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MAGISTRALA ENERGIEI

DEVELOPMENT ON THE ROMANIAN TERRITORY OF THE NATIONAL GAS TRANSMISSION TRANSMISSIONSYSTEM ON THE BULGARIA – ROMANIA – HUNGARY – AUSTRIA CORRIDOR

RAPID SOCIAL IMPACT ASSESSMENT REPORT

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Abbreviations & acronyms

AGI	Above Ground Installation
AOI	Area of Influence
AU	Administrative unit
BRHA	Bulgaria – Romania – Hungary - Austria
EIA	Environmental Impact Assessment
EBRD	European Bank for Reconstruction and Development
ESMP	Environmental and Social Management Plan
EU	European Union
GCS	Gas Compressor Station
GDP	Gross Domestic Income
GMS	Gas Metering Station
GMT	Greenwich Mean Time
IFI	International Financing Institutions
LAF	Land Acquisition Framework
LAAP	Land Acquisition Action Plan
NIS	National Institute of Statistics
NATO	North Atlantic Treaty Organization
NUTS	Nomenclature of Territorial Units for Statistics
OSCE	Organisation for Security and Cooperation in Europe
ROSCI	Romanian Site of Community Importance
ROSPA	Romanian Special Protection Area
RSIA	Rapid Social Impact Assessment
SEP	Stakeholder Engagement Plan
SMURD	Mobile Emergency Service in Romania
SNTGN	National Gas Transmission Company
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
WTO	World Trade Organisation

1. Introduction

1.1 Scope and objectives of current report

This report is prepared prior to the construction of a new Gas Transmission pipeline section on the territory of Romania. The pipeline is part of the Bulgaria - Romania – Hungary – Austria Gas Transmission Network (BRHA Project). In Romania, the pipeline will connect the Technological Node of Podişor with Horia Gas Metering Station (GMS) on the route Podişor – Corbu – Hurezani – Horia. Phase I of the project extends from Podișor to Recaș, whith Phase II extending from Recaș to Horia. Even though EBRD is considering to co-finance the activities that are included in BRHA project Phase I, due to the fact that Phase II of the project is considered as associated facility of Phase I, the same PRs are applicable. Thus, the current SIA is takes into consideration both project phases.

This social assessment has been undertaken in order to identify the main potential social impacts and risks associated to the BRHA Pipeline and to identify the measures required to either prevent, minimise and/or mitigate these impacts. The social impacts have been analysed from the perspective of the local population and the 79 municipalities crossed by the pipeline.

Due to time and budget constraints, conducting a full social impact assessment study was not a feasible option. As such, a Rapid Social Impact Assessment methodology was applied, allowing the collection, processing and analysis of data in a short amount of time, engaging with relevant stakeholders, ensuring that the identified impacts are correctly and effectively described and that all the mitigation measures for the negative impacts are included in the Social Management Plans.

The methodology, by comparison to a full SIA study, did not take into consideration the duration, reversibility, presence of stressors and resilience to the stressors when assessing social impacts, due to difficulty in assessing these indicators given the above stated constraints, as well as due to the fact that there is limited data regarding such aspects related to the AoI and the socio-economic survey carried out was not meant to be a census of PAPs or assets and as such didn't investigate these indicators among respondents

1.2 Legal and policy requirements

The Romanian legislation does not require a full social impact assessment for infrastructure/investment projects, nor is this a requirement for issuance of any permit. However, the Environmental Impact Assessment (EIA) prepared for the Romanian national permitting procedure includes a chapter on social aspects that is consistent with this report.

International Financing Institutions (IFIs) have particular requirements with regard to social and environmental aspects. In this regard, the European Bank for Reconstruction and Development's (EBRD) requirements applicable to this project are presented below. The applicable Performance Requirements addressing social issues are marked in bold in the table below:

Table 1. EBRD Performance Requirements applicable to BRHA:

PR	Title	Applicable to BRHA
1	**Environmental and Social Appraisal and Management System**	YES
2	**Labour and Working Conditions**	YES
3	Pollution Prevention and Abatement	YES

PR	Title	Applicable to BRHA
4	**Community Health Safety and Security**	YES
5	**Land Acquisition, Involuntary Resettlement and Economic Displacement**	YES
6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	YES
7	Indigenous People	NO
8	**Cultural Heritage**	YES
9	Financial Intermediaries	NO
10	**Information Disclosure and Stakeholder Engagement**	YES

Source: EBRD Environmental and Social Policy 2014

1.3 Brief description of the project

BRHA Project is a natural gas pipeline, which will cross Bulgaria, Romania, Hungary and Austria. The Romanian section of the project is implemented by the National Gas Transmission Company (SNTGN) Transgaz in the South, South- West and West Regions of Romania. On the Romanian territory, the pipeline will have a total length of approximately 529 km and will cross 79 administrative units (AUs) located in 11 counties: (Giurgiu, Teleorman, Dâmbovița, Argeș, Olt, Vâlcea, Gorj, Hunedoara, Caraș-Severin, Timiș and Arad). Three compressor stations (Podişor Gas Compressor Station (GCS): Giurgiu County, Bibeşti Gas Compressor Station (GCS): Gorj County and Jupa Gas Compressor Station (GCS): Caraş- Severin County), 38 line valves and 18 cathodic protection ones will be placed along the pipeline route. The pipeline is designed to transport gas at a pressure of 63 bar.

The list with all AUs crossed by the BRHA pipeline is presented below, traveling from East to West:

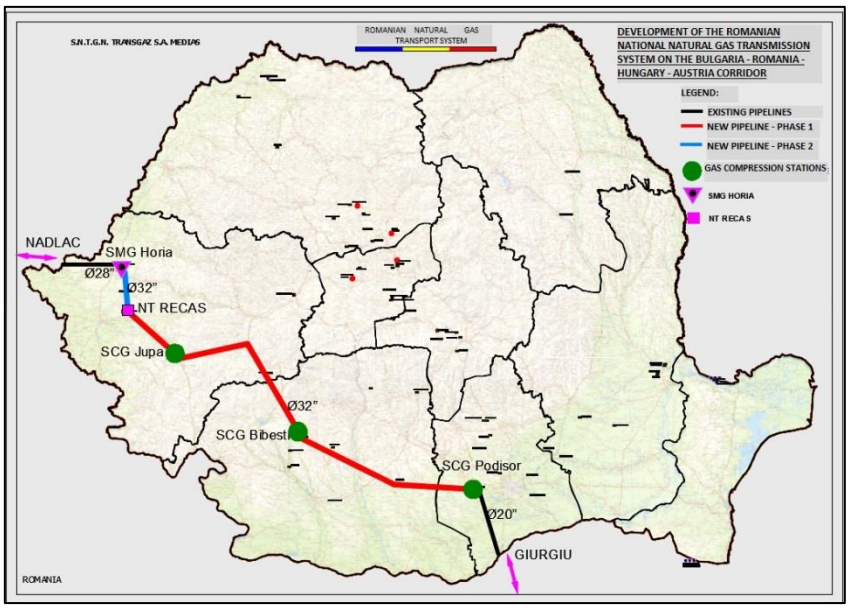
Table 2. List of AUs and counties crossed by the BRHA pipeline

County	No	AU	County	No	AU	County	No	AU
Giurgiu	1	Bucşani		28	Lăcusteni		55	Sarmizegetusa
	2	Crevedia Mare		29	Măciuca		56	Toteşti
	3	Mârşa		30	Ştefăneşti	**Caraş-Severin**	57	Caransebeş
	4	Roata de Jos		31	Suteşti		58	Oţelu Roşu
Teleorman	5	Gratia		32	Tetoiu		59	Băuţar
	6	Poeni		33	Voiceşti		60	C-tin Daicoviciu
	7	Scurtu Mare		34	Zătreni		61	Glîmboca
	8	Tătărăştii de Jos	**Gorj**	35	Bumbeştii Jiu		62	Marga
	9	Tătărăştii de Sus		36	Târgu Cărbuneşti		63	Obreja
Dâmboviţa	10	Şelaru		37	Bălăneşti		64	Sacu
Argeş	11	Popeşti		38	Bărbăteşti		65	Zăvoi
	12	Izvoru		39	Dănciuleşti	**Timiş**	66	Lugoj
	13	Râca		40	Hurezani		67	Recaş
	14	Căldăraru		41	Jupâneşti		68	Belinţ
	15	Bârla		42	Schela		69	Bogda
Olt	16	Potcoava		43	Scoarţa		70	Costeiu
	17	Scorneşti		44	Stejari		71	Fibiş
	18	Corbu		45	Turcineşti		72	Gavojdia
	19	Grădinari		46	Vladimir		73	Ghizela
	20	Oporelu	**Hunedoara**	47	Vulcan		74	Maşloc
	21	Priseaca		48	Haţeg		75	Pişchia
	22	Strejeşi		49	Băniţa		76	Topoovăţu Mare
	23	Teslui		50	Baru	**Arad**	77	Fântânele
Vâlcea	24	Drăgăşani		51	Densuş		78	Şagu
	25	Creţeni		52	Pui		79	Vladimirescu
	26	Fârtăţeşti		53	Sălaşu de Sus			
	27	Guşoeni		54	Sântămărie Orlea			

Source: EIA Report

The pipeline route on the Romanian territory is shown in the figure below:

Figure 1. BRHA Pipeline Route on the territory of Romania

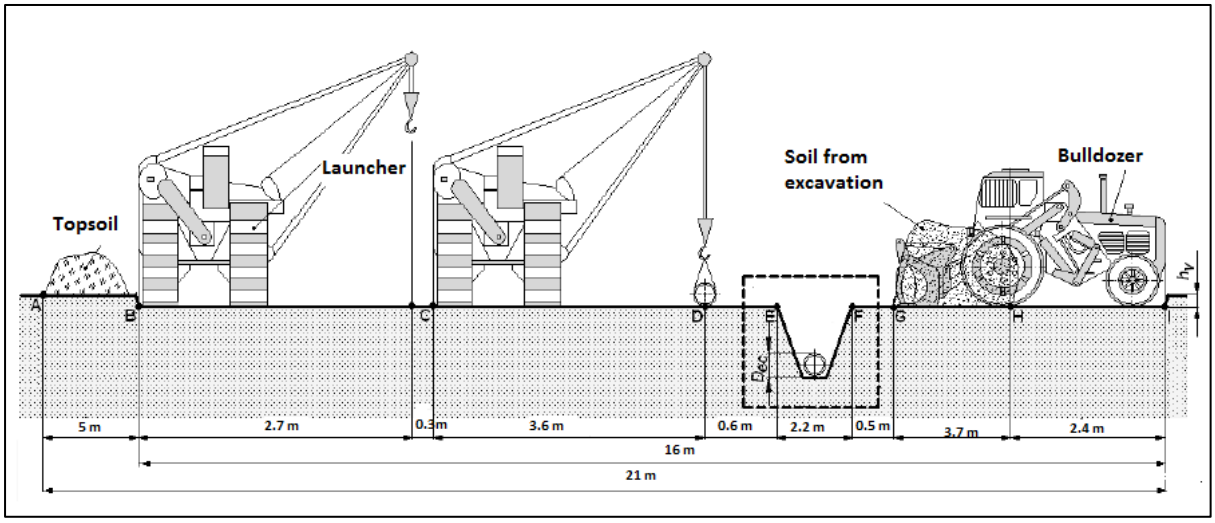


Source: SNTGN TRANSGAZ S.A.

The Romanian section of the pipeline's construction corridor will have a standard working strip of 21 m, reduced to 14 m in sensitive areas such as forests or areas with difficult access. The 800 mm (32“) steel pipeline will be mainly buried to a minimum depth of 1 m. Exceptions will be made when crossing communication networks, where the pipeline will be buried to a minimum depth of 1.5 m. The roads and railways will be undercrossed by horizontal drilling, and the pipeline will be installed inside a protection tube (steel casing). Watercourse crossing will be performed in open trench or by horizontal directional drilling. The riversides will be restored at the end of the construction works.

