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15. Land Ownership and Use

15.1 Introduction

This Chapter of the ESIA describes the context of the Öksüt Project in relation to land use, land use rights and shepherd use of grazing land. It then describes potential impacts on land use associated with the construction, operational and decommissioning phases of the Öksüt Project. Land use impacts are considered both for direct land take (to allow for the construction of the mine and associated facilities) in addition to indirect impacts associated with restricted access to land or services provided by the land.

15.1.1 Objectives

The specific objectives of this land ownership and use impact assessment are to:

- Describe land ownership and use baseline for Turkey, Kayseri Province, Develi District and neighbourhoods in the social study area;
- Identify the potential positive and negative impacts of the Project;
- Develop attainable mitigation measures to enhance positive impacts and reduce or avoid negative impacts;
- Develop management and monitoring measures to be implemented throughout the life of the Project.

15.2 Summary Policy Context

See *Chapter 13* for the policy context.

15.3 Scope and Assessment Methodology

See *Chapter 13* for the scope and assessment methodology.

15.4 Baseline

This section sets out the baseline conditions regarding land ownership and use and considers:

- Status of land within and surrounding the EIA Permitted Area;
- Land use within and surrounding the EIA Permitted Area;
- Use of natural resources associated with land within and surrounding the EIA Permitted Area;

15.4.1 Project Land Area

The proposed Öksüt Project EIA Permitted Area covers a total of 1,243.67 ha. The final fence line has been optimised to minimise land take and will comprise a smaller area of 990.20 ha. When taking into consideration the additional land required for the access road and powerline, the total land requirements are approximately 1.7% of the total land in three affected neighbourhoods, Epçe, Öksüt, and Yukarı Develi (comprised of four neighbourhoods, Yedek, Kopçullu, Camikebir and Güney Yukarı).

Of the EIA Permitted Area, 23% is forest land, 76% pastureland, and the final 1% is comprised of 8.3 ha of privately owned land within the EIA Permitted Area that is not used for agricultural purposes.

The access road to the mine site is estimated to require approximately 140 ha and will be constructed in relatively unused land on the edge of the cultivated land on land that is not used as pastureland for

grazing animals. The access road has been located to bypass and avoid the settlements of Epçe, Gömedi, and Yazıbaşı and its route is shown in Figure 15-1.

Project land requirements are summarised below.

Table 15-1: Project Land Requirements

Project Feature	Land Used (ha)	Comments
EIA Permitted Area	1,243.67	The full area permitted for mining activities
Mine Site fenced area	990.20	The actual area that will be inside the security fence and not accessible to the public
Access Road	140	Final road will be 10 m wide
Powerline	0.75	75 poles/towers of 10 m ² each

Land required for the 154 kW powerline will start in Çayırözü and pass through four other neighbourhoods, Soysallı, Sindelhöyük, Tombak and Zile. The powerline will consist of 75 towers and its route and the tower location is shown in Figure 15-2.

Figure 15-3 shows the powerline route with the existing powerline shown to highlight the already modified nature of the landscape.

