

# Updated Baseline and Social Impact Assessment

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## Lebanon Wind Power

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## 1 INTRODUCTION AND OBJECTIVE

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Sustainable Akkar SAL and Lebanon Wind Power SAL (“The Project Companies”) are proposing to develop project-specific Environmental and Social Management Systems together with associated Environmental and Social management and monitoring plans (ESMPs) in order to take account of adequate mitigation measures intended to mitigate project impacts and improve the social and environmental outcomes in the project area. In this regards the Project Companies engaged the consortium led by IBIS Environmental Social Consulting South Africa Pty Ltd in association with ELARD S.A.L. as the local partner to deliver on the Environmental and Social (E&S) scope of work.

This document focuses on Lebanon Wind Power (LWP) Project and includes the updated socioeconomic baseline and Social Impact Assessment (SIA). The baseline is divided into two sections: the regional socio-economic baseline and the local socio-economic baseline for LWP area.

The objective of the Regional Baseline is to detail the socio-economic environment of the region surrounding the Project area in order to provide an accurate basis for the impact assessment, mitigation measures, and management plans. The regional baseline was carried with the following targeted key issues:

- Provide an overview of Socio-economic and demographic statistics in Akkar Governorate
- Analyse of socio-demographics of the population of Akkar including unemployment and economic sectors

The objective of the Local Baseline is to target the below in the direct area of influence (DAOI):

- Collect socio-economic baseline data in order to determine potential project impacts;
- Build a pre-project socio-economic baseline from which to measure project impacts;
- Identify project stakeholders; and
- Allow stakeholders to participate in the baseline process, and assist with identifying project impacts and sustainable mitigation measures.

Finally, the objective of the SIA is to provide a robust assessment of the potential socioeconomic impacts associated with planned project activities.

## 2 METHODOLOGY

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### 2.1 Baseline Methodology

#### 2.1.1 LITERATURE REVIEW

Literature review was undertaken to provide country level information and regional data for Lebanon and the Akkar Governorate. The regional baseline sought and gathered secondary data sourced from publicly available data most notably national and governmental reports.

## 2.1.2 Primary Data

Using a variety of research tools, primary data were collected for the local socio-economic baseline study. These research tools included surveys, focus group meetings, and key informant interviews.

## 2.2 Impact Assessment

Project's positive and negative impacts are assessed with reference to baseline socio-economic conditions and take into consideration the following:

- The type of the impact, including whether the impact is direct or indirect, and/or reversible and irreversible);
- The duration (i.e. temporal dimension) of the impact, including whether the impact is short, medium or long-term, and/or temporary or permanent;
- The extent (i.e. spatial dimension) of the impact to reflect the expected change that may take place at a national (Lebanon), regional or local (affected community or household) level;
- The magnitude of the impact which reflects the extent of change that is predicted from baseline conditions and the number of communities or households potentially affected;
- The sensitivity of the receptor, taking into consideration stakeholder value that reflects the importance of changing a receptor's current status;
- Gender and vulnerability considerations that are relevant to the impact being assessed; and
- The likelihood or probability of the impact occurring during the project to the receptor, based upon the project's aspects and professional experienced from similar projects in Lebanon and the Middle East and North Africa (MENA) region.

Impact magnitude is defined as below in **Table 2.1**

**Table 2-1 Definitions for Impact Magnitude**

Impact Magnitude	Definition
High	Very significant, permanent / irreversible change to key characteristics, livelihoods or features of the receptor's character or distinctiveness.
Medium	Significant, potentially permanent change, over the majority of the Project's site and potentially beyond, to key characteristics or features of the receptor's status, character or distinctiveness.
Low	Noticeable, temporary (during the project duration) change, over a part of the Project's site, to key characteristics or features of the receptor's character or distinctiveness.
Negligible	Noticeable, temporary (for part of the project duration) change, or barely discernible change for any length of time, over a small part of the Project's site, to key characteristics or features of the receptor's character or distinctiveness.

Receptor sensitivity is defined as below in **Table 2.2**.

**Table 2-2 Definitions for Receptor Sensitivity and Value**

Receptor Sensitivity and Value	Definition
High	Sensitivity: Receptor has a very low capacity to accommodate the impact. Value: Receptor has key characteristics which contribute significantly to the distinctiveness, and character of the socio-economic receptor (e.g. community health, physical security, social cohesion, living standards, livelihood condition, mental well-being, etc.).
Medium	Sensitivity: Receptor has a low capacity to accommodate the impact. Value: Receptor has key characteristics which contribute significantly to the distinctiveness and character of the receptor (e.g. very important to some households in an affected community, but not all).
Low	Sensitivity: Receptor has some tolerance to accommodate the impact. Value: Receptor only has characteristics which are important to few people or households.
Negligible	Sensitivity: Receptor is generally tolerant and can accommodate the impact. Value: Receptor characteristics do not make a significant contribution to local socio-economic conditions, living standards or mental well-being.

Impact significance has been calculated based upon the impact magnitude and the receptor sensitivity as illustrated in **Table 2-3**.

**Table 2-3 Impact Assessment Matrix**

Table 3:				
Impact Magnitude	Receptor Sensitivity / Value			
	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Negligible</i>
<i>High</i>	Major	Major	Moderate	Minor
<i>Medium</i>	Major	Moderate	Minor	Minor
<i>Low</i>	Moderate	Moderate	Minor	Negligible
<i>Negligible</i>	Moderate	Minor	Negligible	Negligible



### **3 REGIONAL SOCIO-ECONOMIC BASELINE**

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#### **3.1 LEBANON**

##### **3.1.1 Overview**

The population of Lebanon is estimated at 6.86 million in 2019, up from the 4.43 million estimated in 2013, which makes it the 108<sup>th</sup> most populated country in the world. No official census has taken place in Lebanon since 1932 due to the sensitive balance between the country's religious groups.

Lebanon occupies approximately 10,452km<sup>2</sup> of area, ranked 168<sup>th</sup> in the world for area. With an estimated population at over 6 million as of the year 2018, the population density is approaching 583 people residing per km<sup>2</sup> overall, ranked the 19<sup>th</sup> most densely populated country in the world (See Figure 3-1). The median age of the Lebanese population is at 30.5 years in 2018, with a total life expectancy of approximately 77.8 years of age.

There have been many migration waves in the country, as more than 1.5 million people emigrated from Lebanon between 1975 and 2011. Lebanon also hosts close to 1 million refugees and asylum seekers, most notably those from Palestine, Iraq, and Syria. As of 2019, it's estimated that there are 926,717 registered Syrian refugees in Lebanon escaping violence in their own country of which 244,931 in North Lebanon.

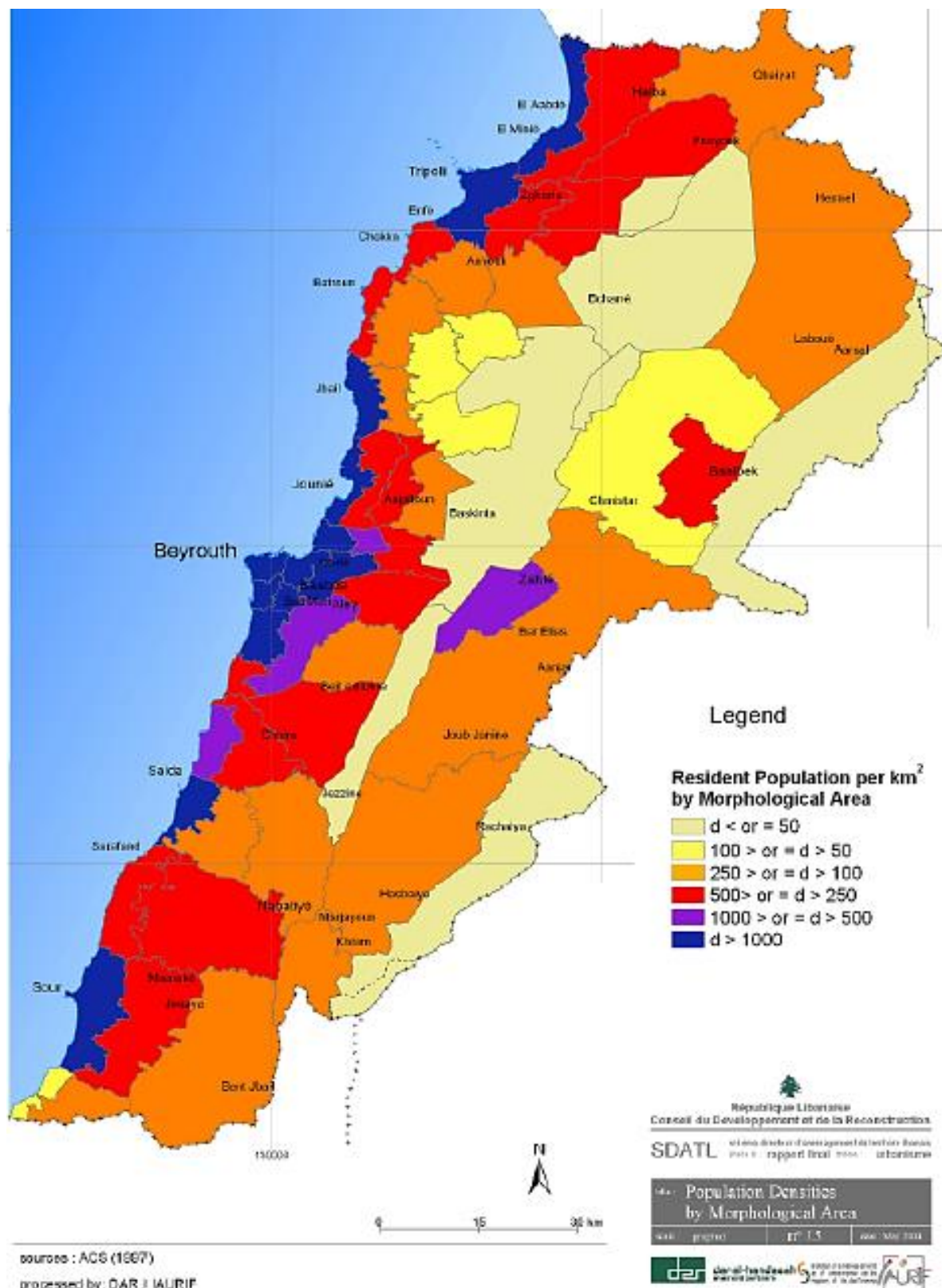


Figure 3-1 Population Densities of Lebanon

### 3.1.2 Religion

Evidence of civilization in the area predates recorded history, and Lebanon was once home to the maritime Phoenicians, a culture that existed for over 1,000 years. The region came under Roman Empire rule and eventually turned into the Empire's largest centre of Christianity before it was conquered by the Arab Muslims and then the Ottoman Empire. Today, the country is officially an Arabic speaking country. Even though the last official census was carried out in 1932, general estimates in terms of religion among the population are 54% Muslim following, 40.5% Christian following, and small percentages of a variety of other religions - including Buddhists, Mormons, and more.(WPR, 2019)<sup>1</sup>

### 3.1.3 Political System

Before the establishment of a democracy in Lebanon under the French mandate, feudal and tribal systems were prevailing in Lebanon. For example, under the Ottoman Empire, and in the frame of “mellah” system, each confessional community used to nominate a representative to negotiate with prevailing power structures. Remains of these systems persist in Lebanon, as underlying social organization, more particularly in remote regions, that have been long overlooked by the government, such as Akkar. One of the forms of this residuals systems are the big families structures (such as the Gemayel, the Frangieh, which have important political positions, but also the Jaafar). In this organization, one representative of the community is designated as a referent by the community members, based on different criteria (oldest or wisest of the group, etc.) to resolve matters related to the community such as money, weddings, territories, conflicts, and others.<sup>2</sup>

### 3.1.4 Socio-demographics

Monogamy is the more dominant form of relationships in Lebanon with nuclear households centred on one husband and one wife. However, polygamy is "permitted under Muslim law... [it is] generally regarded as both impractical and undesirable" due to the extra financial burden it places on the household. Authority is patriarchal, meaning the male is dominant in the household. Descent is patrilineal and is "traced through the father's lineage". It can be assumed that family residence is patrilocal, since all other aspects of the family are male-dominated (Collelo, 1989)<sup>3</sup>.

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<sup>1</sup> World Population Review (2019) Country Profile - Lebanon Profile. Available on <http://worldpopulationreview.com>. Accessed on 5<sup>th</sup> September 2019

<sup>2</sup> Dr. Roula Talhouk, PhD in Anthropology - Cultures and societies of the Arab and Islamic world, from Université

Michel de Montaigne Bordeaux 3, Director of the Center for Muslim-Christian Documentation and Research

(CEDRIC), Saint Joseph University of Beirut.

<sup>3</sup> Collelo, T., Library of Congress. Federal Research Division & Smith, H. H. (1989) Lebanon: A Country Study. Washington, D.C.: Federal Research Division, Library of Congress: For sale by the Supt. of Docs., U.S. G.P.O. [Pdf] Retrieved from the Library of Congress, <https://www.loc.gov/item/88600488/>.

## 3.2 AKKAR REGION

### 3.2.1 Overview

The Akkar Governorate is located in the far north of Lebanon, covering an area of 788km<sup>2</sup> or 7.5% of the total Lebanese territory, as shown in Figure 3-2. It has a population of around 400,000 inhabitants with a population density of around 500 people/km<sup>2</sup>, one of the lowest among all the Governorates in Lebanon, as shown in Figure 3-3.

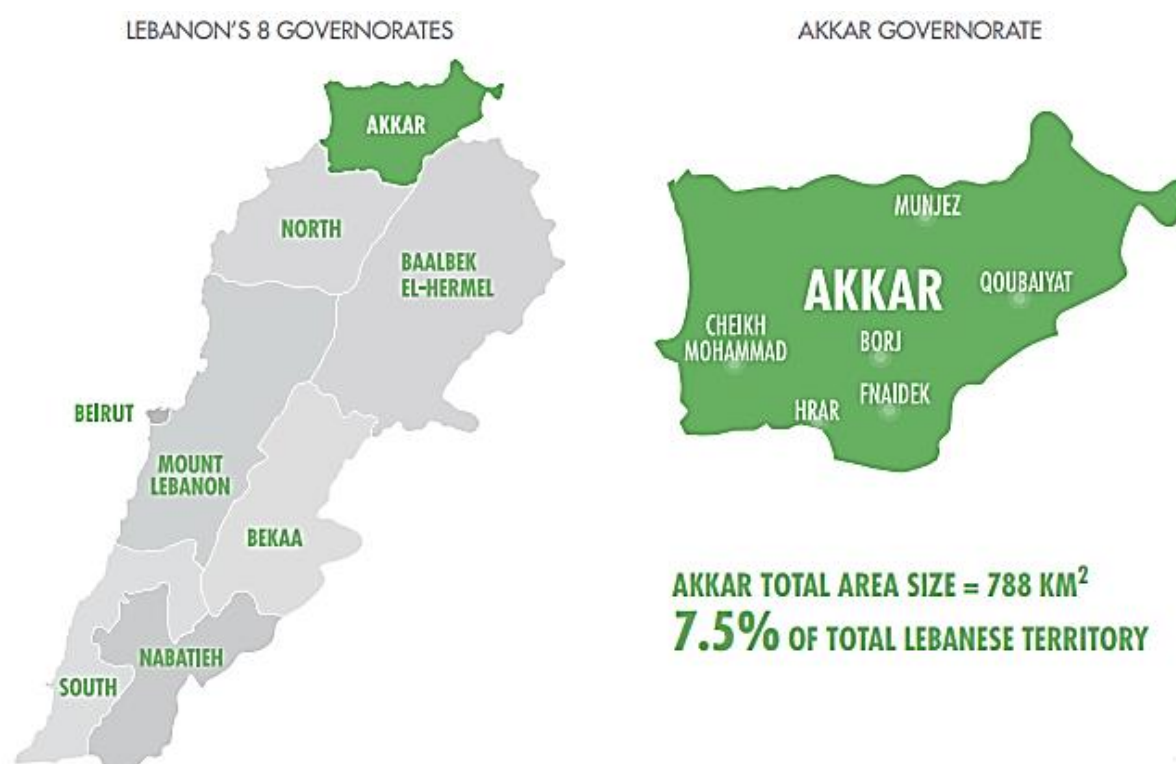


Figure 3-2 Location of Akkar Governorate. Source: UNHCR (2018)

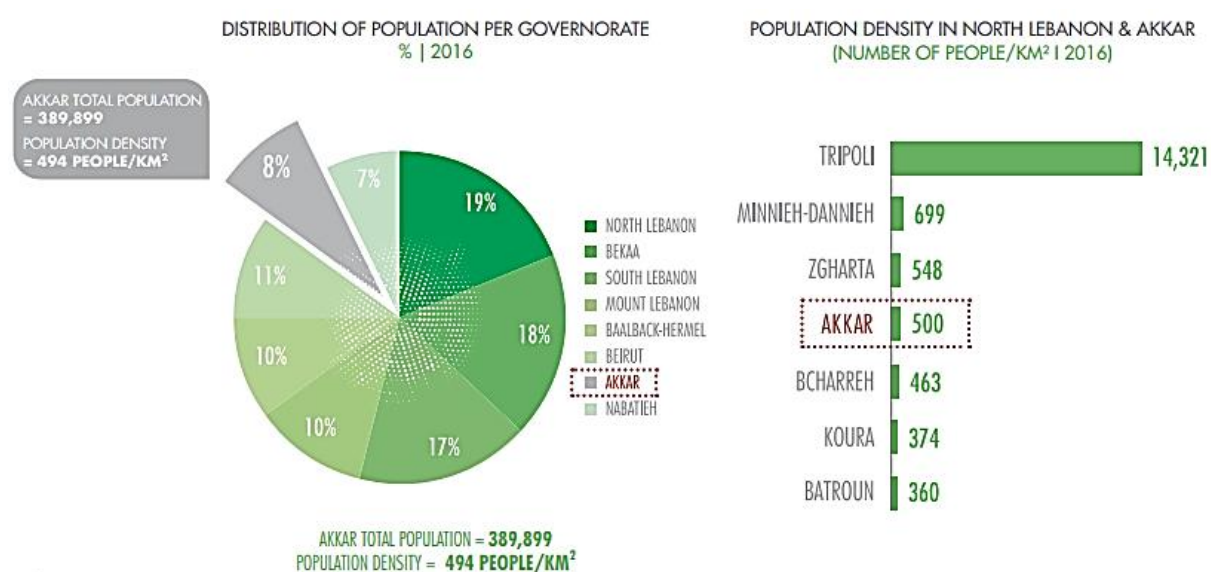


Figure 3-3 Population in the Akkar Governorate. Source: UNHCR (2018)

### 3.2.2 Labour and employment

It is recognized as one of the most deprived regions in the country with a high unemployment rate, poor infrastructure, and limited access to basic public services such as electricity. In fact, a majority of Lebanese in the region are facing deterioration in livelihoods, and the business climate and job market are negatively affected by the crisis where local skills have been substituted by Syrian labour. In 2009, the estimated unemployment rate is 8.2% compared to a national average of 6.4%, as shown in Figure 3-4.

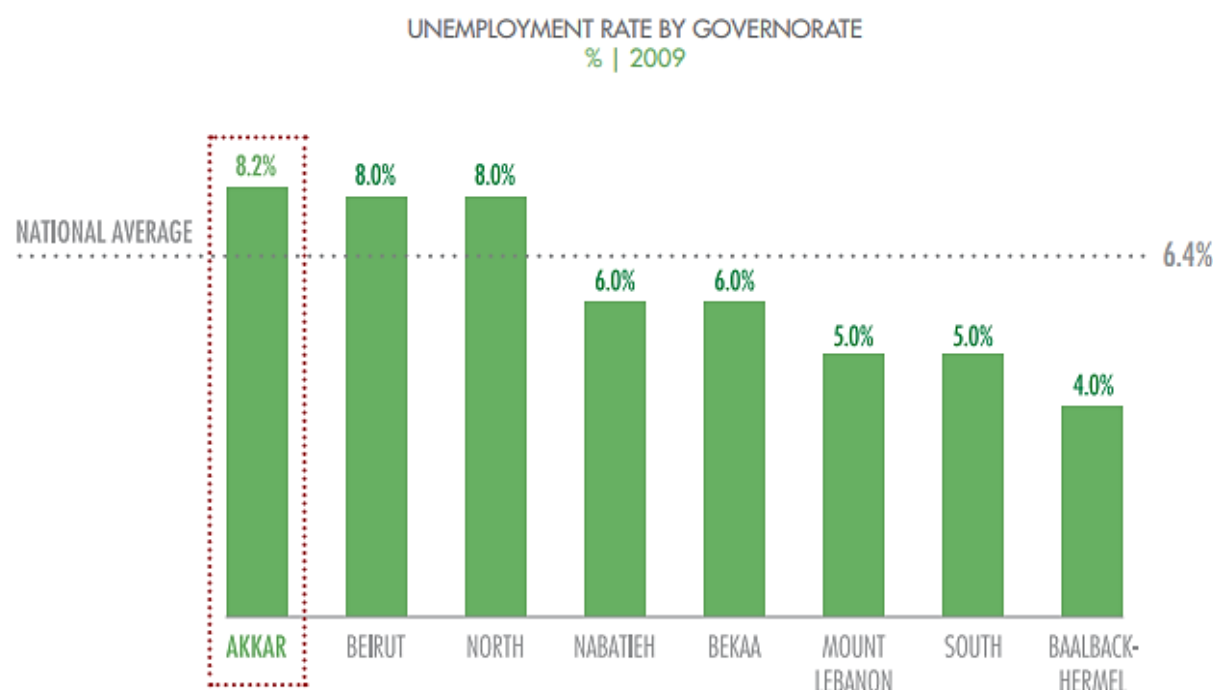


Figure 3-4 Akkar Governorate Unemployment Rate in 2009. Source CAS-EU (2011)<sup>4</sup>

The labour participation rate in the labour force in Akkar is low mainly due to the weak female participation rate as well as the high age-dependency rate, as shown in Figure 3-5. In fact, the population of Akkar can be characterized as being a young population having the highest percentage of residents below the age of 15, the lowest percentage of population in the labour force age bracket of 15-64 and a percentage of elderly lower than the national level: 5.4% compared to 6.9% (CDR/GFA/EU, 2014)<sup>5</sup>.

It is estimated that 18% of the total Lebanese labour force come from North Lebanon and Akkar, the second highest share in the country after Mount Lebanon. The Akkar labour force has been dominated by males due to gender disparity.

<sup>4</sup> CAS-EU (2011) Central Administration of Statistics and EU Twinning Program. “Statistics in Focus – The Labour Market in Lebanon”. Issue 01 October 2011. Publication authored by Najwa YAACOUB and Lara BADRE. Available on [www.databank.com.lb](http://www.databank.com.lb). Accessed on 4<sup>th</sup> September 2019.

<sup>5</sup> CDR/GFA/EU (2014) Strategic Sustainable Regional Development Plan (SSRDP) for Akkar. Available on [www.cdr-adelnord.org](http://www.cdr-adelnord.org)

Males from the Akkar region account for an estimated 26.2% of the national labour force. Females account for just 5.2%, which is well below the national average of 14.8%.

Public administration and armed forces (17.6%), trade, industry and construction (31.1%) employ a large section of the population as shown in Figure 3-6. However, Agriculture and fishing activities are the main sources of employment, employing 29.6% of the labour force on a full time or part time basis.