The figure below presents the organization of the working strip planned for the BRHA pipeline:

Figure 2. The working strip planned for the BRHA pipeline



Source: EIM Report

According to the information provided by Transgaz, 395km out of the 529 km of the pipeline route will follow other existing gas pipelines of SNTGN Transgaz, while 134 km will follow new routes. Some sections of the existing pipelines will be replaced with the new pipeline (circa 10%). In some sections, the pipeline route will be deviated from the existing gas pipelines for safety and environmental reasons.

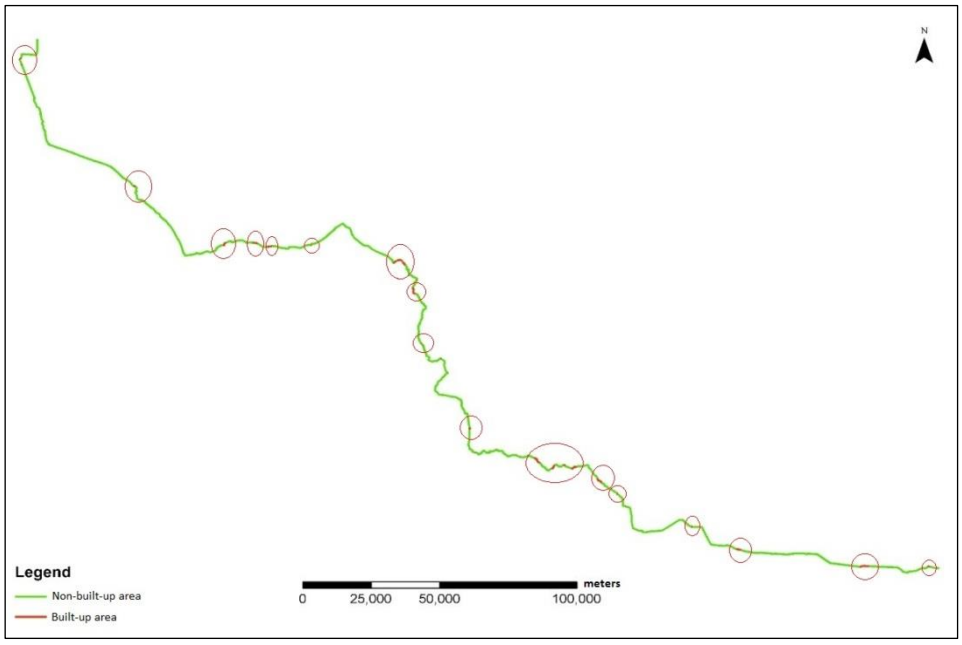
BRHA pipeline crosses or passes near the boundary of:

- 449 watercourses, including water cannels, torrents, etc. (out of which 9 large rivers);
- 2 motorways;
- 191 roads (out of which 23 national roads, 76 county roads and 92 rural public/private roads);
- 18 railways;
- Approximately 29 km of forest;
- 7 Natura 2000 sites;
- 1 Natural Park (Dinosaur Geopark "Haţeg").

The list with the main characteristics of the pipeline is presented in Appendix 1 Main characteristics of BRHA pipeline.

As per the Environmental Impact Assessment Report, only 4.2% of the pipeline will be constructed in built-up areas, however these are usually areas with low population density.

Figure 3. Overlapping of BRHA with buildable areas (red)



Source: EIA Report

Appendix 2 presents data regarding the length of the pipeline in built-up and non-built-up areas in the AUs crossed by BRHA pipeline.

The construction works of the pipeline will cover approx. 1,093 ha out of which 1080.8 ha will be temporary used.

Permanent land takes will cover a total area of 12.46 ha. Part of this surface will be used for the construction of 3 gas compressor stations in Podişor, Bibeşti and Jupa and the 38 line valves and associated roads.

Five constructions camps will be placed along the pipeline route in Argeş, Vâlcea, Gorj, Caraş-Severin and Timiş Counties and three more will be located at the construction sites for the compressor stations.

The list with temporary and permanent land take is presented below:

Table 3. BRHA footprint

Objective	Occupied surface	
	Temporary (m^2)	Permanent (m^2)
GCS Podişor	-	46,136.128
GCS Bibeşti	-	49,499.281
GCS Jupa	-	49,172.140
Pipe storage Poeni	3,381	-
Pipe storage Corbu	3,405	-
Pipe storage Cherlesti	3,000	-
Pipe storage Zatreni	3,244	-
Pipe storage Frasin	10,100	-
Pipe storage Jiu Paroseni	3,150	-
Pipe storage Pui	3,362	-
Pipe storage Iaz	3,116	-
Pipe storage Lugoj	2,556	-
Pipe storage Fantanele	3,120	-
Construction camp and pipe storage Căldăraru, Argeş County	11,800	-
Construction camp and pipe storage Guşoeni, Vâlcea County	14,313	-
Construction camp and pipe storage Turcineşti, Gorj County	14,778	-
Construction camp and pipe storage Bucova (Băuţar), Caraş Severin County	11,360	-
Construction camp and pipe storage Petrovaselo (Recaş), Timiş County	12,500	-
Construction camp within GCS Podișor, Giurgiu County	5,000	-
Construction camp within GCS Bibești, Gorj County	5,000	-
Construction camp within GCS Jupa, Caraş Severin County	5,000	-
Valve stations	-	8.523
Technological roads to valve stations	-	9,736
BRHA pipeline route (working strip)	10,731,846	-
Total (m^2)	10,850,031	163,066.549
Total (ha)	1085.003	16.306

Source: EIA Report

The information regarding affected properties is the result of several processes, starting with the elaboration and registration of zoning plans, communication with municipalities, contracting land agents and eventually sending teams of staff to acquire the missing data. As a result of an extensive process carried out by Transgaz to gather information regarding affected properties, a total number

of 20,190 land plots have been identified as being affected directly by the pipeline construction and operation.

Based on the building permit procedure and on-the-field identification of owners as well as the socio-economic survey carried out in December 2016, the following categories of Project Affected Persons (PAPs) have been defined:

- Owners of land for AGIs
- Agricultural tenants / Land users for AGIs
- Owners of agricultural land in the working strip
- Owners (formal or informal) of assets / structures (temporary or permanent) situated in the working strip
- Owners of forest land (private owners or association of private owners) in the working strip
- Owners of orchards, vineyards and other perennial crops in the working strip
- Agricultural tenants / Land users (formal or informal) in the working strip
- Local businesses
- Land owners and users of land and assets neighbouring the working strip

PAPs in each of these categories will be impacted mainly temporarily but also permanently due to construction and operation of the BRHA Project.

2. Defining the Area of Investigation (AoI)

The Romanian EIA considers a 300m pipeline corridor as the area of influence of the project (150 m on each side of the pipeline). The information presented in by this report covers a 250m wide area on each side of the 21m construction strip. This approximately 500m wide corridor is the Area of Investigation (AoI) of the project.

The reasons for choosing an extended area of investigation include the proximity of settlements to the pipeline construction corridor, construction of access roads and associated facilities, economic activities in the area, etc.

BRHA pipeline will cross the administrative territory of 79 administrative units (AUs) out of which 11 are AU of towns and 68 are AU of rural communes.

Table 4. The length of the pipeline in each county crossed by the BRHA pipeline and the number of Rural/Urban AUs

County	Length of the pipeline (km)	No. of Rural AUs	No. of Urban AUs
Giurgiu	21.654	4	0
Teleorman	19.946	5	0

County	Length of the pipeline (km)	No. of Rural AUs	No. of Urban AUs
Dâmboviţa	3.087	1	0
Argeş	35.081	5	0
Olt	49.399	5	2
Vâlcea	56.524	10	1
Gorj	98.621	10	2
Hunedoara	79.015	8	2
Caraş-Severin	58.785	7	2
Timiş	80.112	10	2
Arad	26.724	3	0

Source: Processed data from SNTGN Transgaz and National Institute of Statistics (NIS), 2016

The following specific terminology has been used:

- Administrative units (AUs) - The area corresponding to the built-up area (constructions and facilities) of one or more settlements and agricultural area (arable land, pastures and hay meadows, vineyards and orchards), the area of the forest fund, the area taken by construction and infrastructure (communication routes, other than those belonging to the state's public domain, water management works), water and ponds around the build-up area delineated by administrative boundaries;
- Town – AU or part of an AU including an inhabited place of greater size, population, or importance than a village, which also has an administrative function;
- Commune (cluster of villages) – AU incorporating the rural population united by a community of interests and traditions. Communes may be comprised of one or more villages depending on the economic, social, cultural, geographic and demographic conditions.
- Settlement – Town or village belonging to one AU.

3. Data collection methodology

3.1 Primary data collection

The sampling methodology for primary data collection was developed by considering several aspects such as: landscape, number of land owners per AUs, proximity of households to the pipeline construction corridor and other project infrastructure (access roads, worker camps, etc.), time framework allocated for data collection, distribution of number of questionnaires along the pipeline. Due to the fact that the roll out of the survey was planned for December and access was constrained by weather, road type and accessibility also needed to be considered.

The route of the pipeline was divided into 4 segments, based on the main type of terrain covered by the route. The 4 segments are:

- I: Podişor, AU Bucşani (Giurgiu) to Petculeşti, AU Grădinari (Olt) – this area is characterised as mainly plain area, with agricultural land
- II: Tighina, AU Voiceşti (Valcea) to Pişteştii din Deal, AU Scoarţa (Gorj) – a hilly area, with orchards and pastures
- III: Bălăneşti, AU Bălăneşti (Gorj) to Jupa, AU Caransebeş, (Caraş-Severin) – mountain area, covered with forests and pastures
- IV: Constantin Daicoviciu (Caraş-Severin) to Valdimirescu (Arad) – combined areas of hills and plains, with large agricultural fields on the last segment of the pipeline.

Once this division was made, the SIA team performed a virtual walk-through on the pipeline map displaying the following features:

- Google earth terrain with elevation, settlements, roads, waterways, etc.
- Existing pipelines, new pipeline, pipeline construction corridor, 250m marking on each side (AoI to be used in SIA).

All the settlements (villages belonging to AUs) within or close to the 250m marking corridor were identified, together with the distance from the nearest house/facility to the pipeline. Based on this information, data from Transgaz related to the number of affected plots/landowners in each AU, municipalities in which previous consultations already took place, municipalities in which AGI are to be placed, were collected and processed.

Once this information was available, the SIA team applied the following filters for determining the total number of household questionnaires to be included in the socio-economic survey:

- municipalities with more than 300 land owners
- 3% out of total land owners from each selected municipality.
- for each selected municipality, a minimum of 2 questionnaires were allocated to be conducted with directly impacted households (situated within the 250 m buffer zone on each side of the pipeline).

Resulting selection was narrowed-down further based on accessibility conditions and distance between localities (if two municipalities were close to each other, the one with the higher number of landowners was selected). Finally, the percentage that was considered for determining the number of questionnaires for impacted land owners was adjusted in some of the municipalities so as to accommodate the proximity and accessibility principles (e.g. although there were only 25 land owners identified in the Crevedia Mare AU, a total number of 10 questionnaires were allocated despite the fact that the AUs close to Crevedia Mare have a larger number of land owners). In other cases, the total number of questionnaires for land owners was reduced to be able to accommodate more questionnaires for households located close to the pipeline corridor.

The differentiation between landowners and directly impacted households was made on the following considerations:

- landowners having land plots crossed by the pipeline are directly affected and as such a representative number of questionnaires should be applied to them (it was arbitrarily established that approximately 80% of the total number of questionnaires should be applied to affected landowners)
- directly impacted households are households located within the 250m wide strip on each side of the pipeline corridor, which do not (necessarily) have land crossed by the pipeline,

but might be affected by noise, dust, etc. coming from pipeline construction activities being carried out nearby. It was arbitrarily established that approximately 20% of the entire number of questionnaires should be applied to this category of PAPs.