Figure 15-1: Access Road Route

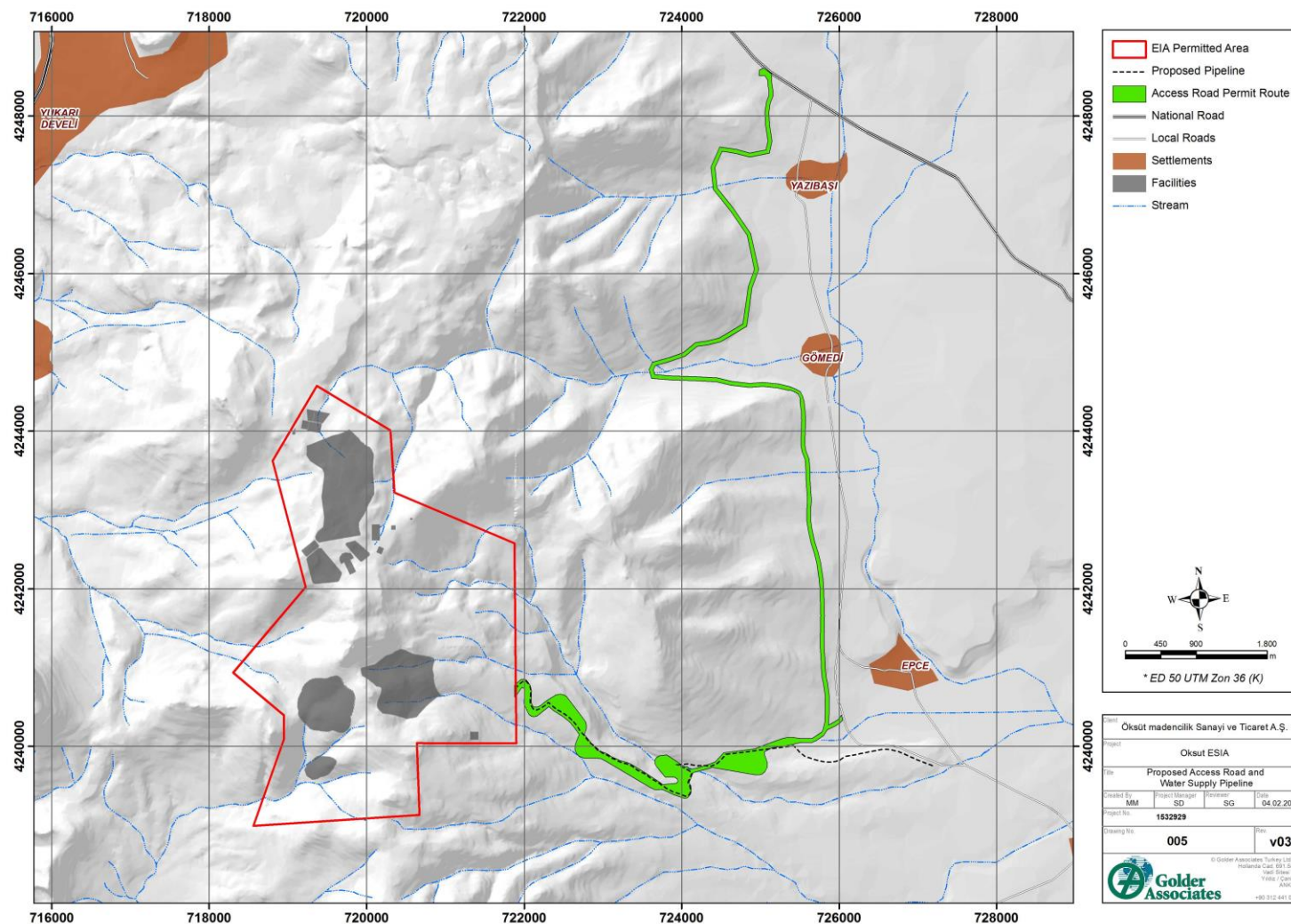


Figure 15-2: Powerline Route and Towers

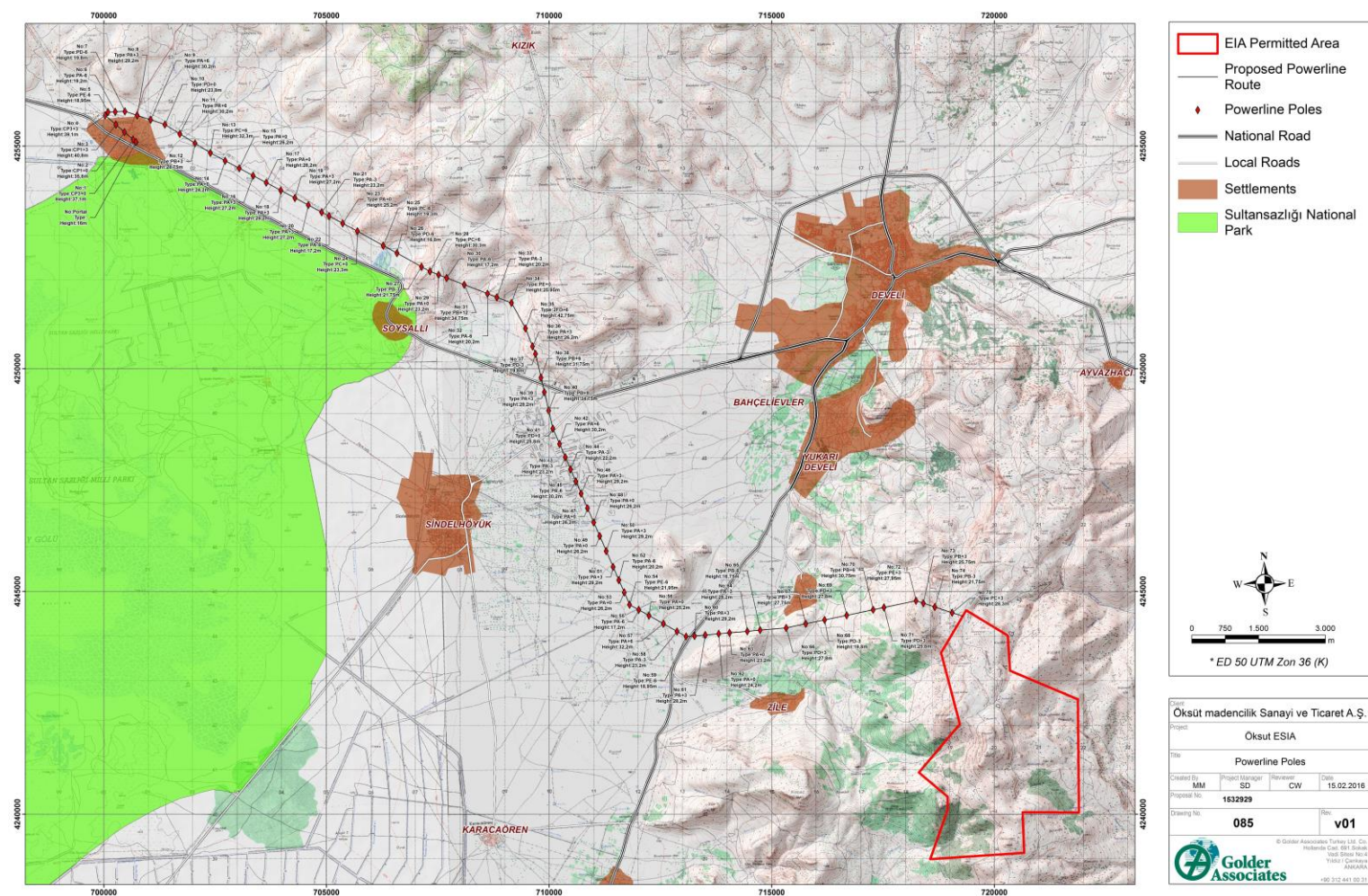
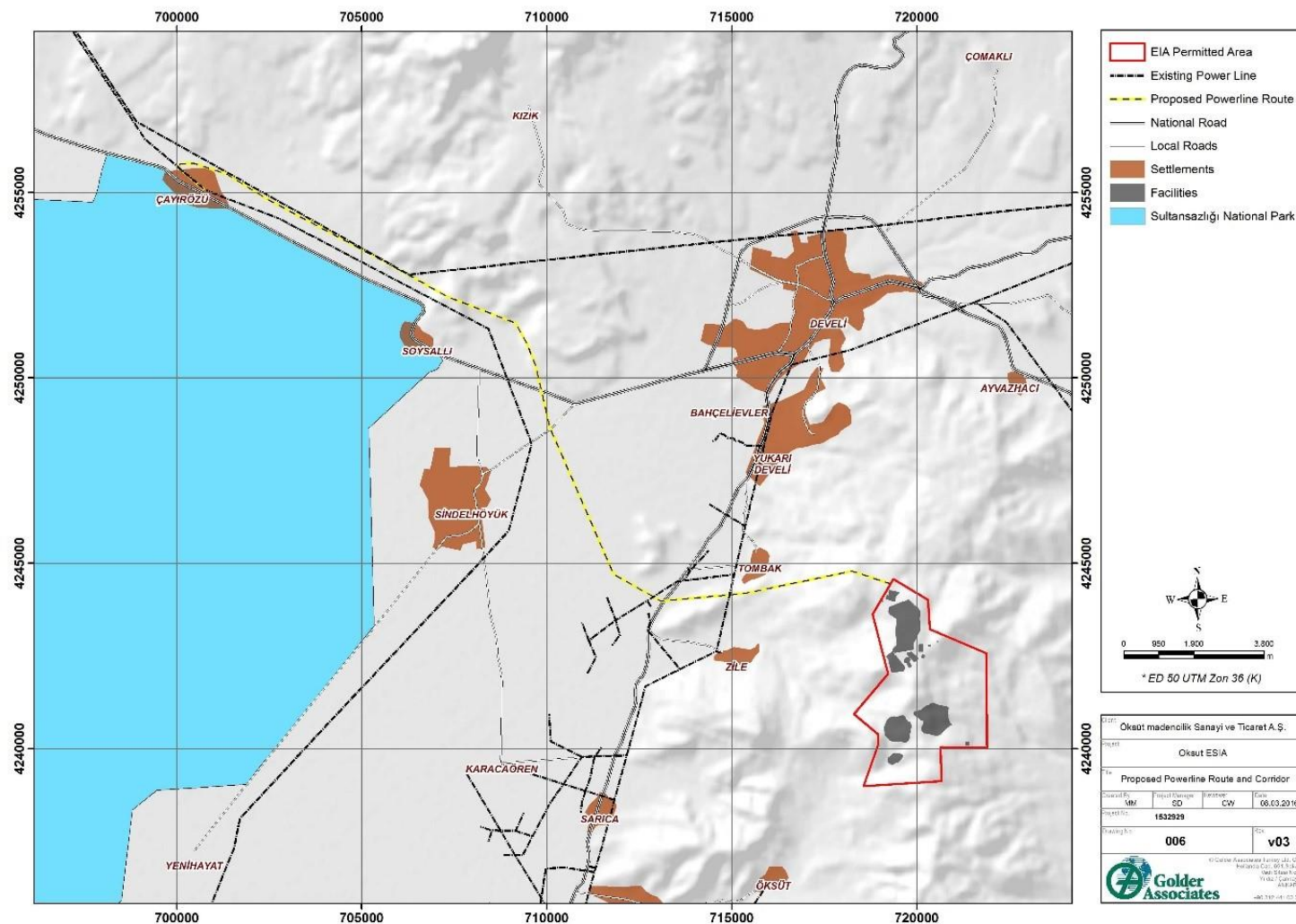


Figure 15-3 Powerline Route Showing Existing Powerlines



Initial land ownership investigations for the proposed access road and water supply pipeline began in January 2015 and were re-assessed in January 2016 by a land use survey programme undertaken by the University of Ankara, Department of Real Estate Development and Management. The cadastral mapping process identified three key land ownership classifications for the route including pasture, treasury and private land, for which ownership has been identified.

