Social Design

September 2014

Socio Economic Baseline Report

Krumovgrad Project

DPM Krumovgrad

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Glossary of abbreviations

AA	Appropriate Assessment
AoI	Area of Influence
BAFS	Bulgarian Agency for Food Safety
BLG	Bulgarian Leva
DFSA	District Food Safety Agency
DPM	Dundee Precious Metals
EBRD	The European Bank for Reconstruction and Development
ESIA	Environmental and Social Impact Assessment
EU	European Union
GDP	Gross Domestic Product
HHS	Socio-economic Household Survey
HIV	Human Immunodeficiency Virus
IFC	International Finance Committee
MDP	Municipal Development Plan
MRF	Movement for Rights and Freedom
NEET	Not in Education, Employment, or Training
NHIF	National Health Insurance Fund
NSI	National Statistics Institute
PR	Performance Requirements
PISA	Programme for International Student Assessment
SIA	Social Impact Assessment
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
VIA	Visual Impact Assessment
WAI	Wardell Armstrong International

1.0 Introduction

This document presents the social and economic baseline to the proposed Krumovgrad Gold Project using findings from the analysis, evaluation and reviews of secondary and primary data collected from various sources. This document provides a description of the social and economic conditions within the identified project study area, which will be used to inform the social impact assessment (SIA) and will form Annex 1 to the SIA document.

1.1 Krumovgrad Project Background and Regulatory Framework

Dundee Precious Metals Krumovgrad (DPM Krumovgrad) is a Bulgarian based, gold mining company engaged in the acquisition, exploration, development, mining and processing of auriferous ores.

In 2000 DPM Krumovgrad, formerly Balkan Mineral and Mining EAD – BMM was awarded the 130 km2 license area. Initial project plans for Ada tepe deposit incorporated a cyanide leaching and tailings dam for disposal of mine waste and covered a project area of 200 hectares. An EIA was detailed and submitted to the Bulgarian Ministry of Environment and water (MoEW) in 2005. There were significant stakeholder concerns voiced and company took back the EIA Report.

In 2007 Bulgaria entered the European Union and a Natura 2000 network was established within all EU countries, with this, legislation was established for an Appropriate Assessment (AA), which applied to investment proposals and plans of programmes, which potentially impacted Natura 2000 sites. As the Krumovgrad Gold Project was located within the boundaries of the Eastern Rhodope,[1] a designated Natura 2000 site, as well as the proximity to the Krumovitza River[2] an AA was obligatory.

As such fundamental changes were made to the Project design and an alternative project set up was detailed. An EIA for new investment proposal was particularised in 2010 incorporating changes and submitted to the MoEW and resulted in the MoEW EIA Decision No 18-8/2011, which was entered in force in March 2013.

In 2014 DPM Canadian owner of DPM Krumovgrad EAD negotiated an amended financial package with a consortium of banks for which the European Bank for Reconstruction and Development (EBRD) acts as environmental agent. According to the EBRD's Environmental and Social Policy (2008), and its associated Performance Requirements (PRs), a project of this type and scale requires a full Environmental and Social Impact Assessment (ESIA).

As discussed earlier, the Project undertook a local national environmental impact assessment (EIA) to Bulgarian standards in 2010 and an environmental permit was issued. Following an independent review of the local EIA reports, the EBRD required a number of supplementary

[1] (BG 0001032) Under 92/43/EEC Habitats Directive
[2] (BG00002043) Under 79/409/EEC Birds Directive NATURA areas
[3] Krumovgrad Gold Project Environmental and Social Action plan, January 2014, (DENKSTATT)

environmental and social studies and documents to fill the gaps necessary to meet the EBRD Performance Requirements (PRs) and international good practice. As such, this Social Impact Assessment (SIA) report has been detailed to supplement the approved EIA (2010).

In addition to the EBRD PRs, some of the consortium banks refer to the Equator Principles and therefore the Project also references the IFC's Performances Standards (2012). The package of supplementary environmental and social documents as well as the local EIA reports together form the Project ESIA. The Project ESIA is summarised in a Non-Technical Summary.

2.0 Project Area of Influence

According to the EBRD Environmental and Social Policy (PR1) a project's "Area of influence" (AoI) is to be individually agreed between EBRD and the Client for any individual project. PR1 states that the AoI may include some or all of the following elements:

(i) The assets and facilities directly owned or managed by the client that relate to the project activities to be financed (such as production plant, power transmission corridors, pipelines, canals, ports, access roads and construction camps).

(ii) Supporting/enabling activities, assets and facilities owned or under the control of parties contracted for the operation of the clients business or for the completion of the project (such as contractors).

(iii) Associated facilities or businesses that are not funded by the EBRD as part of the project and may be separate legal entities yet whose viability and existence depend exclusively on the project and whose goods and services are essential for the successful operation of the project.

(iv) Facilities, operations, and services owned or managed by the client, which are part of the security package committed to the EBRD as collateral.

(v) Areas and communities potentially impacted by: cumulative impacts from further planned development of the project or other sources of similar impacts in the geographical area, any existing project or condition, and other project-related developments that can realistically be expected at the time due diligence is undertaken.

(vi) Areas and communities potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location. The area of influence does not include potential impacts that would occur without the project or independently of the project.

The EBRD 2012 Mining Operations Policy (Section 4.3) further identifies more specific criteria for setting the AoI for mining projects, as follows:

In mining projects, the Area of Influence can include areas and communities potentially impacted by cumulative impacts from further planned development of the project or other sources of similar impacts in the geographical area and other project-related developments. In particular this can refer to power lines, access roads, quarries, processing facilities, and other assets that are included in the security package for the investment…

…Whereas the full requirements of the PRs may not apply to a designated Areas of Influence, the potential environmental and social impacts and issues must be appraised so that the potential impacts of the project are understood and that adverse impacts can be avoided, minimised, or otherwise managed.

To address the significant challenge of setting the AoI in individual cases, the EBRD Mining Operations Policy (Section 4.3) recommends that the decision is based on a thorough baseline appraisal of environmental and socio-economic receptors, as follows: *Due to the large areas of land that can be affected by mining projects, and the potential for significant environmental, health, safety and social impacts to occur, particular attention needs to be given to the appraisal of baseline environmental and socio-economic conditions in the Area of Influence of the proposed project. This forms the starting point for the assessment of the potential impacts, risks, opportunities, and required mitigation measures across all phases of the project life cycle, from initial exploration and pre-feasibility studies through to post-closure care and maintenance.*

As a starting point for establishing the primary AoI for the baseline studies, an analysis of the existing environmental and socio-economic DPM documents was made to identify each document's geographical scope of the proposed project, Table 2-1 presents summary findings and **Error! Reference source not found.** illustrates these boundaries on a map.

Table 2-1: Area of Influence for the Krumovgrad project, as defined in existing DPM studies

Name of Study	Section/Page	Definition of AoI
Baseline Socio-Economic Survey for Krumovgrad Project Impact Area, prepared by Vitosha Research (2004);	pp.3-6	Immediate project area – settlements within 1000 m of the proposed project (pilot interviews and surveys), as well as wider region (for secondary data analysis) – encompassing Krumovgrad Municipality.
Local Populations Attitude Report, prepared by Vitosha Research (2005)	p.3	Town of Krumovgrad and the 5 settlements (villages or hamlets) in the immediate vicinity of the project – Polkovnik Zhelyazovo, Edrino, Dazhdovnik, Kuklitsa, Sarnak and Zvanarka.
Final English EIA Report for the Krumovgrad Project (2010)	NA	Impacted area in EIA Report varies for different components of the environment. For the biodiversity component the affected Natura areas are considered. For impacts on the communities – such as noise or health impacts considers the 9 nearby settlements, adjacent to the project site, including one neighbourhood of the town of Krumovgrad.

Net Impact Valuation of Krumovgrad Project, prepared by denkstatt (2014)	Methodology Report Sections 5-6	Various definitions depending on receptor – from global (regarding GHG emissions) to municipal (social impacts) and strictly localized (noise, air pollution, etc.).
Visual Impact Assessment report as addendum to the EIA (2014)	Section 2.2.2	A 5-km zone around the proposed development, including the Krumovgrad, Izgrev and villages of Dazhdovnik, Edrino, Guliya, Golyamo Kamenyane, Polkovnik Zhelyazovo, Rogach, Skalak, Vransko and Zvanarka and their respective hamlets, and traffic and recreational points within the 5-km zone.
Socio-economic household survey – HHS (2014)	Methodology description	Krumovgrad, Izgrev and villages Ovchari, Zvanarka, Dazhdovnik, Edrino, Malko Kamenyane, Kuklitsa, Skalak, Rogach and Guliya

Based on this it was established that the **primary Area of Influence** (hereafter referred to as the AoI) for the Socio-economic baseline includes:

- The Krumovgrad project facilities and all DPM assets related to the project;
- The villages and the respective hamlets in the immediate vicinity of the project facilities, which have been identified during the scoping stage and surveyed in the household survey – Ovchari, Zvanarka, Dazhdovnik, Edrino, Malko Kamenyane, Kuklitsa, Skalak, Rogach and Guliya (understanding that the Mahala system applies as described below);
- The town of Krumovgrad and the outlying Izgrev quarter.

Within the context the Mahala system applies which names only the main village of a cluster of hamlets for administrative purposes. The following Table 2-2 illustrates the hamlets, which fall under the administrative lead villages and are within 2000 metres of the proposed project. The household survey incorporated the hamlets within the main village as set out below. Some hamlets of the administrative lead village were not included as they were beyond a 3000m zone from the project site.

Table 2-2: Illustration of the hamlets which fall under the territorial jurisdiction (administrative) of a nominated village as indicated by the Mahala system. Some hamlets are not included as they are beyond a 3000m zone from the project site

Town/Village	**Hamlet with in the village**
Krumovgrad	Izgrev (quarter of Krumovgrad)
Edrino	
Ovchari	Taynik
	Bitovo
	Soyka
	Varhushka
	Konsko
	Chobanka 1

	Chobanka 2
	Synap
Zvanarka	Zvanarka
	Lozino 1
	Lozino 2
	Lozino 3
Dajdovnik	Dajdovnik
	Kupel
Malko Kamenyane	Ladovo
Kaklista	Shtarbina
	Kokoshar
Skalak	Podeba
	Belagush
	Skalak
	Kremenik
	Koprivnik
Gulia	Belook
	Pazach
Rogach	Kedikler

Figure 2-1 illustrates the villages and hamlets in the primary area of influence in relation to the proposed project site Figures 2-2 and 2-3 illustrate the Project in municipality and district context.

It must be noted that the AoI may be further expanded or revised, based on new/changed evidence or indications that mine construction/operation/closure impacts are directly impacting communities that were not previously included in the AoI.

Figure 2-1: Primary Area of influence for the Krumovgrad Project

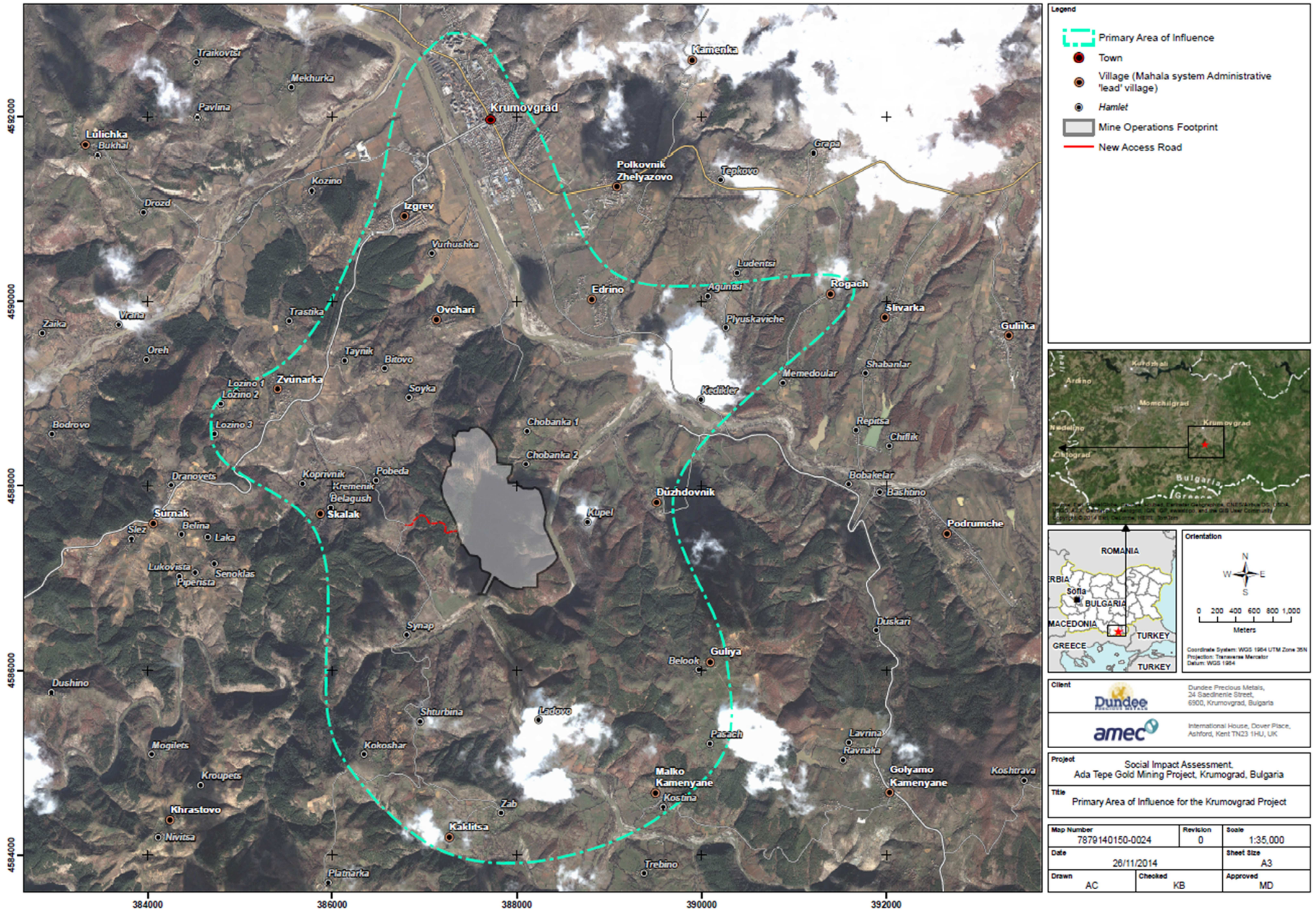
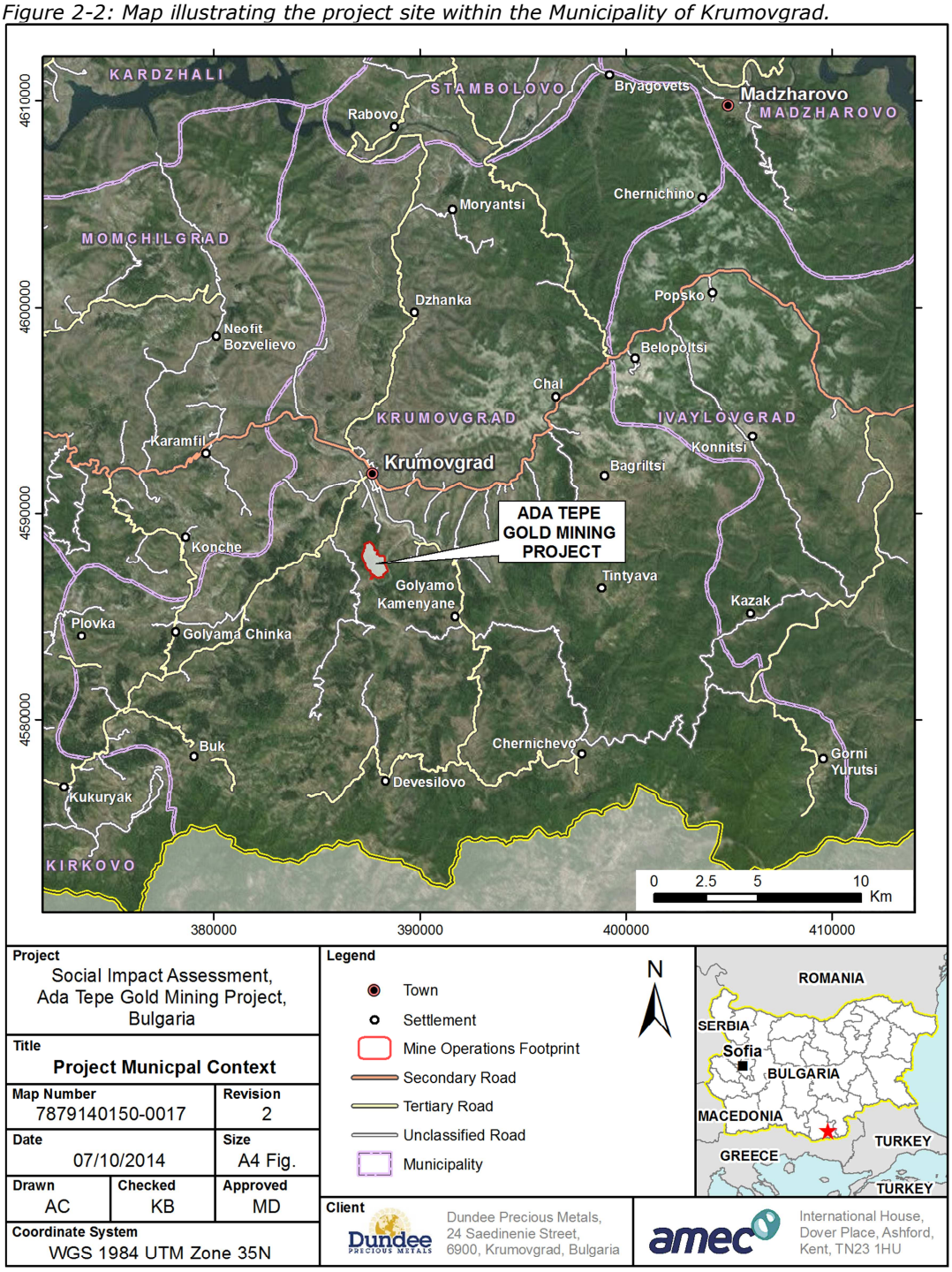
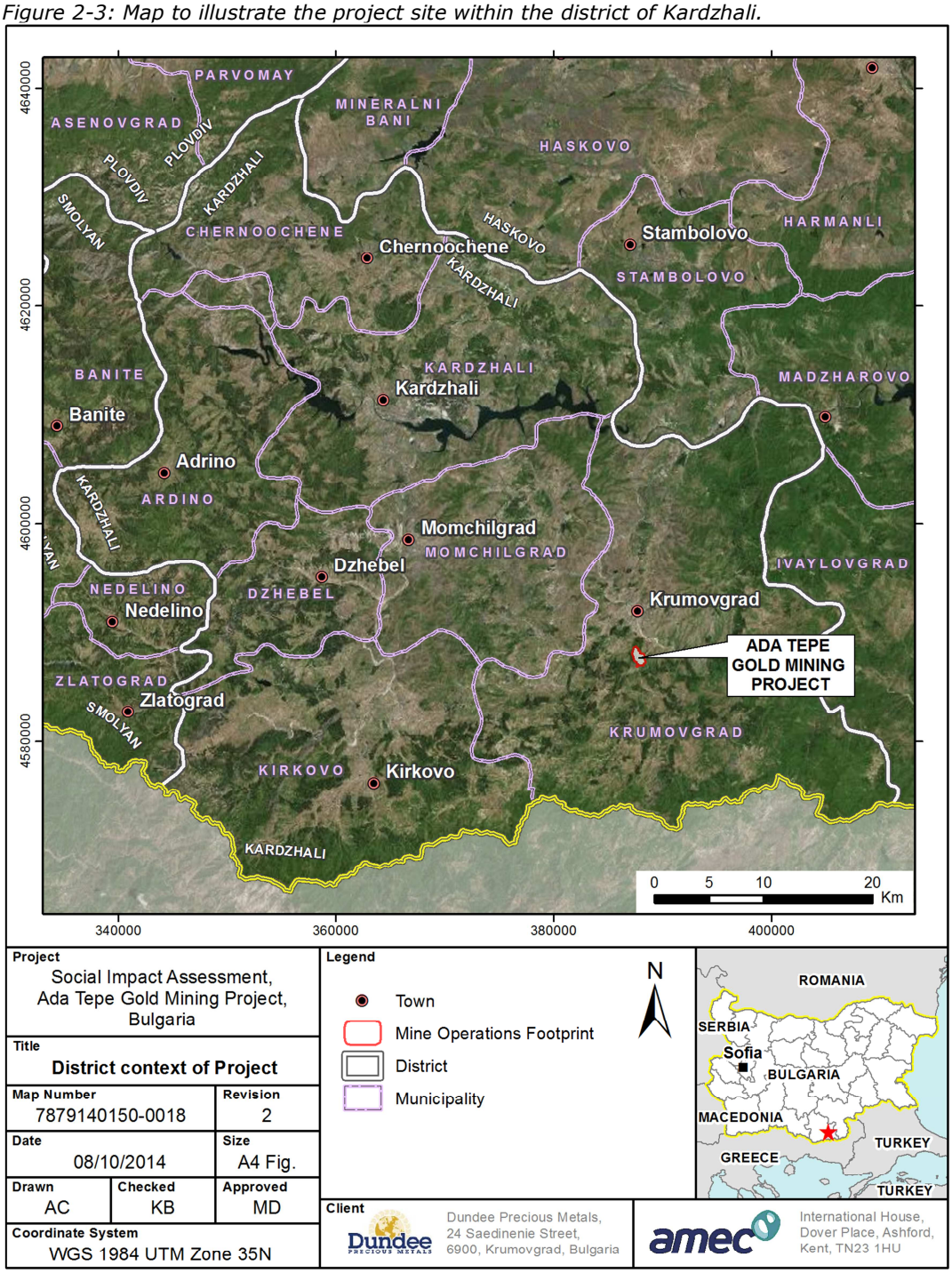


Figure 2-2: Map illustrating the project site within the Municipality of Krumovgrad.



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Figure 2-3: Map to illustrate the project site within the district of Kardzhali.



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

3.0 Baseline Methodology

3.1 Information Sources

3.1.1 Secondary Information Sources

Where National Statistics Institute (NSI) data are available across spatial levels – both national, district and municipal data are displayed and analysed in the report. In addition to providing sectoral and/or topical information, the baseline draws on secondary data from official strategic documents to enrich the analysis by providing important qualitative observations and conclusions about current trends and causal mechanisms. Where possible, inferences from the quantitative data have been supported by interpretations from these official documents. In a few cases, unofficial sources such as media report and documents generated by reputable organizations such as national NGOs have also been used to provide contextual information.

Secondary data sources is provided mainly from municipal strategic documents – the draft Municipal Development Plan (MDP) for the period 2014-2020. This information has been supplemented by DPM's commissioned reports - especially with regard to archaeology (summary information of Ada Tepe excavations), local accommodation (specially commissioned Rental Housing Survey), occupational skills (specially commissioned Skills survey) and ecosystems services baseline and impact assessment (2014). Earlier DPM studies and reports from the period 2004-2014, including opinion surveys, socio-economic reviews, etc., are used to a limited extent, because the information contained there is not up to date or is inferior to the official secondary sources such as NSI and Krumovgrad MDP. The Krumovgrad MDP and DPM studies are cited in each case where quantitative data are used or qualitative inferences from them are made in the report.

3.1.2 Primary Information Sources

The local level information – at the AoI level and also for individual settlements is constructed based on primary sources, which consist of information gathered from baseline consultation meetings (see Baseline Consultations below), conducted in July 2014. Findings of such are presented in a separate Stakeholder Engagement Chapter and are referenced as AMEC 2014. Further more a socio-economic household survey (hereafter referred to as HHS) was also conducted in July 2014 and finings are presented in Annex 1.

3.2 Baseline Consultations Methodology

Baseline consultations were carried out by AMEC to inform both the scoping stage and the baseline information collection, and to verify assumptions on the ground. The scoping fieldwork took place between 2nd – 5th June 2014 and the team consisted of two scoping consultants, a translator and a DPM community liaison officer.

Prior to the baseline stakeholder engagement fieldwork, a plan was developed which identified many of the stakeholders and the most appropriate engagement approach.

The fieldwork took place between July 8 and July 15. The team consisted of a stakeholder engagement consultant and a translator (Bulgarian/Turkish). They worked over a period of eight days (AMEC, 2014).

One-on-one interviews and focus group meetings were used to engage with stakeholders. These were carried out using a semi-structured interview technique. Topic areas and questions discussed were based on the known key impacts associated with similar mining projects in the area (AMEC, 2014).

The translator carried out translations during the meetings. Interview notes were taken as near verbatim as possible and the salient points were extracted and analysed in relation to other consultations so as to distil and validate common issues (AMEC, 2014).

In addition, observations were made of the physical environments in which communities were located. For example, the terrestrial environment, infrastructure, and livelihood activities were noted. Collectively, these findings formed a basis for the baseline study, the impact analysis and identification of potential mitigation measures (AMEC, 2014).

3.3 Socio-Economic Survey Methodology

The household survey was conducted in July 2014, and covered the villages of Krumovgrad, Izgrev, Edrino, Dazhdovnik, Ovchari, Zvanarka, Malko Kamenyane, Kuklitsa, Skalak, Guliya and Rogach incorporated in this sample are the hamlets that fall within the administrative catchment of these villages as set out under above under the paragraph setting out the Project Aoi. The socio-economic household survey (DPM HHS, 2014) was based on a representative sample of 396 households (1 154 persons) at 90% confidence level, (refer annex 1).

Understanding that these communities consist of clusters of small hamlets and villages, the total 'actual' population of the villages and their cluster hamlets collectively were used to calculate the sample size. Proportionate ratios were calculated from the final sample size to work out how many household surveys to perform in each hamlet.

A survey questionnaire was created, covering a range of socio-economic topics, with the purpose of gathering data to characterise the socio economic dimensions of the Aoi. The topic areas within the survey were designed to cover the entire range and typology of variation among households, understood to be typical for Bulgaria and the region during the scoping stage analysis refer Annex 1 for the full household survey questionnaire.

The responses from the HHS were collated and systematized with assistance by Sofia University researchers, and were provided in aggregated and disaggregated form for the present study. This data is presented in Annex 1.

3.4 Limitations

3.4.1 Secondary data sources

The following data limitations have been encountered during the data analysis and elaboration of this baseline report:

- Previous project studies have mostly focused on the impacts and public perception of the Krumovgrad project, with relatively little analysis of the baseline situation, with the exception of the national EIA report. Also, data from DPM studies are not always relevant (some studies date back from to the early 2000s). This problem has been remedied by sourcing baseline information primarily the recent socio-economic studies and including external sources – especially NSI data (see NSI data limitation below) and information from the draft of the Municipal Development Plan (MDP) for the period 2014-2020;
- Public NSI data are mostly available at national and Kardzhali district level – few relevant NSI statistics are available at municipality level;
- There are no comprehensive National Statistics data on the prevalent economic sectors and activities for the municipality or district. Furthermore the MDP has very little, information on economic activities within the Municipality and businesses, included in the report.

3.4.2 Primary data sources

Both the HHS and stakeholder consultation interviews have their own limitations– mainly, the anecdotal nature and inherent biases of the accounts of interviewees, and the limitations placed by the formulation of the survey questions and answers. Where the respondents' statements can be directly cross-checked with relevant answers from the survey, this has been done for objectivity.

Also, many of the hamlets, as studies revealed are largely depopulated. Although the baseline consultations and HHS survey were undertaken during the summer months of June and July, when a lot of the hamlet households historically return from Turkey to spend their summer holidays in Bulgaria, it was found that few households had actually returned this year or in recent years. The studies endeavoured to reach as many potentially affected stakeholders as possible by going door to door and requesting the Mayor to contact all village and hamlet dwellers, however due to absence of household residents not as many were consulted with, as had been intended. The household survey intended to reach 418 households however the survey was performed on 396 households.

Other considerations with regard to the completeness and objectivity of primary data:

- Stakeholder consultation is a fairly new phenomenon in Bulgaria and as such the population especially in some of the small hamlets is generally unwilling to talk in a participatory consultative forum. This is compounded by the occurrence of past

negative campaigns against the mining project inclusive of door-to-door anti-mining lobbying against the project (mainly in Krumovgrad). This appears to have resulted in generation of suspicion and an unwillingness to talk to external parties about the project. This was overcome by the consultant providing a detailed description of the purpose of the consultation and an emphasis was made on the independent nature of the SIA process and the requirements of the recipient organizations such as EBRD. When parties were unwilling to participate, this was respected;

- Some concepts and discussion points could have been distorted through the process of translation, thereby influencing the validity of responses from the stakeholders to the SIA consultant's questions. To counter this, checks were incorporated to ensure the reliability in the translation and the consultation process.

3.5 Report Structure

The structure of the Baseline report presents each socio-economic aspect starting with a brief national overview, followed by elaboration of the main findings from the secondary information sources and the HHS and stakeholder interviews, ordered in sub-sections pertaining to particular topics. In the demography section, the sub-sections follow the basic demographic traits of the population, also discussing the main identified vulnerable groups. The infrastructure section presents the main types of engineering infrastructure assets, such as those related to housing, transport and energy. The land use and natural resource section details the land use statute, regimes and actual utilization of land and natural resources in the AoI. The education and health chapters provide separate description of the function and state of the respective service provision system, and the health and education status of the local population. The Economy section focuses on the main identified sectors of economic activities – industry, tourism, agriculture and services. The cultural heritage section presents the local archaeological findings and intangible cultural assets, such as traditions. The report ends with a brief conclusion sections, outlining the main findings for each of the analysed aspects. The report is set out in the following chapters; Governance (Section 4); Demography (Section 5); Infrastructure (Section 6); Natural Resources and Land Use (Section 7); Education (Section 8); Economy and Livelihoods (Section 9); Health (Section 10); Cultural Heritage (Section 11) and finally report conclusions (Section 12).

4.0 Governance

4.1 Formal Structure

National Overview

Bulgaria is a parliamentary democracy and the legislative system is divided into three independent branches – legislative, executive and judicial.

The legislative branch is represented by the National Assembly (Narodno Sabranie) that is composed of 240 members, elected in parliamentary elections for a four-year term and representing the 28 districts – one of which, Kardzhali district, includes Krumovgrad municipality and the footprint of the project. The National Assembly has powers to adopt legislation, it elects the Prime Minister and the government, approves the national budget, and ratifies international agreements, among other duties.

The Constitution provides the opportunity to convene a Grand National Assembly (Veliko Narodno Sabranie) that has special powers such as the adoption of a new Constitution, amendments to certain articles of the Constitution that are related to basic civil rights and territorial changes. The Grand National Assembly consists of 400 members.

The executive branch on a national level is represented by the President and the Council of Ministers (government).

The President is elected in a direct election for a five-year term and serves as the head of state and commander in chief of the armed forces. Apart from largely ceremonial and representative functions the President may veto legislation. In such cases the draft legislation is returned to the National Assembly for second review, but the MPs can pass it again by qualified majority.

The Council of Ministers is the principle executive organ and is elected by the National Assembly. It is responsible for managing the budget, the state administration and maintaining law and order. The Council is chaired by the Prime Minister and is comprised of ministers, who head the different departments (Ministries) of the government.

The Council of Ministers appoints 28 District Governors who are responsible for the implementation of national policies on local level – i.e. management of state property. They governors also oversee the decisions by Municipal Councils and mayors within their District and have powers to either veto the decisions or send a signal to the Administrative Court.

Each district is composed of Municipalities that are the basic form of administrative division. Municipalities are run by a Mayor (elected by the population for four-year term) and a Municipal Council (local parliament). There are 264 Municipalities in Bulgaria, and each Municipality is composed of one or more towns and villages. Each town or village within a municipality also has a Mayor elected by the citizens for a four-year term. The Municipal

Council approves the yearly budget, adopts strategies and plans for development, and exercises control on the Municipal Administration.

The judicial branch is constitutionally independent of the executive branch of government. The Supreme Judicial Council is the highest body responsible for managing the judiciary and ensuring its independence. It appoints judges, prosecutors and other categories of employees and manages judiciary affairs without interfering with the independence of the bodies concerned.

The district courts are the main courts for examining cases in the first instance. Their decisions are subject to appeal before the provincial court. The provincial courts act as courts of first instance, where they examine a predefined type of case involving significant financial resources or substantial societal interests. They also act as a second (appellate) instance for re-examination of decisions taken by the district courts.

The 28 administrative courts have jurisdiction over cases related to issuing, amendments, repeal or annulment of administrative acts; a declaration that an agreement covered by the Administrative Procedure Code is null or void; redress against unwarranted actions and omissions by the administration; protection against unlawful coercive enforcement; compensation for injury resulting from unlawful acts, actions or omissions by administrative authorities and officials; compensation for injury resulting from coercive enforcement; the annulment, invalidation or setting-aside of judgments rendered by administrative courts; a finding that an administrative act covered by the Administrative Procedure Code is not authentic. (European e-Justice Portal, 2014)

Local Overview

The AoI is located within the district of Kardzhali and the municipality of Krumovgrad. The district of Kardzhali is one of 28 administrative districts (aka "oblasts"). It includes 7 municipalities – Kardzhali (the district center), Ardino, Chernoochene, Dzhebel, Momchilgrad, Kirkovo and Krumovgrad. The district has a total population of 152 808 persons, based on the 2011 census (NSI, 2011). The district administration has adopted a total of several strategic documents of the district level, which also apply to Krumovgrad municipality – the most important of these concerning general economic development, the provision of social services, and social integration of the Roma minority and other vulnerable groups (Kardzhali district, 2014)

The municipality of Krumovgrad is composed of the town of Krumovgrad, the administrative center and 79 villages. The Municipal Council has 29 members divided in eight permanent committees: Finance and Budget; Territorial; Development and Environment; Legal Affairs and Regional Policy; Municipal Assets and Investment Policy; Education, Culture, Sports, Youth and Tourism; Healthcare and Social Policy; Agriculture and Forestry, and Ethics. The municipal administration employs some 140 people in the Municipality with the aim to increase its efficiency and overall capacity.

Several governmental institutions have local offices at district and municipal level.

In the Kardzhali District:

- Regional Health Inspectorate (under the Ministry of Health);
- Regional Inspectorate for Environment and Waters (under the Ministry of Environment and Waters, based in Haskovo, responsible for both Haskovo and Kardzhali districts);
- National Revenue Agency regional office;
- National Social Security Institute regional office;
- District Police Directorate (under the Ministry of Interior);
- Regional Inspectorate for Education (under the Ministry of Education and Science).

In Krumovgrad Municipality:

- Labour Office (under the Ministry of Labour and Social Policy);
- Municipal Agricultural Office (under the Ministry of Agriculture and Foods);
- National Social Security Institute municipal office;
- Police office (under the Ministry of Interior).

At district level there are two types of courts in Kardzhali: Provincial Court and Administrative Court. In Krumovgrad there is a District Court.

4.2 Informal Structures

Informal structures of self-governance are not typical for Bulgaria. Few such structures exist, most notably in the Roma minority. The Roma informal "meshere" institution functions as a hybrid between an extrajudicial settlement body and an elders council, and typically settles small disputes between Roma. Such councils exist at both local and national level, but cover only some Roma (Darik, 2011). It is not known if any meshere councils function in Krumovgrad municipality.

4.3 Political Overview

Politics in the District of Kardzhali is dominated by the Movement for Rights and Freedom (MRF) party that has achieved decisive victories in the region for all recent parliamentary and local elections. Although it is not a strict ethnic party, MRF is nationally recognized as the political defender of the rights of ethnic and religious minorities, including the Turkish and Muslim Roma minorities, which is the basis of its support in ethnically and religiously mixed regions of Bulgaria, such as Kardzhali district and Krumovgrad municipality. In the past three parliamentary elections MRF has sent the majority of the five MPs from the District (CEC, 2014). On a municipal level MRF has won all mayoral seats in the seven municipalities in the past three local elections.

5.0 Demography

5.1 National Review

The following national review has been largely constructed based on national analysis of demographic trends, conducted in 2012 and presented in Revised National Strategy for Demographic Development of Bulgaria, elaborated by the Bulgarian Ministry of Labour and Social Policy (MLSP, 2012).

According to the Census of 1.02.2011 the population of Bulgaria is 7 364 570 people. In the period between the two censuses of 2001 and 2011, the population of the country has decreased by 564 331 people at an average annual rate of decline of 0.7%. Some factors influencing the population of the country are the natural growth (births and deaths) and the international migration, in territorial aspect - internal migration of the population and administrative and territorial changes. About two-thirds of this population reduction is due to negative natural growth (more deaths than births). For the period 1.03.2001 – 1.02.2011 the population has decreased by 389 087 people due to negative natural growth. Almost a third of the reduction in the population for the period between the censuses of 2001 and 2011 is due to emigration, which is estimated at 175 244 people.

Socio-economic changes after 1989 have accelerated the decrease of the birth rate, resulting in a rate of 7.7‰ in 1997. After this minimum is registered a process of stabilization is observed leading to a birth rate typical for most Western European countries (between 9‰ and 11‰.). Over the past two decades of transition a decrease is reported in the birth rates of all major ethnic groups, but it is not uniform. Roma and Turks have relatively higher birth rates than the national average, but there is a trend of convergence. The current considerably younger age structure of these populations is an important factor for maintaining and even increasing their share in the younger population in the medium term.

With regard to migration in the period between the last censuses of 2001 and 2011, 379 181 persons have changed their address in the country from one place to another - mostly moving to national and regional centers such as Sofia, Varna, Plovdiv and Burgas. The process of opening up of the Bulgarian economy and EU accession has also led to increased outward migration – as already stated.

With regard to ethnicity, as of 2011, the Bulgarian ethnic group comprises of 5 664 624 or 84.8% of the people who have voluntarily declared their ethnic self-determination. The Turkish ethnic group is the second largest with 588 318 persons who have identified themselves as ethnic Turks, representing about 8.8% of the total population. The Roma ethnic group traditionally is third largest. As of 01.02.2011 it amounts to 325 343 people according to their self-determination with a share of 4.9%. Other ethnic, national and religious minorities include Russians, Armenians, Greeks, Jewish, Macedonians, Ukrainians and others totalling 49 304 people or 0.7% of the total population. The dynamics of the ethnic groups have been relatively stable over the past decade, with the notable exception of

significant migration of the Turkish population (especially in Kardzhali district) to Turkey in the late 1980s, which has been slightly reversed since then.

Language and religion are closely related to ethnicity - among Bulgarians 99.4% indicate Bulgarian as their native language, with 96.6% of the Turks indicating Turkish. For the Roma minority 85% indicated Roma as mother tongue, 7.5% - Bulgarian and 6.7% - Turkish. With regard to religion, a similar division exists - persons who have identified themselves as Eastern-Orthodox make up the biggest group – 4 374 135 people, or 76% of respondents. Another 577 139 persons, or about 10%, have identified themselves as Muslim. Of them 546 004 people identify as Sunni Muslims, and the rest as Shiite Muslims - 27 407 people. Catholicism is practiced by 48 945 people, Protestantism by 64 476 people, respectively 0.8 and 1.1% of the respondents, with other religious beliefs being much less prevalent.

The population of the country is distributed into 28 districts and 264 municipalities, in which there are in total 255 towns and 5 047 villages. In 2011 5 339 001 people, or 72.5%, lived in the towns[4], while the rural population was 2 025 569, or 27.5% of the total. In the period 2001-2011 there was a distinct trend of depopulation in all the districts of Bulgaria with the exception of Sofia and Varna. In some areas of northwestern Bulgaria the population has decreased by a remarkable 20% in the 10-year period, but in the areas of South Central and Southwest Bulgaria, the reduction of the population was at or below average. The minority ethnic groups are concentrated in rural areas, such as Kardzhali district. In 2011, 44.6% of the Roma population and 62.3% of the Turks lived in villages.