In selecting the actual persons to apply the questionnaire to in each selected settlement, a series of methods were employed, depending on the situation in the field, available time and availability of respondents. With the help of Transgaz representatives in the field and in some occasions also representatives of local authorities, affected land owners were either asked to come to the city hall, a local pub or community events hall, or surveyors went door-to-door to landowners picked up from the list of landowners in the possession of Transgaz representatives and applied the questionnaire depending on their availability. This action was carried out until the desired number of questionnaires for each settlement was completed or even exceeded if respondents were available.

Regarding the directly impacted households, these were selected based on their proximity to the pipeline, identified from pipeline route layer overlapped on Google Earth maps.

When performing the survey in the field, it resulted that a large section of the respondents from directly impacted households were usually also owners of land crossed by the pipeline. As such, when computing the results of the survey, this differentiation on land owners and households has not been taken into consideration. The table below presents the number of planned and applied questionnaires in each section:

Table 5: Selection of surveyed area

Segment	**County**	**AU**	**Settlement**	**Type of settlement**	**No. of identified landowners directly affected by the project**	**Number of questionnaires - planned**		**Number of questionnaires - applied**	**Distance of the closest household to the pipeline corridor (approx. m)**
						Land owners	Households	Landowners and households	
1[1]	GIURGIU	Crevedia Mare	Dealu	Rural	25	10	2	4	92
	TELEORMAN	Poeni	Poeni	Rural	365	10	2	12	90
	ARGEŞ	Popeşti	Planga	Rural	268	9	2	12	120
	ARGEŞ	Căldăraru	Strâmbeni	Rural	499	15	2	23	70
	ARGEŞ		Căldăraru	Rural			2		50
	OLT	Scorniceşti	Chiţeasa	Rural	810	25	2	28	13
	OLT		Negreni	Rural			2		125
	OLT		Scorniceşti	Urban			2		30
	OLT	Teslui	Cherleştii Moşteni	Rural	356	11	2	16	50
Subtotal								**95**	
2	VÂLCEA	Suteşti	Măzili	Rural	351	11	2	18	50

[1] Dambovita County has not been included in the sampling, as there is only 1 AU crossed by the pipeline in this county (Șelaru). Due to the low number of affected landowners in this AU (131), and high distance of the community to the pipeline (4.8 km) it was decided not to include this county in the sampling.

Segment	County	AU	Settlement	Type of settlement	No. of identified landowners directly affected by the project	Number of questionnaires - planned		Number of questionnaires - applied	Distance of the closest household to the pipeline corridor (approx. m)
						Land owners	Households	Landowners and households	
	VÂLCEA	Măciuca	Oveselu	Rural	603	19	2	24	20
	VÂLCEA	Tetoiu	Tetoiu	Rural	510	16	3	20	0
		Hurezani	Hurezani	Rural	281	9	3	14	20
	GORJ	Jupâneşti	Vierşani	Rural	1286	39	2	53	60
	GORJ	Tg. Cărbuneşti	Pojogeni	Rural	794	24	2	29	70
	GORJ	Scoarţa	Budieni	Rural	309	10	2	11	70
Subtotal								**169**	
3	Gorj	Bălăneşti	Bălăneşti	Rural	805	25	3	23	150
	Gorj	Schela	Sâmbotin	Rural	689	21	3	26	65
	HUNEDOARA	Limita Vulcan - Jiu Paroşeni	Pasul Vulcan	Touristic area				19	
	HUNEDOARA	Jiu- Paroşeni + Dealu Babii	Vulcan	Urban	55		3		11
	HUNEDOARA	Baru	Baru	Rural	472	15	3	20	9
	HUNEDOARA	Sântămăria-Orlea	Bărăştii Haţegului	Rural	79		3	12	140
	HUNEDOARA	Sarmisegetuza	Sarmisegetuza	Rural	391	12	3	17	65
	CARAŞ SEVERIN	Marga	Marga	Rural	137		3	9	7
	CARAŞ SEVERIN	Oţelu Roşu	Oţelu Roşu	Urban	110		3	5	35
	CARAŞ SEVERIN	Obreja	Iaz	Rural	236	7	3	12	40
Subtotal								143	
4	TIMIS	Lugoj	Lugoj	Urban	178	6	4	6	18
	TIMIS	Coşteiu	Coşteiu	Rural	167	6	4	8	0
	ARAD	Maşloc	Remetea Mică	Rural	191	6	4	10	100
	ARAD	Vladimirescu	Vladimirescu	Urban	446	14	4	13	170
Subtotal								**37**	
						320	**80**		
TOTAL						**400**		**444**	

Source: Socio-economic survey

A total number of 444 questionnaires were completed during the socio-economic survey. Appendix 3 presents the template of the socio-economic questionnaire.

The socio-economic questionnaire prepared for this survey is focusing on the following type of information:

- Identification data about the respondent and his/her family members;
- Information about residence and land tenure (owners and/or land users);
- Household information – assets, access to municipal infrastructure, etc.;
- Household members and level of education;
- Access to social benefits;
- Income level of the household, income from agriculture;
- Land use, estimated production from agriculture;
- Awareness level of respondents about BRHA project.

3.2 Secondary data collection

In order to be able to analyse the social impacts of the new investment, primary and secondary socio-economic data were collected about the areas affected by the pipeline construction and operation.

Secondary data was retrieved from a variety of official sources, including:

- Romanian National Institute of Statistics;
- Environmental Impact Assessment (General data about the project, Land use, Transport infrastructure, Economic activities);
- Official websites and reports prepared by different ministries (Ministry of Housing, Ministry of Labour, Family and Social Protection);
- Different legislative acts (Housing Law, Law no.348/2003 regarding fruit tree cultivation, clear-cutting of fruit tree plantations and young fruit trees of commercial interest, Technical Norm 118/2013, Forestry Code).

All secondary data were included in an excel database that is available upon request. Data was processed and included in the SIA report in the form of tables, charts, images, boxes.

4. Socio-economic baseline

This analysis is based on results of the primary data collected (survey applied to landowners and households) and of the secondary data provided by NIS and other official sources as listed in the Reference section at the end of the document. The survey was carried out in December 2016 in 26 administrative units where 444 questionnaires were applied to owners of the land crossed by the pipeline, covering approx. 3% of the affected land and households' owners located in the AoI.

The baseline study provides information for the following main socio-economic indicators:

- Demography;
- Settlement and housing;
- Public utilities, services and transport infrastructure;
- Land use and agriculture;
- Economic activities;
- Livelihood;
- Employment and labour force;
- Education;

- Public health and safety;
- Cultural, touristic and recreational sites;
- Vulnerable groups.

4.1 General information about Romania

Romania is located in South Eastern-Central Europe covering an area of about 238,391 km^2. Romania is bordered by Serbia and Hungary (in the West), by Ukraine (in the Northeast and East), by Moldova and the Black Sea (in the East) and by Bulgaria (in the South). Romanian time zone is GMT+ 2 hours.

The figure below presents the most important geographical elements of Romania, including:

- Danube river;
- Danube Delta (a UNESCO World Heritage site famous for its birdlife);
- The Black Sea;
- Carpathian Mountains (crossing the Romanian territory for 910 km) and
- Other lowlands, hills, geographical depressions and rivers.

Figure 4. Geographical map of Romania

Source: http://www.freeworldmaps.net/europe/romania/romania-map-physical.jpg

Romania has a temperate-continental climate, with four seasons. The average temperature is -5° C during winter and 29° C during summer.

Table 6. Facts about Romania

Country name	**Romania**
President (elected in 2014)	Klaus Johannis

Capital	Bucharest
Regional divisions	8 Development Regions (NUTS 2) 41 counties and the Municipality of Bucharest (NUTS 3)
Sub-divisions	320 towns, 2854 communes and 12951 villages
Main cities	Bucharest, Cluj-Napoca, Timişoara, Iaşi, Braşov, Constanţa, Târgu-Mureş, Arad, Oradea, Craiova
Population	**20.2 million inhabitants**
Density	79.9 inhabitants/km^2
Official language	Romanian
Ethnic groups	Romanians (90.6%), Hungarians (6.7%), Roma (1.3%), Ukrainians (0.3%), Germans (0.1%)
Religions	Orthodox (85.9%), Roman-Catholic (4.6%), Protestant (3.2%), Pentecostal (1.9%)
Currency	Romanian Leu
Exchange rate EUR/RON December 2016	1 EURO = 4.4985 RON
Exchange rate USD/RON December 2016	1 USD = 4.2391 RON
Membership in international organizations	European Union (EU) (since 1st of Jan 2007), United Nations (UN), Council of Europe (CE), World Trade Organisation (WTO), North Atlantic Treaty Organization (NATO), Organisation for Security and Cooperation in Europe (OSCE)

Source: Population and Housing Census, October 2011 and National Bank of Romania, December 2016

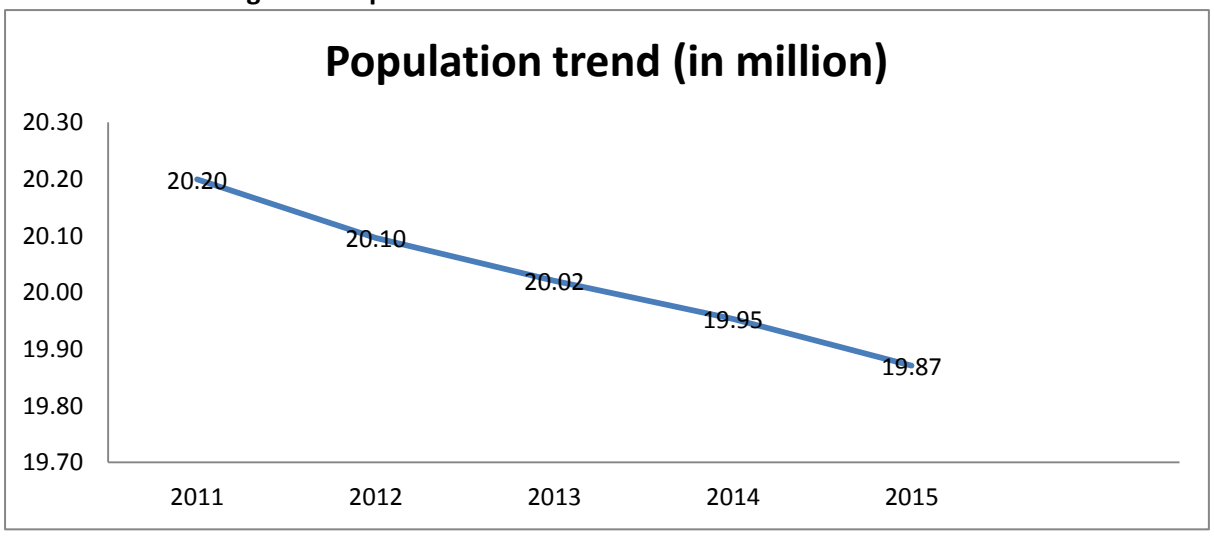
4.2 Demography

Population

According to the NIS data, the population of Romania had a decreasing trend in the last years. Since the last Census performed in 2011 when the figures showed a total population of 20.2 million inhabitants, in 2015 the population reached a total number of 19.9 million inhabitants

The figure below shows the population trend between 2011 and 2015.