Considering some of the EIA Permitted Area is forestry land it is an obligation to prepare a forest rehabilitation plan according to Forestry Law Article 16¹. The Regional Directorate of Forestry provided a formal opinion on the Öksüt project site rehabilitation at the Project scoping stage and required a forest rehabilitation plan to be submitted as part of the national EIA process. The Turkish EIA has been submitted for approval, along with the forest rehabilitation plan² that is consistent with the opinion of the Regional Directorate of Forestry provided during the EIA Scoping Process. Approval of the EIA has been granted and the necessary permitting and approvals is being obtained from the Regional Directorate of Forestry (see *Chapter 5: Project Description*).

Land administration and ‘neighbourhood’ status

Changes in the administrative structure of communities across Turkey have resulted in the villages of the province losing their ‘village’ status and a conversion to a status of ‘neighbourhood’ of a municipality. This conversion occurred under the *Law No 6360 on the Establishment of Municipalities and Twenty Seven Districts in Fourteen Provinces and on the Amendments on Decree Laws issued in the Official Gazette No 28,489 of December 6, 2012*.

With commencement of this law, the province and district are no longer ‘rural’ populations and instead, these are now categorised as urban settlements. The implications for land ownership include that in the Project Area, that some common lands that were the responsibility of the *muhtar* have been transferred to the Develi Municipality in a land consolidation process. The land consolidation process seeks to reduce costs and maximise land use potential through the consolidation of fragmented land parcels, which have been created during the land inheritance process. Small parcels of land are divided between family members, resulting in a large number of uneconomic land parcels. The land consolidation process seeks to reconcile these small pieces of land and unlock the agricultural potential currently being underutilised in much of the rural region.

15.4.2 Land Uses

Land Use Classification

Land in Turkey is classified depending on its capability to be used for agricultural purposes. Assessment of land into these categories was carried out under the supervision of General Directorate of Rural Affairs in 1996, resulting in the three main categories and eight classes described under the Turkish Land Use Capability Classes (LUCC).

The first category covers Classes I to IV, and describes land which is suitable for cultivation and animal husbandry. The second category covers Classes V to VII, which are unsuitable for cultivation but which can support perennial plants when intensive conservation and development practices are applied. The third category contains Class VIII, which is suitable only for wildlife, sports and tourism-related activities³.

¹ Regulation for Application of the Forestry Law Article 16. Number: 28976 Date: 18 April 2014 describes the format of the rehabilitation plan

² Prepared by “Abon Ormançılık Trz. İnş. Taah. Tic. Ltd. Şti.” and is presented in the Turkish EIA report Appendix 10

³ SRK, 2014

National level

The total land area of Turkey is 78,534,470 ha, with 31.1% of this area comprising agricultural land, 27.6% of forest and 18.6% pasture and grassland⁴.

The European Union ran a project investigating land cover in Turkey, Corine (Coordination of Environmental Data Project – Environmental Information Order) in 1990, 2000 and 2006. Comparison of data from this period demonstrates that nationally there was:⁵

- An increase in artificial areas trending from 1.23% in 1990 to 1.61% in 2006
- A decline in the ratio of agricultural land from 42.92% in 1990, to 42.34% in 2006
- Variable ratios of forests and semi-natural lands (around 54%) and wetlands (around 0.33%) in the period investigated
- An increase in the ratio of water bodies from 1.52% in 1990 to 1.64% in 2000 (reportedly due to dam construction).

The increase in artificial areas (which includes residential areas, industry, transportation areas; as a result of increasing populations, urbanisation and industrialisation) resulted in a decrease of agricultural land. Table 15-2 shows the cover as estimated through the surveys 1990 – 2006.

Table 15-2: Land use and land cover data for Turkey⁶

	Corine 1990	Corine 2000	Corine 2006
Forests and semi-natural areas	54.00%	53.89%	54.04%
Agricultural Areas	42.92%	42.60%	42.34%
Water Bodies	1.52 %	1.64 %	1.64 %
Artificial Surfaces	1.23%	1.56%	1.61%
Wetlands	0.33%	0.31%	0.36%

Provincial and District land use

In Kayseri Province the majority of the land is classified as Class VII, i.e. suitable for cultivation and animal husbandry, and of the Kayseri land area, Develi comprises 11.2%. The land use distribution of Kayseri province and Develi district is given in Table 15-3. The majority of land is used for dry farming both in Kayseri (33.5%) and Develi (27.4%), while pasture plays a more significant role in Develi (25.79%), compared to Meadow land at the Provincial level (30.54%).

Table 15-3: Land Use in Kayseri Province and Develi District⁷

Land Use	Develi (ha)	%	Kayseri (ha)	%
Dry Farming (fallowed)	52,118.00	27.43	565,293.00	33.52
Pasture	49,003.00	25.79	63,910.00	3.79
Other Lands	40,536.00	21.34	16,348.00	0.97
Forest	17,219.00	9.06	111,100.50	6.59
Meadow	10,223.00	5.38	515,118.00	30.54
Moorland	8,873.00	4.67	60,443.00	3.58
Irrigated Agriculture	6,149.00	3.24	69,573.00	4.13

⁴ Ministry of Forestry and Water Affairs – General Directorate of Forestry, Forestry Assets of Turkey (2014)

⁵ Ministry of Environment and Urbanization (2012) Environmental Indicators (<http://forum.eionet.europa.eu/nrc-state-environment/seris/reports/603/?country=Turkey>)

⁶ European Environment Agency (2015) <http://www.eea.europa.eu/soer-2015/countries/turkey>

⁷ Environmental Status Report of Kayseri Province, 2011

Land Use	Develi (ha)	%	Kayseri (ha)	%
Garden (irrigated)	1,965.00	1.03	8,319.00	0.49
Vineyard (dry)	1,816.00	0.96	18,194.00	1.08
Settlement (high density)	1,000.00	0.53	13,938.00	0.83
Insufficient Irrigated Agriculture	558.00	0.29	4,014.00	0.24
Garden (dry)	359.00	0.19	3,073.00	0.18
Vineyard (irrigated)	160.00	0.08	1,210.00	0.07
Airport	-	-	411.00	0.02
Water body	-	-	4,251.00	0.25
Industrial Area	-	-	1,787.00	0.11
Non-agricultural Land	-	-	1,630.00	0.10
Dry Farming (without fallow)	-	-	908.00	0.05
Military land	-	-	560.00	0.03
Settlement (low density)	-	-	19.00	-
TOTAL	189,979	100.00	1,686,573	100.00

Anecdotally, it has been suggested that the total area dedicated to agricultural fields in Kayseri has decreased since the introduction of the Inheritance Law. Turkish inheritance law (*Miras*) aims to protect the extended family and imposes a reserved portion or statutory share for the benefit of the extended family and disbursement between heirs⁸. This means it is not possible for an entire property to go to the surviving husband or wife⁹, which can result in fracturing of lands. This law enabled land parcels to be subdivided and so, these small field sizes can become uneconomical for agricultural production. Although there are a small number of irrigated fields in Kayseri, an increase in agricultural efficiency has been recorded due to the modernization of agricultural equipment and the expansion of the use of fertiliser¹⁰.

