrastructure, utilities, and services. In order to have a more comprehensive understanding of the potential impacts, the local community were asked about their anticipations about the impacts of the Project on the issues such as transportation, water infrastructure, electricity, health and education.

Mukhtars of the settlements in AoI were asked about the current situations and the effects of the project to the infrastructure of the villages;

It was stated by all mukhtars that due to the old lines, there are power cuts several times a week, the problem increases especially in winter months and household appliances break down during the cuts. According to the mukhtar of Sefercik, there is low voltage due to the TP-TOC line.

When drinking and utility water is examined, it is understood that only Sazköy has a problematic situation. Since the water wells of the village remain in the project area, the replacement well is insufficient.

Sewerage system is available only in Sefercik neighbourhood. In other villages, septic pits or pipelines are used to transfer sewage to streams. In Sazköy, 80% of the village has a sewerage system and TP-OTC provides vacuum truck support for the emptying of the septic pits in the remaining 20%.

Purchased wood and coal are used as a source of heating. In all the interviews, it was determined that the villagers are waiting for natural gas connection and they want to benefit from the same conditions granted to Sefercik.

Domestic waste collection is carried out by the municipalities. The only problem of the settlements in this regard is insufficient garbage containers.

Due to the family doctor system, villages are expected to be visited by a doctor once a week. However, it has been determined that this system is not working properly and villagers go to health centres in district centres. At the same time, TP-OTC's health centre plays an important role in the region in responding to emergencies.

There is no school in any of the villages in the impact area. Students go to town and district schools by transport system.

The biggest problem related to transport was expressed in Aşağıihsaniye village. It is expected that the 2.5 km area connecting the village to Saltukova will be constructed.

During the HH surveys perceptions of the villagers asked about the possible effects of Phase 2 on infrastructure.

The answers of the household members to the question ‘Do you think there will be a change in the water used by your household?’ (well water, water supply, extraction, use, etc.) were as follows;

Table 7-33 Anticipated project impacts on water usage

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	5	3	17	0	1	26
Aşağıihsaniye	1	0	19	0	3	23
Yeşilyayla	0	0	8	0	0	8
Sefercik	0	0	16	0	1	17
Derecikören	1	0	15	0	1	17
Gökçeler	0	0	21	0	1	22
Total	7	3	96	0	7	113

The negative responses to the question “Do you think there will be a change in the electricity used by your household? suggest that the Project is not impacting the existing, unreliable power lines.

Table 7-34 Anticipated project impacts on electricity

Settlement	Positive	Negative	No Change	Not relevant	Don't Know	Total
Sazköy	1	6	14	5	0	26
Aşağıihsaniye	0	7	15	0	0	22
Yeşilyayla	0	2	6	0	0	8
Sefercik	0	6	9	2	0	17
Derecikören	1	2	10	3	0	16
Gökçeler	0	2	18	2	0	22
Total	2	25	72	12	0	111

Villages such as Sazköy and Aşağıihsaniye, which are close to the existing transportation road and TP-OTC health centre, answered the question, “Do you think there will be a change in your household's access to health facilities?” positively.

Table 7-35 Anticipated project impacts on access to health services

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	18	0	7	1	0	26
Aşağıihsaniye	17	0	6	0	0	23
Yeşilyayla	6	0	2	0	0	8
Sefercik	4	0	13	0	0	17

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Derecikören	3	0	14	0	0	17
Gökçeler	0	0	21	0	1	22
Total	48	0	63	1	1	113

When asked whether the Project would have an impact on access to education services due to the transport system, the answers were mostly no change and not relevant.

Table 7-36 Anticipated project impacts on access to education services

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	2	1	7	15	0	25
Aşağıihsaniye	1	0	10	11	1	23
Yeşilyayla	1	0	1	6	0	8
Sefercik	0	0	4	13	0	17
Derecikören	0	0	7	10	0	17
Gökçeler	0	0	8	14	0	22
Total	4	1	37	69	1	112

When asked, “Do you think there will be a change in transport facilities in your household?”, it was observed that the majority of the participants answered that there will be no change.

Table 7-37 Anticipated project impacts on transportation services

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	5	11	9	1	0	26
Aşağıihsaniye	2	10	11	0	0	23
Yeşilyayla	2	0	5	0	0	7
Sefercik	1	1	13	0	0	15
Derecikören	0	1	15	0	0	16
Gökçeler	0	0	22	0	0	22
Total	10	23	75	1	0	109

Maritime Traffic

Based on the baseline studies, the social component of maritime traffic within the AoI has been rated as having **high sensitivity**. This classification reflects the substantial number of major commercial routes that intersect

the AoI, indicating a critical need to manage impacts on maritime activity carefully. This region sees significant vessel movement along primary maritime corridors connecting the Bosphorus Strait with the northeastern Black Sea, and additional traffic from the commercial route between Zonguldak and Odessa, as well as recreational and fishing vessels navigating between smaller marinas.

Additionally, the Project's supply chain relies on maritime traffic for transporting fuel, materials and equipment. This dependency necessitates proactive management to ensure that supply routes remain unobstructed.

One significant risk associated with maritime traffic in the AoI is the potential for vessel collisions. Given the high volume of maritime traffic in this area, the likelihood of accidents increases, particularly during periods of heavy traffic or adverse weather conditions. The high volume of maritime traffic, particularly during peak periods or adverse weather conditions, increases the likelihood of accidents. This risk is further compounded by noncompliance with navigational regulations, which can lead to dangerous situations for both commercial vessels and local fishing operations.

Vessels transporting materials and fuel must fully comply with maritime regulations. When ships navigate closer to shore than permitted, they pose risks such as collisions with fishing boats or damage to fishing nets. While the Zonguldak Regional Port Authority oversees the enforcement of these rules, it is essential for all supply chain components to adhere to them to effectively minimize risks.

The Project involves the FPU vessel stationed offshore, with supply vessels regularly traversing the area, which will create considerable maritime traffic. Therefore, strict compliance with regulations by all vessels is critical to ensuring safety and minimizing potential conflicts in the busy maritime environment. Effective risk management strategies, such as enforcing compliance with safety protocols and improving vessel tracking systems, are essential to mitigate these hazards.

The potential impacts on this component are further examined below, with considerations for both the construction and operation phases of the Project.

7.4.6.1 Construction Phase

7.4.6.1.1 Impact Factors

Construction activities will generate an increased traffic compared to the current situation for the transport of workers, goods and materials. The existing roads will be used during construction phase of the Project and no road widening is planned. In addition, no link road is planned for the construction phase.

Freshwater will be required by the Project during the construction phase mainly for personnel needs, dust suppression and for concrete production purposes. The drinking water of the personnel will be bottled water. The potable water and any water needed for construction purposes will be supplied from Filyos and Saltukova Municipalities, stored in water tanks and distributed through potable water infrastructure.

With regards to offshore activities, some vessels will be equipped with desalination equipment to obtain utility water. Support vessels will supply water to the vessels that are not equipped with desalination equipment.

Waste management will continue as in the current conditions within the framework of agreements with the relevant municipalities and disposal facilities.

7.4.6.1.2 Mitigation measures

The following mitigation measures will be implemented to reduce the potential impacts on infrastructure and services during the construction phase:

- Organize vehicle journeys so to optimize the transport of materials and reduce unnecessary trips.
- Identify speed limits in construction areas and in public roads and ensure that they are respected by drivers.
- Identify sensitive receptors (e.g. mosques, schools, areas without sufficient side walks, areas where animals graze) within the AoI and identify additional road safety measures in proximity to these receptors.
- Perform traffic safety awareness campaigns targeted at local communities and vulnerable groups, such as children and elderly, that may be increasingly involved in road accidents.
- Ensure that vehicles are equipped with all safety devices such as seat belts, mirrors, safety signals etc.
- Periodically check all vehicles to ensure that they are properly maintained and that all the safety devices are working properly.
- Verify and register of all traffic related incidents and periodically revise road safety measures based on lessons learned.
- Traffic Management Plan and road risk assessments will be kept upto date considering the latest Project schedule, both in accordance with ISO 39001. Implement Traffic Management Plan, will be implemented with indication of the measures that shall be enforced to reduce impacts generated by traffic and to increase safety for workers and local communities. The Plan will include the measures indicated above and additional measures that may emerge from engagement with stakeholders.
- Measures for pedestrians, shepherds and animals detailed in Section 7.4.3.1.2 will be evaluated and implemented as necessary.
- Within the context of the SEP, inform local authorities, local communities on the progress of activities and in particular on the schedule of activities that will entail closures/limitations of roads and interruption of infrastructure networks; possible changes to limit impacts on local communities will be agreed and implemented.
- Implement Grievance Mechanism to be manage the concerns and the complaints.
- Implement water saving strategies, particularly to reduce consumption of water for civil uses among workers. Provide indications on water saving initiatives to workers during induction and periodic training.
- Control on sufficiency of Sazköy water sources which is relocated during Phase 1 will be provided.
- Implement updated Waste Management Plan that includes an identification of the waste disposal facilities for the Project and selects those that are less impacting from an environmental and social standpoint and closest to the Project location.
- Provide indications on waste reduction and waste recycling initiatives to workers during induction and periodic training.
- Design the route for construction vessels to minimize interference with existing commercial and local traffic.

- Coordinate construction activities to avoid peak traffic times, thereby reducing the risk of congestion and delays on maritime traffic.
- Establish clear communication channels with local fishers and other users of the ports and harbours to inform them of Project activities and any potential disruptions in advance.
- Ensure that all vessels of the Project and Project's supply chain adhere to established maritime regulations by Zonguldak Regional Port Authority to reduce the risk of collisions and enhance overall safety.
- Engage with the Zonguldak Regional Port Authority regularly to ensure that maritime operations are compliant with safety and regulatory standards, and to facilitate effective communication about Project activities and any potential impacts on local maritime traffic.
- Ensure that non-compliance will result in penalties for supply chain components, which will be monitored regularly and inform related parties accordingly.
- Establish clear guidelines and protocols for vessel navigation to reduce the chances of collisions.
- Regularly update emergency response plans to ensure swift action in the event of a collision or near-miss.
- Integrate safety measures into the supply chain logistics, such as scheduling deliveries during off-peak traffic times and coordinating with shipping companies to ensure that vessel movements align with maritime traffic patterns to minimize and reduce the risk of congestion and collisions.
- In case of damage to fishers and/or their equipment, there will be specific protocols to address and compensate for losses.
- Provide training for local fisheries on maritime safety practices and the importance of adhering to navigational regulations to further enhance safety and reduce potential risks.

7.4.6.1.3 Residual impacts

Based on the baseline conditions of the assessed component, the Project characteristics and actions, as well as the proper implementation of the mitigation measures proposed above, expected impacts on infrastructures and services during the construction phase are given in **Table 7-38**.

The rationale behind the assessment: Due to the observed sensitivity of the local communities on traffic and drinking water, the mitigations should be take into consideration shortly. Also, it was observed that there is a need for garbage bins in all the settlement within the AoI. Thus, TP-OTC can make cooperation with the local authorities to develop a project on this issue.