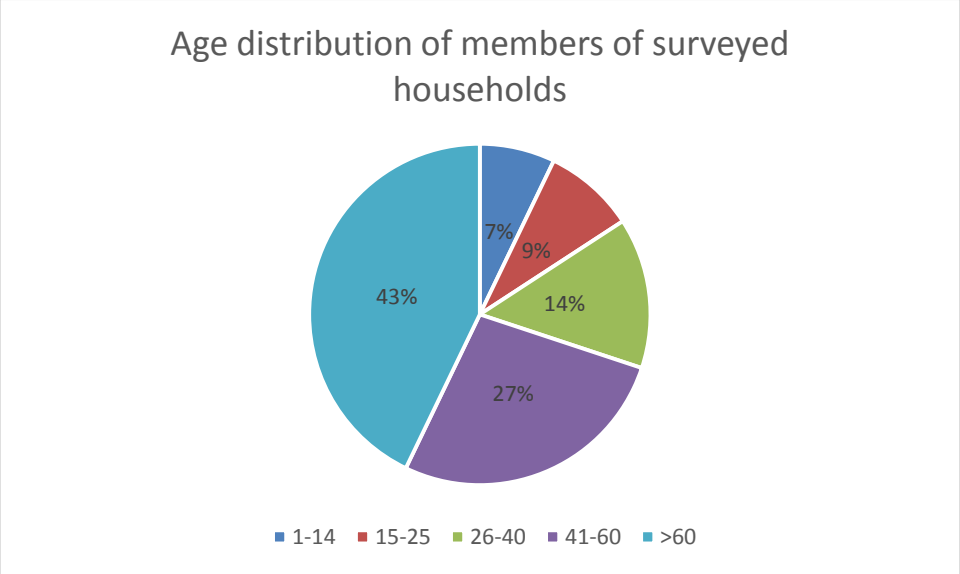
Figure 5. Population trend in Romania between 2011 and 2015



Source: NIS processed data 2011-2015

In 2015, the total population living in AUs which will be crossed by the pipeline was of 379,434 inhabitants. The AU with the highest number of inhabitants is Lugoj (Timiş County) reaching in 2015 a total number of 47,766 inhabitants. The information regarding the population of each AU is presented in Appendix 4 Demography in the AUs crossed by BRHA pipeline.

The descending trend of population is reflected also in the age distribution of the people in the surveyed settlements, displayed in the figure below. The largest age group of the household members is composed of elderly people, over 60 years old.

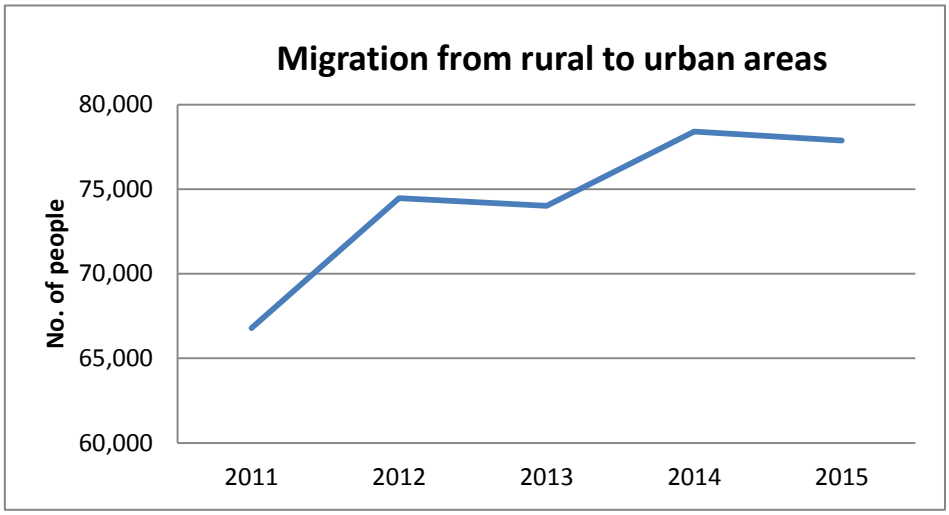


Migration

The decrease of the population is the result of the internal and external migration which increased in Romania after the fall of communism in 1989 when the market was liberalized, the political and economic environment was unstable and a lasting process of reorganization started.

Also, due to the differences between regions and between rural and urban areas (low level of infrastructure, low level of access to public utilities/services, low GDP per capita in rural areas), a tendency of migration to urban areas has been observed.

Figure 6. Internal Migration trends in Romania between 2011 and 2015

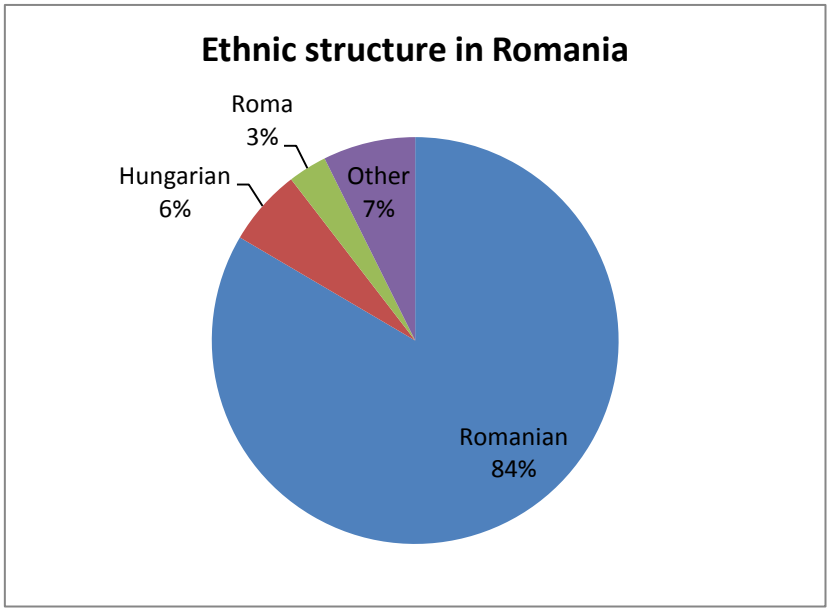


Source: NIS processed data 2011-2015

Ethnicity

At the census of October 2011, declaring the ethnicity was optional. This is due to complying with the fundamental right of each individual to declare his or her ethnic affiliation without any kind of constraint and under complete liberty. Still, it can be noted in Figure 7, that 83.5 % from the total population declared themselves of Romanian ethnicity.

Figure 7. Ethnic structure in Romania in 2011



Source: Population and Housing Census, 2011

The ethnic structure of population living in the AoI in 2011 is presented below:

Table 7. Ethnic distribution in the AoI.

Total population in the AoI	**100%**
Romanians	91.78
Hungarians	0.83

Roma	2.42
Other	4.96

Source: Population and Housing Survey, October 2011

Most of the inhabitants living in the AU crossed by the pipeline declared themselves in 2011 as being Romanians. The largest minority in the AoI is represented by the Roma population (2.43%). In AUs such as Tătărăştii de Sus (Teleorman County), Izvoru (Argeş County), Corbu and Grădinari (Olt County) and Scoarţa (Gorj County) the Roma population is above 10%. In Grădinari, the percentage of Roma is approximately 25% out of the total population.

The South-West region of Romania is characterized by the presence of Hungarian population. Their presence is also shown in the data collected for the AUs crossed by the pipeline. In Timis County (Lugoj, Coşteiu and Recaş) and Arad County (Fântânele) the percentage of Hungarians is above 5% out of the total population. In Coşteiu, the Hungarian population reaches 10%.

The ethnic groups' distribution in each AU in the AoI is provided in Appendix 4 Demography in the AUs crossed by BRHA pipeline.

Religion

The dominant religious entity is the Romanian Orthodox Church. The last census (2011) revealed that 81 % of the population of Romania is Orthodox. Other important Christian religions includes Roman Catholicism (4.3%).

In the AoI, 83.5% inhabitants declared themselves as being Orthodox. The table below presents the share of the Orthodox and Catholic population in the 79 AUs crossed by the pipeline route.

Table 8. Religious distribution in the AoI.

Total population in the AoI	**100%**
Orthodox	89.68
Catholic	1.09
Other	9.23

Source: Population and Housing Survey, October 2011

In Timiș County (Lugoj and Recaş) and Arad County (Şagu) the percentage of Catholics goes up to approximately 10% of the total population.

Appendix 4 Demography in the AUs crossed by BRHA pipeline presents the current situation of structure of population based on ethnicity and religion.

Gender

As per the statistical data available for 2015, the gender ratio at national level is 51% women and 49 % men. The distribution of population by gender in the AoI shows the same pattern. The list with gender distribution in each AU crossed by the pipeline is presented in Appendix 5 Gender distribution in the AUs crossed by BRHA pipeline.

4.3 Settlement and housing

4.3.1 Types of Settlements and Housing

The pipeline will cross different types of terrains: plains, hills and mountains. Depending on the geographic characteristics, the settlements in Romania generally differ from the point of view of settlement structure.

In the mountain areas, the villages are mostly **scattered** with isolated households. Scattered villages are found along the pipeline route in administrative units of Hunedoara County (Vulcan, Băniţa AUs).

In the hill regions, the villages are generally **dispersed** and are characterized by large areas of agricultural land. The households are located at smaller distances of one another. Such villages are found along the pipeline route in Argeș County (Căldăraru AU), Gorj County (Turcineşti, Schela AUs) and Timiş County (Găvojdia, Lugoj, Ghizela, Topolovăţu Mare AUs).

Cluster villages are common in plains or lowlands where the favourable geographic condition and the high quality of land have led to existence of large villages that are able to continuously extend. Along the pipeline route, settlements with these kind of similarities are in Giurgiu County (Bucşani, Mârşa, Roata de Jos, etc.), Teleorman County (Graţia, Poeni, etc.), Dâmboviţa County (Şelaru), Argeş (Popeşti, Râca), Olt County (Corbu, Potcoava, Scorniceşti, etc.), Vâlcea County (Voiceşti, Măciuca, etc.), Gorj County (Dănciuleşti, Stejari, etc.), Timiş County (Coşteiu, Pişchia, Bogda, etc.) and Arad (Maşloc and Vladimirescu AUs).

Figure 8. Example of Romanian scattered village, Vulcan AU, Hunedoara County

Source: Socio-economic survey, December 2016

Figure 9. Example of Romanian dispersed village, Căldăraru AU, Argeș County

Source: Socio-economic survey, December 2016

Figure 10. Example of Romanian clustered village, Coșteiu AU, Timiș County

Source: Socio-economic survey, December 2016

4.3.2 Housing Space and Household Composition

Most of the dwellings in the AoI are located in rural areas. Typical houses in the rural area are mostly one storey houses but the general trend is to build bigger houses with two levels.

Figure 11. Traditional Romanian houses

Source: Socio-economic survey, December 2016

There are also differences between household types when looking at the western and southern part of Romania. Western parts (Timiş and Arad Counties) have been under Austrian-Hungarian Empire occupation so the house type is much influenced by architectural style imposed during the empire.

Figure 12. House in Coşteiu, Timiş County

Source: Socio-economic survey, December 2016

The average number of members per households provided through the 2011 Census is 2.68. The socio-economic survey revealed that each interviewed household has about 2.9 members, with 34% of the households in the AoI having 2 members, 16% having 3 members and 13% have only one member.

4.3.3 Settlements in the 500 m Corridor

A virtual tour along the pipeline was performed prior to the socio-economic survey in order to identify all settlements that will be crossed by the pipeline in the extended impact area of 500 m (250 m on each side of the pipeline centre point). The pipeline construction corridor is described in Figure 2.

Appendix 6 presents the list of all settlements crossed by the BRHA pipeline located within the 500m corridor.

The virtual tour revealed that out of the 79 AUs, 58 have settlements located in the 500 m corridor. Moreover, in 21 AUs the houses are located at a distance varying from zero metres (Corbu, Tetoiu, Obreja, Coşteiu) to 20 m from the pipeline construction corridor of 21m.

The list with the proximity of each AU and settlement to the pipeline corridor is presented Appendix 6 List of Administrative Units and Settlements crossed by BRHA pipeline.

According to the information provided by Transgaz, 11 properties are located at a distance of 10m to 19m from the pipeline, within the 21 m working strip. In these cases, the minimum required distance of 20m as per Annex 3 of Technical Norm 118/2013 is not met. Transgaz prepared assessments and determined the necessary mitigation measures in order to reduce to a minimum the impact on environment and communities. The list of settlements where this Risk analysis was performed is presented below:

Table 9. List of settlements where this Risk analysis was performed

No.	County	Km/AU	Distance to the pipeline (m)

No.	County	Km/AU	Distance to the pipeline (m)
1	Olt	81+553/Corbu	16
2	Vâlcea	149+263/Gușoieni	18
3		162+717/Oveselu	15
4		170+399/Tetoiu	10 and 12
5		183+191/Zatreni	17
6	Gorj	266+093/Schela	16
7		268+411/Schela	19
8	Hunedoara	288+865/Vulcan	15 and 18
9	Hunedoara	296+368/Vulcan	12 and 19
10		296+676/Vulcan	11 and 14
11		297+789/Vulcan	16 and 10
12		311+125/Banita	19 and 16

Source: SNTGN TRANSGAZ S.A.