Protected Areas in the Region

All protected areas fall outside the Project Area, including the Sultan Sazlığı Wetland and National Park, the Zamantı River Wetland and the Erciyes Winter Sports Tourism Centre. These areas are discussed further with respect to biodiversity and water and potential interactions with the Project in *Chapter 8: Biodiversity* and *Chapter 10: Water Resources*. Archaeological sites surrounding the EIA Permitted area are addressed in *Chapter 18: Cultural Heritage*.

On the 29th September 2014 the Kayseri Management of Culture and Tourism provided OMAS with a letter informing them that there were no cultural heritage artefacts or places of first or second class classification or cultural sites and/or buildings in the mine operation site (EIA Permitted Area) were identified. The letter confirming this is provided in *Annex E*.

In December 2015, the Ministry of Environment and Urbanisation provided an official opinion to confirm that there are no protected or restricted areas around or along the powerline route in terms of law No. 2863 on the protection of cultural and natural assets. The letter confirming this is provided in *Annex V*.

⁸ <http://www.admdlaw.com/succession-in-turkey/#.Vfz4nrRzWfR>

⁹ <http://turkey.angloinfo.com/money/pensions-wills/inheritance-law/>

¹⁰ Environmental Status Report of Kayseri Province, 2013

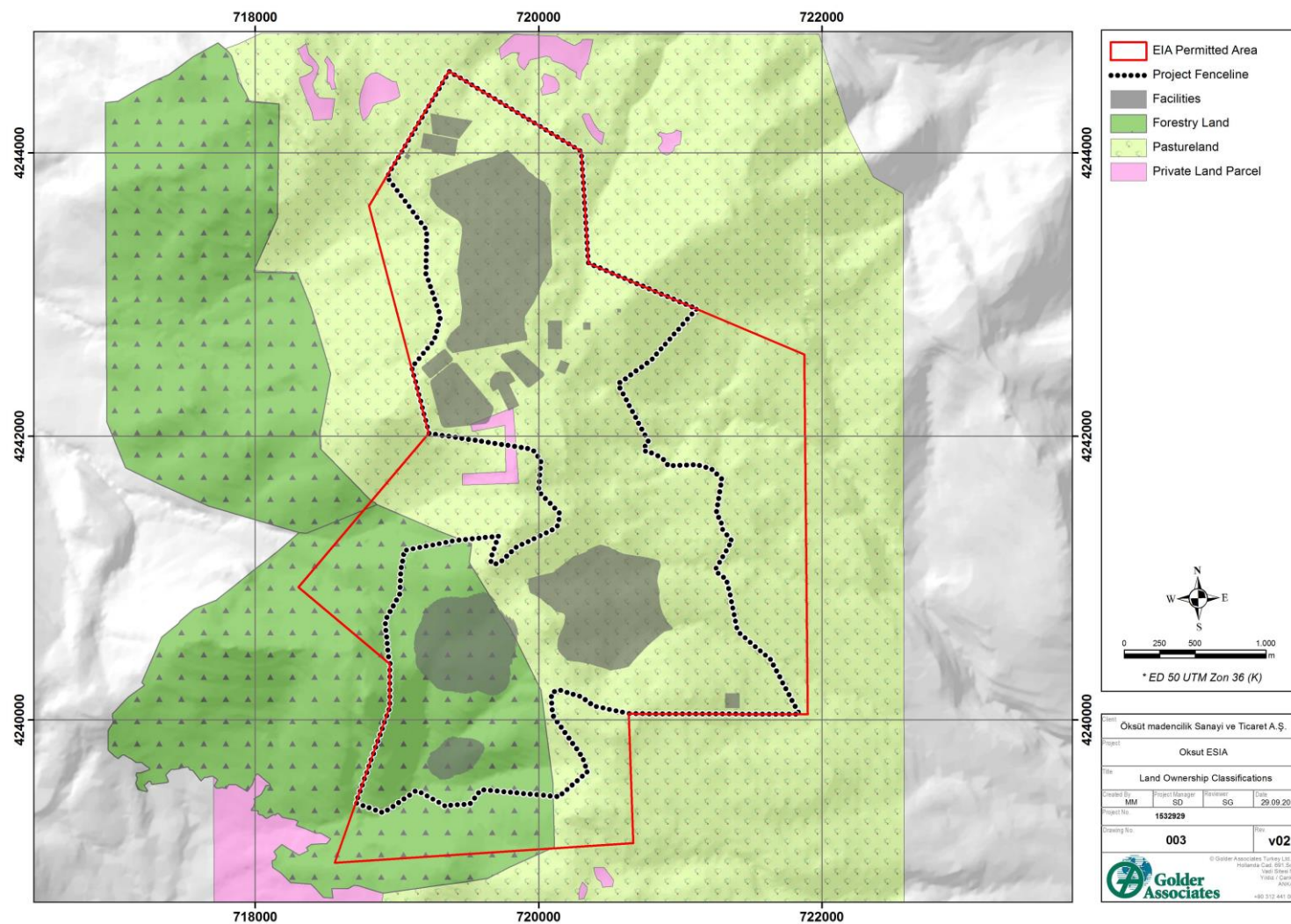
Licence Area Land Classification and Ownership

Almost half of the Licence Area (a larger area than the EIA Permitted Area) is classified as suitable for wildlife, sports and tourism-related activities and so is considered not suitable for agriculture or animal husbandry, as shown in the four land use classification categories within the Licence Area:

- Class III comprising 1.22%
- Class IV comprising 7.54%
- Class VI comprising 6.92%
- Class VII comprising 42.17%
- Class VIII comprising 49.22% of the License Area

Land ownership in the EIA Permitted Area is predominantly Government-held. There is one parcel of private land within the Project Area. This is owned by 27 different families / persons from Öksüt and Zile and is an old, historical, land holding. There is some discrepancy over the boundaries of the land parcel and the land owners are currently undertaking a legal process with the Government to define the boundaries. OMAS report no opposition to the Project from these land owners and once the legal boundaries have been confirmed a "willing buyer - willing seller" transaction is planned to be conducted, with expropriation as a last resort if land ownership issues cannot be resolved before OMAS requires the land to meet the Project construction schedule. This land parcel is not immediately required for construction, which will allow time for the land acquisition process to be concluded without the need for expropriation. Figure 15-4 shows the land ownership in the EIA Permitted Area and immediate surrounds, with key Project infrastructure footprints.