With regard to the gender structure of the population there is a trend of dominance in the number of women. In 2011 out of the total population of 7 364 570 people – 3 777 999 (51.3%) were women and 3 586 571 people (48.7%) were men, or for every 1 000 men there were 1 053 women. In some lower and middle age cohorts men predominate, while there are significantly more women in the age groups above 60 which contributes to the higher poverty rates in these groups taking into account the lower incomes received before retirement and consequently lower pensions. In rural areas there are almost as many women aged 60+ years as women aged 40 or less. Rural population is significantly older than the urban population, with a predominance of women in the higher age groups. This predetermines some negative economic trends – while labour participation of active age women compared to men in Bulgaria is not dramatically low in the EU context, a predominance of women at the higher age group and traditionally low pension incomes impede access to health care, and goods and services for women in rural areas.

[4] In Bulgaria "town" status (referring to both large cities and small towns) is based upon special designation of the settlement by the Council of Ministers. By general conventions only settlements over approximately 3 500 inhabitants receive town status, and new town designations are very infrequent due to the prevailing trend of depopulation of small settlements. Some national cultural or tourist centers with populations as low as 1 000 people are designated as town due to their importance and there are a few other exception. Generally all smaller settlement are designated as villages.

5.2 Population characteristics

5.2.1 Demography

Krumovgrad municipality covers an area of 836.75 km^2 and consists of 1 town (Krumovgrad) and 79 villages. According to the Census conducted in February 2011 the population size of Krumovgrad municipality is 17 823, which is 11.66% of the total population of the Kardzhali district and forms 0.24% of the population of Bulgaria, refer Table 5-1 below.

Table 5-1: Population- Census 2011(Sources – NSI, 2011 and ESGRAON, 2014)

Territorial Unit	NSI Census- 2011	2014 ESGRAON[5]
Krumovgrad Municipality	17 823	18 233
Krumovgrad (town only)	5 070	4 943
Kardzhali district	152 808	160 931
Bulgaria	7 364 570	

More up-to-date information is offered by ESGRAON, which refers to the number of inhabitants having their current address in the municipality or district, refer to Table 5-1 above. In 2014 the number of inhabitants in the municipality and the district has increased according to ESGRAON by up to 18 233 people to 160 931, while in the town of Krumovgrad there was a decrease in population.

In terms of population density the municipality and the district are below the National average of 66 inhabitants/km^2. As presented in Table 5-2 below, the population density in the municipality is, in fact, 2 times lower than the density of the Kardzhali district and 3 times lower than the national average.

Table 5-2: Population- density, absolute numbers for 2001 and 2011, and changes in population

	Population 2011 (NSI)	Population 2001 (NSI)	Change (%)	Area (km^2)	Population density
Krumovgrad Municipality	17 823	19 907	-10.47	836.75	21.30
Krumovgrad (town)	5 070	8 480	-40.21	5.144	985.61
Kardzhali (region)	152 808	164 019	-6.84	3 209.1	47.62
Bulgaria	7 364 570	7 928 901	-7.12	110 994	66.35

Source: National statistical institute

A trend can be seen in the figures above, especially in the town of Krumovgrad, where there was a 40% decrease in the population for the period 2001-2011. The population decrease of the entire municipality was lower, with a 10.47% decrease between 2001 and 2011. Some of

[5] ESGRAON is the National resident registration system and main source of information for physical persons. Every citizen has a Personal registration chart. The system is the most frequently updated source of statistics on the population.

the reasons for this decrease are the negative natural growth and the negative net migration.

The overall categorization of the villages in the AoI is that they are small, which is typical for the villages in the Municipality of Krumovgrad. Villages within the municipality also usually consist of clusters of hamlets, as discussed previously. Baseline consultations found that the mine site hamlets were largely depopulated and dwellings remained unoccupied, indeed 2 of the hamlets within the Aoi and closest to the proposed project site, Chobanka 1 and Chobanka 2 (Ovchari village) are abandoned, with only one household rented off an absent owner and their land used for cattle grazing, refer to Figure 5-1 below. The depopulation of rural villages in Krumovgrad and in other parts of Bulgaria was due to the outward population migration during the late eighties. As discussed under the data considerations, when performing the household survey it was found that registered data of population sizes of the mine site villages and hamlets, provided by the Municipality, did not correspond to the actual population size. Table 5-3 shows the distribution of registered citizens in the villages of the AoI and compares it to actual numbers. The actual data differs a lot from the registered data in some cases, such as for Ovchari village or Zvanarka, where the official population is claimed to be almost 3 times bigger than found in the HHS. Five of the villages of the AoI are very small, having less than 100 residents. The biggest shares of the population live in the town of Krumovgrad and in Izgrev. The next biggest is the village of Edrino (380 residents), which is near to Krumovgrad followed by Ovchari and Zvanarka.

Figure 5-1: Abandoned Village dwellings of Chobanka 1 and 2

Table 5-3: Population size of the villages and Towns in the AoI, 2014 (NSI Demography, 2014; DPM HHS, 2014)

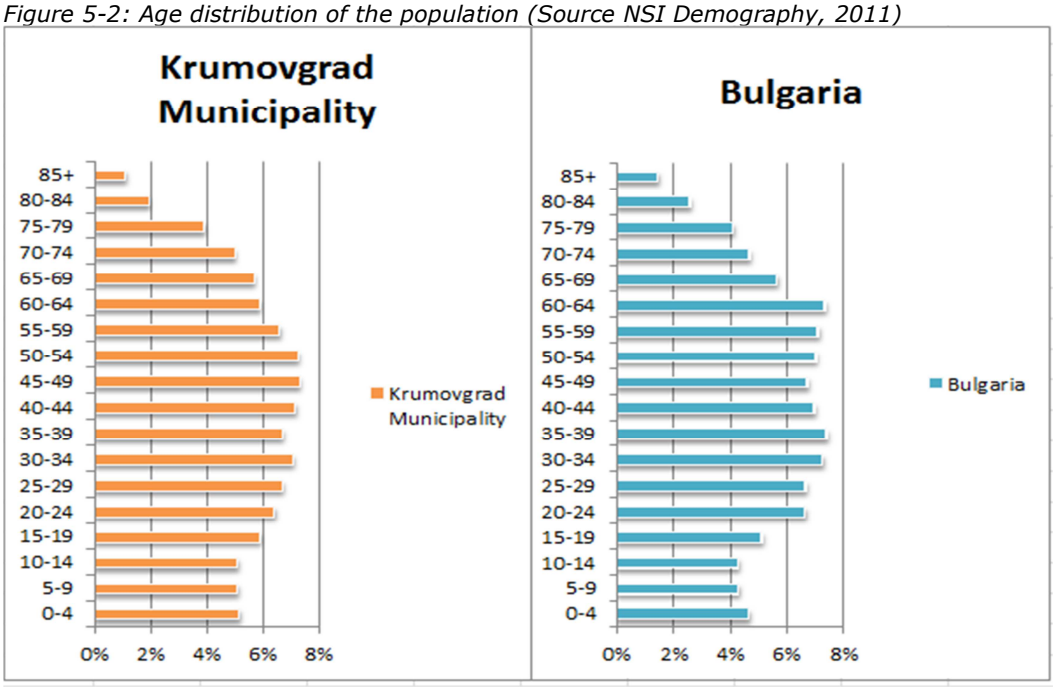
Municipality of Krumovgrad- Area of Influence		
Village	**Registered**	**Actual***
Krumovgrad	6 183	4 662
Izgrev	1 174	1 174
Ovchari	421	169
Dazhdovnik	99	46
Edrino	342	380
Malko Kamenyane	50	25
Kuklitsa	50	38
Skalak	41	36
Gulia	65	48
Zvanarka	371	150
Rogach	291	No data

*Figures provided by DPM to SIA Consultant June, 2014

5.2.2 Age

As indicated in the national overview section above, while the populations of Kardzhali district and the Municipality of Krumovgrad are ageing, this is representative of the typical situation of Bulgaria, and the age trends of Krumovgrad Municipality, although predominantly aged, the population is actually younger than other rural regions. The age distribution is close to the average for the country as can be seen on Figure 5-2. Compared to the National average the number of children below 19 in the Municipality of Krumovgrad is slightly higher with 21.25% compared to the national average 18.37%. Similarly the inhabitants of the municipality above 60 years old are 2% less than the National average. Additionally, the percentage of citizens of working age within the municipality is similar to the national average at 55.24% compared to 55.8% nationally.

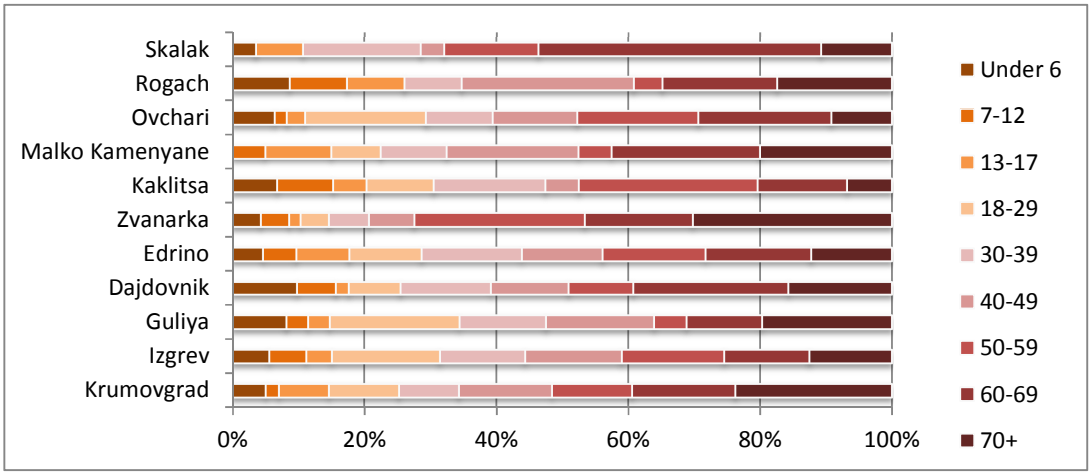
Figure 5-2: Age distribution of the population (Source NSI Demography, 2011)



The reasons for the slightly younger population could be traced to the ethnic structure of the region and in particular the age structure of the Turkish and Roma minorities, confirming the trend explained for the national level. During baseline consultations a consultee described a tendency among teenage Roma for "extremely high rate of births and women get[ting] married at a young age" purported to be motivated by the state social security support.

A more detailed picture of the age structure in the AoI settlements is displayed in Figure 5-3. According to the household survey the village of Kuklitsa is the one with the biggest share of population of working age (between 18 and 60), while the village of Skalak has the smallest share of people of working age and the biggest share of people over 60 years old.

Figure 5-3: Age of the population in the AoI by villages, Source: HHS, 2014



5.2.3 Gender

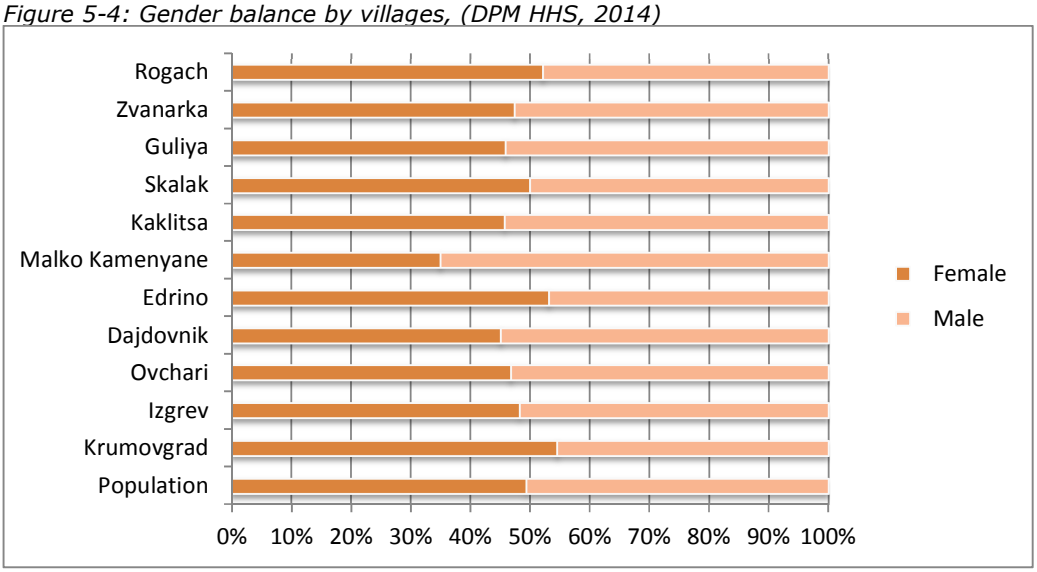
According to the Census of 2011 there is a comparatively even distribution of men and women in the Municipality of Krumovgrad - see Table 5-4 below. Krumovgrad Municipality actually has more male than female inhabitants, which is not representative for the district and for rural regions and the country as a whole, although the deviation is not extreme.

Table 5-4: Gender distribution at national, district and local level (NSI Demographics, 2011)

	Total			Urban population				Rural population			
	All	Men	Women	All	Men	Women	% of total	All	Men	Women	% of total
Krumovgrad	17269	8709	8560	4888	2370	2518	28,31%	12381	6339	6042	71,69%
Kardzhali	150605	74806	75799	62991	30464	32527	41,83%	87614	44342	43272	58,17%
Bulgaria	7245677	3524945	3720732	5291675	2555342	2736333	73,03%	1954002	969603	984399	26,97%

Baseline consultations found that a proportion of the male population in the municipality is employed as seasonal workers abroad, as stated by women interviewees particularly from Edrino during the stakeholder meetings. The HHS results do not indicate such a trend, as for the entire AoI a near parity is established with 51% men and 49% women – see Figure 5-4 below. The biggest deviation is seen in the village of Malko Kamenyane where there is a significant gender imbalance with almost twice as many male residents than female. These findings could to some extent be attributed to the fact that HH survey respondees incorporated absent male members of the household in the count.

Figure 5-4: Gender balance by villages, (DPM HHS, 2014)

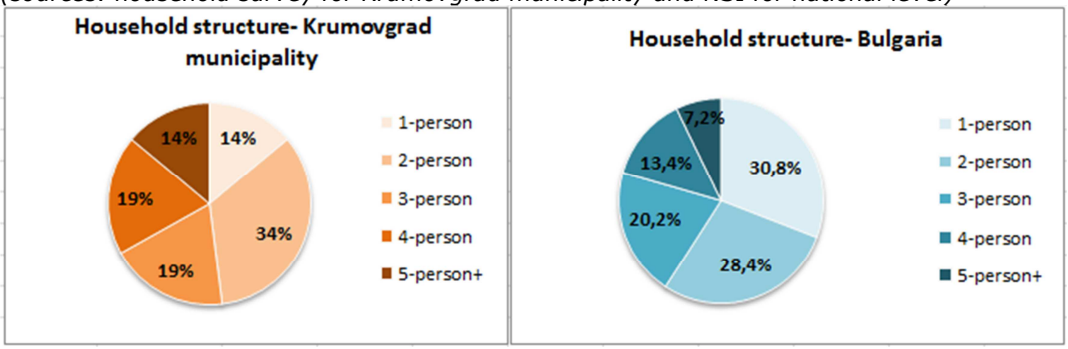


5.2.4 Household composition

The HHS determined that an average household in the AoI consists of 2.9 persons. This is slightly higher than the average of 2.4 persons for the country, as detailed by the National Statistics Institute, and 2.4 persons in urban areas and 2.5 persons in rural areas (NSI Census, 2011). The possible reasons for the difference in the average household size is perhaps related to the age composition and a relatively higher percentage of the population

under 19 than elsewhere in Bulgaria, as discussed earlier. Figure 5-5 below gives the breakdown of household sizes, as identified by the household survey compared with the average national breakdown for 2011 published by NSI. HHS data on individual settlements cannot be interpreted objectively due to the small number of households in each village.

Figure 5-5: Distribution of household sizes in the AoI compared to the national level (sources: household survey for Krumovgrad municipality and NSI for national level)



The proportion of households consisting of 5 or more inhabitants is twice as big as the national figure for this type of households. In addition the proportion of single-person households (14%) is more than twice smaller than national (30.8%). The biggest proportion is for the 2-person households with 34% of interviewees living in such a household. Opposite to the national trend the smallest proportion is of the single-person households with around 14% of interviewees living in this type of household.

5.2.5 Urban/rural population distribution

As referenced in Table 5-4 above, the population size of the rural villages is much higher than those living in towns which is a trend at district level as well as for Krumovgrad municipality. More precisely 71.69% of the population of Krumovgrad Municipality live in rural areas, with the rest living in Krumovgrad. Likewise at district level 58.17% of the residents live in villages and the rest in urban areas. This is a marked difference to the national distribution presented in Section 5.1 above, defining the AoI as definitely situated within a rural area. The fact that many residents live in the smaller settlements could also indicate lack of economic opportunities on a regional level, and especially in the district city of Kardzhali.

Although a higher number of the municipality residents live in rural areas, within the AoI itself, the residents of the town of Krumovgrad and Izgrev quarter significantly outnumber inhabitants of the small villages and their hamlets, some of which were found to be completely deserted during the field visits, such as Chobanka 1 and Chobanka 2. Figure 5-6 and Figure 5-7 below present this strong contrast at the village level.

Figure 5-6: Population size of each village of the AoI (DPM HHS, 2014)

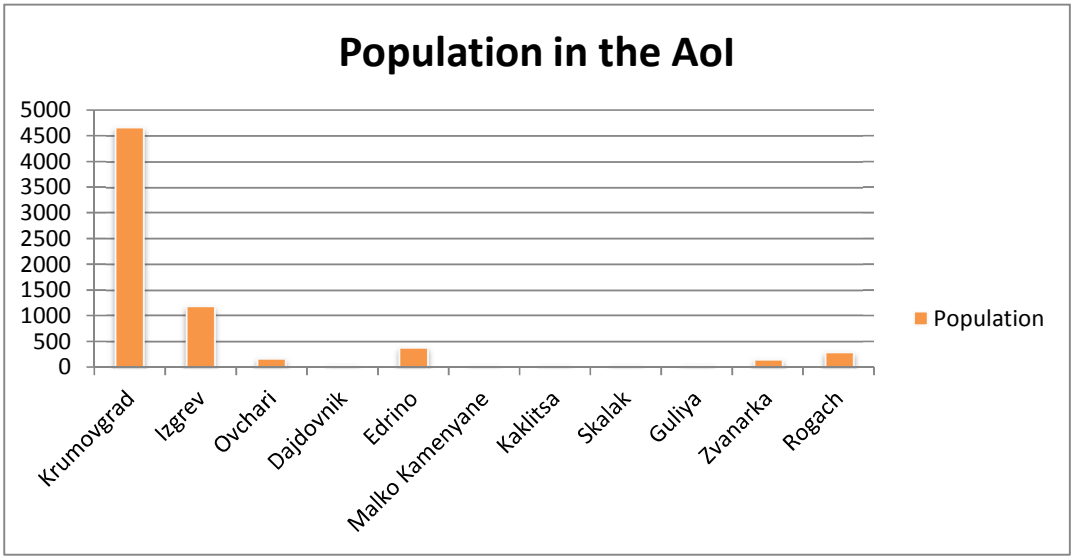
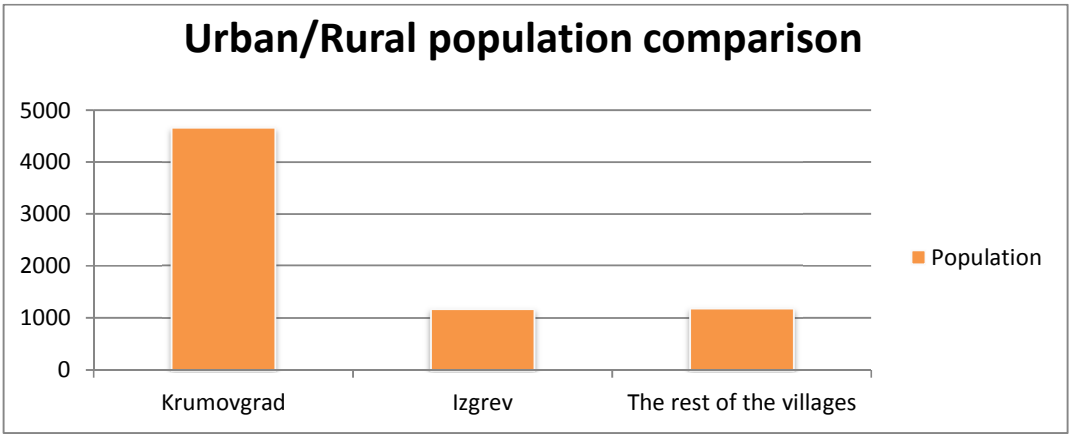


Figure 5-7: Urban/Rural population comparison, household survey, 2014



As the findings from the household survey indicate the population size of Krumovgrad (and Izgrev neighbourhood) is almost 5 times bigger than the rest of the villages taken together. This emphasises the importance of the town of Krumovgrad to the AoI and indicates strong concentration of human resources within the AoI.

5.2.6 Population Growth and Migration

There is a clear tendency of reduction in the population, both in terms of natural growth and migration processes, which reflects the national trends, as noted in Section 5.1 above. In

Table 5-5 below the trends in both of the categories for the past 10 years are presented.

Table 5-5: Net migration of the population (Source: NSI, 2001-2013)

Krumovgrad Municipality	Inward migration			Outward migration			Net Migration		
	All	Men	Women	All	Men	Women	All	Men	Women
2013	111	56	55	293	125	168	-182	-69	-113
2012	127	56	71	280	146	134	-153	-90	-63
2011	134	59	75	242	125	117	-108	-66	-42
2010	194	99	95	552	289	263	-358	-190	-168
2009	235	122	113	450	237	213	-215	-115	-100
2008	517	245	272	671	309	362	-154	-64	-90
2007	269	125	144	449	204	245	-180	-79	-101
2006	138	58	80	368	185	183	-230	-127	-103
2005	290	124	166	543	252	291	-253	-128	-125
2004	300	132	168	540	259	281	-240	-127	-113
2003	262	122	140	472	227	245	-210	-105	-105
2002	233	102	131	430	203	227	-197	-101	-96
2001	556	259	297	755	351	404	-199	-92	-107

As seen in the table above, the size of the outward migration from Krumovgrad Municipality is high for the actual population size of the municipality and remains consistent for all the years of the period 2001-2013. Interestingly, of the total numbers migrating, there is a similar number of men and women. This was evidenced in baseline consultations, where stakeholders stated there was significant migration out of the municipality of youth and men. This leads to the conclusion that most of that outward migration is by people of working age.

While the precise reasons for migration cannot be determined specifically for the locality, it may be deduced that these also correspond to the main motivators present at national level. According to the National strategy for demographic development of Bulgaria 2013-2030 (MLSP, 2012), the biggest group of people migrating within or out the country is of people between 20 and 39 years old, followed by the 40-59 years old group and then those under 20. According to a related survey of the National statistics institute, nearly 59% of emigrants move for the purpose of finding permanent occupation, for 20% leaving the country is related to education opportunities and for 13% it is due to marriage decisions.

Interestingly, however, this trend of emigration for occupational reasons is not evidenced in the household survey target group, as only 3% of the household members over 18 years of age are reported to be seasonally employed abroad, while another 4% are stated to be seasonally employed elsewhere in Bulgaria (See Section 9.2). This may signify that many locals with more permanent employment abroad and in the big city centres of Bulgaria are considered to have permanently left the households and community.

While occupational migration could be permanent, some residents state that there are whole families registered in a particular village, while they are occupying their houses mainly during the summer, which is further evidenced by HSS and VIA findings that even in the summer months many residents are absent from their houses so that actual population

figures were found to be significantly lower than officially registered residents. The reason for this absence mainly has to do with the Turkish residents moving semi-permanently to neighbouring Turkey in the 1980s due to the integration policies of the Bulgarian communist government. Since the advent of democracy in 1989, Turkish inhabitants have been provided dual-citizenship and return to Bulgaria relatively frequently, but do not live there for most of the year, as is indicated in the AoI.

With regard to natural population growth (birth/death) rates, the male death rate is higher than the female death rate. With regard to the birth rate of boys, it is higher than the birth rate of girls for most of the years between 2001 and 2013. Compared to the migration out of the municipality there is a relatively high percentage of birth rates reaching 48% of the total outward migration (average for the period 2001-2013). This probably accounts for the higher number of residents below 19 years old, as evidenced in the population size analysis – see Table 5-6 below. Yet the natural growth of the municipality is negative, due to the higher level of deaths. The current dynamics of death rates and birth rates largely follow the expected long-term trends indicated by the late stages of the demographic transition process in developed countries, as is also indicated by the analysis of the National strategy for demographic development of Bulgaria (MLSP, 2012).

A further assumption can also be made that the reason for higher number of deaths among the male population, which is evident both in the Municipality and at national level, with males from the age group 40-59 being particularly vulnerable, is because of unhealthy lifestyles and exposure to occupational stress (MLSP, 2012). In rural areas, child mortality is also a problem, due to poor access to healthcare and poor social services for the vulnerable groups (MLSP, 2012). Unfortunately, the health data available at municipal level (as stated in the survey and MDP, see Section 10.3) are not conclusive for those particular groups.

Table 5-6: Natural growth of the population, (2001-2013), Source: National Statistical Institute

Krumovgrad Municipality	Live births			Deaths			Natural growth		
	All	Boys	Girls	All	Men	Women	All	Men	Women
2013	191	105	86	194	110	84	-3	-5	2
2012	162	87	75	217	117	100	-55	-30	-25
2011	173	81	92	244	123	121	-71	-42	-29
2010	189	96	93	242	134	108	-53	-38	-15
2009	223	102	121	221	120	101	2	-18	20
2008	216	111	105	238	127	111	-22	-16	-6
2007	209	115	94	249	133	116	-40	-18	-22
2006	219	110	109	231	125	106	-12	-15	3
2005	205	109	96	223	113	110	-18	-4	-14
2004	205	98	107	205	126	79	0	-28	28
2003	200	111	89	192	106	86	8	5	3
2002	203	98	105	225	136	89	-22	-38	16
2001	266	159	107	252	142	110	14	17	-3

5.2.7 Ethnicity, Religion & Language

As indicated in the national overview above, ethnicity and religion in the AoI settlements are interconnected, as ethnicity to a great extent determines religious identity. In the local case that means that ethnic Bulgarians are mostly Orthodox Christian - 13% of the households surveyed by the HHS indicate Orthodox Christianity, while ethnic Turks and Roma are predominantly Muslim (81% of the surveyed households). This corresponds roughly to the ethnic makeup of the population in the municipality, from the 2011 census – see

Region	Total	Ethnic group				No self-definition or response	Total respondents
		Bulgarian	Turkish	Roma	Other		
Bulgaria	7364 570	5664 624	588 318	325 343	49 304	736 981	6680 980
Kardzhali district	152 808	39 519	86 527	1296	753	24 713	130 781
Krumovgrad Municipality	17 823	3 968	10 161	36	97	3 561	14 485

Table 5-7.

Table 5-7: Ethnicity in Bulgaria, Kardzhali and Krumovgrad, (Source: NSI Census, 2011)

Region	Total	Ethnic group				No self-definition or response	Total respondents
		Bulgarian	Turkish	Roma	Other		
Bulgaria	7364 570	5664 624	588 318	325 343	49 304	736 981	6680 980
Kardzhali district	152 808	39 519	86 527	1296	753	24 713	130 781
Krumovgrad Municipality	17 823	3 968	10 161	36	97	3 561	14 485

Only 6% of the surveyed households have stated they are non-believers, a trend, which is nationally more common among the Bulgarian ethnic group.

According to MDP statistics, the district of Kardzhali has an ethnic makeup which is typical of the Eastern Rhodopes illustrating a majority Turkish population. The Municipality of Krumovgrad is also representative of the district with 57% of the total population identifying themselves as Turkish at municipal level (NSI, 2014), and more than 70% of the HHS respondents within the AoI identifying themselves as Turkish (DPM HHS, 2014). It must be noted that there is a high number of people recorded in the NSI statistics who have not responded or have chosen not to disclose their ethnicity, which distorts the results from the national census study for Krumovgrad and Kardzhali.

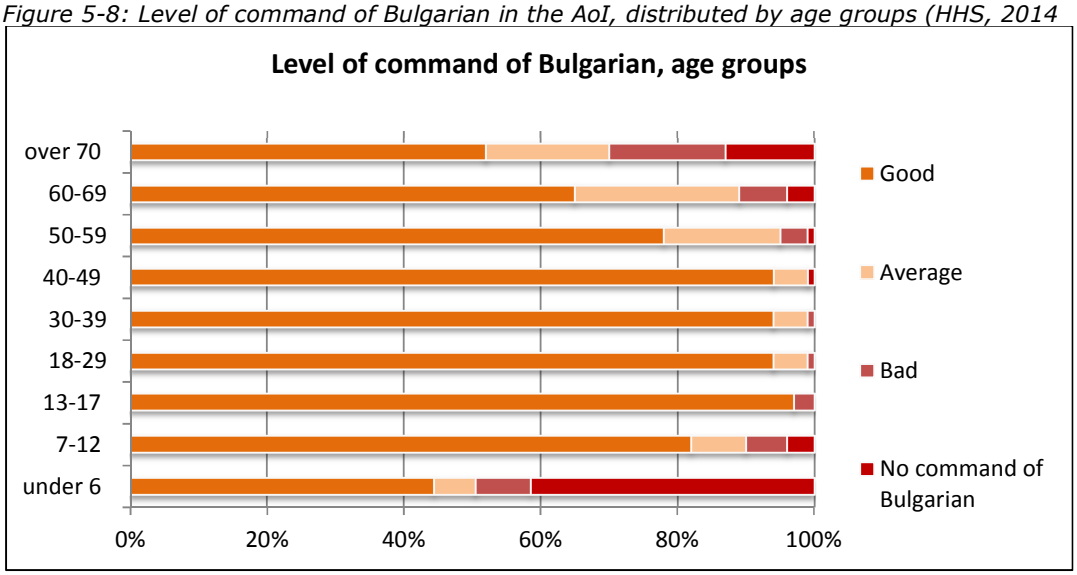
It is further noted that whilst the majority population in the AoI is ethnic Turkish, the household survey established that the level of Bulgarian language proficiency among the

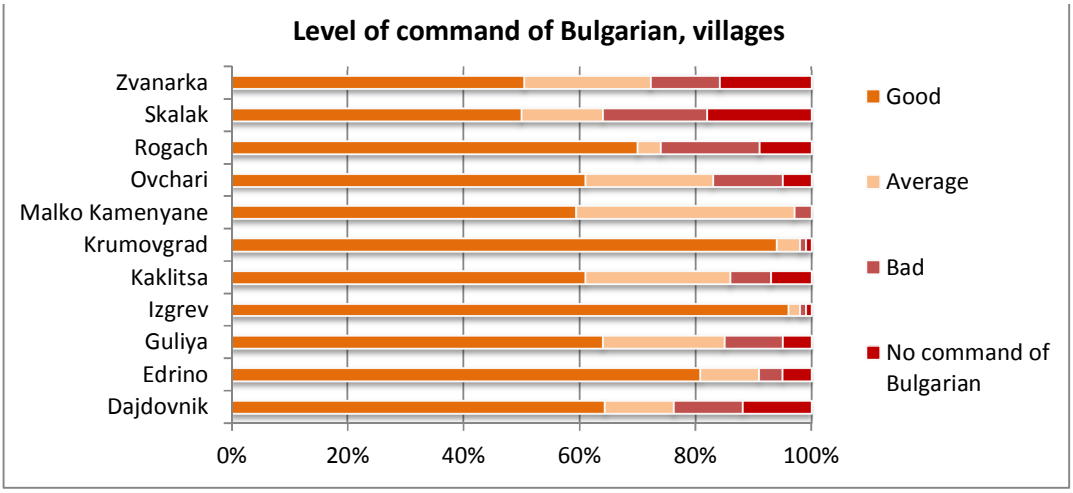
active population (aged 18-59) is good. Only 5% of the surveyed household members do not speak Bulgarian at all, while 6% have poor knowledge of the language.

As illustrated in Figure 5-8 below, the non-Bulgarian speakers mostly come from the oldest age group of the Turkish community, as well as children who are only now entering the school system and speak Turkish at home. Interviewees during baseline consultations confirm that the level of Bulgarian understood in the AoI communities was low, especially amongst the older generation of women. The level of Bulgarian language proficiency of individuals is important for obtaining better education, work and social integration opportunities, as only limited primary schooling in Turkish is available. Figure 5-8 and

Figure 5-9 below present a detailed picture of the level of command of Bulgarian of the population per age groups and villages. The village with the highest number of residents with bad or no command of Bulgarian is Skalak with almost 40% of the population unable to understand the national language. This is followed by Zvanarka with 30% of the population with bad or no command of Bulgarian and joint third both Dajdovnik and Rogach with approximately 25% of their populations in the sample having bad or no command of Bulgarian. Krumovgrad and Izgrev have the highest number of people who have good or average Bulgarian but every community in the sample has a proportion of the sample of respondees who have bad or no command of Bulgarian.

Figure 5-8: Level of command of Bulgarian in the AoI, distributed by age groups (HHS, 2014





The figure above presents the level of command of Bulgarian, for population in the AoI distributed by villages. It can be concluded that the residents of the villages of Skalak, Zvanarka and Rogach have the largest share of the population with poor or no command of Bulgarian, amounting to around 35% of the respective settlements' population.

5.2.8 Social cohesion

The Baseline consultations found that the within the AoI there is a robust social fabric with stakeholders stating that communities are very closely knit. Stakeholders claimed that there was a tolerance towards people coming from outside the municipality as well as from Greece and Turkey. It was stated that as it was relatively close to the border, the municipality was used to outsiders passing through the communities. Furthermore crime rates were reported to be very low with only petty crimes and a low level of traffic accidents being reported as incidents.

National Statistics Data confirm that the crime rate is relatively low in Kardzhali district with a total of 526 criminal judicial procedures resolved in 2013 resulting in 237 effective and 199 suspended sentences, with the rest of the cases acquitted or dismissed. In comparison, other Bulgarian districts with comparable population such as Shumen, Montana or Yambol have well over 1 000 criminal procedures each (NSI Crime, 2014). Again, this may reflect the fact that regional crime rates are low, while more common petty crimes, such as theft of agricultural produce or household items might often go unreported.

Baseline consultations found that there were no ethnic tensions reported, illustrating that the different ethnic groups within the municipality coexist peacefully. As the community is small and closely knit, people are supportive of each across ethnic and religious divisions. According to opinions stated during the baseline consultations for some of them the poverty and the similar living conditions play an important role in uniting the community. There are also various formal cultural institutions and traditional gatherings that allow people to socialize, utilising local community hall/cultural centres. Baseline consultations found that

domestic violence was not reported to be common but it was reported to be present. Some stakeholders responded that domestic violence can be witnessed in the Roma families, but it was not a common phenomenon in the communities as it is not in alignment with the cultural traditions. National information on domestic violence is also lacking, although each year the programme for tackling the problem is approved at national level.

Related alcohol and drug abuse are reported not to be typical for the population of the municipality, therefore there were almost no incidents related to them reported by stakeholders.

According to multiple reports and analyses Bulgaria is a source country for sex trafficking by women and children (USDS, 2011). Added to this problem is a recent trend for trafficking refugees and economic migrants across Bulgaria's southern borders. It may be expected that some sex trade and human trafficking activities occur within Kardzhali district, which is a border district, but these are probably concentrated around border towns and traffic checkpoints in the distric.

5.2.9 Vulnerable groups

There is no single national definition of a "vulnerable group" in Bulgaria, although the term is used in a different context to denote various categories and degrees of social and economic vulnerability. For instance, physical and mental disability is categorized by the state and afforded financial support, while certain categories of low-income households are eligible to receive various forms of financial and in-kind assistance, such as food, schooling supplies and energy aid. The implementation code of the Bulgarian Social Support Act (Art.9), defines people eligible for monthly financial aid, as follows:

- Minors, working age persons and retired persons receiving certain fractions of the minimum regulated income for a household member (set at BGN 65 as of 2014);
- Lone parents and pregnant women, receiving certain minimal incomes;
- Orphaned children and children with caretaker families;
- Disabled children;
- Children of other nationalities, awaiting granting of humanitarian refugee status.

The Municipal Development Plan (MDP) of Krumovgrad also provides a list of the vulnerable groups, which are also target groups for social services, such as admittance to adult day care centres, home assistance and food aid and social worker counselling. In addition to persons defined as vulnerable by national disability or income criteria, these include:

- Pensioners living alone and families depending on a single minimal pension;
- Homeless persons.

Perhaps, most difficult to define and least understood and accepted are vulnerabilities stemming from exclusion, segregation and discrimination based on ethnicity, gender or age – phenomena, which are not uncommon, and are not adequately addressed. At national level

no encompassing definition for these vulnerabilities exist, although there are multiple national strategic documents targeting gender equality and integration of the Roma minority.

Based on the above definitions and considerations, the potential vulnerable groups within the AoI can be grouped into categories, applying vulnerability criteria –age, gender, poverty, minority status and disability. Therefore as discussed in detail below those deemed vulnerable in the AoI are, elderly, youth, women, unemployed, Roma minority group and those people with disabilities.

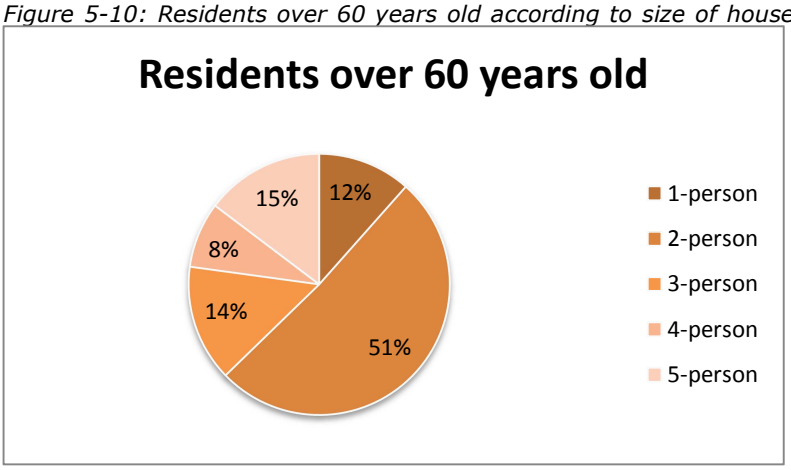
Age

Two categories of age-related vulnerable groups can be defined - elderly persons (retirees) and unemployed youth (the so called "not in education, employment or training – NEET").

With regard to the elderly, people above the retirement age (which now varies between 60 and 65 depending on gender and type of work and is gradually being increased) are customarily considered as vulnerable persons. The Krumovgrad Municipality MDP, makes a particular distinction in this regard, that pensioners living alone and those receiving the minimum pension are especially at risk. This is further corroborated by the baseline consultations in which stakeholders also identified these people as being potentially vulnerable.

Overall, according to the HHS retirees constitute on average 33% of the household, which is a significant percentage. The survey also discovered that around 12% of the residents over 60 years old live alone and another 51% in 2-person households (See Figure 5-10 below). The figure below shows the distribution of the population over 60 by type of household. HHS data indicate that the actual population of 60+ age is around 33% of the total population of the municipality. As such, Krumovgrad Municipality places the elderly retirees as a focus of social programs in the municipality, also noting a particular problem with people who are just below the retirement age threshold, because "for these people finding employment is most difficult" (Krumovgrad MDP, 2014).