Table 7-38 Residual impact assessment matrix for the infrastructures and services during the construction phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Increase of onshore traffic	Duration:	Medium	Medium-high	Mid term	**High**	Medium-high	**Low**
	Frequency:	Highly frequent					
	Geo. Extent:	Local					
	Intensity:	High					
	Duration:	Medium					

Increase of offshore (maritime) traffic	Frequency:	Highly frequent	High	Short-mid-term	**High**	Medium-high	**Low**
	Geo. Extent:	Transboundary					
	Intensity:	High					
Demand for freshwater	Duration:	Medium	High	Mid term	**High**	Medium-high	**Medium**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	High					
Demand for waste disposal services	Duration:	Medium	Medium-low	Mid term	**Low**	High	**Negligible**
	Frequency:	Frequent					
	Geo. Extent:	Local					
	Intensity:	Medium					

7.4.6.1.4 Monitoring measures

The following monitoring measure shall be implemented to assess the impacts of the Project on infrastructure and services during the construction and verify the effectiveness of the mitigation measures:

- Verification that the transport needs of the Project are defined, and that routes and vehicle journeys are organised so to minimize impacts;
- Verification that the Traffic Management Plan is updated and implemented;
- Records of the number, type and outcomes of meetings performed with local authorities and local communities;
- Records of number, type, attendance and outcomes of stakeholder engagement activities.
- Records of the number of disruptions to local infrastructures caused by Project activities, if any,
- Records of the number of grievances received and percentage of grievances resolved positively.
- Verify the amount of water consumed for the different uses;
- Monitor waste disposal practices and management as per Water and Waste Management Plan provisions.
- Verification that supply chain compliance is monitored, ensuring all vessels follow maritime regulations to minimize collision risks and enhance overall safety,
- Records of the number of training sessions conducted for local fishermen on maritime safety practices and the effectiveness of these training initiatives,
- Tracking of the incidence of any maritime accidents or near-misses associated with Project activities, documenting responses and mitigation actions taken,
- Evaluation of the implementation of emergency response plans.

7.4.6.2 Operation phase

7.4.6.2.1 Impact factors

Water requirement will be substantially lower during the operation phase compared to the construction phase.

The potable water, utility water, process water, and fire-fighting water will be supplied by the groundwater wells, after obtaining necessary permissions from the relevant institutions.

Waste will be managed in line with Turkish legislation through authorized contractors, which are expected to be able to manage the amounts of waste generated by the Project. Considering the type and amount of waste produced during operation, the Project is not expected to add increased pressure on existing waste disposal systems and infrastructures.

Limited traffic will be generated by the Project during this phase and will be relative to staff entering and exiting the site daily. The number of vehicles entering and exiting the site will be limited; heavy vehicles will be used to transport waste and for periodic maintenance activities. Based on the traffic load generated by the Project during the operation phase, no significant impacts on traffic are therefore expected.

7.4.6.2.2 Mitigation measures

The following mitigation measure will be implemented to mitigate the impacts on infrastructure and services during the operation phase:

- Implement water saving strategies, to reduce water consumption to the extent possible. Provide indications on water saving initiatives to workers during induction and periodic training.
- Provide continuous control on water sources of the settlements.
- Implement updated Waste Management Plan that includes an identification of the waste disposal facilities for the Project and selects those that are less impacting from an environmental and social standpoint and closest to the Project location.
- Support waste storage and collection needs of the villages in AoI.
- Traffic Management Plan and road risk assessments will be kept upto date considering the latest Project schedule, both in accordance with ISO 39001. Traffic Management Plan, will be implemented with indication of the measures that shall be enforced to reduce impacts generated by traffic and to increase safety for workers and local communities. The Plan will include the measures indicated above and additional measures that may emerge from engagement with stakeholders.
- Measures for pedestrians, shepherds and animals detailed in Section 7.4.3.1.2 will be evaluated and implemented as necessary.
- Implement the updated Stakeholder Engagement Plan and ensure that appropriate resources and budget are dedicated to engagement. Periodically revise the stakeholder mapping and the plan based on progress of activities
- Implement Grievance Mechanism to be manage the concerns and the complaints.
- Establish clear communication channels with local mariners and stakeholders to inform them of Project activities and any potential disruptions in advance.
- Ensure that all vessels of the Project and Project's supply chain adhere to established maritime regulations by Zonguldak Regional Port Authority to reduce the risk of collisions and enhance overall safety.
- Engage with the Zonguldak Regional Port Authority regularly to ensure that maritime operations are compliant with safety and regulatory standards, and to facilitate effective communication about Project activities and any potential impacts on local maritime traffic.

- Ensure that non-compliance will result in penalties for supply chain components, which will be monitored regularly and inform related parties accordingly.
- Establish clear guidelines and protocols for vessel navigation to reduce the chances of collisions.
- Regularly update emergency response plans to ensure swift action in the event of a collision or near-miss.
- Integrate safety measures into the supply chain logistics, such as scheduling deliveries during off-peak traffic times and coordinating with shipping companies to ensure that vessel movements align with maritime traffic patterns to minimize and reduce the risk of congestion and collisions.
- In case of damage to fisheries, there will be specific protocols to address and compensate for losses.
- Provide training for local fisheries on maritime safety practices and the importance of adhering to navigational regulations to further enhance safety and reduce potential risks.

7.4.6.2.3 Residual impacts

Table 7-39 below summarizes the impacts on infrastructure and services during the operation phase.

The rationale behind the assessment: During the operation phase, considering the long term duration of Project activities, Project needs in terms of infrastructure and services should be planned well in advance. This approach will help minimize impacts and reduce potential interference with the needs of local communities. Overall impacts are expected to be low for onshore traffic due to nature of the geography in the local area, low impact for demand for fresh water, and negligible for waste disposal services.

Table 7-39: Residual impact assessment matrix for the infrastructures and services during the operation phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Increase of Onshore Traffic	Duration:	Long	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Frequent					
	Geo. Extent:	Local					
	Intensity:	Medium					
Increase of offshore (maritime) traffic	Duration:	Long	High	Short-mid-term	**High**	Medium-high	**Low**
	Frequency:	Frequent					
	Geo. Extent:	Transboundary					
	Intensity:	Medium					
Demand for freshwater	Duration:	Long	High	Long term	**Very High**	High	**Low**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Very high					
Demand for waste disposal services	Duration:	Long	Medium-low	Long term	**Medium**	High	**Negligible**
	Frequency:	Infrequent					
	Geo. Extent:	Local					
	Intensity:	Medium					

7.4.6.2.4 Monitoring measures

The following monitoring measure shall be implemented to assess the true effects of the Project on infrastructure and services during the operation and verify the effectiveness of the mitigation measures.

- Verification that the transport needs of the Project are defined, and that routes and vehicle journeys are organised so to minimize impacts,
- Verification that the Traffic Management Plan is updated and implemented,
- Records of the number, type and outcomes of meetings performed with local authorities and local communities; verification of the number, type and outcomes of additional mitigation measures identified,
- Records of number, type, attendance and outcomes of stakeholder engagement activities,
- Records of the number of disruptions to local infrastructures caused by Project activities, if any,
- Records of the number of grievances received and percentage of grievances resolved positively,
- Verify the amount of water consumed for the different uses,
- Monitor waste disposal practices and management as per Pollution Prevention Plan and Waste Management Plan provisions.
- Verification that supply chain compliance is monitored, ensuring all vessels follow maritime regulations to minimize collision risks and enhance overall safety,
- Records of the number of training sessions conducted for local fishermen on maritime safety practices and the effectiveness of these training initiatives,
- Tracking of the incidence of any maritime accidents or near-misses associated with Project activities, documenting responses and mitigation actions taken,
- Evaluation of the implementation of emergency response plans.

7.4.7 Cultural Heritage and Archaeology

7.4.7.1 Onshore cultural heritage

During the baseline studies of SGFD Phase 1 ESIA, both desk-based studies and field studies were performed by HERMES Arkeoloji Çevre ve Sosyal Danışmanlık company (Hermes) for investigation of tangible and intangible cultural heritages.

As a result of the studies, tangible archaeological assets discovered within the Project AoI (defined in Chapter 6.4.14) are given in Table 7-40 and Figure 7-3.

Table 7-40: Information on the Archaeological Assets Identified Around the SGFD

No	Site name	Archaeological Area Registration Status[1]			Province	District/Village	Distance to SGFD (m)
		Registered	Unregistered	Unknown			
1	Filyos 1st Degree Archaeological Site	X			Zonguldak	Filyos	1500
2	Sazköy 3rd Degree Archaeological Site	X			Zonguldak	Filyos / Sazköy	30
3	3rd Degree Archaeological Site	X			Zonguldak	Filyos / Sazköy	480
4	Sazköy Modern Cemetery		X		Zonguldak	Filyos / Sazköy	15
5	Derecikören Ancient Bridge	X			Zonguldak	Filyos / Derecik ruin site	1300

[1] Project EIA Report and Archaeology Baseline Report

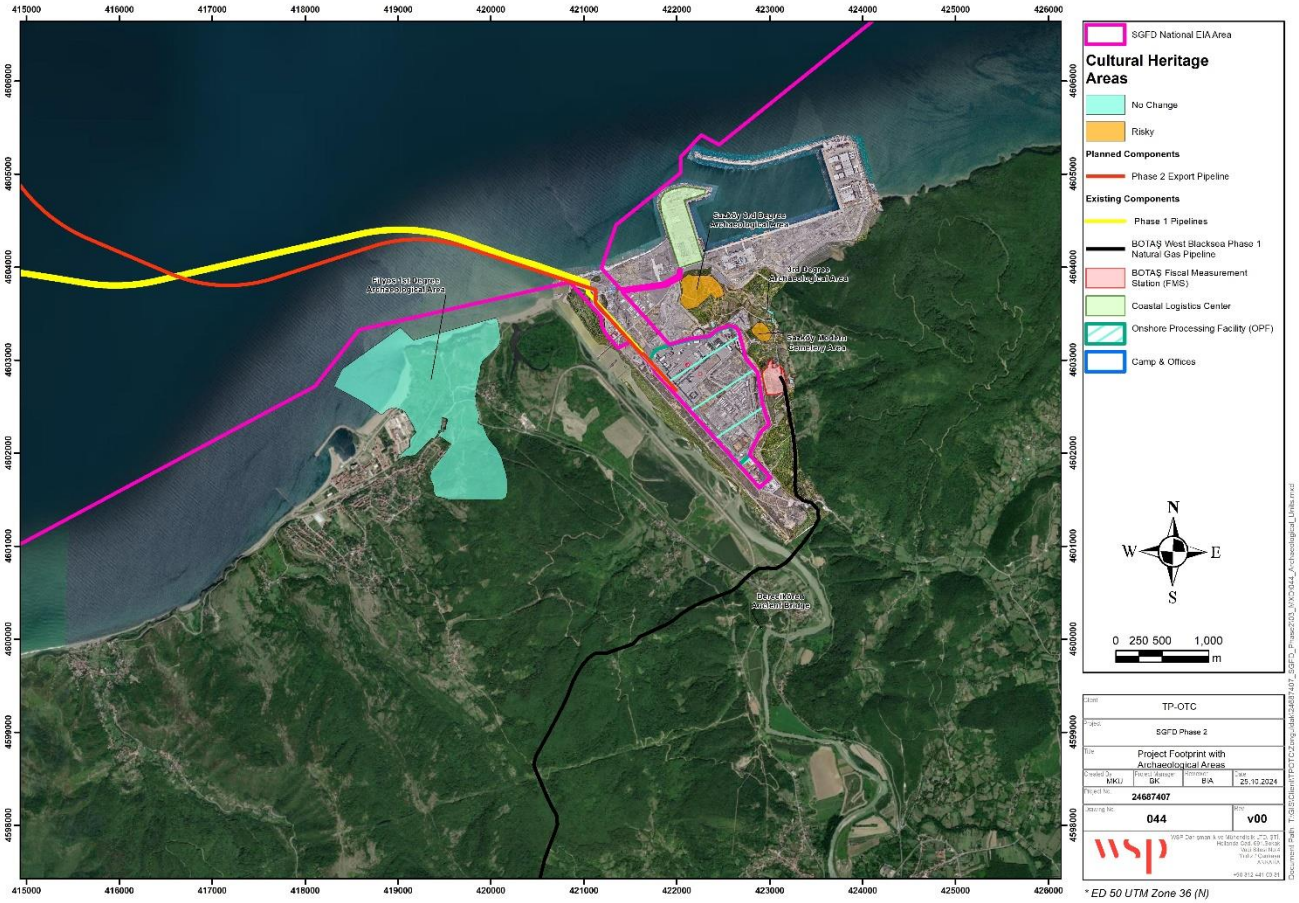

Figure 7-3: Satellite Image Showing Project Site and General Archaeological Status

(Note: The boundaries of the protected areas given on the map are approximately determined)

Interviews were held with Derecikören Village and Sazköy Mukhtars in the vicinity of the Project site and also with some people living in the region regarding presence of intangible in the region. According to the interviews, no intangible cultural heritage was identified within the Project AoI.