Figure 15-4: Land ownership in the EIA Permitted Area



Neighbourhood land use

The data presented in this section is sourced from the baseline research field investigations. This included focus group discussions with male and female neighbourhood residents (in separate groups), and discussion on accessibility of lands for agricultural and/or cropping purposes and historical land use context of note for the neighbourhoods in the study area. An additional activity as undertaken with the female research participants of community mapping, which documented key land uses in and around each neighbourhood and was followed up by additional discussion to identify and better understand use of the land and other social assets in each neighbourhood. Data from both male and female groups are described by village in this section. As the areas are based on participant descriptions, use areas described may be approximate only.

Zile

Baseline research¹¹ described the land use in Zile as predominantly private land, as follows:

- 75% private land
- 10% pastureland
- 5% treasury
- 5% foundation land
- 2% municipality land
- 3% common pastureland of Zile and Sarıca

Land consolidation is still in progress (i.e. transfer of village land to the Municipality); however the majority of this process has been completed. It was reported that there were some households engaged in land purchase, however this has decreased with the completion of land consolidation, resulting now in stability of land ownership in the neighbourhood. Irrigated agriculture is practiced in Zile and there is a slaughterhouse located approximately 300 m east of the neighbourhood centre.

Öksüt

The land area of Öksüt is 300 ha, after transfer of the Öksüt pastureland (approximately 6 ha) from the village to the Develi Municipality. It was reported during baseline research that, prior to land the land transfer to the municipality, the *muhtar* was renting pasturelands to villagers for 3,500 TRY for three years duration¹². Currently, there are approximately 25 households who rent out their land because they are elderly or do not own agricultural equipment. Öksüt residents noted that they purchase lands from Gazi and Kopçu. As landowners, they then migrate to other provinces or abroad, and leave their lands to the local residents to rent, preferentially receiving crops instead of money in payment.

All lands within the Öksüt neighbourhood boundaries have title deeds and in Öksüt, inheritance of property was reported to be rare¹³, instead, property (whether agricultural land or property on which houses are located) is purchased via market transactions. Dry agriculture is practiced in Öksüt, and a large pasture area extends from the northwest of the neighbourhood.

Sarıca

In Sarıca, it was reported that the majority of land is fragmented, with each villager holding small land parcels¹⁴. All of the Sarıca lands are formally registered, although some of it is up to 7 or 8 km from the neighbourhood centre. It was reported in key informant interviews and focus group discussions that land owners formally rejected land consolidation rather than transfer these small holdings into

¹¹ Zile *muhtar* key informant interview

¹² Öksüt focus group discussions

¹³ This may reflect the experience of participants, or general practice that properties are not passed on through inheritance to avoid land subdivision.

¹⁴ Sarıca *muhtar* key informant interview

collective pastures. The total area of harvested land is 200 ha (both irrigated and dry agriculture) and there are 500 ha of pastureland and treasury land. Women reported that they do hold land in their own names; however this is managed by male family members. There are households in Sarıca that are renting land from Zile neighbourhood, however those in Sarıca do not rent their land out to households from other neighbourhoods. There is one seasonal workers' campsite on the north side of the neighbourhood.

Tombak

Participants in Tombak baseline research reported that they have no problems with their land, which is easily reached from the neighbourhood, at most, 3 km away¹⁵. Households from Tombak use land in Develi Mountain for grazing purposes which is outside the Project study area. There are four beekeeping and three poultry areas within approximately 600 m of the *muhtar's* office in Tombak.

Yazibaşı

In Yazibaşı, local residents have difficulties reaching their land because of poor roads, the farthest lands being 6 km from the neighbourhood¹⁶. All land is registered and there is no treasury or forest land belonging to the neighbourhood. Leasing of land is common, with the population who out-migrate seasonally renting their land to the local residents or other households living close to Yazibaşı. The *muhtar* reported that 80% of land is privately owned, while the remaining 20% is pastureland. There are two apple orchards, a livestock watering pond and one small block of pasture within approximately 600 m of the neighbourhood centre.

Gömedi

Gömedi land comprises approximately 7,500 ha in total. The residents reported no difficulties in accessing their land, the most distant of which is 3 km from the neighbourhood centre¹⁷. Dry farming is practiced and a herd of 60 cattle is kept. Leasing of land is very common in the neighbourhood but only to residents of Gömedi. All land is registered and has title deeds. The female population do not own land and the women participating in baseline research reported that the right of inheritance belongs to males.

Yukarı Develi

About ten households in Yukarı Develi practice dry agriculture. Every household in the neighbourhood is reported to have vineyards and keep poultry¹⁸. Approximately 19 households practice animal husbandry (sheep and goats) and almost half the households keep cattle and have benefitted from government support to improve these livestock. The nearest pastureland is approximately 600 m northeast from the village square. Additionally, there are 3-5 households engaged in beekeeping.

Epçe

It was reported during baseline research that the title deeds of land in the neighbourhood are not current; these were last updated in 1982-83, recording the names of the fathers of those who resided there at the time¹⁹. Families have chosen not to update these records due to financial reasons or to avoid land inheritance issues. This limits opportunities to benefit from Government support or grants to those that do hold current land deeds (about 10% of the village). Neighbourhood lands are easily accessible, the farthest about 4-5 km away. There is no forestry land belonging to the neighbourhood however there is a protected afforestation area of approximately 450 ha in the neighbourhood. Landowners tend to rent their lands out to people from the neighbourhood. Women in Epçe do not hold land deeds.

¹⁵ Tombak focus group discussions.

¹⁶ Yazibasi focus group discussions.

¹⁷ Gömedi focus group discussions.

¹⁸ Yukarı Develi focus group discussions.

¹⁹ Epçe focus group discussions.

Gazi

Leasing of land is very common in Gazi, and the residents rent lands from Sarıca, Karacaviran and Kopçu if required²⁰. In winter, people feed animals in their barns and in summer, they graze at Erciyes. However Gazi residents do not rent their own lands out to people from other settlements. Those that migrate out lease their land to local residents, and in return prefer to receive money instead of crops for rental. Gazi has foundation lands comprising 2% of the total land of the neighbourhood, while the remainder is privately held. Foundation land is land which belongs to a foundation, rather than an individual, and is used for charitable purposes. The nearest pasture area is about 200 m north of the village while treasury land is located approximately 500 m west of the village square, within neighbourhood limits.

Çayırözü, Sindelhöyük and Soysallı

Key informant interviews with *muhtars* and focus group discussions with community members were also held in the neighbourhoods of Çayırözü, Sindelhöyük and Soysallı to support assessment of the impacts of the powerline²¹.

In Çayırözü, lands along the powerline are mainly pasture with limited private ownership. In all three neighbourhoods much of the land is rented to agricultural companies from Develi and Kayseri.

Land and Water Resources within the EIA Permitted Area

The land within the EIA Permitted Area is used by seasonal and informal land users. The EIA Permitted Area comprises a mix of Treasury, Forest and Pasture land (Figure 15-4). In a 2015 survey, nineteen shepherds were recorded to be using the land within and around the EIA Permitted Area boundary on a seasonal basis.

The area in and around the EIA Permitted Area is considered a contiguous pasture area, and as such, separation between users is not formalised.