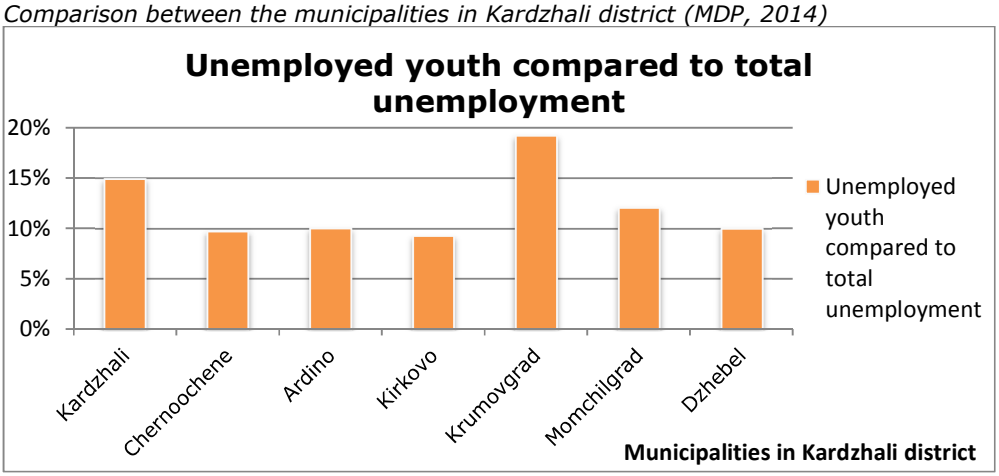
Figure 5-10: Residents over 60 years old according to size of households (DPM HHS, 2014)



According to Krumovgrad MDP unemployed youth (under 29 year olds, falling in the NEET category) is the other vulnerable age cohort because of the unemployment risk. The draft plan notes that for the municipality and the district additional unfavourable factors are the low level of education and qualifications of young people (MDP, 2014). The proportion of unemployed young people in the municipality of Krumovgrad is 19.2%. Compared to the rest of the municipalities in the district of Kardzhali, Krumovgrad takes first place in youth unemployment.

The HHS and baseline consultations confirm that this trend is present for the settlements in the AoI – according to the respondents 32% in the 18-29 age group, are unemployed – See Figure 5-11 below. In Baseline consultation interviewees pointed out unemployment and the lack of employment opportunity to be major reasons for youth emigration. Other interviewees shared their concerns that even if there were to be better employment opportunities, the young population is currently under qualified to benefit for them.

Figure 5-11: Unemployed youth (age 18-29) compared to the total unemployment, Comparison between the municipalities in Kardzhali district (MDP, 2014)



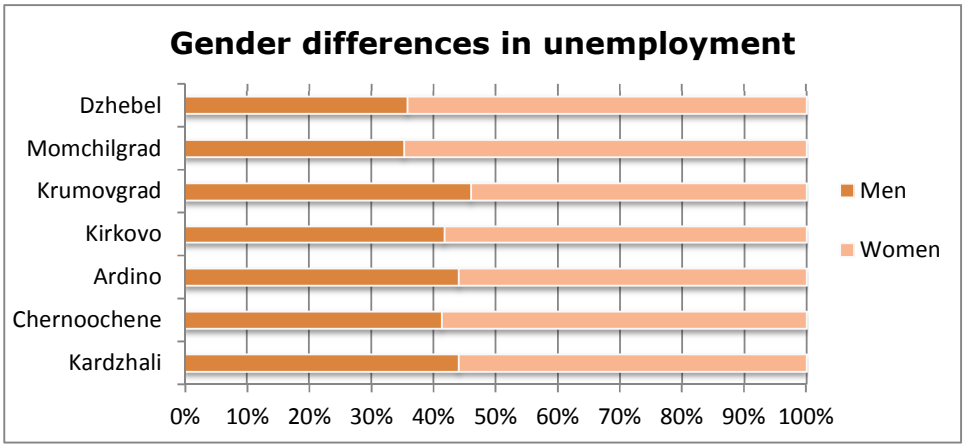
Another problem contributing to the NEET youth unemployment trend is the rate of school-dropouts for school age children. Children around the age of 15-16 who disengage with school and drop out before they have graduated are deemed a vulnerable group as they have not accumulated sufficient skills to be able to take care of themselves. This problem has been acknowledged both by Krumovgrad Municipality (MDP, 2014) and by HHS respondents. In the draft MDP, a special focus has been set at improving the engagement of children with school, providing them with extracurricular activities related to their interests.

Gender

According to interviewees women in general are not considered a vulnerable group, as they are well respected in the community, they often receive better education than men and sometimes have better professional opportunities. However, a high proportion of HHS survey respondents categorized or self-categorized women in the household as "housewife", indicating potential vulnerability and constrained opportunities for personal and professional

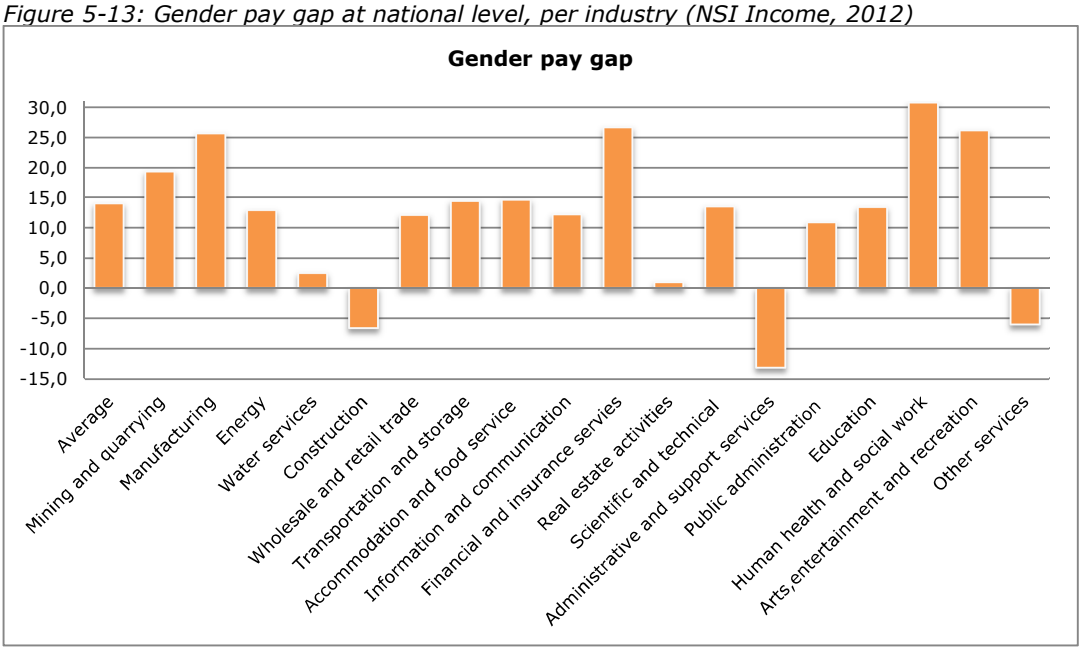
realization. In fact, national experience in terms of women employment (especially in rural regions), level of pay and access to educational and career opportunities generally indicates inequality – men outnumber women in the workforce, indicating women are less active in seeking employment. Women are hampered by high expectations and demands of combining household and child-rearing duties with active work, and they are also at a disadvantage in regard to pay levels on a national level (MLSP, 2012). On a local level, these trends are also likely evident. According to MDP low education and qualifications of women" are the reason for their higher unemployment among women, officially reflected in municipal statistics and also typical for other municipalities in Krumovgrad district - See Figure 5-12 below.

Figure 5-12: Gender differences in unemployment across municipalities in Kardzhali District, (distribution of the total unemployment by gender) (Krumovgrad MDP, 2014)



According to data from the National statistical institute there still exists a gap between the salaries of women and men in Bulgaria. In Figure 5-13 below the gender pay gap across sectors is presented comparing the salaries of men and women for 2012. The biggest gaps are observed in the sectors "Human health and social work", "Financial and insurance services", "Manufacturing" and "Arts, entertainment and recreation", in which the salaries of men are higher by between 25% and 30%. On the other hand there are several sectors in which women are reported to receive higher salaries than men, some of which are "Construction" and "Administrative and support services". It should be pointed out that this is a basic comparison of the average salaries of men and women across sectors and some factors have not been taken into account, such as the ratio men/women working in different industrial sectors, and their expected qualification and positions.

Figure 5-13: Gender pay gap at national level, per industry (NSI Income, 2012)



It is a national trend of having a more women than men struggling with poverty, especially for women from minorities. According to a national survey, Roma women are in the most unfavourable situation (MLSP, 2012). The findings from the survey point out that 69% of Roma women do not have any profession and are unable to contribute to the family incomes. Almost half of the Roma women are permanently[6] unemployed (MLSP, 2012).

Economic status

According to the HHS, 26.4% of household members aged 18-59, and 32% in the 18-29 age group, are unemployed. This illustrates a much higher rate than the national and regional registered unemployment figures, described in Section 9.1. This discrepancy may be attributable to unemployed people within the Municipality not officially registering with the municipality.

Underemployment is also a problem as only 30% of working age household members are reported to have a permanent work contract (DPM HHS, 2014). The findings also indicate a specific gender problem with a high percentage of unemployment/underemployment of women in the municipality - only 25% of the women of working age are permanently employed. Furthermore the HHS responses indicate that the primary occupation of 29% of women is agriculture. Baseline consultations respondents indicate the plight of people without income is worst for those within this category of vulnerable groups who do not have a safety net such as parents or relatives capable of taking care of them or family members abroad sending remittances (AMEC, 2014). Remittances from abroad contribute an average of 5.4% of household income, according to the survey (DPM HHS, 2014).

Another typical vulnerable group related to poverty is homeless people. There are no official data available for their number in Bulgaria. According to the Social Agency register there are more than 1300 homeless people in Sofia alone, who have received support from the Agency. The police reports them to be around 200. On the contrary NGOs claim the number to be higher than 2000, having in mind the challenges of tracking the migration of homeless people. According to some statistics homelessness tends to be lesser in rural communities but does still exist. In the AoI there is no indication of a problem with homeless people. 77% of the residents who participated in the HHS gave a positive answer to the question if they possess ownership documents for their dwellings.

In addition to the urban homeless, Bulgaria also has a significant Roma nomadic population, who live in mobile camps, and poorly built structures near or on the outskirts of settlements (see sub-section on Roma below).

[6] Permanently unemployed are considered persons who have been unemployed for more than 5 years.

Minority Status

Many Roma have no incomes and subsist in deep poverty. Roma families nationally have problems with teenage marriages and births, and consequently abandoned children, low levels of literacy and poor social integration, all of which render this minority group as potentially vulnerable. Kardzhali district has adopted a District Strategy for Roma integration (District Administration Kardzhali, 2013),, which states that in Krumovgrad municipality "compact clusters of socially vulnerable Roma communities" are located in the villages and hamlets in Zvanarka (Kozino hamlet), Pelin, Podrumche, Oreh, Slivarka (Bashitno hamlet), Vransko (Papur hamlet), Baratsi and Strandzhevo. Of these, only Zvanarka and the hamlets of Lozino 1, 2, and 3 are among the settlements adjacent to the Krumovgrad project, which have been included in the household survey and considered directly impacted as they fall within 2000m of the project site, whereas Kozino is located 3000m away from the site.

In the District strategy the Roma population has been reported to live mainly in illegal dwellings of poor quality and sanitation, this was not verified during the baseline consultations. It has also been outlined that there is overpopulation in those dwellings, which additionally increases the health risks for the residents. Furthermore, unemployment in the Roma community in Kardzhali district is evaluated at 67.3%. Most of the Roma population is reported to rely on social welfare, although baseline studies found that they also engage in seasonal subsistence activities such as mushroom and wild herbs collecting. According to the District strategy for Roma integration, it is reported that tensions in the Roma communities are attributable to delays of social welfare payments or domestic quarrels.

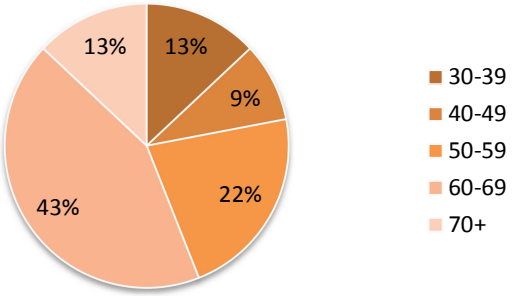
A high rate of school-dropout is reported in the Roma population leading to very low education levels. Only 0.15% of the Roma population in Kardzhali district is claimed to have higher education and 3.55% have graduated from high-school. In addition 19.6% of the Roma have never attended school and 33.41% are illiterate. This decreases the chances of finding work opportunities and further improvement of the economic status of the Roma population. Baseline consultations found that there was an EU funded adult literacy scheme targeting Roma populations, where students are paid to attend and transported to the school. The project is running in Zvanarka primary school during the afternoons when the school is closed to children.

Disability

People living with varying degrees of disabilities have been identified by the Municipality as needing social support. During 2012 in Bulgaria a total of 6 802 children and 62 047 adults (over 16 years old) were newly categorized as disabled, of which 33 children and 25 094 adults had a lifelong disability (NSI Health, 2013). For the district of Kardzhali the number is 4 608 adults with disabilities registered in 2011 (NSI Census, 2011), which 7.3% of the total district population. Information at municipal level is scarce, not publicly available.

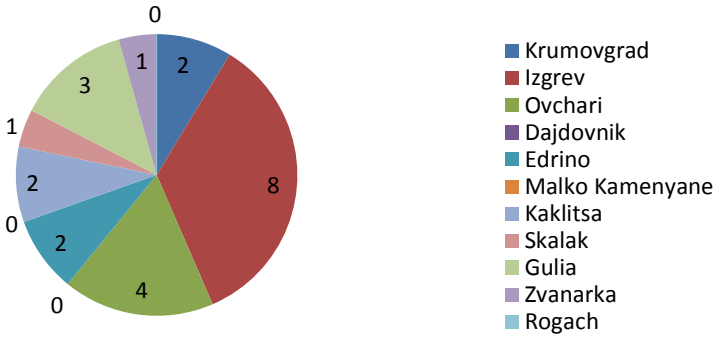
The household survey indicates that 2% of household members are disabled and need social care. More than half of these 2% are of 60+ age and there were no young people (below 30 years old) with disabilities identified from the HHS responses. Figure 5-14 below shows a picture of the age distribution of the people with disabilities included in the sample of the survey.

Figure 5-14: Residents with disabilities in AoI, according to age structure, (HHS 2014)



In total the HHS found 23 cases of people with disabilities in the AoI. Figure 5-15 below shows the distribution of the total number of residents with disabilities by villages. The largest proportion of people with disabilities is situated in Izgrev neighbourhood with 35% of the total number of disabled people in the AoI. This is follows by the villages of Ovchari and Guliya with 17% and 13% respectively. In the villages of Dazhdovnik, Malko Kamenyane and Rogach there are no reported cases of people with disabilities. Considering the small sizes of the villages and the small size of the samples of interviewed residents in each one of them, there is opportunity for distortion of these data, leaving some residents with disabilities in the villages unrecorded.

Figure 5-15: Residents with disabilities by villages – number and % of total (HHS, 2014)



With regard to providing adequate social services for persons with disabilities and the elderly, it must be noted that the delivery of such services is concentrated in the town of Krumovgrad, while the majority of the people in need of such services are situated in the villages. Krumovgrad Municipality also warns of a general shortage of experts and NGOs who can deliver social services (MDP, 2014).

6.0 Infrastructure

6.1 National Overview

The general state of infrastructure assets in Bulgaria can be characterized by a relatively high level of completion, but also plagued by poor maintenance and need for rehabilitation.

Over 91% of the housing stock in Bulgaria is constructed from reinforced concrete panels or solid construction with partial concrete elements. Over 20% of homes are in prefabricated buildings. Amortization of most buildings is accelerated by poor maintenance, and most of them are not renovated. According to expert assessment, the homes in three or more storey buildings in need of urgent renovation to 2020, number about 680 000 homes, of which about 360 000 are concrete panel homes, 150 000 concrete homes and 170 000 reinforced brick homes (NPRRBB 2006-2020, 2005). There is no national level information on the condition of low-density brick and stone houses in rural areas, but general observation confirms many of these residential homes are also in a poor state of repair and not properly maintained.

The transport network in Bulgaria is relatively well developed but also in need of significant investment. As of 2012, the national road network consists of 19 512 km of roads (2 970 km first class, 4 030 km of second class and 11 766 km of third class roads) and road density of 0.175 km/km^2, which is comparable to the average density for EU member states (NDP, 2012). However, Bulgarian road network density is mostly related lower grade roads with only one completed highway and several other highways and express motorways under construction. The railway system consists of a total of 4 098 km of rail track as of 2010, with 68% of those tracks electrified and much of it in need of rehabilitation (NDP, 2012). Some basic problems of the entire transport network are the lack of intermodal terminal capability, lack of modernized sea ports and need to further develop the Trans-European Transport Corridors (NDP, 2012).

Energy infrastructure is also well developed with almost universal electrification of settled areas, however low building and industrial energy efficiency, and over reliance on households for heating by electricity, wood and low-grade lignite drives up costs and pollution, and prevents switching to more efficient alternatives such as natural gas (NDP, 2012). An on-going boom in renewable energy production alleviates some pollution but increases costs.

Ecological infrastructure has been under intensive modernizations since 2008, focusing on a new regional landfill system with separate recycling installations and modern wastewater treatment facilities financed by the European Union (NDP, 2012). The rate of construction of the sewerage network in Bulgaria as of 2011 is 61% serving 74% of the population. (Partnership agreement, 2014).

ICT infrastructure such as mobile coverage and broadband Internet is well developed in all urban and most rural areas.

6.2 Local Overview

6.2.1 Housing

Most of the housing in Krumovgrad municipality consists of one-family privately owned houses, which are generally in a poor state of repair and need significant improvement to meet modern construction and utility standards.

According to information in the MDP, most of the residential housing in the municipality is of solid construction, made by brickwork, stone or adobe with concrete columns. Under 2% of the buildings are prefabricated panel buildings (mainly high density blocks in Krumovgrad).

Typical houses in the region have a garden with vegetable plots and fruit trees. Some of the houses also have trellis vine for grapes.

Figure 6-1: Examples of single-family residential houses in the AoI (AMEC, 2014)

In the town of Krumovgrad there are several multi-story residential blocks, which are also privately owned. As in other Bulgarian cities and towns, these apartment buildings were mostly constructed in the 1970s-1980s and consist of prefabricated concrete panels, which are now in general state of disrepair and need structural rehabilitation in order to extend their life beyond 2020-2030 (see discussion in Section 6.1).

Figure 6-2: Prefabricated panel apartment blocks in Krumovgrad (Source: Google StreetView)

Both single-family houses and apartment blocks in Bulgaria, constructed between the late 1960s and early 1980s are likely to have contamination problems arising from the existence of asbestos-containing materials in their construction elements – roof shingles, pipe insulation, door frame, plasters and others (NCPHP, 2007).

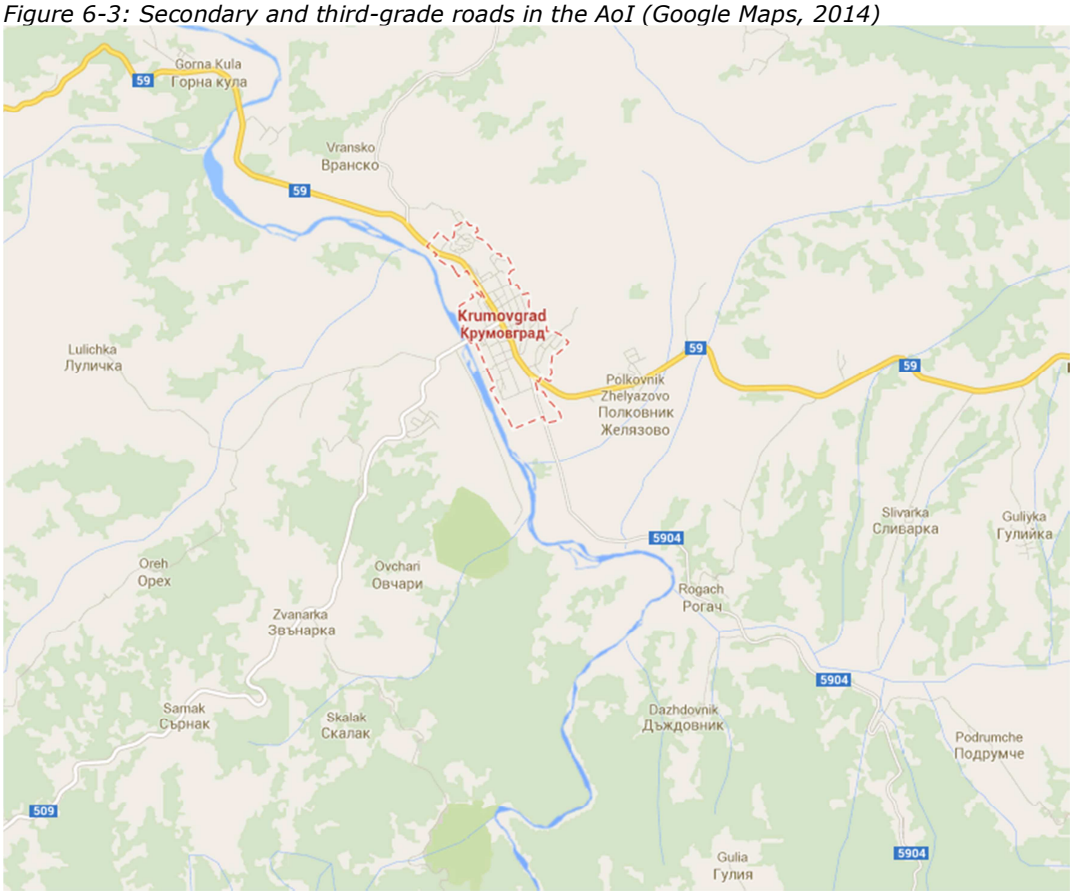
6.2.2 Transport infrastructure

The road infrastructure in the municipality plays a major role in the transport infrastructure since there is no other mode of transport such as a railway system, airport or sea port in the municipality (MDP, 2014). The nearest railway station with facilities for passenger and freight transport is located in Momchilgrad which is 32 km from the town of Krumovgrad. The nearest airports are located in Plovdiv 133 km northwest and in Alexandroupolis (Greece) 136 km southeast from Krumovgrad.

The municipal road network has a length of 261 km, of which 66 km is in good condition and 78 km is in average condition, with the remaining 117 km in poor condition (MDP, 2014).

According to the draft MDP the roads are in need of repair as the asphalt in places is highly deformed and does not meet current requirements for a secure, modern and fast transport. According to municipality lack of funds for road repairs in combination with increased intensity of water erosion, especially on gravel and unpaved roads, are the reasons for the poor condition of the local road network (MDP 2014). HHS respondents corroborate that the quality of the roads is very poor with very difficult access during winter (DPM HHS, 2014). Some baseline consultations with stakeholders in the remote mine site hamlet of Kupel stated that the municipality will not repair the road as the population is so small and the road only provides access to land plots (AMEC, 2014). On the most used roads in the AoI – second-grade road II-59 and third grade-roads III-509 and III-5904, there appears to be insufficient signage and faded road markings in many locations.

Figure 6-3: Secondary and third-grade roads in the AoI (Google Maps, 2014)



The traffic management plan of Ada Tepe Gold Project describes the main roads in the municipality in more detail. The main thoroughfare is a secondary road II-59 length 27 km. It passes through the municipal center - Krumovgrad and connects the municipality with the neighbouring municipalities Ivaylovgrad and Momchilgrad. This road connects the regional center to the border checkpoint Makaza – Nymfaia and links Bulgaria and Greece. The main road II-59 links Krumovgrad to the checkpoint Ivaylovgrad - Kipronos. The road is twin-lane, surfaced with asphalt and in good condition. The road has a typical width of the roadway from approx. 9 m, with sidewalks on both sides. In Krumovgrad the road has a speed limit 50 km/h. Between Krumovgrad and Momchilgrad the carriageway width narrows to approximately 6m and the road is subject to a 90km/h speed limit (with the exception of sections that pass through settlements, where the speed limit reduces to 50km/h). The road is mostly surrounded by agricultural fields and woodland, and there are no footpaths present (DPM TMP, 2014).

The other main road in the municipality is road III-509 that routes along a north-east south-west alignment, from Krumovgrad to the north-east and Kukuryak to the south-west. The road passes through a number of villages and hamlets including Zvanarka, Kandilka, Topolka and Tokachka. Within settlements the road is subject to a 50 km/h speed limit; outside settlements it is subject to a 90km/h speed limit. Within Krumovgrad the road is of urban type with an approximate carriageway width of 8 m. It has intermittent street lighting and

footpaths. The remainder of the road south-westwards is of a rural nature, with an approximate width of 6m. The road is predominantly surrounded by agricultural fields and woodland, and there are no footpaths present (DPM TMP, 2014).

Since January 2014 the project "Reconstruction of part of the road infrastructure in Krumovgrad" including reconstruction of the Podrumche local road and the road III-593, Oreshari – Madzhari, is reported to be in implementation (DPM TMP, 2014).

Despite relatively low traffic volumes, road accidents in Krumovgrad municipality occur. According to NSI statistics there have been 14 serious traffic accidents in the municipality in 2013, resulting in 14 casualties, of which 1 fatality. For the entire Kardzhali district there have been a total of 141 serious accidents with 175 casualties, of which 5 fatalities. A comparison of the serious accidents on per capital basis reveals that Krumovgrad Municipality is slightly less prone to traffic accidents but still representative of district and national levels – See Table 6-1 below.

Table 6-1: Traffic accidents at local (NSI Traffic Accidents, 2013; NSI Census, 2011).

2013	Traffic accidents	Per inhabitant (2011 Census)	Fatalities	Injured
Krumovgrad Municipality	14	$7.86x10^{-4}$	1	13
Kardzhali district	141	$9.23x10^{-4}$	5	170
Bulgaria	7 015	$9.53x10^{-4}$	601	8 775

The NSI accident data also profiles the most common serious accidents for Kardzhali district. These tend to occur mostly within settlements, primarily involve private light vehicles, and result in higher pedestrian than car occupant fatalities. There are no distinct seasonal peaks, associated either with work commute or holiday travel (NSI Traffic Accidents, 2013).

6.2.3 Energy Infrastructure

Electricity

In the municipality of Krumovgrad there is one hydro-electric power (HPP) plant - "Studen Kladenetz". It is part of the Arda cascade consisting of HPP "Kardzhali" and HPP "Ivaylovgrad." The HPP "Studen Kladenetz" has the highest average annual production of electricity as of 2010. The average annual energy output is 170 GWh and the annual energy output for 2010 was 253.7 GWh (MDP, 2014).

According to the MDP the maintenance of transmission and distribution systems and its facilities in the municipality of Krumovgrad of electricity is carried out by "EVN Bulgaria". The plan also states that all settlements within the municipality are electrified. The Plan describes the grid of the municipality as relatively well developed, with few problems in some places with the quality and security of supply (MDP, 2014). This was further corroborated during the baseline consultations which found that every settlement visited in the Aoi had access to

electricity even the less populated hamlets such as Kupel as well as the one dwelling rented in the Chobanka had an electricity connection. HHS survey respondents report no complaints about the supply of electricity (DPM HHS, 2014).

Perhaps, the biggest problem related to electricity is the cost – due to low incomes and living standards, electricity costs form a relatively large percentage of household expenditures on a national level – approximately BGN 276 annually per household member, or approximately 4.7% of the annual household member income for 2013 (NSI Income and Expenses, 2014). While the actual tariffs are the lowest in the EU, for the last several years electricity tariffs have been on the rise necessitating drastic measures on behalf of the national regulator to contain the price hikes, with further gradual increase nevertheless expected (SEWRC, 2014).

There are no completed industrial scale renewable energy installations (either PV or wind) on the territory of Krumovgrad municipality, despite a 2012 investment announcement for a local wind farm, which has likely been dropped by the investor.

Natural Gas

As significantly low percentage (<1%) of the respondents of the HHS stated that they heat their home with gas. This source of energy is generally used for cooking purposes. Gas supplies are not piped to individual houses in the municipality, rather it is typically supplied in cylinders which can be bought/exchanged at filling stations and distribution networks (sometimes CNG/auto gas filling stations). According to the draft MDP, the Municipality does not intend to develop gas supply infrastructure in the imminent future. Using natural gas sourced from filling stations for household cooking and heating is associated with accident risks due to poor maintenance of gas bottles and has caused many deaths and injuries in past accidents in small towns in Bulgaria. At least 2 such incidents in Krumovgrad municipality have been reported by local and national media since 2012 with one of them completely demolishing a village house and seriously wounding 5 persons.

In Bulgaria, natural gas (CNG/auto gas) has also become a popular form of fuel used for vehicles fitted with CNG systems, due to low cost. This form of fuel is also associated with increased incidence of fire accidents with the Bulgarian fire service reporting 230 such incidents on a national level in the period January-August 2014. Despite the recent uptake in auto gas usage rise petrol and diesel remain the most used fuel for vehicles.

Other Energy Sources

From the MDP data can be concluded that major sources used by the residents for heat energy during winter are solid fuels – wood and lignite coal. This was corroborated during baseline stakeholder consultations, where stakeholders stated that they relied on wood for heating houses (AMEC, 2014). The HHS provides quantitative data for the AoI settlements, as depicted in Table 6-2 below. 4% use electricity as the main or one of the main sources of heating energy. It was further found that 97% of households in the survey buy firewood for

heating (97%). Further afield 19 households in kuklista, 16 in households in both Guliya and Zvanarka. These settlements are a further distance away from the site where there are alternative forest areas available for collecting wood.

Table 6-2: Energy sources used for heating – breakdown by AoI villages (DPM HHS, 2014)

Type of fuel	**Total**	Krumovgrad	Izgrev quarter	Ovchari village	Dazhdovnik village	Edrino village	Malko Kamenyane village	Kuklitsa village	Skalak village	Guliya village	Zvanarka village	Rogach village
Baseline: All respondents	396	67	65	37	17	80	19	23	11	25	44	8
Firewood		65	63	36	17	80	17	23	11	25	40	8
		97%	97%	97%	100%	100%	89%	100%	100%	100%	91%	100%
Electricity		6	5	-	-	-	-	-	1	-	4	-
		9%	8%	-	-	-	-	-	9%	-	9%	-
Gas		-	-	-	-	-	1	-	-	-	-	-
		-	-	-	-	-	5%	-	-	-	-	-
Other		1	1	-	-	-	-	-	-	-	1	-
		1%	2%	-	-	-	-	-	-	-	2%	-
No response		-	-	1	-	-	1	-	-	-	1	-
		-	-	3%	-	-	5%	-	-	-	2%	-

6.2.4 Communication Infrastructure

Krumovgrad is served by a regional telephone network with main automatic telephone system Kardzhali consisting of 13 terminal stations distributed across the municipality.

The three national mobile operators M-tel, GLOBUL and VivaCom provide coverage in the municipality. Baseline consultations found that the mobile networks were reliable and there was a sufficiently good coverage across the municipality.

The MDP states that all settlements in the municipality of Krumovgrad are able to access the Internet through the mobile internet offered by the three operators (MDP, 2014). The Bulgarian Telecommunications Company also provides ADSL high-speed Internet access. Krumovgrad is served by an Internet service provider offering cable internet. However baseline consultations found that few people in the AoI accessed the internet (AMEC, 2014). This may be attributed to the associated costs. Some interviewees mentioned that they used the internet in an internet cafe in Krumovgrad (AMEC 2014). Although access to the internet via mobile phones is available across the municipality with the three mobile internet operators, few people during the consultations were found to use this, again most probably due to the associated costs. The results from the household survey show that 61% of the respondents do not have an internet access, 38% use home internet and very few use mobile internet or internet in Internet cafes, schools or community houses (1%).

6.2.5 Water supply

Water supplies to the town of Krumovgrad and 37 villages in the municipality (82% of the population) are provided and maintained by the state and municipality owned company ViK OOD Kardzhali. According to the NSI 2010, the proportion of the population on a reticulated central supply has grown to 82.8% (NSI Water supply, 2014). The remainder relies on local water sources (well, local springs). The HHS confirmed that around 90% of households are supplied with drinking water from the mains water system with the remainder relying on wells (10%) or a local water source (6%; DPM HHS, 2014). Water supply in the villages Kuklitsa and Skalak is mostly from wells and local sources.

The technical condition of the water supply system is reported to be poor and some 90% of the infrastructure requires replacement (DPM, 2014), with some rehabilitation activities for Krumovgrad and its settlements having been initiated in 2013 (Krumovgrad Municipality, 2013).

HHS results indicate that between 8% and 36% of the surveyed households for different settlements have problems with water supply (DPM, HHS 2014). During stakeholder consultations the residents of Izgrev stated that the lack of access to water prevents them to capitalizing on their fertile soils (AMEC, 2014). About 90% of the households surveyed by the HHS use drinking water piped from the mains system, while the other 10% use drinking water from a well. About 76% define the quality of the drinking water as satisfactory, and 24% of them state that the quality is unsatisfactory (DPM HHS, 2014). Most dissatisfied with water quality are the residents in Izgrev Quarter and in the village of Zvanarka. About 8% of all households experience difficulties with the water supply (the majority of them in Zvanarka - 36%).The main problems, particularly with the drinking water, are associated with high tariffs; there are also water supply interruption and contamination issues (DPM HHS, 2014). During stakeholder consultation meetings, some Ladovo hamlet residents stated that there is no drinking water available so they need to buy bottled water, and that local wells have not been quality tested (AMEC, 2014).

6.2.6 Sanitation and Flood Protection

According to the MDP the biggest risk to water quality is the undeveloped sewerage system of Krumovgrad that allows wastewater from households to directly be discharged into Krumovitsa River (MDP 2014). Krumovgrad municipality has constructed a sewerage collector system for the town of Krumovgrad, and a modular wastewater-treatment installation for Izgrev quarter. The municipality, in partnership with a newly formed regional Water and Sanitation Association, of which it is a member, is constructing sewage collection systems and small-scale modular wastewater treatment facilities for some villages and hamlets in the AoI such as Golyamo Kamenyane, Ovchari, Polkovnik Zhelyazovo and Rogach (Krumovgrad Municipality, 2013).

The HHS results for AoI settlements indicate that only 36% of the households use a centralized sewerage system. Another 43% use a local septic tank and a relatively high percentage - 19% - discharge the waste water directly into the land or river. This illicit practice appears to be most common in the villages of Skalak and Zvanarka, while all of the surveyed Dazhdovnik residents report they use a legally compliant septic tank – see breakdown by settlement in Table 6-3 below.

Table 6-3: Breakdown of utilized sanitation solutions by settlement (DPM HHS, 2012)

Settlement / Solution	Krumovgrad	Izgrev quarter	Ovchari village	Dazhdovnik village	Edrino village	Malko Kamenyane village	Kuklitsa village	Skalak village	Guliya village	Zvanarka village	Rogach village
Septic tank (regular pumping by the household)	-	-	49%	100%	64%	68%	91%	55%	64%	55%	75%
Sanitary/combined sewer	99%	95%	32%	-	-	5%	-	-	-	5%	13%
Direct discharge into the environment (stream/soil)	1%	-	11%	-	39%	26%	9%	55%	36%	41%	-
Septic tank (regular pumping by the Municipality)	-	-	8%	-	-	-	-	-	-	-	-
Other	-	-	8%	-	-	-	-	-	-	-	-
No response	-	5%	3%	-	-	-	-	-	-	-	13%

According to the DPM EIA report, there are no sources of industrial wastewaters, nor any areas that are identified as potentially impacted by agricultural sources (Dango, 2010).

With regard to flooding risk, the project EIA report indicates that the soils, which are mainly cinnamon low saline and sandy and clayey-sandy, and stony in composition, have eroded severely in the conditions of deforestation, and their water regulation capacity is very poor, which causes rapid runoff from precipitation (Dango, 2010). 2014 has been a disaster-prone year in Bulgaria, characterized by multiple extreme precipitation events and flash floods in many parts of the country, generally attributed to badly designed and maintained modified floodplains, agricultural irrigation and urban sewerage systems. Krumovgrad municipality has been relatively unaffected with no reports of flood events, casualties or property damage.

6.3 Household waste

At present, household waste for the AoI settlements is disposed of in a temporary landfill site in the village of Vishegrad. This dumpsite has no system to record the amounts of incoming waste (MDP, 2014). This service is reported to be reliable and the majority of baseline interviewees stated that they rely on this service to dispose of their waste (AMEC, 2014). According to the HHS respondents, 80% of households state that the municipality regularly

collects solid waste. 17% of households state that burn them (regularly or occasionally), and 17% dispose of them close to their home in self-designated areas (DPM HHS, 2014).

Construction waste is disposed of at the municipal landfill, where they are used for blinding material for the municipal landfill cells. There is no municipal service for collecting this waste. This waste is transported to the landfill by the owners (MDP, 2014). Medical waste generated in the municipal hospital is temporarily stored in a special repository and then transported to Sofia for incineration (MDP, 2014).

6.4 Emergency Services

According to information publicized by Ministry of the Interior information the Krumovgrad fire brigade was founded in 1969 and had 2 modern fire engines delivered in 2006, and 3 older ones. In addition to the brigade has formed 4 volunteer teams of young people to help them in case of emergencies – numbering some 30 volunteers (MI, 2009).

According to the Kardzhali Police Directorate, the total number of local police staff in Krumovgrad – 59 persons, and it is indicated that 11 of these have university degree (Kardzhali Police Dept, 2014). No information about police equipment is available.

The hospital in Krumovgrad (see further description in Section 10.2) had two functioning local ambulances as of the latest hospital renovation in 2010 (Klassa, 2010). The nearest fully equipment emergency service centre is located in the district town of Kardzhali.

6.5 Leisure and recreational infrastructure

There are no theatres or cinemas in Krumovgrad municipality. In the summertime, one outdoor amphitheatre scene in the city park is modified as summer cinema. There are 12 cultural centers, known in Bulgaria as "chitalisthe" ("reading house") in the municipality. There are several dance classes in the popular culture centre "Hristo Botev" in Krumovgrad. Other events organized by "Hristo Botev" centre include holiday celebrations and concerts. There are some sports ground, a few child playgrounds and a small park.

7.0 Natural Resources and Land Use

7.1 National Overview

Bulgaria's farmlands cover some 51.2% of the country's area, compared to 42.67% for forests and 4.9% for urban areas. The land use regimes and land cover is relatively stable according to statistics (EEA, 2011), although a pervasive problem with illegal logging of state forest lands has been frequently reported. By some unofficial estimates, this accounts for 45% of annual logging (WWF, 2005) - as of 2014 this problem remains unaddressed (WWF, 2014). Another nationwide problem with farming and forestry land is high soil acidity – which affect 1.5 million hectares, or 11 % of total farmland. Around 500 000 hectares have acidity levels toxic to most farm crops. This is attributable to a combination of naturally occurring mineral substrate, a history of antropogenic acid rain mostly from coal powerplants and application of nitrogen fertilization to agricultural lands(EEA, 2011).

7.2 Land Use Statute

The Bulgarian Spatial Planning Act formally recognizes 7 types of territories, associated with particular regimes of land use – urbanized territories, agricultural territories, forest territories, protected natural areas, disturbed territories (including landfills, landslides, mines, tailing ponds, etc.) and transportation territories (roads, railways, ports and airports).

Land use regimes within most of the above mentioned types of territory, are governed by special Acts (either addressing the territories themselves or the purpose of their use regimes and restrictions). These Acts include:

- **Act on the Ownership and Use of Agricultural Land** - regulating the ownership rights and regime of use of territories, designated as agricultural land;
- **Forest Act –** regulating procedures for change of designation and exemption of lands and forests from the so called forest fund (public forest lands), as well as establishing rights of way and easements for construction and technical infrastructure facilities in forest fund lands;
- **Protected Territories Act –** regulating the national system of protected territories, such as national parks, reserves and nature monuments;
- **Biodiversity Act -** regulating the parallel system of protected biodiversity areas under the EU NATURA 2000 network, including Sites of Community Importance (SCI) and Special Protected Areas (SPAs);
- **Hunting and Wild Game Protection Act -** defines the so called "hunting territories", which includes all the lands, forests and surface water bodies outside of urbanized areas where wild game can be found and hunting may proceed.
- **Underground Resources Act –** regulating the prospecting, exploration and mining/quarrying activities in the country.