Impact Assessment Methodology

Impacts on the identified cultural heritages within the Project AoI were evaluated according to "Guidance on Heritage Impact Assessments for Cultural World Heritage ("WH") Properties" document[2] published by International Council on Monuments and Sites (ICOMOS) (see Figure 7-4).

The interrelations between the discovered archaeological sites and the Project site have been evaluated. The interrelations identified are presented in this chapter with their degree of importance, impact, and sensitivity.

[2] https://www.iccrom.org/sites/default/files/2018-07/icomos_guidance_on_heritage_impact_assessments_for_cultural_world_heritage_properties.pdf

The mitigation measures to be followed for minimizing the effects of activities on the cultural heritages are also presented.

VALUE OF HERITAGE ASSET	SCALE & SEVERITY OF CHANGE/IMPACT				
	No Change	Negligible change	Minor change	Moderate change	Major change
For WH properties Very High – attributes which convey OUV	SIGNIFICANCE OF EFFECT OR OVERALL IMPACT (EITHER ADVERSE OR BENEFICIAL)				
	Neutral	Slight	Moderate/ Large	Large/very Large	Very Large
For other heritage assets or attributes	SIGNIFICANCE OF IMPACT (EITHER ADVERSE OR BENEFICIAL)				
Very High	Neutral	Slight	Moderate/ Large	Large/very Large	Very Large
High	Neutral	Slight	Moderate/ Slight	Moderate/ Large	Large/Very Large
Medium	Neutral	Neutral/Slight	Slight	Moderate	Moderate/ Large
Low	Neutral	Neutral/Slight	Neutral/Slight	Slight	Slight/ Moderate
Negligible	Neutral	Neutral	Neutral/Slight	Neutral/Slight	Slight

Figure 7-4: Impact Matrix Defined by ICOMOS

According to the matrix defined by the Guidance, professional expert judgement is used to determine the importance of the resource. The value of the asset is defined using the following grading scale:

- Very High
- High
- Medium
- Low
- Negligible
- Unknown potential.

Scale or severity of impacts or changes is judged by taking into account their direct and indirect effects and whether they are temporary or permanent, reversible or irreversible. The cumulative effect of separate impacts is considered. The scale or severity of impact can be ranked without regard to the value of the asset as:

- No change
- Negligible change
- Minor change
- Moderate change
- Major change

Since the cultural heritage areas within the Project AoI are not in the status of "world heritage", during identification of significance of possible impacts on the cultural heritages, value of heritage assets is categorised according to "value of heritage asset for other heritage assets or attributes" given in Figure 7-4.

Detailed investigations and assessments were carried out for the environmental impact, mitigation measures, management, and monitoring of impacts for the phase where the impact on cultural heritages are at maximum.

Considering the risks of potential discoveries during the construction period, movable and immovable archaeological heritage constitutes the main focus of the field works.

Based on the information collected for the definition of the baseline, the social component *Onshore cultural heritage* was assigned as **Medium** value of sensitivity in general according to ESIA Methodology for the following reasons:

- Presence of archaeological sites close to the Project site boundaries;
- Uncertainty of the boundaries of archaeological sites;
- Presence of unregistered archaeological sites;
- Other ongoing construction projects around archaeological sites.

Sensitivity analysis according to ICOMOS and impacts potentially affecting each identified archaeological asset are assessed here below for the construction phase. Considering the nature of the Project no impacts are expected on the onshore cultural heritage component during the operation phase.

7.4.7.1.1 Construction phase

Impact factors

The impact factors from the Project activities potentially affecting onshore cultural heritage during construction phase are listed in the following table.

Table 7-41: Project actions and related impact factors potentially affecting onshore cultural heritage during construction phase.

Project actions	Brief description	Impact factors
Site levelling and grading & soil removal	Soil removal except for small amounts is not planned as part of the construction phase. However,	Removal of soil

Project actions	Brief description	Impact factors
	in unexpected situations during the construction phase, soil removal operations can be performed.	

Definition of the potential impacts and impact analysis based on the Guidance of ICOMOS for each cultural asset is presented in Table 7-42.

Mitigation measures

The following mitigation measures shall be implemented to mitigate the impacts on the cultural heritage assets identified.

General

- Measures will be taken to prevent access to such areas (i.e., by marking the archaeological site with signs similar to "no entry, sensitive zone").
- Boundaries of the site will be confirmed and measures should be taken to prevent possible physical interventions in the site.
- Human and vehicle traffic along the boundaries of the area will be minimized.
- In case the usage of the Derecikören Ancient Bridge is planned in order to access Project site, speed-reducing applications can be made, and speed can be reduced at this point with the signs to be placed on the road with the approval of relevant authority of the highways.
- The Cultural Heritage Management Plan and Chance Finds Procedure prepared within the scope of the SGFD should be updated implemented throughout the Project. In case of chance find, all work must cease at the location where discovery is made and a temporary buffer zone around the chance find will be put in place. Cultural Heritage/Archaeological Monitoring Specialist will inform site management and museum archaeologist immediately. Chance find site will be properly secured with flagging, no-entry signs etc.
- Protection of site: chance find should not be moved, removed or further disturbed.
- In particular, all operators and Project workers assigned to land preparation works should receive training on project requirements, protection of cultural and archaeological heritage, laws and regulations regarding archaeological and cultural heritage, Cultural Heritage Management Plan and Chance Find Procedure.
- Necessary information and training should be provided to the personnel to raise awareness about the archaeological site(s).
- In particular, truck/truck drivers should be informed that the materials that are considered as waste should not be dumped into the area, that these areas are protected areas by the relevant law.

Intangible Cultural Heritage

- Mobility of public and vehicles in the region during the planned activities will not be prevented.
- Transit routes will be left for uninterrupted access to areas regularly visited by the public.

- Contractors and subcontractors will be trained on the code of conduct, including their approach to relations with local communities, during the employment phase and at regular intervals throughout the Project.
- Information will be provided to contractors and subcontractors on any site-specific sensitivity/issue (e.g., festival locations, dates, events, etc.) regarding intangible cultural heritage.

Residual impacts

The table below summarizes the impacts caused by Project activities on the identified archaeological assets and residual impacts after mitigation measures are applied.

Table 7-42: Impact Analysis Table

No	Name	Distance to Project Site (m)	Definition of Possible Impacts	Impact Analysis as per ICOMOS Guidance			
				Value of Heritage Asset	Scale of Impact	Significance of Impact	Residual Impact
1	Filyos 1st Degree Archaeological Site	1,170 m to Pipeline Construction Area	Considering the distance between the construction area and the Filyos 1st Degree Archaeological Site, it is not expected to be affected by construction activities.	Very High	No Change	Neutral	Neutral
2	Sazköy 3rd Degree Archaeological Site	950 m to Pipeline Construction Area 50 m to internal access road to the port	Considering the distance between the construction area and the Sazköy 3rd Degree Archaeological Site, it is not expected to be affected by construction activities regarding the pipeline. On the other hand, since the port access road is close to the boundary of the site. It is not expected to be affected by the traffic volume to be realized during the construction works.	High	No Change	Neutral	Neutral
3	3rd Degree Archaeological Site	1,380 m to Pipeline Construction Area	Considering the distance between the construction area and the 3rd Degree Archaeological Site, it is not expected to be affected by construction activities.	High	No Change	Neutral	Neutral
4	Sazköy Modern Cemetery Area	1,050 m to Pipeline Construction Area 1,500 m to Material	Considering the distance of the construction area from the material transportation route and the Sazköy Modern Cemetery Area, it is not expected to be affected by construction activities.	Medium	No Change	Neutral	Neutral

No	Name	Distance to Project Site (m)	Definition of Possible Impacts	Impact Analysis as per ICOMOS Guidance			
				Value of Heritage Asset	Scale of Impact	Significance of Impact	Residual Impact
		Transportation Road					
5	Derecikören Ancient Bridge	2,740 m to Pipeline Construction Area 1,450 m to Material Transportation Road	It is not expected to be affected by construction activities as the bridge is not defined on the Project access roads.	High	No Change	Neutral	Neutral

Note: The camp sites established for Phase 1 will also be used by Phase 2 workers. For this reason, the camp sites are not expected to have a negative impact on archaeological sites during Phase 2 construction phase.

Monitoring measures

The following monitoring measure shall be implemented to assess the true effects of the project on onshore cultural heritage during construction and verify the effectiveness of the mitigation measures.

- Archaeological monitoring by an archaeologist is required for construction activities to be carried out near the identified cultural heritage finds.

7.4.7.1.2 Operation phase

Considering the nature of the Project no impacts are expected on the onshore cultural heritage component during the operation phase.

7.4.7.2 Marine archaeology

Based on the information collected for the definition of the baseline (see 6.1.6.2), the social component *Marine archaeology* was assigned a **Low** value of sensitivity for the following reasons:

- Absence of evident marine archaeological heritage features in the AoI

Impacts potentially affecting this component are assessed here below for the construction phase and operation phase.

However, the possible presence of a modern shipwreck along the pipeline AoI would be still require some consideration.

7.4.7.2.1 Construction phase

Impact factors

The impact factors from the Project activities potentially affecting marine archaeology during construction phase are listed in the following table.

Table 7-43: Project actions and related impact factors potentially affecting marine archaeology during construction phase.

Project actions	Brief description	Impact factors
Offshore excavation (trenching) and sediment storage	Excavation of a trench in shallow water in correspondence of the land approach (1.4 km). The sediments removed will be temporarily stored west of Filyos Port, east of the pipeline, and will be moved back to cover the pipeline.	■ Handling and resuspension of sediments ■ Presence of the cofferdams
Offshore pipeline laying	Offshore laying of the pipelines, umbilical line, and lines within the SPS and their connection.	■ Handling and resuspension of sediments ■ Introduction of new offshore infrastructures

Mitigation measures

The following mitigation measures shall be implemented to mitigate the effects of the impact factors.