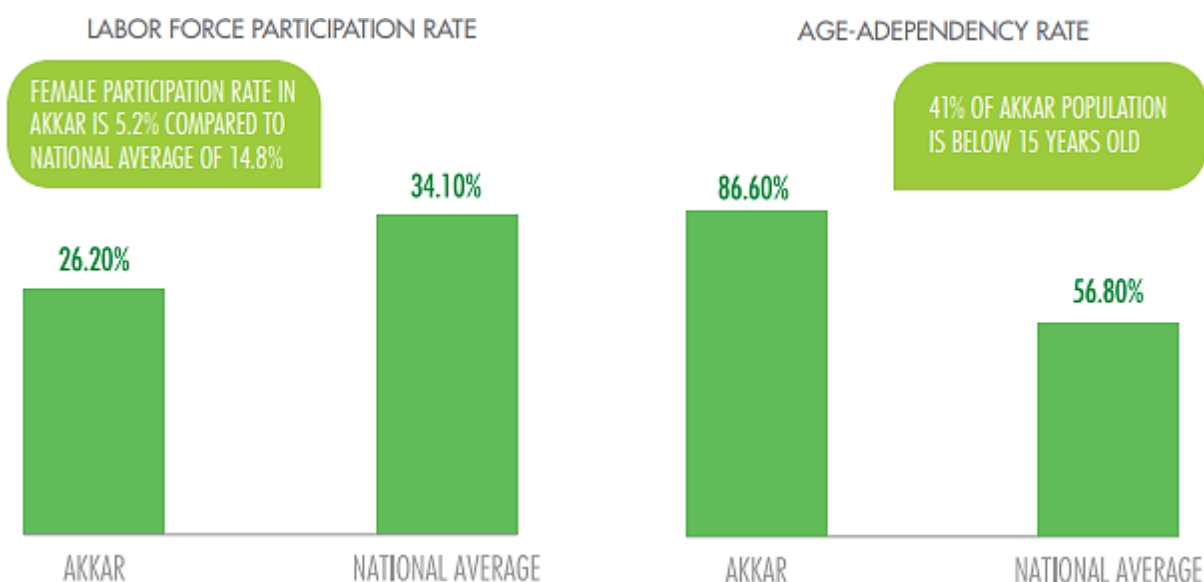


Figure 3-5 Akkar Governorate Unemployment Rate in 2009. Source: MADA Association (2009)

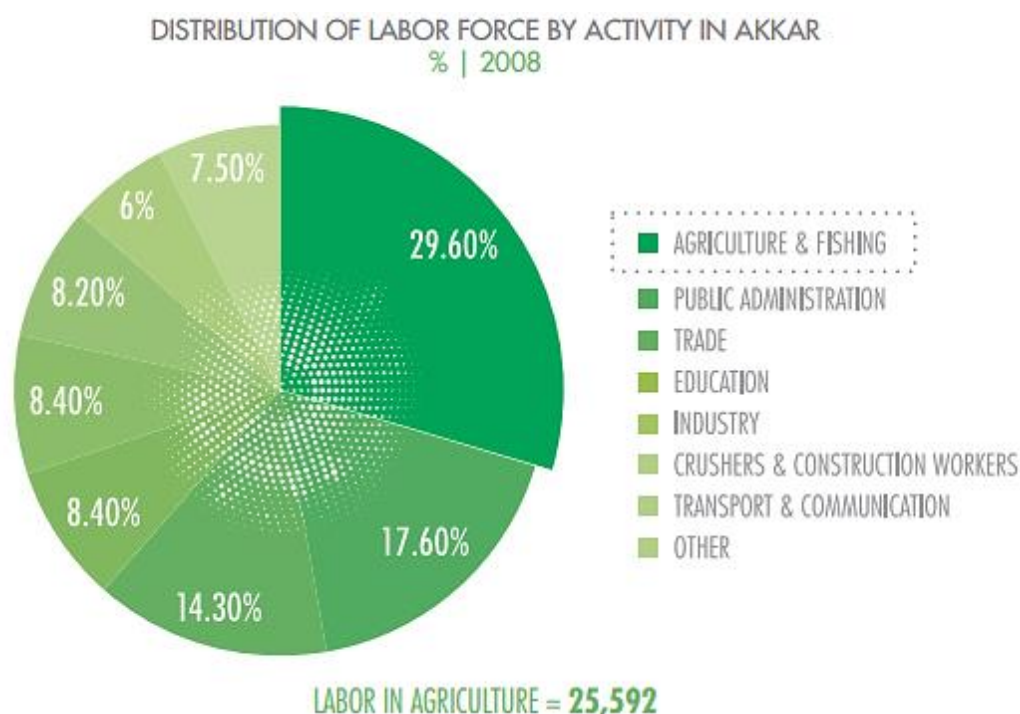


Figure 3-6 Distribution of Labour Force by Activity in Akkar in 2008



### **3.2.2.1 Agriculture**

Akkar is indeed the second biggest area of agricultural production after Bekaa governorate mainly in the lower plains due to the fertility of the soil and the gentle slopes, water abundance, and agro-climatic zones diversity. Akkar is also a major producer of dairy cow milk and contributes to 14% of the national cattle livestock while goat and sheep are of minor importance at the national level (MoA, 2010). Nevertheless, the agricultural sector in the Akkar Governorate remains underdeveloped, with the main crops planted being wheat, barley, soya, corn, apples and olives. Rain fed cultivation is often practiced due to lack of irrigation networks, government supply network and water harvesting or collection systems. The Project area is not used for crops, intensive cultivation or orchards see Figure 3-7, but in fact it is dominated by forests bordering the Jroud Akkar ridgeline.

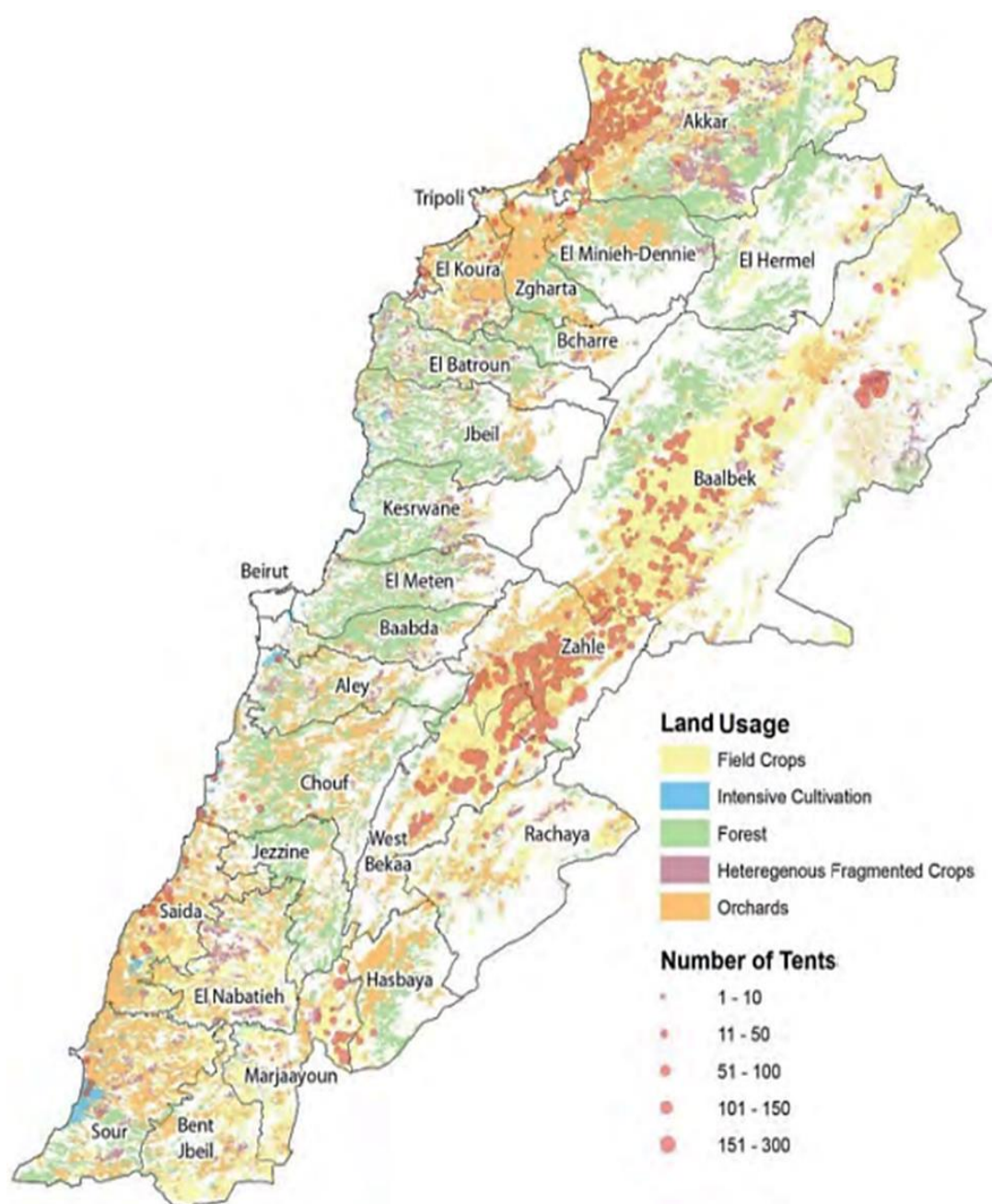


Figure 3-7 Agricultural Domains in Lebanon

### 3.2.2.2 Education

In terms of education, the Akkar is the governorate that has the highest number of public schools as well as 18 universities offering degrees of business, law and engineering programs. Nonetheless, public schools in Akkar are disadvantaged, neglected, often rented and in bad conditions (cracked walls, humidity, absence of lighting and heating, etc.). Schools and other support infrastructure are summarized in Table 3-1



Table 3-1 Social Infrastructure of the North Lebanon Region

Infrastructure	North Region	Akkar Region
Public Schools	265	163
Public Hospitals	32	21
Social Development Centers	23	19
Municipalities	140	121
Unions of Municipalities	7	6
Informal Settlements	145 hosting 10,888 of registered Syrian refugees	439 hosting 28,162 of registered Syrian refugees

The presence of refugees places a burden on Akkar governorate particularly on the sectors of education, healthcare, housing, household assets, energy, water supply, sanitation, roads and transport. Housing conditions of Syrian refugees are summarized in Table 3-2.

Table 3-2 Living Conditions of Syrian Refugees

	Substandard Shelters	Informal Settlements	Collective Shelters
Syrian Refugees	54.5%	39.8%	2.5%

### 3.2.2.3 Industry, Banking and Trade Sector

Even though there are three industrial zones in Akkar (Halba, Andqet, and Rmoul) as per the DGUP master plans, the industrial sector in Akkar is almost inexistent and only 8.4% of the working population in Akkar is employed by small to medium industries. Trade is confined to Al Abdeh and Halba, and employs 14.3% of the working population in Akkar. Northern Akkar consists of small local shops and few larger ones in some important locations on international roads and in the Mohafaza centre, Halba.

There are 48 commercial banks operating in Lebanon, 11 of which are foreign banks. Eight banks, with a total of 10 branches, are operating in Akkar. Yet these branches seem to have excess liquidity with loans provided for personal, agriculture, tourism, and construction purposes. Micro-finance is provided in Akkar through 4 micro-finance institutions through agents working through banks, independent institutions, projects such as the EU-Economic and Social Development Fund with the aim to bridge the gap to foster employment and poverty reduction, local NGOs and Foundations. Micro-finance includes only micro-credit of mostly women and rural borrowers (CDR/GFA/EU, 2014).

## 4 LWP LOCAL SOCIO-ECONOMIC BASELINE

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### 4.1 INTRODUCTION

#### 4.1.1 Direct Area of Influence (DAOI)

The DAOI comprises the following (see Figure 4-1):

- Villages where land to be leased or purchased from landowners for the installation of Project turbines, internal roads, substation and transmission line, i.e. For LWP: Fnaidek, Rweimeh Village and the Karm Chbat Cadastral Area.
- Areas of the new segments of road:
  - The new 0.65km section of asphalt road to avoid impacts to Chadra, Machta Hassan and Machta Hammoud to be constructed through currently vacant land purchased from private land owners.
  - The new 0.15km section of asphalt road to be constructed between two existing sections of asphalt road in order to avoid hairpin turns near homes
  - The new 3.0km section of gravel road to be constructed within the existing railroad ROW managed by Machta Hammoud Village.
- Jabal-Akroum Kfartoun, where an office is to be leased for the CRO Office.
- A 3km radius around the Project boundary that encompasses the noise, shadow flicker and visual receptors (as shown in Figure 4-2; note: yellow dots are uninhabited houses). The houses immediately north and east of the Project are considered part of Rweimeh Village, while the houses to the west of the Project are considered part of Fnaidek.
- Extends up to 15km from the Project footprint, limited to sites and monuments of national importance located within the 15km and potentially affected by the Project's visual impact, i.e. Al-Saifa Fortress in Akkar El-Atiq'a and the Qammouaah Plain.
- Villages within sightline of the wind turbines and potentially affected by the Project's visual impact, i.e. Jour El Hachich, Rweimeh Village, Quobaiyat, Akkar El-Atiq'a, Es Sayeh and Fnaidek. There are other villages within the sightline of the turbines, and therefore in the DAOI; however these villages were not included in the detailed assessment of visual impacts because of low visibility and/or because they were located at a greater distance than those villages modeled for visual impacts. An update (ongoing) of the visual and landscape assessment considers receptors up to 25 km from the turbines locations, noting that negotiations are being made regarding the radius.

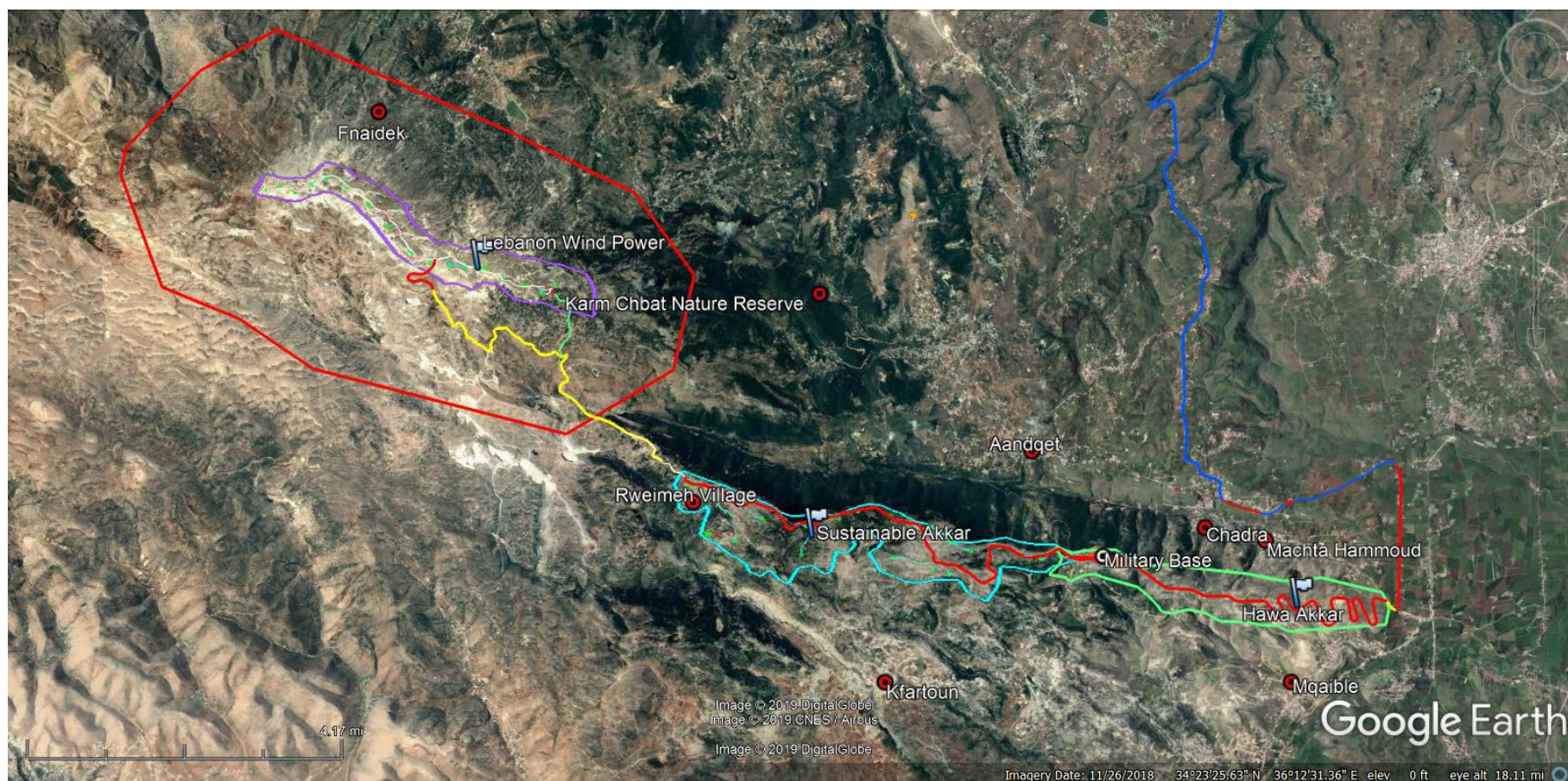


Figure 4-1 Direct area of influence



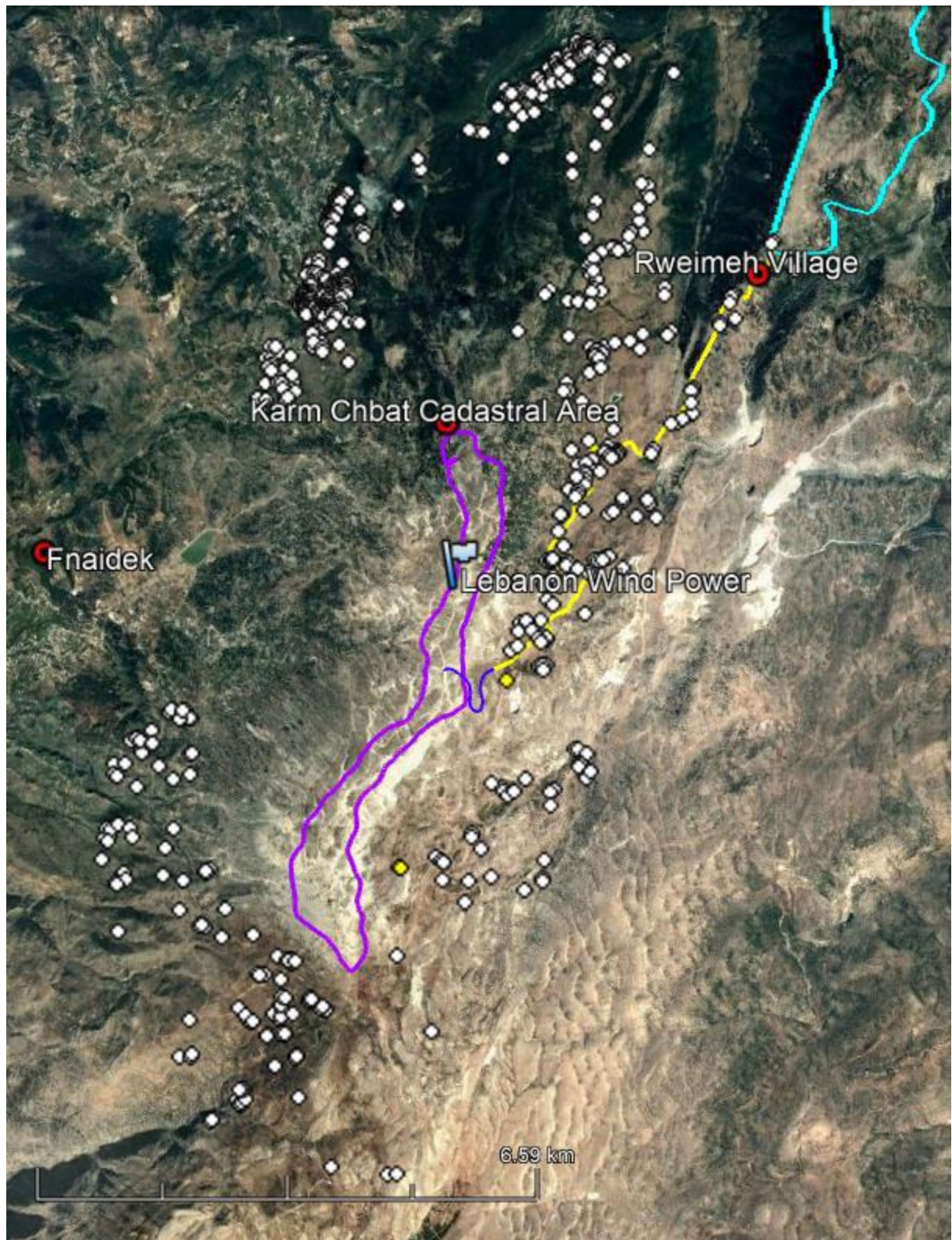


Figure 4-2 Individual Houses Near the Project

#### 4.1.2 Indirect area of influence

The Indirect Area of Influence (IAOI) for the ESIA is shown (in blue) in Figure 4-3 **below**. The IAOI comprises:

- The existing transport corridor between the Tripoli Seaport and the Project.
- Informal settlements located within 1km of the existing road (a total of 22 settlements (195 households and 1,235 individuals in the villages of Minie, Zoug Bhannine, Mhammaret, Qouber Chamra, Mqaiteaa, Kfar Melki Akkar, Qaabrine, Sammouniye, Chir Hmaraine, and Aandqet).

All villages along the transport corridor include:

Tripoli	Qaabrine	Qachlaq
Beddaoui	Sammouniye	Aamaret El Baikat
Deir Amar	Tall Abbas El Gharbi	Noura Et-tahta
Borj El-Yahoudiye	Hissa	Kouachra
Nabi Youcheaa	Tall Abbas Ech-Charqi, Tall Hmaire	Dibbabiye
Zouq Bhannine	Chir Hmairine	Fraidis
Al-Mhamra	Hokr Jouret Srar	Qsair Akkar
Bebnine	Illtige	Menjez
Qoubber Chamra	Barcha	Rmah
Mqalteaa	Kharmoubet Akkar	Chikhlar
Kfar Melki Akkar	Janine	Aaouaainat Akkar
Rmoul	Qaabrine	Machta Hassan



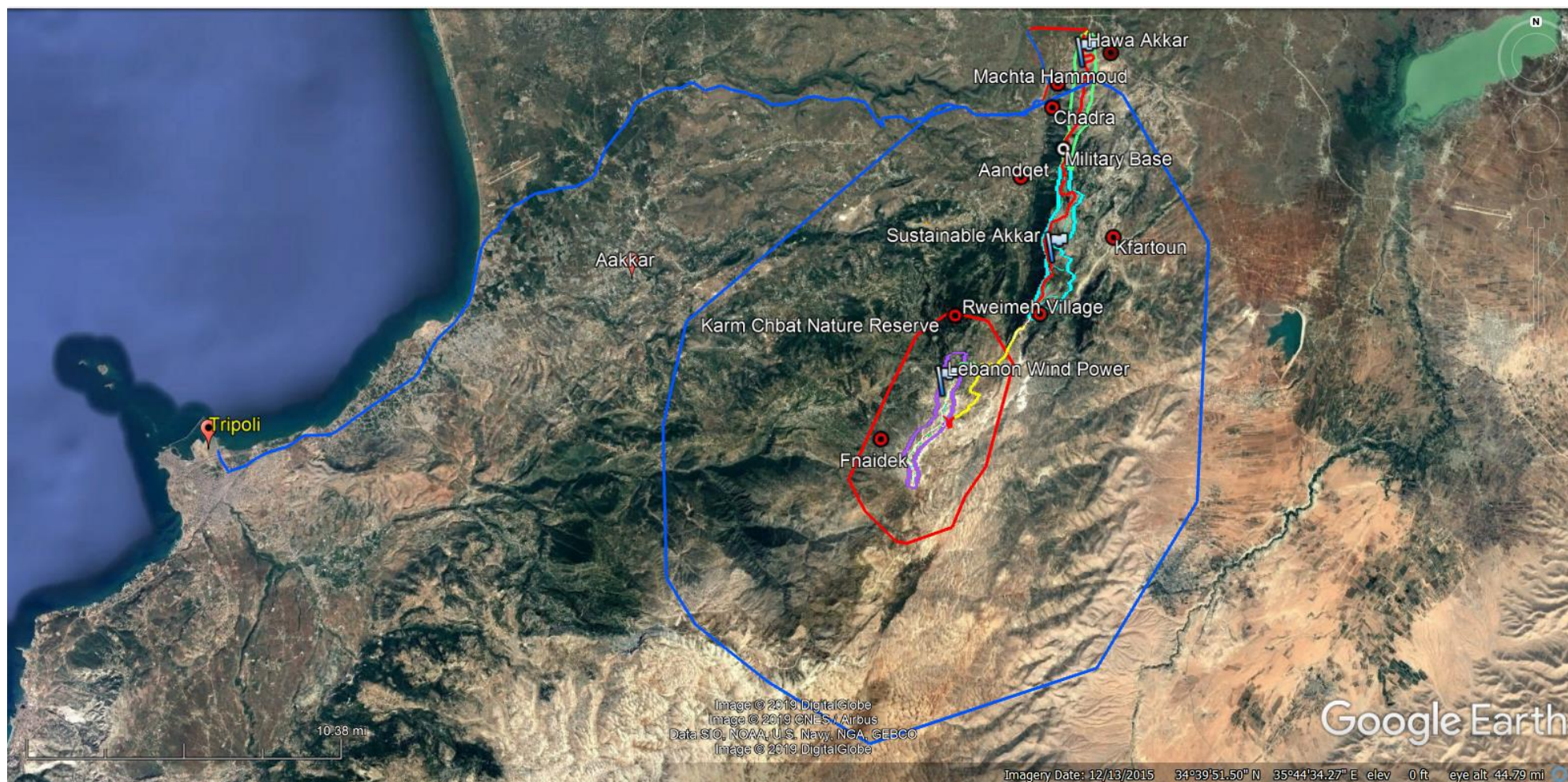


Figure 4-3 Indirect Area of Influence

## 4.2 POPULATION, ECONOMIC ACTIVITIES AND EDUCATION LEVEL

This section includes demographic information about the villages and communities in the LWP DAOI: Fnaidek, Rweimeh and Karm Chbat.