7.3 Local Land Use Overview

According to the Krumovgrad Environmental Impact Assessment report, Krumovgrad municipality comprises of 48.8% forest area, 47.8% agricultural lands, 2.2% towns, villages and hamlets, and 1.2% surface water bodies, transport and other infrastructure (Dango, 2010). Nearly half (47%) of the land used for agriculture is privately owned and is divided into small farms. With few formal employment opportunities, most livelihoods in the area depend on local agriculture and pastoral activities, such as tobacco growing, livestock grazing (cattle and sheep), bee keeping, and production of other crops such as peppers, onion, potatoes and tomatoes. With regard to agricultural usage, plant growing is dominated by tobacco - traditionally the majority of small farms are engaged in tobacco growing (see more detailed description in Section 9.2.2). Tobacco growing is a formal income generating activity with growers establishing contracts with buyers at the beginning of the seasons and revenues taxed at source. According to the Karzdzali Regional Directorate for Agriculture there are also smaller areas used for wheat (135 ha) and 12 ha barley (RDA, 2014). Agricultural produce (vegetables and livestock) is generally sold to buyers who travel from beyond the Municipality and as buyers travel to the producers there is little bargaining on prices, therefore income generated is low

According to the baseline studies as well as GIS analysis, to the east and to an extent the south of the proposed mine site the agricultural lands are predominantly cultivated intensively for tobacco growing owing to their proximity to the Krumovitza River and the need for irrigation. Towards the north, west and to an extent the south of the Project site the land use is used for tobacco on a lesser scale but also for livestock grazing, refer Annex 2.

*Table 7-1: Types of land in the Kardzhali District municipalities, 2011 (RDA, 2014)*RDA data does not specify exact usage*

Municipality	**Total Agricultural Lands**	**Including:**			**Forests**
		Fields	**Pasturage**	**Other Agricultural usages***	
	ha	ha	ha	ha	ha
Ardino	13 192	4 964	6 244	1 984	18 942
Dzhebel	7 633	4 294	1 552	1 787	14 348
Kirkovo	20 034	10 187	8 478	1 368	31 176
Krumovgrad	38 378	14 631	17 423	6 324	43 036
Kardzhali	22 731	12 218	6 714	3 799	22 501
Momchilgrad	15 927	6 256	8 185	1 486	17 899
Chernoochene	12 059	5 303	5 214	1 542	19 458
Total Kardzhali District	129 953	57 853	53 811	18 289	167 360

7.4 Land ownership

According to NSI data, the real estate market for agricultural land is poorly developed in Krumovgrad. In 2011 there were only 11 land purchases (22 in 2010) for a total amount of 56.5 decares[7] (330.7 decares in 2010). The selling price for a decare in Krumovgrad was BGN 265 n 2012, compared to the national average of BGN 547. In 2013 there were 4 deals for rent of agricultural land of 403 decares and an average price per decare of BGN 9per annum. This price was significantly lower than the average for the district – 14 BGN per annum and the country – 38 BGN per annum (NSI Land Market, 2014).

The HHS, focusing on the target group of households in the AoI, established that 31.6% of the households owned land, and that the total owned arable land is 55.3 ha, giving an average area per household of 0.464 ha. No large landowners among the survey respondents have been identified. It must be noted that, the majority of respondents do not count their house plot in the owned land, as it is typically urban regulated land within the settlements – however, house plots in Bulgaria are used for vegetable and fruit growing for subsistence and in the Rhodopes region house open plots may also be used for drying tobacco leaves. Hhs data did not capture the average size of household plots however it was observed that generally the garden plots adjacent to houses were small with a vegetable patch and fruit trees. The arable land referred to by the target group is typically located less than 1 km from their home, providing relatively easy access, with another 14% located between 1 and 5 km from the home (DPM HHS, 2014).

The HHS reveals that 88% of privately owned arable land is cultivated by the household – this is a big difference from other Bulgarian agricultural regions, such as the Northeast, where most of the household land is rented to large farming companies for crop growing, supplying a stable and secure income from annual rent fees. Cultivating smallholder land plots by the household is much more laborious and less efficient and implies smaller earnings and higher costs of production. The survey responses also indicate about 7% of arable land is not used at all (this is better than other Bulgarian rural regions such as the Northwest), while only 3% of arable land plots are shared with another households (DPM HHS, 2014).

Pastureland is owned by 12.9% of the households – an average household in the target group typically owned 0.886 ha of pastureland. Pastures are also relatively easily accessible with 62% located within 1 km and 88% within 5 km. They are used by the households who own them in 76% of the cases (DPM HHS, 2014).

Only 2% of the surveyed households own forest lands - a total forest area of just 4.5 ha, which corresponds to a national trend of primarily state and municipally owned forests. Uncultivated lands – bad lands and non-arable plots constitute the remaining 2.1 ha of agricultural land owned by households with only 0.8% of households reporting owning such lands (DPM HHS, 2014).

[7] 10 Decares (daa) equals 1 Hectare (ha)

An analysis of the landownership in relation to gender revealed that more women in the sample owned dwellings than men, with 78% female owners and 76% male owners. However the sample represented that marginally more men owned land (plots separate to houses) than women with 39% male land owners and 32% female land owners. Likewise ownership of arable land showed that 4% of the sample was owned by men and 3% was owned by women.

7.5 Natural Resources Overview

7.5.1 Water

Municipal infrastructure and use of centrally supplied drinking water has been described in Section 6.2.5 above. As much as 91% of the HHS respondents state that in addition to using water for drinking/domestic purposes they also use it to irrigate crops – it is assumed that this applies both to water from the central supply and household wells (DPM HHS, 2014).

With regard to use of local water resources (non-drinking) local rivers, streams and several small local reservoirs are used. The project area is located in the west watershed of the mid-stream portion of Krumovitsa River, a right-hand tributary of Arda River between the Studen Kladenets and Ivaylovgrad water reservoirs. The Krumovitsa River source is on the southern border ridge (Maglenik) of the Eastern Rhodopes and flows northwards. Its total length is 58.5 km, and its watershed area is 670.8 km^2. There are several reservoirs in Krumovgrad Municipality – "Slivarka" 1 and 2, "Golyamo Kamenyane", "Chernichevo". At the border of the Krumovgrad and Kardzhali Municipalities there is the large national dam "Studen Kladenetz" (Dango, 2010).

According to stakeholder consultations the best agricultural lands for tobacco and vegetable is highly dependent on the location of the land with regards to its vicinity to the Krumovitsa River (AMEC, 2014). More fertile soils located further from the river are less attractive as, according to respondents of stakeholder consultations meetings, there are no means for irrigation. This has been further evidenced by the GIS analysis of the land use, which found that most intensive agriculture took place to the east of Ada Tepe, whereas to the west of Ada Tepe, with no means of irrigation, there is more cattle grazing refer Annex 2. Responses from the HHS indicate that for irrigation needs, 64% of the surveyed households use water from the mains system, while others rely on water from wells, rain water and boreholes.

Several sensitive locations related to drinking water - public water taps and water wells for animals, were identified. It must be noted that stakeholder interview respondents were particularly protective of these taps (AMEC, 2014). This attitude is rooted in the cultural traditions of the mixed population in the area. During Ottoman times it has been a tradition that well-to-do community members construct public water taps close to settlements (often inscribing the year and initials of the benefactor family), and these were of great value as they shortened the distance women had to traverse to get water and also water troughs were important for watering domestic animals. The taps themselves were an important place

of socialization in the small settlements. To this day, local communities in the region and Bulgaria are very attached to their public water taps and still use them as a source of drinking water even while household wells and central water supply is almost universally installed in the houses. It must be noted that public taps also pose risks of contamination by pathogens and harmful substances with many recent cases nationwide, including contamination of multiple taps in Kardzhali district, identified in 2014 (RHI Kardzhali, 2014).

7.5.2 Soils

The leached forest cinnamon soil is the prevalent soil type in Krumovgrad Municipality (EIA). They are suitable for thermophilic intensive crops such as sunflower, tobacco, vine, among others (MDP 2014 – also see Section 9 description of these livelihoods). The intrazonal soils – rendzinas are rare and the alluvial soils are even rarer. There is no local public information on specific use practices for local soil resources or the erosion rates of soil cover.

7.5.3 Forests and Biodiversity

According to the publication Review of Ecosystem Services (2007, Zarvudakis, Rashev) the following ecosystems are present in the Municipality of Krumovgrad: forests (38 867 ha), meadows (21 560 ha) and inland waters and wetlands (475 ha). The total valuation of ecosystem services in Krumovgrad is estimated at approximately 115.7 million BGN per year. As forests represent nearly half of the overall land they account for 87.8 million BGN. The majority of woods are deciduous (26 426 ha), and there are also coniferous (4 724 ha) and mixed forests (7 716 ha). More than 90% of forests in the municipality were planted and are now logged commercially. Apart from their industrial use forests are important for households. It is estimated that some two thirds of the population in the Rhodopes Mountain use wood for heating, as discussed earlier under infrastructure (2007, Zarvudakis, Rashev). Meadows and open spaces are evaluated at 13 million BGN per year. Inland waters and wetland bring 9.2 million BGN per year. The valuation includes material benefits along with supporting and cultural benefits.

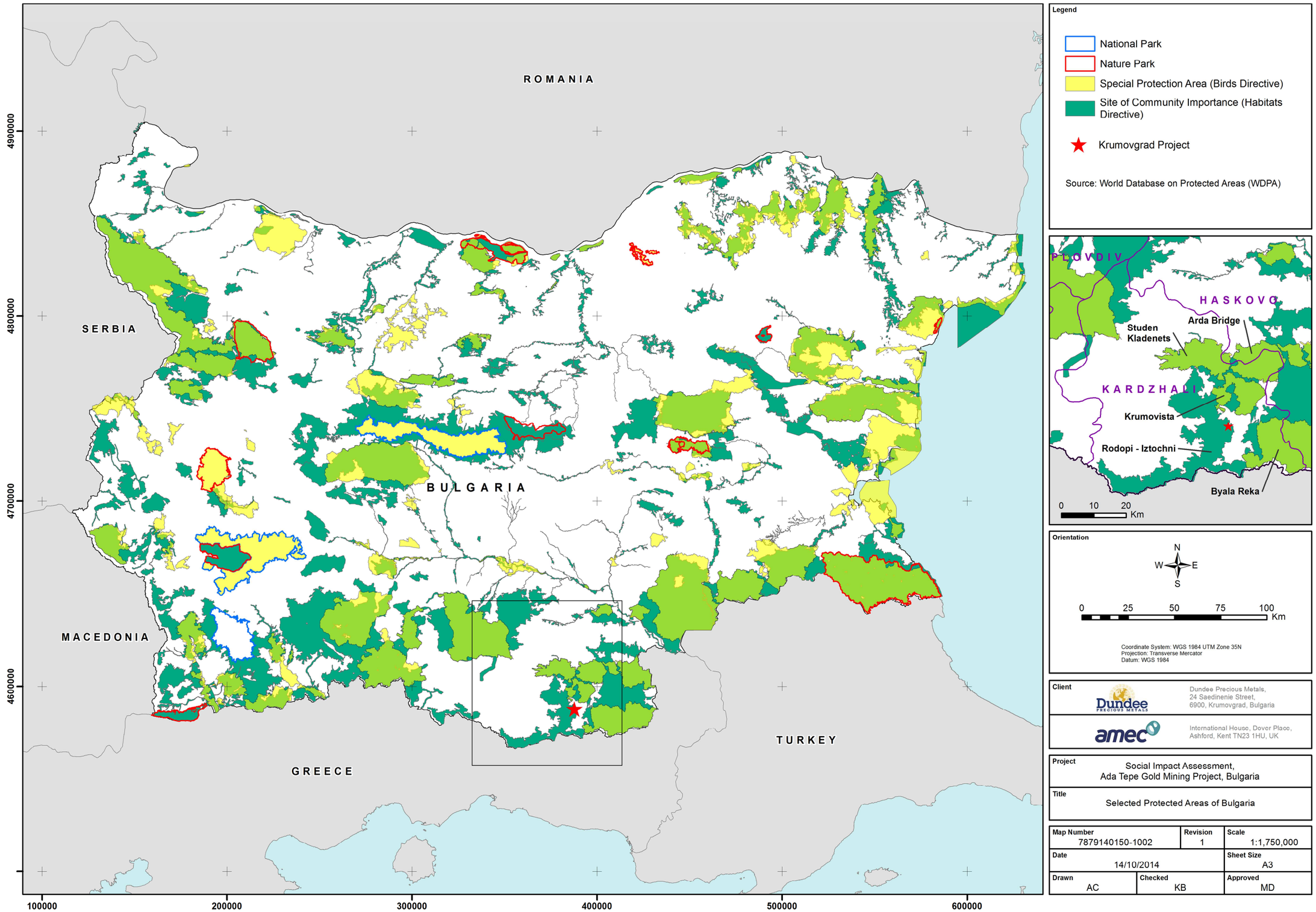
In addition to timber, the local population utilizes a range of forest products and services such as mushrooms, herbs and fruits, wild game and fish that abound in the local forests and waterways, and also aesthetic ecosystem services in the form of ecotourism activities (see Section 9 on the economy for description of this usage and the associated livelihoods). Unfortunately, no credible inventory of wild growing forest resources exists (artificial herb plantations inventories from the MDP are listed in Section 9.2.2).

Almost 80% of the territory of Krumovgrad municipality is in the European ecological network Natura 2000 with 4 protected areas under Council Directive 2009/147/EC (Birds' Directive) - "Krumovitsa", "Studen Kladenetz", "Arda bridge" and "Byala reka"; and one under the Council Directive 92/43/EEC (Habitats' Directive) - "Rodopi – Iztochni" (MoEW NATURA 2000, 2014) refer Figure 7-1 below. On the territory of Krumovgrad Municipality

there is also one Important Bird Area – Krumovitsa, which is of a global importance (BirdLife, 2014).

There are three protected areas under the Bulgarian national network of protected areas: "Oreshari", Ribino" and "Momina skala", and three natural phenomena: Stone plateau (between the villages of Kovil and Dzhanka), Eagle Rocks (northwest of Krumovgrad) and the evergreen oak near Skalak are situated in the region of Krumovgrad (EEA, 2014).

Figure 7-1:Protected areas of Bulgaria.



7.6 Natural Resource-Based Livelihoods

Collection and growing of mushrooms, herbs, fruits

The gathering of wild herbs, berries and mushrooms is a traditional activity undertaken by both men and women in Bulgarian households. For a minority it forms one of series of income generating activities but it is also often done informally. For Krumovgrad this group of people is relatively small compared to such groups in the Western Rhodopes, Central Balkan and other parts of Bulgaria. An in depth ecosystems services report has been detailed and forms Appendix B of the SIA, to establish the extent and reliance of the collection of natural resources in the study area as a livelihood and or a subsistence activity.

Figure 7-2: Men sorting Chanterelle mushrooms in Shtarbina (Left).Mushrooms found on Ada Tepe N41 25'59" E25 39'12" (Right).

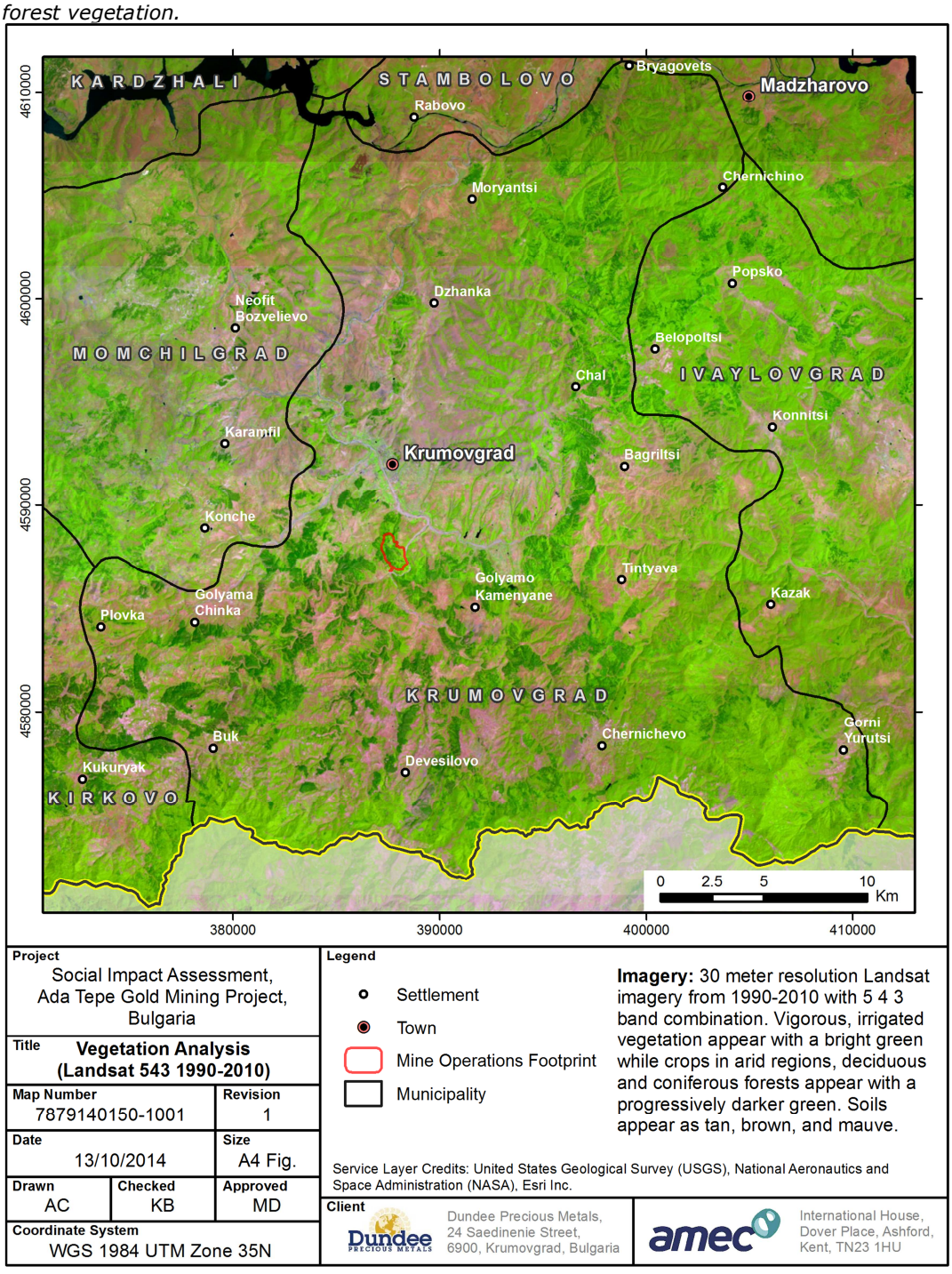
The HHS findings indicate that 54% of all 396 surveyed households practice more or less regularly activities for natural resources utilization provided by the local ecosystems such as wild fruit gathering, wild plant collection, firewood collection or hunting. Wild fruits and wild plant collection is practiced by 29% of the households. People use the local natural resources mostly for household consumption and do not consider it as an important income for their households. The types of herbs and mushrooms collected are illustrated in Table 7-2 below as disclosed during the baseline consultations. Furthermore the consultations found that during the season mushrooms and wild herbs were in abundance throughout the Municipality and people collected them from various areas and were not limited to one specific spatial area, refer Figure 7-3 illustrates the woodland areas where forest mushrooms would grow in the Municipality. Indeed one baseline consultation respondee stated that usually people kept their locations secret so as not to disclose the exact location of the wild produce. It should be noted, however, that of the 5 Roma people whom were respondees in the HHS 4 Roma people stated that collection of wild herbs during the right season was one of the 5 sources of income they depended on.

Table 7-2: Types and usages of wild herbs and mushrooms in the Aoi as disclosed during the baseline consultations.

Plant Name	**Usage**
Greek Oregano	Cooking
Savory	Cooking
Melissa Officinalis	'Spice'
Tilia (Tieia)	Tea (medicinal)
Common balm (Salvia Officinelis)	Tea (medicinal)
Dog Rose	Tea
Thyme	Tea and cooking
Juniper (a protected species)	Cooking
Crab apple	Pectin

Mushroom	**Usage**
Chanterelle	cooking
Boletus	cooking
Red pine mushroom/saffron milk cap	cooking

Figure 7-3: Potential mushroom growing areas in the municipality of Krumovgrad, identified by dark green coloured regions of Landsat 543 imagery which highlights the presence of forest vegetation.



Hunting

There are two game breeding reserves (MDP, 2014), one of which "Studen Kladenetz" is of national and international importance. It is situated south of Studen Kladenetz dam, straddling Momchilgrad and Krumovgrad municipalities, with a total area of 5577 ha. The reserve offers hunting of big game (fallow deer, roe, wild boar, wolf, fox), small game (hare, quail) and permitted species of wild ducks. In addition to hundreds of local hunter, visiting hunters from all over Bulgaria congregate in the Studen Kladenetz breeding area, with widespread poaching also reported (Krumovgrad.bg, 2013).

In Krumovgrad Municipality there are 13 active hunting fields as set by the Forestry Department (refer to Figure 7-4). As such there are 13 established hunting groups who are assigned to each hunting territory. Baseline consultations were told that hunting groups within the Municipality maintain good relations with their neighbouring hunting groups and there existed no conflict or rivalry. The hunting areas across the Municipality offer hunting of wild boar, hare, wolves, foxes, marten as well as quail, partridge, wood pigeon, woodcock and waterfowl. According to baseline consultations with a hunting group deer are usually also hunted (presently forbidden), however Muslims do not shoot them as it is a sacred animal to them. Hunting traps are deemed illegal. Baseline consultations found that hunters walk approximately 5 to 10 km during the day. The hunting season lasts between 15th August and 15th January for birds and between 1st October and 31st December for mammals, although it can be extended to the end of January by exception. The annual fee for hunting is 150 BGN and the daily permit is 62 BGN (hunting and fishing) which is purchased from the local Forestry Department.

In addition to recreational hunting activities, the hunting groups may also be requested by the Forestry Department to organise controlled culls for which they are compensated by the Hunting Association as follows:

- Wolves – BGN 100 per kill;
- Jackals - BGN 25 per kill;
- Foxes – BGN 10 per kill.

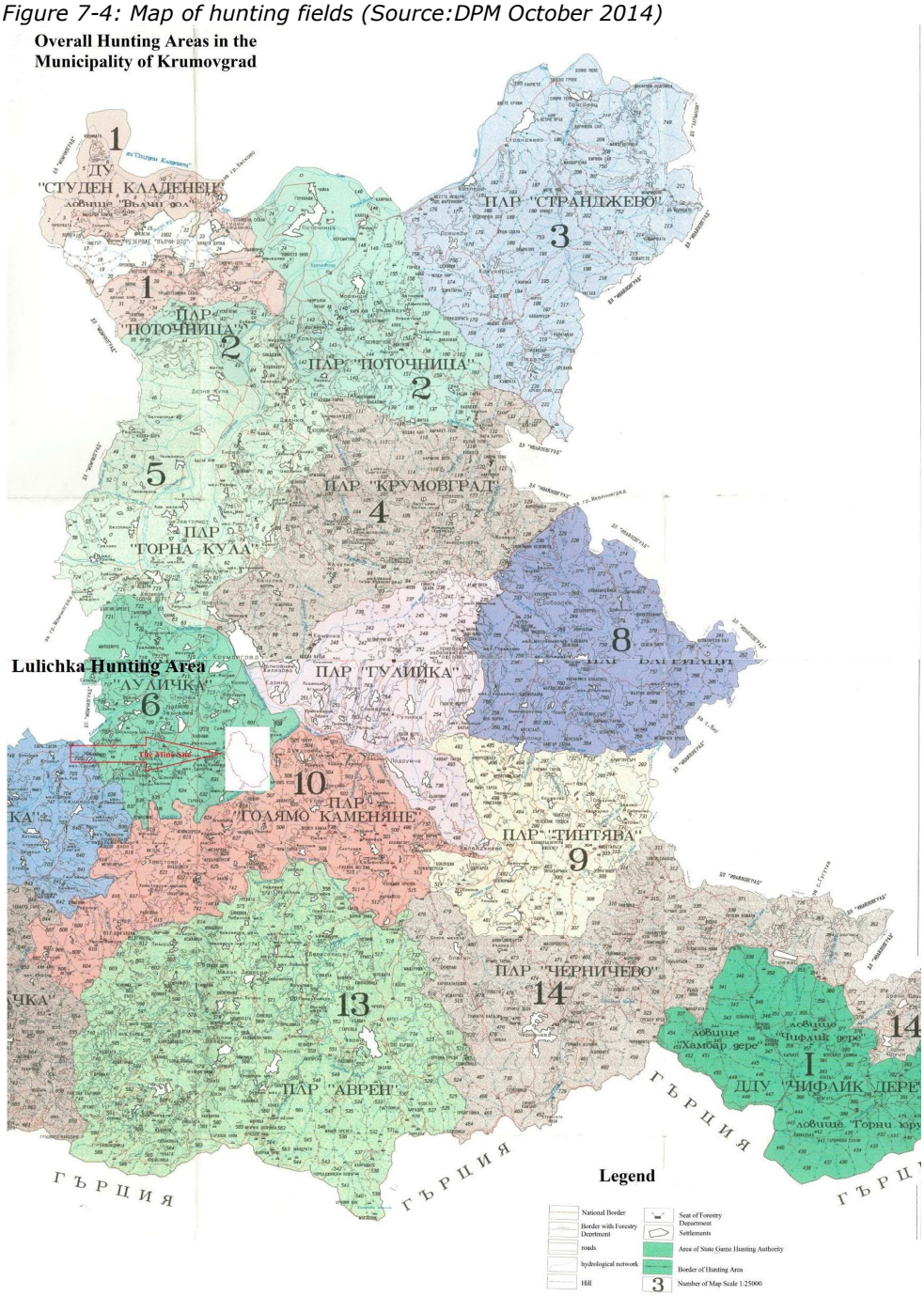
This is tightly controlled and depends on the size of the population of animals

Lulichka hunting group is one of the thirteen hunting groups within the Municipality, refer Figure 7-4, territory 6 highlighted in pink. The 35 hectare territory incorporates the proposed project area footprint, no other hunting group has their hunting territories within the project foot print. There are 50 members, whom are all male. Baseline consultations found that animals such as wolves, jackals, foxes, wild boar and fowl, are all hunted in this territory. However the only part of the Lulichka hunting territory, which is maintained to have wild boar, despite there being no fences in the areas to restrict movement, is in the Ada Tepe area. It was purported that there is presence of wild boar in forest areas of other hunting territories in the Municipality. Boundaries of hunting territories cannot be moved, according

to baseline consultations with the Forestry Department as they are permanently agreed and set.

Hunting in the Municipality remains relatively exclusive, perhaps due to the costs associated as discussed above, and the HHS results indicate that hunting is practiced by only 5% of the surveyed households. Meat is consumed for personal consumption and is a recreational activity. However 3 out of 396 respondees in the HHS whom hunt stated that hunting is one of the sources of income for the household.

Figure 7-4: Map of hunting fields (Source:DPM October 2014)



Fishing

The rivers Arda and Krumovitsa offer opportunities for fishing. People fish mainly for recreation and not for commercial purpose and it is predominantly carried out by men. They often fish in the river below Ada Tepe and in 'micro dams'[8] and fish Mountain Barbel, Perch, Carp, Trout, Mullet, Tilapia, Pike, Sheat fish and Rudd. 15% of the surveyed households carryout fishing as a recreational activity (DPM HHS, 2014).

Figure 7-5: People fishing in Micro dam near Kokoshar

Beekeeping

Beekeeping is a traditional agricultural practice in Krumovgrad and predominantly carried out by men. Although not as popular as tobacco growing, this sector tends to grow, due to the fact that the EU provides funds to support bee keeping. Funding is provided only to registered bee keepers. According to the Krumovgrad State Veterinary Service, the number of registered colonies (hives) has increased from 2,600 in 2010 to 2,654 in 2013. (DPM SEIDP, 2014). Results from the HHS, however, reveal on average only 4% of the households keep bees. The HHS results indicate that most beehives are kept by Kuklitsa residents - 35%. This percentage is smaller (11% - 18%) for residents of Malko Kamenyane, Skalak and Rogach village, while in Guliya only 4% of the people are occupied with beekeeping. Baseline consultations also found bee keeping practices in Ovchari (AMEC, 2014). Baseline interviewees report the honey produced is primarily for household usage and only if there is

[8] Micro-dams are formed by diversion of natural stream waters (gorges, small rivers and streams) and their waters are primarily used for irrigation and water supply.

surplus, then it is sold. Interviewees familiar with local beekeeping also believe that the area is unpolluted and very suitable for bee keeping (AMEC, 2014).

Figure 7-6: Bee keeping in Varhushka (Ovchari) [Left]. Bee keeping in Shtarbina (Kuklitsa)[Right].

Recreation and Land use

The land is used to a lesser degree for recreational and leisure usage (not tourism). Within the AoI there is an abandoned tourist lodge and 4 tourist bungalows (owned by the Municipality), which are purported to be used by a Krumovgrad school despite their dilapidated state (EIA 2010) refer Figure 7-7 below. According to baseline consultations people also use the forest areas throughout the Municipality for walking and hiking but not to a great extent.

Fishing as a recreational activity takes place in the river Krumovitza, which flanks the southern side of Ada Tepe area and flows only during the winter months but it is also carried out in micro dams, and the Rivers Arda and Kesebir. The HHS, indicate that of the sample few people undertake fishing. Of the villages nearby the proposed development the most people citing that they fished were in the Village of Kuklista (Shtarbina and Kremenik), which is up stream from the site. The banks of the river Krumovitza were also observed to be used as sites for picnicking and relaxing.

As discussed above hunting also takes place predominantly as a recreational activity.

Figure 7-7: Derelict Lodge on Ada Tepe N41 26' 36" E 25 39' 16"(Left). Derelict Student's leisure chalets N41 26' 31" E 25 39' 20" (Right).

8.0 Education

8.1 National Overview

8.1.1 National Education System

Bulgaria has adopted a system of compulsory primary and secondary education, which is secular in nature and is provided free of charge in a system of state and municipal schools. According to the state Public Education Act the state guaranteed right of free and mandatory education applies to all children from 7 to 16 years old, presided over by a Ministry of Education. The Ministry enforces a strict system of educational requirements – curricula, licensed textbooks and a teacher accreditation system, which applies to all levels of schooling. Private schools are also admissible following the state sanctioned educational requirements, although state funding for private schooling is limited.

All education in kindergartens, schools and their affiliates is conducted in the Bulgarian language. Schooling in mother tongues (such as Turkish) is permitted for children whose mother tongue is not Bulgarian in municipal schools, under the control of the state.

Article 12 of the Public Education Act states that "Bulgarian kindergartens and schools with foreign participation shall be opened or transformed at the request of associations, or corporations, or companies of Bulgarian and foreign natural and/or legal entities. There are some foreign schools in Bulgaria, as well as foreign-operated educational programs such as a local branch of the Teach for All network, and until 2013 teachers sent by the US Peace Corps. Large companies, particularly in the mining and IT sectors, frequently partner and fund schools, typically technical profile high schools, associated with a particular industry.

Higher education is concentrated in the big cities, where a network of more than 50 accredited institutions of higher education (universities and colleges) exists, most of which are universal or profiled with large regional universities. The nearest universities to Krumovgrad Municipality is a regional branch of Plovdiv University, located in the city of Kardzhali, specializing in philology, business and tourism, and the the Free University of Burgas, specializing in economic, legal and humanitarian studies and information sciences.

Various formal and informal opportunities for lifelong learning and career training and retraining exist, some of which are sanctioned by the state, and some partner the academic institutions. There is a certified training system for some professional skills (such as language proficiency and computer literacy), which has been set up with the support of the European Structural Funds in the period 2007-2013, under Operational "Programme Human Resources Development" (MLSP, 2007). A still frequently utilized form of informal education services are private tutors in languages, high school subjects, and various skills.

8.1.2 National Educational Attainment

According to NSI Census data, approximately 93% of the national population have graduated at least at primary school level, of which 43% also achieved a high school diploma and 19.6% have a university degree. A relatively small number of people – mostly older persons – have never attended high school, and this number has dropped significantly between 2001 and 2011, as the newer generations increasingly have at least a high-school qualification (NSI Census, 2011). The expansion of university graduates during that period – See Table 8-1, is in part owed to the liberalization of the nation tertiary education system and lowering of the barriers to enrollment in many new state and private universities.

Table 8-1: Educational attainment of the population – 2001-2011 trends (NSI Census, 2011)

Highest educational level Attained	**Persons (2011)**	**% of Total (2011)**	**Persons (2001)**	**% of Total (2001)**
Graduated university	1 348 650	19.6	1 050 534	14.1
Graduated high school	2 990 424	43.4	2 826 821	37.9
Graduated middle school	1 591 348	23.1	2 049 443	27.4
Graduated primary school	536 686	7.8	933 329	12.5
Unfinished primary school	328 803	4.8	433 049	5.8
Never attended school*	80 963	1.2	132 888	1.8
Children under school age	14 303	0.2	20 153	0.3
Total	**6 891 177**	**100**	**7 467 839**	**100**

**during the 2001 census the category "never attended school" was reported as "illiterate"

A comparison between residents of cities and villages shows that rural inhabitants have been lagging significantly in educational attainment, especially for higher degrees. The gender gaps in attainment are also more prominent in villages – see Table 8-2 (NSI Census, 2011).

Table 8-2: Educational Attainment of the Population – comparison across gender and place of residence (NSI Census, 2011)

Highest educational level Attained	% Men in cities	% Women in cities	% Men in villages	% Women in villages
Graduated university	21.3	28.1	4.8	6.8
Graduated high school	50.1	43.7	38.8	30.2
Graduated middle school	18.1	16.9	38.0	37.7
Graduated primary school	5.2	6.0	11.0	16.0
Unfinished primary school	4.5	4.2	5.6	6.2
Never attended school	0.6	0.9	1.6	2.9
Children under school age	0.2	0.2	0.2	0.2
Total	**100**	**100**	**100**	**100**

In addition to interpreting official indicators of scholastic attainment, it is important to have a picture of the functional knowledge of the population. An independent metric for this are the international PISA tests, conducted in 2012 (OECD, 2012). PISA tests functional knowledge under 3 categories: Mathematics, Natural sciences and Reading. Student performance is measured by standardized achievement levels – 1st being the lowest level of achievement and 6th – the highest.

The results (See Figure 8-1 and Figure 8-2 below) of the Bulgarian students' mathematical knowledge, natural science knowledge and reading literacy skills are below the average of OECD. For mathematical skills, the results of Bulgarians in the higher levels are 2-3 times lower than the average OECD countries. Especially alarming are the results for reading literacy – on average for OECD countries 1,3% of the students have shown performance below the first achievement level, while in Bulgaria the share of those students is 8% (OECD, 2012). Insufficient reading skills dramatically reduce chances of employment and career development, as well as other vital contributions to community social life.

Figure 8-1: Mathematics skills comparison between Bulgaria and OECD (OECD, 2012)

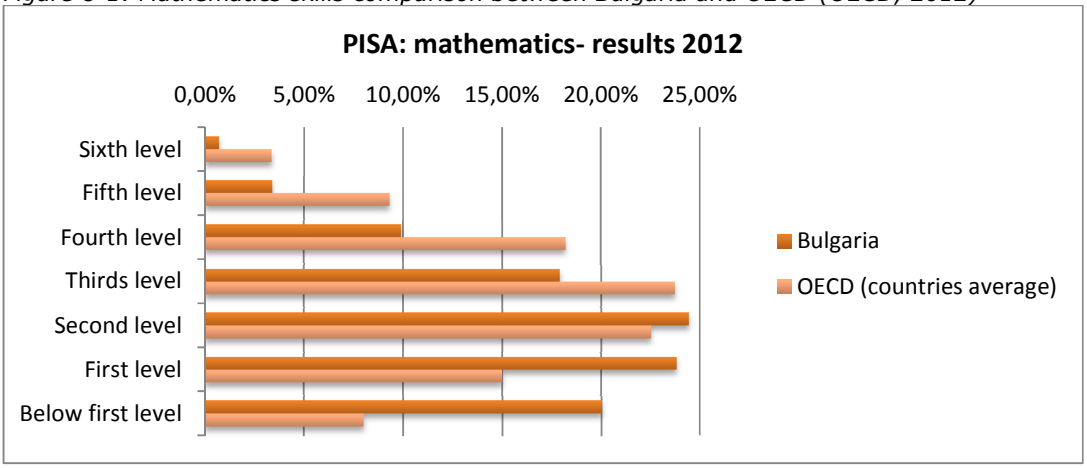
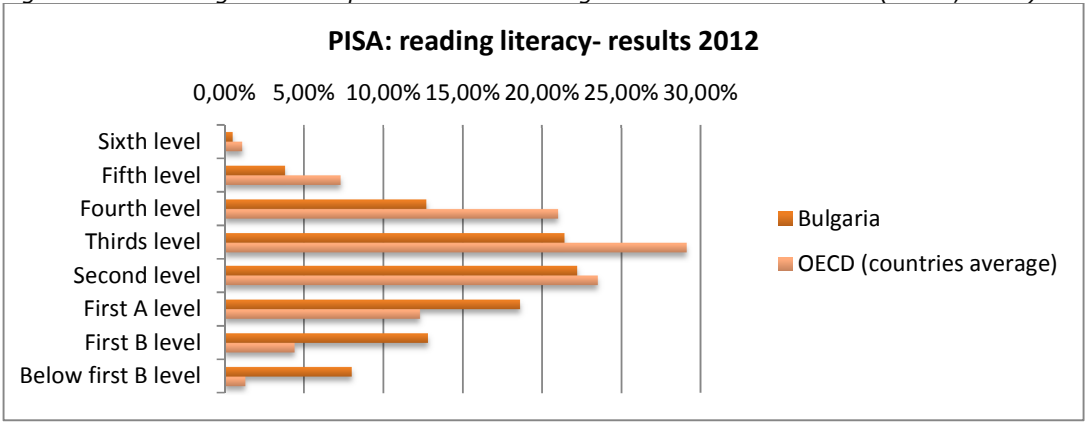


Figure 8-2: Reading skills comparison between Bulgaria and OECD countries (OECD, 2012)



8.2 Municipality and local level educational infrastructure

8.2.1 Formal Education

According to MDP in the academic year 2013/2014 Krumovgrad municipality had 10 public schools, which educate students, divided into classes from I-XII; 8 kindergartens, a kindergarten with two infant and toddler groups, working with children aged 3 years and children aged 3 to 6 years including six half-day kindergartens attended by children aged 3 to 6 years (See Table 8-3 below). Children attending high schools, primary schools and kindergartens are transported to schools from their homes by school buses, funded by the Ministry of Education. Schoolchildren in the AoI villages are primarily transported to the Zvanarka primary school (AMEC, 2014).

Table 8-3: Educational Institutions in Krumovgrad Municipality (Krumovgrad MDP, 2014)

Types of institutions	For the year 2013
Kindergartens	7
Schools	11
Professional high schools	1
Total	**19**

The MDP concludes that Krumovgrad has a school system that is optimal for the needs of the population of the municipality (Krumovgrad MDP, 2014). Baseline consultations found that households preferred to send their children to schools in Krumovgrad because they were deemed better than the more rural schools, such as Zvanarka (AMEC 2014). Baseline consultation interviewees reported that the school bus system in the municipality is regular and reliable. They also mention a problem of Roma community families withholding their children from schooling (AMEC, 2014).