- **Handling and resuspension of sediments**

In the eventuality that the removed sediment presents some foreign object this should be immediately inspected and its photographic records should be taken, if the object/s are not immediately identifiable as modern age debris the coordinates of the finding should be recorded and the photos should be immediately provided to an archaeologist for a preliminary assessment of the material. The initial assessment will be then discussed with the responsible of offshore construction operations for an eventual temporary alt of the activities.

- **Presence of the cofferdams**

No specific mitigation is required for this impact factor.

- **Introduction of new offshore infrastructures**

An ROV inspection on the possible shipwreck location is needed before commencing construction works.

This will open the way to two main scenarios:

If the presence of a modern historical wreck (e.g. WW1 or WW2 vessel) is confirmed a no-activities buffer area of 100-150 m (depending on conditions of the wreck and engineering requirements) should be considered around the it while laying the pipeline.

In the case there is no confirmation of a modern historical wreck no specific mitigation would be required for this impact factor.

Residual impacts

The table below summarizes the impacts caused by the identified impact factors on the component assessed. The whole matrix used for the assessment, including all scores, is available in Appendix K.

Based on the baseline conditions of the assessed component, the project characteristics and actions, as well as the proper implementation of the mitigation measures proposed above, a potential **low negative impact** is expected on marine archaeology during the construction phase.

Table 7-44: Residual impact assessment matrix for marine archaeology during construction phase.

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation effectiveness	Residual impact value
Handling and resuspension of sediments	Duration:	Medium	Low	Short-term	**Negligible**	Low	**Negligible**
	Frequency:	Continuous					
	Geo. Extent:	Project footprint					
	Intensity:	Medium					
Presence of the cofferdams	Duration:	Medium-short	Low	Short-term	**Negligible**	None	**Negligible**
	Frequency:	Continuous					
	Geo. Extent:	Project footprint					

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation effectiveness	Residual impact value
	Intensity:	High					
Introduction of new offshore infrastructures	Duration:	Medium	Low	Short-term	**Negligible**	None	**Negligible**
	Frequency:	Continuous					
	Geo. Extent:	Project footprint					
	Intensity:	Low					
Overall assessment:		**Negligible**	Rationale:	Due to the short-term reversibility, even using a precautionary approach, the residual impact values are not expected to cumulate to a higher impact value. Therefore, the average residual impact value may be considered as a reference for the overall impact.			

Monitoring measures

No monitoring measures were considered necessary.

7.4.7.2.2 Operation phase

Considering the nature of the Project, no impacts on the marine archaeology component are expected during the operation phase.

7.4.8 Gender Assessment

In this section, the potential implications of the Project on gender relations and gender equality within the AoI are assessed.

During the interviews, the researchers provided detailed information on the potential impacts of the Project on women's lives. This situation was examined in detail through both household interviews and focus group discussions.

- As understood in the interviews, women are engaged in agriculture and animal husbandry as well as salaried jobs. There is a demand from the Project for more employment opportunities for the women in local communities. The major demand expressed in every village during the women focus group discussions was for the development of projects for women. They expressed a desire to participate in economic activities by selling the products they grow and prepare, making soap from collected laurel leaves, and producing items like bags, baskets, and other handicrafts. They also shared their expectations for support from TP-OTC in these areas.
- Most of the women want to have common areas in their villages where they can socialize and spend time with their children.
- The most significant request was for natural gas to be supplied to their homes, as it would greatly ease their daily lives.
- In addition to this, the women expressed a desire to have their voices heard and to engage in more dialogue with the Project.

- In Sazköy village, women primarily handle daily housework and childcare. There are also university students/graduates in the village. Most of the young women collect laurel leaves and hazelnuts. The women stated that they had attended the project information meeting two years ago, and expressed their desire to voice their concerns and suggestions about the Project.
- Most of the women are doing agriculture as income generating activity in Aşağıihsaniye. There were complaints regarding employment, pipeline, Energy Transmission Line (ETL), expropriation payments, and traffic load which are very close to their houses.
- In Sefercik neighbourhood women are occupied with tending to their gardens, animals, and household chores. The mukhtar serves as their main contact for the Project. TP-OTC employed 4-5 women from the area. Their concerns focused on payments for private lands taken during road construction, requests for dedicated meetings for women about the Project, and opportunities to sell their agricultural products.
- Women are aware that there is no direct contact between the Project and Gökçeler village. They have concerns about other investments closer to the village. Their demand from the Project is to be in more dialogue with the management as in previous years. They have employment expectations for the young population living outside the village.
- Derecikören is the only village within the AoI with a woman mukhtar. The villagers are very concerned about the construction of a fertiliser factory near the village.
- In Yeşilyayla, women are often concerned about road safety for the children and animals. They stated that they cannot attend the Project meetings and there is a need for a separate women-only meeting. As in other villages, they do housework, take care of their gardens and go hazelnut picking.

In the household surveys, the question “If a job opportunity arises from this Project, will any women in your household work?” received the following responses in Table 7-45.

Table 7-45 Anticipated project impacts of job opportunities for women

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	5	13	6	1	0	25
Aşağıihsaniye	8	6	9	0	0	23
Yeşilyayla	2	2	4	0	0	8
Sefercik	3	8	5	1	0	17
Derecikören	10	4	3	0	0	17
Gökçeler	4	10	7	0	0	21
Total	32	43	34	2	0	111

7.4.8.1 Construction Phase

7.4.8.1.1 Impact Factors

Based on the household surveys and observations during the social field study, it is anticipated that during the construction phase of the Project, gender disparities may arise as a result of the Project, which are as follows:

- Due to the nature of construction work, which traditionally employs more men, women in the local communities may face challenges in accessing equal employment opportunities arising from the Project. Women in local communities are primarily hired for administrative or service roles; however, the availability of such positions is limited.
- The influx of outsiders to the area due to construction may result in women facing restrictions imposed by household members and the community. Specifically, they may encounter limiting behaviours that could lead to gender-based violence related to their mobility, travel, attire, and conduct.

7.4.8.1.2 Mitigation measures

The following mitigation measures shall be implemented to mitigate the impacts related to gender:

- For the job opportunities and benefits created within the scope of the Project to be equally beneficial, it will be ensured that women are informed at a sufficient level,
- Women-only meetings will be organized to keep women informed about construction works, job announcements, impacts and the mitigations of the construction activities,
- Concerns, grievances and the feedback of the women will be registered and managed,
- The Project will encourage women to benefit from the employment and local procurement opportunities to be created,
- The Project will make a detailed local suppliers survey to create an opportunity for the women suppliers and entrepreneurs,
- Corporate social responsibility projects will be planned and implemented for women to encourage them to be part of social and economic life,
- The Gender-Based Violence and Sexual Harassment Management Plan will be developed and implemented for the Project.
- Awareness meetings on various subjects like health, traffic safety, will be organized for women to establish a sustainable communication.

7.4.8.1.3 Residual Impacts

The component's impact factor has a medium duration and occurs highly frequent. The geographic extent is assessed as local, and the intensity is considered to be high. The component sensitivity is rated as medium-high, and the reversibility is classified as short-mid-term.

Following the implementation of the aforementioned measures, the impact assessment of the Project on the gender component has been assessed as low. It is therefore essential to implement mitigation measures in order to eliminate gender-based project risks. The residual impact on gender issues after the application of the measures during the construction phase is presented in Table 7-46.

The rationale behind the assessment: Supporting the women by creating special communication channels, increasing job opportunities, and implementing development projects, residual impact will be expected to be low during construction.

Table 7-46 Residual impact assessment matrix for gender issues during the construction phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Impact on gender issues	Duration:	Medium	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Highly frequent					
	Geo. Extent:	Local					
	Intensity:	High					

7.4.8.1.4 Monitoring measures

The following issues will be monitored to verify the effectiveness of the mitigation measures:

- Number of women applicants to the job announcements and recruited women from local area,
- Records showing purchases made from women entrepreneurs,
- Records of the number, type and outcomes of meetings performed with women,
- Numbers and types of campaigns organized for women,
- Plans and deliverables of the projects implemented for women's economic and social development within the AoI,
- Grievance records, including topics, resolving process and recurrent ones, received from women.

7.4.8.2 Operation Phase

7.4.8.2.1 Impact Factors

During operation, which is planned as 25-40 years, communications with women needs to be continued in a transparent and regular based. While recruitment opportunities will be limited during this phase, local procurement activities will continue throughout the Project's lifespan. Additionally, no security threats are anticipated for women during the operation period.

7.4.8.2.2 Mitigation measures

The following mitigation measures shall be implemented to mitigate the impacts related with gender issues during the operation phase:

- Enhancement measures will be developed to increase women's use of the Project opportunities and will be included in the relevant Local Employment Plan to be developed,
- The Project will encourage women to benefit from the employment and local procurement opportunities to be created,
- The Gender-Based Violence and Sexual Harassment Management Plan will be developed and implemented for the Project,
- Women-only stakeholder engagement meetings will be organized to ensure gender equality on the information disclosure process.
- Development projects especially for women will be implemented to involve women to socio-economic life.

7.4.8.2.3 Residual Impacts

The component's impact factor has a long duration and occurs frequent. The geographic extent is assessed as local, and the intensity is considered to be high. The component sensitivity is rated as medium-high, and the reversibility is classified as long-term.

Following the implementation of the aforementioned measures, the impact assessment of the Project on the gender component has been assessed as low. It is therefore essential to implement both mitigation and enhancement measures in order to eliminate gender-based project risks. The residual impact on gender issues after the application of the measures during the construction phase is presented in Table 7-47.

The rationale behind the assessment: During the women focus group meetings, it was noted that women expect more communication with the Project to rise their needs and voices. Since the operation phase is long TP-OTC can plan women-based projects and conduct regular communication with the women in local communities, which overall reduce anticipated negative impacts.

Table 7-47 Residual impact assessment matrix for gender issues during the operation phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Impact on gender issues	Duration:	Long	Medium-high	Long term	**High**	High	**Low**
	Frequency:	Frequent					
	Geo. Extent:	Local					
	Intensity:	High					

7.4.8.2.4 Monitoring measures

The following issues will be monitored to verify the effectiveness of the mitigation measures:

- Number of women applicants to the job announcements and recruited women from local area,
- Records showing purchases made from women entrepreneurs,
- Records of the number, type and outcomes of meetings performed with women,
- Numbers and types of campaigns organized for women,
- Plans and deliverables of the projects implemented for women's economic and social development within the AoI,
- Grievance records, including topics, resolving process and recurrent ones, received from women.

7.4.9 Vulnerable Group Assessment

The impact of the Project on vulnerable groups and their well-being is another crucial issue that is assessed in this section. Whether the Project would have a positive or negative impact on vulnerable groups was questioned locally during the social field study. The local residents' anticipations of the Project's impacts on vulnerable groups are provided in the tables below.

During the household surveys, when participants were asked, "How do you think this project will affect the women in your household?," their responses are shown in Table 7-48.

Table 7-48 Anticipated project impacts on women

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	6	1	14	3	2	26
Aşağıihsaniye	3	2	16	2	0	23
Yeşilyayla	2	0	3	3	0	8
Sefercik	2	1	9	4	1	17
Derecikören	5	1	9	1	1	17
Gökçeler	6	1	11	4	0	22
Total	24	6	62	17	4	113

Since the elderly population is high in the region, the question “How will children be affected due to the Project” was commonly answered with "no change" or "not relevant."