### 4.2.1 Fnaidek

The population of Fnaidek is approximately 20,000 (3,000 families in Summer) and 18,561 (1,100 families) in Winter. There are a total of 4,961 households with an average of 7 family members per household.

The composition of Fnaidek is 100% Sunna.

There is a 48.9% female and 51.1% male gender split, represented by the age breakdown shown in **the table below**:

*Table 4-1 Age Breakdown in Fnaidek*

<22	22-39	40-59	≥60	Total
23.69%	41.67%	23.84%	10.80%	100%

39.0% of the community have a secondary education level or higher, with 6.6% with no education.

68.1% of the community is employed or freelances, 8.3% are unemployed, with the balance identifying as a student, housewife or retired. Nearly 57.0% of the community has a monthly income between 500,000 and 1,000,000 LBP, with 24% generating less than 500,000 LBP per month. Agriculture and Armed Forces are the most frequent occupation listed.

### 4.2.2 Rweimeh Village

Statistics Lebanon reports the population of Rweimeh Village is approximately 550 (50 families in Summer) and 120 (30 families) in Winter. There are a total of 55 households with an average of 5 family members per household. However, the focal point for Rweimeh Village (Mr. Abdo Jaafar) indicates a total of 120 households (120 in Summer and 12 households in Winter).

The confessional composition of Rweimeh Village is 100.0% Chiaa. However, the focal point for Rweimeh Village indicates that the confessional composition is 98.0% Chiaa and 2.0% Sunna. No gender or age breakdown information was provided by Statistics Lebanon.

The number of education facilities or current students was not reported. 31.0% of the community has a secondary education level or higher, with 8.0% with no education.

69.0% of the community is employed or freelance, 6.0% are unemployed, with the balance identified as a student, housewife or retired. 57.0% of the community has a monthly income between 500,000 and 1,000,000 LBP, with 27.0% generating less than 500,000 LBP per month. Agriculture and Commerce are the most frequent occupation listed.

### 4.2.3 Karm Chbat

The majority of the Karm Chbat Cadastral Area is designated as a Forest Reserve. However, it is noted that leased lands within the borders of the Karm Chbat Nature Reserve, directly leased from the locality of Fnaidek (2 real estate parcels) and from individual owners (4 real estate) are outside the mentioned borders of the protected area. The socioeconomic conditions for the total of six real estate parcels are as provided under Fnaidek and Rweimeh Village.

## 4.3 LAND OWNERSHIP

Land issues are one of the most important considerations during Project development and implementation. Land parcels needed for the Project are owned by the Municipality of Fnaidek to the west and the Jaafar Family to the north and east (i.e. Karm Chbat and Rweimeh Village). Engagement with the Jaafar Family leadership began in 2017 to support the planned development of the Project, as summarized in Table 4-2.

*Table 4-2 Face-To-Face Meetings with Family Leadership in Affected*

Communities Name	Village Represented	Date
Abbas Jaafar, Kamel Jaafar, Mohamad Jaafar and Abdo Jaafar	Karm Chbat Cadastral Area	2-Mar-17
Hussein Jaafar, Youssef Jaafar	Rweimeh Village	8-Mar-17
Ali Jaafar, Toaan Jaafar and Noura Jaafar	Karm Chbat Cadastral Area	11-Sep-17
Hassan Jaafar, Ahmad Jaafar and Medhit Jaafar	Rweimeh Village	9-Oct-17
Riyad Jaafar, Imad Jaafar and Mohamad Jaafar, Ali Jaafar and Ajaj Jaafar and Rached Jaafar	Rweimeh Village	16-Nov-17

Preliminary discussions were undertaken with officials regarding land rentals and potential ownership impacts from turbines such as noise, shadow flicker and visual amenity as follows:

20 July 2018 - Meeting with Mayor of Fnaidek, Mr. Ahmad Baarini.

20 July 2018 - Meeting with Fnaidek Municipal Official, Mr. Mohamad Aalah El Din.

Along with the general terms of the rental contract, discussions included what job opportunities would be created by the Project.

On 6 December 2018, meetings were held between the Developer and representatives of the Municipality of Fnaidek to discuss the terms of the rental contract. Fnaidek Municipality was represented by the Mayor, Mr. Ahmad Baarini and Dr. Mohamad Ali, while the Developer was represented by Project attorney Me. Adele Halabi, Mr. Jules Assi and Eng. Sarkis Farah. The main topics discussed included the following:

1. *Duration of this contract – why the rental is for 28 years?* To cover all three phases of the Project: Phase 1 – Technical Studies and Installation, Phase 2 – Operations and Maintenance, and Phase 3 – Decommissioning.

2. *Number of parcels to be rented for the Project?* Total of 18 parcels, for a maximum installation of 16 turbines to be installed among 17 parcels and 1 parcel for installation of the Project substation.



3. *Price clarification as suggested by the companies?* The municipality asked if the \$7,000 USD/MW was per installed capacity or per produced. The companies replied that the suggestion is per installed capacity.

4. *Will a copy of the Lebanon Wind Power ESIA be provided?* Once the study is completed, it will be published on all of the lenders' websites for comment and therefore the Developer shall share it with the municipality along with the Arabic version of the non-technical summaries.

#### 4.3.1 Land leases

Following the cadastral survey undertaken in 2018, land leases with the Jaafar Family for the construction of Project wind turbines and platforms for WTGs 7, 8, 9, 10, 11, 14, 19, 20, 21, parking area and access road, and land purchase for the construction of the substation were finalized in accordance with acknowledgement Certificates) attesting the ownership of a real estate property which is unsurveyed and un-registered in the official real estate records.

Land lease paperwork was issued by the Ministry of Finance General Directorate of Land Registry and Cadastre and signed by a judge in Tripoli to lease land parcels in Fnaidek Municipality and Karm Chbat. Land parcels needed for the Project are owned by the Municipality of Fnaidek to the west and the Jaafar Family to the north and east (i.e. Karm Chbat and Rweimeh Village). Engagement with the Jaafar Family leadership began in 2017 to support the planned development of the Project. Following cadastral survey in 2018, land agreements have been executed as follows:

- Land tenure has been secured for a period of 28 years at an agreed price of US\$34,000 / year during Phase 1 Technical Studies and Installation, US\$7,000 /MW / year during Phase 2 Operations and Maintenance, and US\$583.33 / MW / month during Phase 3 Decommissioning. Land owned by the Owner as per the Acknowledgment Certificate to be issued- Land to be leased by Owner to Lebanon Wind Power.
- Paperwork was issued by the Ministry of Finance General Directorate of Land Registry and Cadastre to lease land parcels in Fnaidek Municipality and Karm Chbat Cadastral Area and signed by a judge in Tripoli.
- The plots subject of the abovementioned lease agreements are free from any occupant, liabilities, rights, liens, or encumbrances. The Project land take will not result in resettlement/economic displacement (loss of livelihoods).

Nonetheless, 155,611m<sup>2</sup> will be leased for the Project for 28 years, and +3,500m<sup>2</sup> will be acquired permanently. This represents a loss of access to land by the Municipality of Fnaidek, Rweimeh Village and the Karm Chbat Cadastral Area.

Land lease parcels are presented in Figure 4-4 and Figure 4-5 overleaf.

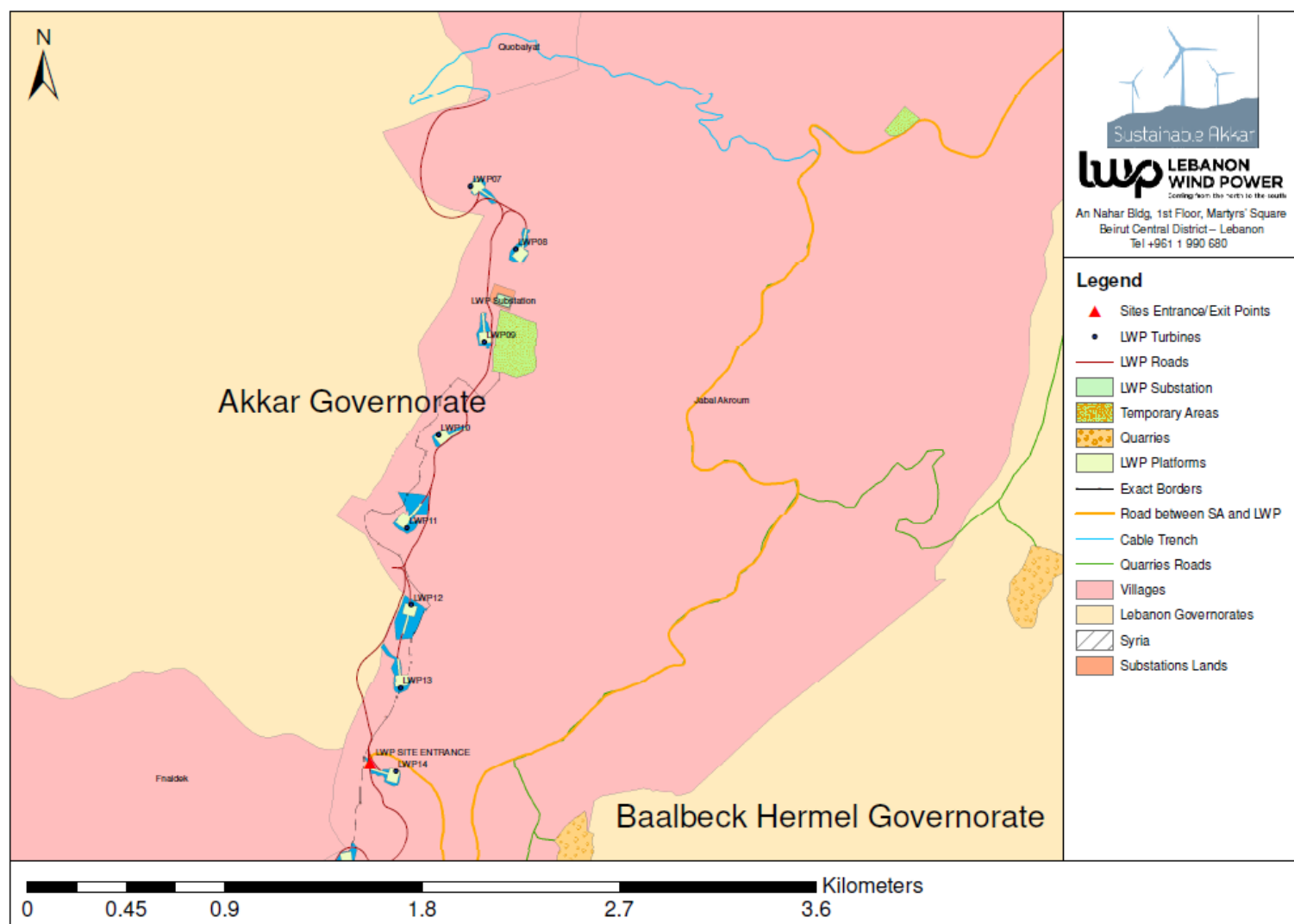


Figure 4-4 Land Lease Parcels – Acquisition of LWP Substation

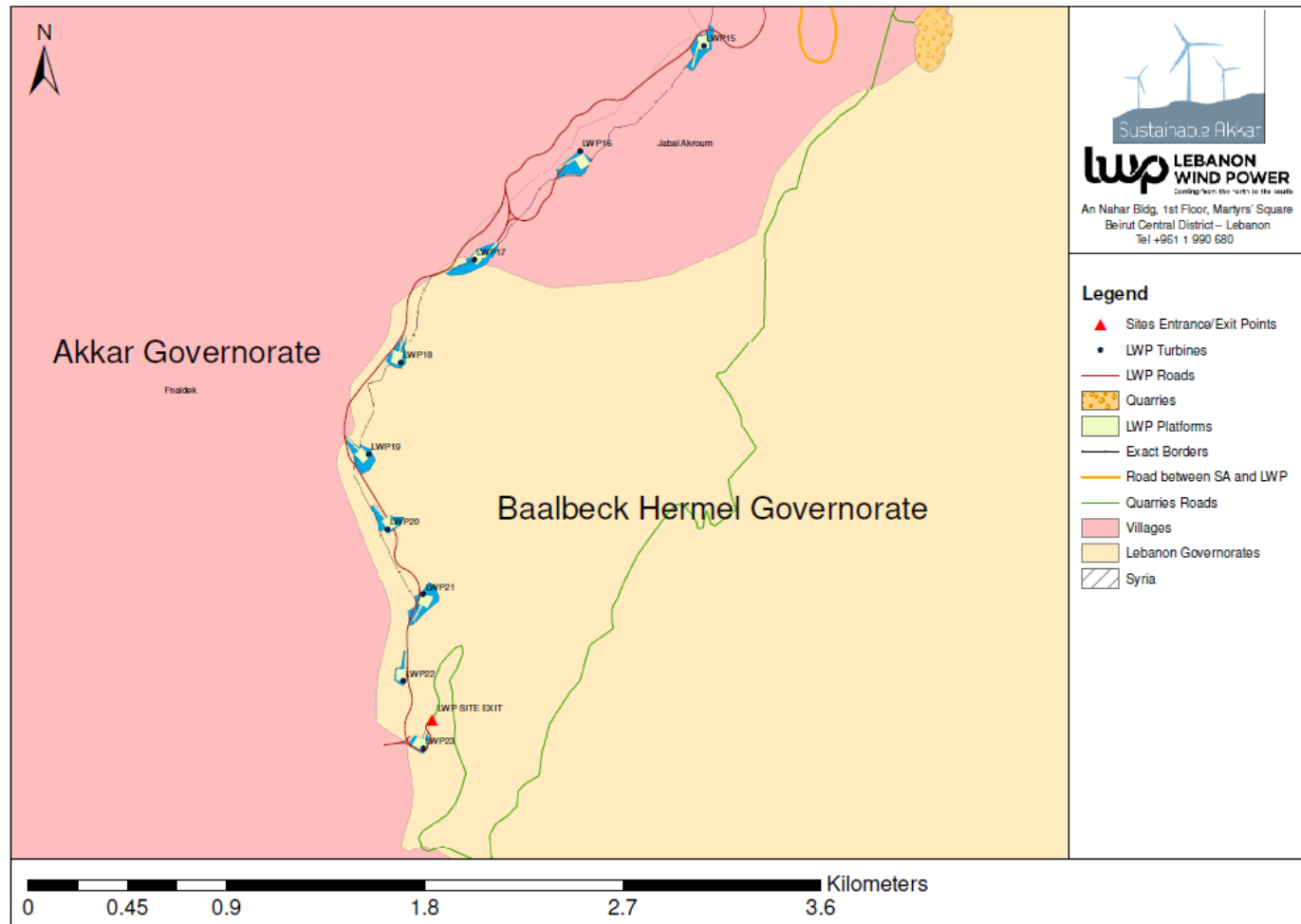


Figure 4-5 Leased Land Parcels

### 4.3.2 Decommissioning phase

The PPA between the Project and the GoL will be for 20 years. The landowners leasing contract is for 25 years; 5 years were added to decommission the Project and return the land to its original state (stated also in the contract). The lease agreements state that a daily rental fee will be paid during the decommissioning phase, on the basis of the number of turbines that are still producing electricity.

Decommissioning activities will adhere to the requirements of the MOE, MOEW, local authorities and international bodies (OPIC, EIB, FMO) and will be in accordance with local permits and international guidelines and requirements. Decommissioning activities will be undertaken in accordance with the Decommissioning Plan, to be approved by the Developer as part of the detailed design.

The decommissioning and restoration process comprises removal of aboveground structures, below ground structures to a depth of 1m or greater, removal of access roads if required by the land owners (or local authorities), restoration of topsoil, re-planting and re-vegetation, seeding and implementation of a two-year monitoring and remediation period, in a manner aimed at reducing the damage that may affect the land. Any damage to the land caused by decommissioning activities will be repaired to restore the land to its original state. Aboveground structures include the turbines, transformers, substation, maintenance buildings and office in Jabal-Akroum Kfartoun.

Below ground structures include turbine foundations, transmission lines, drainage structures (if any) and internal road sub-base material. The removal of wind farm structures will involve the evaluation and categorization of components and materials for disposition according to the following sequence: 1) recondition and reuse; 2) salvage; 3) recycle; and 4) dispose.

The decommissioning of the wind farm can be divided into three different phases:

- Phase I - \_Project management and planning: operations are scheduled taking into account the time and costs involved, aiming to achieve the most efficient and sustainable solution.
- Phase II - \_Removal of wind farm structures.
- Phase III - \_Post decommissioning processes: monitoring the destination of the removed elements and site recovery.

## 4.4 RESIDENCE AND HOUSING

The data presented in sections 4, 5 and 6 below are based on a household survey conducted in Fnaidek. Rweimeh Village was not surveyed as planned, as the Project Team was advised by the local mayors and the focal point of Rweimeh Village (Mr. Abdo Jaafar) that they must be accompanied by village leaders who were not available at the time of the visit. In addition, Rweimeh Village does not have a permanent resident population and its houses are occupied on a seasonal basis by members of the Jaafar Family, with winter occupancy reduced to just approximately 10% of the households. Mr. Jaafar has advised the Project Proponent that there are no objections to the Project by Rweimeh Village members, the construction of the substation in El Rweimeh Village, and/or the construction of the buried transmission line along the existing asphalt road and the existing track through Karm Chbat Nature Reserve. The research team conducted a total of 176 surveys in Fnaidek (88 households out of a total of around 1,100 households in the village and 88 active SMEs).

Of the 88 households interviewed, 32 only stay in Fnaidek seasonally (i.e., from the end of June, July, August and/or to the beginning of September). 100% of those surveyed owned their home. Despite the support some households get from working females, mainly married, the main income responsibility towards the household rests on the male. This reflects the culture of the region and the lack of opportunities for women to be actively engaged in employment.

#### **4.5 EMPLOYMENT AND INCOME LEVEL**

The baseline assessment of both villages in 2018 (Ramboll ESIA) revealed that Fnaidek enjoys a more permanent residency. Many of the Fnaidek residents have government jobs and earn 800 USD to 1,500 USD per month (23 out of 88 surveyed households in Fnaidek, or 26%), an income that can allow a decent livelihood in their village.

Income level and the number of household members play a major socioeconomic factor in the burden of living expenses, which reflects on the cost of electricity and how it consumes a significant percentage of their income. The survey revealed that a family earning between 800 USD and 1,200 USD per month spends around 200 USD on electricity, which is considered a high expense as it represents a 25% at the lower end and 17% at the higher end of income level.

Age distribution for working people varies significantly indicating the difference between household age and active working individuals in businesses in the villages. Of those surveyed in Fnaidek, the minimum active age was 22 years old and the maximum was 90 years old. The most frequent age reported was 45 years old. Of the 88 households surveyed, 68% of the females were unemployed, compared to a national average of 14.8%.

Over one third of the Akkar population is engaged in agricultural activities, either as a primary or secondary job or to support their livelihoods. However, the survey revealed that less than 50% surveyed own agricultural land, investing in land to provide a secondary income but not working as farmers.

#### **4.6 ELECTRICITY COST AND INCOME**

Securing enough income to pay for the cost of electricity is a struggle for many households in the Akkar region. Power cuts are relatively common in the Akkar region. Surveyed households revealed power cuts in Fnaidek up to 14 hours. Such long power outage hours indicate that the cost of subscription to alternative energy supply sources is impacting the livelihood of individuals and the economy of the region especially since the average cost of such alternative sources is 750 LBP/KW. In addition, the margin of cost variation depends on the level of consumption.

A comparison of energy consumption costs from EDL versus privately-owned generators shows the latter is much higher due to the long hours of power cuts and the high cost per unit of electricity supplied. In Fnaidek, only 7% of persons surveyed are satisfied with the current energy supply. 93% of Fnaidek residents think that they do not have enough energy supplied to them, but they are unable to consume more due to the cost burden. The common use of energy is lighting and powering appliances. Of the 88 households surveyed in Fnaidek, 0% use energy in households for heating and cooling across all four seasons.

## 4.7 LAND USE

### 4.7.1 Herders/Shepherds Using the Project Area for Grazing

Information regarding shepherds grazing animals in areas near the Project was acquired from the Department of Grazing at the Ministry of Agriculture (Ms. Zeina Tamim). Mr. George Roustom (Head of Department of Aandqet Forests) visited the Project site on 22 February 2019, and Mr. Mohammad Mostapha (Head of Department of the Qammouaa Forest) visited on 25 February 2019, who stated that they maintain grazing information covering the Project area. The percentages of the communities in Fnaidek and Rweimeh that use natural resources are shown in the tables below:

Table 4-3 Use of Natural Resources by Fnaidek

River	Spring	Water Well	Pond	Forest	Agricultural Land
10%	70%	15%	0%	50%	80%

Table 4-4 Use of Natural Resources by Rweimeh Village

River	Spring	Water Well	Pond	Forest	Agricultural Land
0%	80%	0%	0%	20%	0%

Land use divisions, agricultural crops, livestock, building numbers, water supply, wastewater and paved road, or power outage information was not reported.

Twenty-six (26) shepherds grazing in the Project area comprise 16 from Fnaidek (61%) (LWP location), 1 from Akkar El Atiq'a, and 9 from Jabal-Akroum Kfartoun (SA location). However, latest engagements found that there are herders who use the grazing areas in the project's sites Rweimeh and Fnaidek seasonally (during the summer). The grazing areas near the Project are shown in green in Figure 4-6. Two (2) of the smaller grazing areas are located within the immediate study zone, and as such, grazing at this location will be prohibited during the construction phase, i.e. 7 months.

Both Grazing Area 1 and Grazing Area 2 are 0.20 km<sup>2</sup>, resulting in a temporary prohibition of grazing of 0.40km<sup>2</sup>. The grazing areas that will remain accessible are Grazing Areas 4, 5 and 5, and represent 4.06km<sup>2</sup>, and are nearer to Fnaidek. Therefore, there is temporary loss of access of land for grazing of 8.6% of the total available.

In July 2019, the CRO discussed the loss of access to grazing areas for a period of 18 months during the construction phase with the livestock owners the shepherds using the planned Sustainable Akkar wind farm area. From this engagement, it was determined that the shepherd grazing at the planned wind farm are Syrians employed by local livestock owners. Based on the discussions, the livestock owners expressed the following concerns:

1. Livestock owners rely on livestock for livelihood.
2. Access to alternative grazing areas will not be allowed by:

a. Owners of the alternative grazing lands.

B. Owners of the lands they need to cross to be able to access alternative grazing areas.

While the local livestock owners affected by the Lebanon Wind Power Project have not yet been consulted, it is assumed that the same concerns will be applicable. The loss of livelihood is passed on from the livestock owners to the Syrian shepherds.

According to recent stakeholder engagement activities conducted in August 2019, there are herders who use the land for grazing in Fnaidek, Rweimeh and Karm Chbat. The following sections present the outcomes of engagements with herders and their families, including wives of herders, in these areas.