The one professional state technical school "Hristo Smirnenski" has a transportation profile, although IT and computer training has recently also been developed with financial and technical aid from DPM Krumovgrad. A baseline consultation meeting with school representatives with the director of the Transport high school reveals that while there are

currently 180 students enrolled in the school in 8 classes (2 for each year group), it has capacity to take on more students. While the school is co-educational, there are currently many more enrolled boys than the girls. Children enrol for four years and on successful completion receive a nationally recognized certificate, after which students can opt to continue their education in university out of the municipality. It was revealed that about 30% of the students from this school go on to study at university. Only 20% go on to become mechanics or find employment abroad.

8.2.2 Skills Training

In addition to formal educational institutions, in the town of Krumovgrad there is also a Centre for Professional training and re-training for adults (accepting persons of working age – above 16 years old, which offers vocational training for the following ten professions:

- Profession "Office secretary" - specialty "Administrative service";
- Profession "Computer operator" - specialty "Word processing";
- Profession "Transportation technology technician" - specialties "Auto transportation technology" and "Road construction technology";
- Profession „Mechanic of material - handling equipment " - specialty "Material-handling equipment mounted on road vehicles" and "Material-handling equipment with electric drive";
- Profession "Transportation technology worker" - specialties "Auto painter";
- Profession "Tailor" – specialty "Tailoring";
- Profession "Landscaping" - specialty "Park construction and landscaping";
- Profession "Chef" - specialty "Production of culinary and beverage products";
- Profession „Waiter - bartender" - specialty „Servicing catering establishments";
- Profession „Hairdresser" - specialty „Hairdressing"

8.3 Local Educational Attainment

8.3.1 Formal Educational Attainment

As one of the crucial factors for the education of the population it is important to have a picture of the educational attainment of the citizens of the Municipality of Krumovgrad. Table 8-4 below illustrates the official statistics for Krumovgrad municipality and Kardzhali district based on the 2011 Census – also see national figures in Section 8.1.

Table 8-4: Educational attainment of the population at district and municipal level (NSI Census, 2011)

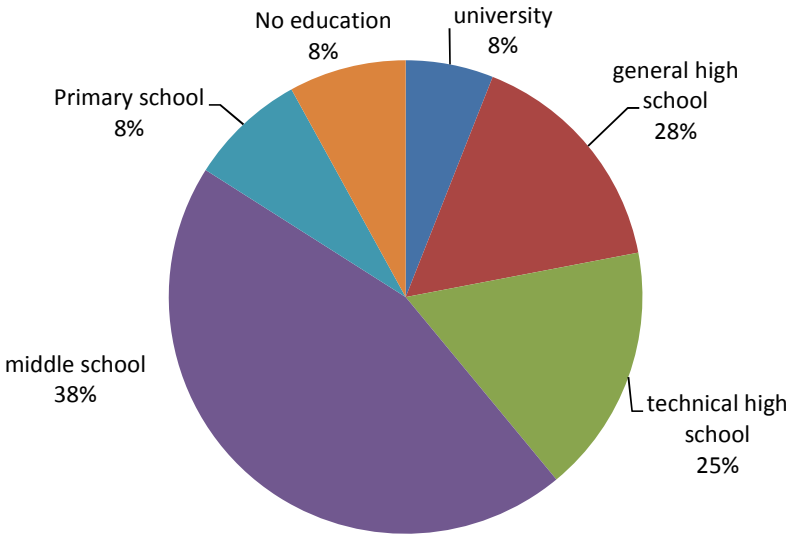
Highest educational level Attained	Krumovgrad municipality		Kardzhali district	
	Persons (2011)	% of Total (2011)	Persons (2011)	% of Total (2011)
Graduated university	1 113	6.7	14 719	10.3
Graduated high school	4 503	27.2	4 6357	32.5
Graduated middle school	6 531	39.4	50 849	35.7
Graduated primary school	2 597	15.6	16 288	11.4
Unfinished primary school	1 156	6.7	8 941	6.3
Never attended school	616	3.7	5 069	3.5
Children under school age	41	0.2	311	0.2
Total	**16 557**	**100**	**142 534**	**100**

The attainment distribution shown above is fairly close to the district statistics but much more modest than the national picture. This indicates low levels of educational attainment in the whole district, not only in the AoI, and presents a strong probability of lower levels of qualification of the human resources in the district compared to the national levels.

As can also be seen in Table 8-4 above, 6.7% of the Municipality population has a university education, which is less than the district figure by around 3,5% and as much as three times lower than the national figure. The proportion of people with a high-school degree is also smaller than the national one, but close to the district one. The highest proportion of population has a middle school qualification at 39.4% of the inhabitants (NSI Census, 2011). There is a relatively high percentage of dropouts from primary schooling, and the proportion of people who have never attended school in Krumovgrad Municiaplity and Kardzhali district exceed the national figure.

For the AoI target group the HHS results indicate a large share of people with lower educational attainment (39%) - 3 times larger than national averages (DPM HHS, 2014).

Figure 8-3: Educational attainment for inhabitants in the AoI settlements (DPM HHS, 2014)



A clearer picture emerges when educational levels are disaggregated by gender and age groups. If one compares the oldest age group in the working age segment – those aged 50 to 59 - to the youngest working age group – the people aged 18-29, there is a clear difference – See Table 8-5 below. Almost 3 times more persons from the older group have graduated at only middle school level, while the majority of the younger group have graduated from a general or technical high school. The difference between men and women is more nuanced with a clear separation of men and women choosing technical and general high school, but proportionately more women having a university degree than men (DPM HHS, 2014).

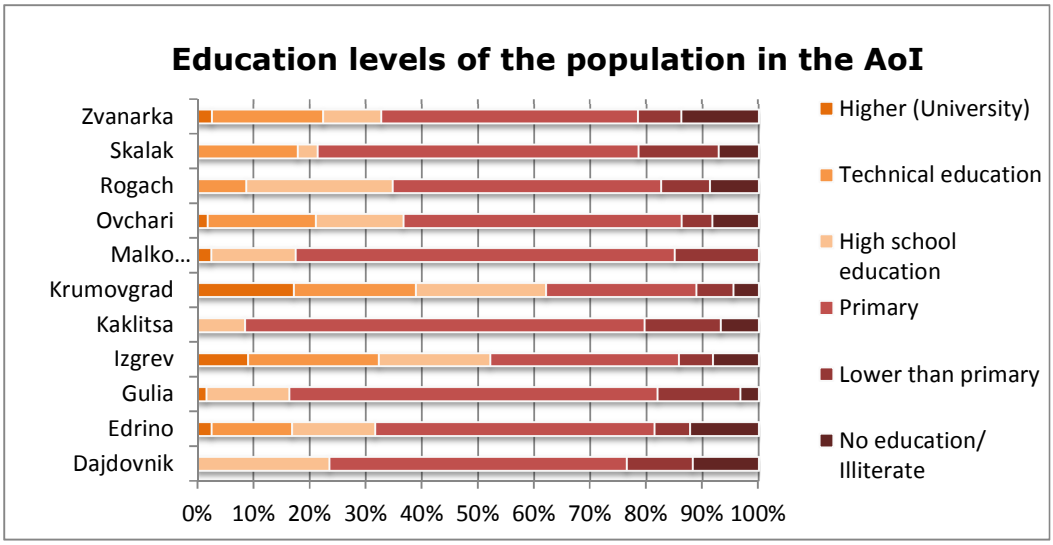
Table 8-5: Education levels comparison in AoI by gender and age groups (DPM HHS, 2014)

Education Degree Attained	% Men in AoI	% Women in AoI	% 18-29 Age Group	% 50-59 Age Group
University	4	8	13	3
Technical High School	25	6	19	21
General High School	15	19	46	15
Middle School	42	48	21	60
Primary School	8	8	1	0
No education	6	11	0	2
Total	**100**	**100**	**100**	**100**

The HHS has insufficient data on the educational levels of Roma community due to a low number of respondents from that community. From the available data it appears that the majority of the Roma inhabitants have primary education. There are slight differences between Bulgarian and Turkish communities, as proportionately more self-identified Bulgarians in the sample group have graduated high school and university (DPM HHS, 2012).

Regarding education levels in individual settlements, Krumovgrad and Izgrev neighbourhood people can be identified as the best educated in the area, having the largest proportion of inhabitants with university, high-school and secondary school qualifications. Following on from these are the people from the villages of Ovchari, Zvanarka, Edrino and Rogach (DPM HHS, 2014). The village of Kuklitsa is reported to have the largest proprtion of residents with only primary or no education – see Figure 8-4 below.

Figure 8-4: Education levels in the AoI per settlement (DPM HHS, 2014)



8.3.2 Qualification and Skills

Additionally to the educational levels of the population of the AoI, there is some official information about the qualifications and skills of the employed and unemployed population in the municipality of Krumovgrad (Bulgarian employment Agency, cited in the DPM Skills Survey, 2014). According to data from the Employment Agency as of December 2013 in the Municipality of Krumovgrad there were 1 405 registered unemployed residents. Out of these, 60% have secondary education and 11% have graduated with university degree. The table below presents a detailed picture of the skills and qualifications of the registered unemployed in two major fields of relevance to the project, as follows:

1) Engineering and technology;

2) Finance, economics and administration.

Table 8-6: Fields and skills specialties of the registered unemployed residents in the municipality of Krumovgrad (Bulgarian employment Agency, cited in the DPM Skills Survey, 2014)

	High-school education		University		Qualification	
	Field	**Number**	**Field**	**Number**	**Field**	**Number**
Engineering and technology	car driver	119	Chemistry	1	1st PQD	
	Operator of metal-cutting	6	Plumbing networks	1	Motor vehicles	3
	Turner (lathe operator)	20	Computer networks and technology	1	Road construction worker	24
	Metallurgy and non-ferrous metals	5	Engineer	6	2nd PQD	7
	Construction	4	Construction of buildings	3	Stoker	1
	Technology of non-organic mater	1			3rd PQD	
	Operator of electricity networks	4			Construction worker	1
	Laboratory technician	1			Road construction worker	13
	Air conditioning and ventilation equipment	1			Motor vehicles technician	5
	Plumbing network	2			4th PQD	
					Mechanic	3
Finance, economics and administration	Economics	6	Finance	4	1st PQD	
			English language	1	Administrator specialist	2
			Economics	11	Word processing	1
			Bulgarian and English languages	1	3rd PQD	
			Marketing	1	Word processing	1
			Public administration	1		
			Public relations	1		
			Industrial management	1		
			Budgeting and planning	1		

The most common technical qualification among unemployed job seekers with high school education appears to be "car driver", followed by "road construction worker" and "turner" (lathe operator). Out of the economic qualifications the most common is "economics" at university level, followed by high-school level "economics" and "finance" at university level.

For comparison, Table 8-7 below presents a distribution of the currently employed residents in the same two fields. The most common occupation in the technical field appears to be construction followed by the processing industry (DPM Skills Survey, 2014). On the other hand, most of the employed with an economics background occupy governmental jobs, most probably meaning positions in the municipal structures.

Table 8-7: Number of currently employed residents in the municipality of Krumovgrad in 2 fields (Bulgarian employment Agency, cited in the DPM Skills Survey, 2014)

	Groups of economic activities	Total	In the town of Krumovgrad	In the villages
Engineering and technology	Mining and quarrying	65	26	39
	Processing industry	680	418	262
	Production and distribution of electrical and thermal energy and gaseous fuels	46	26	20
	Water supply; piping services, waste management and re-cultivation	55	21	34
	Construction	382	120	256
Finance, economics and administration	Financial and insurance services	23	21	..
	Administrative and supporting activities	71	53	18
	Government jobs	519	287	232

In addition to the data obtained by the DPM Skills Survey, the DPM HHS survey asked inhabitants of the AoI settlements to list their occupational and functional skills. From the collected responses (See Table 8-8) below it seems that agricultural (farming) skills are the most common amongst men and women in any age group. This is an expected result considering that agriculture is main occupation for the majority of the population in the AoI (see Section 9. Economic context and livelihoods). About 20% of the surveyed residents have also evaluated themselves as having "no specific skills". The third most popular group of skills for men is related to driving, while for women it is sewing. When distributing the same skill set amongst age groups, the results for the age group 50-59 follow the general trend – with the most popular skills being agriculture, sewing and driving. For the generation entering the work force (age group 18-29), the skill set is much more diversified and although the most popular skills are again agriculture and driving they are followed by Crafts and IT. About 10% of the population aged 18-29 have evaluated themselves as having "no specific skills", which is concerning, but to some extent reflects the more informed and realistic self-evaluation of younger people regarding the skills demanded on the current labour market (DPM HHS, 2014).

Table 8-8: Self-identified skill categories of the residents of AoI settlements by gender and age groups (DPM HHS, 2014)

Skill Category	% Men in in AoI	% Women in AoI	% 18-29 Age Group	% 50-59 Age Group
No specific skills	20%	22%	10%	4%
Crafts	10%	4%	10%	8%
Electrotechnical	3%	-	1%	2%
Sewing	2%	13%	5%	12%
Agricultural	29%	43%	28%	46%
IT	1%	3%	10%	-
Driving	17%	1%	14%	11%
Teaching	2%	4%	5%	1%
Medical	1%	3%	4%	2%
Economic	2%	6%	5%	4%
Construction	8%	-	2%	5%
Cooking	1%	1%	1%	2%
Stonework	1%	-	-	-
Plumbing	-	-	-	1%
Military	1%	-	-	1%
Mining	2%	-	2%	-
Metal processing	-	-	-	-
Public and governmental sector	-	-	-	1%
Administrative	-	-	-	-
Trade	-	-	1%	-
Others	1%	2%	-	2%

It must be noted that the above findings allow only limited interpretation of the objective mismatch between the demanded and supplied qualifications and skills in the local market. For example, it is clear that at present financial services have insufficient scope for local development, despite the number of persons with economic background and qualification being apparently available. Processing jobs – which are assumed to span both agricultural produce and food processing and other light industry, predominate, but it is not clear if enough workers have the specific skills required by the predominant types of local employers, some of which are identified in Section 9.2. Also the problem with functional skills and low literacy described in Section 8.1 above, may prevent young people fresh out of school or even university education from entering the labour market and performing effectively on the job. This, in result could have a rebound effect as young people who are laid off or just unable to find work join the ranks of the vulnerable group of young unemployed people, identified in Section 5.2.9.

9.0 Economic Context & Livelihoods

9.1 National Economy Overview

The following national review has been constructed based on current information provided by the Socio-Economic Analysis of the National Development Programme "Bulgaria 2020" (NDP, 2012) and current data from the NSI.

Overall, the Bulgarian economy has been recovering from the impacts of the global financial and economic crisis, which followed a national economic boom period characterized by a strong annualized growth rate of 5.8% for the period 2000-2008, and reaching 6.2% in 2008 just before the onset of the crisis (NDP, 2012). This was followed by a sharp recession amounting to a drop of -5.5% of annual GDP for 2009 and sluggish recovery staying slightly below or above 1% GDP growth since, with 0.9% growth in 2013 (NSI GDP, 2014). In nominal terms the Bulgarian annual GDP totalled approximately BGN 67 billion (EUR 34 billion) in 2013 (NSI GDP, 2014). In the pre-crisis period GDP growth was based mostly on investment, and particularly foreign investment in the real estate sector, which was badly hit during the crisis. Since then growth has been driven by exports, which have recovered relatively steadily, while domestic consumption has been stagnant or lagging, mostly due to depressed income and unemployment resulting from the crisis (NDP, 2012).

The employment situation in the country also took a sharp turn at the time of the crisis. Around 2008 employment was growing by 3% annually (despite negative demographic growth) and unemployment reached historically low levels of 5%. Following the slump of the construction and export-oriented industrial sectors in 2009-2010, drops in employment followed, with industrial production employing 16.5% and construction companies employing 31.8% less workers in 2011 compared to 2008 (NDP, 2012). In the post-crisis period some export-oriented industries, such as the manufacture of machinery and equipment, electrical equipment, and transport vehicles showed a marked increased labour demand, but that has not compensated the losses from the slumps in construction and domestic services (NDP, 2012). Some government administration workers were also laid off because of cost-saving reforms. As a result unemployment also rose, reaching 11.2% in 2011 (NDP, 2012) and most recently 11.4% for the second quarter of 2014 (NSI Employment, 2014).

The current breakdown of the total national GDP of BGN 67 billion according to different sectors (see Figure 9-1 below) indicates that industry – among which extractive minerals industry, machine building and energy, dominates in terms of value creation, followed by retail and public services, with a much more modest role for agriculture (NSI GDP 2014), underscoring the difference in wealth creation potential between primarily industry and service-oriented urban population centres and agriculture-dominated rural regions. A comparison of GDP value added to sector employment shares (see Figure 9-2 below) further underscores the relatively lower wealth and income creation potential of employment in labour-intensive sectors such as agriculture, basic services and local administration, available to the inhabitants of less industrialized rural areas (NSI Employment 2014).

Figure 9-1: Relative Value Added Share for economic sectors for 2013 (NSI GDP, 2014)

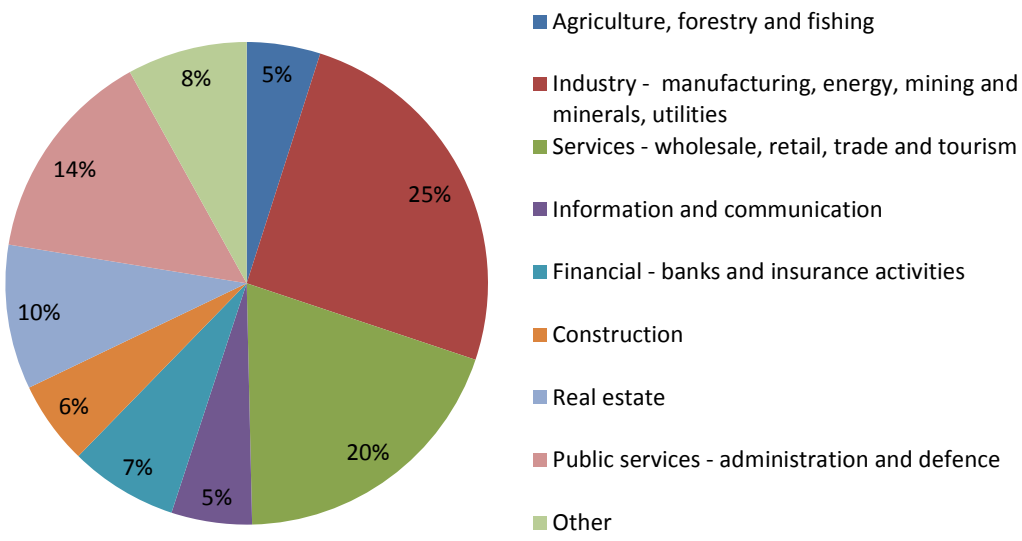
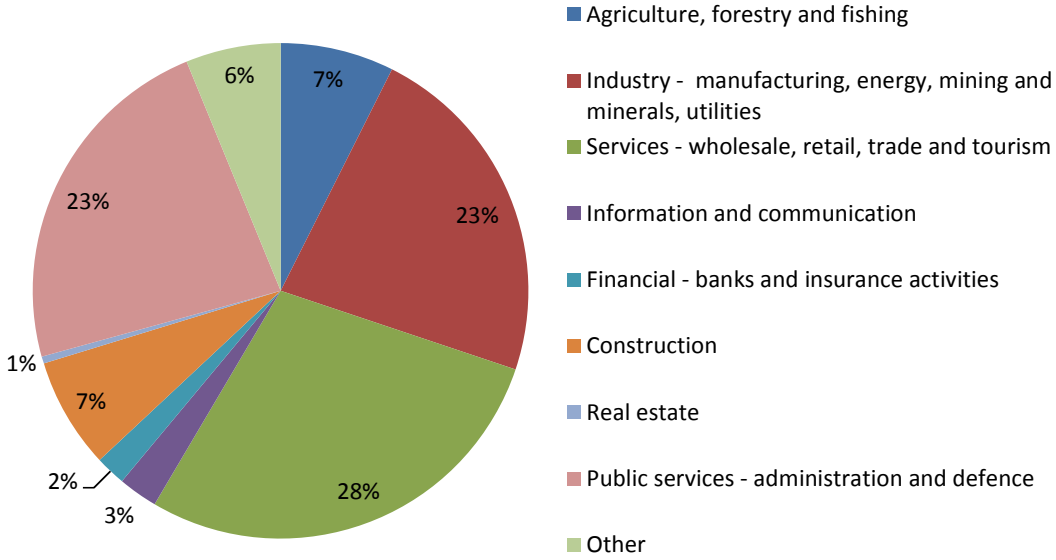


Figure 9-2: Share of Employment for Q2 2014 for economic sectors (NSI Employment, 2014)



9.2 Local Economy Overview

As established in the limitations of this report, NSI data does not exist to illustrate the district of Kardzhali's economic profile, however a review of the average annual salary broken down by economic sector/employer provides a general proxy to the types of business as illustrated in Table 9-1 below indicates that the energy sector is the highest paying

economic sector, followed by financial services, and thirdly by the sector public administration of which is a civil service/Government sector. It is understood that the disproportionately high salary of electricity and gas, which distort the annual salary profile in the district considerably is due to the specialist requirements of the jobs.

Table 9-1: Average Annual Salary for Economic Sectors in Kardzhali District in 2012 (NSI, Regions 2014)

Economic Sector	**Annual Salary – BGN**
All sectors	6 266
Agriculture, Forestry and Fishing	6 278
Mining and Quarrying	No data*
Manufacturing	5 784
Electricity, gas, steam and air conditioning supply	15 685
Water supply, sewerage, waste management and remediation services	7 398
Construction	5 525
Wholesale retail trade, repair of motor vehicles and motorcycles	4 801
Transportation and Storage	6 649
Accommodation and food service activities	1 097
Information and communication	6 159
Financial and insurance services	9 857
Real Estate Activities	7 329
Professional, Scientific and Technical Activities	6 930
Administrative and Support Service Activities	4 640
Public Administration and defence; compulsory social security	8 218
Education	7 378
Human health and social activities	7 689
Arts, entertainment and recreation	5 181
Other service activities	4 561

A further review of fixed asset investments of the economic sectors in Karzhali district to ascertain the economic profile of the district is indicated in Table 9-2 below. The table shows that the manufacturing, mining and quarrying type industries; water supply, sewerage, waste management and remediation have the highest investment in their fixed assets. Followed by Public Administration and defence; compulsory social security; education, human health and social activities, which is a civil service/Government sector and thirdly wholesale and retail trade, transportation and storage, accommodation and food service activities. From these two proxy indicators of the economic profile of Kardzhali district it can be deduced that there is little industry and economic investment in the region and as evidenced at local level in Krumovgrad Municipality the government remains a largest employer across it's sectors (health, education, administration, public services etc). Light industry, small businesses and construction sectors also have a presence. Of relevance to the proposed project, there is an active mining and quarrying sector within the district, whilst

data is scarce, research reveals that there is a Gold processing plant 'Gorubso Kardzhali ' located in Kardzhali which employs 600 workers (Gorubso Kardzhali, 2014). It is understood that Gorubso has been planning to expand its operations in Kardzhali District, including in Momchilgrad Municipality. In January 2014 an investment proposal notification was entered for the "Momchil" area, envisioning a 10-year gold-silver ore mining operation at 80 000 tonnes per year, which will be processed in the existing Kardzhali facilities (Krumovgrad Municipality, 2014). The results of such remain pending. Additionally Gorubso has been developing a separate site "Sedefche" in Momchilovgrad Municipality, which has already undergone an EIA process for a 100 000 tons per year of poly-metal ore that will employ 50 persons (Momchilgrad Municipality, 2014). In addition to metal ore mining there are several smaller quarry operations for inert materials and industrial minerals – the National Concessions Registry lists a total of 10 construction and andesite materials quarry concessions in active stages of exploitation (National Concessions Registry - NCR, 2014). Baseline consultations found that many stakeholders were aware of the implications of mining due to the fact that they had been former employees of mines and quarrying operations during the Communist Government when a considerable number of mining operations were running in the district but have now closed down.

Table 9-2: Fixed Asset Investments for Economic Sectors in Kardzhali District in 2012 (NSI, Regions 2014)

Economic Sector	**Fixed Assets- Thousand BGN**
All sectors	111 975
Agriculture, Forestry and Fishing	2 756
Manufacturing, mining and quarrying and other industry; water supply, sewerage, waste management and remediation	72 036
Construction	5 026
Wholesale and retail trade, transportation and storage, accommodation and food service activities	12 910
Information and communication	260
Financial and insurance services	No data*
Real Estate Activities	1 044
Professional, Scientific, Technical Activities, administrative and support service activities	2 615
Public Administration and defence; compulsory social security; education, human health and social activities.	13 592
Other service activities	No data*

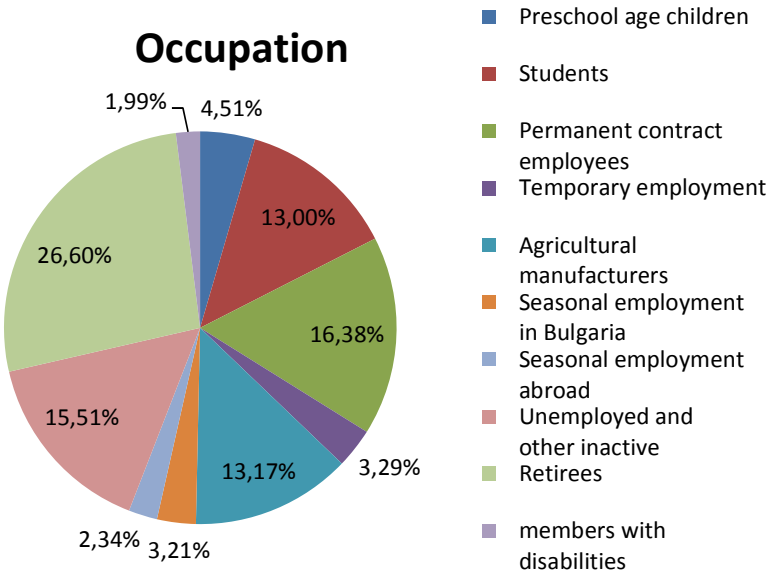
*data are confidential, because only 1 or 2 companies in this sector have submitted salary data

As is typical for a non-industrial rural municipality, the basis of local business in Krumovgrad municipality is centered around agriculture, food processing, construction and light manufacturing micro and small enterprises. According to the draft Municipal Development, 94% of enterprises are micro (up to 9 employees) and are concentrated in the municipal center Krumovgrad (MDP, 2014). The plan identifies small industrial enterprises, which are described in Section 9.2.1. Agriculture is centred around several main livelihoods for

smallholder farmers such as tobacco growing and livestock raising. Tourism is not significantly developed, although limited accommodation in the form of hotels and guest houses is available – see Section 9.2.3 below. There is insufficient information at the local level about the size and trends in the service sectors, other than regional registers of small food stores, barbers, restaurants and cafes – See section 9.2.4, but it is assumed these make up a significant share of the local economy in the municipal capital Krumovgrad, as is generally the case in Bulgarian rural regions.

The occupations of local people, already discussed above in the context of qualification and skills mismatch (see Section 8.3.2), are centered around established sources of employment opportunity, including agricultural with a smaller share of seasonal employment and a large share of unemployed people and retirees – See Figure 9-3 below. Of the employment based on a permanent work contract, the HHS results indicate that almost all seems to be associated with local or national administration positions, while craftsmen such as plumbers work on temporary contracts (DPM HHS, 2014). A lot of the respondents avoid answering questions about the nature of their current occupation, so a local picture of employment by sector cannot be constructed.

Figure 9-3: Occupation of the population of the AoI (Source: HHS, 2014)



More information about the development of the main local economic sectors, based on the draft Municipal Development Plan and other secondary information sources is given below.

9.2.1 Industry

The main industrial enterprises in Krumovgrad area are tailoring and the shoe industry. Other than this there are few other industrial employment opportunities in the area, mainly in the construction and food processing sector. According to the Municipal Development Plan of Krumovgrad (MDP, 2014) the following enterprises are active in the area:

- **Clothing and Textiles** - Enterprises related to the footwear industry are "Krumitsa" JSC (150 employees) and "Dickie shoes" Ltd. Knitwear is produced by "Hasteks" Ltd (86 employees) and "Suteks Krumovgrad" Ltd (156 employees). All work on commission for foreign companies;
- **Food Processing -** The production is sold mainly in the municipality - small producers of bread and meat products;
- **Construction & Materials -**"Bulslate" Ltd. is extracts and processes natural stone materials. „Niki 03" Ltd produces gneiss slabs, flooring, cladding, skirting. Part of the construction activity in the municipality is carried out by "BKS" LTD. The company owns facilities (equipment, transport, storage facilities). Over 80 people are employed. Other private companies involved in the construction industry include ET "Fevzi & Son - Engineering - Stanimir Semov" ET "Caution - Mehmet Hussein", "Dural" Ltd., ET "Sovastroy", "Soft S" Ltd. and "Naafi" Ltd.

In 2009 the company Vets Chal EOOD had an investment project in Krumovgrad area for developing a wind park with 15 wind turbines planned (Dnevnik, 2012). The project appears to not have been implemented, probably because in 2012 all planned renewable energy projects in Bulgaria were severely restricted by the energy regulator (SCEWR, 2014).

9.2.2 Agriculture

The following list of local agricultural livelihoods is compiled based on data from the MPD, baseline study consultations and the household survey. This list of livelihoods is not necessarily ordered by importance, although tobacco growing and subsistence farming (with some additional sources of income, see Section 9.3 for the most significant livelihoods in the area. Where actual data on number of employed persons for the stated activity exists, these have been reported. Unfortunately, as already stated, no comprehensive National Statistics Data on persons employed in economic sub-sectors and agricultural livelihoods may be obtained for the municipality.

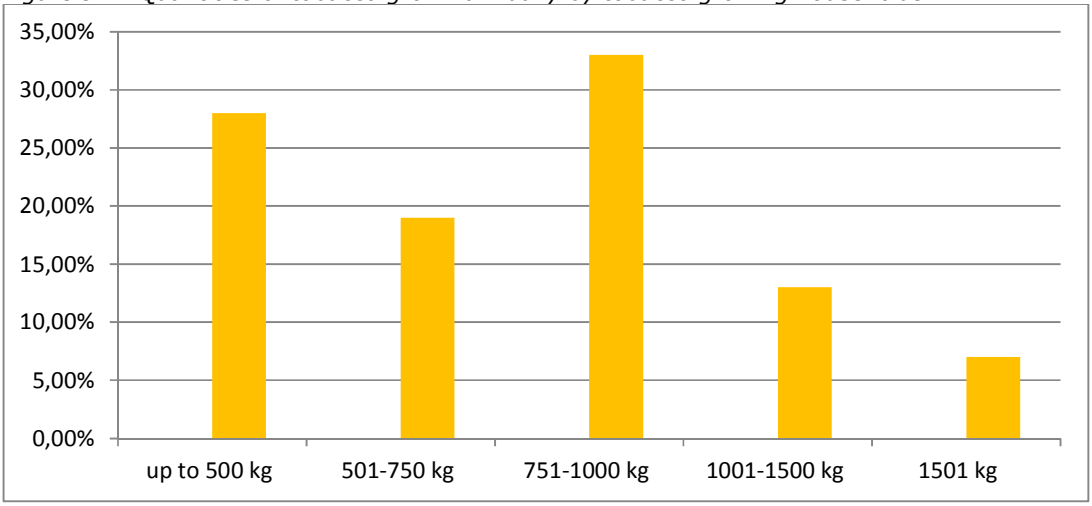
Tobacco Growing

Tobacco growing provides livelihood to more than 5,000 local people and hence dominates the economy of the Municipality. Currently tobacco plantations cover about 26,583 acres. Based on Municipality data, a trend is observed for decrease of the tobacco growers with 3,370 people in 2009 and 2320 in 2011. This trend is associated with a decrease in tobacco production in the last few years. Nevertheless, since tobacco is deeply associated with the traditional way of life and livelihood of the local population, it will likely continue to be a major activity for the residents in the area. Households sell their tobacco production to buyers such as Phillip Morris with whom they have a contract and incomes are taxed (AMEC, 2014). In Krumovgrad Municipality, a high-quality oriental tobacco "Bashi-bales" type is produced. The production is well placed on the local and international market. Interviewed stakeholders report that local inhabitants generally prefer to grow tobacco than to have paid

employment because they receive a better income, which is formalised by contracts with buyers at the beginning of the season and earnings are taxed at source (AMEC, 2014).

The HHS further established tobacco growing as the only significant commercial crop, with all other crop types adapted mainly for subsistence farming. According to the survey results, 30% of the surveyed households are involved in tobacco growing, with most tobacco growers producing less than 1000 kg of tobacco annually (see Figure 9-4 below). Survey data further show that tobacco is the most commonly cultivated crop by the people of Kuklitsa village - 74%, while for the other settlements (excluding Krumovgrad with 4%) this percentage is on average 30%. The higher percentage in Kuklitsa may be due to the fact that this village has the biggest share of working age population (between 18 and 60) and tobacco growing is perceived as quite a hard occupation.

Figure 9-4: Quantities of tobacco grown annually by tobacco growing households



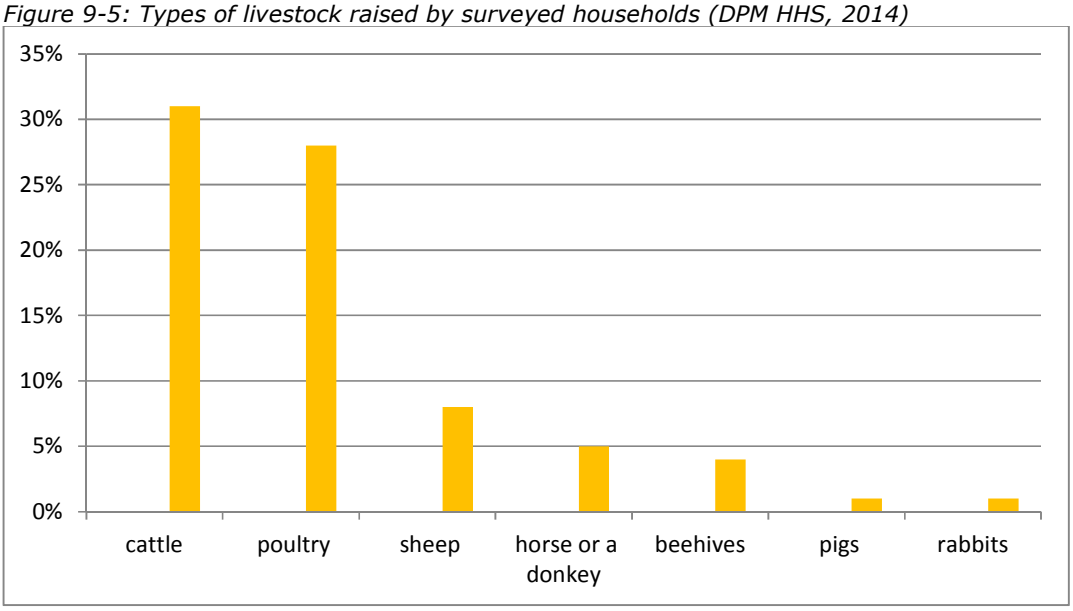
In this part of Bulgaria it is a common practice that all family members, including young children, are engaged in tobacco growing. Although between 2004 and 2009 under the supervision of the International Labour Organisation and with cooperation of numerous NGOs a lot of effort has been put into preventing child labour, this practice continues (Le Monde, 2013; The Guardian 2013).

Livestock Raising

In the territory of Krumovgrad Municipality, people breed cattle, sheep and goats, mainly for milk and meat. Despite this, there are no commercial live-stock farms in the Municipality and virtually all cattle are raised in small private farms and produce is mainly for personal, non-commercial use. Baseline consultations found that it was common for every household to have at least two cows, however households with larger herds tended to be located to the west of Ada Tepe, where livestock rearing is predominant rather than tobacco growing, as discussed earlier. Cattle and sheep roam freely, sometimes accompanied by a shepherd or cattle herder, however baseline consultations found that this was rare. The grazing lands are

privately owned or municipality owned. Results from the survey show that it was accepted practice for livestock to move freely across grazing areas without permits or permission from land owners. Production in this sector is low due to lack of milk processing equipment and quality control assurance that deprives producers of the realization of their production and of obtaining subsidies. Furthermore baseline consultations found that households were unable to get buyers to buy their livestock and milk because road conditions and access to households was poor. This was cited by many stakeholders, predominantly in the mine site hamlets to the west of Ada Tepe. Nevertheless, 39% of the surveyed households try to sell some of their production (milk products, honey, meat) or livestock. According to Municipality data, the number of livestock steadily decreased between 2005 and 2011. The household survey (2014) has established that 48% of the surveyed households raise livestock with 31% owning cattle, 28% poultry and 8% sheep (See Figure 9-5 below).

Figure 9-5: Types of livestock raised by surveyed households (DPM HHS, 2014)



Other Marketable Crops

Based on statistical data from Krumovgrad's municipality, about 865 acres support herb plantations: white marjoram, lemon balm and rose hips. Orchards/apples, pears and cherries/cover 562 acres and vineyards - 270 acres. 823 acres of land were indicated as areas planted with other perennials in the development plan of Krumovgrad. Vegetable growing is poorly represented with only 44 people registered as vegetable producers. The main crop is tomatoes (83% of the surveyed households) followed by potatoes and peppers with 71 % and 69 %, respectively (see Figure 9-6 and Figure 9-7 below) and least crop growing – alfalfa (1%), nuts (2%), and carrots (4%). The same practices in crop growing with some small variations are observed for all villages (DPM HHS, 2014).