Table 7-49 Anticipated project impacts on children

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	1	2	8	14	0	25
Aşağıihsaniye	0	1	7	15	0	23
Yeşilyayla	0	0	1	7	0	8
Sefercik	1	0	4	12	0	17
Derecikören	2	0	2	12	0	16
Gökçeler	0	0	3	19	0	22
Total	4	3	25	79	0	111

The perception of the Project's impacts on the elderly was often reported as "not relevant," with no change expected. This perception is due to the elderly population not being directly involved in or affected by the aspects of the Project that would lead to significant changes in their daily lives.

Table 7-50 Anticipated project impacts on elderly

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Sazköy	1	3	10	11	0	25
Aşağıihsaniye	0	1	9	13	0	23
Yeşilyayla	0	0	4	4	0	8
Sefercik	1	3	8	5	0	17

Settlement	Positive	Negative	No Change	Not Relevant	Don't Know	Total
Derecikören	0	1	9	7	0	17
Gökçeler	1	0	11	10	0	22
Total	3	8	51	50	0	112

7.4.9.1 Construction Phase

7.4.9.1.1 Impact Factors

The sources of main potential impacts on the vulnerable groups in the AoI are traffic intensity, infectious diseases, and employment opportunities. Based on the household surveys, observations, and discussions with the local people, it is anticipated that during the construction phase of the Project, the following impacts may occur for the vulnerable groups:

- Restraints on mobility and travel due to construction activities for the older population and people with physical disabilities.
- Lack of participation in the information disclosure activities of the Project (illiterate, disabled, older adults).
- Unequal access to employment and procurement opportunities,
- Community unrest because of the outsider workers.

7.4.9.1.2 Mitigation measures

It is possible to reduce the potential negative impacts emerged from the Project on the vulnerable groups residing in the settlements within the AoI, if certain mitigation measures are taken, such as:

- Traffic Management Plan will be updated and implemented accordingly.
- Stakeholder engagement activities will be planned to reach all stakeholders and necessary visual and written materiel will be supplied to vulnerable groups.
- Capacity building will be implemented for vulnerable groups if there is an employment opportunitiy arising from the Project for vulnerable groups.
- Project employees will be given cultural awareness, code of conduct and grievance management trainings.
- Grievance system will be implemented for all stakeholders.

7.4.9.1.3 Residual Impacts

Following the implementation of mitigation measures, the impact assessment of the Project on vulnerable groups shows **low negative impact**. It is therefore essential to implement both mitigation and enhancement measures in order to minimize the impact and provide support for vulnerable groups. Table 7-51 presents details of the residual impact on vulnerable groups during the construction phase.

The rationale behind the assessment: With the implementation of the mitigation measures, especially the proper implementation of SEP, impact on the vulnerable groups can be shifted from medium to low value during construction.

Table 7-51 Residual impact assessment matrix for impact on vulnerable groups during the construction phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Impact on the vulnerable groups	Duration:	Medium	Medium-high	Short-mid-term	**Medium**	Medium-high	**Low**
	Frequency:	Infrequent					
	Geo. Extent:	Local					
	Intensity:	High					

7.4.9.1.4 Monitoring measures

The following issues shall be monitored to assess the true impacts of the Project vulnerable groups during the construction and verify the effectiveness of the mitigation measures:

- Implementation records of the social management plans,
- Number of meetings held in villages for vulnerable groups,
- Type and content of informative materials prepared for vulnerable people,
- Records of local employment and local procurement of/from vulnerable individuals residing in the settlements, if any,
- Records of capacity building conducted for vulnerable groups, if any,
- Registers of employees' trainings on cultural awareness and code of conduct,
- Grievance records, including topics, resolving process and recurrent ones, received from vulnerable groups.

7.4.9.2 Operation Phase

7.4.9.2.1 Impact Factors

There is no additional impact is expected during operation phase on vulnerable groups other than assessed for the construction phase, which are:

- Lack of participation in the information activities of the Project (illiterate, persons with disabilities, older adults), unequal access to employment and procurement opportunities, and social unrest due to external labourers can create problems for vulnerable groups.

7.4.9.2.2 Mitigation measures

It is possible to reduce the potential negative impacts emerged from the Project on the vulnerable groups of the AoI if certain mitigation measures are taken, such as:

- Plans prepared for management of social components will be updated and implemented accordingly.
- Stakeholder engagement activities will be planned to reach all stakeholders and necessary visual and written materiel will be supplied to vulnerable groups.
- Capacity development programs and projects will be planned and implemented for the vulnerable groups.
- Project employees will be given cultural awareness, code of conduct and grievance management trainings.

- Grievance system will be implemented for all stakeholders.

7.4.9.2.3 Residual Impacts

The impact on vulnerable groups during the operation phase would create negative consequences with a local geographic extent. The component has a long duration with an infrequent impact. The intensity is medium, and all of the potential impact factors may result in medium-high levels of receptor sensitivity. The reversibility is a long-term process.

Following the implementation of mitigation measures, the impact assessment of the Project on vulnerable groups during the operation phase is low. It is therefore essential to implement both mitigation and enhancement measures in order to minimize the impact and provide support for vulnerable groups. Table 7-52 presents details of the residual impact on vulnerable groups during the operation phase.

The rationale behind the assessment: Vulnerable groups will be needed special attention in terms of communication, involvement in the socio-economic life by implementing specific programs during the operation phase. With the implementation of proposed mitigations the residual impact is expected to be low.

Table 7-52 Residual impact assessment matrix for impact on vulnerable groups during the operation phase

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Impact on the vulnerable groups	Duration:	Long	Medium-high	Long term	**High**	High	**Low**
	Frequency:	Infrequent					
	Geo. Extent:	Local					
	Intensity:	High					

7.4.9.2.4 Monitoring measures

The following issues shall be monitored to verify the effectiveness of the mitigation measures during the operation phase:

- Implementation of the social management plans,
- Number of meetings held in villages for vulnerable groups,
- Type and content of informative materials prepared for vulnerable groups,
- Registers of employees' trainings on cultural awareness and code of conduct,
- Grievance records, including topics, resolving process and recurrent ones, received from vulnerable groups.

7.4.10 Human Rights Impact Assessment

The purpose of this section is to define the management system to be implemented to address impacts potentially generated by Project activities at both construction and operation phases on Human Rights.

It applies to all Project activities under the control of TP-OTC, BOTAŞ and its contactors and sub-contractors and to all workers.

Legal Framework for Human Rights

The ESIA provides in-depth legislative framework to be adopted by the Project for all types of activities. This section analyses the national and international requirements (specifically IFC's PSs) within the scope of human rights aspect to be followed throughout the Project lifespan.

As part of the ESIA studies, Project human rights impact assessment was held to identify the mitigation methods for the potential impacts on the local communities and Project direct and indirect workers in compliance with Equator Principles IV, specifically the following clause: "The client is expected to include assessments of potential adverse Human Rights impacts and climate change risks as part of the ESIA or other Assessment, with these included in the Assessment Documentation."

National Requirements

The Constitution of the Republic of Türkiye is the fundamental legal document guaranteeing respect to human rights as stated in Article 2 of Chapter II of the Constitution:

"The Republic of Türkiye is a democratic, secular and social state governed by rule of law, within the notions of public peace, national solidarity and justice, respecting human rights, loyal to the nationalism of Atatürk, and based on the fundamental tenets set forth in the preamble."

The following national legislation and international conventional will be applicable to the Project:

- Constitution of the Republic of Türkiye
- The Law on the Human Rights and Equality Institution of Türkiye (TIHEK) (Law No. 6701, 2016)
- Labor Law (Law No. 4857, 2003) and related regulations
- Regulation on the Implementation of the Law Concerning Private Security Services
- Labor Act No. 1475, 1971
- Occupational Health and Safety Law No. 6331, 2012
- Social Insurance and Universal Health Insurance Law No. 5510, 2006
- Regulation on Overtime and Extra Hours No. 25425, 2004
- Regulation on the Principles and Procedures Governing the Employment of Children and Young Workers published in gazette No. 25425 (April 2004)
- Law on Trade Unions and Collective Bargaining Agreements No. 6356, 2012

International Requirements

- International Labor Organization (ILO) conventions ratified by Türkiye
- Equator Principles 4 (2020)
- IFC Performance Standards (2012)
- The UN Guiding Principles (UNGPs) on Business and Human Rights by the UN Human Rights Council (2011)

- Guidance Note on Implementation of Human Rights Assessments under EPs (2020)
- IFC Good Practice Note on Managing Contractors' E&S Performance (2017)
- IFC Good Practice Handbook on Use of Security Forces: Assessing and Managing Risks and Impacts (2017)
- IFC/European Bank for Reconstruction and Development (EBRD) Worker's Accommodation: Processes and Standards (2009)
- IFC Handbook for Addressing Project-Induced In-Migration (2009)
- IFC Good Practice Note on Addressing Grievances from Project-Affected Communities (2009)
- IFC Introduction to Health Impact Assessment (2009)
- IFC Stakeholder Engagement Handbook: A Good Practice Handbook for Companies Doing Business in Emerging Markets (2007)
- World Group Bank (WBG) General and Sector Specific Environmental, Health and Safety (EHS) Guidelines (2007)

7.4.10.2 Construction and Operation Phases

7.4.10.2.1 Impact factors

At all stages of the project, TP-OTC and its subcontractors are obliged to develop practices for Human Rights principles for employees, suppliers and other stakeholders in accordance with legal legislation and international standards.

7.4.10.2.2 Mitigation measures

The following mitigation measures shall be implemented to mitigate the effects of the impact factors.

Working conditions and working hours

- Adopt and implement Human Resources Policies and Procedures appropriate to TP-OTC's size and workforce, that set out its approach to managing workers consistent with the requirements of this International Standards and national law.
- Require contractors and subcontractors to adopt and implement human resources policies and procedure aligned with TP-OTC's policies and procedure and with this plan. TP-OTC will perform periodic audits of its contractors and subcontractors to ensure that the policies and procedures are adopted and implemented.
- Ensure that a transparent and fair recruitment process is set up and implemented.
- A single and central recruitment process will be used to hire workers. No other channels will be allowed to be used.
- All workers will be provided with a written contract. The contracts as a minimum will include information on terms and conditions of employment, including the period of employment, wages, hours of work, overtime arrangements, procedures for termination of the contract and any benefits. The contract will be in the native language of the worker, and it will be clear and understandable to the worker. A copy of contract will be given to the worker.

- Necessary measures will be ensured for the safety and health protection of workers, including prevention of occupational risks and provision of information and training, as well as provision of the necessary organization and means and shall ensure that these measures are adjusted taking account of changing circumstances and aim to improve existing situations.
- Workers' accommodation standards provided relevant management plans will be updated (Offsite Accommodation, Labour Management, etc.) implemented within the scope of the Project, in line with the IFC/ EBRD's Guidance Note on Worker's Accommodation, 2009.
- Shift schedule of the direct and indirect workers will be strictly monitored and the annual overtime working hours will not exceed the working time
- In compliance with the article 44 of the Labor Law, worker's consent will be taken into consideration during the arrangements of the work on national day and public holidays. The issue of whether work will be done or not on the national day and public holidays will be decided by the collective agreement or by employment contracts. The worker's consent is required if there is no provision in the collective agreement or in employment contracts.
- Workers will be free to terminate their employment in accordance with national law.