#### 4.7.2 Socio economic conditions of two herders and their families in Fnaidek

The information below is based on two meetings with four herders and their families in Fnaidek. A meeting with a herder and his family from Fnaidek held on August 28, 2019. The herder owns between 200 and 250 sheep. There are 12 members in the family including adults and children (3 children were present during the interview). In addition to the interviewee, three of the herder's children (males) are also herders.<sup>6</sup> His wife takes care of feeding and cleaning the sheep as well as milking. She is not involved at all in taking sheep out for grazing, which is considered the male's responsibility. The herder and his family live in Fnaidek during winter (where they have a house) and move to a sort of tent in the summer. The seasonal move is due to the harsh winter conditions prevailing in Fnaidek's upper hills. The herder's summer house (or tent) is located less than 5 km away from the project location (a distance estimated by the herder himself). Herder does not belong to any form of social association for herders or farmers, such as a cooperative.

The second herder interviewed in Fnaidek was interviewed on September 2, 2019 and owns between 80 to 90 sheep. The herder is original from Fnaidek, where he and his family have a small house of 2 rooms (the place where the elders stay). In they summer they live in a small tent in Jroud Fnaidek because of availability of grazing areas. In winter, they move to Gebrayel because of harsh winter conditions in Jroud Fnaidek.

Two other herders were interviewed on September 3 are also from Fnaidek. One has 40 sheep and lives in a small house of 2 rooms. In summer they live in a small tent in Jroud Fnaidek because of availability of grazing areas, and moves to Gebrayel in the winter because of harsh winter conditions in Jroud Fnaidek. The other herder has 90-100 goats and lives in a small tent in Jroud Fnaidek because of availability of grazing areas; in winter, he moves with his goats to Tikrit because of harsh winter conditions in Jroud Fnaidek.

#### *Livelihoods*

Herding is their only source of income for them and their families. One herder argued that *there are no other sources of income possible in the area*. Through herding, the family sells milk (clients are local) as

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<sup>6</sup> At the beginning of the meeting, the herder did not want to say how many persons live and work with him. The question was raised three times before he answered. When the visit ended, the municipal representative informed the facilitator that two of the herder's sons suffer from certain impairments (not specified).

well as sheep. Selling sheep happens mainly once per year especially during *Adha*, in addition to selling sheep to butchers (old sheep rich in meat) and to individual clients (for sacrifice). Dozens of sheep are sold yearly. Sheep meat and milk (and yogurt) are sold to locals or local butchers; these allow the family to survive the entire year.<sup>7</sup> Herding animals depends significantly on weather conditions. This year (2019) was characterized by a wealthy rain, and, consequently, a lot of water. During the previous two years, there was water scarcity and limited rainfall, especially in 2018. Herders move in the area (Fnaidek and Qammoua) seeking the best available places for grazing during summer seasons. Consequently livelihood status depends on the weather/ rainfall conditions, which affects economic conditions.<sup>8</sup> In addition, the two herders interviewed in Fnaidek said that their economic situation has not changed over the last years and feels it is getting worse. One of them stated that their economic situation fluctuates and that income is not stable: “sometimes we feel we have a lot of money, and sometimes we do not have money even to buy bread.” Another said that 40 sheep are not enough to support his family. One herder, however, said that his economic situation was acceptable and can provide his family with meeting basic needs.

#### ***Land use: Grazing activities and other natural resource users***

The first herder interviewed explained that there are two grazing seasons: from January to April or May (depending on climatic conditions, snow, rain), when sheep are moved to Halba town (towards the Sweisseh area); then from May or June until the end of the year, sheep are moved back to Fnaidek. The project area is used for grazing extensively during the spring because lands are richer in water. In the summer season, sheep are moved there once to three times a month, depending on water availability. The herder also stated that **the project area is rarely used for other purposes, such as herb collection**, because it is very far. Collecting herbs is quite occasional, if not very rare, and only herders are able to access the area. However, other herders interviewed said that they know that some people collect herbs in the site. Finally, herders interviewed did not report any conflicts between herders using the same areas. *“The lands are open and available to all herders. Lands are not territorially divided among the herders”*.

Other herders interviewed said that sheep are moved to Gebrayel (this period may vary according to climatic conditions) January to April. From May to December, they come back to Fnaidek upper hills because of availability of grazing areas. He also stated that the project area is used rarely as an alternative to other lands in the region by him, but said that other herders are more affected by the project because they are closer.

#### ***Level of awareness about the project and perceptions on impacts of the project***

The first herder interviewed in Fnaidek said that he is aware that the project will impact access to the location he frequents for herding. However, he also stated that, if the project will benefit the community

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<sup>7</sup>The municipal representative, who was also present during the meeting, asked the herder about the selling price of a small sheep. The price the herder proposed was 100\$, which was considered expensive by the municipal representative, who pointed this out in front of the herder.

<sup>8</sup> The herder did not wish to provide further details on the matter.



as a whole, he is willing to take his animals to alternative locations. In addition, when asked to proposed the most suitable ways to support affected herders during the construction phase if an impact on herders' livelihoods are expected, the herder did not suggest any proposal and just reiterated his readiness to support any project of public interest or for the benefit of the community, even if the project may affect his herding activities. He also stated that any positive impact on the Fnaidek community as a whole will in turn have a positive impact on his livelihood as well.

Other herders interviewed said that they are not fully aware of the impacts or disadvantages of the project or whether the project will affect grazing activities negatively. He said that "We heard that it is dangerous for the sheep to come close to the fans. If so, this will negatively impact the availability of grazing zones". He also stated that if no harm will occur, then he will not have any issues against the project. The herders added that nobody informed them about the project and its impact. However, they heard from the Jaafar family about it. The herders expressed that the community needs to know details about restrictions during construction and later after commissioning. He also added that he hopes for increased job opportunities for his community, as this will have positive impact on their economic conditions. Another herder interviewed said that although he may not be significantly affected if they close the project area he has heard it is dangerous for the sheep to come close because of the generation of electricity.

One herder, however, expressed that he believes the project *will negatively impact our agricultural livelihood if the area will be restricted.*

*"Till now we don't have fair idea about the upcoming activities, we just knew when we saw some electricity column erection in the area. Jaafar family herders told us that the fans and electricity wires will be dangerous for our animals".*

If no harm will occur, then we won't have any problem against the project.

*"If the project will benefit our community, it is not a must to take my sheep up to the project location. Instead, I can take them to Qammoua, for example".*

*"All herders must be gathered and informed by the municipality".*

*"We need to know more about the project before we give our [full] support"*

### ***Herders' wives, women's livelihoods and participation in the community***

When asked if he knew of women involved in the herding of animals, or in any other way in relation to land use, the first herder interviewed stated that herders' environment is very conservative and, hence, a male-dominated activity. According to the herder's wife, women are never involved in herding in the area. According to all herders, women are generally responsible for feeding and cleaning sheep, milking them and preparing milk and yoghurt for sale.



Herder and his family in Fnaidek



Herder's animals in Fnaidek

#### 4.7.3 Socio-economic conditions of herders in Rweimeh

A total of three herders were interviewed on August 29, 2019. These herders are members of the Jaafar family and own between 25 and 300 goats. According to the herders, there are 10 herders in the village and none of the herders in the village is a member of a cooperative. Two of the herders interviewed are brothers and also grow wheat, barley and chickpeas. Besides using the yield for house consumption and feeding goats, the surplus is usually sold. As for collecting edible wild plants, the herders reported that women go to *Wadi Al Sarweh* to gather malva, watercress<sup>9</sup>, taraxacum<sup>10</sup>, and other seasonal plants.

<sup>9</sup> *Eruca vesicaria* ssp. *Sativa* الجرجير

<sup>10</sup> The local name is مَخَو بَعَبُو

## Livelihoods

One of the herders has several sources of income, including herding, woodcutting, as well as from the minimarket located on the main road of Rweimeh. Clients of the herder are the inhabitants of the village and his children help in herding and in the shop. The herder's wife is milking goats and preparing dairy produce, cleaning and feeding goats. She also helps in running the minimarket. The herder argued that the quantity of dairy products meant for sale is limited compared to other herders who have more goats.

The remaining two do not have a second livelihood source and have large families (20-25 family members). They all live thanks to goat raising. Precisely, they only know how to raise animals. In winter, the brothers move to Al-Qasr, around 40 km away from Rweimeh. Wintering in Al-Qasr is not only for the goats but also for the family (schools and health services). Savings made in summer from herding activities are spent during winter. As for alternative livelihoods, they said to be interested in *cow raising and beekeeping, for which they would require start-up support*. Finally, the women said that it would be helpful to be able to establish a coffee shop or receive support to open a minimarket.

## Land use: Grazing activities and other natural resource users

One herder explained that there are two herding seasons for herding in the area: from November/December (depending on the weather) until April/May, goats are moved to an area locally known as Al-Chmiss.<sup>11</sup> From April until the end of the year, goats go to the village woodlands. According to one of the herders, the grazing seasonality and system did not change in the past five years regardless of weather conditions. The other herders stated that in the winter season (from 15 December to 6 May) herders move their goats to Al-Qasr (Hermel) and the Syrian frontier.<sup>12</sup> The second season extends from 6 May until the end of the year, which marks the summer. Goats are herded in *Wadi Al Sarweh* and wherever grazing lands are available such as in Oudine. During the past five years, the changes in the weather conditions affected goats. Grazing areas have stretched and goats got sick. Finally, conflicts among herders were not reported. *"Very few [in the community] still raise goats these days. The entire village embraces 500 to 600 goats. Each herder has between 10 and 20 goats"*

## Herders' wives, women's livelihoods and participation in the community

Herders' wives help their husbands in milking goats, producing dairy products (cheese, yoghurt, *labneh*, ghee). One of them stated: *"I do everything. Besides, I clean the barn (goat shed) as well. We also make sure that our goats are not infected. I check them daily and inform the veterinary if necessary. I also administer the medicines where needed. Taking goats to graze is not an activity handled by women."* As for collecting edible wild plants, women go to *Wadi Al Sarweh* to gather malva, watercress<sup>13</sup>, taraxacum<sup>14</sup>, and other seasonal plants.

<sup>11</sup> The name refers to a sunny location.

<sup>12</sup> The facilitator asked why May 6<sup>th</sup> in specific. As per the herder, a certain local festivity *Eid El Khodor* عيد الخضار happens on that day. It indicates that winter has phased out.

<sup>13</sup> *Eruca vesicaria* ssp. *Sativa* الجرجير

<sup>14</sup> The local name is مَحْو بَعْبُو





Herder's wife and their animals



Herder pointing towards the location of the project



Herders met facilitator in their house



Discussion with the family

### ***Level of awareness and knowledge of projects and its impacts***

According to a herder's wife, the herder family has heard about the project and believe that it will benefit the residents of the village. She stated that she is familiar with the turbine location (known locally as Wadi Al-Sarweh) and that it is far from where the herders go. The herder added that he owns a parcel there and is willing to sell it to the project if turbines are to be located there.<sup>15</sup>

#### **4.7.4 Socio-economic conditions of herders in Karm Chbat**

A total of 14 herders were interviewed on August 29. Two were members of the same family (brothers) that owned 200-400 goats, and reported to have a cousin who is also a herder but was not present because he was out with his goats; six herders from the Jaafar family in one meeting (who together own 650 goats and 5 cows), and another herder family of 6 male herders in another meeting, also from the

<sup>15</sup> Land tenure is not surveyed in Rweimeh, in the sense that land ownership is based on simple notifications endorsed by the *Mukhtar*. The system of land sale and ownership is family based. If a member of a certain family - for instance composed of three brothers- sells a land to the company, the money he gets will be divided equally between the three brothers. In turn he will get a share of the lands owned by his two brothers. This is the case of the herder met in Rweimeh.

Jaafar family (who own about 500 goats together); there are three other herders who were not present in the meetings. According to the herders, these are all the herders present in Karm Chbat.

The meetings with the two herder brothers took place in the area called *Nanaa*, located below Al Qalaa (which is the turbines site), estimated by the herder brothers to be only 200 to 250 meters away from the summer dwelling. The meeting with the six herders and their wives took place in the Maabour Al Abiad area.

The herder brothers report to have experienced poverty and poor living conditions. The cement house is composed of one large room where the entire family lives during the summer season and does not have a restroom. The road to reach the family not asphalted, located in the middle of an open landscape partially cultivated. Even minimarkets or other services lack in the area. All herding families live from the dairy products produced and receive income from agricultural activities, i.e. the herder brothers also collect wild herbs (wild thyme, *Gundelia tournefortii*<sup>16</sup>, berberis, and other types of mountainous edible wild plants). They also plant chickpeas and wheat, and others plant cherries and . As it is the case of all herders, none of these herders belong to any cooperative or informal/ formal gathering of herders. The herders move to Al Qasr (Hermel) in December when the weather becomes colder and snowy. The families go back to Maabour Al Abiad in April. In Hermel, goats graze in the plains of Al Houcharieh, Al Qasr, and Sahlat Al May. In summer, the only herding location is Al Qalaa, which they and other natural resource users also visit to collect plants. As in other meetings, herders report that weather conditions affected significantly herding over the last five years.

*“In the past, you used to see here more than 4000 goats owned by ten herders, which means that ten families live from herding; Now the capacity of goats to give birth has decreased [due to the weather], as it is the case of milk. Only 2019 was good to use. The remaining four years were not good at all”*

In addition, the herders reported to have been affected by other factors, such Karm Chbat being declared a nature reserve. According to one herder who knew the matter well, Karm Chbat was declared as such without consulting Jaafar family of herders. In addition, an administrative committee was formed and composed of 12 members without any prior consultation with the family or including the family in the committee. For family, the reserve “does not exist”. The local understanding of “nature reserve” is a ban of all economic activities including having houses in the protected zone. The family associate indirectly this experience with the current project, which Jaafar family fears that it will hinder them from using the area.<sup>17</sup> Few years ago, the Society for the Protection of Nature (SPNL) engaged

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<sup>16</sup> العكوب الجبلي

<sup>17</sup> The link was not expressed explicitly. However, the questions raised and the insistence to talk about the reserve was observed.

Jaafar family in a discussion to establish a *Hima* in Karm Chbat, which seem to be more acceptable to the tribe.<sup>18</sup> However the initiative was discontinued for reasons unknown to the herder.<sup>19</sup>

### **Livelihoods**

The herders do not exercise any other work to earn their living, besides herding and some farming. These are their main sources of income. The income generated from herding and agriculture in summer allows the families to survive during winter.

*“Our only work is herding. We were not taught to do other jobs. I have a son who had to leave the army and help us to feed the family”*

In addition to this, one herder expressed that *“The project should find an alternative to affected people rather than compensating them financially”*. According to herders, employment opportunities are very scarce *“unlike the situation in Qobayat; goat herders are extremely poor. A herder can barely educate his children”* said one of them. Herders pointed out that a herder’s daily income in the area is averagely 10,000 L.L. They suggested that fodder for their animals should be secured or that herders should be provided with temporary work until *Al Qalaa* is accessible again for herding. Another suggested alternative is to encourage the cultivation of wild thyme and other plants, including the coverage of water and electricity costs related to agriculture. Otherwise, they said that financial compensation would be required for the loss that might be encountered (affecting both herding and collecting wild plants).

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<sup>18</sup> In 2012, the Society for the protection of Nature (SPNL) introduced a replacement of the traditional concept of “reserves” with the old concept of “*Hima*”. This concept takes into account the lives of the surrounding people and the beneficiaries of the life cycle of nature. This initiative aims to “improve the livelihoods of communities in Hima zones from a social, economic and natural perspective. The *Hima* system, based on the traditional classification of land according to its uses, is one of the most important systems that contribute to the conservation of biodiversity in the world and the preservation of nature and its resources through the establishment of a heritage system adopted by the Arab people and practiced by Lebanese villages and towns as a legacy tradition of land use, ensuring sustainable use of natural resources, which means a rational investment of resources and preservation of the ability of the environment to replenish its resources” (source: [www.spnl.org](http://www.spnl.org)).

<sup>19</sup> The Karm Chbat Nature Reserve is located in the heights of the town of Kobayat, Akkar district in northern Lebanon. It is estimated at an area of about 520 hectares and its altituderanges from 1400 to 1900 meters. Established as a reserve in 1995 (Decision of the Minister of Environment no. 14/1), the importance of the reserve lies in the multiplicity of biodiversity of trees, birds, animals and plants. Among the most important trees contained in the reserve are perennial cedar trees, lizards, Cilicean sprouts, *Juniperus oxycedrus*, *Quercus cerris* and *Prunus ursina*. There are rare animals, such as squirrel, fox, hyena, wild boar and wolf, *Accipiter nisus*<sup>19</sup>, and a number of birds such as partridges, hoopoe, *Garrulus glandarius*, buteo, merops, *Turdus Viscivorus*, eagle and crow.

### ***Land use: Grazing activities and other natural resource users***

All herders interviewed have the same view about grazing areas. They kept on repeating that “Al Qalaa is the only alternative for herding”. “Before talking about an alternative, we need to see how one turbine operates when it is constructed” said Abu Ibrahim. “If the benefits of the turbine are greater than its damages, then we can “tolerate” the project. We will not leave our region nor Al Qalaa”. “We cannot dispense with the land for at least 500m<sup>2</sup> perimeter”.

### ***Herders’ wives, women’s livelihoods and participation in the community***

During the visit, women (mother-in-law and her daughter-in-law of the herder brothers’ family) were cleaning wild thyme and dismembering green chickpeas. Another herder reported that the entire family is involved in a way or another in herding: “We are herders and farmers. This is only what we do as families here”. In the other meetings, herders confirmed that women are not involved directly in herding. They do not go with goats, which is a task assumed by men. Women engage in milking cows and preparing dairy produce. Regarding women members of the third family interviewed, women herders support their families in preparing the dairy produce, growing vegetables, drying wild plants, and selling the produce, in addition to taking care of household related tasks. Women also grow vegetables, such as tomatoes, as well as walnut, wheat (as a fodder for goats) and chickpeas (for human consumption). They also go to Al Qalaa (where the project is located) to collect edible wild plants, such as wild thyme and berberis. These plants are used for local consumption as well as for sale (when quantity collected exceeds the need). The women said that Al Qalaa is the only location where they go to collect wild plants “because it is a clean area far from dust; we even bring the wood from Al Qalaa”.<sup>20</sup>

### ***Level of awareness and perceptions about projects and its impacts***

The herders reported to have heard contradictory information about the project, that grazing area won’t be accessible anymore due to the project and that the project will be harmful to the area in general and goats in specific, as “the goats won’t get fat”(said one of them). One herder expressed that “Some people say the project is harmful, others say it doesn’t. Nothing is clear. The project is ambiguous”. The herders stated that if the project is really vital to the region, “let someone come and explain to people here what it is about”. “We need to understand what this project is exactly about”.

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<sup>20</sup> The women pointed out that they do not cut the wood. They only collect the wood found in the site for heating purposes during winter.





Project location behind the herders' house



The herders





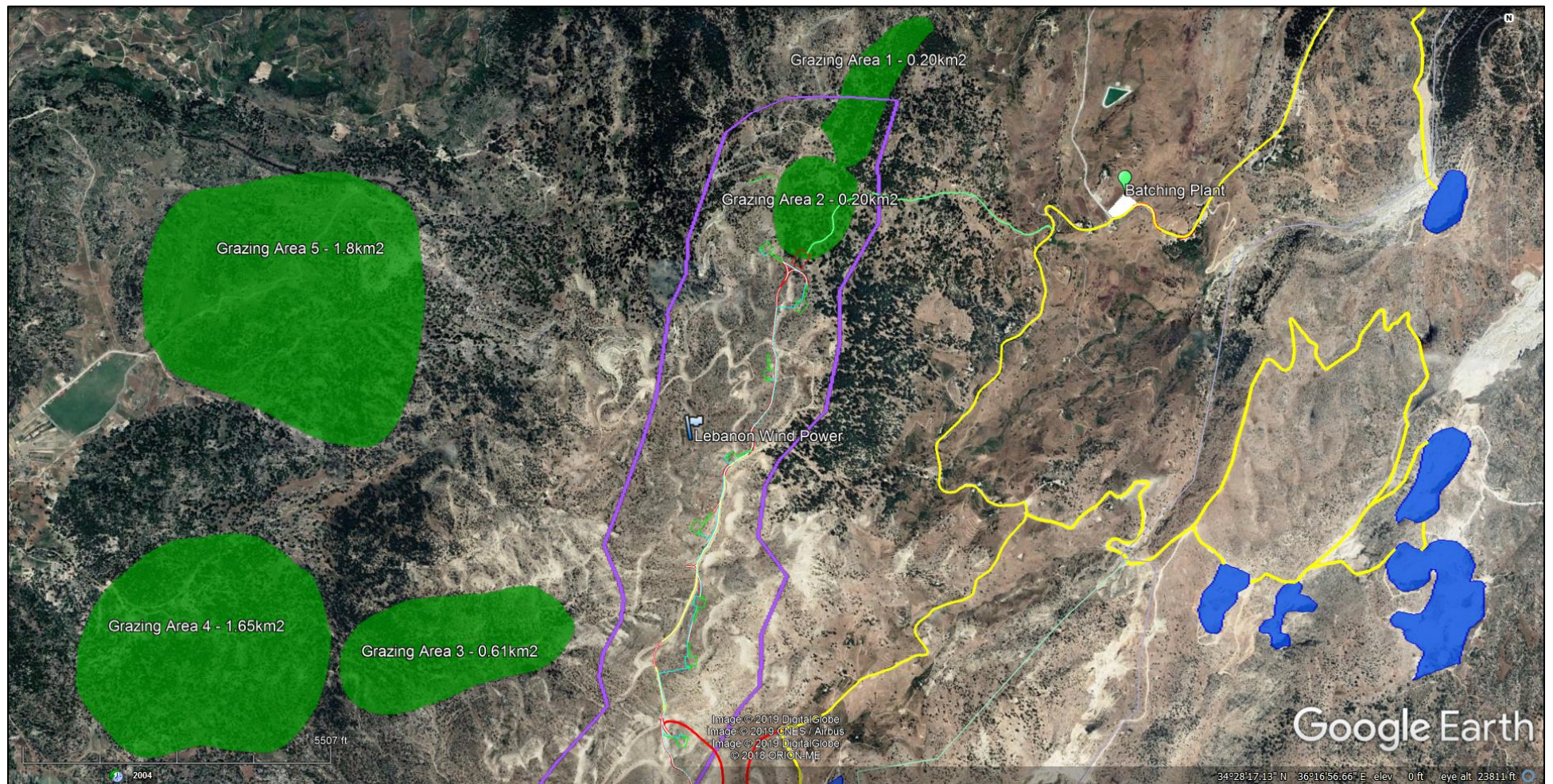


Figure 4-6 Grazing Areas Used by Shepherds/ herders Within or Near the Project

#### 4.7.5 Hunters using tracks within or near the Project

Hunters use tracks that are found within and near the Project locations. Key Informant Meetings were held with bird hunters using tracks within and near the Project. During these meetings, the hunters were advised that access to tracks within the Project area would be temporarily prohibited during the construction phase for a period of 18 months, indicating:

- Birds seem to avoid the installed masts and are not flying around them.
- No one in the area makes a living from hunting, it is a hobby only.
- The hunters confirmed that they can find another place to hunt.
- Hunting as a hobby usually comprises hunting at a diversity of sites.

There were different opinions about the Project; while some of the hunters believe that the Project is beneficial for the area and therefore it is ok if they change the place of their hobby; others think that the Project is not beneficial for them as their hobby will be affected. Some hunters were concerned about nature more than hunting, mentioning that migratory birds are part of the equilibrium of the ecosystem and should neither be hunted/harmed by turbine blades as they are responsible of reducing the number of snakes, rats and animal corpses. The hunters mentioned that shops selling equipment/bullets may be affected by the Project. A lot of local businesses benefit from hunting season especially bungalows, cafés and restaurants. Their income may be affected if hunting activities are decreased.