4.4 Public utilities, Services and Transport infrastructure

The NIS and the Socio-economic survey provide information on the main utilities in the AoI, including water supply, gas, electricity and telecommunication facilities.

Transport infrastructure elements were collected via the EIA Report.

4.4.1 Access to water and gas sources

The National Institute of Statistics collects data only for one indicator relevant for water supply, the quantity of water distributed to consumers in each AU crossed by the pipeline. The statistical data show that water is distributed in 62 AUs out of the 79 identified in the AoI. The NIS does not provide any statistical data regarding the water supply for Priseaca AU (Olt County).

All 16 AUs which do not have access to the water distribution network are rural AUs and are situated in Giurgiu County (Crevedia Mare), Telorman County (Scurtu Mare, Tătărăştii de Jos, Tătărăştii de Sus), Argeş County (Popeşti), Vâlcea County (Guşoeni, Măciuca, Tetoiu), Gorj County (Dănciuleşti, Vladimir, Jupâneşti, Turcineşti), Hunedoara County (Băniţa, Toteşti, Sarmizegetusa) and Caraş - Severin (Băuţar). Drinking water in these AUs is sourced from private or public wells.

The survey has identified that most of the interviewed persons do not have a source of irrigation water for the land they own (73.6 %). 4% are using water from the water wells and only 1.8% is using the public irrigation system.

The statistical data also show that gas is distributed only in 27 AUs out of the 79 identified in the AoI. The NIS does not provide any statistical data regarding the gas supply for Sântămărie Orlea AU (Hunedoara County). Among the 51 AUs which are not supplied with gas 50 are rural settlements and one (Potcoava – Olt County) is an urban settlement. In rural areas, if available, gas is usually used for cooking food, and wood is generally used for heating purposes. In urban areas connected to

the gas supply, it is used both for cooking and heating. Alternative fuels for heating in the urban areas, in the absence of gas, may be wood (individual heating sources), oil or coal (for district heating).

4.4.2 Access to Electricity and Telecommunication services

All AUs crossed by the pipeline are supplied with electricity and with telecommunication services. The telecommunication coverage might be poorer in some isolated areas in the mountains, in AUs such as Băniţa, Baru, Pui (Hunedoara County).

4.4.3 Access to Transport infrastructure

Several national, county, communal roads and railways will be crossed by the pipeline along the Podişor- Horia section. A summary of the road crossing by the BRHA pipeline is presented below:

Table 10. Infrastructure elements crossed by the pipeline route

Type of transport infrastructure	Number
Motorways	2
National roads	23
County roads	76
Communal roads	55
Public utility roads	37
Railways	18

Source: EIA report, Environmental permit

The list with transport infrastructure that will be crossed by the BRHA pipeline is presented in Appendix 7 Existing infrastructure elements in the Podişor - Horia Section.

4.5 Land use and agriculture

The land use type in the project area is mostly agricultural (arable, orchards, vineyards, pastures, forests) or unproductive land.

Approximately 99% of the total area needed for the construction works will be occupied on a temporary basis. The rest of 1% will be acquired for AGIs and their associated facilities. The permanent servitude strip will be 6 m along the entire pipeline route. On this strip, restrictions such as no structures, no trees or deep rooting plants, no deep irrigation channels, drains or ponds will apply.

The table below indicates the total area of the construction corridor and the length of the pipeline per each county crossed by the project in hectares and kilometres.

Table 11. Area affected by the pipeline construction corridor in each county

County	Total area of working corridor per county (Ha)	Total length crossed by pipeline (km)
Giurgiu	44	22
Teleorman	42	20

County	Total area of working corridor per county (Ha)	Total length crossed by pipeline (km)
Dâmbovița	6	3
Argeș	74	35
Olt	102	49
Vâlcea	115	57
Gorj	197	99
Hunedoara	161	79
Caraș-Severin	113	59
Timiș	162	80
Arad	56	27
Total	**1073**	**529**

The most impacted region is the county of Gorj, with over 197 ha of land being directly affected, followed by Timiș and Hunedoara, with 162, respectively 161 ha of land directly affected by the pipeline construction works.

4.5.1 Agricultural Land

Most of the land needed for the project crosses through arable land, but there are also considerable areas of forest, grass lands and vineyards. The pipeline will cross mostly through rural areas where agriculture is a key source of income for the communities.

The Romanian EIA Study states that most of the land required during construction period is currently used for agricultural purposes. The biotope in the AoI as defined in the EIA (buffer zone considered 300 m - 150 on each side of the pipeline) is summarized below:

Table 12. Biotope in the 300 m corridor (considered in the EIA report)

No.	Biome	Surface (ha)	%
1	Road	371.21	2.4%
2	Atrophic	218.47	1.4%
3	Agro ecosystems	10869.2	68.9%
4	Meadow	1722.27	10.9%
5	Forest	2047.64	13.0%
6	Riparian	299.1	1.9%
7	Scrubs	209.93	1.3%
8	Others	40.65	0.3%

Source: EIA report

NIS data for the year 2014 shows that the AUs with the largest areas of pastures are located in Vâlcea County (Fârtăţeşti, Guşoeni, Măciuca, Tetoiu, Zătreni), Gorj County (Bălăneşti), Hunedoara County (Băniţa, Baru, Sălaşu de Sus) and Caraş-Severin (Oţelu Roşu, Băuţar, Glîmboca). In these AUs the share of pastures is above 50% of the total agricultural land.

There are important areas of vineyards in Drăgăşani and Suteşti (Vâlcea County) and in Lugoj and Recaş (Timiş County). In Suteşti around 13% of the agricultural land is used for vineyards and in Recaş the share of vineyards is 8% out of the total agricultural land.

Several orchards are present in the AoI. In Turcineşti, Gorj County 13.5% of the total agricultural area is used for orchards.

Appendix 8 Land use in the AUs crossed by BRHA pipeline presents the distribution of land use types in all AUs crossed by the pipeline.

Box 1. Information on Romanian requirements for fruit tree growing and forestry.

In accordance with the requirements of the Law no.348/2003 regarding fruit tree cultivation, clear-cutting of fruit tree plantations and young fruit trees of commercial interest, belonging to natural and legal persons is only allowed on the basis of the authorization issued by the County Directorates for Agriculture and Rural Development.

The wood material resulting from the clear-cutting of fruit tree plantations is the property of each legal owner of the plantation and isolated fruit trees, having the right to decide on trading or using such rights.

Provided that land is not going to be replanted with orchards after clear-cutting, the land owners are required to apply for changing the designated land use category in accordance with the current legal requirements. The land-owners shall submit the required documentation for authorizing land use change to the Directorate for Agriculture and Rural Development three months prior to clear-cutting.

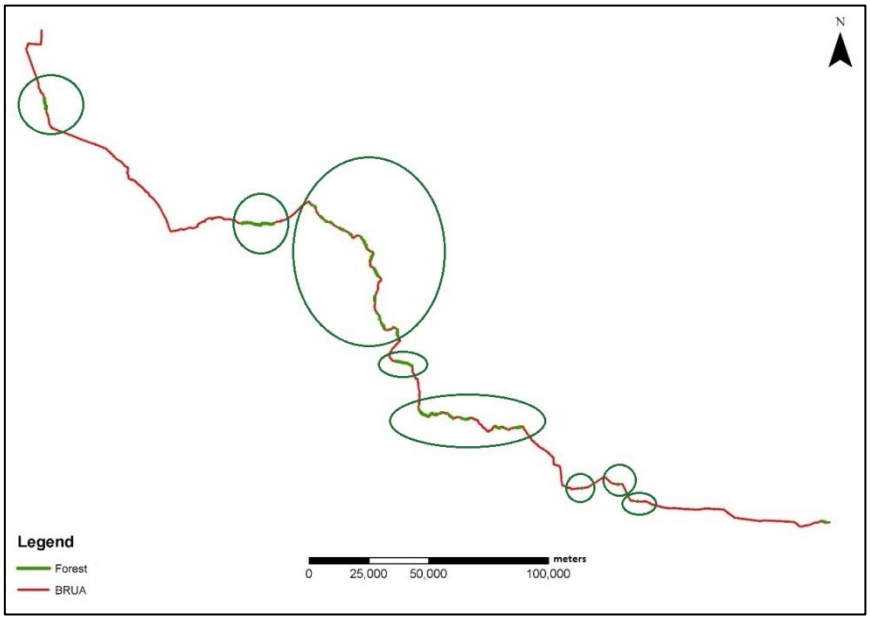
According to the Forest Code, temporary land take of the forest fund is only allowed for a specified period of time and upon ensuring the advance payment for land withdrawal from the national forest fund. The Approval for temporary occupation of forest covers the period of clear-cutting and must extend to the time for the works needed to restore the land to suitable afforestation conditions.

Source: Law no.348/2003 and Forest Code

4.5.2 Forestry

As per the information provided by Transgaz, in 30 AUs the working strip will be reduced to 14m due to crossing of forest areas. Same will be applied when crossing vineyards, orchards or other sensitive areas. Around 31 km of forests will be crossed by the pipeline mostly in: Vâlcea County (Măciuca, Fârtățești, Zătreni AUs), Gorj County (Dănciulești, Stejari, Hurezani, Vladimir, Târgu Cărbunești, Scoarța, Bălănești, Schela AUs) and Hunedoara County (Vulcan, Bănița, Sarmizegetusa AUs). The land use in the 14 m working strip is detailed in Appendix 9 Land use in the 14 m working strip.

Figure 13: Sectors that overlap with forests (areas marked in green)



Source (EIA Report)

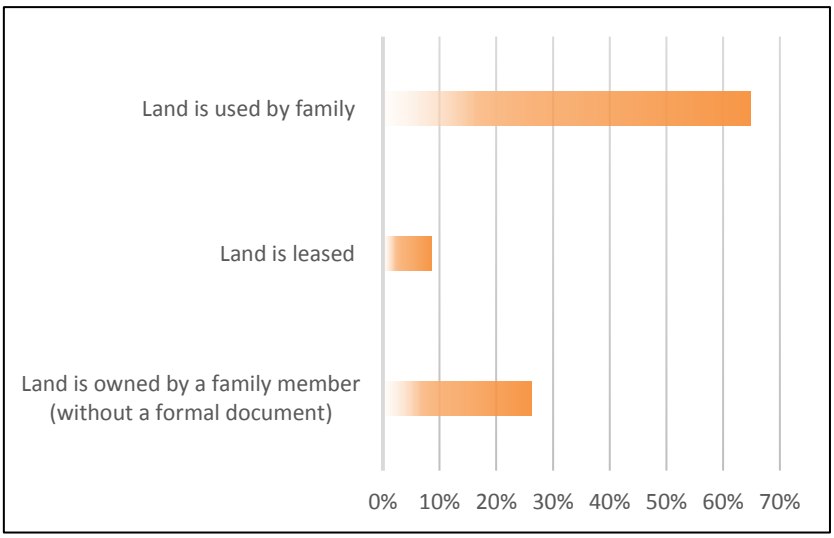
The Permanent Servitude Strip will be reinstated at the end of the construction, but maintained in clear condition with no trees for the purpose of on-going maintenance and operation of the pipeline throughout the entire period of operation.

Deforestation will be performed in accordance with the legal requirements, specifically the Forestry Code (Law 46/2008) and the requirements regarding the permanent withdrawal from, and temporary land take from the national forest fund per the Order of the Ministry of Agriculture, Forests and Sustainable Development no.25/2009.