The water sources within the EIA Permitted Area are²²:

- 4 developed springs²³ / fountains
- 17 natural springs
- 4 surface water points
- 1 water depot²⁴

The water resources in the access road corridor are:

- 3 surface water points
- 2 water depots
- 2 developed springs / fountains
- 1 natural spring
- 1 Epçe water supply well

Table 15-4 describes the settlement, number of animals and type of animal shelter for the 19 users identified in the 2015 survey²⁵. It should be noted that the information in the table is based on locations of shepherds at the time of interview; they are mobile (except where 'permanent pen' sites

²⁰ Gazi focus group discussions.

²¹ OMAS field notes and social impact assessment prepared by Prof. Dr. Suavi Aydın from Hacettepe University for Selin İnş.

²² Estimated from the ESIA Study Areas map #9, August 2015.

²³ Photographs of developed springs/fountains are provided in Annex T.

²⁴ A water depot is a water storage tank, where water from springs or wells is collected. Photographs of water depots are provided in Annex T.

²⁵ OMAS survey, 8 July 2015.

are indicated), so the location is indicative only of the area in which that particular shepherd may graze the flock.

All shepherds own their own animals (i.e. none use a hired shepherd). The period of use of the pasture area is for about two months seasonally, starting when the snow melts and concluding when the pasture is dried in late summer. Following this, shepherds move their flocks to other areas with suitable feed, and usually rent this location for the rest of the summer. When the first snow comes again, the shepherds return to their home neighbourhood, and livestock are kept in barns/in the neighbourhood for winter.

One beekeeper was recorded as using the area around the EIA Permitted Area. Additional data collected with the beekeeper indicated his use of this area outside the EIA Permitted Area beside the existing road (between Yukarı Develi and the site) between May-October (i.e. when flowering commences). Hives are moved to a warmer location from September.

Table 15-4: Settlement, number of animals and shelter in the EIA Permitted Area²⁶

#	Settlement	# Bovine animals	# Sheep	Fixed/mobile shelter
1	Zile		147	Mobile pen
2	Zile	37		Mobile pen
3	Zile	50	350	Mobile pen
4	Öksüt		425	Mobile pen
5	Yukarı Develi		449	Mobile pen
6	Yukarı Develi		350	Mobile pen
7	Yukarı Develi		436	Mobile pen
8	Yukarı Develi		387	Mobile wire pen and stone pen
9	Yukarı Develi		233	Mobile pen
10	Yukarı Develi		299	Mobile pen
11	Yukarı Develi		351	Mobile wire pen and stone pen
12	Yukarı Develi		256	Mobile wire pen and stone pen
13	Yukarı Develi		220	Mobile wire pen and stone pen
14	Zile		350	Mobile pen
15	Zile		300	Mobile pen
16	Yukarı Develi		183	Mobile wire pen and stone pen
17	Yukarı Develi	Located beside the existing road		
18	Yukarı Develi	Located beside the existing road		
19	Yukarı Develi	70 beehives, Located beside the road		

Additional surveys were undertaken in January 2016 with land users and muhtars from key settlements near the mine site²⁷. These interviews were compared to government statistics on animal ownership, which showed discrepancies between official data and both the number of animals owned

²⁶ OMAS research, 8 July 2015

²⁷ Study undertaken by University of Ankara, Department of Real Estate Development and Management to support the development of a Livelihoods Restoration Plan for the Project.

and the number of users. However, even with discrepancies, the number of households actively involved in animal husbandry (registered and unregistered) in the area is approximately 55, the majority being from Öksüt, Zile, and Yukarı Develi. While land from Epçe is to be used by the mine site, there were no identified household practicing animal husbandry on this land. Key informant interviews did not indicate trends in over-grazing or a lack of pasture land, however, it is clear from the surveys undertaken that some areas in the mining site are considered favourable for herders moving animals, especially as it related to the availability of water sources for animals in the area.

15.4.3 Use of Natural Resources

The list of the natural resources available in the EIA Permitted Area is provided in Table 15-5. The natural resources are only collected for subsistence purposes, not for trading. The location of the available natural resources were identified during baseline participatory research by women of the neighbourhoods, and are marked on the Community Maps presented in *Chapter 16: Infrastructure and Services*. Most commonly collected are mushrooms, rosehip, sideritis²⁸ and thorn apple. Hunting for recreation was reported only in Gömedi.

Table 15-5: Natural Resources collected in the EIA Permitted Area²⁹

Neighbourhood	Available Natural Resources
Epçe	<ul style="list-style-type: none"> Mushroom Thyme (grows but is not collected)
Gazi	<ul style="list-style-type: none"> Bitter almond Blackberry Medical plants grow but are not collected Mushrooms (collected by the elderly for subsistence) Rosehip Sage Sideritis³⁰ (collected by the elderly for subsistence)
Gömedi	<ul style="list-style-type: none"> Garden sage Hunting - rabbit, partridge and quail (for hobby) Mushroom - collect 1-2kg for subsistence Pear Rosehip Thorn apple
Öksüt	<ul style="list-style-type: none"> Sage (collected by women & shepherds) Thyme
Sarıca	<ul style="list-style-type: none"> Manger (a herb used in cooking) Meşmelek³¹ Mushroom Rosehip
Tombak	<ul style="list-style-type: none"> Mushroom

²⁸ *Sideritis* (also known as ironwort, mountain tea and shepherd's tea) is a genus of flowering plants well known for their use as herbal medicine, commonly as an herbal tea.

²⁹ Baseline research, December 2014

³⁰ A flowering plant used in herbal medicine or for herbal tea, also known as also known as ironwort, mountain tea and shepherd's tea.

³¹ Wild plant collected by women for subsistence

Neighbourhood	Available Natural Resources
	<ul style="list-style-type: none"> Rosehip Sideritis Thorn apple
Yazıbaşı	<ul style="list-style-type: none"> Mountain pear - collected by both men and women Mushroom Rosehip Thorn apple Yılan pancarı (spinach-like wild plant - collected by 10 households)
Yukarı Develi	<ul style="list-style-type: none"> Amelanchier Mushroom Rosehip Sideritis Thorn apple Thyme yılan pancarı (spinach-like wild plant - especially in Öksüt and Gazi)
Zile	<ul style="list-style-type: none"> Mushroom Sideritis – located around the mine site however it exists in other places.

15.5 Impact Assessment

This section identifies and assesses impacts to land ownership and use in the study area for the Project construction, operations and closure phases.

Scoped In

Impacts on the study area land ownership and use will occur during the Project's construction, operations and closure phases. Anticipated impacts include:

- Permanent loss of land due to Project infrastructure (Construction, Operations and Closure phases);
- Permanent loss of access to land due to Project infrastructure and affecting land use (Construction, Operations and Closure phases);
- Temporary loss or disruption of livelihood activities (Construction phase).

Scoped Out

Issues that have been scoped out of this assessment for this aspect are:

Physical displacement causing resettlement:

- No construction of Project infrastructure will cause any household to move.

Impacts to natural resources collected by the communities in the study area (construction and operations phases):

- Natural resources used for hunting, medicinal plants, firewood and wild foods were investigated during the baseline research, and it was found that these are collected for subsistence only and that they are not specific to the EIA Permitted Area (i.e. that which will be fenced off at Project commencement) or the land area to be taken for construction of the access road.