Figure 9-6: Types of vegetable crops grown by surveyed households (DPM HHS, 2014)

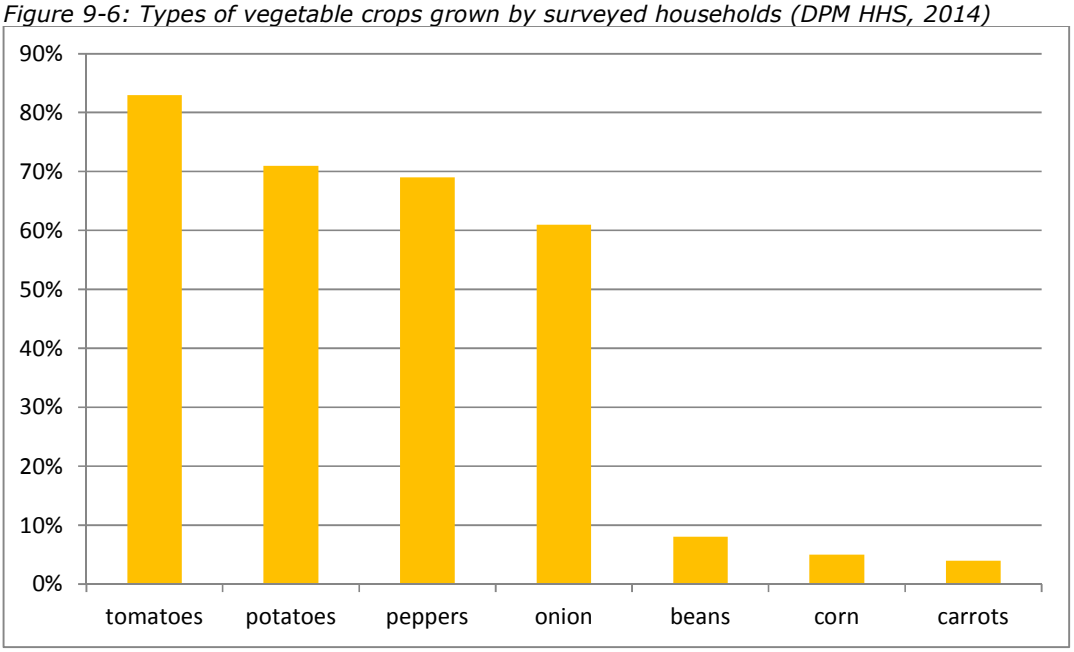
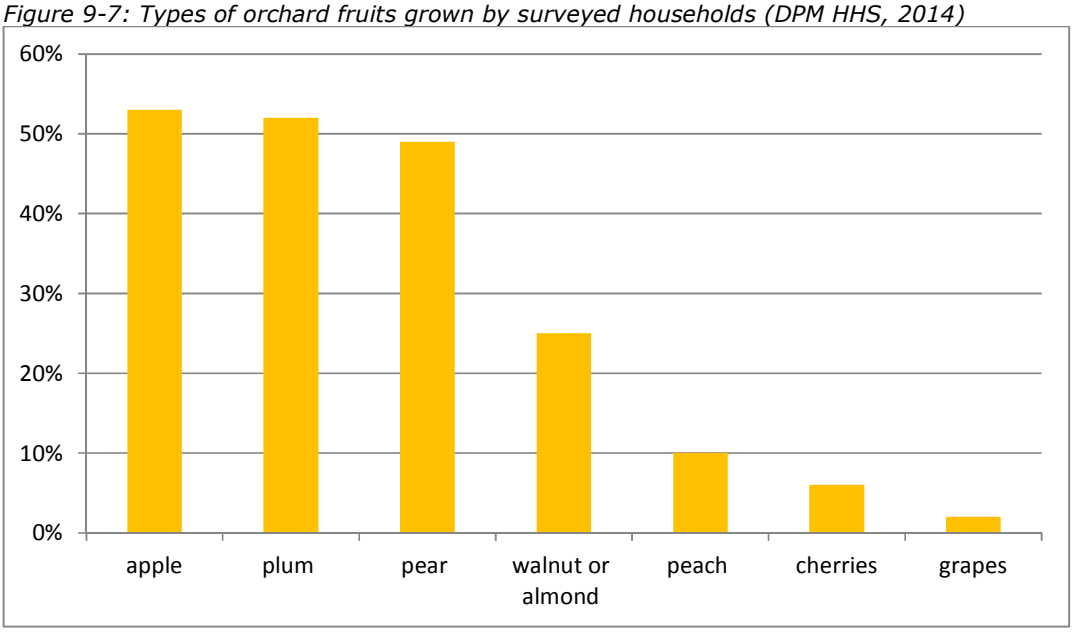


Figure 9-7: Types of orchard fruits grown by surveyed households (DPM HHS, 2014)

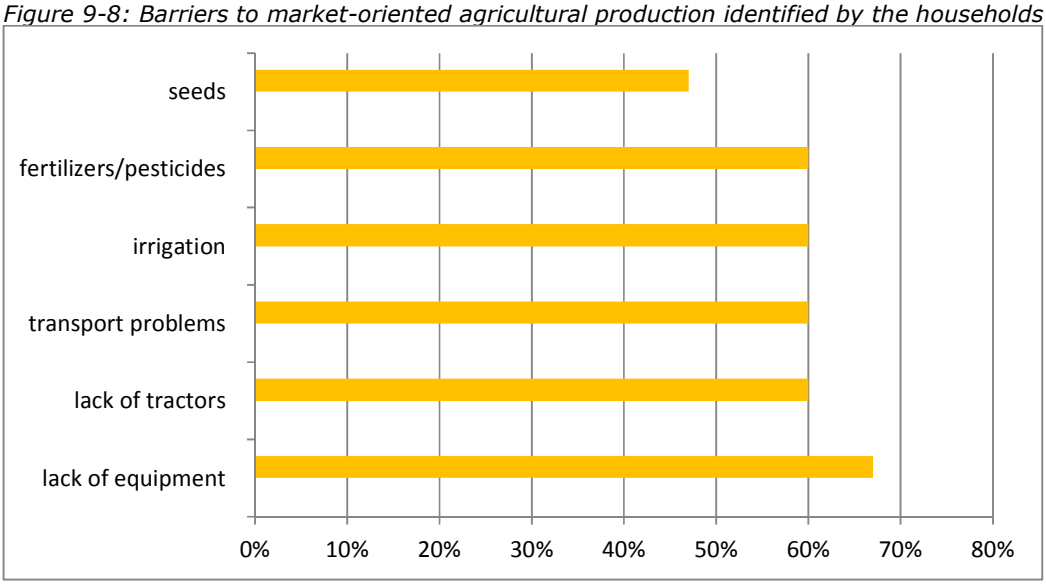


Subsistence Farming

Practically all crops grown, excluding tobacco (described in the previous section), are for household consumption and do not reach the market, thus, constituting a form of subsistence agriculture. Why this may be so is illustrated by the household survey responses related to the main barriers to marketing produce – including lack of equipment, irrigation

and seeds/pesticides (See Figure 9-8 below). This reflects an underlying cause – lack of business planning skills and access to finance for starting a profitable smallholder business.

Figure 9-8: Barriers to market-oriented agricultural production identified by the households



9.2.3 Tourism

The MDP observes that tourism in the municipality is not significantly practiced and forms a minor part of the municipality revenue. According to data from the National Statistical Institute in 2012, the municipality provided two accommodation establishments with a capacity of 52 beds. Overnight stays for 2012 numbered 19 032, which is 60% less compared to 2011 (MDP, 2014).

As stated in Section 7, the natural surroundings of Krumovgrad remain unique and offer potential for tourism development. This is coupled with the attractions offered by historic and especially archaeological sites in the area. Nevertheless, as stated by some interviewed stakeholder respondents "tourists are rare" (AMEC, 2014) and does not represent a significant livelihood source – the MDP lists only 5 guest houses on the territory of the municipality, which are maintained by local households as family businesses. This situation is logical as the municipality is not well established among regional and international tour destinations and routes. The MDP states several important barriers to successful tourism development, including lack of investment interest and lack of sufficiently developed infrastructure and adequate promotional activities. The plan also outlines measures to support tourism as a potentially significant driver of economic development in the 2014-2020 period, with a leading role for rural and ecological tourism – which also has the greatest potential to be developed by local family-owned businesses and provide livelihoods in the smaller settlements of the municipality (MDP, 2014).

Table 9-3: Tourism accommodation capacity, based on accommodation facility owner statements (DPM Accommodation Survey, 2014)

Accommodation	**Number**
Beds	233
Rooms	98
Apartments	16
Hotels and guest houses	6

According to the accommodation survey (DPM Accommodation survey, 2014), there is a capacity 233 beds, understanding that the survey did not comprehensively engage with all accommodation owners, only those who showed interest. There are 3 hotels in Krumovgrad – hotel "Divna" (38 persons), hotel "ViA" (52 persons) and hotel "Arhida" (110 persons). The hotels provide cable TV, electric heating (air conditioning) and wireless Internet access. Additionally there are several guest houses and apartments for rent that are furnished, equipped and ready to use, with total accommodation capacity of 33 persons. The guest house "Enigma" offers a swimming pool.

In addition to this accommodation, Krumovgrad also offers other family/single occupancy options in the form of rental apartments. Residential buildings owned by natural or legal persons can accommodate another 141 people. However, these additional accommodation options are currently non-furnished and not ready-to-use, although the owners express readiness to furnish and equip them (DPM Accomodation survey, 2014).

Ecotourism

As already stated in Section 7.6, the hunting reserve "Studen Kladenec" is partially located in Krumovgrad municipality, offering two hunting lodges, with 8 beds each and serving traditional local dishes made from organic products produced in the area. The reserve organizes fishing parties for carp, white fish, perch, bleak, etc (see also 8.5 Natural Resource-Based Livelihoods – Hunting). Within the hunting reserve the Nature reserve "Valchi Dol" (774.7 ha) is located. It has an international reputation for mammals (wolf, fallow deer, etc), eagles and the griffon vulture. In the village close to the nature reserve a Nature protection centre is situated that offers to the visitors two eco trails for observation of vultures and accessing the natural sites "Shaitan" gorge and "Abrazievi kladentsi".

The so called "green center" in Avren village is located in the center of the village and is suitable for access for people with disabilities. It provides educational programs in the field of environmental protection, training camps in nature for children and young people and can accommodate visitors for recreation and tourism (MDP, 2014).

9.2.4 Service Sector

As is typical for rural regions of Bulgaria, agriculture, food processing industry and tourism are supplemented by various local services, provided by family-owned or micro/small enterprises such as car repair shops, barbershops, convenience stores, restaurants and pubs.

In Bulgaria there is no centralized register or statistics about such service-oriented small businesses, and corporate registers only cover certain traders and companies, who may be registered at a different location. Nevertheless, incomplete information exists for small businesses in Krumovgrad Municipality, which are related to food preparation, distribution and sale. The Bulgarian Agency for Food Safety (BAFS) via its district Food Safety Agency (DFSA) of Kardzhali, maintains a registry of such business enterprises. As the agency was founded in 2011 the available data provide information about the businesses established since that time. The data are also limited as the registry consists of information about established businesses, but does not clarify which of them currently operate (BAFS, 2014).

According to the BAFS there are 35 fast food restaurants opened in the AoI settlements, 33 of which are registered in Krumovgrad, 1 in Izgrev and 1 in the village of Rogach. There are two categories for retail shops: one of them is shops selling packaged food, 45 of which were established in the AoI settlements, and retail shops selling packaged and fresh food (including meat), 4 of which were established in Krumovgrad. In the period 2011-2014 5 restaurants were established in Krumovgrad and 26 pubs and cafés in the whole AoI (24 in Krumovgrad, 1 in Zvanarka and 1 in Rogach). For the same period In Krumovgrad 14 confectionery and pastry shops were also established in the town of Krumovgrad for the same period. A total of 7 movable food stands have been registered in the AoI settlements in the 2011-2014 period, 6 of which are in Krumovgrad and 1 in Edrino village (BAFS, 2014).

9.3 Income & Expenditure

Income

Annual income for an average Bulgarian household from all sources has been estimated at BGN 12 086 for 2013, and as BGN 5 094 on a per capita basis, which constitutes an almost twofold increase in nominal terms for the 10-year period since 2004 (NSI Income and Expenses, 2014). Of this aggregate household income about 53% comes from salaries and wages and about 25.5% from retirees pensions with other sources of income such as rent and interest earnings constituting much smaller fractions – see Table 9-4 below.

Table 9-4: Annual household income on national level per household and per capita level, per income source for 2013 (NSI Income and Expenses, 2014)

Type of income source	Annual Household Income BGN	Annual Per Income Per Capita BGN	Proportion of Total Income %
Salaries and wages	6 067	2 557	53.1
Pensions	2 915	1 229	25.5
Other earnings	438	185	3.8
Entrepreneurship	650	274	5.7
Property income	124	52	1.1
Unemployment benefits	76	32	0.7
Family allowances	85	36	0.7
Other social benefits	180	76	1.6
Household plot	183	77	1.6
Property sale	76	32	0.7
Miscellaneous	628	265	5.5
Interest income	365	154	NA*
Loans and credits	292	123	NA*
Loans repaid	8	3	NA*

*Note: Last rows left empty due to NSI methodology of allotting loan income.

The last available NSI data indicates that the average salary in the district of Kardzhali was 522 BGN in 2010 (NSI Income and Expenses, 2014). According to the 2011 KC2 socio-economic study salaries for people working in the private sector in Krumovgrad are about 15-25% lower than salaries for comparable jobs in the district center Kardzhali, at levels below 300 BGN during 2010. Also, unemployment is lower reaching 35% while the levels are about 10% in the district centre for the same period.

The 2014 data from the AoI settlements in the HHS indicate a mean income of 4 602 BGN per household annually or 384 BGN per household per month (143 BGN income per capita). The median household monthly income is BGN 417 indicating a relatively uniform income distribution (DPM HHS, 2014). Overall, these are very low levels, even for Bulgarian national standards (see above), underscoring the poverty of the region. Such low incomes also explain the predisposition of many of the households with subsistence farming's non-cash contributions (meat, milk, eggs, fruit and vegetables).

Disaggregated data set out below in Table 9-5 below indicate that pensions form the main income source for both men and women, in the HHS sample which, corroborates earlier findings that the Municipality has a predominantly ageing population. This figure is proportionately higher than the second highest source of income for the sample which is reliance on a wage derived from formal employment. Understanding that the sample size has more men than women and therefore the gender disaggregation cannot be considered reliably representative, in the survey marginally more men (13%) rely on a wage as an income compared to women. The third highest source of income across the sample indicate

that state subsidies are a main source of income for both men and women. Again understanding the high unemployment rates and the lack of formal employment opportunities within the study area this is not unexpected. The results indicate that few people rely on hunting and fishing as a source of income and the survey reveals that these activities are only carried out by men. Baseline consultations found that mushroom picking and wild herb picking was carried out by both men and women and to a large extent for household consumption, however Table 9-5 indicate that a small proportion of men and women rely on these activities as a source of income and from this data it indicates that the activity is principally carried out by men. Remittances sent from household members working abroad and elsewhere in the country also form a main source of income, and of interest more for women than men. The sample results illustrate that people in the study area do not rely on savings as a source of income, with only 1 respondee stating they relied on savings as a source of income, which would indicate households within the study area's financial vulnerability.

Table 9-5: Main income sources- gender disaggregated data, HH survey, 2014

Main income source	**Total**	**Gender**	
		Men	**Women**
Respondents	***396***	***248***	***148***
Salaries/ Wages	159	85	74
	40%	34%	50%
Livestock breeding	99	77	22
	25%	31%	15%
Growing tobacco	121	86	35
	31%	35%	24%
Growing vegetables (for commercial purposes)	7	2	5
	2%	1%	3%
Honey production	15	14	1
	4%	6%	1%
Mushroom picking	11	10	1
	3%	4%	1%
Herb picking	26	19	7
	7%	8%	5%
Hunting	3	3	-
	1%	1%	-
Fishing	9	9	-
	2%	4%	-
Remittances*	43	20	23
	11%	8%	16%
Pensions	231	138	93
	58%	56%	63%
State support/ subsidies	123	82	41
	31%	33%	28%
Entrepreneurship	4	2	2

	1%	1%	1%
Fruit tree growing (for commercial purposes)	1	1	-
	*	*	-
Savings	1	1	-
	*	*	-
No answer	1	1	-
	*	*	-

*In accordance with the HHS questionnaire methodology this category includes both local family assistance and remittances from abroad

A disaggregation of income per settlement (see Table 9-6 below) is also revealing, as it shows that some of the AoI villages (namely Skalak, Guliya, Kuklitsa and Malko Kamenyane) receive very little wage income, compared to residents of the town of Krumovgrad, while tobacco growing and other agricultural livelihood income, together with social support and family remittances is a much more important income source in the smaller settlements.

To gain amore in depth understanding of each settlement in the Aoi the data in Table 9-6 below has been used to create a profile of each village and where appropriate refers to data presented earlier in the document.

Krumovgrad, in comparison with the villages in the AoI has the second highest number of people receiving a formal salary as well the second highest number of people receiving pensions. This is in line with other characteristics presented in the baseline. Krumovgrad has the highest concentration of population, with the majority of the economic activities taking place, apart from agricultural activities. The age distribution of Krumovgrad as discussed earlier indicates that there is an almost parity in age distribution of people of working age 18-59 and people of retirement age 60 – 70 +. The gender balance of Krumovgrad indicates that there are slightly more women to men and of interest baseline consultations found that some stakeholder's views were that the job opportunities available in the Municipality were more geared towards women. Krumovgrad has the fewest number of people receiving social support, which is possibly due to the availability of employment opportunities.

With regards to Izgrev, a suburb of Krumovgrad and the location of the Municipal hospital, the town has the highest number of respondees receiving a wage in comparison with other settlements in the AoI. With regards to the population there are slightly more people of working age 18-59 than there are people of pensionable age. Despite this the number of people receiving a pension is comparatively high in Izgrev, but lower than other AoI settlements as set out in the table below. Of interest Izgrev holds the highest number of residents with disabilities in the sample, however the number of people receiving social support as indicated in Table 9-6 is comparatively low. The number of people receiving a wage from agricultural activities such as tobacco growing and animal husbandry are low. The former is surprising considering its proximity to the river Krumovitza and the irrigation potential. However the number of people receiving an income from the production of

vegetables is the highest in the sample and this is possibly why there is less tobacco production, with farmers preferring to grow vegetables, possibly due to better financial gains. However stakeholder consultations found that there was concern amongst agricultural producers that their ability to market goods was poor due to infrastructure and transportation means. Izgrev, like other villages in the Aoi have a number of residents who receive remittances from family members.

With regards to Ovchari Village and it's cluster of hamlets is not densely populated with the majority of its inhabitants living in Varhushka, Table 9-6 illustrates that of the sample most of the residents remain dependent on a pension for an income. Of the population only 30% are over the age of 60 - 70+, therefore it would indicate that the people of working age are engaging in agricultural activities to derive an income, as the table shows such activities are tobacco production, animal husbandry and vegetable production. Of interest, 4 people derive an income from fishing and hunting, which is a small amount however in most of the other villages across the sample people do not perform this activity at all as a source of income.

Dazhdovnik, of which 40% of the population are of pensionable age, like the other villages in the Aoi, most of the inhabitants income source is derived from a pension. However this is followed by a relatively high number of people who receive a formal salary, which is surprising considering its rural location. The data in Table 9-6 indicates that residents prefer to perform animal husbandry over tobacco production, as a means of an income. The village has the second highest number of residents comparatively across the villages in the Aoi, receiving remittances. This was corroborated during the baseline consultations with stakeholders saying that a large number of family members worked overseas or in other places in the country. There is a high number of people receiving social support, which may indicate high unemployment levels especially as 40 % of the population is of working age.

Edrino is a village near to Krumovgrad, and similar to the other villages, the majority of the sample receive a pension, however closely followed by people receiving a salaried income source, possibly due to the town's proximity to Krumovgrad. Approximately 28% of the population of Edrino are of pensionable age, leaving the majority of the population of working age. Baseline consultations found that a substantial number of residents of Edrino were engaged in tobacco production, this is evidenced in Table 9-6 below as well. The number of residents who receive an income from tobacco in Edrino is the second highest across the villages in the sample. The fifth highest means of income in Edrino is receipt of social support, with approximately 35% of the population of working age this could be related to those registered unemployed. The number of people receiving remittances is the lowest of all the villages, which is contrary to findings from the baseline consultations, which found that a high number of household members in Edrino worked overseas.

Malko Kamenyane is a rural village, of substantial distance from Krumovgrad and only accessible along a poorly maintained dirt road. The main source of income in this village is from animal husbandry and although the village is in close proximity to a tributary of the Krumovitza, those deriving an income from tobacco growing amongst the sample appears

relatively low as shown in the table below. This is possibly due to the rough terrain and soil characteristics which have a heavy presence of stones as observed during the baseline consultations. Over 40 % of the population is of pensionable wage, as such the number of people in the village sample receiving a pension as an income source is the third highest across the surveyed villages. Honey production as an income source is relatively high and comparatively across the other villages in the survey it is the fourth highest.

Kuklista Village, like Malko Kamenyane is a rural cluster of hamlets, to access them the road follows the proposed haul road. The age profile of the village has only 20% of the population of pensionable age, and this is reflected in the numbers of people in the sample receiving a pension, which is low. Indeed, It is the lowest of all the communities in the survey. 50% of the population are of working age, however due to the rural location, there are few employment opportunities thus the village has the highest number of people comparatively across all the villages who receive social support. Nevertheless, the village is highly dependent on agricultural production as a source of income, mainly tobacco production and animal husbandry. In fact compared with the other villages in the survey, Kuklista is the village which appears to depend most on agricultural production. Furthermore there is the highest number of people across all the villages who depend on honey production as a source of income as well as the highest number of people gathering herbs and mushrooms amongst the surveyed villages.

Skalak consists of a cluster of hamlets, which are the closest to the proposed development. The age profile of the village shows that over 50% of the population are of pensionable age, as such this is illustrated in the table below with pensions being the highest source of income for the majority of the village inhabitants. People also have a heavy reliance on agricultural production as a source of income, the main being animal husbandry, followed by tobacco and honey production. Of all the villages in the survey Skalak has the second highest number of people generating an income from gathering mushrooms and herbs. Of interest Skalak has the highest number of respondees who depend on remittances sent from family members across all the villages surveyed.

Guliya's age profile indicates that over 30% of the population are of pensionable age and this is evidenced in the table below which shows that pensions are the second highest source of income amongst the sample respondents. However animal husbandary is the highest source of income, with a smaller proportion of people performing tobacco growing. This is possibly due to the rough terrain and the distance from a source of irrigation. Guliya has a high number of people receiving social support, again this may be attributable to the rural location and the absence of formal employment opportunities, indeed only 12 people in the sample had a wage based income.

The main source of income for most in Zvanarka is from pensions, with over 45% of the population of pensionable age. Compared to the other villages it has the highest number of people who rely on a pension as a source of income across all the villages. The table below indicates that animal husbandry is the second highest source of income and a comparatively

small number of the sample carryout tobacco production. As Zvanarka is relatively easily accessible, a number of people (20) have formal employment and receive a salary, in fact a proportion more than those who carryout tobacco production (16).

Rogach village, is located to the East of the proposed project. Of all the villages in the survey it has the third highest amount of people who depend on pensions as a source of income and within the village it is the main source of income for most of the respondees. This is followed by animal husbandry, and thirdly by a considerably less amount of people depending on tobacco production as a source of income. However a sizeable number of people rely on honey production and fishing as a source of income. In fact the number of people who fish for a source of income is the highest across all the villages in the sample. This may be due to the fact that Rogach is relatively close to a tributary, which feeds in to the River Krumovitza down stream.

Table 9-6: Stated Main sources of income per households per settlement (DPM HHS, 2014)

Stated Proportion of households receiving significant income from this source % / **Type of income source**	Krumovgrad	Izgrev quarter	Ovchari village	Dazhdovnik village	Edrino village	Malko Kamenyane village	Kuklitsa village	Skalak village	Guliya village	Zvanarka village	Rogach village
Salaries and Wages	52	69	41	41	45	16	13	9	12	20	25
Pensions	76	54	49	71	46	47	30	73	56	77	75
Tobacco production	3	32	30	12	50	37	74	36	28	16	38
Social support	9	25	24	41	39	58	83	27	52	16	13
Animal husbandry	1	8	22	41	16	63	70	45	60	27	63
Remittances*	10	14	14	18	6	0	13	27	12	9	13
Honey production	0	0	0	0	0	11	39	18	4	0	13
Vegetables production	0	6	3	0	1	0	0	0	0	2	0
Gathering mushrooms and herbs	0	0	0	0	0	0	39	9	4	0	0
Hunting	0	0	1	0	0	0	1	0	0	0	1
Fishing	0	0	3	0	0	0	4	0	0	0	13

*In accordance with the HHS questionnaire methodology this category includes both local family assistance and remittances from abroad

The observed temporal trends in cash income by the HHS indicate a stagnant or even deteriorating situation, 27% of the survey participants indicate a decrease in their cash income during the previous year, while another 57% state no change of household cash income (DPM HHS, 2014). This is a telling sign of the financial difficulties felt by households at local and national level, due to the slow recovery from the economic crisis, described in Section 9.1.

The stakeholder consultation interviewees also voiced the conclusions of the survey - that a large share of the population in the municipality depends on the pensions, which vary

between 120 and 250 BGN. As there is high unemployment and low levels of education there are few opportunities to increase the household incomes of the municipality or the district households. This is one of the primary reasons for the migration of the population, especially of that part of the population working abroad (AMEC, 2014). Furthermore it illustrates people's dependence on agricultural activities as a source of income which renders them vulnerable to any natural or induced changes in the environmental conditions of the area.

Expenditures

The HHS results provide a breakdown of expenditures for the AoI target group of households. The proportion of household expenditures, compared to national level statistics (NSI Household Budgets, 2014) is illustrated in Table 9-7 below. It must be noted that the HHS expenditure categories do not overlap completely with NSI expenditure categories, and where possible NSI data have been disaggregated or the discrepancy has been explained.

Table 9-7: Breakdown of household expenditure for AoI households compared to average national household expenditures (NSI Household Budgets, 2014 and DPM HHS, 2014)

Category of expenditure	**Share in a small consumer basket for average AoI household %**	**Share in a small consumer basket for average national household %**
Food	**53.5%**	**31.4%***
Electricity	**8.3%**	**4.7%**
Transport	6.5%	6.6%
Health care and medication	5.7%	5.6%
Telephone, Internet, paid TV	5.4%	4.6%
Water	4.7%	NA**
Education	4.2%	3.5%
Clothing	3.9%	2.8%
Agricultural supplies	3.7%	NA
Loan costs	1.6%	NA
Leisure and recreation	1.5%	4.5%
Rent	0.4%	NA**
Wood, coal, gas	0.4%	NA**

*National food figure excludes alcohol and soft beverages, which amount to 4% of total expenses. **National level data have one figure for rent, fuels, electricity and water, amounting to 14.2% of total household expenses. With the exception of electricity, the other expenses cannot be disaggregated.

As indicated by their modest income level, the biggest AoI household expenditures cover the main living necessities – food (53.5%), electricity (8.3%) and health care expenses (5.7%). Leisure and recreation activities amount to only 1.5% of cash expenditures, and rent constitutes just 0.4% - illustrating the trend that a high number of households within the sample are privately owned.. Whilst the highest expenditure for households is on food, each household in the Municipality invariably has a plot next to the house in which they grow fruit and vegetables, nevertheless this does not seem to detract from the amount spent on food

products. Expenditure on goods such as education-related expenses[9] and medications, as well as services with fixed national charges such as telephone, Internet and TV appears to be similar, across each category with proportion differences resulting from the differences in income levels outlined previously.

The differences in median expenditures level regarding several types of consumer basket expenses, such as electricity, telephone, Internet and paid TV, and clothing (no median data available for recreation), tell of the slight economic divide between the urban population of Krumovgrad and Izgrev on one hand and the inhabitants of the smaller AoI villages on the other – See Table 9-8 below. The difference is not more pronounced because the HHS respondents supplied expenditure feedback in pre-determined bins limiting data resolution.

There were no such demonstrated differences in other expense items which may be expected to differ between urban and rural settings, such as rent or water (due to irrigating crops). Also median expenditures for education in some villages were higher than for the town of Krumovgrad, which may signify either higher attention to education or a higher level of associated expenses, such as board and supplies.

Table 9-8: Breakdown of household expenditure per AoI settlements (DPM HHS, 2014)

Median monthly expense for AoI household BGN / **Category of expenditure (monthly)**	**Krumovgrad**	**Izgrev quarter**	Ovchari village	Dazhdovnik village	Edrino village	Malko Kamenyane village	Kuklitsa village	Skalak village	Guliya village	Zvanarka village	Rogach village
Electricity	**50**	**50**	30	20	30	30	30	30	30	30	30
Telephone, Internet, paid TV	**30**	**40**	25	15	30	25	22	20	20	22	20
Clothing	**30**	**50**	30	20	20	40	30	15	30	15	10

With regard to "strategically important" expenses such as education and mortgage/loans, it is important to note also that households in different income brackets are allowed to allocate a different proportion of their expenditures - See Table 9-9 . This difference does not seem significant for the lower surveyed income brackets but appears to become significant for both items above BGN 12000, taking into consideration that only a couple of the surveyed households fall within this high bracket. It is probably the case that if households had incomes approaching those of the major cities in Bulgaria – up to several times higher than the surveyed brackets – much more money would be allocated to such expenditures.

[9] While tuition in the state school system in Bulgaria is free, there are various school-related expenses such as textbooks, supplies and school lunches, which in most cases are not fully covered. The households may also list other expenses such as private lessons for schoolchildren in this category.

Table 9-9: Breakdown of AoI household expenditure per income bracket (DPM HHS, 2014)

Annual household income bracket / Category of expenditure (annual)	Below BGN 3600	BGN 3601-4801	BGN 4801-7200	BGN 7201-12000	Above BGN 12000
Education	600	500	660	1000	1900
Mortgage/Loans	2400	NA*	2700	1700	6000

***no interviewed households responded to the question**

Poverty

As evident from the income and expenditures trends shown above, poverty in the area is widespread, and this is confirmed by a comparison with national poverty indicators. Based on the median national incomes (NSI Income and Expenses, 2014), the official poverty line in Bulgaria for 2014 constitutes a monthly income below BGN 251 per person, which has increased by BGN 10 since 2013 when it had been BGN 241 BGN. It is therefore evident that a large proportion of households surveyed, in particular the households within the more rural villages such as Kuklista, Malko Kamenyane, Skalak, Guliya and Rogach, could be considered as vulnerable due to their lack of formal income sources and their dependence on agricultural derived income sources.

Savings & Credit

Only approximately 12% of the target group AoI households declare they have savings. This is not surprising within the context of low incomes and a subsistence existence of many households. These savings are generally held in bank deposits (80%), while 15% are invested in real estate and only 2% are invested in business (DPM HHS, 2014). The fact that more of the saved income is not reinvested reflects an unwillingness of the local population to take risks with regard to their small savings – a contributing factor to stagnant entrepreneurship and SME development.

A very clear, almost linear, trend is seen with regard to the availability of savings for households of different income brackets – see Table 9-10. Despite small sample sizes, it also appears that income levels may affect where savings are invested – households in the relatively higher income brackets make more risky decisions, such as investing their savings in property or business.

Table 9-10: Breakdown of AoI household expenditure per income bracket (DPM HHS, 2014)

Annual household income bracket	Below BGN 3600	BGN 3601-4801	BGN 4801-7200	BGN 7201-12000	Above BGN 12000
% of households with savings	1%	5%	11%	25%	40%
% of households who keep savings in bank	100%	100%	80%	75%	83%
% of households who invest savings in property	0%	0%	20%	25%	0%
% of households who invest savings in business	0%	0%	0%	0%	17%

A more encouraging finding from the household survey is the low level of indebtedness – just 5% of the households currently have loans. As shown above loan servicing costs amount to only 1.6% of household expenditures. This trend also has a downside, however, as it indicates low use of credit by households, who could otherwise be able to borrow funds for productive use – e.g. for obtaining education, making housing energy efficiency improvements or to buy a car to improve access and be able to transport produce to market or to buy agricultural implements and increase productivity. Three of the four main purposes of loans identified by the households are namely for education, housing improvements and vehicle purchase, while credit is also used to cover health care costs (DPM HHS, 2014).

10.0 Health

10.1 National Overview

The Bulgarian health system is dominated by the state, as it is regulated by the Ministry of Health and the National Health Insurance Fund (NHIF) – the sole guarantor and provider of free health care services, including state paid medications and hospital interventions. The state health care depends on patients following clinical pathways of diagnosis and treatment starting with general practitioners (GP), specialist doctors, prescriptions, operations and other interventions. The NHIF finances hospitals, clinics and other health care providers, based on mandatory health insurance coverage meaning individuals make a monthly contribution directly from their salaries and a system of clinical pathways. The primary care medications sold in the Bulgarian pharmacy chains have regulated prices with the NHIF financing the least costly or standard medications for a list of serious conditions. Health care providers and medication providers, thus, have to sign contracts with the NHIF for the provision of services and treatments under the clinical pathways. Licensed physicians can also sign contracts to work with the NHIF (most private practitioners do) or work through the health care institutions in which they are employed. Many doctors work both in a state or municipal health care institutions and also in a separate personal practice, as the pay for state and municipal doctors is quite low.

The hospital system itself is divided into state hospitals, municipal hospitals (such as the Krumovgrad municipal hospital), polyclinics and dispensary care centres. Municipal hospitals often serve as regional hospitals and there are conflicts between municipal authorities regarding their financing and upkeep. In rural regions municipal hospitals are insufficient and there is a big problem with staffing as there are few qualified medical personnel – doctors and nurses. Diagnostics and treatment facilities and equipment are also generally outdated.

There is a parallel system of private health institutions – hospitals and clinics, which is gaining popularity. It is also permitted to work under state fund compensation for most of the clinical pathways, but generally charges are higher, which are paid in part or in full by the patients. Private hospitals and cities mostly cover the big cities of Bulgaria as there is no market for them in rural regions. Rural inhabitants travel to big cities to receive better care.

There is a separate network of centres for emergency medical care – ambulance services, coordinating with the 112 emergency number and dispatching qualified emergency care teams. 28 such centres exist in the 28 district centres, including Kardzhali district. In theory they should be covering all settlements but they mostly cover the district and municipal centres, but here are problems with personnel and equipment shortages and controversy due to ambulance service delays and patient conflicts. There is practically no medical airlifting service. In 2014, the first medical ambulance helicopter in Bulgaria was leased by the government hospital in Sofia as a demonstration project. Some private ambulance services also exist, but these are focused in Sofia and in the major sea and ski resort areas.

10.2 Local Health Infrastructure

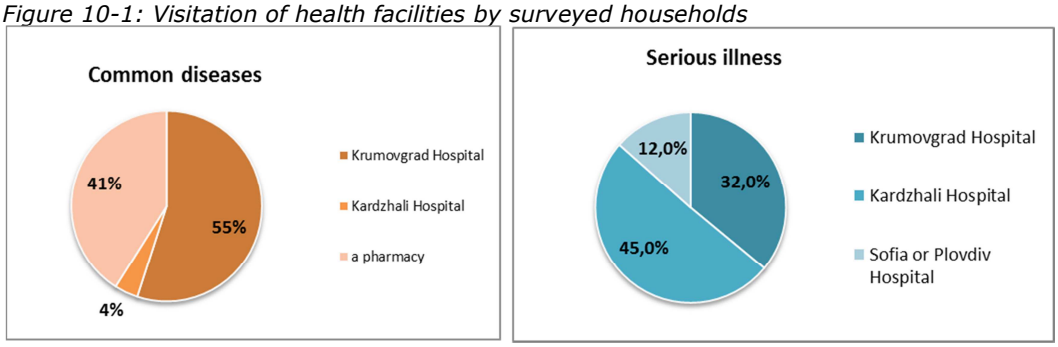
The MDP states that the main hospital for active treatment is "Zhivot" hospital in Krumovgrad with capacity of 60 beds. Operating divisions are internal medicine, paediatrics, obstetrics and genecology however there is no surgery department. In 2010, the Hospital "Zhivot" surgical ward was closed due to not covering the requirements set by the Ministry of Health of normative 1 000 surgeries per year. The MDP also notes there is no mental health care centre in the municipality, which is typical of rural regions where this type of care is lacking (MDP, 2014).

In addition to the hospital in Krumovgrad municipality there are 23 medical practitioners, including 6 general practitioner practices, 9 dentist practices and 7 medical specialists. There are 3 vacant positions for general practitioners in the town of Krumovgrad and 10 vacant positions in the villages in the municipality (MDP, 2014)

The district centre in Kardzhali has two general hospitals – "Atanas Davovski" and "Kardzhali", which together have a capacity of 400 beds, expandable to 600 beds in cases of epidemics. The "Atanas Davovski" hospital accepts about 1400 patients monthly, providing about 34 000 medical examinations annually. Approximately 15% of these patients have no health coverage (Kardzhali Municipality, 2014). In addition to the general hospital, the city of Kardzhali also has a state psychiatric hospital, which has established a leading position for psychiatric screening and treatment for Southern Bulgaria. The psychiatric hospital has a capacity of 320 beds (Kardzhali Municipality, 2014). Also, in the city of Kardzhali there are two hospice centers and a care and rehabilitation center for children with chronic illnesses (Kardzhali Municipality, 2014).

Interview respondents from baseline consultations indicated that the Krumovgrad hospital is in poor condition, there is a lack of specialists and equipment – which is a nationwide problem in the health care system. Respondents say that the Kardzahali Regional Hospital offers better facilities (AMEC,2014). Yet, more than half of the HHS respondents indicate that they would generally use the Krumovgrad hospital for common conditions, while for more serious conditions the Kardzahali hospital is visited more frequently – See below in Figure 10-1. It appears that the general satisfaction with the medical care in the hospital of Krumovgrad is good, falling not too far behind with the respondents' evaluation of the services in Kardzhali hospital. As is typical in Bulgaria, many people state that they obtain medications from the pharmacies directly without consulting doctors to save visitation costs and time (DPM HHS, 2014),

Figure 10-1: Visitation of health facilities by surveyed households



Krumovgrad municipality estimates that approximately 45% of the total population of the municipality don't have health insurance (MDP, 2014). According to the HHS, approximately 72% of the HHS respondents claim they have a valid health insurance – which is deducted monthly for salaries or paid in person by self-employed persons (pensioners don't pay). Approximately 12% admit to not having valid health insurance and 8% are not sure.

The difference between municipal estimates and HHS self-reported figures may reveal unwillingness of respondents to admit don't have health insurance or unawareness about this fact. The fact confirms a national trend for uninsured people to be mostly located in the villages among - mostly working age Turkish and Roma people (DPM HHS, 2012). The higher concentration of uninsured people in rural regions affects hospitals financially, as they have to shoulder some of the costs for providing care for them.

10.3 Health profile of the population

As already stated in the demographics chapter Krumovgrad Municipality has a negative population growth (- 3.1‰ for 2012). While the main factor for that is the migration of the population the municipality has one of the lowest mortality rates in Bulgaria (13.9‰ for 2012). The child mortality rate is steadily decreasing – it was 7.7‰ for the Kardzhali District in 2012. The majority of child deaths are in the perinatal period and with a smaller number in the neonatal period. According to the MDP there are no deaths in the post-neonatal period in the district (MDP 2014)[10].

Krumovgrad municipality notes that the health status of the municipal population in villages is worse than the health status of Krumovgrad town residents due to socio-economic factors, such as living conditions and social status. The lack of general practitioners in villages already stated in Section 10.2, as well as difficult access to ambulance services are also contributing factors. Some of the especially vulnerable rural residents who do not receive adequate medical care include elderly people living alone, large families, families without income and people with disabilities (MDP, 2014).

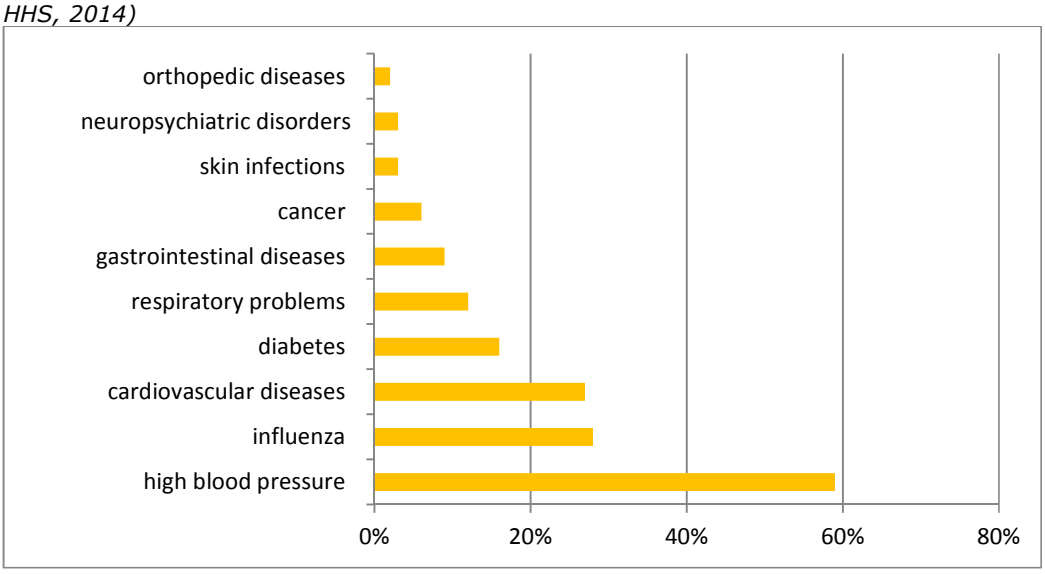
[10] Baseline consultations interviewees report that health statistics are regularly collected (AMEC, 2014)

Despite difficulties in accessing healthcare services, according to the health survey reviewed by the EIA assessment in the 2008-2010, Kardzhali district is characterized by better health statistics than the national average, in particular regarding oncological, respiratory and cardiovascular diseases, and the mortality associated with them. Mortality from oncological and cardiovascular diseases for Kardzhali district is reportedly significantly lower than the national average (Dango, 2010). For Krumovgrad municipality, the EIA report notes that the disease morbidity is similar to the Kardzhali district, with the exception of respiratory diseases where Krumovgrad municipality performs better (Dango, 2010).