4.5.3 Land tenure

The information obtained from the socio-economic survey[2] revealed that most of the land in the project area tends to be used by the nuclear or extended family of the landowner (65%) and only 9 % is formally leased.

Figure 14. Land ownership in the surveyed area



Source: Socio-economic survey

Most of the interviewed people (66%) declared that they also own other land plots, beside the affected ones. 20% of the landowners do not own other form of land. Table below presents the land use in the surveyed area.

Table 13. Land use in the surveyed area

Land use	Total answers	% out of the total 444 interviews
Arable land out of which:	332	75%
Potato	*2*	
Cereals	*2*	
Corn	*166*	

[2] The socio-economic survey included 444 questionnaires applied to persons directly and indirectly affected by the land take and households and does not represent a census of PAPs or affected assets.

Land use	Total answers	% out of the total 444 interviews
Sunflower	*12*	
Wheat	*122*	
Vegetables	*19*	
Barley	*8*	
Oat	*1*	
Orchards	50	11%
Vineyard	6	1%
Forest	39	9%
Pasture	29	7%
Hayfield	89	20%
Alfalfa	12	3%

Source: Socio-economic survey

Most of the interviewed persons declared that they use the land for arable reasons. The arable land is used mostly for cultivation of corn, wheat and vegetables.

4.6 Economic activities

The main economic activities in Romania are Industry (mining, manufacturing, electricity, gas, water production and supply, etc.), Retail and wholesale, Transport and logistics, Accommodation and food, Public administration and defence, Social Insurances, Education and Health and social care.

Data analysed by World Bank showed that the Gross Domestic Product (GDP) in Romania increased slightly between 2011 and 2014, with a decrease in 2015. Table below shows the fluctuations of GDP between 2011 and 2015.

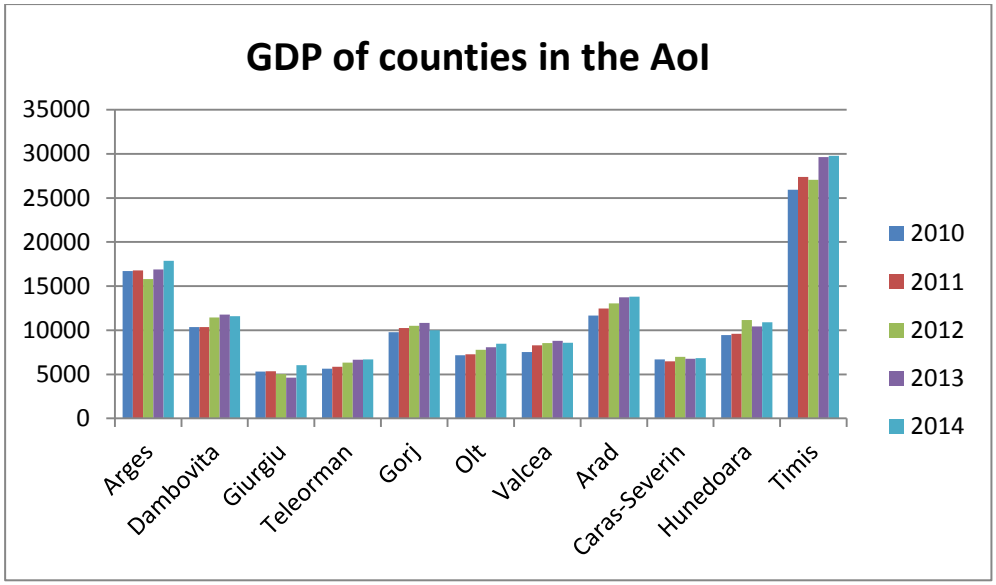
Table 14. GDP evolution at national level

Indicator	2011	2012	2013	2014	2015
Nominal GDP (billion USD)	185	171	191	199	177
GDP per capita (USD)	9, 200	8, 558	9, 585	10, 020	8, 9729

Source: World Bank databank, http://databank.worldbank.org/data/reports.aspx?source=2&country=ROU , accessed February 2017

The increase of the GDP is also reflected at the level of most of the counties crossed by the pipeline. In 2014, Giurgiu had the lowest GDP, while Timiş County had the highest.

Figure 15 GDP evolution between 2010 and 2014 in the counties crossed by the pipeline (in million Romanian Lei).



Source: NIS processed data

According to the EIA study, with few exceptions, the main economic activity of most of the AUs crossed by the pipeline is agriculture. Drăgăşani, Târgu Cărbuneşti, and Lugoj are mostly industrial areas. Mining is an economic activity specific for Vulcan area.

4.7 Livelihood

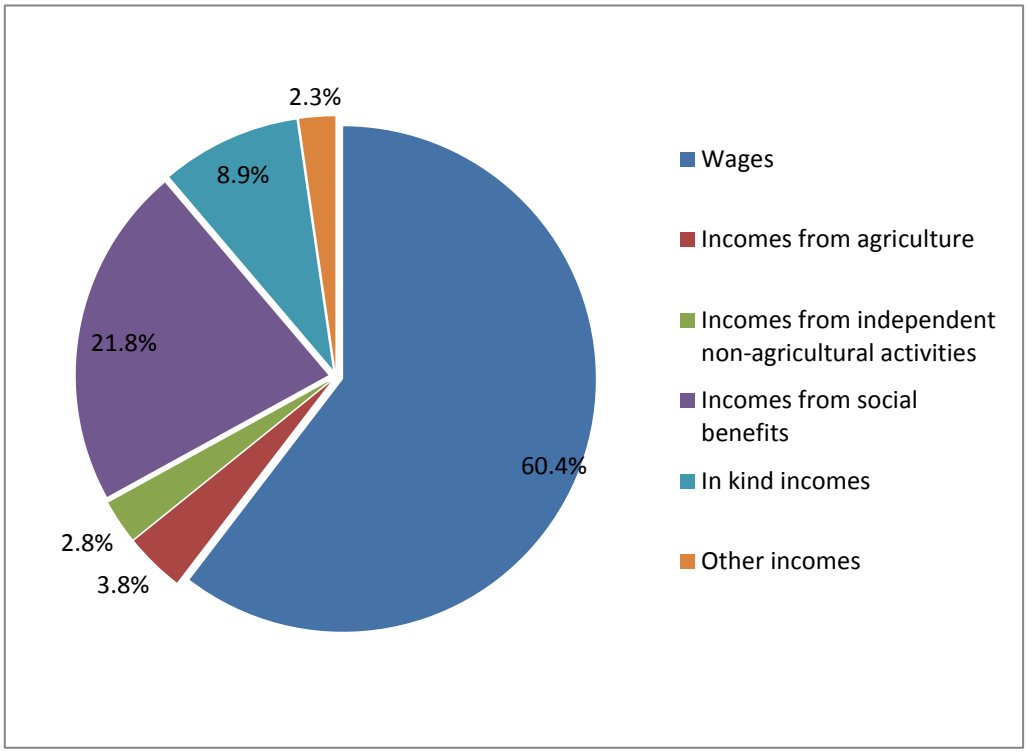
In 2015, 87.2 % of total household incomes are monetary incomes and 12.2% are represented by in kind incomes.

Furthermore, 60.4 % of the total incomes of Romanian households come from wages, 21.8% from social benefits (including pensions, unemployment benefit, child allowance etc.) and 3.8% come from agriculture. Crop agriculture in Romania is mainly performed in small farms, as the agricultural land is highly fragmented. In 2013, the average used agricultural area/farm for private persons was 2.02 ha, while for companies this value was more than 100 times higher (207.49 ha/farm)[3]. This is highly specific for Romania. According to Romanian law of inheritance, estates are divided in equal shares among the beneficiaries. After 1989, the Romanian government had to return all the farmland collectivised under the communist regime to the millions of original, legal owners. This resulted in a complete breakdown of the Romanian agricultural structure and large fragmentation of plots. These small agricultural land plots are mainly used by land owners together with their family members for subsistence agriculture. In some cases, the land is formally leased to larger farming companies/associations which give the owners a share of the produce. In the majority of cases, land owners own more than one plot of land, in addition to small vegetable gardens next to the house.

The structure of the total income of households is shown in the figure below:

[3] Source: General data on the Romanian Agriculture report, 2015, Ministry of Agriculture and Rural Development, http://www.madr.ro/docs/agricultura/agricultura-romaniei-2015.pdf, accessed February 2017

Figure 16. Structure of the total income of households



Source: NIS, 2016

At the level of the 26 surveyed AUs, 34% of the interviewed people declared receiving their monetary income mainly from pensions and 22 % from wages. The high share of households depending on pensions is a direct consequence of an aging population in rural areas and the early pension policy implemented in the '90s in Romania. The survey revealed that approximately 57% of the members of the households are above 45 years old. The aging population is the result of the process of internal migration from rural to urban areas especially in the case of the young generation. Many of the young people decide to change their residence and move to bigger towns in search for better jobs or for educational reasons. Pensions are at a level of 200 Euro/month. The average was calculated taking into account all types of pensions including the medical ones (for disabilities or health problems).

5 % of all households receive money from other social schemes (social aid, children support income, etc.). 2% of the respondents declared that they do not have any source of income.

The minimum wage started to increase since 2013 at an average annual rate close to 15 %. It increased from approx. EUR 162 in 2012 to approx. EUR 235 in July 2015.

A household's typical expenditures are structured as presented in the below table:

Table 15. Household's expenses composition

	Total costs	**% out of total:**				
		Monetary costs	**% out of which, costs for:**			**value of own products**
			consumption	out of which:	taxes	

	average monthly costs - RON			food and beverages	non-food products	payment of utilities		
TOTAL	962.41	91.1	65.4	21.0	25.4	19.0	20.7	8.9
Employed person	1214.71	94.9	61.6	19.0	24.1	18.5	29.4	5.1
Person engaged in agriculture	551.72	69.7	58.3	20.2	26.2	11.9	4.1	30.3
Unemployed person	482.50	88.2	71.3	29.3	22.5	19.5	12.6	11.8
Pensioner	843.79	88.0	71.8	23.9	27.6	20.3	9.0	12.0
URBAN	1142.80	95.8	67.1	21.7	24.2	21.2	24.5	4.2
RURAL	754.15	82.9	62.4	19.7	27.6	15.1	14.1	17.1

Source: NIS data, October 2016

Most of the household costs are monetary (91.1%) out of which the highest share is represented by the in kind cost. The value of the own products has a bigger share in the rural areas where people save money by using the cultivated products for their own consumption.

4.8 Employment and Labour force

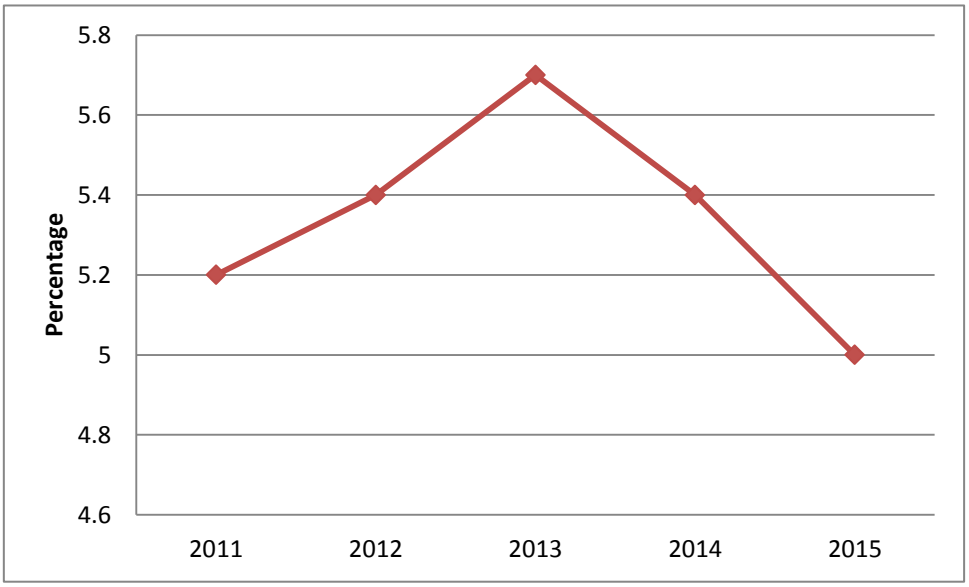
The European Commission (EC) performed a study in 2016 (Country Report Romania 2016 Including an In-Depth Review on the prevention and correction of macroeconomic imbalances) revealing that the employment rate for the 20-64 age group increased in 2014 compared to year 2013. In 2015, Romania registered an employment rate of 67.4 %. Due to the GDP growth, the employment rate is forecast to continue its increase in the next years but it will still remain below the current EU average of 69.8 %.