Loss of access to apiary area near the EIA Permitted Area

- The beekeeper from Yukarı Develi uses the land outside the EIA Permitted Area along the existing road between the site and the EIA Permitted area. As such, the Project does not limit access to apiary areas.

15.5.1 Construction, Operations and Closure Phase Impacts and Mitigation Measures

Permanent Loss of Land Due to Project Infrastructure

Impact Assessment

Impact	Permanent Loss of Land Due to Project Infrastructure
Receptor Sensitivity³²	Medium
Impact Magnitude	Direct, long term, highly localised and certain to occur Medium impact magnitude
Significance	Minor adverse

Permanent loss of land relates only to land loss not to household displacement. As stated above, no household will require physical displacement. Land loss is associated with pasture or agricultural land in the EIA Permitted Area, for the poles along the powerline and for the access road to the mine site.

There are two instances in which private land will be permanently lost as a result of the Project. Within the EIA Permitted Area, there is one unused plot of private land. This parcel is jointly owned by 27 different families from Öksüt and Zile. The purchase of this land is subject to government efforts to clarify discrepancies over the boundaries of the area and the precise allocations between different land owners.

Along the powerline, of the estimated 75 towers required, 35 will be located on privately owned land and of those, only three will affect the land use (described below). Turkish laws stipulate the compensation to be paid to a private owner in these situations.

Receptor sensitivity is identified as medium. The impact is direct, long term, highly localised and certain to occur. In light of the limited use on the land, the magnitude is considered medium for a significance of **minor adverse** prior to mitigation.

Impact Mitigation

All permanent land loss linked to the EIA Permitted Area have been acquired through the Government as Pastureland or Forestland. The parcel of land owned by 27 different households has been delayed while courts clarify ownership status among the households. The court proceedings started prior to the Project and were initiated with the Cadastral Office by the various land owners.

For the powerline, compensation will be provided in accordance with Turkish regulatory requirements. This relates to acquisition of the land, not to the loss of income from loss of area for crops, to be covered in the following impact topic. This additional consideration will seek to meet the legal market value for the land, plus the replacement cost of any economic losses.

No private land has been purchased for the access road.

³² Sensitivity for social impacts, unlike environmental impacts that are linked to the quality and rarity of the receptor, is linked to the consequence of a change and whether a change would impair (or benefit) quality of life. "Very high" would seriously impair (or substantially improve) quality of life. "Low" would be a change from baseline conditions, but not impair or change the quality of life.

Audit reports will confirm that all transactions have been made according to the national legal requirements.

Residual Effects

Residual impact from the land purchase according to Turkish requirements are expected to be **negligible**.

Permanent Loss of Access to Land and Restrictions in Land Use Due to Project Infrastructure

Impact Assessment

Impact	Permanent loss of access to land and restrictions in land use due to Project infrastructure and affecting land use
Receptor Sensitivity	Medium
Impact Magnitude	Direct, long term, localised and certain occur High impact magnitude
Significance	Moderate adverse

Fencing of the EIA Permitted Area will result in restriction of access by existing informal land users in the area. OMAS has undertaken baseline research of users in this area and has determined that users are seasonal livestock herders that use the area as communal pastureland.

Exact locations and duration of use vary from year to year; shepherds move their livestock through the EIA Permitted Area and surrounding area for a period of approximately two months during spring and summer (i.e. following the period of winter snow melt until the available pasture has been grazed). Shepherds stay in tents (for mobility, to move with the livestock) and livestock are sheltered in either mobile pens or in permanent pens (made from local rocks). There are three such permanent pens in the EIA Permitted Area. Water for livestock is from water sources both inside and outside the EIA Permitted Area.

The area within the EIA Permitted Area does not include physical settlements; displacement will be temporary and economic related to the use of land currently used for seasonal grazing.

The current baseline identifies up to 55 different users that will be impacted by fencing the EIA Permitted Area. The users are predominantly from three neighbourhoods, Öksüt, Zile and Yukarı Develi. While Epçe is one of three neighbourhoods that will lose land as a result of the mine development, shepherds from the settlement were not identified as being regular users of the land. Of the three settlements losing pasture land, the total lost pasture is 15% of the total area of available pastureland.

This impact will be direct for those users, and the duration long term as it will occur seasonally for the duration of construction and operations phases. During closure the mine site area will be rehabilitated and security fencing will be removed (apart from around the open pit areas) to return as much of the area as possible back to its original land use and status. The impact will affect the localised area (i.e. within the fence line inside the EIA Permitted Area) the shepherds will be displaced from the EIA Permitted Area to other surrounding pastures.

The economic resilience of the impacted households to land take is expected to be high. During construction and operations, the loss of access is of short (2-month) duration each summer season, and the area of land used within the EIA Permitted Area is one of a number of grazing areas used by the shepherds. At Project closure, the size of the fenced area will be reduced to safely allowable limits to enable, as far as practicable, restoration of pre-Project land uses. The area that will remain fenced post-closure (open pits which will be fenced for safety reasons) is not anticipated to be a significant proportion of the total overall Project Area pastureland and so recovery is estimated to occur within the mid- to long-term.

In addition to the impacts of pastureland use on local land users, a second type of economic displacement relates to the use of forest lands for mushroom gathering and the collection of forest wood. Baseline interviews indicate that this is only for personal consumption. No forest products are reported to be unique to the EIA Permitted Area.

In relation to the powerline, 75 towers will pass through 195 privately owned plots of land. However, in very few instances will this influence or change the land use and therefore the economic function of the land use. The powerline has poles located in the neighbourhoods of Çayırözü, Soysallı, Sindelhöyük, Tombak and Zile. Three towers will be located in agricultural areas where crops are planted. Up to 10 of the towers are located on either private or public pasture land, however these will not influence land usage. No other potential interruptions to land usage were identified³³.

In relation to the access road, the land needed will follow a 20 km corridor and pass through the edge of Yazıbaşı, Gömedi and Epçe neighbourhoods. OMAS designed the road to avoid the use of local roads, minimising community road safety issues. The road has been designed to follow the edge of cultivated farmland, avoiding pastureland, thereby avoiding any direct impact to economic activity. Interviews indicate that this transitional area between the cultivated land and the pastureland further up the hillslopes is not used as a specific pastureland area.

Receptor sensitivity is identified as high given the importance of land use for the households closest to the mine site. The impact is direct, long term, localised and certain to occur. Given that the quantity of land to be made unavailable is a small percentage and that other areas are reportedly available, the magnitude is considered medium. The overall significance rating is moderate adverse prior to mitigation.

Impact Mitigation

In applying the mitigation hierarchy to impacted land users in the EIA Permitted Area, OMAS has sought to avoid and minimise displacement as far as practicable. This has included:

- Alternatives analysis to confirm that alternative pasture areas (Erciyes and the area west of the EIA Permitted Area) are unlikely to be able to support additional livestock, either permanently or for renting during the period of impact.
- Fencing the minimum area of land for the minimum duration possible to maintain worker and public safety and minimise environmental and land use impacts in the EIA Permitted Area. The fence line has been “optimised” and is significantly smaller than the area of the EIA Permitted Area. It is anticipated that displacement will commence in the construction phase, be in place for the duration of operations, and at closure, will be reduced to key Project infrastructure areas (total duration 12 years).
- Undertaking baseline research to identify:
 - Impacted households
 - Alternative pasture areas
 - Livelihood restoration measures
 - Agreement on water restoration measures (conducted to date in Zile)
- Implementation of water restoration measures (renovation and construction of the animal watering areas in Zile).