The map overleaf shows the tracks within and near the Project by hunters:



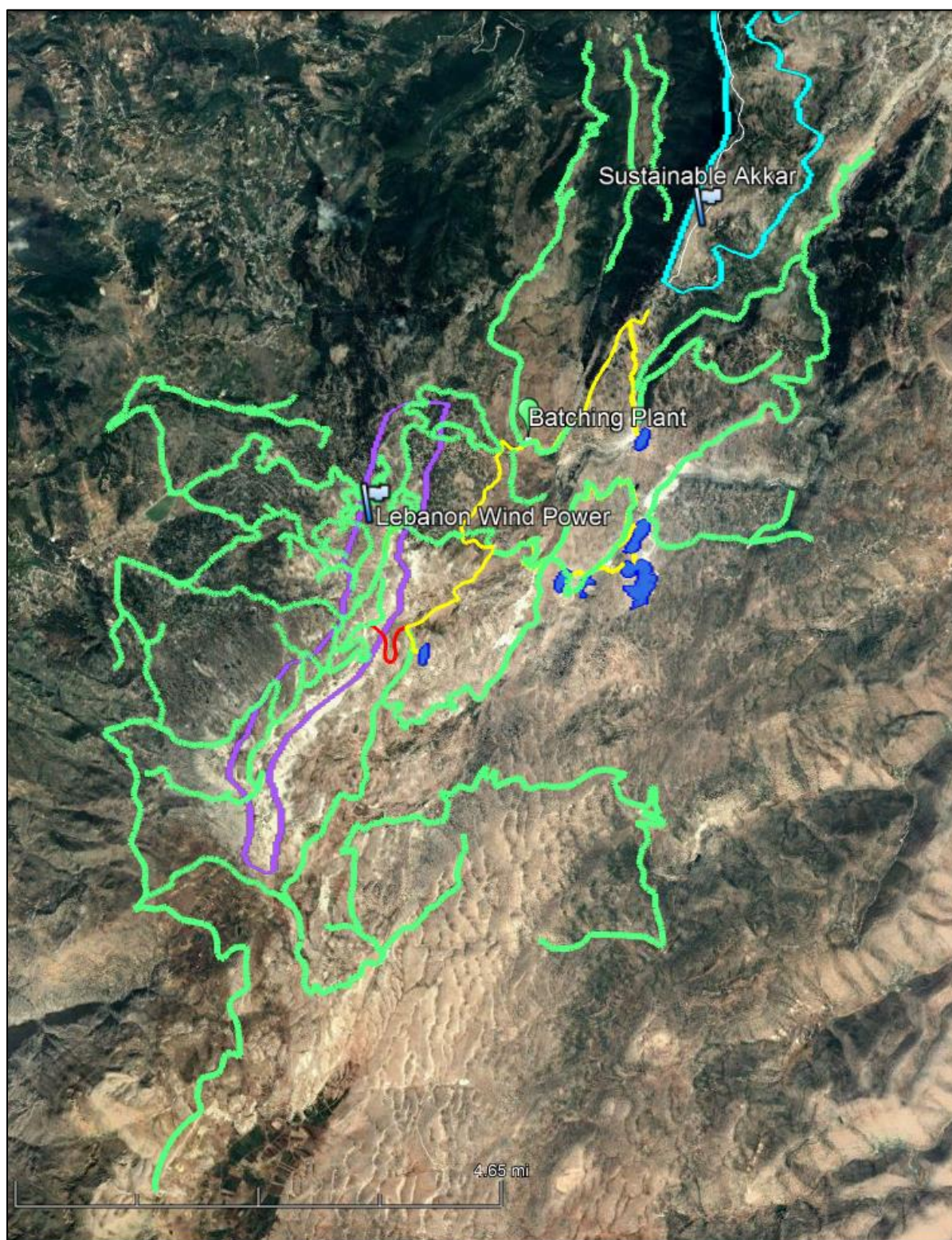


Figure 4-7 hunter tracks in the Project area

#### 4.8 GENDER ANALYSIS: SOCIAL AND ECONOMIC CONDITIONS OF WOMEN IN THE DAOI

The following section provides information about the social and economic conditions of women in Rweimeh gathered during a focus group discussion with 7 women in Rweimeh conducted on August 28, 2019 as well as a key informant interview with the president of the Committee of Employee Women Union in North Lebanon (CEWU) conducted on September 2, 2019. Similar meetings are currently being conducted in Fnaidek and Karm Chbat, including one meeting with a female herder in Karm Chbat.

##### 4.8.1 Socio-economic conditions of women in Rweimeh

Among the participants, 2 are currently working (supermarket and owned antiques shop); the remaining participants are housewives, including one elderly woman; also 2 of them are also students. All participants knew about the Project planned in the area. According to the women participants in the discussion, only four houses are all year-round residents of Rweimeh. The remaining inhabitants, which are estimated to be 400 persons, move to Al Qasr (Hermel) where services, notably schools and medical, are more available. This is due to the harsh winter conditions (snow, inaccessible roads) and lack of any minimum services. Al Qasr is a key winter location for all Jaafar families, as all visits to women and herders showed. Rweimeh becomes populated in summer seasons (almost 60 houses). One particularity to mention about this village is the fact that people do not need to own their own houses to spend summer in there. *“All we need to ask for is the key of any house and we will get it. This is a tradition in Rweimeh”*, said a seventh-grade girl. This matter was confirmed by the participants in the focus groups. Another particularity to highlight before presenting the findings is the level of awareness registered among the women, especially when compared to women met in former focus groups in other areas.

##### *Gender roles and women’s participation in the workforce*

The sample of women met showed that **some women, in addition to their traditional role of looking after the children, cooking, and cleaning, have their own work**. As previously mentioned, one runs a minimarket and a gas station. One participant resumed her studies in law after her children grew up (fifth and sixth grades) and runs in the same time an antique-furniture shop in partnership with her sister in Al Qasr. None of the participants is the main breadwinner. One participant stated: *“We have people who are conservative and against the principle that a woman should work, whereas others more open-minded like in every society”*. Another participant said that *“Preparing mouneh, running a shop and similar activities are also acceptable. However, working in an area far from the house location is not encouraged”*; **however, in spite of this, women’s participation in the army is encouraged**; one participant reported that *“Women engaging in the army is encouraged. My little daughter wants to become a soldier when she grows up.”*



### *Women land users*

Participants reported that women use the project area (the land surrounding the turbines) for wild edible plant picking. This includes dandelion<sup>21</sup>, taraxacum<sup>22</sup>, chicory, watercress<sup>23</sup>, and other plants collected during spring season in the village areas known as *Qornet Bechara* and *Al-Delal* as well as in upper hills. Herders do use the project area for grazing purposes.

### *Skills linked to economic activities found in the village*

Responding to this question was not easy for the participants in this group, especially given that only four households live in Rweimeh all year-round (out of seven participants). According to the women, skills in general are available and varied among people from Rweimeh. **Skilled workers among people original from Rweimeh encompass nurses, hotel managers, schoolteachers, farmers, bakers, among other professionals, but they do not reside or work in the village.** The village current “deserted” context does not allow for the exploitation these skills for the benefit of the village. Participant agreed on that *“Rweimeh lacks schools, water, accessible roads, an appropriate medical center. Even the center of the Ministry of Social Affairs<sup>24</sup> is abandoned. A doctor comes there from time to time probably to register his presence and get paid. Who can live and work here in such circumstances?”* Finally, one participant added that *“During winter, roads remain blocked for several days until one of the inhabitants open it, paying himself for the expenses.”* In terms of skills needed for income generating activities suitable for women who work from home, a participant pointed out that the preparation of *mouneh* (local produce) is meant exclusively for house consumption, except for a woman referred to as the wife of Ali Adib Jaafar, who sells *mouneh* and dairy products in the village.

### *Local employment opportunities*

The women participants stated there is a lack of available job opportunities and this is the reason why most people leave to seek employment elsewhere. Participant who do not reside in the village all year round also stated that **the village needs to improve its basic infrastructure in order to create opportunities:** *“We need water, schools, roads, more than 3 hours/day of electricity, and many other vital services need to be secured. Even the internet does not exist except in the hotel. When we have all this, we will think about coming back to Rweimeh. There is a high unemployment rate among young people and women”*.

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<sup>21</sup> The local name is **الخسيسية**. The translation needs more verification as a sample of the plant was not available during the FGD.

<sup>22</sup> The local name is **مخو بعبو**

<sup>23</sup> Locally known as **جرجير**

<sup>24</sup> In Lebanon, Social Development Centers (SDCs) are associated with the Ministry of Social Affairs and provide basic health care and social services for local communities across Lebanon.

### ***Level of awareness and knowledge of projects***

The participants are aware of project details. They attended the meetings held in the hotel (of the village) and did their own online investigation with the help of one of the participants. One learned about the project in school and also found that similar projects are implemented in the Netherlands and the United States. Another participant said that she visited a similar project in Iran, stood below a turbine and did not hear any noise. They know that residential houses should be at least 300 to 400 meters away from the project [turbines] location, which corresponds to their situation, that Hunting will be banned, but that their community does not engage in hunting anyway. They had also initially heard that will cause diseases, but when they checked online, they found that many European countries have similar projects. Participants do not believe that a project that has negative impacts would be approved or implemented by any company. The women participants believe that there is no need for any further meeting to explain the project because there have been several meetings already organized where men and women were present.

*“In Lebanon we have the electric poles that are much more dangerous and built between our houses”*

*“We heard, we asked, we checked and we are convinced. We have children, and we don’t accept that they are subject to any negative impacts”*

### ***Perceptions on positive and negative impacts that may be caused by the project during construction and operations***

Participants stated that they have heard that the project will take three to four years to finish, that the projects will hire employees and guards and engage people who own vehicles. They have also heard that the project will help the community manage solid waste that is burnt currently there is no solid waste collection in the community. The participants also said that they as well as Rweimeh community members are in favor of the project because they believe it will generate employment opportunities and improve the quality of roads. Participants also said that they see it as the biggest project in Lebanon and that, because Rweimeh is a very deprived area, the project is expected to indirectly impact the village positively leading to the development of the village and general improvement of socio-economic conditions. One participant said that she owns land near the water tower and is willing to sell it to someone from the village who in turn make it available for the Company’s investment. They also expressed that the project will impact men and women equally.

*“The project will revive the village”.*

*“The positive benefits will be indirect on the village”.*

*“Nobody is against the project in Rweimeh. The village will become a city even more developed than Akroum”.*

*“Representatives of countries from Holland and Bulgaria and the Ministry of Environment told us that the village infrastructure will improve when the project starts; We were asked how you envision your*

*village as part of the project? for sure we will be more encouraged to open coffee shops, a medical center, a school, etc.”*

***Suggested ways in which the project can support or enhance the livelihoods, living standard, and women’s active role in society***

- Inform the community about job opportunities that suit the existing skills and vocations.
- Organize training courses: Internet, English language, touristic guides, remedial/additional programs for school children, etc.
- Support economic activities, especially trainings or projects targeting women, that consider the fact that the majority of the population is available during summer season (3-4 months during the year).
- Provide support for open a cafeteria in the village and purchase an ambulance.

#### **4.8.2 Socio-economic conditions of women in Fnaidek**

Eight women members of the Fnaidek community participated in this focus group discussion held on August 28, 2019. The group included women the ages of 18 and 25, of which the majority are women working in local association and a school, while two are students (high school and vocational training). The participants are not aware of conflicts that may affect the community in general and women in particular.

***Gender roles and women’s participation in the workforce***

The women participants of the Fnaidek community reported that women in their community are generally in charge of all house-related tasks. Single women who do not study help their mothers too, while women/girls who study support in housework whenever time is available. Women in Fnaidek are very active and engaged in community activities, including taking part in NGO initiatives, as volunteers in most of the cases. According to one participant, there is equality between men and women in Fnaidek, a matter that was contested by some other women in the group: “I have been working on girls-related protection initiatives since almost six years. I noticed that we should now work on protecting the men [as well]. Men are unemployed while women work”. One participant ran for the municipal elections in 2016, but she then withdrew. As per the overall feedback, the participants reported that women work, study, teach, and volunteer in municipal and NGO initiatives.

***Women land users***

They said that they believe that nobody uses the project location, not even herders, because they said the location is arid. Collecting edible wild plants takes place in Qammouaa, Jawz Al Dawra and Delbeh, which are far from the project. They said that if this is the case, then this activity is not affected by the project.

### ***Skills linked to economic activities found in the village***

Handcrafts, *mouneh* (local, homemade food products), sewing, usage of computer, languages, hairdressing, secretariat, and first aid were among the skills women cited. The participants added that there are women who are also skilled in electricity repairs, home painting, telephone repairs. *“It is true. I took part in one of these mixed training courses. I learned how to paint, and I painted my house”* said one woman participant. Another participant added that the most available employment, and consequently skill, is teaching. In general, they reported that skills are available. However, job opportunities are lacking.

### ***Local employment opportunities***

Women participants said that they think almost 70% of women are unemployed, if the total number of educated and unschooled women is taken into consideration. Besides, there is a high poverty rate in Fnaidek. One participant stated that Fnaidek inhabitants used to rely on agriculture in the past. However, agriculture in the area has been affected by the lack of ability to sell in the market and diseases affecting yields. In addition, women report that there is a high rate of unemployment. The competition between Lebanese and Syrians on employment opportunities did not reach a resolution. Some of the participants blamed the Syrians for taking the jobs of Lebanese, for reasons such as asking for lower pay than Lebanese, while others considered that thanks to Syrians some increased local economic activity was witnessed in the past years. The participants argued that, during the Syrian crisis, a substantial number of Fnaidek young men and women were engaged in humanitarian activities, so increased humanitarian aid due to the crises created jobs, some paid and others as volunteers. However, according to the participants, the number of Syrian refugees has noticeably decreased because many have returned to Syria.

### ***NGO presence and women participation in Fnaidek NGO sector***

The women of Fnaidek reported that there are several local NGOs in the village, where the presence of women is observed, including *Zahrat Al Ajjal* Association (100% women), *Jil Al Amal* Association (composed of women and to a lesser extent men), *Ma'an Li Ajl Al-Kheyr* and *Nahr Al Hayat* Association. In addition, women know of international and national organisations who worked in Fnaidek, which include Save the Children, DRC, UNICEF, Medecins sans Frontières (psychosocial support), Mercy Corps (solid waste management), KAP (solid waste management), MADA, Concern Worldwide, UNDP, Islamic Al Makassed (vocational training), Akkarouna and Anera. Some of these NGOs are still present in the village. Since 2016, the following NGOs provided support specifically to women:

- Akkar and Development Network, which works and still on projects related to protecting women and girls, and providing vocational training courses (sewing, glass painting, chocolate production, etc.). The NGO has a program entitled *“Injaz”*, which is based upon submitting a small concept note to obtain a grant. This was the case of Safaa who was granted a sewing machine, and another woman who opened a house cleaning service office (not present among the participants).
- An NGO funded by the European Union funded training courses on nursing, awareness campaigns, ... (the participants did not remember the name of the NGO).
- Save the Children, which provided sewing courses.



Other NGOs were active in Fnaidek, as previously mentioned. However, they were not all specifically dedicated to support women, though the women engagement as volunteers was highlighted. Finally, the women participants reported that an agricultural cooperative is active in the area. It is not specifically dedicated to women, but the director is a woman.

### ***Level of awareness and knowledge of projects***

Most women knew about the project, except for two. Participants said that they heard that the project is meant to generate electricity, but did not know further details. They expressed that they do not know what are “turbines”, that they have heard that the turbines affect negatively birds and animals, They also heard that it will be noisy, but asked to confirm if the village is far from the location, which shows that they do not know where exactly the turbines will be located Finally, participants assume that nobody should be against the project because the entire village is deprived of electricity.

### ***Suggested ways in which the project can support or enhance the livelihoods, living standard, and women’s active role in society***

Women participants said that the best way to keep women of the Fnaidek community informed is through the municipality and through one of the participants who works at a local association. In terms of potential suitable ways to support women in the community were suggested, including, for example, providing vocational training courses, and establishing a kitchen (for catering), a child daycare center, a chocolate production center, a center to distil wild herbs, a center to teach foreign languages, gym specifically dedicated to women, a factory to process apple (juice and vinegar) to help farmers. Finally, they also suggested that support in establishing a municipal committee specifically dedicated to women would be helpful and suitable. They said that these opportunities are highly demanded by women, as they are eager to take on employment opportunities be it temporary or long-term.



Women participants of focus group discussion in Fnaidek

A women focus group discussion in Karm Chbat is planned and pending confirmation.

### 4.8.3 Gender roles, women's issues and livelihoods

According to information provided by the president of the Committee of Employee Women Union in North Lebanon (CEWU), Asma Mustafa, women are not usually consulted when development projects are planned in the region and are willing to participate more in these type of activities. She stated that in some communities in Akkar do not have a positive view of their municipalities and believe that all projects will benefit the municipalities and not the community directly, and that these affects the level of participation of women in consultations relating to projects in the area.

Regarding gender roles, these are mainly determined by traditional male and female roles in the area, whereby women stay home and men are the main breadwinners. However, some exceptions to the rule, such as the case of a female school bus driver or household appliance technician, may lead to changes in attitudes towards working women within the community, specially among the more vulnerable and less educated, but this process needs time. In addition, economic opportunities and income generating activities for women who want to work from home are scarce and, therefore, support is needed in this regard. According to CEWU's engagements with women from these communities, income generating opportunities are highly demanded by these women due to willingness and need to contribute to household expenses. Women in the communities express their interest in increased vocational education and training opportunities for them, mainly *moune* (homemade food products) sewing and embroidery, hairdressing and makeup, cooking and catering, as well as computer literacy, English language, and life skills courses. It was also reported that some women are also interested in opening small grocery shops, where they can also sell their homemade products, or clothing shops. In these cases, women will need support in accounting, branding and gaining access to markets for their products, as there are no active women cooperatives in the region that can provide these support.

CEWU also reported that although a high level of education among women is also found in these communities, i.e. college degrees, many women do not work due to lack of job opportunities in areas close to their place of residence. Other issues found among working women is their ability to juggle between long working hours and care for the household and family, which may lead to conflicts between husband and wife.

In terms of main social and family issues experienced by women in the region, CEWU reported that the main social and family issues among women in the areas include early marriage, gender-based violence, sexual and reproduction health as well as the need for vocational training, job opportunities and income generating activities, which are scarce in the region. The CEWU has recently completed in August 2019 a number of training sessions for women in Rweimeh and Fnaidek (and other parts of Akkar governorate) addressing these issues as well as communication and conflict resolution.

#### 4.8.4 Decent work and ways to encourage women to apply for jobs

According to Decent Work Adviser of The Employment Intensive Infrastructure Programme at the International Labour Organization, Regional Office for the Arab States (ILO-ROAS), Toni Ayrouth, interviewed on September 3, 2019, women can be encouraged to apply for jobs during construction and operation phases in remote areas like Akkar and communities in the project locations. Ayrouth explained that there is a combination of different factors and strategies that need to be taken into consideration in this endeavor. He provided the example of a current project they support in Tell Abbas, Akkar, for the rehabilitation of agricultural works, which has reached 10 percent of women participation. Similar projects and standards are implemented across Lebanon, and now the target is reaching 15 percent women participation in this type of labor intensive projects. Ayrouth explained that they encourage contractors to hire women through raising awareness about decent work standards and equal opportunities and, specifically, addressing preconceptions about women's physical capacity to perform labor intensive tasks and their level of productivity with the contractor. For instance, the ILO explains that the contractor should focus on creating more jobs for the community through the new project and make financial considerations, i.e. equal pay for equal type of work, but not increase productivity of the workers per se.

Besides preconceptions of women not being able to perform labor intensive work productively, Ayrouth also stated that encouraging women in communities in Akkar has to address other context-specific issues. One aspect is the identification of specific tasks that women in a specific community can perform; the second strategy is to focus on task and skill transfers through training for the construction phase: "If you teach women how to do construction related work, i.e. picking rubble, they can do it very well". As for the operations phase, skills identification and training is also applicable and even more feasible.<sup>25</sup>

Another issue that ILO emphasizes is equal pay, as this is in line with both Lebanese law and international labor standards. Moreover, ensuring that women get paid directly and not through someone else, such as a family member or shawish (community leader), for instance, is also very important.

In addition, transportation to the work site may be an obstacle for women to perform this type of work, as common practices show that travelling long distances in trucks can be dangerous. Therefore, contractors should abide by standards of decent work, not only in terms of equal pay, but also in terms of transportation of workers to the site, which should preserve workers' dignity and integrity. Another strategy to encourage women to apply is ensuring that the women contracted know each other and belong to the same community, so they can commute, work and rest together. Another way in which women can be encouraged to apply for these jobs is by conducting thorough advertising and awareness campaigns in the communities. This process requires contractors to make sure that the community knows about the project and job opportunities very well and that the contractor will conduct a transparent recruitment process.

Also, maternal health responsibility needs to be considered. For instance, the project is trying to address child care for workers in the projects they support and planning to establish a child care center in the work facilities. The ILO conducted focus group discussion with female and male members of the

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<sup>25</sup> In the case of agriculture-related projects, such as the one given as an example by the key informant, long-term women participation is more acceptable within these communities, not only in terms of physical capacity but also culturally.

community to consult them about the benefits of this; results of consultations, however, showed that men were in favor the idea of a child care center, while the women said they prefer to leave the children with their families. In general, it is important to engage with the community, including men, in order to convince them that women are able to perform labor intensive work, due to traditional gender roles, whereby men are the main breadwinners. Therefore, good communication with the community and the contractor is important, to ensure that the former is properly mobilized and the latter does not miss any women applicants during the recruitment process.

The ILO works in trying to overcome issues with equal and timely pay, decent working conditions and transport, appropriate rest hours, provision of gender-disaggregated toilets and rest areas through training and monitoring of contractors' activities through different modalities. In terms of monitoring, the ILO establishes monitoring teams who perform this task on a daily basis to see if contractor abides by the law and decent work standards and working conditions. They also monitor abuse and harassment, not only towards the working women, but also all workers.

In terms of training, the ILO works on mainstreaming monitoring labor intensive projects by training other NGOs and other organizations, that are able to train contractors on decent work principles, such as Caritas, Palladium Group, UNRWA, UNICEF and UNDP. Companies can seek the support of these NGOs in developing and implementing training sessions on decent work standards. Additionally, ILO's Employment Intensive infrastructure Programme Team, which is currently working in Akkar in the aforementioned project, can also provide training and support. Companies can request training from the ILO by contacting Toni Ayrouth. Ayrouth explained that the decent work training covers all principles, including rest, equal pay, dignity, as well as specific and practical guidelines for application of these standards, such as toilets, transportation, and related issues.

## 5 STAKEHOLDER ENGAGEMENT ACTIVITIES COMPLETED

Table 5.1 summarises stakeholder engagement activities that have been completed to inform the assessment of social impacts for the LWP Project and Table 1.2 describes the planned engagement that is currently on ongoing and due to take place in September 2019.