Wages

- Payroll records of the direct and indirect workers will be controlled by TP-OTC strictly.
- All workers will be paid equally for equal positions.

Non-discrimination

- TP-OTC will strictly prohibit any discrimination on the basis of race, religion, gender, sexual orientation, gender identity or expression, national origin, age, disability, veteran's status or any other characteristic protected by law.
- Turkish Labor Law forbids discrimination due to race, language, gender, political views and opinion and religion. In accordance with the equal treatment principle covered in article 5 of the Turkish Labor Law, employers should treat part time workers with the same rights as full time workers and indefinite period workers to definite period workers unless there are genuine reasons for not doing so. As TP-OTC will comply with the Turkish Labor Law and will base the employment relationships on the principle of equal opportunity and fair treatment, the Turkish standards will fulfil the requirements of PS2 with regard to ensuring non-discrimination.
- Employment decisions, such as recruitment, dismissal, promotion, will be transparent and will not be made (directly or indirectly) based on personal characteristics such as sex, race, nationality, etc., but rather on the ability to do the job.
- A Worker's Code of Conduct will be prepared and implemented indicating that the non-discrimination, equal treatment and prohibition of harassment in the workplace, commitment on continual improvement, consultation and participation of workers will be promoted.

Collective bargaining and freedom of association

- The Project will endeavour to work in good faith with trade unions and any other bodies that workers collectively choose for their formal representation. Organized workforces are common in Türkiye.

- The Project will not seek to prevent by any means whatsoever the formation of trade unions or any other legally established worker group(s).
- TP-OTC and its contractors will comply with Turkish Labor Law concerning relations with authorized labor organizations and workers representatives.
- In the case of a stoppage of work or strike, TP-OTC will ensure that relevant managers, contractors and other parties are informed promptly so that appropriate engagement and action can be undertaken to resolve the issue.
- In the event of stoppage or strike, TP-OTC will arrange meetings with designated labor/worker representatives to determine the cause and to discuss and agree on resolutions; and
- If necessary, the relevant requirements of the Labor Law will be exercised, including using legal mediation and other means of arbitration.

Prohibition of child and forced labour

- The employment of children (i.e., persons below the age of 18) for the Project will not be permitted. The same requirement will be applicable to Project contractors and subcontractors.
- Periodic audits of contractors and subcontractors will be performed by TPOTC to ensure that no employment of children occurs.
- The use of forced labour (i.e., any work not voluntarily performed and that is exacted from an individual under threat of force or penalty) for the Project will not be permitted. The same requirement will be applicable to Project contractors and subcontractors.
- Periodic audits of contractors and subcontractors will be performed by TPOTC to ensure that no forms of forced labour occur.

Right to abstain from work

- In the event of serious, imminent, and unavoidable danger, workers shall leave their workstation or dangerous area and proceed to a safe place. Workers will not be placed at any disadvantage due to their action.

Right to social security, including social insurance

- Social insurance payments of all direct and indirect workers will be strictly controlled by TP-OTC
- If required awareness meetings will be held with the Project workers.

Women's employment

- Equal wage policy for equal positions between men and women workers will be implemented.
- When man and women candidates meet all conditions equally, priority should be provided to women candidates during the recruitment process.
- The safety of women staff staying in the accommodation camps will be provided at a high level and their needs will be met.

Occupational Health and Safety

- Workers will be provided with safe and healthy working conditions.
- Workers will be provided with adequate Occupational Health and Safety training regarding the use and maintenance of the workplace environment, tools, machinery and equipment.
- Vulnerable workers will be identified (older workers, those with underlying health conditions etc.) and will be monitored by the occupational physician.

Grievance Mechanism

- The Grievance Mechanism has been developed and implemented, for external individuals or groups to submit grievances relative to Project activities. The Grievance Mechanism aims at facilitating the resolution of concerns and grievances about the Project's environmental and social performance.
- Local communities will be informed about the Grievance Mechanism through the Stakeholder Engagement Plan and through the engagement activities that will be implemented during the Project's entire lifecycle.
- The Workers Grievance Redress Mechanism (WGRM) will be updated and implemented for the Project workers including contractors' and subcontractors' workforce at sites. Workers will be able to raise their complaints relating to their work environment or work conditions.
- All direct and indirect workers will be informed about the WGRM during recruitment, during induction training and periodically during other training and communication activities.
- The Grievance Mechanism and the WGRM will be subject to monitoring and to periodic auditing to ensure that they are implemented correctly and effectively.

Freedom of expression

- Individuals and groups will have the possibility of expressing their thoughts and opinions freely on the Project during engagement activities and through the Grievance Mechanism.

Right to information

- A Stakeholder Engagement Plan has been prepared for the Project and will be implemented in all phases of the Project.
- ESIA disclosure activities will be performed in order to inform all stakeholders about the Project impacts.
- During the construction and operation periods of the Project, all stakeholders will be informed about the status of the Project by using various tools including the face-to-face meetings, Project website, media.

Privacy and confidentiality of data

- All information on workers will be stored securely within TP-OTC's storage systems and will be accessible only to competent staff.
- Appropriate measures will be implemented to avoid theft or loss of information on workers from TP-OTC storage systems.
- No confidential information on workers will be shared externally and provided to Authorities without the individual's permission

Project related impacts on the environment and local communities

- Appropriate and effective management plans for the waste, wastewater, noise, air quality, community health and safety and traffic will be established and implemented.
- A relationship with Çaycuma Municipality will be established to discuss solutions to mitigate project related environmental and social impacts.
- Construction locations, transportation routes, construction camp sites, are to be regularly monitored for environmental aspects and in case of a grievance, additional measurements will be implemented, and the results will be shared with the local communities. In addition, monitoring of environmental aspects and grievances during the operation phase will also be performed.
- Nearby communities will be informed in advance about the construction activities, in line with the indications of the Stakeholder Engagement Plan.
- Safety awareness campaigns targeted to local communities will be carried out with respect to blasting activities, traffic safety, construction area risks etc. which have the potential impacts on community members.

Security management procedures

- Before the construction and operation, local communities will be informed about the restrictions to entering the construction and operation sites.
- Security personnel will patrol the site to prevent any unauthorized access.
- Community Health&Safety and Security Management Plan will be updated and implemented, outlining expectations around security.
- Conflict Management Training will be provided to armed security personnel.
- All security personnel will be trained on and adhere to the provisions of:
  - the Law No. 5188 on Private Security Services, which regulates the provision, licensing, and oversight of private security services in Türkiye, establishing the legal framework for private security companies, personnel, and their duties;
  - IFC Good Practice Handbook, Use of Security Forces: Assessing and Managing Risks and Impacts; Guidance for the Private Sector in Emerging Markets (Feb.2017)

7.4.10.2.3 Residual Impacts

After taking all mitigation measures mentioned above, and by following the legal requirements and international standards, the residual impact value related to human rights risks of the Project is assessed as low.

The rationale behind the assessment: The mitigation measures on Human Rights components will provide a long-term positive impact to the Project.

Table 7-53 Residual impact assessment matrix for impact on human rights during all project phases

Impact Factor	Impact Factor Features	Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value

Human rights risks	Duration:	Long	Medium-high	Long term	**High**	High	**Low**
	Frequency:	Infrequent					
	Geo. Extent:	Local					
	Intensity:	Medium					

7.4.10.2.4 Monitoring measures

Monitoring for human rights risks will be conducted in line with the following monitoring plan and Key Performance Indicators (KPIs), presented in Table 7-54 and Table 7-55.

Table 7-54 Human Rights compliance monitoring plan for the Project

ID	Topic	Method	Frequency
1	Contractors' and subcontractors' policies and procedures	Ensuring that HR Policies are adopted and implemented by contractors and subcontractors, and that they are compliant with TPOTC policies and procedures.	During procurement and then annually.
2	Contractors' recruitment process	Supervising contractors' HR policies, auditing their recruitment processes	Quarterly
3	Forced and child labor	Supervision of the contractor and subcontractors' HR policies, recruitment processes and internal auditing systems	Quarterly
4	Employment	Number of worker grievances submitted, processed and resolved	Monthly
5	Training	Percentage of workers completing mandatory trainings	Monthly
6	Implementation	Number of cases of discrimination or harassment reported	Monthly
7	Contractor Compliance	Review of compliance records by TP-OTC	Quarterly (Construction) Annually (Operation)

Key Performance Indicators

Table 7-55 summarizes the KPIs for Human Rights Performance of the Project.

Table 7-55 KPIs for human rights performance of the Project

ID	Key Performance Indicator	Target
1	Total hours of workers training on policies and procedures concerning aspects of Human Rights and percentage of workers trained.	100% of workers trained on Human Rights
2	Total number of incidents of discrimination and actions taken.	Zero per year
3	Situations of child labour identified during periodic audits of contractors and subcontractors	Zero per year
4	Situations of forced or compulsory labour identified during periodic audits of contractors and subcontractors	Zero per year
5	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of Human Rights	100% of workers trained on Human Rights
6	Total number of incidents of violations involving rights of stakeholders and actions taken	Zero per year

7.4.11 Supply Chain Management

Project has various contractors (elaborated in Chapter 3 Project Description, Section 3.4 Project Parties) and suppliers, some of which are common with Phase 1 contractors and suppliers:

Tier 1 Suppliers (Primary contractors responsible for large systems of services during construction and operations):

Scope: Tier 1 suppliers are responsible for delivering large-scale infrastructure and high-value services essential for the Project's core operations. These suppliers have direct contracts with TP-OTC and are critical to meeting Project timelines and standards.

- EPCI Contractors
- FPU Providers
- Logistics and PSV providers
- Pipeline Installation Contractors
- Chemical Suppliers for Process Operations

Tier 1 suppliers have the greatest direct environmental and social impacts, will adhere to Project E&S requirements and management systems with all aspects of their activities monitored closely by TP-OTC.

Tier 2 Suppliers (Suppliers providing key equipment, vessels, and services to Tier 1 contractors):

Scope: These suppliers provide specialized components, services, or systems to Tier 1 contractors, such as fuel, chemicals, or security personnel. They work under subcontract agreements to deliver crucial support functions.

- Bunker Fuel Suppliers
- Specialised Equipment Providers, such as SURF, etc.
- Safety and Security Providers
- Transport and Logistics Support
- Chemical Suppliers

Tier 2 suppliers will align with Project E&S requirements, ensuring safe handling of chemicals, low emissions, safe navigation standards and compliance with health and safety protocols.

Tier 3 Suppliers (Smaller or specialized suppliers, often subcontracted by Tier 2):

Scope: Tier 3 suppliers consist of local suppliers or indirect service providers that support Tier 2 or Tier 1 contractors indirectly. These can include labour contractors, catering services, temporary accommodation providers, and equipment rental services.

- Instrumentation and Control Systems
- Safety Equipment
- Catering and Accommodation Providers
- Equipment Components
- Equipment Rental Services
- Waste Management Companies

Management of Suppliers:

The information of supplier companies is stored in the Supplier Registration System. The evaluation of suppliers is carried out by the relevant stakeholders within the organization and recorded in the Supplier Performance System.

Applicable Standards:

The ESIA provides in-depth legislative framework to be adopted by the Project for all types of activities. This section provides a brief list of national and international standards within the scope of supply chain management to be followed throughout the Project lifespan.