The EIA report also states that the district has lower than national rates of mortality due to oncological and cardio-vascular diseases. The majority of oncological diseases are related to female breast diseases and diseases of the digestive and respiratory systems The EIA report also includes data from 2004-2008 health screenings about the types of disease found during monitoring among school children that show complete absence or very low levels of virtually all types of chronic diseases in Krumovgrad Municipality, with the exception of child obesity (Dango, 2010).

The household survey somewhat corroborate this trend – according to the respondents during the last 2 years only 16% of the households have experienced a serious illness. The biggest problems include hypertension, serious flu, heart disease, diabetes and respiratory problems with a relatively low incidence of cancers and psychological conditions – see Figure 10-2 below (DPM SSH, 2014).

Figure 10-2: Health issues and illnesses during the last 2 years reported by households (DPM HHS, 2014)



During stakeholder consultations, local residents reported no serious health issues, apart from such resulting from the hard work (problems with bones) and kidney problems allegedly related to the lime in the water. Some of them report that they use home remedies for prevention and curing simple illnesses – i.e. using herbs, tea, honey, etc. Interviewees

familiar with the issue stated that there are almost no STDs and HIV testing is non-existent. There is occasional testing for syphilis, especially for patients who travel abroad, but there are problems with funding such tests (AMEC, 2014).

No public information about contagious diseases or STDs is available for Krumovgrad Municipality. In general Bulgaria's HIV infection rate is among the lowest in the world, with only 113 new HIV cases having been discovered in 2013 from 115 000 tested persons - the total monitored HIV-positive population in Bulgaria as of June 30, 2014 is 922 persons. Most of the new infections are concentrated in Sofia and no new infections discovered in Kardzhali district during 2013 (MH, 2014). With regard to other STD's, the NSI statistics for Kardzhali district note 10 syphilis cases registered in 2013 (NSI Health, 2014).

With regard to other significant contagious diseases, NSI data for 2012 indicate that in Kardzhali district there were 119 cases of viral hepatitis, 74 cases of chickenpox, 24 cases of scarlet fever, 8 cases of viral meningitis and 1 case of dysentery (NSI Health, 2014). STDs and contagious diseases with the exception of flu were not included in the HHS responses (DPM SSH, 2014).

There may be hidden public health risks in local people lifestyles - according to a survey conducted by the National Center of Public Health and Analyses (NCPHA, 2014) 46.7% of the children in Kardzhali District are passive smokers.

11.0 Cultural Heritage

11.1 National Overview

In terms of archaeological heritage, Bulgaria is considered to be one of the richest countries in Europe, frequently compared to Italy and Greece. The favourable climatic and geographical conditions have facilitated the development of ancient civilizations in Bulgarian lands, including Thracian, Ancient Greeks, Romans, Slavs, Bulgars, Varangians and Ostrogoths.

Thracian artefacts[11] of tombs, golden treasures and ritual vessels have survived to the present days. The ancient Bulgars left traces of their heritage in music and early architecture. More significant treasures dating from ancient times are: Rogozene silver treasure (108 phials, 54 pitchers, 3 cups and 165 silver items); Panagyurishte treasure (9 vessels with gold decorations); Vulchitrun treasure (13 items for ritual purposes); Lukovit treasure; Letnishkoto treasure; Mezzek; Sveshtari; Kazanlak.

Bulgarian Middle Ages saw the arrival of Barbarian peoples from East. During the Middle Ages, Bulgaria was the centre of Slavic Europe with considerable cultural influence over the

[11] Detailed information for the sites of national importance mentioned in this section can be obtained from the registers of the National Institute of Immovable Cultural Heritage (NIICH, 2014).

Eastern Orthodox Slavic world. In the late 14th century, the Bulgarian state was in revival and the culture flourished. The capitals Pliska, Preslav and Tarnovo are hubs for monumental sculpture and architecture. Cultural heritage from that period includes the following: Boyana Church; Assen's Fortress; Madara Horseman.

In the Late Middle Ages there was a significant development of church painting influenced by Italian Renaissance art. However, at this period also a great amount of cultural heritage were destroyed, among which the major artistic center of Tarnovgrad. The Late middle ages left monuments, such as Boboshevo Monastery; Church St. Peter and Paul (Tarnovo); Rozhen Monastery and Church St. St. Tiron and Theodore Stratilat.

The Bulgarian Revival during the 18th-19th century is known for the flourishing of residential architecture/carvers, painters, stonecutters, leaving cultural heritage as: Rila Monastery; House Argyros Kuyumdjioglu (now Ethnographic Museum in Plovdiv); the inn of Hadji Nikoli (Turnovo); Kableshkova house (Koprivshtitza); the Bridge of Yantra River (near Byala).

Bulgaria has nine UNESCO World Heritage Sites and fourteen additional properties are on the tentative List (UNESCO, 2014).

- the early medieval large rock relief carved on the Madara Plateau - Madara Rider;
- two Thracian tombs (one in Sveshtari, dating back to 3rd century BC and one in Kazanlak, part of a large Thracian necropolis);
- three monuments of medieval Bulgarian culture (Rila monastery, one of the most significant cultural, historical and architectural monuments, the Boyana church and the Rock-hewn Churches of Ivanovo);
- the ancient city of Nessebur- one of the most important centres of seaborne trade in the Black Sea, situated on a peninsula;
- two natural sites: Sreburna nature reserve and Pirin National park.

Intangible cultural heritage

In addition to the material historic and cultural heritage, Bulgaria also boasts a significant intangible cultural heritage. The First Bulgarian Empire adopted and developed the Cyrillic script, which originated from the Preslav and Ohrid Literary Schools. Cyrillic script contributed to a flourishing literary and art tradition, based on Bulgarian and Slavic cultures and orthodox Christianity. The Bulgarian National Revival under Ottoman Rule of the 18th and 19th centuries, followed by the consolidation of the cultural influences of the Bulgarian nation state century in the 20th century, significantly enriched Bulgarian literature, art and music, giving rise to world renowned authors such as Ivan Vazov and composers such as Pancho Vladigerov.

The strongest influences in theirs and other works come from the national folklore – songs and dances unique in each Bulgarian region (typically based on asymmetrical rhythms), fine woodworking, metalworking and textile crafts, cuisine and rich oral tradition. Thracian rituals

such as "Zarezan", "Kukeri" and "Martenitza" are kept alive in modern Bulgarian culture. The folklore and traditions mostly survive today, and are especially well preserved and valued in rural and mountainous areas. The diverse ethnic mix of Bulgaria additionally enriches local traditions by adding significant and valuable contributions from the Turkish, Roma, Bulgarian-Muslim, Armenian, Jewish, Sarakatsani and other locally established ethnic and/or religious communities.

11.2 Local Tangible Cultural Heritage

Cultural and historical heritage

Remains of Thracian sanctuaries, temples and medieval fortresses, cemeteries and tombstones have been discovered in the Krumovgrad region. Furthermore, the region abounds in impressive natural sights. Krumovgrad Municipality has 28 archaeological monuments of local importance and 3 archaeological monuments of national importance: 1) necropolis of dolmens in Chernichevo village, in Hambar dere area - 7 dolmens dated to end of II – beginning of I millennium BC. Four of the dolmens are well preserved; 2) medieval rock monastery "Dupka na pop Martin" in Oreshari village. The tomb was carved in hard rocks above the right bank of Arda river and 3) rock tomb in the village of Rogach, dated to I mill. BC. Twelve architectural sights and building monuments of local importance are listed.

The medieval temples in Krumovgrad were built of stone cemented with plaster. In churches in Chernichevo and Egrek villages, traces of wall paintings were found.

Remains of medieval fortresses found in the region date to the Second Bulgarian Kingdom. A hoard of 40 silver coins of Bulgarian Tsar Ivan Alexander and his son Michael, were discovered in the "Gradishteto" near the village of Chernichevo. Other remains of medieval fortresses can be found in the villages of Surnak, Zlatolist and Kran.

Other architectural sights are the Thracian rock niches carved into the cliffs along the Arda river and Krumovitsa river. Thracian rock niches are located near the Thracian fortresses or towns. Probably small pottery urns or burial goods were placed into the rock niches. Based on the found fragments, the pottery can be dated from 9-5 BCE. Rock niches can be seen near villages of Vransko, Potochnitsa and Strandjevo, at the left slope of the "Top dere" and at the high rock called "Ak Kaya".

Several Thracian sanctuaries associated with cults worshiped by the Thracians were discovered near the villages of Dzhanka, Ovchari, Kovil, Perunika, Pelin, Sbor, Limets and Maluk Devisil. The Sanctuary "Sabazius" - the sun god, is located in the "Tsarkvishteto" area above the village of Limets. The Thracian sanctuary at "Ada Tepe" is considered the most important of any of the known sites in the Eastern Rhodopes providing information on Thracian religious practices, customs, economic activities and relations.

A bronze statue of Apollo and a Thracian horseman as well as antique coins have been discovered during excavations in the past. In the area surrounding the present-day town of

Krumovgrad, archeologists have found remains of a fortress and a church, dating to the Middle Ages, while in the surroundings of the village of Plevun were found remains of Thracian settlements and a Thracian sanctuary. The sanctuary is situated close to the peak of St. Iliya and held a ritual plate with a Thracian horseman depicted on it. In Ada Tepe area near Krumovgrad, reportedly the most ancient gold mine in Europe has been found, which functioned during XV-VIII century BC.

Rock tombs were discovered in the villages Dzhanka, Rogatch, Strandjevo and Potochnitsa. Rock tombs are unique Thracian monuments that were cut in the lower part of a large rock.

In Kovil village a necropolis with 9 rock tombs with altars were found. Medieval cemeteries were discovered in Krumovgrad, Zvanarka, Ovchari, Gorna Kula, Strandjevo, Studen Kladenetz, Stari Chal, Potochnitsa, Ribino, Golyama chinka, Avren, Egrek, Ruchey, Limets, Devisilovo, Chernichevo, Gorni Yurutsi Strazhets.

In the villages of Zvanarka, Ovchari, Avren and Lulichka Thracian burial mounds were found.

Over 2000 exhibits, arranged in a museum collection at the Regional Historical Museum has in different sections - archaeology, new history and ethnography, testify of the rich cultural heritage of Krumovgrad region. The museum has been open since 1965, and is housed in a building itself declared for a cultural monument. The Museum works in accordance with Article 26 of the Bulgarian Cultural Protection Act, as a state owned regional museum. The Museum is housed in a former Muslim religious school, which was constructed around the turn of the 20th century with voluntary donations from the local Turkish population (Pressa Daily, 2013).

In Table 11-1 below a summary list of cultural heritage sites in Krumovgrad area is provided.

Table 11-1: Cultural heritage sites in Krumovgrad municipality (NTG project, 2009-2014; Feasibility study of the Iron Curtain Trail on the Balkans, 2011)

Archaeological sites and objects
• Ruins of ancient Thracian sanctuaries and necropolis • Ruins of castles and Roman bridge (near village of Egrek) • rock tomb and medieval fortress near the village of Rogach • Thracian tomb mound in the area Yurtata and Staroto turbe near the village of Avren • The medieval necropolis also near the village of Avren • Necropolis of dolmens, medieval fortress in the areas Asara and Gradishteto near by the village of Chernichevo in Hambar dere area • Thracian rock niches near the villages of Vransko and Dzhanka near by the Oreshari protected site • Prehistoric Thracian antique village at Asar area near the village of Kovil • Thracian necropolis near the village of Kovil
Architecture monuments (bridges, monuments, buildings)
• Museum of archaeology, contemporary history and ethnography • 2 tobacco storehouses in the city of Krumovgrad • 5 watermills in the village of Egrek – operating between November and March • Roman bridge and mill in the village of Egrek • 15 monuments of solders, cultural and political activists
Spiritual places (rituals and customs)
• The church of "St. Iliya (Elijah) the prophet" near the village of Avren • The church St. Atanasyi and the medieval church in the village of Chernichevo • Mosque in the village of Chal - the oldest mosque in Eastern Rhodopes • Cult place in Ak kaya area near the village of Kovil

In addition to these listed sites, it must be noted that stakeholder interview respondents (AMEC, 2014) were particularly protective of the following local sites: public water taps, Islamic graveyards and the Said Baba Tomb - see Map of specific sites in Annex 3. The cultural significance and the embodiment of public water taps as sensitive locations have been described earlier in the report. In addition, graveyards are universally important sensitive locations. Turkish Muslim cemeteries are especially respected due to the culturally ingrained reverence of the Turkish community to familial and community ancestors. Traditionally Muslims (both men and women) visit graveyards once or twice a year but particularly during the Festival of sacrifice also known as Bayram. Women and men are prohibited from visiting a graveyard together during funeral ceremonies. Baseline consultations found that the two Islamic graveyards in close proximity to the proposed haul road indicate that one of the graveyards is still in use. Figure 11-1 below. The graveyard is considered sacred and has a fence around it. to illustrate it's presence. The second grave yard next to the proposed haul road is not in usage any more and consists of several head stones strewn randomly by the side of the existing road. Consultations with the Mufti of Krumovgrad revealed that Islamic graveyards could not be moved on any account. Furthermore, there have been several recent high profile acts of vandalism to Turkish cemeteries in Bulgaria during recent years, so it is understandable that the Turkish inhabitants are protective of these sites. The Said baba tomb consists of a mausoleum and a

fenced sacrifice area adjoining the tomb. The Mufti of Krumovgrad revealed that yearly there was a celebration to commemorate Said Baba, an ancient influential Islamic figure.

Figure 11-1: Abandoned Islamic graveyard near to Pobeda (Left). Pobeda Islamic graveyard which remains in use (Right).

11.3 Summary of Ada Tepe Excavations

During 2011 and 2012 there was an extensive archaeological research and excavation of the ancient gold mine site at Ada Tepe, involving leading archaeological experts from Bulgaria and Germany and in coordination with the national institute of Archaeology and the Ministry of Culture. The archaeological research implemented interdisciplinary scientific methods applied for the first time in Bulgaria, which gives the project unique scientific value. Furthermore the principle objective was to enable a comprehensive archaeological study of the ancient gold mine in full compliance with the regulations of Bulgaria's cultural heritage (Popov, 2012).

The archaeological research provides evidence for shallow underground gold mining at the south-western and eastern slopes of Ada Tepe. The team established that the ancient miners used stone and wooden tools and fire to gradually cut the rock and take out the gold bearing quartz veins (Popov, 2012). On the top of the hill the researchers found traces of mining settlement – ancient houses and supporting facilities. The high gold grades found indicate that ancient miners could have used smelting to produce gold as an end product. The archaeological remains on the western and the northern slopes of Ada Tepe gave information of the methods and technology of the ore extraction. Small dumps of finely crushed rock were found by researchers, evidencing the process of sorting and grinding of the mined ore. Gold mining at Ada Tepe started in the late Bronze Age (15th c. BC). Currently, the Ada Tepe mining site is considered the earliest known gold mine in Europe.

The archaeological researchers at Ada Tepe found several ceramic pottery vessels from the late Bronze Age (15th-11th c. BC) and the early Iron Age (10^{th}-8^{th} c. BC). Clay stamps for pottery decoration dated from the early Iron Age.

11.4 Local Intangible Cultural Heritage

The cultural heritage to local people is estimated to be with a of high importance (AMEC Ecosystem Services Baseline and Impact Assessment Report, 2014). Traditions are kept alive through local music and dance festivals. These are practiced at and coordinated by local cultural institutions such as the "Hristo Botev" Community Hall. Other community halls in the Krumovgrad municipality also account for the various cultural activities throughout the year.

Annually in May in the city of Krumovgrad a folk festival is held where local Rhodopes, Thracian and Turkish songs and dances are performed. Each year in early October the traditional local fair "Seit baba" is organized. The other most significant cultural event is the traditional cultural festival "Krumovgrad lights" which is held annually and has been running for the past 25 years. The festival lasts for three days and gathers artists from different artistic fields (Krumovgrad Municipality Events, 2014).

Some cultural events and activities are restricted to particular ethnic and religious communities. Such are the rites and customs, associated with religious holidays - for example the "Kurban Bairam" (Greater Eid), practiced by Muslim Turks and Muslim Roma. It is common practice for major religious holidays of different faiths, such as Easter, Saint George's Day and Ramadan, to be celebrated together by the entire community, as a way to strengthen bonds and exchange goodwill.

12.0 Conclusions

The following general conclusions can be made in accordance with the findings regarding the individual baseline aspects studied and described in the previous sections of the report:

- **Demography** – the AoI has an unfavourable demographic structure, with ageing and declining population, although these processes are not as extreme as in other regions in Bulgaria. The population is ethnically and culturally diverse and social cohesion is good. Full social integration of some vulnerable groups, such as the Roma minority and underemployed youth remains a problem;
- **Infrastructure** – engineering infrastructure is relatively well developed but as a general rule needs maintenance and rehabilitation – especially with regard to the road network and water and sanitation. The municipality can attract significant financial assistance from the EU operational programmes in the 2014-2020 period;
- **Natural resources and land use** – land use in the AoI has a formal nature with good management over forestry and cropland resources with possible exceptions of poaching and illegal logging. More than half of the local households regularly utilize the resources provided by the local ecosystems such as wild fruit gathering, firewood collection, hunting, fishing, beekeeping, etc. People use the local natural resources mostly for their own needs and do not consider them as an important income source;
- **Education –** the educational opportunities offered within the AoI settlements are mostly limited to the national school system, with prospective students needing to pursue higher education in major Bulgarian cities. There is sufficient access to schools in the area and an adequate and improving level of formal educational attainment. However, nationwide problems with acquiring functional skills persist. Adult retraining and qualification is assisted by a local training centre in Krumovgrad;
- **Economic Context & Livelihoods** – The local economic context is not dominated by any single business sector or activity, with light industry, agriculture, tourism and services generating local income and employment. Of these tourism probably has the biggest development potential. Tobacco growing and livestock raising are the leading agricultural livelihoods. Local incomes are modest, with low levels of savings and spending. Households supplement their financial incomes with subsistence farming;
- **Health** – There are no recurrent or socially significant health problems affecting the local population. The biggest local health issue is the lack of medical practitioners;
- **Cultural heritage** – The AoI and Krumovgrad municipality in general share a rich cultural heritage, living traditions and impressive archaeological and natural sites;

In conclusion, the conducted socio-economic household survey reveals that approximately 68% of the surveyed residents state that Krumovgrad municipality is "a good place to live", with only 9% disagreeing, and a total of 63% would not consider relocation to another place.

Such results betray an underlying optimism and endurance of the local population, which can be tapped and relied on to spur local economic growth, attract new business and employment opportunities, and ultimately improve livelihoods. There is no evident single

measure or path that could bring about such a change – but a significant and strategic investment in new employment, education and skills training for growth sectors, coupled with providing quality public services, can support local aspirations for future development.

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Annex 1: Socio economic survey package

Krumovgrad Gold Project
Socio Economic Household Survey
July 2014

(The raw data from survey is available on DPM Krumovgrad office. To obtain a copy of the information please contact with Lubomir Marchev on e-mail:

Lubomir.Marchev@dundeeprecious.com

or land phone number +359 3641 6802

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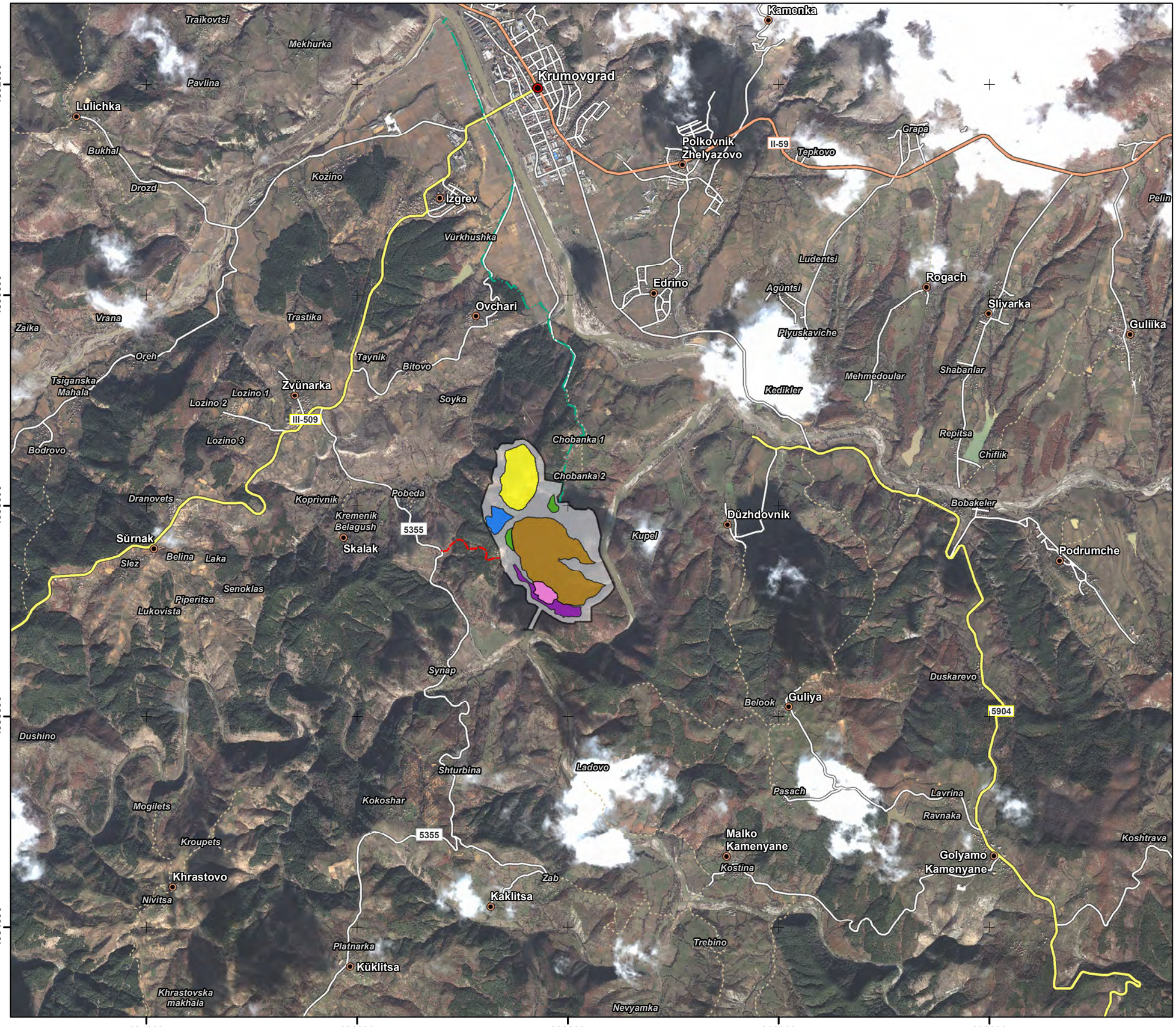
Section 1

Map of villages and hamlets



Legend

- Town
- Village (Mahala system Administrative 'lead' village)
- *Hamlet*
- Mine Operations Footprint
- Ada Tepe Mine Open Pit
- Reservoir
- Stockpile
- ROM Ore Pad
- Integrated Mine Waste Facility
- Process plant
- Discharge Pipeline
- New Access Road
- Primary Road
- Secondary Road
- Tertiary Road
- Track

Orientation

N
W E
S

0 200 400 600 800 1,000
Meters

Coordinate System: WGS 1984 UTM Zone 35N
Projection: Transverse Mercator
Datum: WGS 1984

Client

Dundee Precious Metals,
24 Saedinenie Street,
6900, Krumovgrad, Bulgaria

International House, Dover Place,
Ashford, Kent TN23 1HU, UK

Project

Social Impact Assessment,
Ada Tepe Gold Mining Project, Bulgaria

Title

Project Area of Influence

Map Number	Revision	Scale
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Section 5

Main Findings

Private and Confidential

Socio-economic research in the region of Krumovgrad

July 2014

Analysis of the main results

Prepared for:

DPM Krumovgrad

Prepared by:

Prof. Zhivko Georgiev

Methodology

➢ Quantitative survey

- **Scope** ⇨ The survey covers part of the settlements in the Municipality of Krumovgrad, and in particular the town of Krumovgrad (including Izgrev Quarter) and the villages Edrino, Dazhdovnik, Ovchari, Zvanarka, Malko Kamenyane, Kaklitsa, Skalak, Guliya
- **Sample** ⇨ The effective sample includes 396 households with 1154 members at the time of the survey
- **Method of registration** ⇨ Direct (face-to-face) semi-standardized interview according to residence with the household head or another member of the household aged 18+ years
- **Period of implementation** ⇨ 17-21 July 2014

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I. Socio-demographic profile of the target group

* The sociological survey on the territory of the Municipality of Krumovgrad covers the following settlements: the town of Krumovgrad, Izgrev Quarter and the villages Ovchari, Dazhdovnik, Edrino, Malko Kamenyane, Kaklitsa, Skalak, Guliya, Zvanarka, Rogach.

Effective interviews were made in 396 households, which consisted at the time of the survey of 1154 persons distributed in

- 14% single-person households
- 34% two-person households
- 19% three-person households
- 19% four-person households
- 14% five- or more person households.

The average household size is 2.9 persons.

* The gender structure of the target group is

I. Socio-demographic profile of the target group

- male - 51%
- female - 49%

The age distribution is as follows

- people under working age (17 years) - 14%
- people of working age (18-59 years) - 53%
- people over working age - 33%

Of the people aged over 18 years (979 people)

- 3% are students
- 19% work on a permanent labour contract
- 4% work on temporary labour contract
- 16% are farmers
- 4% are seasonally employed in Bulgaria

I. Socio-demographic profile of the target group

- 3% are seasonally employed abroad
- 18% are unemployed or housewives
- 33% are retired (including 2% persons with disabilities).

The aggregate of people aged 18+ has the following educational structure

- tertiary - 7%
- secondary general - 19.4%
- secondary technical - 18.5%
- lower secondary - 48.7%
- primary - 2.8%
- no education - 3.6%

The educational structure of the population in working age, which forms the labour supply on the local labour market (a total of 599 people), is:

I. Socio-demographic profile of the target group

- tertiary education - 8.3%
- secondary general - 27.4%
- secondary technical - 25.2%
- lower secondary - 37.9%
- primary or no education - 1.2%.

The attention is drawn by the large share of people with lower education (≈39%) - a value, which is 3 higher than the average for the country for this target group.

Of the people aged 18-59 unemployed at the time of the study are 26.4%, and among young people (aged 18-29) - 32%, i.e. every third person.

On the other hand, 42% of the people over the age of 60 are employed, either on some kind of labour contract, or as farmers.

* Of the population aged 18-59, only 5% declare that they have no skills useful on the labour market. The rest of the people have.

I. Socio-demographic profile of the target group

The skills that are most frequently indicated by men are

- agricultural
- driving
- crafting
- mining
- electro-technical

Most frequently indicated by women are

- agricultural
- sewing
- economical
- pedagogical
- crafting
- computer.

I. Socio-demographic profile of the target group

The level of Bulgarian language proficiency (important for the full social integration) among the active population (aged 18-59) is good.

If there is a problem among the aggregate population (5% do not speak Bulgarian at all, and 6% have poor knowledge of the language), it is concentrated among small children who have not attended school yet (aged 4-5 years) and among the older members of the Turkish ethnic community.

* The ethnic structure of the target group (by self-determination) is

- Turkish - 63%
- Bulgarian - 23%
- Roma - 1%.

and 12% are registered as ***'other'***, but they can be identified as Bulgarian Muslims (or Muslims as they most frequently describe themselves).

I. Socio-demographic profile of the target group

* The ethnic structure to a great extent determines also the structure of religious identity.

The majority of people in the target group are

- Muslims - 81%

Followed by

- Eastern Orthodox - 13%
- unbelievers - 6%

II. Income, savings, financial assistance

The essential items that for the income of the surveyed households (according to their statements) are

- pensions stated by - 58% of the households
- salaries/wages - 40%
- social support - 31%
- tobacco growing as a commercial crop - 31%
- animal husbandry - 25%
- remittances from relatives working abroad - 11%
- gathering herbs - 7%
- honey production - 4%
- gathering wild mushrooms - 3%
- growing vegetables as a commercial crop - 2%

II. Income, savings, financial assistance

- fishing - 2%
- hunting - 1%

According to the collected information regarding the annual income for each item, if **(1)** we use the median estimate (the scales are interval) and **(2)** the assumption that non-respondents are a random subsample of those relying on the respective item, we can estimate the contribution of each item to the annual cash income of the average household in the surveyed target group, as follows

- salaries and wages - 29.7%
- pensions - 29.2%
- tobacco production - 19.3%
- social support - 8.4%
- animal husbandry - 5.7%
- remittances from abroad - 5.4%

II. Income, savings, financial assistance

- honey production - 0.4%
- vegetables production - 0.4%
- gathering of mushrooms and herbs - 0.4%
- hunting and fishing - 0.4%
- other - 1.0%

The aggregate income from agricultural production for commercial purposes is 25.8% of all income.

According to these estimates, the average net cash income per target group household is 4602 levs per year, and respectively 384 levs per month.

The declared annual net cash income of the average household in the surveyed target group (in the scale of *Me*-median) is about 5000 levs, i.e. about 417 levs.

The monthly income per capita for such household is 143 levs.

II. Income, savings, financial assistance

Certainly, due to the relatively developed agriculture in the region, it is obvious that the households rely also on significant **non-cash income**, made up of food for natural consumption (meat, milk, eggs, fruit and vegetables).

Nevertheless, only 12% of the surveyed households have savings.

Nearly 80% of the savings are not used for investment purposes, i.e. they are held on deposit in a bank. 15% are invested in real estate and only 2% are invested in business.

The surveyed households are conservative regarding the use of credits/loans. Only 5% of them have loans.

There are four main purposes for using credit/loan:

- for construction/repair of a house
- for covering education related costs
- for covering healthcare costs
- for purchase of a car.

II. Income, savings, financial assistance

The summarized assessment of the dynamics of household income as compared to the previous year is as follows:

- 57% stated 'no change'
- 27% - decreased
- 8% - increased
- 9% could not determine or did not respond

III. Household expenditure

The survey has made an attempt to study the main daily expense items of the household, which in aggregate account for about 90% of the expenditure of Bulgarian households (outside this group remain expenses for special occasions, purchase of household appliances and equipment, household chemicals, cosmetics).

If we have to describe the shares of the average expenditure of a typical household from the target group, the estimates show that **their shares in a small consumer basket of the household are**

- food - 53.5%
- electricity - 8.3%
- transport - 6.5%
- health care and medication - 5.7%
- telephone, Internet, paid TV - 5.4%

III. Household expenditure

- water - 4.7%
- education - 4.2%
- clothing - 3.9%
- agricultural supplies - 3.7%
- loan costs - 1.6%
- leisure and recreation - 1.5%
- rent - 0.4%
- wood, coal, gas - 0.4%

The high share of food expenditure (10% more than the average for the country regarding the studied segment of expenditure), **provided that a considerable part of the households produce themselves certain types of food for their own consumption, is an indirect indicator of the relatively low standard of living of the target group, even compared with its low level in Bulgaria as a whole**.

III. Household expenditure

Certainly, in the last year the households have also made other considerable expenditures (13% of the respondents indicate such).

The more significant of these include

- 4% for purchase of a vehicle
- 4% for health care
- 2% for purchase of immovable property
- 2% for renovation of a house
- 1% for celebration of a significant family event (wedding, prom, etc.).

In their summarized assessment

- 40% state that in comparison to the previous year the expenditures of the household have not changed.

III. Household expenditure

- 7% state that they have decreased
- 52% indicate an increase of their household expenditure.

IV. Land ownership, land use and agriculture

1. Land ownership

Landowners with official ownership deeds are 36.1% of the surveyed households.

1.1. Arable land

31.6% of households own such land.

The total area of the owned arable land is 55.3 ha, i.e. average area of **0.464 ha per household**.

There are no large landowners among the surveyed households. The maximum area of the properties is 3 ha.

All land lots, with single exceptions, are on the territory of the municipality.

It is noteworthy that the majority of respondents have not indicated their own yard in this section.

IV. Land ownership, land use and agriculture

* 79% of owned farmland is located at less than one kilometer from the home, the other part (14%) is located at between 1 and 5 km.

* **88% of the arable land is used and cultivated by the household**.

In another 7% of the cases the land is leased to another household, while in 3% of the cases it is shared with another household.

The respondents state that in 7% of the cases the arable land is not used.

1.2. Pastures

12.9% of households own pastures.

The total area of this type of land property of the target group is 43.4 ha. The average area of pastures per household possessing such is 0.886 ha.

* In 62% of cases the pastures are also located within 1 km, while 88% of the land lots are located within a distance of less than 5 km.

IV. Land ownership, land use and agriculture

In 76% of the cases the pastures are used by the households that own them.

1.3. Forests

Forests are owned, based on documents, by 2% of the surveyed households.

The total area of the forests owned by them is 4.5 ha.

90% of these forests are used by the households.

1.4. Uncultivated lands

Ownership of such land is reported by only 0.8% of the surveyed households.

The total area of these lands is 2.1 ha.

1.5. Summary

According to the survey, the 396 sample households have

IV. Land ownership, land use and agriculture

ownership documents for a total of 105.3 ha land, including

- arable - 52.5%
- pastures - 41.2%
- forests - 4.3%
- uncultivated - 2%.

2. Crop-growing

87% of all surveyed households cultivate some kind of crops or another.

The predominant ones are

- tomatoes - 83% of the households
- potatoes - 71%
- peppers - 69%
- onion - 61%

IV. Land ownership, land use and agriculture

- tobacco - 30%
- apples - 20%
- peaches - 15%
- beans - 8%
- raspberries/strawberries - 6%
- corn - 5%
- carrots - 4%
- nuts - 2%
- grapes - 2%

All other crops amount to 1% or less.

Virtually all food that the households produce is intended for their own consumption and does not reach the market.

Only the tobacco production is 100% market-oriented.

IV. Land ownership, land use and agriculture

The surveyed community of 396 households produces for consumption an average of

- 94 kg peppers
- 59.4 kg potatoes
- 55.6 kg tomatoes
- 30.3 kg apples
- 15.2 kg onion
- 1.7 kg peaches
- 1.3 kg beans

and less than 1 kg of other fruits and vegetables.

The majority of the households grow fruit trees in their yards, including

- 53% apple(s)
- 52% plum
- 49% pear(s)

IV. Land ownership, land use and agriculture

- 25% walnut or almond
- 10% peach
- 6% cherry/ies,

but in the large majority of cases these are 1-2 trees of each kind.

Only 4 households have larger gardens with over 20 trees of the species apple, pear and peach.

In this situation, it is obvious that fruit-growing in private farms remains natural and is off the market.

What are the problems that those 87% of households in the target group are facing, while being involved in one way or another in plant-growing?

15% of them indicated some kind problem and predominant are

- lack of equipment - 67%
- lack of tractors - 60%

IV. Land ownership, land use and agriculture

- transport problems - 60%
- irrigation - 60%
- fertilizers/pesticides - 60%
- seeds - 47%

These types of problems are mostly valid for producers, which are mainly market-oriented.

In the case of the only market-oriented crop, the tobacco, in the production of which are involved 30% of the surveyed households, the breakdown by quantities produced is as follows:

- up to 500 kg - 28% of tobacco producers
- 501-750 kg - 19%
- 751-1000 kg - 33%
- 1001-1500 kg - 13%
- 1501 kg - 7%

The average quantity per household is 840.6 kg.

3. Animal husbandry

48% of all surveyed households breed livestock (in the villages this value is between 54% and 87%).

- 31% of households breed cattle
- 28% breed poultry
- 8% breed sheep
- 5% have a horse or a donkey
- 4% have beehives
- 1% breed pigs
- 1% breed rabbits.

In 66% of the cases cattle-breeders own 1-2 animals.

IV. Land ownership, land use and agriculture

About 20% keep more than 5 animals, and this renders them to a greater extent market-oriented. These are mainly from the villages of **Malko Kamenyane**, **Kaklitsa**, **Skalak** and **Guliya**.

70% of the sheep-owners keep more than 10 animals and this is a prerequisite for market orientation.

Poultry, pigs, rabbits are bred in quantities that cover the needs of the households.

40% of the bee-keepers have more than 10 beehives, which also indicates potential to leave the boundaries of the natural economy.

In 70% of cases the most common animals in the community - cattle and sheep - are left to graze free pasture beyond the confines of pens and farmyards.

The free grazing pastures are located at an average of 1.9 km. Only in 11% of the cases it is located at more than 4 km.

IV. Land ownership, land use and agriculture

Animal products are traded by 39% of the households.

The products are most frequently sold

- through a buyer in Krumovgrad - 59% of the sellers
- to a buyer who comes to the house to buy directly - 54%
- on the market in Krumovgrad - 18%
- traded on exchange basis between neighbors - 8%
- to a wholesale market - 3%

* In the cases where the buyer visits the houses the traded goods are mainly milk or livestock.

* The goods sold on the market in Krumovgrad are mainly milk, honey, livestock, dairy products made at the household (cheese, curd cheese, butter).

* A limited amount of animal products is sold through a buyer in Krumovgrad - meat, milk, honey. The same products are also typically traded on exchange basis between neighbors.

IV. Land ownership, land use and agriculture

4. Agricultural subsidies

32% of surveyed households declare that they receive some type of agricultural subsidies, including

- 28% subsidy from the Agricultural Fund
- 6% from the Ministry of Agriculture
- 2% from EU Funds
- 1% from other governmental and non-governmental organizations.

V. Infrastructure and Housing

1. Water supply

As a matter of fact, 100% of the households use water for drinking and domestic purposes and 91% use it also for agricultural purposes.

* The households are supplied with drinking water mainly (90%) from the water mains system. Another 10% use a well for this purpose, and 6% use a local water source.

Water supply in the villages **Kaklitsa** and **Skalak** is mostly dependent on wells and local sources.

* In the general case, the domestic water is the same as the one used for drinking.
* For irrigation and other agricultural purposes
  - 64% use water from the water mains
  - 28% rely on rainwater harvesting
  - 17% rely on a well

V. Infrastructure and Housing

- 9% rely on pumping from the river
- 4% use bored wells
- 6% use local springs and small dams.

* According to 76% of the interviewed people, the quality of drinking and household water is 'good' and 24% of them state that to one extent or another the quality is 'poor/bad'.

Most dissatisfied with the quality of water are the people in **Izgrev Quarter** (42%) and in the village of **Zvanarka** (37%).

* 8% of households experience difficulties with the water supply (the majority of them in **Zvanarka** - 36%).

The main problems (particularly with the drinking water) are that

- it is expensive
- there are water cuts
- the water is not pure

V. Infrastructure and Housing

2. Sewerage

* Most commonly used is the septic tank - 43% of the households.

Sewerage system is used by 36% of the households, direct discharge into river/land – by 19%, and septic tank regularly disposed of by the Municipality – by 1%.

The sewerage system is typical for **the town of Krumovgrad (including Izgrev Quarter**) and partially for the village of **Ovchari**. In the other villages predominantly used are the septic tanks, and at some villages (**Edrino** - 39%, **Zvanarka** - 41%, **Skalak** - 55%, **Gulia** - 36%) also the direct discharge into river/land.