The highest employment rates in 2015 were registered in Romania in ICT and professional, scientific and technical activities as well as in industry and construction. In contrast, the employment in agriculture and manufacturing sector has decreased in the recent years.

Out of the 11 counties crossed by the pipeline, Gorj County has the lowest number of active population, representing 1% out of the total active population at national level while Timiş County has the highest percentage among the 11 counties (3.9%). The figures regarding the active population in each county are presented in Appendix 10 Active population in the Counties crossed by the pipeline.

The Romanian Ministry of Labour calculated that in 2015 the unemployment rate was of 5 %, the lowest in the last 5 years.

Figure 17. Unemployment rate evolution in Romania between 2011 and 2015



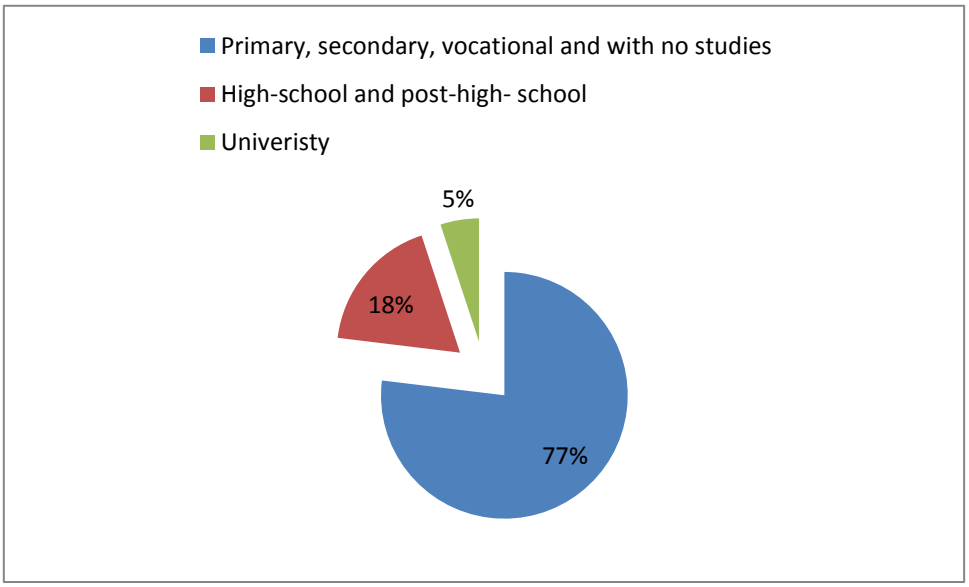
Source: NIS processed data

In December 2015, the total number of unemployed persons was 436,242 out of which only 108,533 persons were entitled to indemnities.

In 17 counties of Romania, the unemployment rate decreased in 2015 compared with 2014 (National Labour Agency). 6 counties in the AoI registered a decrease in the unemployment rate: Vâlcea, Giurgiu, Olt, Teleorman, Caras Severin and Gorj.

The distribution of unemployed based on education levels in presented below:

Figure 18. Unemployment distribution based on education level



Source: Romanian Ministry of Labour/National Labour Agency

The highest rates of unemployed are registered in agriculture, packaging industry, maintenance of roads, bridges, dams. The employment rate of recent university graduates decreased over the last

years. This is connected to the fact that the educational system is not sufficiently correlated to the labour market needs.

31% of the total surveyed households declared having at least one unemployed person in the family. In 13 of the surveyed households, the unemployed person/persons are registered at the National Labour Agency.

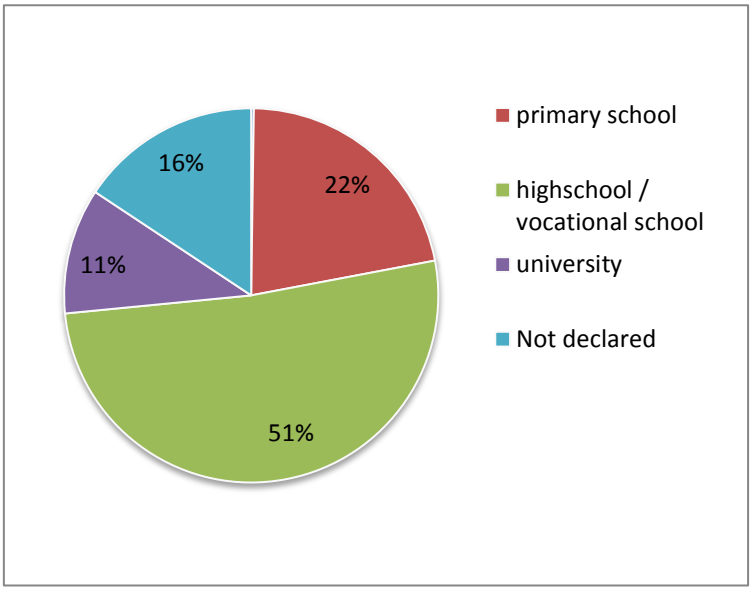
4.9 Education

The Romanian Ministry of Education prepared a report on the status of the pre-university educational system for the year 2014. As indicated in this report, the number of students has decreased in the last 5 years. This is correlated with the decrease of birth rate at national level. In the schooling year 2013/2014 the pre-university educational system had a total number of 3.214 million students with 52,000 less than the previous year. Some educational levels registered a decrease in the number of students (noticeable in high school educational system where a decrease of 6.65% was registered compared to the previous year). In parallel, some educational levels registered an increase in the number of students (vocational educational system where an increase of 25.5% was registered compared to the previous year).

The Ministry prepared a similar report for the state of university educational system showing also a decreasing trend. In the academic year 2013/2014, in Romania were enrolled 433,234 students with approx. 31,000 students less than the previous year. Out of the total number of students enrolled in university educational system, only 38.3% students have graduated the university.

The socio-economic survey revealed that 51% of the members of the 444 surveyed households have graduated high school or a vocational school. Only a small percentage of the household members (0.2%) have not been enrolled in the schooling system.

Figure 19. Educational level of the members of the surveyed households



Source: Socio-economic survey, December 2016

Based on the official data collected during the preparation of this document, primary and secondary school units exist in 73 municipalities out of the 79 crossed by the pipeline while high school units

exist only in the towns located along the route (11 AUs). Lugoj is the only AU with universities. The 79 AUs totalize a number of 119 educational units. No educational units are located in the proximity of the AoI (250 m on each side of the pipeline).

4.10 Public Health and Safety

Secondary data regarding public health and safety retrieved from the NIS for 2015 and the website of the Mobile Emergency Service in Romania (SMURD) show that there is at least one medical unit in each AU, with the exception of Bănița and Totești AUs in Hunedoara County. Regarding mobile emergency units, there is one in every county which tends to the needs of each AU in the respective county or AUs from other counties located nearby.

Appendix 11 Public Health and Safety in the AUs crossed by the BRHA pipeline presents the number of first aid services in affected AUs and the total number at county level (which include general, individual and speciality medical offices), number of hospitals (at county level) and number of SMURD Intervention crews (at county level). Along the pipeline route, the hospitals are located in large urban areas such as Bucharest, Slatina, Târgu Jiu, Petroşani, Timişoara, Arad.

In the household survey, out of 444 respondents, 374 declared no notable health problems. Out of the 70 households that declared their health status, the most frequent illnesses were related to mobility and heart disease.

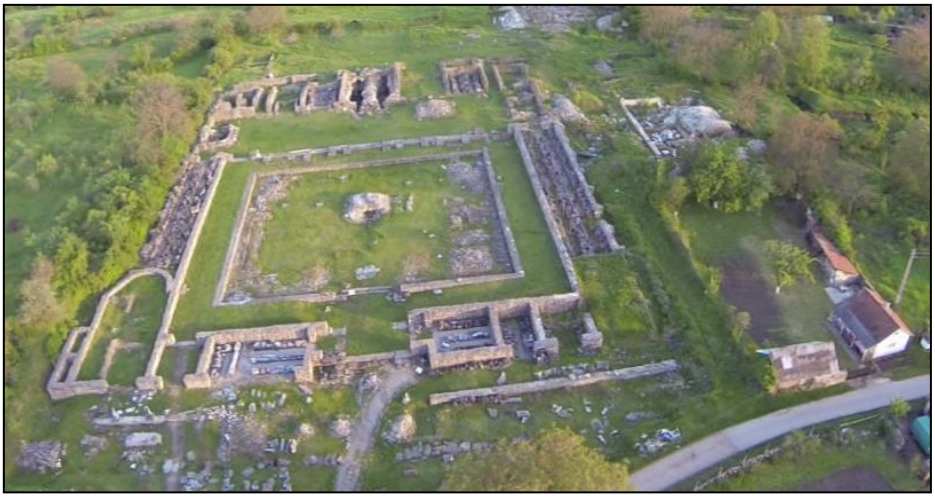
4.11 Cultural, touristic and recreational sites

There are some locations in the AUs where tourism is an economic activity and tourist potential in the AoI is significant, especially in the mountain areas.

The most important touristic areas along the pipeline route are located in Hunedoara County, and they include:

- Ulpia Traiana Sarmisegetuza (ruins of roman colony), located in Sarmisegetuza AU.
- Prislop Monastery, Dinosaurs Geopark and Silvuț Bison Reservation in Hațeg AU.

Figure 20. Ulpia Traiana Sarmisegetuza ruins, Sarmisegetuza AU



Source: http://tarahategului.ro/place/ulpia-traiana-sarmizegetusa/, accessed on 16 January 2017

The mountain area in Hunedoara County includes several resorts which are popular for winter sports and summer holidays. The construction corridor usually avoids touristic areas and settlements, but in some cases, such as Pasul Vulcan, the pipeline construction activities are likely to affect touristic activities, as the corridor is situated less than 100m away from touristic accommodation units. The touristic accommodations and proximity to the pipeline construction corridor are depicted in the map below.

Figure 21. Pipeline corridor close to touristic accommodation units in Pasul Vulcan area, Hunedoara County.

Source: SNTGN TRANSGAZ S.A.

4.12 Vulnerable groups

4.12.1 Poverty and social exclusion

Since the pipeline route will cross mostly rural areas, the vulnerability of the inhabitants is analysed from this perspective.

The rural poverty can manifest in many forms, from the poverty of small villages and those with aging populations to marginalized communities characterized by poor people, low formal employment, and inadequate housing.

In 2014, the World Bank Group provided assistance to the government of Romania in developing the National Strategy on Social Inclusion and Poverty Reduction 2015-2020 and its corresponding Action Plan.

One of the instruments developed to achieve the targets set in the Strategy is The Atlas of Rural Marginalized Areas and Local Human Development in Romania. The Atlas identifies the rural localities where marginalized areas are present. Rural marginalized areas are referring to compact zones inhabited by people with disproportionately low human capital, limited formal employment, and inadequate housing conditions compared with the residents of other rural areas.

Based on the information provided by this publication, 3 rural settlements located along the pipeline route have compact marginalized areas (Corbu – Corbu AU- Olt County; Petculeşti – Grădinari AU – Olt County and Obreja – Obreja AU - Caraş-Severin County).