*Table 5-1 Stakeholder Engagement Activities Completed for LWP*

Date	Location/ Community	Stakeholder	Key outcomes / topics discussed
August 28, 2019	Fnaidek	8 Women members of the Fnaidek community	<ul style="list-style-type: none"> <li>Gender roles and women's participation in the community.</li> <li>Livelihoods and job opportunities.</li> <li>Awareness about the project.</li> <li>Ways to support the women members of the community and keep them informed.</li> </ul>
August 28, 2019	Fnaidek	1 Herder and his family	<ul style="list-style-type: none"> <li>Grazing activities and locations throughout the year.</li> <li>Livelihoods and sources of income.</li> <li>Level of awareness about the project and perceptions on impacts.</li> </ul>
August 29, 2019	Rweimeh	7 Women members of the Rweimeh community	<ul style="list-style-type: none"> <li>Gender roles and women's participation in the community.</li> <li>Livelihoods and job opportunities.</li> <li>Awareness about the project.</li> <li>Ways to support the women members of the community and keep them informed.</li> </ul>
August 29, 2019	Rweimeh	3 herders from Rweimeh	<ul style="list-style-type: none"> <li>Grazing activities and locations throughout the seasons.</li> <li>Livelihoods and sources of income.</li> <li>Level of awareness about the project and perceptions on impacts.</li> <li>Women's roles in herding and other activities.</li> <li>Ways to support herders and their families and keep them informed about the project.</li> </ul>
August 29, 2019	Karm Chbat	14 herders from Karm Chbat	<ul style="list-style-type: none"> <li>Grazing activities and locations throughout the seasons.</li> <li>Livelihoods and sources of income.</li> <li>Factors affecting herders.</li> <li>Women's roles in herding and other activities.</li> <li>Level of awareness about the project and perceptions on impacts.</li> <li>Ways to support herders and their families and keep them informed about the project.</li> </ul>
September 2, 2019	Fnaidek	1 Herder and his family	<ul style="list-style-type: none"> <li>Grazing activities and locations throughout the year.</li> <li>Livelihoods and sources of income.</li> <li>Level of awareness about the project and perceptions on impacts.</li> </ul>



Date	Location/ Community	Stakeholder	Key outcomes / topics discussed
September 2, 2019	North Lebanon (community) Beirut (location)	Ms. Asma Moustafa - President of Committee for Women Employee Union in North Lebanon	<ul style="list-style-type: none"> <li>• Main social and family issues faced by women in the communities, i.e. GVB, SRH, early marriage.</li> <li>• Jobs and income generating opportunities for women.</li> <li>• Need for vocational education and training for women in the region.</li> </ul>
September 3, 2019	Fnaidek	2 Herders and their families	<ul style="list-style-type: none"> <li>• Grazing activities and locations throughout the year.</li> <li>• Livelihoods and sources of income.</li> <li>• Level of awareness about the project and perceptions on impacts.</li> <li>• Concerns about the project impacts.</li> </ul>
September 3, 2019	Beirut	Mr. Tony Ayrout – Decent work Advisor - ILO	<ul style="list-style-type: none"> <li>• Synergies with the Employment Intensive Infrastructure Programme and the 'Decent Work' training package which is already developed.</li> <li>• Working conditions (including challenges with women working in male-dominated working environments).</li> <li>• Equitable and transparent employment recruitment opportunities (including how to encourage women to apply for positions).</li> <li>• Strategies to encourage women to apply for jobs in Akkar (during both construction and operation phases)</li> </ul> <p>Information to be provided following meeting:</p> <ul style="list-style-type: none"> <li>• Status of vulnerable people (migrants, women, refugee and low-skilled workers)</li> <li>• Access by workers to the National Social Security Fund (NSSF) and union/workers associations' membership.</li> <li>• National record of occupational H&amp;S incidents amongst construction workforces and steps to reduce risks for the construction phase of this project.</li> <li>• Informal and irregular work (national and regional data if available).</li> </ul>

Table 5-2 Ongoing Stakeholder Engagement Activities and Activities to be Completed in September 2019

Date	Location/ Community	Stakeholder	Key topics to be discussed
TBC	Karm Chbat	Women members of the Karm Chbat Community	<ul style="list-style-type: none"> <li>Gender roles and women's participation in the community.</li> <li>Livelihoods and job opportunities.</li> <li>Awareness about the project.</li> <li>Ways to support the women members of the community and keep them informed.</li> </ul>
September 4	Beirut	Ms. Lena Joubran - Vice President of Kunhadi	<ul style="list-style-type: none"> <li>Discuss whether the NGO would be willing 'in principle' to support the project by implementing a public road safety campaign along the road transport corridor. This is expected to involve developing an information leaflet on road safety, organizing a series of meetings/sessions with each community, and repeating the exercise amongst local schools and similar types of institutions, where necessary.</li> </ul>
September 4	Beirut	Mr. Soman Moodley Country coordinator of LHIF	<ul style="list-style-type: none"> <li>Issues and challenges of affected and vulnerable groups relating to living and working conditions, as well as access to social services, i.e. women, herders, refugees, gypsies.</li> <li>Job opportunities for women, as well as ways to encourage host community and refugee women to engage in work or income generating activities and apply for local employment positions (if applicable).</li> <li>The role of forum member INGOs in the protection of affected and vulnerable groups in the DAOI and improvement of socio-economic conditions.</li> </ul>
September 5	Beirut	Ms. Layal Abou Darwich Associate Programme Officer UNHCR	<ul style="list-style-type: none"> <li>Issues and challenges of refugees relating to living and working conditions, as well as their current access to social services.</li> <li>Refugees level of integration within the host community.</li> <li>Strategies for addressing H&amp;S risks associated with road transport movements affecting refugees and host communities.</li> <li>Status of women, including women's level of workforce participation and income generating activities available to them.</li> <li>The organization's potential role in facilitating the organization of sessions with refugee/Dom communities who are living within the DAOI.</li> </ul>

			<ul style="list-style-type: none"> <li>Partner NGOs that could potentially be involved in consultations with refugees and awareness on road safety.</li> </ul>
September 5	Beirut	Aya Majzoub Lebanon Researcher HRW	<ul style="list-style-type: none"> <li>Working conditions (including challenges with women working in male-dominated working environments).</li> <li>Equitable and transparent employment recruitment opportunities (including how to encourage women to apply for positions).</li> <li>Status of vulnerable people (migrants, women, refugee and low-skilled workers) within the DAOI.</li> <li>Actions/behaviour of Lebanese security forces (both private and national police/Lebanese army).</li> </ul>
TBC	TBC (Akkar governorate)	Local NGOs	<ul style="list-style-type: none"> <li>Assess and increase awareness about the project nature, impacts and grievance mechanism.</li> <li>Discuss the role of local NGOs in their communities and explore avenues for collaboration with local NGOs.</li> </ul>

## 6 SOCIAL MITIGATION AND ENHANCEMENT

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The Project is expected to have multiple effects on socio-economic conditions at a national, regional and local level. Where negative impacts or risks are identified, appropriate mitigation measures are recommended to avoid or reduce them in accordance with the mitigation hierarchy adopted for the ESIA. A residual impact assessment is presented to identify the significance of adverse impacts that might be expected, even after implementation of the proposed mitigation measures.

The socio-economic impact assessment has identified a range of opportunities to enhance expected positive impacts from certain risks and impacts. Where enhancement measures are proposed for positive impacts, no residual impact is presented as this is only necessary for the assessment of negative impacts in accordance with the social impact methodology.

Where there is uncertainty over the potential significance of an impact, mitigation includes monitoring activities to check whether the impact is occurring, or the effectiveness of mitigation measures that are to be used. During the start of project implementation, potential impacts shall be carefully monitored and, where necessary, additional mitigation measures may be required and shall be designed and implemented. Such measures shall be fully incorporated into the broader ESMS used for the construction phase.

## 7 SOCIO-ECONOMIC IMPACT ASSESSMENT

### 7.1 Introduction

The following socio-economic impacts are assessed for the project:

1. Impacts on the regional and national economy during construction from procurement;
2. Impacts on land and livelihoods from land physically occupied by the project during construction;
3. Impacts from employment and training during construction;
4. Impacts from the use of local accommodation facilities by the non-local construction workforce;
5. Potential increases in crime and conflict from influx and other sources during construction;
6. Impacts from the use of security personnel during construction and operations;
7. Health and safety incidents involving the workforce and local communities during construction and operations;
8. Impacts from increased community health and safety risks from road transport during construction and operations;
9. Impacts from modifications to public infrastructure for the transportation of turbines during construction;
10. Impacts from local employment during operation;
11. Impacts on land during operation of the turbines
12. Impacts on the national and regional economy during operation; and
13. Impacts associated with positive and negative perceptions towards the project.

### 7.2 Impacts on the regional and national economy during construction from procurement

#### 7.2.1 Impact assessment

The Project will positively influence the regional and national economy during construction from the direct procurement and supply of materials and services from companies based in the local, regional and broader areas of Lebanon. This includes for example, the Lebanese company that shall be hired to implement the Balance of Plants (BOP) contract, procurement of a local security company, existing local construction companies that provide machinery and workers to complete the necessary civil works, lodging and accommodation services provided to the workforce residing in the project locations, plus many others. There is also the possibility of local companies being involved in the provision of materials and services during construction.

The Project will entail significant capital spend during construction on plant, machinery and third-party companies to provide services and materials.

Impact Assessment: Impacts on the regional and national economy during construction from procurement		
Impact Nature	Positive	Negative



Impact Assessment: Impacts on the regional and national economy during construction from procurement					
	Impact is positive because construction activities will generate economic growth at a local, regional and national level through the procurement of services and materials.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is both direct and indirect because the company will pay taxes during the purchase of materials and services and generate indirect economic opportunities as project suppliers procure materials and services from their own internal supply chain networks. The increased demand for business-to-business services to small-to-medium enterprises (SMEs) will generate increased revenue across the region, resulting in higher turnover for the small to medium enterprises involved. The impact is reversible as it will only continue during the construction phase.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact is short-term as construction works are expected to continue for a period of 7 months.				
Impact Extent	Local		Regional	National	
	The impact is expected to occur at a local, regional and national level.				
Impact Magnitude	Negligible	Low	Medium	High	
	The impact magnitude is low to medium because the total capital expenditure incurred by the project developer during construction is expected to be a small contribution to the annual regional economic output. Where local companies are to be used, the impact magnitude is expected to be medium.				
Receptor Value / Sensitivity	Negligible	Low	Medium	High	
	The receptor value is low to medium as the use of SMEs based in the region will have multiple clients and the project's contribution to their revenue and profitability will vary depending upon the overall size of the business. For some SMEs, their involvement in the project may result in a significant increase in business turnover during construction which may represent a substantial boost to their annual revenue and profits.				
Gender and vulnerability Considerations	Yes		No		
	There is an opportunity for the project to preferentially use local businesses that are either owned by women, or have a substantial female workforce, with the aim of enhancing women's livelihoods and achieving gender-inclusive economic growth.				
Impact Significance	Negligible	Minor	Moderate	Major	
	The overall impact significance is moderate. This is a positive impact and no mitigation is required. No residual impacts are expected to occur.				

### 7.2.2 Mitigation and enhancement

In order to strengthen the positive effects and record the use of SMEs the following enhancement measures shall be implemented through a Local Hiring and Procurement Plan:

- The project shall identify opportunities to involve SMEs either based in the DAOI and the region;
- The total capital spent on SMEs during the construction phase shall be recorded, broken down by where they are based and operational (i.e. at a local, regional and/or country level). This information shall be collated and compiled into future Environmental and Social Performance Reports to provide stakeholders with information on the how Lebanese SMEs have been involved in the project. The reports shall also include details (presented as case studies) reflecting how the SMEs have benefitted from their involvement in the project to date, using the information from interviews with business owners, which shall be accompanied by photographs and statistical summaries; and
- The project shall identify opportunities to involve SMEs who are either owned by women or have a substantial female workforce during the construction phase. Information on these types of SMEs shall be included into future Environmental and Social Performance Reports.

### **7.3 Impacts on land and livelihoods from land physically occupied by the project during construction**

#### **7.3.1 Impact assessment**

Impacts to land and livelihoods will commence at the start of construction civil works, as working areas are fenced off to prevent unauthorised entry. Fences shall be positioned to surround individual turbine foundations/sites, while other construction site area such as access roads, internal roads (where cables are to be installed), the substation site, and temporary storage areas, and other types of project infrastructure will remain inaccessible to the public for Safety & Security reasons though not necessarily fenced due to the expansive area they cover.

Within areas where construction works are ongoing, impacts to land and livelihoods will occur arising from a loss of access to land due to access restriction. According to the results of fieldwork undertaken during August 2019, the land within the project area is currently being used for:

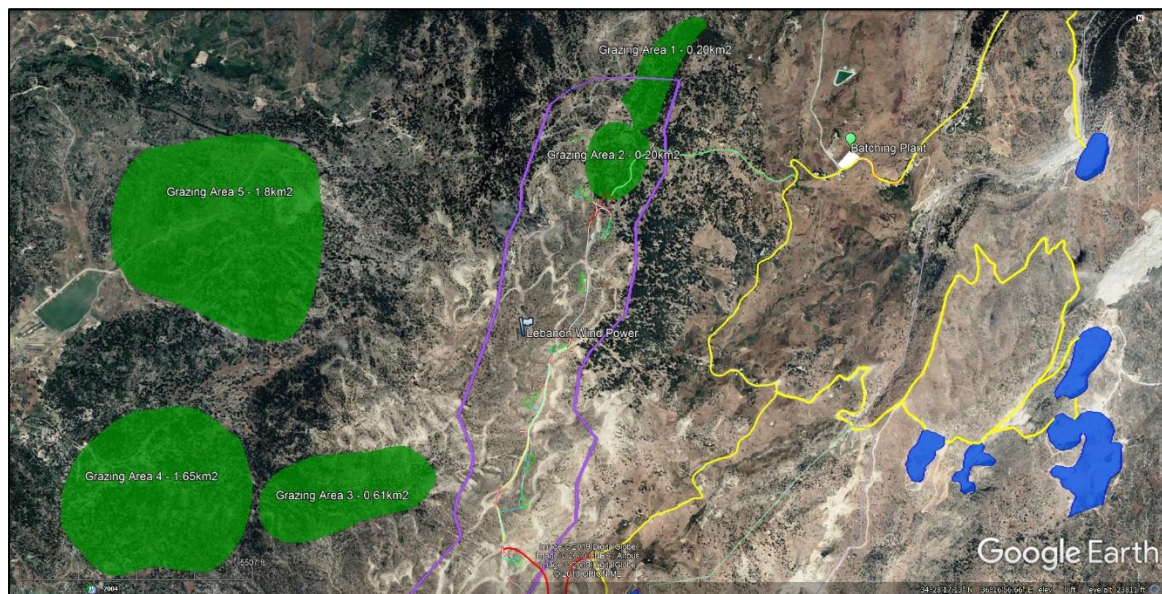
- Animal grazing by herders;
- Recreational hunting for wild rabbits, partridges (a type of bird) and wild boar which is legal during the hunting season (15<sup>th</sup> September until the end of January) and illegal (although poorly enforced) outside of this time;
- General access along footpaths (mainly by herders); and
- The collection of wild herbs and other materials (primarily by women).

According to information from the herders, the grazing period is divided into two: January to May in Halba area, and June to December near to the project area. As the construction period (according to the BOP Contractor) is from March to September 2020, the period of overlap with the grazing season is only 4 months.

Land parcels needed for the Project are owned by the Municipality of Fnaidek to the west and the Jaafar Family to the north and east (i.e. Karm Chbat and Rweimeh Village). Land parcels required for the physical footprint of the project (i.e. access roads, turbine structure, airspace overpass distances, etc.)

shall be leased for a period of 28 years. The land to be leased is free of any residential or other structures and no physical displacement will occur.

According to information gathered during August 2019, 16 herders use the project area for the purpose of grazing. Other herders may also use the project area for grazing during summer months. The approximate boundary of grazing areas has been demarcated using local knowledge from the survey team and from herders themselves. A total of five grazing areas have been identified, with grazing areas 1 and 2 located close the project as illustrated below.



*Figure 7-1 Grazing (Green) and hunting (Blue) grounds around the Project area*

Based upon an analysis of these grazing areas the temporary access restrictions that the project will enforce during construction can be estimated. According to the GIS calculations, approximately 9% of grazing land (as a total of interference with grazing areas 1 and 2) shall be impacted from a loss of access. Herders will be able to use the remaining parts of grazing areas 1 and 2, and should they wish to, grazing areas 3, 4, and 5. The percentage to be permanently lost during operation is estimated to be 3% given that the operational footprint of the project is significantly lower than that required for construction.

Additional information gathered during interviews with herders clearly indicates that there are significant concerns associated with the lack of alternative grazing areas to those currently used, as they may not have permission to access the land from the relevant landowners. Based upon the information gathered, it is clear that herders are involved in a marginal livelihood where any impact to their current status could have adverse impacts to their standard of living of the household.

The areas used for the collection of wild herbs by women, and for the purpose of hunting are not as well defined and take place across the entire region. It is considered that impacts associated with the collection of wild herbs and other materials, and for hunting, will not be significant as there are multiple alternative areas available for these activities to be continued. These impacts are not included in the assessment table below.

Impacts on land and livelihoods from land physically occupied by the project during construction					
Impact Nature	Positive			Negative	
	Impact is negative as herders (and their livestock owners) may experience a loss of livelihood arising from restrictions in access to grazing areas during construction.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is direct because land users will no longer be able to access land inside fenced off areas. Indirect impacts may also occur due to the way in which greater pressure is placed upon alternative land resources outside of fenced-off areas, which could result in conflicts between herders and potentially other land user groups that have not yet been identified within these alternative areas. Indirect impacts may also occur to women who have a role in livestock keeping.				
	During construction most of the impact is reversible as the fenced-off areas shall be removed after the construction phase is completed. However, some of the land fenced-off during construction shall still be used during operations, so part of the impact is irreversible.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact is short-term and long-term as land users will no longer be able to access the land for herding inside the project area from the moment fences are installed along site working areas. Some access restrictions shall continue into operation.				
Impact Extent	Local		Regional	National	
	The impact will occur at a local level amongst the herders and their livestock owners (where different). Even if herders decide to seek alternative grazing areas this is likely to still be within the local geographical area.				
Impact Magnitude	Negligible	Low	Medium	High	
	The impact magnitude is medium as the number of herders is expected to be between 16-20, depending upon the number of additional herders that use the project area during the summer months.				
Receptor Value / Sensitivity	Negligible	Low	Medium	High	
	The receptor value is high. Herders have reported that they are vulnerable to changes in their livelihoods from meteorological conditions, and that they experience occasional hunger in their households.				
Gender and vulnerability Considerations	Yes		No		
	The herders are vulnerable as they are often of Syrian origin, working without formal documentation to a Lebanese owner of the livestock. Typically, they do not have any alternative livelihood and may be subject to harassment by their Lebanese counter parts. Women may also be affected by any change in livelihood status as they typically are involved in feeding and cleaning sheep, milking and processing animal products for either sale or household consumption.				
	Negligible	Minor	Moderate	Major	

Impacts on land and livelihoods from land physically occupied by the project during construction	
Impact Significance	The overall impact significance is moderate as there is the potential to impact vulnerable people's livelihoods which are marginal.

### 7.3.2 Mitigation and enhancement

The project shall develop and implement a Livelihood Restoration Plan (LRP) for the construction phase of the Project (only).

The LRP shall include:

- The results of a socio-economic survey that aims to provide an accurate description of pre-project living standards and livelihoods that can be used as a benchmark to monitor the performance of the LRP during implementation. The socio-economic survey should include a section on food security, housing condition, and livestock numbers and their health;
- The provision of compensation for loss of access to grazing land which shall include a monthly provision of animal feed for the periods (months) when access to grazing areas is restricted. This shall be calculated based upon the number of animals by type and age;
- Support to secure access to alternative grazing areas during construction so that the daily movement of herders are able to continue, reflecting that herding is a way of life by shepherds and that ideally it would be more sustainable for them to continue grazing with their animals rather than relying on quantities of purchased animal feed which could introduce dependency;
- Details of technical capacity building to be provided to herders to check the quality of their livestock, and capacity building to their households to process and store animal products more effectively (this shall include dedicated sessions to women);
- Details of a grievance mechanism that can be used to raise a concern about any aspect associated with the project, compensation or other matter;
- A reporting and evaluation framework which includes a specific set of measures to track changes in animal condition, women's livelihoods, household socio-economic status and food security; and
- Clearly defined roles and responsibilities, a realistic budget (including contingency) and implementation schedule.

### 7.3.3 Residual impact assessment

Residual Impact Assessment: Impacts on land and livelihoods from land physically occupied by the project during construction				
	Negligible	Minor	Moderate	Major



<b>Impact Significance</b>	Following implementation of the LRP the impacts to land and livelihoods during construction are expected to be Minor. Dependency on the provision of fodder can be reduced where alternative grazing areas can be used during construction.
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## 7.4 Impacts from employment and training during construction

### 7.4.1 Impact assessment

The number of local people that are to be employed during construction is expected to reach a peak of 230 personnel, expected to occur between May and July 2020. This includes managerial personnel (approximately 45 in total, of which 25 will be local professionals), as well as technicians and low-skilled personnel (approximately 60 technicians of which 40 are local professionals, and 125 low-skilled workers, of which 100 will be from households located inside the DAOI) who will receive various levels of training before starting work on the project. This includes basic training on HSE, labour management and, where required for specific job profiles, vocational training.

The construction workforce shall comprise of four categories of workers, broken down into skilled and low-skilled, engaged in the following order of priority (highest to lowest):

1. Local people with the legal right to work residing within the DAOI;
2. People with the legal right to work residing in the northern region of Lebanon;
3. People with the legal right to work who are based elsewhere in Lebanon; and
4. Expatriates who have the legal right to work.

The total number of the local workforce is expected to increase as site preparation activities commence. After the peak level has been reached, the local workforce will gradually be reduced leading up to the start of operations.

The individuals employed during the construction stage and their household members will benefit from increased income that is likely to increase their overall standard of living, access to healthcare and educational resources, and reduce their socio-economic vulnerability. This is especially important for young people, herders and women who have recorded high levels of unemployment and/or economic vulnerability.

The project represents an opportunity for young people to increase their skills through vocational training that will be of use to them after their involvement in this project is completed. Individuals who receive such vocational training should be able to seek alternative work within the construction sector in the future, having benefitted from their involvement in the project.

Impact Assessment: Impacts from employment and training during construction					
Impact Nature	Positive			Negative	
	Impact is largely positive as local employment is a key expectation amongst local community residents and their representatives, and this has been recorded during numerous stakeholder engagement activities.				
	However, there is a potential for local tensions to arise if local, Lebanese residents incorrectly perceive that non-nationals or people from outside the local area (including Syrians) are being provided with employment opportunities that they are entitled to. Whilst local employment is generally a positive impact, road blockades and other forms of forced engagements (such as protests) could occur if the local recruitment process is not perceived to be fair and transparent.				
	There are currently high levels of tensions between Lebanese and Syrians associated with employment and other types of economic opportunities amongst the local communities.				
	Other types of negative impacts could also occur if the income earned is not spent in a sustainable, gender-inclusive manner by male members of the household.				
There is also the potential for labour violations to occur within the broader supply chain used by the BOP Contractor and their own internal supply chain. Violations could include, for example, the use of forced or child labour.					
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is both direct and indirect because the workers and their household members will benefit from increased income and from training and skill development opportunities. The impact is reversible as the income generated from local employment shall cease at the end of their employment as numbers reduce towards the start of operations.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The majority of the impact is short-term as construction works are expected to continue for a period of 7 months. However, permanent impacts are expected to take place associated with the increase in living standards and from the vocational training provided. Experience has shown in similar projects in Lebanon that short-term employment provides an opportunity for households to pay off their debts, invest in the quality of their housing and increase access to education amongst young people. These types of impacts will be long-lasting and represents a significant opportunity within the household for positive change.				
Impact Extent	Local		Regional	National	
	The impact will mostly occur at a local level amongst the communities in the DAOI.				
Impact Magnitude (positive impact)	Negligible	Low	Medium	High	
	Impact magnitude is medium as the generation of income into the household is expected to have a substantial change on the employed person and their household. This does, to a large extent, depend upon the way in which the money is shared amongst				

Impact Assessment: Impacts from employment and training during construction				
	household members (including cash provided to spouses, spend on children and the elderly, etc.) and whether it is used in a sustainable, gender-inclusive manner.			
Impact Magnitude (negative impact)	Negligible	Low	Medium	High
	The impact magnitude is medium for the negative impacts associated with local employment.			
Gender and vulnerability Considerations	Yes		No	
	There is an opportunity for women to become a substantial part of the low-skilled and skilled workforce, benefitting from the vocational training and earned income. The employment of women shall reduce their economic vulnerability and may increase their decision-making capacity within the household.			
	Additionally, vulnerable women and children may be employed within the broader supply chain and exploited, subject to poor working conditions and terms of employment.			
Receptor Value / Sensitivity	Negligible	Low	Medium	High
	The sensitivity is medium as local employment is a key expectation amongst local people. It is essential that the local recruitment process is adequately managed and perceived to be both fair and transparent, involving the active participation of local and regional stakeholders.			
Impact Significance (negative impact)	Negligible	Minor	Moderate	Major
	The overall significance for negative impacts is moderate.			
Impact Significance (positive impact)	Negligible	Minor	Moderate	Major
	The overall significance for positive impacts is moderate.			