The process for mitigation of the remaining unavoidable impacts on other informal and seasonal land users (economically displaced land users) is the preparation and implementation of the Livelihood Restoration Framework (OMAS-ESMS-LR-PLN-001). Implementation is an iterative process, responding to Project and contextual constraints. Additional efforts are ongoing by OMAS to develop

³³ Study undertaken by University of Ankara, Department of Real Estate Development and Management to support the development of a Livelihoods Restoration Plan for the Project.

the conceptual Livelihood Restoration Framework into an actionable Livelihood Restoration Plan (LRP).

Planning and implementation of mitigation actions to date will continue to focus on:

- Sequencing: where the focus is on priority land requirements to use available internal resources efficiently (e.g. prioritise area to be fenced, followed by land for associated facilities).
- Consultation: being responsive to results of consultation with affected people at all stages to ensure compensation & livelihood restoration is relevant, fair and sustainable, between different users from neighbourhoods.
- Participatory planning and flexibility: Using a consultation-driven and iterative process to implement agreed measures, ensuring needs of displaced land users participate in ongoing engagement activities.
- Livelihood restoration measures: Seek to approach livelihoods restoration measures with affected households in stages, to enable the Project to progress while implementing measures that have been agreed with all stakeholders. This includes implementation of water restoration measures while engagement with Government agencies and other organisations (as partners in delivering agreed measures) is ongoing.

To develop the LRP, further clarification on mitigation measures include:

- Engagement with and identification of impacted land owners and users.
- Gathering additional census information from affected stakeholders and consultation on the Draft Entitlements Matrix.
- Agreement and implementation of the Entitlements Matrix.
- Ongoing monitoring during the course of implementation of agreed compensation measures; including response to any grievances raised by affected stakeholders.
- Completion audit (2 years after commencement of Operations).

The acquisition of land for access roads, adjacent to pasture lands, is not expected to interrupt herding practices, but will affect movement of local residents moving their animals to and from upland pastureland. To minimize this impact, additional mitigation will include:

- Locating crossing points in consultation with shepherds.
- Providing road safety awareness training to local communities.
- Monitoring impacts on water depots and springs that make affect the movement of animals.

Residual Effects

Implementation of the Livelihoods Restoration Framework is an iterative process which anticipates that resilience of receptors to the impacts will be improved through support for alternative livelihoods and capacity building measures. The resulting significance of this impact is expected to decrease. However, the residual impact remains **moderate adverse** until the LRP is finalised.

Temporary Loss or Disruption of Livelihood Activities

Impact Assessment

Impact	Temporary loss or disruption of livelihood activities
Receptor Sensitivity	Medium
Impact Magnitude	Direct, medium term, highly localised and likely to occur Medium impact magnitude
Significance	Minor adverse

Temporary loss or disruption of livelihoods are linked to the construction period of the project when construction equipment and activities may interrupt normal economic use of land along the powerline or access roads.

The receptor sensitivity is considered medium for this temporary disruption. The impacts will be direct, medium term, highly localised and are likely to occur. The overall significance rating is minor adverse.

Mitigation

The iterative and temporary nature of the construction impacts requires iterative mitigation. Most important will be the Contractor Management Framework (OMAS-ESMS-CM-PLN-001), which stipulates the need for Contractors to follow the requirements of the OMAS Environmental and Social Management System. All contractors are subject to inspection and audit by OMAS prior to a contractors initial appointment and on an annual basis, as outlined in the Contractor Management Framework. In addition, any interruption or unanticipated impact from construction should be reported through the Grievance Procedure (OMAS-HSEC-PRC-005), which has been widely distributed among all potentially affected communities.

Residual Effects

Following implementation of mitigation measures described above, impacts related to the temporary impacts of construction are considered **negligible**.

15.5.2 Summary of Impacts and Mitigation Measures

A summary of potential impacts and proposed mitigation measures as described above are summarised in Table 15-6 below.

Table 15-6: Construction Phase Impacts and Mitigation Measures

Impact	Receptor	Receptor Sensitivity	Impact Categorisation	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans, Policies and Procedures	Residual Effect Significance
Permanent Loss of Land Due to Project Infrastructure	Land owners of parcel on EIA Permitted Area and towers for the powerline	Medium	Direct Long term Highly localised Certain to occur	Medium	Minor Adverse	<ul style="list-style-type: none"> Avoidance of operations and closure phase impacts through design. Adhere to legal compensation requirements under Turkish law. Reporting of final acquisition information in audit reports. 	Livelihoods Restoration Framework Stakeholder Engagement Plan	Negligible
Permanent loss of access to land and restrictions in land use due to Project infrastructure	Land users of project-affected lands in EIA Permitted Area, Access Road, Powerline	High	Direct Long term Localised Certain to occur	Medium	Moderate adverse	<ul style="list-style-type: none"> Avoidance of operations and closure phase impacts through design. Preliminary identification of impacted households Development of Livelihood Restoration Framework, including an outline of additional studies needed for appropriate entitlements Identification of optimal road-crossing points with shepherds Provision of road safety awareness training Implementation of water restoration measures 	Livelihood Restoration Framework Stakeholder Engagement Plan	Minor adverse
Temporary loss	Land users of	Medium	Direct	Medium	Minor	<ul style="list-style-type: none"> Contractor Management 	Contractor	Negligible

Impact	Receptor	Receptor Sensitivity	Impact Categorisation	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans, Policies and Procedures	Residual Effect Significance
or disruption of livelihood activities	project-affected lands in EIA Permitted Area, Access Road, Powerline		Medium term Highly localised Likely to occur		adverse	Framework	Management Framework Stakeholder Engagement Plan Grievance Procedure	

15.6 Monitoring Requirements

Table 15-7 specifies the Monitoring requirements for this aspect.

Table 15-7: Land Ownership Monitoring Requirements

Source Document	Monitoring Location	Parameters	Frequency
Stakeholder Engagement Plan OMAS-ESMS-SEP-PLN-001 and Grievance Procedure OMAS-HSEC-PRC-005	<ul style="list-style-type: none"> CR Office Communities 	<ul style="list-style-type: none"> Stakeholder Engagement Register Grievance register Commitments audit records Survey results with key stakeholders Water monitoring records (including participatory monitoring, as appropriate) 	<ul style="list-style-type: none"> Ongoing and monthly reviews Annual reporting for life of mine
Livelihood Restoration Framework OMAS-ESMS-LR-PLN-001	<ul style="list-style-type: none"> CR Office Communities 	<ul style="list-style-type: none"> Agreements with land users Records of livelihood restoration activities Compensation records for land owners and users Household income monitoring records Stakeholder Engagement Register Grievance register Commitments audit records 	<ul style="list-style-type: none"> Six-monthly monitoring of Livelihood Restoration Framework implementation Annual income survey of economically displaced households Completion audit two years after commencement of operations