3. Solid waste

80% of households state that the municipality regularly collects solid waste, but 17% burn them (regularly or occasionally), and the another 17% dispose them close to their home in designated areas.

The latter two practices are predominant in **Malko Kamenyane**, **Kaklitsa**, **Guliya**.

V. Infrastructure and Housing

4. Heating

The local households use mainly wood for heating (97%).

4% use electricity as a main or one of the main sources for heating.

97% buy firewood, but 27% collect the greater part of it in nearby forest areas.

This percentage is highest in the villages of **Kaklitsa** (83%), **Guliya** (64%), **Skalak** (64%) **Malko Kamenyane** (59%).

VI. Health care

In the last 2 years, only 16% of households had no serious illness.

The predominant health issues were

(1)	high blood pressure	in -	59%	of the households
(2)	influenza	-	28%	
(3)	cardiovascular diseases	-	27%	
(4)	diabetes	-	16%	
(5)	respiratory problems	-	12%	
(6)	gastrointestinal diseases	-	9%	
(7)	cancer	-	6%	
(8)	skin infections	-	3%	
(9)	neuropsychiatric disorders	-	3%	
(10)	orthopedic diseases	-	2%	

VI. Health care

* In the case of **common diseases** medical assistance is most often sought at

- the Krumovgrad Hospital - 55%
- a pharmacy - 41%
- the Kardzhali Hospital - 4%

In case of serious illness

- 45% seek help at the Kardzhali Hospital
- 32% at the Krumovgrad Hospital
- 12% at a hospital in Sofia or Plovdiv.

When asked to assess the health care on the scale ranging between '***(1) dissatisfied***' and '***(4) completely satisfied***', the average ratings of the respondents are

- the Krumovgrad Hospital - 3.5
- the Kardzhali Hospital - 3.5
- hospitals visited in Sofia and Plovdiv - 3.9

VI. Health care

- the pharmacy that they usually use - 3.9

* 72% of the respondents firmly declare that they have health insurance.

12% explicitly state that they do not have such. 8% are not sure.

* **The highest relative share of the people that do not have health insurance is in the villages, and these are mainly representatives of so-called active population of the Turkish and the Roma community**.

VII. Transport and communications

* For short distance travels respondents indicate as most widely used means of transport

- personal (owned by the household) car - 59%
- bus - 43%
- bicycle - 4%
- cart - 2%
- other - 3%

* Only 11% of the respondents assess the roads in the municipality as 'good'.

According to 41% they are 'very poor', and 47% assess them as 'poor in places'.

* The access of to telecommunication services is described by the surveyed households as follows:

- 73% have a mobile phone
- 36% have landline phone
- 31% use Internet /Skype, etc./

VII. Transport and communications

Those who do not have access to any of these services are 12% and the vast majority of them are one- or two-person households with members aged over 60 years.

* In general, 39% state that they have Internet access, 38% of them - at home (but 7% of them in another household, living in the same house), and 1% for each of the following: club, community center, school. **Of all 396 respondents, however, only 1 (?) has a mobile Internet access**.

VIII. Cultural and historical heritage, natural landmarks

* The local people consider that the region in which they live cannot boast prominent cultural and historical heritage or exceptional natural landmarks.

For that reason, when asked to name such, 41% find it difficult to identify anything in particular, and another 29% give only general answers of the type *'Eastern Rhodopes'* or simply *'the Rhodope Mountains'*.

Nevertheless, the most significant number of answers were collected for

- *Ada Tepe Area* - 17%
- *Krumovitsa River* - 16%
- *Tyulbe Teke* (religious site) - 4%

The following sites are mentioned in single answers

- *The cave near the village of Ridino*

VIII. Cultural and historical heritage, natural landmarks

- *The evergreen oak near the village of Kandilka*
- *The White Eagle*
- *The rock formations near the village of Dolna Kula*
- *The Ethnographic Museum (village of Batkovtsi)*
- *The Mill (village of Egrek)*
- *Golata Chuka Peak*

and others.

IX. Utilization of natural resources

1. Practices for utilization of the local natural resources

* 54% of all 396 households practice more or less regularly activities for natural resources utilization provided by the local ecosystems

What is the prevalence of these practices?

- 27% of the surveyed households collect herb plants
- 27% breed grazing livestock
- 24% collect wild fruits and vegetables
- 18% collect firewood for heating and cooking
- 15% are fishing
- 15% collect medical plants
- 5% are hunting animals and birds
- 1% collect ingredients for traditional alcohol

IX. Utilization of natural resources

Rarely, other activities are practiced, however with a little importance for the household economy.

Practically all people practicing these activities are using the natural resources for the household needs. In fact, 70% are using the resources only for the household needs, while the other 30% are motivated to sell them as well.

The main mechanism for transforming the natural resource into income on the Krumovgrad's market is by breeding grazing livestock (cattle, sheep) – 14% of the households.

Second, although practiced only by 3% of the households, is the collection and sale of herbs and other medical plants.

IX. Utilization of natural resources

Only 1% have found a way to profit from the sale of wild fruits and vegetables (probably mushrooms are considered here as well).

2. Hunting and fishing

* 5% of the surveyed households are practicing hunting

In these occasions hunting is practiced mostly 2-3 times/month (during the hunting season).

Typically, people travel between 5 and 15 km from their homes for hunting.

There are no particularly preferred areas for the hunting.

Traditionally the preferred animals for hunt are:

- wild boar - 89%
- hare - 72%
- wolf - 61%

IX. Utilization of natural resources

- fox - 50%
- partridge - 17%.

* 15% of the households are with at least one fisherman

Almost all of them fish in **Krumovitsa river** (12% at the dam), and only a few prefer **Arda river** and **Kesebira river**.

Fishing is practiced usually 1-2 times/month, and for 20% - more often.

3. Collecting wild fruits and other plants

This practice is traditional and regular for at least 24% of the households.

Most of them practice it at least 2 times/month during the spring-autumn period.

2/3 collect wild fruits near their homes, while 1/3 travel for not more than 5 km away.

What wild fruits are mostly collected:

IX. Utilization of natural resources

(1) rose hip

(2) cornels

(3) blackberries

(4) walnuts

(5) mushrooms

(6) pears

(7) raspberries.

* **29% of the households collect herbs and medical plants**

In a good season this practice is done 1-2 times/month. The preferred distance away from their homes is not more than 5 km.

What herbs and medicinal plants are mostly collected:

- thyme - 90%

IX. Utilization of natural resources

- wort - 64%
- oregano - 38%
- sumac - 28%
- chamomile - 14%
- yarrow - 12%
- hawthorn - 4%
- minta - 2%
- melissa - 2%.

X. Conclusion – local patriotism

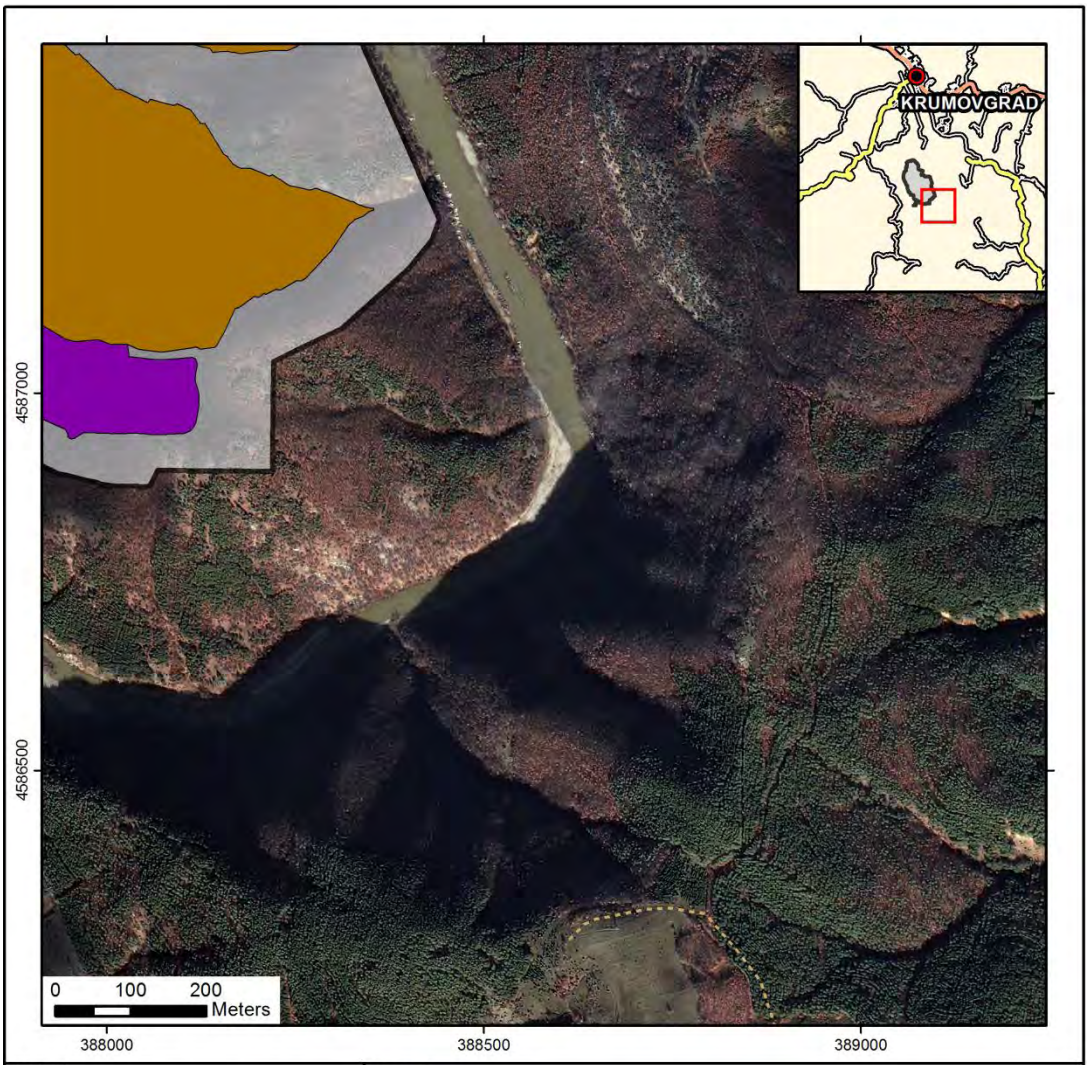
68% of the surveyed think that Krumovgrad Municipality is a good place to live.

For 22% it is ‘partially' good.

For 9% (mostly young people) it is not a good place to live.

* 63% of the surveyed would not consider relocating
- 15% would like to move to another place in Bulgaria
- 12% would like to move to another EU country
- 6% would like to move to a country outside EU (ethnic Turks, perhaps meaning the neighboring Turkey).

Annex 2: GIS Spatial Analysis



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Title	**Communities directly southeast of Project area**
Map Number	7879140150-0014
Revision	0
Date	21/08/2014
Size	A4 Fig.
Drawn	AC
Checked	KB
Approved	MD
Coordinate System	WGS 1984 UTM Zone 35N

Legend

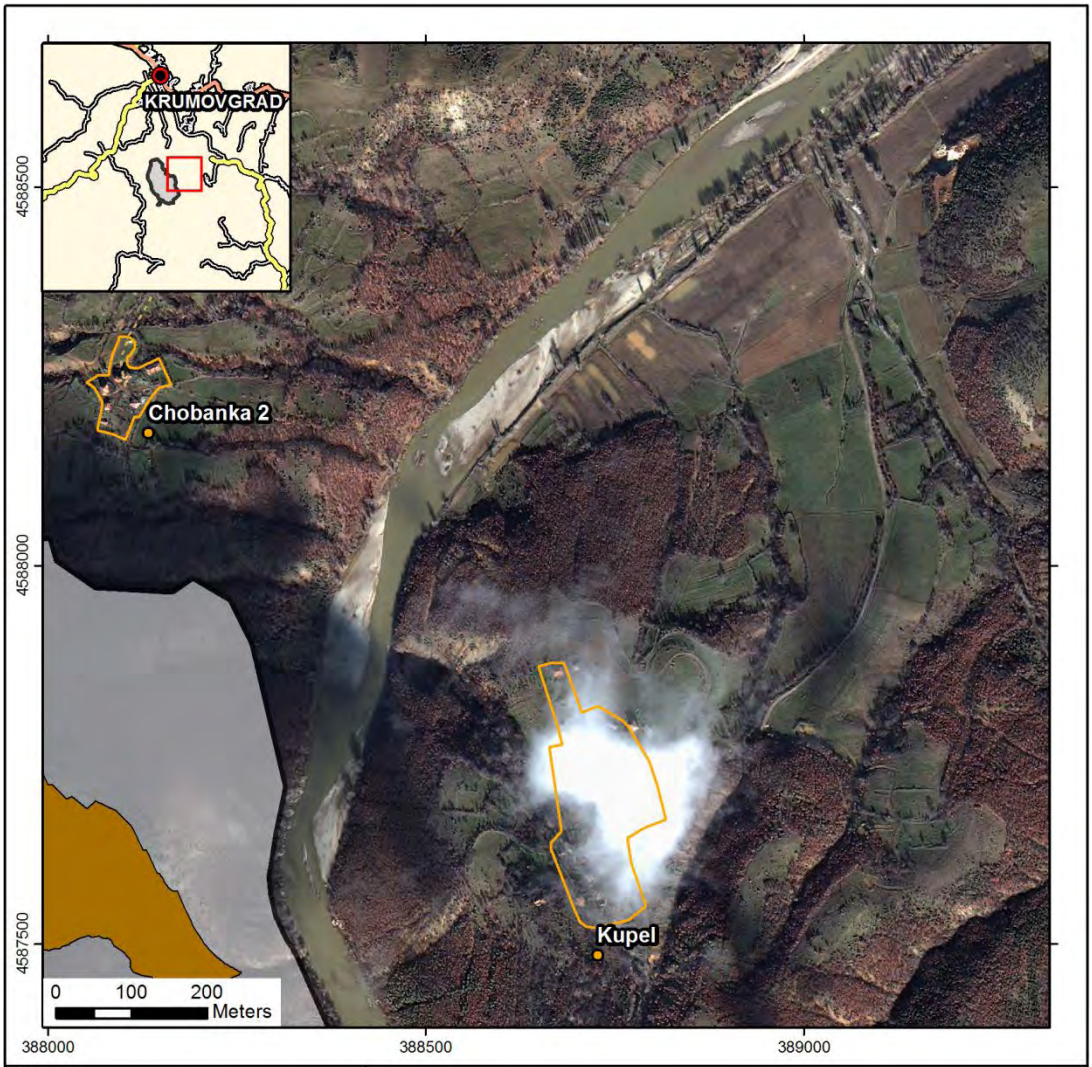
- Ada Tepe Mine Open Pit
- Reservoir
- Stockpile
- Integrated Mine Waste Facility
- Process plant
- ROM Ore Pad
- Discharge Pipeline
- New Access Road
- Mine Operations Footprint
- Village
- Primary Road
- Secondary Road
- Tertiary Road
- Track

N

Client

Dundee Precious Metals, 24 Saedinenie Street, 6900, Krumovgrad, Bulgaria

amec International House, Dover Place, Ashford, Kent, TN23 1HU



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Revision	0
Date	06/08/2014
Size	A4 Fig.
Drawn	AC
Checked	KB
Approved	MD
Coordinate System	WGS 1984 UTM Zone 35N

Legend

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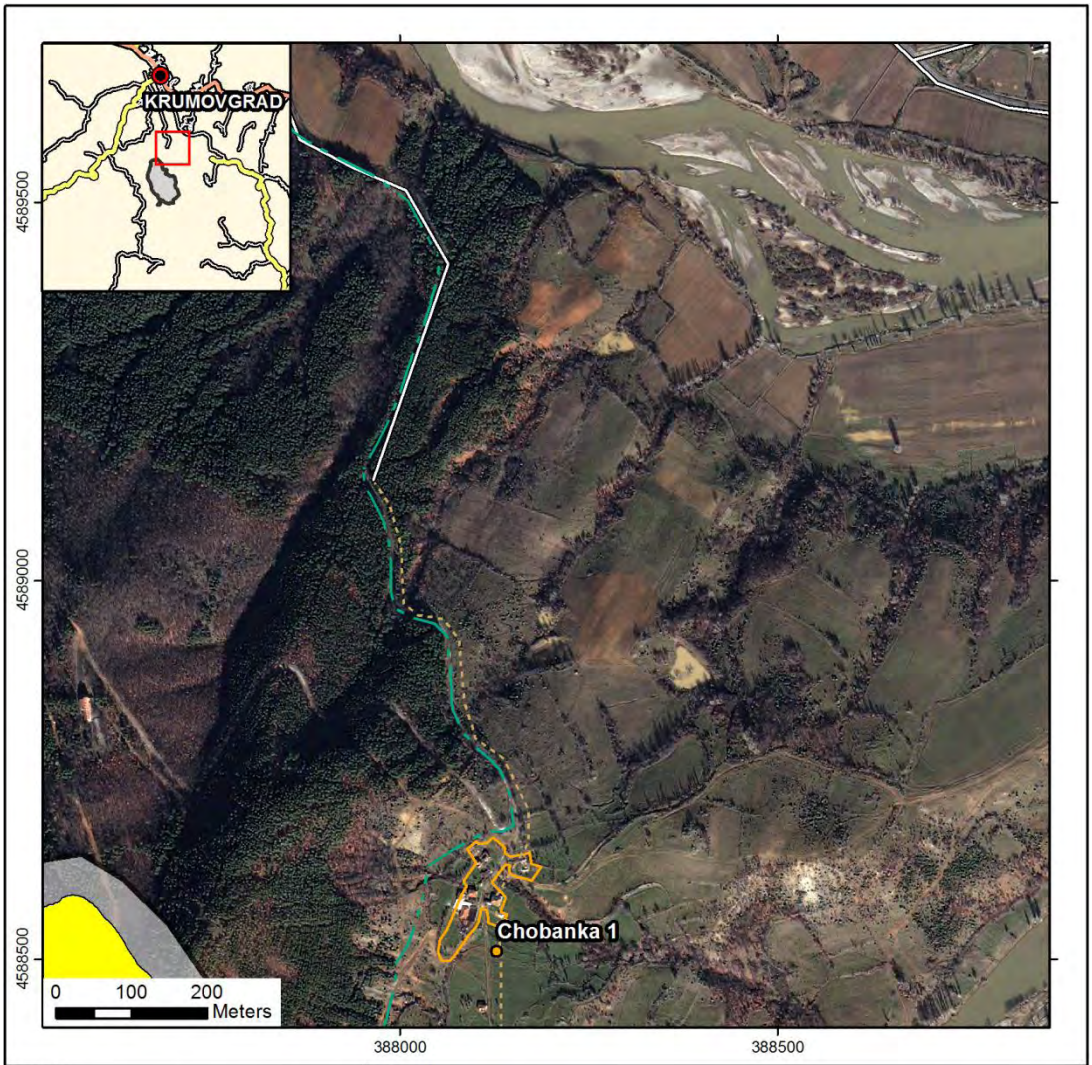

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Date	06/08/2014
Size	A4 Fig.
Drawn	AC
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Legend

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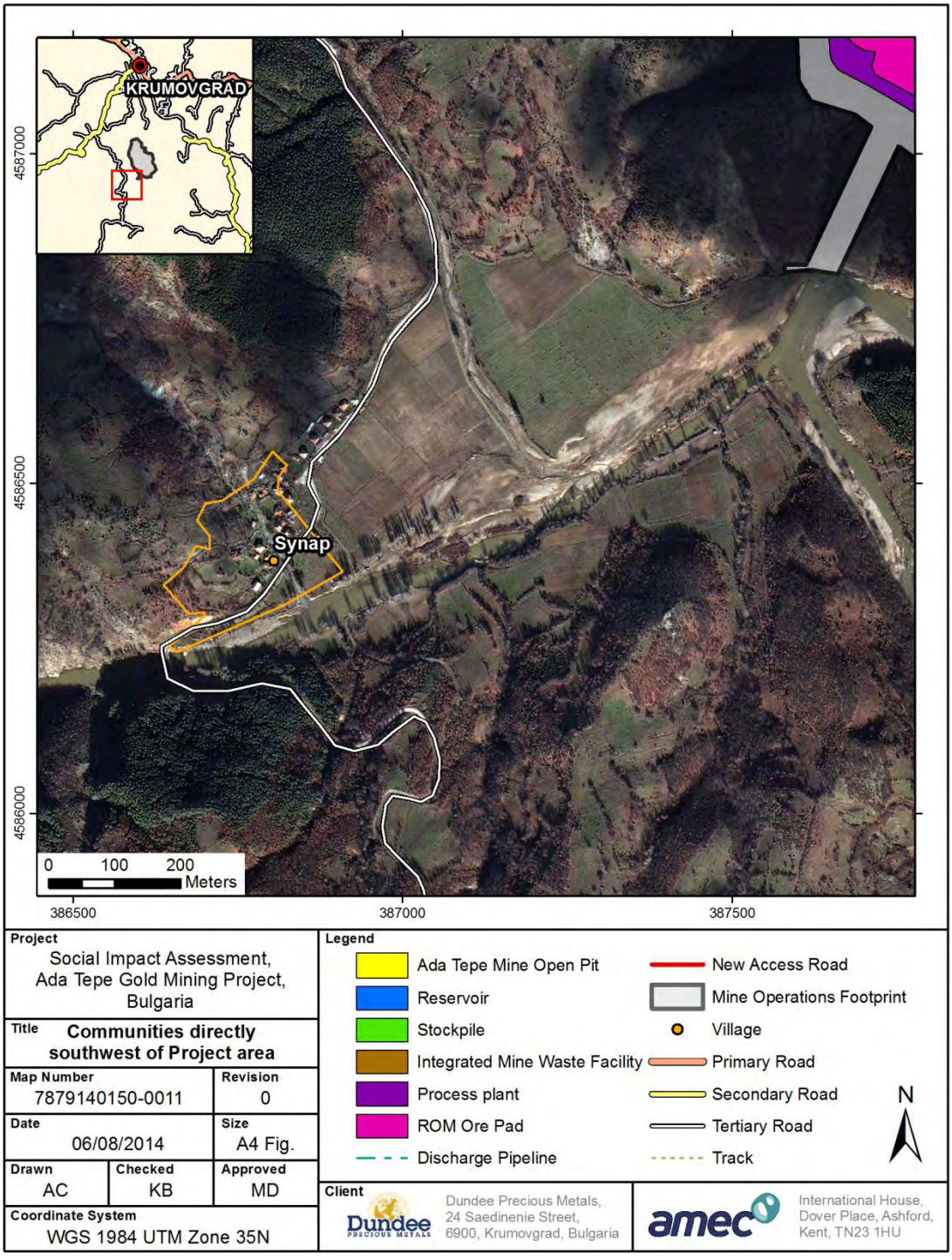
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Ada Tepe Mine Open Pit
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Dundee Precious Metals, 24 Saedinenie Street, 6900, Krumovgrad, Bulgaria
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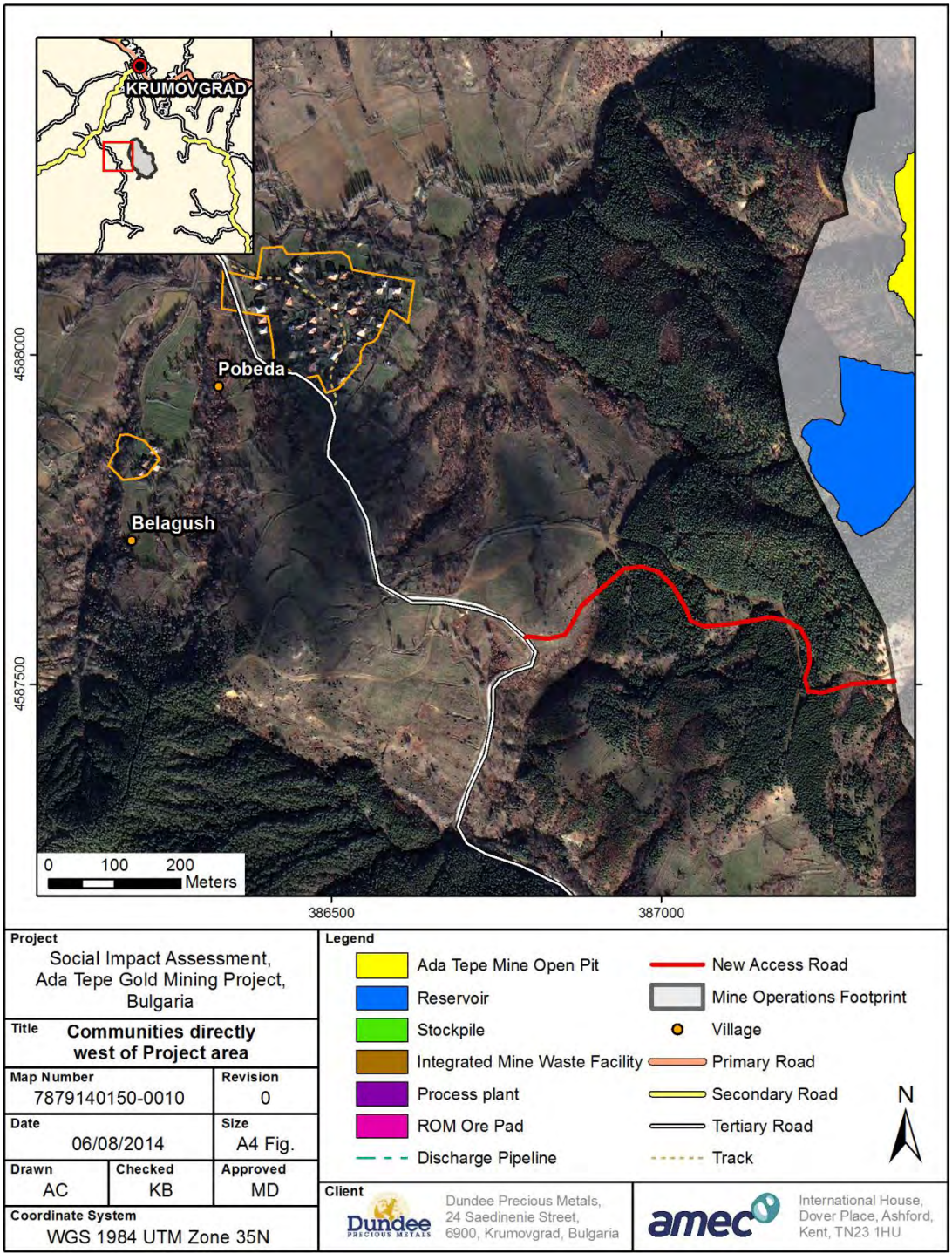
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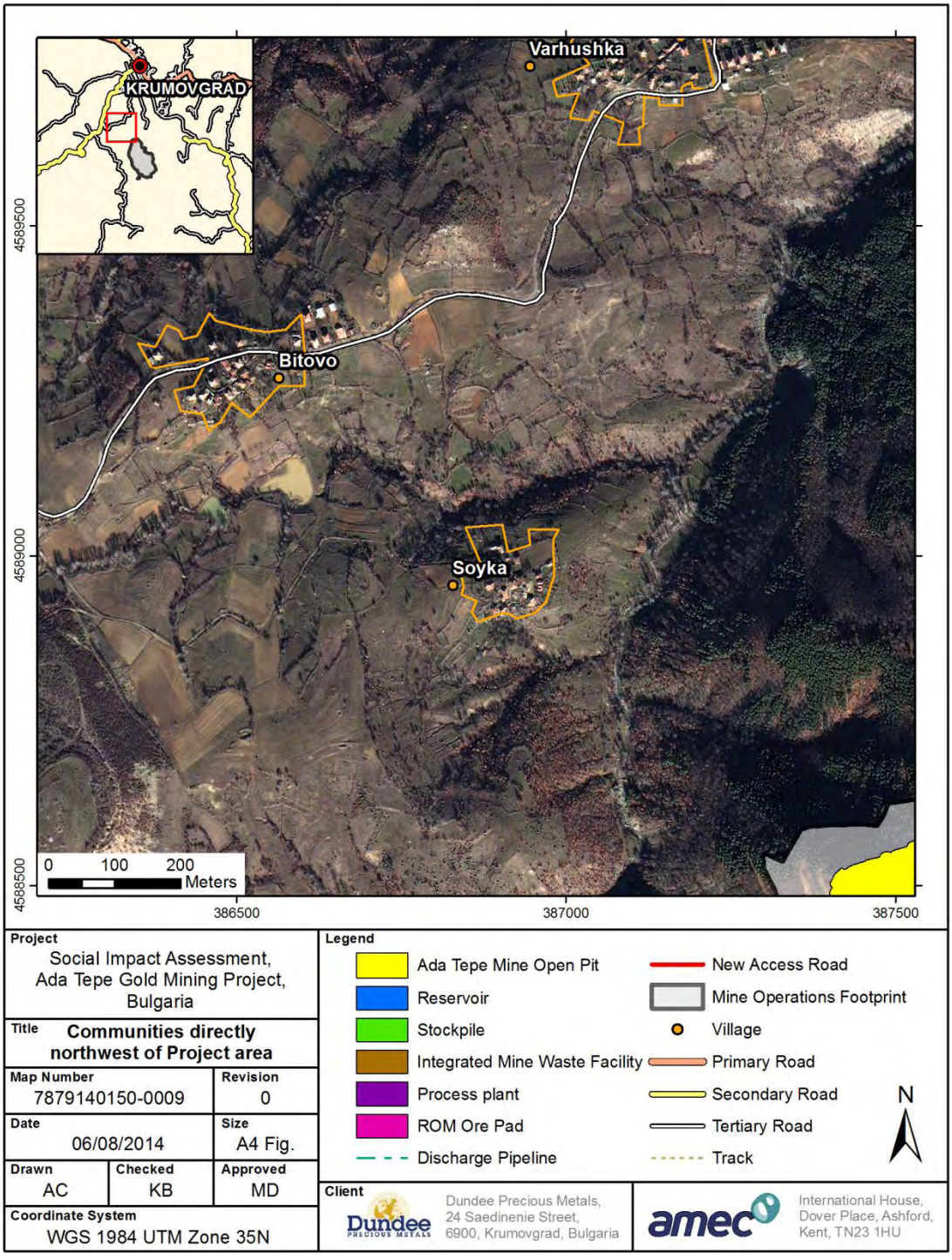
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Title
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Map Number
7879140150-0015
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Date
21/08/2014
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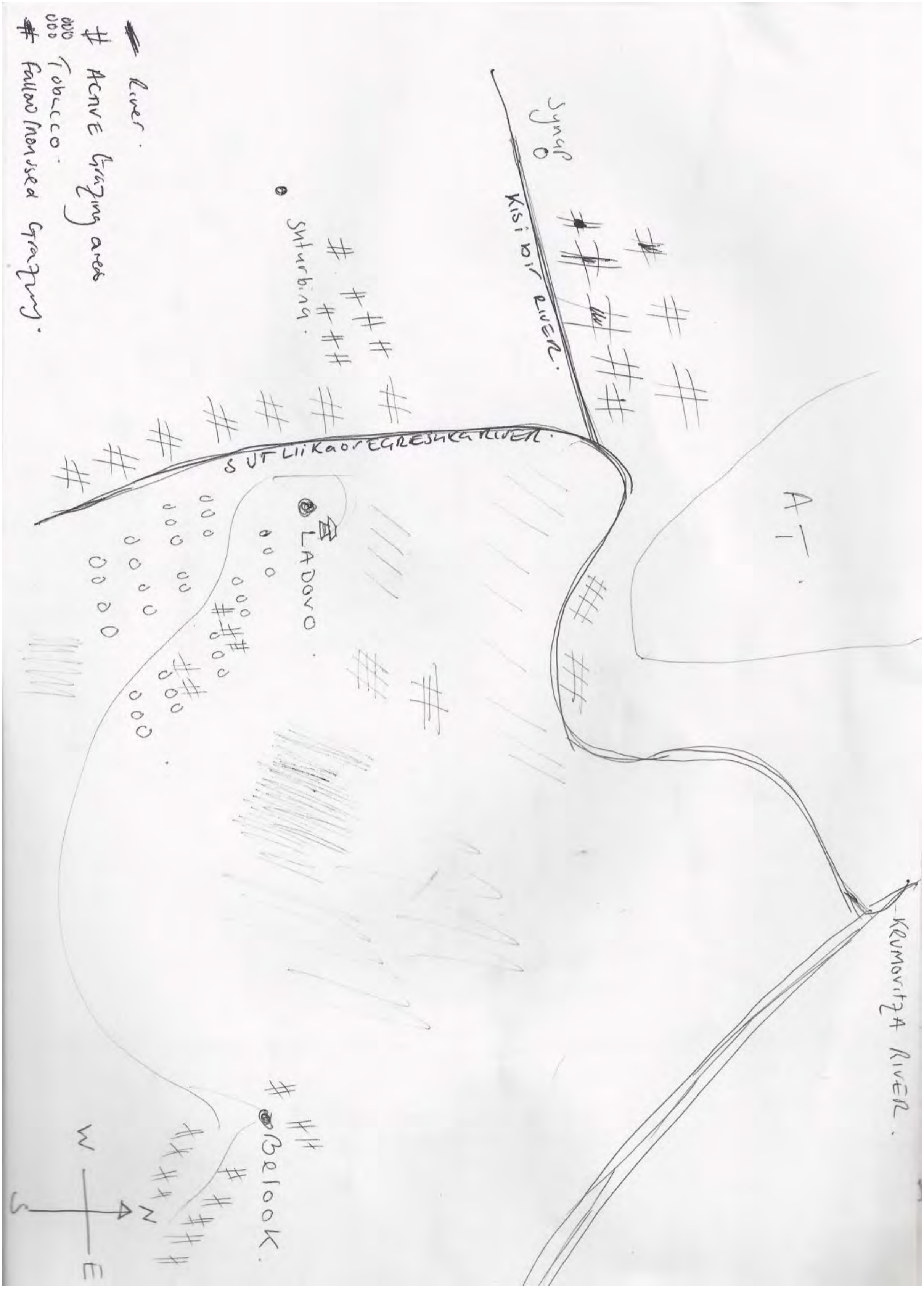
River.
Active Grazing area
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Kedikler
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Chobanka 2
Kupel
River
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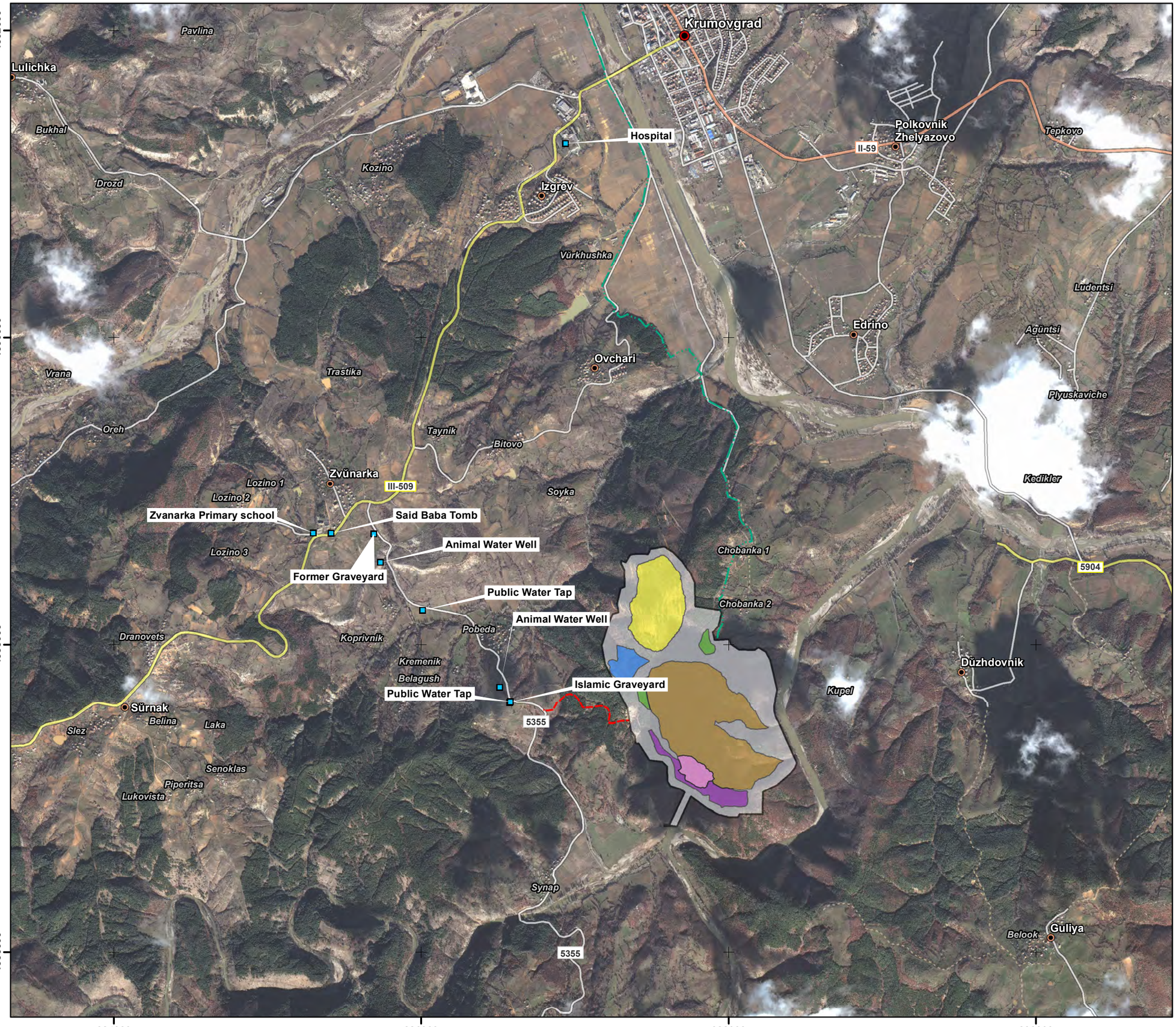
Forest

Annex 3: Sensitive Locations Identified during Baseline Consultations

The following sensitive locations were identified during the field study and stakeholder interviews:

Location	Coordinates	
Islamic graveyard by the side of the road fenced off Pobeda	N 41 25'56"	E 25 38'33"
Public water tap directly opposite graveyard by the road	N 41 25'56"	E 25 38'33"
Public water tap by the side of the road	N 41 26'15"	E 25 38'08"
Water well for animals by the side of the road but at a lower level	N 41 26'25"	E 25 37'56"
Former graveyard by the side of the road (2 tomb stones)	N 41 22'31"	E 25 37'54"
Tomb of Said Baba & sacred place where animals slaughtered to celebrate his death approx. 5 000 years ago	N 41 26'31"	E 25 37'42"
Water well for animals by the side of road	N 41 25'59"	E 25 38'30"
Zvanarka Primary school	N 41 26'31"	E 25 37'37"



Legend

- Sensitive Location
- Town
- Village (Mahala system Administrative 'lead' village)
- *Hamlet*
- Mine Operations Footprint
- Ada Tepe Mine Open Pit
- Reservoir
- Stockpile
- ROM Ore Pad
- Integrated Mine Waste Facility
- Process plant
- Discharge Pipeline
- New Access Road
- Primary Road
- Secondary Road
- Tertiary Road
- Track

Orientation

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Coordinate System: WGS 1984 UTM Zone 35N
Projection: Transverse Mercator
Datum: WGS 1984

Client	
Dundee Precious Metals	Dundee Precious Metals, 24 Saedinenie Street, 6900, Krumovgrad, Bulgaria
amec	International House, Dover Place, Ashford, Kent TN23 1HU, UK

Project	
	Social Impact Assessment, Ada Tepe Gold Mining Project, Bulgaria
Title	
	Sensitive Locations Along Haul Road

Map Number	Revision	Scale
7879140150-2000	2	1:24,000
Date		**Sheet Size**
15/10/2014		A3
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