#### 7.4.2 Mitigation and enhancement

The project shall develop and implement a Local Hiring and Procurement Plan, and a Labour and Working Conditions Plan, that includes:

- A summary of the numbers and job description profile, required for the Project using information from the BOP Contractor;
- Details of the vocational training that each worker shall be provided with;
- Details of a fitness to work certificate that each worker shall be required to obtain following a medical examination which is organised and paid for by the Project;
- A commitment to provide a certificate to each worker that describes their job title, profile, vocational training received and any certifications, duration of employment, and contact details for a future employer to use to check that the information contained therein is accurate and valid once their involvement in this Project is complete;

- A description of the process used by the BOP Contractor to recruit the construction workforce based upon the four different categories of workers described above and how this is to be publicly disclosed to local and regional stakeholders. The description will include details of the way in which positions are to be publicly advertised, how candidates can apply and what support shall be provided to candidates seeking work who are not able to complete an application form during to literacy or other reason, the way in which candidate details shall be recorded on a central register/database; how candidates shall be individually screened based upon a clearly defined criteria to be applied to determine the suitability of candidates against specific job requirements (this includes verification that they are locally resident), and how workers shall be subject to a medical test to demonstrate their fitness to work;
- Women shall be actively encouraged to apply for both low-skilled and skilled positions;
- Roles and responsibilities for employment between the Project developer who shall oversight of the entire process, and the BOP Contractor;
- Details of a worker grievance mechanism that shall be available (and disclosed) during the recruitment process, including a 'whistle-blower hotline' where allegations of fraud or misrepresentation can be reported, in addition to any labour violations;
- How the legal rights and terms and conditions of employment are to be provided (and explained verbally, where necessary) to workers them at the start of and during their employment. This shall include details of their salary, right for freedom of association, severance pay, working hours, overtime payments, tax and other types of deductions, and provision of insurance from a project-related health and safety incident;
- How workers are to be provided with access to occupational health and safety services during the period of their employment;
- How labour relations are to be managed during the construction period to ensure the workplace is suitable for the presence of women and any minority groups, in accordance with the Project's policy documents covering equal opportunity and anti-bullying/harassment. This shall include a Worker's Code of Conduct that is presented individually during their initial induction process for their review and signature to reflect their acceptance;
- Providing workers with regular information about the temporary nature of their position and giving them enough notice as to when the termination of their contract may occur, notification does not come as a sudden shock and trigger resentment or protests;
- How the above arrangements shall apply to sub-contractors used, where there is a risk of supply chain workers generating impacts described above; and
- Reporting and monitoring indicators covering the recruitment process and ongoing management of the workforce.

In relation to the potential for labour violations to occur within the supply chain, the Project shall implement the following additional control measures:

- The use of a Supplier Selection Procedure that aims to gather information on the way in which all suppliers to the Project (including the BOP Contractor) manage the risk of labour violations within their internal supply chains;
- Completion of a screening assessment prior to the start of construction to gather information on the types of suppliers and materials required by the BOP Contractor, so that high-risk areas are identified and focused on; and
- Completion of labour right audits following the start of construction works to check that the controls required to be in place are being effectively implemented across the BOP's internal supply chain.

### 7.4.3 Residual impact assessment

Residual Impact Assessment: Impacts from employment and training during construction				
Impact Significance (negative impact)	Negligible	Minor	Moderate	Major
	Following implementation of the Local Hiring and Procurement Plan, and also a Labour and Working Conditions Plan, it is anticipated that negative impacts associated with the recruitment process are reduced to minor. However, it is likely that some groups may remain dissatisfied with the recruitment procedure, possibly due to the limited number of available positions during construction or from unrealistic expectations, or from suspicions of corruption.			

## 7.5 Impacts from the use of local accommodation facilities by the non-local construction workforce

### 7.5.1 Impact assessment

The construction workforce that is not based locally, shall be provided with accommodation facilities based in the local area. The selection of facility shall be the responsibility of the BOP Contractor. As stated in *Section 3.2: Impacts on the regional and national economy during construction from procurement*, the owners and employees of hotels and accommodation facilities used will directly benefit and this impact is not re-assessed here.

The number of construction workers to be relocated and accommodated is expected to be 65 at a peak. Workers using local accommodation may be exposed to health and safety risks associated with fire, poor sanitation, electrical safety, poor security risks, and food safety. There is also the potential for workers accommodated locally to interact with local people, increasing tensions between incomers and locals, the spread of communicable diseases, and from an increase in crime (including sexual assaults) on local people. It is also possible that commercial sex workers will move towards accommodation facilities being used seeking clients.

Impact Assessment: Impacts from the use of local accommodation facilities by the non-local construction workforce		
Impact Nature	Positive	Negative



Impact Assessment: Impacts from the use of local accommodation facilities by the non-local construction workforce					
	The impact is negative as the construction workforce not locally based shall be potentially exposed to a variety of risks from the use of accommodation facilities. The incoming workforce may also act in an inappropriate manner towards local residents in the vicinity of the accommodation facility, resulting in an increase in tensions. There is also the potential for a rise in communicable diseases to occur and a rise in local tensions, if male workers seek sexual services from local residents (including marginalised women/children), or commercial/occasional sex workers.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is direct because the individuals involved, and the nearby communities may be impacted by the behaviour of workers based in accommodation facilities. The impact is both reversible and irreversible, depending upon the type of security and health incidents that occur.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The majority of the negative impacts are short-term as construction works are expected to continue for a period of 7 months. However, medium-term, long-term and permanent effects may arise depending upon the type of health or criminal incidents that occur. It is possible that this impact leads to permeant and irreversible changes in health status either amongst workers, or to other people.				
Impact Extent	Local		Regional	National	
	The impact is expected to occur at a regional level, reflecting the locations where worker accommodation facilities are to be used which is outside of the DAOI but within the region of the project.				
Impact Magnitude	Negligible	Low	Medium	High	
	The impact magnitude is high as potentially the entire workforce could be exposed to communicable health risks, as well as people and communities close to the facilities used.				
Gender and vulnerability Considerations	Yes		No		
	Women, particularly young girls from minority populations (such as refugees and gypsies), are at risk from the incoming workers accommodated locally. Interactions between incoming workers and women has the potential to increase the incidence of communicable diseases, raise tensions and increase the prevalence of gender and sexual based violence. There is also the potential that refugees and gypsies are specifically targeted for sex work, as the incoming workforce may perceive that they will be less able to seek redress, raise a formal complaint, or be taken seriously by Lebanese security forces if they wish to report an incident.				
Receptor Value / Sensitivity	Negligible	Low	Medium	High	
	The sensitivity is high as the health and safety of the workforce and surrounding people, particularly vulnerable groups, is the project's highest priority.				
	Negligible	Minor	Moderate	Major	

Impact Assessment: Impacts from the use of local accommodation facilities by the non-local construction workforce	
Impact Significance	The overall significance for negative impacts is major.

### 7.5.2 Mitigation and enhancement

The Project shall, in close coordination with the BOP Contractor, prepare a Worker Accommodation Plan that describes:

- The way in which accommodation facilities are to be selected which shall take into consideration: (1) the nearby proximity of social receptors such as gypsy camps, refugee settlements, schools, areas of informal settlements, plus other types; (2) the results of an audit against the applicable content of the IFC/EBRD publication entitled: *“Workers’ accommodation: processes and standards - A guidance note (2010)”*; All accommodation facilities used shall be inspected and required to meet the minimum specifications of the guidance note which covers fire, electrical safety, sanitation, security, food safety and other topic areas, prior to their use;
- The provision of separate sleeping, recreational and eating areas for women so that they can choose whether to use mixed gender areas, or not, during non-working times;
- The use of security personnel stationed permanently at each accommodation facility;
- A restriction of the incoming workforce that prohibits them from leaving the accommodation facility during non-working hours, unless they have permission from the facility manager. All worker’s leaving and entering the accommodation facility shall be recorded to note the date, time of entry/exit and for what purpose;
- A worker Code of Conduct that prohibits sexual interactions inside accommodation facilities, and with local people, as well as the on-site consumption of alcohol and any other illicit substances. Any workers seeking to solicit sexual services shall be immediately terminated from their employment. The worker Code of Conduct shall be disclosed to workers during the initial induction process;
- Disclosure of the worker grievance mechanism inside the working accommodation facilities, and other notices to raise awareness of worker’s legal rights;
- Disclosure of the Project grievance mechanism that can be used by local people (or other parties) to raise a concern or complaint about the behaviour of resident workers;
- Regular meetings between workers and Project Senior Management to discuss the quality of accommodation facilities; and
- Reporting and monitoring indicators which shall include periodic audits of accommodation facilities used, and engagement with local people to check the behaviour of the incoming workforce.

During use of the hotels and accommodation facilities, the Project shall monitor the physical presence of adult/child sex workers. Sex workers who are present shall be requested in a respectful and culturally appropriate manner by the facility manager to move and stay away from the area. If sex workers remain within the close proximity of the facility, the Lebanese Security Services shall be requested to provide assistance in moving them away from the area. Under no circumstances, shall the facility manager use force to remove people from soliciting sexual services.

### 7.5.3 Residual impact assessment

Residual Impact Assessment: Impacts from the use of local accommodation facilities by the non-local construction workforce				
Impact Significance	Negligible	Minor	Moderate	Major
	Following implementation of the Worker Accommodation Plan the impacts will reduce to minor.			

## 7.6 Potential increases in crime and conflict from influx and other sources during construction

### 7.6.1 Impact assessment

During construction there is a potential for people from outside the local area to turn up without invitation, seeking employment and other types of economic opportunities. This may result in a spread of communicable diseases, increased tensions between local people and newcomers, and may result in an increase in the local incidence of crime.

There is also the potential for people across the country to have unrealistic views as to the level of employment and other economic opportunities available, considering that there will be three separate projects (LWP, SA and HA) being completed in parallel within the same geographic region.

There are very high levels of social cohesion and group identity amongst community residents inside the DAOI, and newcomers seeking short-term employment or other types of economic opportunities shall be quickly identified. Many of the security staff used to guard construction sites and accommodation facilities, are likely to be local people themselves and will be able to identify the presence of newcomers.

The presence of security staff within the project area at construction sites, and those stationed at accommodation facilities, may act to improve security conditions within the local communities.

Impact Assessment: Potential increases in crime and conflict from opportunistic influx					
Impact Nature	Positive		Negative		
	The impact is negative. Tensions may arise between locals and newcomers competing over project benefits and opportunities. Additional pressure on environmental and social welfare resources may also occur, alongside an increase in crime.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is direct as the arrival of newcomers may result in a rise in tensions. It is reversible as tensions are expected to quickly reduce once newcomers realise that they will be unable to obtain employment from the project and seek alternatives elsewhere.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact is temporary as newcomers are only expected to arrive during the construction period only due to the relatively low workforce of the operational stage.				
Impact Extent	Local		Regional	National	
	The impact will occur at a local and regional level amongst the communities in the DAOI, considering that there are three parallel construction projects to be started within the same time period, in the same geographical region.				
Impact Magnitude	Negligible	Low	Medium	High	
	The impact magnitude is low because large numbers of newcomers are not expected to arrive given the relatively low construction workforce number required (for example, the construction unskilled workforce requirement is just 100 personnel).				
	Whilst there are going to be three construction projects within the same region, the project construction workforce requirement is small (100 unskilled for each project) and this small, total number of people is not expected to result in large numbers of people moving towards the project site given that 300 people is approximately 0.075% of the population of the region (this is 400,000).				
Gender and vulnerability Considerations	Yes		No		
	Women and children are particularly at risk from the presence of newcomers (likely to be male) who move towards the project area, seeking economic opportunities. Women and children may be harassed or subject to unwarranted attention.				
Receptor Value / Sensitivity	Negligible	Low	Medium	High	
	The receptor value is medium as it may not require multiple incidents for a general rise in local community tensions and perceptions of crime to occur.				
Impact Significance	Negligible	Minor	Moderate	Major	
	The impact significance is minor.				

## 7.6.2 Mitigation and enhancement

The following mitigation and enhancement measures shall be implemented:

- In accordance with the Local Hiring and Procurement Plan and Stakeholder Engagement Plan, details of the local employment process shall be publicly disclosed to emphasise that communities located inside the DAOI are being preferentially offered opportunities, and that people resident outside of these areas should not move towards the project area as they will not be eligible for employment. The public announcements shall also state that people should not move towards the project area seeking other forms of economic opportunities, as the Project has a strict procurement policy and all contracting processes for the use of companies and local workforce requirements are already established and finalised. It is anticipated that these measures collectively, shall dissuade people from moving towards the project area during construction as they will be unable to obtain work or seek other types of economic opportunities;
- The Project shall monitor the arrival of newcomers to track if influx is occurring during construction. If this is noted to occur, in large numbers, then additional resources will be provided by the Project to support communities to maintain calm, and newcomers shall be informed (by community leaders and/or CLOs) that there are no employment positions or other forms of economic opportunities available to them and that they should return to their place of origin; and
- The incidence of crime and other social ills shall be recorded through regular engagement with community leaders and from local policing forces, to gather their perceptions associated with any changes in the type and incidence of crime. Crimes that are brought to the attention of the Project shall be recorded and immediately referred to the Lebanese Police for investigation.

### 7.6.3 Residual impact assessment

Residual Impact Assessment: Potential increases in crime and conflict from opportunistic influx				
Impact Significance	Negligible	Minor	Moderate	Major
	The residual impact significance is expected to be minor once the mitigation measures have been implemented.			

## 7.7 Impacts from the use of security personnel during construction and operation

### 7.7.1 Impact assessment

During the construction phase, personnel from a private security company shall be used by the Project to provide general security at construction working areas to ensure that there is no entry of unauthorised personnel and that construction equipment is safe and secure. Security personnel shall also be stationed at each accommodation facility to check the behaviour of the non-local workforce. Security personnel from the Lebanese Police Force and Lebanese Army may also be involved in providing general support as they patrol the local and regional area.

There is the potential for a security personnel (either from the private force, or from a national force) to use excessive force that results in damage to the Project's reputation and act as a trigger point to start local protests. No security personnel used from a private company involved in the project shall be armed. The Lebanese Police Force and the Lebanese Army are armed. Security personnel shall be present during the operational phase in significantly lower numbers.

Impact Assessment: Impacts from the use of security personnel during construction and operation					
Impact Nature	Positive			Negative	
	The impact is negative as the presence and behaviour of security staff may result in a rise in local tensions if they behave in an inappropriate manner.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is direct and indirect because it involves the use of the project’s security staff and their potential interactions with local people, and also the potential for security to be improved across the project area from the increased presence of personnel. The impact is reversible as it is hoped then even if an incident occurs, this is unlikely to result in permeant damage.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact is long-term as the security personnel will be present throughout the duration of the project (construction and operation). The numbers of security present during the operational phase will be significantly lower when compared to the construction phase.				
Impact Extent	Local		Regional	National	
	The impact will occur at a local level amongst the communities in the DAOI, and at a regional level to reflect the geographical location of the accommodation facilities, as a security staff shall be stationed at each facility used.				
Impact Magnitude	Negligible	Low	Medium	High	
	The magnitude of the impact is medium. Personnel from the Lebanese Police Force are known to defer to their legislated authority, when dealing with local residents and this has in the past (during a site visit in May 2019 by Lenders for example), caused increased tensions at a local level. If a serious incident does occur, it is possible that this could act as a trigger point for protests and result in road blockades, and other types of intervention by local people. The project shall be able to exert greater control over the private security force which shall not be armed and used for guard general working areas and accommodation facilities.				
Gender and vulnerability Considerations	Yes			No	
	It is possible that women and children may be particularly at risk from inappropriate behaviour of security personnel, as they may be perceived to be easier to manipulate and have ‘less of a voice’ to raise a complaint, when compared to their male counterparts. Children may also be forced to witness inappropriate behaviour by security forces towards local people, which could be frightening and increase mental stress.				



Receptor Value / Sensitivity	Negligible	Low	Medium	High
	The receptor value is high as even a single incident could act as a trigger for local protests and result in damage to the Project's reputation.			
Impact Significance	Negligible	Minor	Moderate	Major
	The potential impact significance is major given the above magnitude and receptor sensitivity. Whilst the behaviour of personnel provided by the private security company can be easily controlled, it shall be more challenging to influence the behaviour of the Lebanese Police Force and Lebanese Army.			

### 7.7.2 Mitigation and enhancement

The Project shall develop a Security Management Plan that includes:

- A summary of current human rights issues for this specific region of Lebanon with a particular focus on the historical behaviour of the Lebanese Police Force and the Lebanese Army;
- A risk assessment associated with the use of security personnel by the project to identify the types of incidents that could occur, how they may be generated/triggered, and the potential ways in which security personnel could respond to provocation. This shall be undertaken separately for the private security company providing personnel, for the Lebanese Police Force and also the Lebanese Army;
- For the private company providing security personnel to the project:
  - Details of a screening procedure to ensure that all security personnel recruited by the private company used have not been implicated in past criminal activity. This screening procedure shall be applied during their original recruitment so that only screened personnel are selected;
  - Details of training that will be provided to all security personnel to ensure that they are trained in the rules of force, culturally appropriate engagement, how to de-escalate conflict situations, and the Project's grievance mechanism;
  - Details of the uniform to be used so that they are easily identified as security personnel, including a unique reference/label that can be used to make a grievance about a specific person.
  - Details of communications equipment so that personnel are able to request support during the start of any incident, and Personal Protective Equipment (PPE); that shall be provided free-of-charge to all personnel, along with training on its usage;
  - A cross-reference to the Project's grievance mechanism that can be used to address any concerns promptly associated with the actions of security personnel, and details as to how this is to be disclosed; and
- For the Lebanese Police Force and the Lebanese Army:
  - A Memorandum of Understanding (MOU) shall be agreed between the Project Developer and the Lebanese Police Force and the Lebanese Army. The MOU shall

describe the way in which their personnel shall be selected, trained and behave in accordance with the principles of proportionality and good international practice. This includes practice consistent with the United Nation's (UN) Code of Conduct for Law Enforcement Officials, and UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials.

- Reporting and monitoring indicators which shall include periodic audits of third-party security companies used to provide personnel, to check that the provisions above have been adequately implemented.

### 7.7.3 Residual impact assessment

Residual Impact Assessment: Impacts from the use of security personnel during construction and operation				
Impact Significance	Negligible	Minor	Moderate	Major
	The residual impact significance is expected to be negligible after the mitigation and monitoring measures have been implemented.			

## 7.8 Health and safety incidents involving the workforce and local communities during construction and operation

### 7.8.1 Impact assessment

*NOTE: health and safety risks associated with road transportation are addressed in Section 3.9: Impacts from increased community health and safety risks from road transport.*

The use of a workforce and construction activities generates a variety of occupational health and safety risks to the workforce and to local people arising from:

- General construction works which shall include the use of mechanical excavation machinery, rotating construction tools and mobile machinery;
- Working at height and with cranes during the installation of turbines and associated project equipment;
- The introduction of slips and trips that could cause an injury to the workforce, inside fenced-off areas;
- Heavy lifting of components and construction tools by the workforce; and
- Working with live electrical components during construction and operation.

The Project also needs to implement controls to ensure the fire safety of temporary site offices have adequate response measures in the event of an emergency. An emergency during operations could involve flying ice during winter that has built up on the blade, or the mechanical failure of a turbine, resulting in a fire and the physical break-up of turbine blades and nacelle, falling down to the ground in an uncontrolled manner. In accordance with Good International Industry Practice, the turbines to be used for the Project are designed with a range of in-built mitigation measures already included that comprise:

- Vibration sensors to activate an emergency stop mechanism in the event that the turbine nacelle starts to vibrate outside of its operating limit;
- The testing of turbine blades prior to their arrival into Lebanon to check that they are able to withstand fatigue from repeated bending during operation;
- Overspeed protection devices which activate an emergency stop mechanism in the event that the turbine experiences the failure of a critical safety component (such as overheating, disconnection from the electrical grid, or rapid an uncontrolled acceleration of the turbine blades); and
- An aerodynamic braking system which turns the motor blades about 90 degrees along their longitudinal axis which are automatically activated in the event of a hydraulic failure which are able to stop the turbine rotating in a couple of rotations in a gradual and controlled manner (i.e. not a hard stop which could lead to mechanical failure).

Impact Assessment: Health and safety incidents involving the workforce and local communities during construction and operation					
Impact Nature	Positive		Negative		
	Occupational health and safety incidents during construction has the potential to impact the health of the workforce and local community members. An incident during construction, such as a local person gaining unauthorised entry into a working area where excavations are present could result in an injury or fatality. During operations emergency events could be linked to an electrical fire and break-up of the turbine.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is direct because it involves impacts to the workforce or a member of the public. The impact is either reversible or irreversible depending upon the type of injury or if a fatality occurs.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact starts from the commencement of construction activities and continues during operations. However, the majority of risks shall occur during the construction stage where civil works are to be completed.				
Impact Extent	Local		Regional	National	
	The impact will occur at a local level amongst the communities in the DAOI who may be walking close to construction working areas. During operations, the extent of the impact is assumed to be restricted to a radial distance surrounding each turbine to represent the ‘falling zone’ within which any debris is likely to touch the ground. This shall be calculated as 1.5 times the highest point of the turbine blade.				
Impact Magnitude	Negligible	Low	Medium	High	
	The magnitude of the impact is medium as the entire workforce and local community residents may be exposed to increased health and safety risk.				

Gender and vulnerability Considerations	Yes		No	
	Children are naturally inquisitive and are often used to taking high risks that older, more mature people would not take. As a consequence, children need to be informed about the presence of the working areas so that they understand the risks and know that it is dangerous to enter the sites.			
Receptor Value / Sensitivity	Negligible	Low	Medium	High
	The sensitivity is high as safety is the Project’s highest priority.			
Impact Significance	Negligible	Minor	Moderate	Major
	The potential impact significance is major.			

### 7.8.2 Mitigation and enhancement

For occupational and local community health and safety risks, the Project shall develop a Health and Safety Plan (for the workers) and a Community Health and Safety Plan.

The Health and Safety Plan shall include the following:

- The outcome of a risk assessment to identify potential health and safety risks during construction and operation, to the workforce and local communities. The risk assessment shall be informed through a hazard identification workshop which shall be attended by Project Senior Management and representatives of the BOP Contractor. A Risk Register shall be prepared using the outcome of the workshop and compiled into a Risk Register Report that describes the control measures and monitoring activities required. Alongside each control measure recorded the roles and responsibilities between the Project and the BOP Contractor shall be clearly defined;
- The provision, free of charge, of PPEs including safety shoes, helmet, goggles, earmuffs, and safety harnesses for working at height. PPE shall be provided alongside safe drinking water and adequate protection from the sun and heat radiation exposure;
- Training activities to generate a culture of safety amongst the workforce. This shall include the use of PPE, identification of risks, reporting unsafe acts and near misses, rewards for safety observations. A job competency matrix shall be prepared to identify the type of training required for each job description;
- Ensuring that electrical work is not carried out during poor weather when lightning strikes may occur;
- Certification and pre-use inspections for all lifting equipment used, such as cranes, and checking that they are operated by competent and trained personnel;
- An up to date first aid box shall be provided at all construction sites and a trained person shall be appointed to manage it;
- The provision of a temporary firefighting and alarm system;

- Monitoring and evaluation framework to record all training activities, tool-box-talks, risk assessments, provision of PPE, and the investigation of all incidents and near-misses;

The Community Health and Safety Plan shall include the following:

- A commitment to ensure that public access is restricted to all working areas during the construction phase. Fences shall have signs with warning notices (in both Arabic and English) to deter people from entering. Contact details shall also be placed on the fences that use the details in the grievance mechanism so that any person can request additional information on the fence lines, should they wish to do so; and
- A commitment to engage with young people in local schools and similar institutions, to inform them about the start of construction works in advance, and educate them on the dangers presented inside the fenced-off areas;

In addition, the falling zone radial area surrounding the turbine shall be maintained to be free of any residential housing structure during operations so that in the event a catastrophic failure of a turbine does occur, this shall not impact residential receptors below. The falling zone shall be maintained free of residential dwellings during operations in the same manner long-term land use restrictions will be imposed as discussed above under Section 3.12 Impacts on land during operation of the turbines.

An Emergency Response Plan shall also be prepared and available prior to the start of construction works. The nearest hospital, ambulance, fire station and police station shall be identified in the Emergency Response Plan. A similar plan shall also be prepared prior to the start of operations.

### 7.8.3 Residual impact assessment

Residual Impact Assessment: Health and safety incidents involving the workforce and local communities during construction and operation				
Impact Significance	Negligible	Minor	Moderate	Major
	The residual impact significance is expected to be minor given the mitigation measures implemented in the Health and Safety Plan, Community health and Safety Plan, Emergency Response Plan, and from the adoption of a sterile area within the falling zone.			

## 7.9 Impacts from increased community health and safety risks from road transport during construction and operations

### 7.9.1 Impact assessment

The use of road vehicles to transport materials and personnel to/from the site introduces significant community health and safety risks. Transportation of the equipment and parts of the wind power technology providers (such as the turbine blades, etc.) shall take place only at night when road traffic is at its lowest.