Turkish Regulations

- Labor Law (No. 4857): Governs labour rights, working hours, and health & safety regulations for workers involved in supply chain activities.

- Environmental Law (No. 2872): Ensures that supply chain operations do not harm the environment and that proper waste management systems are in place.
- Occupational Health and Safety Law (No.6331): Ensures that supply chain operations are in line with the occupational health and safety rules and regulations.
- MARPOL Implementation (Marine Pollution Prevention): Requires suppliers involved in bunkering and shipping to comply with marine pollution prevention protocols.
- Public Procurement Law (No. 4734): Governs public contracts, ensuring transparency, competition, and compliance with ethical standards for supply chain activities.

ISO 28000 – Supply Chain Security Management System

- Risk Identification and Mitigation: Requires a structured approach to identify and mitigate risks within the supply chain.
- Compliance with Safety and Environmental Standards: Encourages companies to align supply chain operations with global health, safety, and environmental standards.
- Continuous Improvement and Auditing: Mandates regular audits, monitoring, and improvement to address vulnerabilities in the supply chain.

World Bank Guidelines on Procurement and Supply Chains

- Sustainable Procurement: Promotes the integration of environmental and social criteria into supply chain decisions to reduce risks.
- Supplier Evaluation and Monitoring: Recommends regular supplier performance evaluations to ensure compliance with environmental and social impact guidelines.
- Risk Management: Identifies potential risks (e.g., supply disruption, labour violations) and encourages pre-emptive risk mitigation strategies across the supply chain.

IFC Performance Standards (PSs)

- Performance Standard 1: Requires risk assessments and management systems for environmental and social risks, which include supply chain risks.
- Performance Standard 2: Focuses on labour practices and fair treatment of workers within the supply chain, ensuring no forced or child labour.
- Performance Standard 6: Emphasizes biodiversity conservation, ensuring supply chain operations do not harm critical ecosystems.

Equator Principles IV (EP IV)

- Supply Chain Transparency: Requires borrowers to disclose and monitor their supply chain operations to prevent environmental and human rights violations.
- Human Rights Compliance: Mandates adherence to human rights standards, including ensuring that all suppliers follow fair labour practices.

- Climate Change and Sustainability: Promotes sustainable procurement strategies that minimize the carbon footprint of supply chains.

7.4.11.1 Construction and Operation Phases

7.4.11.1.1 Impact factors

At all stages of the Project, TP-OTC and its contractors are obliged to develop systems aligned with the Project Standards to map their supply chain, identify and assess the risks and set the rules for and manage the risks of their supply chain.

7.4.11.1.2 Mitigation measures

The following mitigation measures shall be implemented:

TP-OTC will map its supply chain and identify its Tier 1, 2 and 3 suppliers and environmental, social and governance risks associated with them.

TP-OTC will develop a Supply Chain Management Plan, covering all Supply Chain phases from supplier selection and acceptance, new material or services procurement, post invoice and stock receiving to follow-up compliance of monitoring and reporting requirements with standards. The Plan will be applicable to Tier 1, 2 and 3 suppliers.

TP-OTC will ensure that the following measures are complied with by its supply chain:

- ESIA:
  - Ensure its supply chain is aware of and complies with the mitigation and monitoring requirements identified in this ESIA and SGFD Management Plans.
  - Provide training and enforce through contracts.
- Environmental Mitigation Measures
  - Emissions Control:
    - Use low-sulfur fuels for all PSVs and supply vessels to comply with MARPOL Annex VI.
    - Monitor vessel emissions and fuel use to meet IFC PS3 requirements on pollution control and climate change.
    - Monitor/audit suppliers regularly to ensure that suppliers are in compliance with the environmental regulatory framework
  - Chemical Management:
    - Ensure safe storage and handling of chemicals (MEG, TEG, firefighting agents) with proper spill prevention protocols.
    - Train personnel on chemical handling procedures to prevent leaks and spills and possible interaction of the chemicals to be stored.
  - Waste Management:
    - Engage licensed waste management companies to handle construction debris and hazardous waste.
    - Implement a zero-waste target where feasible.
    - Implement a zero-discharge policy where feasible.

- Social Mitigation Measures
  - Fair Labor Practices and Human Rights Compliance:
    - Ensure all suppliers, including Tier 2 and Tier 3, adhere to labor standards under IFC PS2 and Turkish labor law (No. 4857).
    - Extend the SEP and the grievance mechanism for all workers, including subcontracted labor, to raise concerns anonymously.
    - Ensure its supply chain complies with the Human Rights Mitigation Measures detailed in Section 7.4.10
  - Community Health and Safety Risk Management:
    - Ensure that all suppliers effectively manage their risks related to the community health and safety, through contractual obligations and audits frequencies commensurate with relevant risks associated.
  - Local Supplier Engagement and Community Relations:
    - Prioritize local procurement to boost community engagement and minimize socio-economic risks.
    - Communicate the SEP to involve local businesses and communities in supply chain activities.
- Operational and Safety Mitigation Measures
  - Supply Chain Risk Management:
    - Conduct supply chain risk assessments for key suppliers to address disruptions in fuel, chemicals, goods or logistics.
    - Implement contingency plans for critical operations reliant on Tier 1 and Tier 2 suppliers.
  - Security and Safety of Personnel and Cargo:
    - Align with ISO 28000 by securing supply routes and critical assets through certified security providers (No. 5188 Private Security Law).
    - Equip all vessels with Dynamic Positioning (DP) systems for safe navigation and compliance with COLREGs.
    - Ensure all contractors and suppliers operate according to the following standards, enforced through their contracts, with penalties or other remedies applied in cases of non-compliance.:
      - MARPOL (International Convention for the Prevention of Pollution from Ships). (1973/1978). International Maritime Organization.
      - SOLAS (International Convention for the Safety of Life at Sea). (1974). International Maritime Organization.
      - COLREG (International Regulations for Preventing Collisions at Sea). (1972). International Maritime Organization.
      - ISM Code (International Safety Management Code). (1998). Part of SOLAS, International Maritime Organization.
      - ISPS Code (International Ship and Port Facility Security Code). (2004). Part of SOLAS, International Maritime Organization.
      - STCW (International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers). (1978, as amended). International Maritime Organization.
      - MLC (Maritime Labour Convention). (2006). International Labour Organization.

- Ballast Water Management Convention (BWMC). (2004). International Maritime Organization.
- ILO Conventions Related to Maritime Employment. Various dates. International Labour Organization.
- Load Lines Convention (LLC). (1966). International Maritime Organization.
- Tonnage Measurement Convention (ITC). (1969). International Maritime Organization.
- SAR (International Convention on Maritime Search and Rescue). (1979). International Maritime Organization.
- IBC Code (International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk). (1983). International Maritime Organization.
- AFS Convention (International Convention on the Control of Harmful Anti-Fouling Systems on Ships). (2001). International Maritime Organization.
- CLC (International Convention on Civil Liability for Oil Pollution Damage). (1969, as amended). International Maritime Organization.
- IMDG Code (International Maritime Dangerous Goods Code). (1965, as amended). International Maritime Organization.
- Torremolinos Protocol (International Convention for the Safety of Fishing Vessels). (1993). International Maritime Organization.

– Ensure compliance with the OHS Law (No.6331)

▪ Supplier Monitoring and Compliance Audits:

– Update the Supplier Performance System to monitor alignment with ISO 28000 and compliance with EP IV standards.

– Conduct annual audits of Tier 1 and Tier 2 suppliers to ensure environmental and social compliance.

■ Climate and Sustainability Measures

▪ Carbon Footprint Monitoring:

– Track emissions and fuel consumption from vessels and suppliers, aligned with EP IV and TCFD recommendations.

– Promote the use of alternative fuels and/or alternative technologies where feasible to reduce the Project's carbon footprint.

▪ Sustainable Procurement Policies:

– Implement sustainable procurement policies to encourage suppliers to meet IFC PSs and EP IV.

– Engage in capacity-building programs for local suppliers to align their practices with sustainability goals.

7.4.11.1.3 Monitoring measures

Monitoring for supply chain management will be conducted in line with the following monitoring plan.

Table 7-56 Supply chain monitoring plan for the Project

ID	Topic	Method	Frequency
1	Emissions Control	Monitor emissions and fuel use of vessels using GPS and emission tracking systems (aligned with MARPOL Annex VI).	Monthly
2	Chemical Management	On-site audits to ensure proper chemical storage, handling, and spill prevention; review safety data sheets (SDS).	Quarterly
3	Waste Management	Review waste transfer documentation; conduct inspections at waste handling sites.	Monthly
4	Fair Labor Practices Compliance	Audit labour practices and contracts of Tier 1 and Tier 2 suppliers against IFC PS2 and Turkish labour law (No. 4857).	Annually
	OHS Practices Compliance	Audit OHS practices of Tier 1 and Tier 2 suppliers against IFC PS2 and Turkish OHS law (No. 6331).	Bi-annually
5	Human Rights and Grievance Mechanism	Track grievance submissions and resolution times through the project's grievance mechanism.	Monthly
6	Local Supplier Engagement	Review local procurement records; hold engagement meetings with community representatives.	Quarterly
7	Supply Chain Risk Management	Conduct supply chain risk assessments and scenario planning for key operations (e.g., fuel, logistics).	Bi-annually
8	Security of Personnel and Cargo	Perform compliance audits of security providers (aligned with ISO 28000 and compliant with Turkish Private Security Law No. 5188).	Annually
9	Vessel Navigation Compliance	Check vessel Dynamic Positioning (DP) system logs and incident reports; review COLREG compliance.	Monthly
10	Supplier Performance Monitoring	Update Supplier Performance System records; conduct random on-site inspections.	Quarterly
11	Supplier Compliance Audits	Perform annual audits for Tier 1 and Tier 2 suppliers to ensure adherence to applicable Project EHS Standards.	Annually
12	Carbon Footprint Monitoring	Track emissions and fuel consumption, aligned with TCFD recommendations and EP IV.	Quarterly
13	Sustainable Procurement	Review procurement records to ensure compliance with sustainable policies; conduct supplier training sessions.	Annually

7.4.12 Visual Aesthetics

Based on the information collected for the definition of the baseline (see 6.4.15), the physical component *Visual aesthetics* was assigned a **Medium-low** value of sensitivity for the following reasons:

- Presence of one settlement within the visual zone of visual influence.
- Absence of areas of touristic interest within the visual zone of visual influence.
- Presence of roads and volume of traffic within the visual zone of visual influence.
- There are no natural parks protected and classified areas within the visual zone of visual influence.

Impacts potentially affecting this component are assessed here below for the construction phase and operation phase.

7.4.12.1.1 Construction phase

Impact Factors

The impact factors from the Project activities potentially affecting infrastructures and services during construction phase are listed in the following table.

Table 7-57: Project actions and related impact factors potentially affecting visual aesthetics during construction phase.

Project actions	Brief description	Impact factors
Site levelling and grading	Soil removal for small amounts is planned as part of the construction phase.	■ Removal of soil
General onshore engineering/construction works	Heavy machinery will be operating on the Project area.	■ Emission of light

All the impact factors identified above are described below and assessed in the matrix that follows.

Removal of soil

The removal of soil will be conducted during the Phase-2 pipeline construction. The area directly impacted by the landfall construction works corresponds to approximately 2 ha. Campsites are areas that are already existing and within the scope of operation, and no construction work will be carried out regarding soil removal perspective. As a result, no additional visual impact is expected during Phase 2 as the Phase 2 pipeline will also be constructed within the existing facility boundaries.