The transportation route of the turbines has been defined between the Tripoli Seaport and the project site. Social receptors up to a distance of 1km from the road comprise 35 villages in addition to 22 informal settlements comprising an estimated 195 households and 1,235 individuals) in the villages of:



Minie, Zoug Bhannine, Mhammaret, Qouber Chamra, Mqaiteaa, Kfar Melki Akkar, Qaabrine, Sammouniye, Chir Hmaraine, and Aandqet).

A road traffic incident has the potential to result in an injury or fatality to a member of the public, other road user, driver of a project vehicle and its occupants, and could also act as a local trigger for protests against the project. Damage from an incident could also be caused to a third-party structure (such as a house) or livestock.

Impacts associated with damage to the physical condition of the road are not assessed on the basis that the transport of large turbines is not in itself, expected to cause damage. The turbines shall be transported on multi-axel vehicles where the axel weight of the road design criteria shall not be exceeded.

Impact Assessment: Impacts from increased community health and safety risks from road transport during construction and operations					
Impact Nature	Positive			Negative	
	The increase in community health and safety risks is a negative impact.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is direct because it involves increased community health and safety risk to a range of receptors. The impact is either reversible or irreversible depending upon the type of injury or if a fatality occurs. Damage to third-party structures are irreversible as these can be repaired.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact is long-term as community health and safety risks shall be introduced from the start of the construction phase and continue throughout operation of the project. Depending upon the type of incident and impact to human health, the duration could be permanent. The majority of road transport movements shall take place during construction.				
Impact Extent	Local		Regional	National	
	The impact will occur at a local and regional level which is reflected by the transport corridor.				
Impact Magnitude	Negligible	Low	Medium	High	
	The magnitude of the impact is medium as community residents shall be exposed to increased health and safety risk.				
Gender and vulnerability Considerations	Yes			No	
	Children often take high-risks that older, more mature people would not do at road crossing points, and often have a poor understanding of road safety. Women may also need to be educated about road safety risks. For example, child refugees living in informal settlements very often walk freely along the road unsupervised and may be given more freedom to do so compared to non-refugee families living in more formal types of accommodation.				

	Given the presence of informal settlements and tents (where gypsies and farmers may also live) along the transport route, where very weak structures made of plastic sheeting and wood materials exist, there may be some areas that are more susceptible to vehicle-related traffic.			
Receptor Value / Sensitivity	Negligible	Low	Medium	High
	The sensitivity is high as safety is the Project's highest priority.			
Impact Significance	Negligible	Minor	Moderate	Major
	The potential impact significance is major.			

### 7.9.2 Mitigation and enhancement

The Project shall develop a Traffic and Transport Plan that includes the following:

- Project vehicles transporting the turbines shall only be used during the hours of 11 pm to 4 am;
- All drivers are prohibited from undertaking any off-road driving. Drivers shall adhere to the pre-approved Project road transportation routes during construction and are not permitted to make deviations unless authorised to do so. NOTE: this measure does not apply in the event of an emergency;
- Drivers must obey applicable speed limits at all times. Due to the presence of social receptors along the road route a series of 'go-slow' zones have been defined by the project to ensure that drivers are particularly careful in close proximity of receptors;
- All drivers shall prevent the idling of engines whilst they are stationary, unless it is absolutely necessary to do so. The aim of this management measure is to avoid the unnecessary generation of air and noise emissions from idling vehicles (which could generate community nuisances) whilst they are not in active use;
- The wearing of safety belts by the driver and its occupants whilst travelling in any project vehicle is mandatory. All belts (for all occupants) shall be of the 3-point configuration (only);
- All drivers of Project vehicles must have:
  - Comply with best practise driving techniques, such as not overtaking from the right, being particularly cautious with pedestrians and motorcycles on the road, etc.;
  - In their possession a valid driving licence issued by the Lebanese Department of Transportation;
  - Passed a defensive driving safety course;
  - Monitor self-alertness and manage fatigue;
  - Conform to the Project's Drug and Alcohol Policy;
- Drivers shall not make or answer a mobile telephone call while driving a vehicle. This restriction also applies to the use of text or mobile data services typically found on modern smart phones. Mobile telephones can be left on during a trip to alert the driver of any incoming calls but must

not be actively used whilst driving. If the driver wishes to use their phone, then they should safely leave the road and bring the vehicle to a complete and safe stop, in a safe area, before initiating or answering a call;

- All vehicles used by the Project shall be fit for purpose based on an assessment of usage and be maintained in safe working order in line with manufacturers' specifications and all applicable national legal requirements. This includes the repair of all minor defects that have an implication to safety, such as the presence of cracked glass windscreens, unlit bulbs, etc. All vehicles shall also have a reverse alarm system installed that activates automatically; and
- The above requirements shall apply to all Project vehicles, which extends to all sub-contractors (and their own internal suppliers) used for the purpose of the project. No exceptions or exclusions shall be granted by the Project.

In addition to the Traffic and Transport Plan, a road safety campaign shall be implemented to target all of the communities located along the road transport corridor. This comprises 38 different villages and is expected to be implemented by an NGO who is well-known to facilitate these types of events (such as the NGO 'Kunhadi'). During the road safety campaign, awareness of the grievance mechanism shall be raised so that any transport-related grievances can be reported and investigated in accordance with the mechanism.

### 7.9.3 Residual impact assessment

Residual Impact Assessment: Impacts from increased community health and safety risks from road transport during construction and operations				
Impact Significance	Negligible	Minor	Moderate	Major
	The residual impact significance is expected to be minor given the mitigation measures implemented in the Traffic and Transport Plan.			

## 7.10 Impacts from modifications to public infrastructure for the transportation of turbines during construction

### 7.10.1 Impact assessment

The transportation of turbines from their point of entry into Lebanon to the project area requires a variety of modifications to public infrastructure, which shall take place during construction (only). This includes levelling and widening of some roads so that the road is as a minimum 6m when straight, and 10m wide at curves to accommodate large vehicles carrying the turbine parts. Where the road is to be widened, this shall involve excavations to install foundations, establishment of suitable foundations, and then surfacing so that it is ready for use.

The installation of electrical cabling and connection of cables to substations will require additional excavations.

Impact Assessment: Impacts from modifications to public infrastructure for the transportation of turbines during construction					
Impact Nature	Positive			Negative	
	The modifications required to public infrastructure are largely negative as this will involve temporary disruptions to other users, predominately users of roads and bridges.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is both direct and indirect because it involves users of the public infrastructure that requires modification and may place additional pressure on alternative routes used during the works. The impact is reversible as the availability of public infrastructure shall be returned as soon as possible.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact is temporary as the works will take place typically across a matter of days/weeks, with the exception of bridge modifications which shall require 1-2 months.				
Impact Extent	Local		Regional	National	
	The impact will occur at a regional level as the modifications to public infrastructure cover locations along the entire transport corridor.				
Impact Magnitude	Negligible	Low	Medium	High	
	The magnitude of the impact is medium as whilst the modifications to public infrastructure shall take place at different times during the construction phase, it has the potential to affect (directly and indirectly) many people who rely on roads/bridges, etc. for their daily/economic activities.				
Gender and vulnerability Considerations	Yes			No	
	There are no gender and vulnerability considerations for the impact identified, as the disruptions are expected to impact both men and women in equal measures.				
Receptor Value / Sensitivity	Negligible	Low	Medium	High	
	The sensitivity is high as people are reliant on public infrastructure for their daily lives and economic activities.				
Impact Significance	Negligible	Minor	Moderate	Major	
	The potential impact significance is moderate.				

### 7.10.2 Mitigation and enhancement

The Project shall incorporate into the Traffic and Transport Plan the following:

- A commitment to minimise the duration and extent of all planned disruptions through careful planning, communication with stakeholders, and adequate resourcing during the civil and other types of works required;

- A summary of the modifications to public infrastructure required along with details of their timing during the construction phase, location and screening classification (high, medium low);
- Details of the way in which temporary disruptions are to be notified to users, which may include individual households, businesses, road users, pedestrians using bridges, and others; and
- A commitment to ensuring that all planned disruptions are undertaken with the full involvement and written approval of relevant government/municipal authorities, so that they are actively involved.

### 7.10.3 Residual impact assessment

Residual Impact Assessment: Impacts from modifications to public infrastructure for the transportation of turbines during construction				
Impact Significance	Negligible	Minor	Moderate	Major
	The residual impact significance is expected to be minor given the mitigation measures implemented in the Traffic and Transport Plan.			

## 7.11 Impacts from local employment during operation

### 7.11.1 Impact assessment

The number of local people that are to be directly employed during operation is expected to comprise approximately 25 workers.

As the project transitions from construction into operation, there will be a shift in the skills required. Consequently, it will be necessary to develop the skills of local people during construction so that suitable individuals are able to take up the long-term (potentially 20 year) positions during operations.

The individuals employed and their household members will benefit from increased income that is likely to increase their overall quality of life and access to healthcare, educational and other types of resources across a longer time frame. The household is also expected to experience increased resilience to external shocks from the supply of income that could arise from a sudden change in health status or external factor such as conflict or food price inflation.



Impact Assessment: Impacts from local employment during operation					
Impact Nature	Positive			Negative	
	The impact during operations is positive.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is both direct and indirect because the individuals and their household members are expected to benefit from an increase in standard of living and reduced vulnerability to external shocks. The impact is reversible as the income generated from local employment shall cease at the end of their employment at the end of the operational phase (25 years).				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The period of employment will continue over the lifetime of the project which is 25 years.				
Impact Extent	Local		Regional	National	
	The impact will occur at a local level amongst the communities in the DAOI.				
Impact Magnitude	Negligible	Low	Medium	High	
	The impact magnitude is low as the workforce required during operations is relatively small when compared to the construction stage.				
Gender and vulnerability Considerations	Yes			No	
	There is an opportunity for women to become a substantial part of the operational workforce, benefitting from vocational training and earned income.				
Receptor Value / Sensitivity	Negligible	Low	Medium	High	
	The sensitivity is high as local employment during both construction and operations is a key expectation amongst local communities and their representatives.				
Impact Significance	Negligible	Minor	Moderate	Major	
	The overall impact significance is moderate.				

### 7.11.2 Mitigation and enhancement

The Project shall develop and implement an Operational Local Hiring and Procurement Plan that:

- Describes the way in which local people are to be selected and provided with training during construction, so that they can become part of the operational workforce;
- Includes provisions to actively encourage women to apply for both skilled and low-skilled job positions; and
- An outline of the redundancy process that will be followed at the cessation of operations and the start of decommissioning.

## **7.12 Impacts from land use restrictions during operation of the turbines**

### **7.12.1 Impact Assessment**

Significant impacts on land and livelihoods during operation of the turbines are linked to the falling zone surrounding each turbine (the safety distance within which residential receptors should not be located due to the fall-out from an emergency event); and the generation of a wider area that shall be unsuitable for residential dwelling in the future due to the generation of noise levels and shadow flicker effects beyond applicable thresholds for human health exposure.

In relation to shadow flicker impacts on existing residential houses, there are 13 houses located within the zone where the applicable thresholds shall be exceeded. Unacceptable impacts on these properties shall be avoided by limiting the period of time within which the turbines move, so that each residential structure is exposed to flicker below the stated threshold limits. As a consequence, there is no physical displacement arising from the project.

Within a distance of 80m from the turbine, a series of draft land agreements have been signed with individual landowners to obtain permission for the turbine blades to pass above their air space (the length of an individual blade is up to 78m). This involves the annual payment of a capital sum which shall continue throughout the project's duration. These existing agreements shall be extended to cover the entire falling zone, and this involves the same set of landowners (no new landowners need to be engaged with for this purpose). The agreements shall state that the construction of residential housing in the future within the applicable noise and shadow flicker zones is not allowed, as per the terms of the agreement.

Impacts to land during operations may reduce the market value of land after it becomes unsuitable for the future development of residential properties. Landowners may become frustrated at the imposition of land-related impacts from an incoming third-party, who is not geographically based at the project site (i.e. the staff and owners of Project Company do not live or own land within the affected area themselves). It is possible that landowners decide to construct residential dwellings within the affected areas, even though the applicable noise and shadow flicker levels are beyond threshold limits. Individuals constructing properties may decide to subsequently take legal action against the Project and/or demand compensation for economic loss.

Impact Assessment: Impacts from land use restrictions during operation of the turbines					
Impact Nature	Positive			Negative	
	The impact is largely positive for landowners who have an agreement with the Project up to the edge of the falling zone, as they shall receive a cash compensation annually during operation of the Project. The Municipality of Fnaidek and the Jaafar Family shall experience an increase in revenue/income.				
	Negative impacts shall occur to different landowners outside of the agreement areas, who may experience economic loss due to their future inability to use land within the noise/shadow flicker zone for residential purposes. Due to the Project the market price of land as a saleable asset may reduce and landowners may also become frustrated, increasing tensions between them and the project developer.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impacts on landowners arising from the project are direct.				
	The impact is reversible as the payments and restrictions on the future development of residential properties shall cease after the operational period is over.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact is long-term as the changes shall continue until the operational period is over.				
Impact Extent	Local		Regional	National	
	The impact will occur at a local and regional level due to the geographical extent of the shadow flicker effects on surrounding land. Impacts from the generation of noise shall occur at a local level only.				
Impact Magnitude (negative impact)	Negligible	Low	Medium	High	
	The negative impact magnitude is high as future land use restrictions is predicted to affect multiple land parcels across the region.				
Impact Magnitude (positive impact)	Negligible	Low	Medium	High	
	The positive impact magnitude is low as the regular provision of capital into the Municipality of Fnaidek and the Jaafar Family will have a small impact on their total annual revenue/income.				
Gender and vulnerability Considerations	Yes			No	
	None as payments shall be made into an established family and municipality.				
Receptor Value / Sensitivity	Negligible	Low	Medium	High	
	The receptor value of land within the affected area is high as local residents have voiced strong concerns associated with future land use restrictions arising from the project.				
Impact Significance (positive impact)	Negligible	Minor	Moderate	Major	
	The overall significance for positive impacts is minor.				

Impact Assessment: Impacts from land use restrictions during operation of the turbines				
Impact Significance (negative impact)	Negligible	Minor	Moderate	Major
	The overall significance for negative impacts is major as long-term restrictions on future land use development shall be recommended for a period of 25 years across a wide area.			

### 7.12.2 Mitigation and enhancement

The Project shall implement the following mitigation measures:

- In accordance with the Ministry of Environment (MoE) conditions attached to the EIA licence that has already been granted, a request for approval of the Project shall be issued to the General Directorate of Urban Planning. The request shall include maps of the applicable falling zone, noise and shadow flicker threshold areas so that the national/regional spatial maps can be updated. The General Directorate of Urban Planning shall be requested to ensure that affected land areas are clearly marked on the national/regional spatial plans to indicate where the future development of residential properties should not be permitted by Municipality Authorities;
- The General Directorate of Urban Planning shall request that Municipal Authorities that issue Construction Permits (required for any residential structure to be legally built) are denied to all future permit applications for the construction of residential structures inside the threshold zone for noise and shadow flicker;
- Raise awareness of the grievance mechanism to landowners within the falling zone/noise/shadow flicker affected areas, so that they can raise a grievance about the project in the future should they wish to do so. All grievances raised shall be recorded and evaluated in accordance with the Project's grievance mechanism.

### 7.12.3 Residual impact assessment

Residual Impact Assessment: Impacts from land use restrictions during operation of the turbines				
Impact Significance	Negligible	Minor	Moderate	Major
	If the above mitigation measures are implemented, the impact during operation is predicted to reduce to moderate. No compensation shall be provided to landowners within the shadow flicker zone where long-term land use restrictions shall be imposed to ensure residential properties are not built in the future. Any claims for economic loss shall be addressed through the existing grievance mechanism.			

## 7.13 Impacts on the national and regional economy during operation

### 7.13.1 Impact assessment

The Developer holds a signed PPA to construct and operate the Project to provide a maximum licensed capacity of 68.3MW to be delivered to the public grid. The total Project generation capacity is specified

as 68.3MW. The Project shall also make annual tax payments to central government in parallel with the generation of revenue and profits.

During operations, there will also be an ongoing demand for general support from national and regional businesses, such as consulting, legal and accounting using small to medium enterprises.

Impact Assessment: Impacts on the national and regional economy during operation					
Impact Nature	Positive			Negative	
	Impact is positive because the operation of the Project will generate energy, which is fed into the national grid, contributing towards the ongoing development of the country which is currently severely lacking in energy generation which is currently relying on fossil fuel sources for its energy generation which contributes to regional poor air quality and global climate change.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is both direct and indirect because the company will provide energy to the national grid which will benefit other electricity users (households, businesses and government buildings), pay taxes, purchase materials and services, which will lead to the growth of small and medium business. The impact is reversible as it will only continue during operation.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact is long-term because it would continue throughout the whole period of project operation of 25 years.				
Impact Extent	Local		Regional	National	
	The impact will occur at a local, regional and national level as energy shall be injected into the national grid which is anticipated to improve the reliability of energy provided to individual houses.				
Impact Magnitude	Negligible	Low	Medium	High	
	The impact magnitude is medium as the quantity of energy generated by the project is a small (but still significant) contribution at 68.3MW. This represents 3.4% of the national total installed capacity, which is 2,000MW.				
Gender and vulnerability Considerations	Yes			No	
	There are no gender and vulnerability considerations for this impact.				
Receptor Value / Sensitivity	Negligible	Low	Medium	High	
	The sensitivity is medium as the countries' energy demand shall continue to increase during the lifespan of the project.				
Impact Significance	Negligible	Minor	Moderate	Major	
	The overall impact significance is moderate.				



### 7.13.2 Mitigation and enhancement

In order to strengthen the positive effects and record the use of small to medium enterprises the following enhancement measures shall be implemented:

- The Project shall record the capital spend and location of the main small to medium enterprises used during the operational period so that an accurate record is available of the companies involved, broken down by their geographical location; and
- The Project shall record the project's generation of energy and contribution to the national grid. This information shall be collated and compiled into future Environmental and Social Performance Reports to provide stakeholders with accurate information about the project's contribution towards the country's energy generation sector.

## 7.14 Impacts associated with positive and negative perceptions towards the project

### 7.14.1 Impact assessment

A review of existing project documentation and the outcome of stakeholder engagement activities conducted during preparation of the SIA, has clearly indicated that there are people who have positive and/or negative views towards the project. Following an analysis of the latest version of the grievance register, stakeholder engagement records and from internal discussions with the individuals involved in completing social field work, the reasons for the negative perceptions arise from the following:

- A lack of accurate understanding of the project and its key components. For example, not all parties engaged with are aware of what the wind turbines will look like which has caused confusion as to what the project will involve;
- A lack of accurate understanding associated with the adverse impacts. For example, herders are concerned about the ability of their livestock to maintain a healthy condition if they graze in proximity to a turbine or connection cable. They are concerned about whether livestock will continue to survive and be able to produce milk and “*get fat*”, whilst others perceive the project to be “*harmful*” without being able to articulate exactly what aspects of the project could cause harm possibly due to a lack of knowledge of the project's key activities and components;
- Concerns associated with noise levels generated by the rotating turbines (*NOTE: (there is no mention in stakeholder engagement records associated with impacts linked to shadow flicker from project affected people. This may be due to a lack of understanding as to what shadow flicker impacts are from an onshore wind turbine)*);
- Concerns associated with the potential for a catastrophic failure to occur (i.e. ignition, fire and explosion) and from ice shear from the turbine blades during winter that could present a risk to community health and safety;
- Concern associated with physical restrictions to land during construction and operation, reducing access to grazing areas and the free movement of people and livestock; and
- Concerns associated with the impact of the rotating turbines on birdlife from two opposing perspectives: (1) from potential impacts upon biodiversity, causing bird mortality from collisions and causing the ecosystem to become “*unbalanced*”; and (2) upon birds (partridges) that are

hunted within the project area and will no longer be available for hunting as they will stay away from the turbines.

There is no evidence that landowners involved in the LWP Project are against the project. Landowners comprise two types of stakeholders: (1) the Municipality of Fnaidek to the west; and (2) the Jaafar family to the north and east. Following a cadastral survey in 2018 various land agreements have been executed and land secured for a period of 28 years.

Reasons for positive perceptions towards the project arise from the following:

- High expectations that the project will result in significant developmental changes amongst local communities, either through the provision of employment and vocational training opportunities which will affect households directly, and from direct interventions channelled through a Community Development Plan that results in broader economic change;
- Support from the project that shall be directly provided to local communities in relation to the management of waste, improvement of local public roads, and through the provision of enhanced social welfare services including *“a medical centre, a school, etc.”*; and
- High expectations (including those from women) that the project will provide electricity as villages in Fnaidek are deprived of electricity. As the project involves the generation of energy then there is the expectation that local villages shall be connected.

The combination of unrealistic expectations of the project, and an inaccurate understanding of the project and potential impacts, could result in increased mental stress if local people perceive that they are being exposed to risks that they cannot always visually see or understand, increased fear of the future, and perceptions of increased safety risk in public areas from an emergency event. This could lead to tensions and frustration towards the project developer. The project could also increase tension between local residents and the Municipality of Fnaidek and Jaafar family who are being paid an annual sum for their land to be leased, and hence derive a direct, financial benefit from the project.

Impact Assessment: Impacts associated with positive and negative perceptions towards the project					
Impact Nature	Positive			Negative	
	The impact arising from a poor understanding of project impacts and from unrealistic expectations of project benefits is negative.				
Impact Type	Direct	Indirect	Reversible	Irreversible	
	The impact is direct as it will be experienced by individuals who have concern associated with the project, and indirect if people chose to move away from the area. The impact is largely reversible if the project can address the concerns and expectations adequately. The impact may be irreversible if residents decide to move away from the area, or herders avoid the area in the future and decide to use other locations for grazing.				
Impact Duration	Temporary	Short-term	Medium-term	Long-term	Permanent
	The impact could continue throughout operation of the project (i.e. into the long-term) if the project is not able to address the concerns and expectations adequately. There is a potential for lingering resentment towards the increased perceived risks and other changes the project brought by local people to continue, until decommissioning.				
Impact Extent	Local		Regional	National	
	The impact will primarily occur at a local level as the perceptions are experienced by local residents. However, if people decide to move away from the project area then the impact could take place at a regional level through modifications to internal migration flows.				
Impact Magnitude	Negligible	Low	Medium	High	
	The magnitude of the impact is high as perceptions towards the project has the potential to alter individual decisions made at a household level in relation to where to live, and to complete grazing activities.				
Gender and vulnerability Considerations	Yes		No		
	There are significant gender and vulnerability considerations for the impact identified. Changes in future household health of the elderly or children, could be wrongly attributed towards the project resulting in increased stress and frustration. Women are known to frequent the project area occasionally for the collection of wild herbs and other materials, which could discontinue if they perceive that the project area is no longer suitable for this activity.  Herders are vulnerable due to a lack of alternative livelihood, poor socio-economic conditions, and from a reliance on the weather and rainfall patterns for their livelihood. Many herders stated that their economic situation fluctuates significantly and that sometimes they do not have money to purchase bread. If herders decide to stay away from the project area due to perceived risks to their animal health, women could be indirectly impacted as they are responsible for obtaining and processing animal products from the livestock.				
	Negligible	Low	Medium	High	

Receptor Value / Sensitivity	The sensitivity is high			
Impact Significance	Negligible	Minor	Moderate	Major
	The potential impact significance is major.			

### 7.14.2 Mitigation and enhancement

The Project shall address this impact through the following activities:

- Providing accurate and easily accessible information associated with the project and potential impacts during construction, in accordance with the Construction and Operations Stakeholder Engagement Plan. This shall include regular public meetings with local residents in each community, providing information through leaflets on specific issues, so that the level of knowledge associated with the project becomes greater and more accurate as the project moves into operations;
- Preparing and implementing in a transparent manner, a Corporate Social Responsibility Plan which is designed to provide broader economic benefits to the communities inside the DAOI;
- Preferentially offer employment and vocational training opportunities to local residents in accordance with the Local Hiring and Procurement Plan; and
- Operating the responding to all grievances raised during construction and operation to address specific concerns raised by local residents and ensuring that the Project has adequately staffed CLO resources during both construction and operations, to respond and manage any issues or incidents that arise.

### 7.14.3 Residual impact assessment

Residual Impact Assessment: Impacts associated with positive and negative perceptions towards the project				
Impact Significance	Negligible	Minor	Moderate	Major
	The residual impact significance is expected to be minor given the mitigation measures implemented above.			

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