Emission of light

Construction activities are planned to be performed during 16 hours a day. Regarding the current site conditions that there already exists lighting due to security and operational reasons; it is expected that additional artificial lighting will generally not be necessary during construction. However, on some occasions it may be necessary to work at nighttime and hence artificial lighting may be used. In addition, some construction areas may have to be illuminated for security reasons. Also, accommodation camps will be illuminated for security reasons.

Regarding the current conditions of the site where SGFD phase-1 onshore structures are in operation; the site and its surrounding are lightened in order to execution of the operations and also for security reasons. Therefore, during the construction activities of the Project, there will be no need for additional lighting for execution of the construction.

Mitigation measures

The following mitigation measures shall be implemented to mitigate the effects of the impact factors.

Removal of soil

- Limits of construction areas will be clearly marked or fenced in order to avoid impacts outside this area;
- No construction activities will be carried out in the eastern section of the Phase 2 pipeline footprint, given the presence of endemic and CH-triggering flora species;
- All vehicles will drive on designated routes unless otherwise authorized, and off-road driving will be strictly prohibited;

Emission of light

- If necessary, agreements will be taken with surrounding receptors and local communities to identify and implement measures to reduce unwanted lighting.
  - Light emissions will be focused within the Project Area boundaries.
  - Lights will be mounted as low as practicable.
  - Shielded light fittings and directional lights will be used to manage light spill.
  - Use of artificial light will be limited to what required to maintain a safe working environment during construction activities past sunset and before sunrise.
  - Unnecessary lighting will not be used, including lights in unused areas, decorative lighting, or lighting that is brighter than needed for the task being carried out.
  - Where practicable, timers and motion sensors will be used to turn off lights when not in use (e.g., sunset switch on, timer off for lighting used for walkways, car parks, and roads).

Residual impacts

The table below summarizes the impacts caused by the identified impact factors on the component assessed.

Based on the baseline conditions of the assessed component, the project characteristics and actions, as well as the proper implementation of the mitigation measures proposed above, a potential **negligible negative impact** is expected on visual aesthetics during the construction phase.

Table 7-58: Residual impact assessment matrix for the visual aesthetics during construction phase.

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Removal of soil	Duration:	Medium	Medium-low	Short-term	**Negligible**	Low	**Negligible**
	Frequency:	Frequent					

	Geo. Extent:	Project footprint					
	Intensity:	Negligible					
Emission of light	Duration:	Medium	Medium-low	Short-term	**Negligible**	Low	**Negligible**
	Frequency:	Concentrated					
	Geo. Extent:	Project footprint					
	Intensity:	Negligible					

Monitoring measures

The following monitoring measure shall be implemented to assess the true effects of the project on visual aesthetics during the construction and verify the effectiveness of the mitigation measures.

- Verification of number, type, attendance and outcomes of stakeholder engagement activities.
- Verification of the number of grievances received and percentage of grievances resolved positively.

7.4.12.1.2 Operation phase

Impact factors

The impact factors from the Project activities potentially affecting visual aesthetics during operation phase are listed in the following table.

Table 7-59: Project actions and related impact factors potentially affecting visual aesthetics during operation phase.

Project actions	Brief description	Impact factors
FPU/infrastructure operation offshore	During the operation phase, the following new onshore and offshore infrastructures will be present: Onshore part of the Phase 2 pipeline FPU 170km offshore for processing extracted natural gas Buoyancy modules that serve to identify the location of the pipeline on the sea surface.	■ Presence of new offshore infrastructures ■ Emission of light

All the impact factors identified are described below and assessed in the matrix that follows.

- **<u>Presence of new offshore infrastructures</u>**

During the operation phase, impacts on visual aesthetics will be generated by the additional offshore infrastructures, namely the buoyancy modules.

The design and placement of the buoys have been carefully considered to blend harmoniously with the natural surroundings. They are small in size and will be spaced out appropriately to avoid overcrowding the area. For this reason, it is anticipated that the visual impact it will create will be negligible during operation phase. At the same time, since the FPU will be located 170 km from the coast, it is not expected to cause any visual impact (see below figure showing theoretically visible area).

- **Presence of new onshore infrastructures**

In the sight analysis given in the ESIA Report of the SGFD Phase-1, a digital elevation model of open-source ALOS DEM data (~30 m) enhanced to 5 m horizontal resolution by interpolation was used. This elevation model data was levelled to obtain a facility area ground level of 7 m. Consequently, the elevation data model was applied by using the Viewshed algorithm of the Global Mapper software. Sight was calculated including all the points within a circle with a radius of 5 km, assuming that there was a lighting post at a height of 10 m at a point closest to the sea, which was selected in the facility region. The results of this analysis are shown in the figure below; the areas coloured in pink are those from which the Site is theoretically visible.

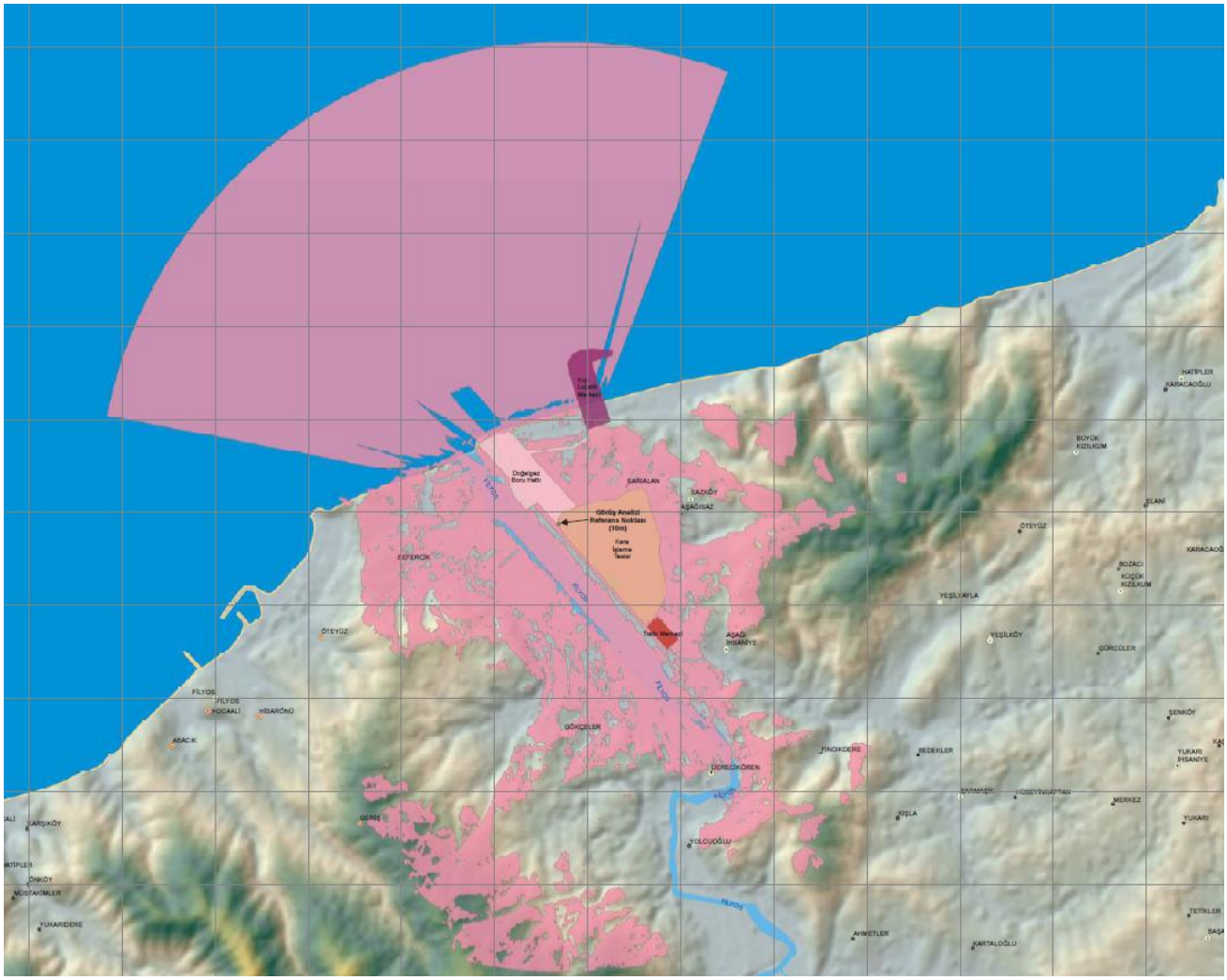

Figure 7-5: Map of the model results showing the Theoretically Visibility of the Area (source: SGFD Phase-1 ESIA Report)

The onshore part of the Phase-2 pipeline will go through within the boundary area of existing SGFD (see Figure 7-6 and Figure 7-7). The visual impacts of the existing SGFD components were evaluated in the disclosed ESIA of the Phase-1. Regarding the baseline conditions of the site presented in Chapter 6.4, it is expected that the overall aesthetic condition of the AoI remains relatively unchanged.

Figure 7-6: Drone image of SGFD SITE Onshore Facilities, Campsites, Sazköy and Planned Phase-2 Pipeline

Figure 7-7: Drone image of SGFD SITE Onshore Facilities, Campsites, Filyos River and Planned Phase-2 Pipeline

- **Emission of light**

With regard to the current conditions at the site, there has been lightning in the existing facility, port and, vessels in the port at nighttime. The impact of light emissions was evaluated in the disclosed ESIA Report of the SGFD

Phase-1. As for the operation of Phase-2, it is important to note that the onshore components will be located within the SGFD area. The SPVs used during this phase will be similar to the vessels currently in operation, and the buoyancy modules that identify the pipeline's location will be positioned close to the existing ones. Therefore, it is anticipated that the overall aesthetic condition of the AoI will remain relatively unchanged.

Mitigation measures

Since any additional negative visual impacts are not expected due to the Project, the mitigation measures defined in the disclosed ESIA of the SGFD Phase-1 and relevant management plans shall be kept implemented.

Residual impacts

The table below summarizes the impacts potentially caused by the identified impact factors defined above.

Based on the baseline conditions of the assessed component, the project characteristics and actions, as well as the proper implementation of the mitigation measures proposed above, a potential **negligible negative impact** is expected on visual aesthetics during the operation phase.

Table 7-60: Residual impact assessment matrix for the visual aesthetics during the operation phase.

Impact Factor	Impact Factor Features		Component Sensitivity	Impact Reversibility	Impact Value	Mitigation Effectiveness	Residual Impact Value
Presence of new offshore infrastructures	Duration:	Long	Medium-low	Short-term	**Negligible**	Low	**Negligible**
	Frequency:	Continuous					
	Geo. Extent:	Project footprint					
	Intensity:	Negligible					
Emission of light	Duration:	Long	Medium-low	Short-term	**Negligible**	Low	**Negligible**
	Frequency:	Continuous					
	Geo. Extent:	Local					
	Intensity:	Low					

Monitoring measures

The following monitoring measure shall be implemented to assess the true effects of the project on visual aesthetics during the construction and verify the effectiveness of the mitigation measures.

- Verification of number, type, attendance and outcomes of stakeholder engagement activities.
- Verification of the number of grievances received and percentage of grievances resolved positively.