4.12.2 Project related vulnerable groups

In the context of the pipeline section, based on the discussions with local authorities and survey results, the following groups are considered as having different degrees of vulnerability:

Low income people who depend on land for their livelihood and may be affected by land acquisition

- Rural families with many children particularly single headed households (including single women-headed households);
- Informal land users without security of tenure. In Romania, many land leasers do not register their land lease;
- Low income people who work as dependent staff in activities that may be disrupted because of land acquisition and/or construction (such as workers/employees of agriculture or commercial activities along the pipeline).
- Low income land owners without land books proving their ownership, which might not be able to access compensations provided for land take incurred by the Project (either temporary or permanent).

Roma minority group

This group presents worse social indicators than the main population and other minority groups. In rural areas, Roma groups are particularly dependent on agricultural labour. They are generally much more exposed to unemployment and poverty than other groups. There are no AUs inhabited exclusively by Roma population. Usually, the Roma minority represents a small percentage out of the total population, with few exceptions, such as Tătărăştii de Sus (Teleorman County), Izvoru (Argeş County), Corbu and Grădinari (Olt County) and Scoarţa (Gorj County) where the Roma population is above 10%. In Grădinari, the percentage of Roma is approximately 25% out of the total population.

Children travelling to and from school

Children will be exposed to Project traffic and other safety risks, such as pedestrian crossing of construction corridor on the way to and back from school. A total number of 119 schools have been identified in the 79 AUs crossed by the BRHA Pipeline.

Low-income elderly people

In the Project area the population tends to be elderly, because many young people migrate either to the nearby cities or abroad for work. The field survey indicated that the largest age group of the household members is composed of elderly people, over 60 years old.

Disabled people

Living in affected communities who may be disproportionally affected by problems of access and circulation due to Project construction activities.

The following vulnerability aspects were identified in the regions potentially affected by the Project during the socio-economic survey:

- Poor living conditions characterize elderly people who live alone in rural area, with homes consisting of a room or two rooms, getting water from public fountains or neighbours, with uncontrolled waste water disposal, and heating their homes with wood and coal.
- Mobility issues were the most frequent ailment declared by respondents during the socio-economic survey. This might impede this category of PAPs to participate in the assessment of land assets or damages incurred by the project, as well as communicate their concerns and grievances to the project easily.
- From the perspective of vulnerable groups there is a significant association between poor housing conditions and elderly persons living alone and families with many children, particularly Roma households.

According to the official statistics presented by Ministry of Labour, even if the poverty rate has decreased between 2008 and 2010, it showed an upward trend between 2010 and 2013. Poverty is present mostly in rural areas. This is due to the structural characteristics of rural areas with a growing aging population benefiting from few sources of income.

From the land acquisition and livelihood restoration point of view (Table 16), the persons who might be disproportionately affected by the project include:

- Persons that are dependent on land resources and their livelihood is closely connected to agriculture/land-based livelihoods;
- Owners of non-legalised constructions built along the route (if this will become apparent when construction works will be initiated);
- Elderly or disabled persons that are not be able to communicate their concerns and grievances to the Project easily.

Table 16. Categories of PAPs from a land acquisition and livelihood restoration point of view

Category of PAP	Vulnerability/Livelihood Status
Resident Owners of Assets	No formal or informal housing has been identified on the route. However, informal houses could be built before the construction is commenced and owners of these structures may be affected by poverty.
Agricultural land owners	Isolated cases where affected persons do not possess other land than the one affected Persons that have not initiated the inheritance process due to financial difficulties and are not able to access their compensation Elderly land owners that are not familiar with their rights in relation to the land acquisition process
Agricultural Tenants/Land Users	Land users that do not possess a formal agreements for land use and have made land improvements at their own cost

General observation of the project area during the socio-economic survey along the pipeline route would indicate that vulnerable people or entities would not be generally present in the AoI, but there may be specific exceptions that need to be identified during the LALR process. A full census would allow the identification of vulnerable group categories which are of particular relevance to the project.

4.13 Organizational structure of BRHA PIU

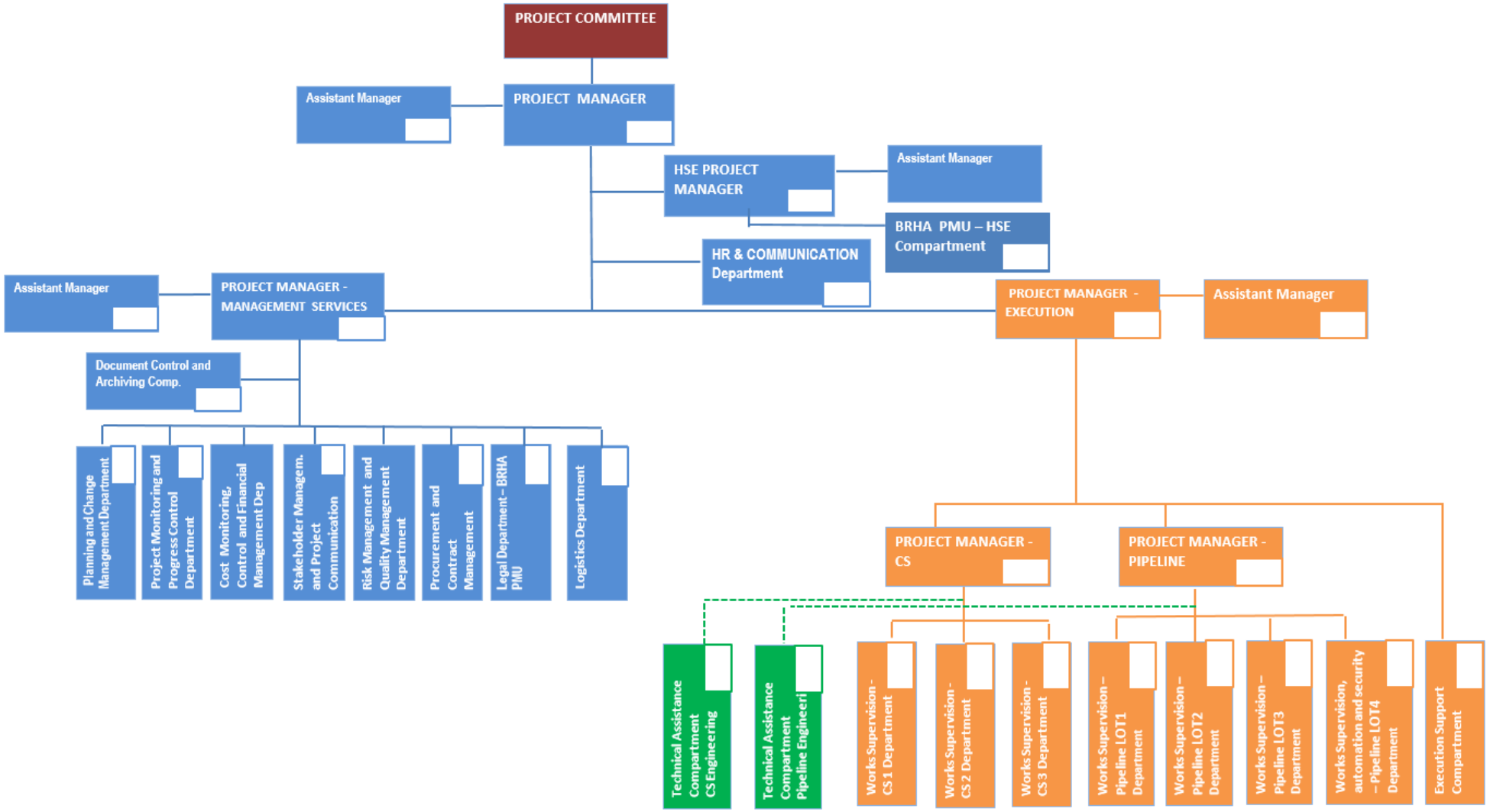
Transgaz has established a separate PIU for the implementation of the BRHA project, which will be in charge throughout the pre-construction and construction phase. After the construction is finalized, the operation of the pipeline will be taken over by Transgaz, through their existing management structures.

The work force management and expected impact, contractor management, as well as Transgaz CSR policy and main actions are presented in Chapter 5 below.

Structure of BRHA PIU

BRHA PIU is foreseen to include approximately 120 persons, which is considered appropriate, given the magnitude of the project. A dedicated department has been included in the organisational chart in order to deal with social aspects and engage with stakeholders: Stakeholder Management and Project Communication. This department includes 6 members, but persons belonging to other departments in Transgaz have communication and community liaison responsibilities, such as site supervisors/managers in the Works Supervision (either construction phase or pipeline operation phases) departments. The entire workforce of Transgaz includes 5200 employees.

BRHA IMPLEMENTATION STRUCTURE ORGANIZATIONAL CHART



4.14 Conclusions

The 79 AUs which are in the working strip of BRHA pipeline are located in various geographical areas (plains, hills, mountains). Project area of investigation and its surroundings, therefore, generally include rural settlements and towns. A virtual tour of the pipeline revealed that out of the 79 AUs, 58 have settlements located in the AoI of 500 m corridor (250 m on each side of the pipeline).

The secondary data collected for Public utilities, Services and Transport infrastructure revealed that water is distributed in most of the AUs (62) but gas is distributed only in 28 AUs. All AUs crossed by the pipeline are supplied with electricity and with telecommunication services.

Land crossed by the pipeline is in the vast majority (roughly 60%) arable, with some important areas with pastures, vineyards, orchards or forests.

The main agricultural crops likely affected by the project will include corn, wheat and vegetables. Moreover, some orchards, hayfields and pastures in the AoI are also likely to be affected.

With regard to the local economy, the southern counties have a lower GDP than the western counties (Timis, Arad). The main economic activity in the AUs crossed by the pipeline is agriculture.

NIS data presents the status of primary and secondary school units that exist in 73 municipalities out of the 79 crossed by the pipeline while high school units exist only in the towns located in the AoI (11 AUs). Lugoj is the only AU with universities. The 79 AUs totalize a number of 119 educational units. No educational units are located in the proximity of the pipeline corridor.

There is at least one medical unit in each AU, with the exception of Bănița and Totești AUs in Hunedoara County and Marga AU in Caraș-Severin County.

The structure of monetary income shows that the income of the households where the socio-economic survey was applied comes mainly from pensions and from wages.

Tourist attractions are present in the affected municipalities and touristic periods will be taken into consideration in Project construction. The tourist activities are more significant in Hunedoara County where Ulpia Traiana Sarmisegetuza (ruins of roman colony), Prislop Monastery, Dinosaurs Geopark and Silvuț Bison Reservation in Hațeg AU are located. Also, in the mountain area of Hunedoara County, there are several resorts popular for winter sports and summer holidays especially in Pasul Vulcan.

Taking into account that the educational units are not located in the proximity of the pipeline, the children have to travel to reach their school. The traffic conditions, including crossing, will be carefully considered in order to identify and develop adequate measures to be implemented by the Project.

From the social baseline and socio-economic survey, it can be concluded that the majority of PAPs are land owners or tenants living in rural areas, involved mainly in agricultural activities, generally over 60 years old and a with a level of education up to high school or vocational school.

The fact that most of the surveyed persons are involved in agriculture and the pipeline construction corridor will affect their lands, either temporarily or permanently, could constitute an impact on

their livelihood. As 66% of interviewed people declare that they also own other land plots beside the one(s) directly affected by the pipeline construction, special attention should be paid in the land acquisition process to those persons which rely only on the affected land plot for their livelihood and do not have other income sources.

The education level and age of the people in affected AUs should be an aspect which is considered by Transgaz when engaging with the local population, and the persons within BRHA PIU and Transgaz, as well as community liaison officers should be aware of these aspects, using adequate language when engaging with PAPs.

Aging population in the rural area, combined with mobility issues being the most frequent ailment declared by interviewed persons, is a relevant aspect to take into consideration by Transgaz when engaging with affected land owners/tenants in the process of inventory of assets on the affected land plots, as well as assessment of damages to the land incurred by the project activities.

5. Socio-economic aspects related to project implementation capacity of Transgaz

Labour

Economic and employment impacts will potentially occur during the Project's pre-construction, construction and operation phases.

The Project will require highly skilled, semi-skilled and unskilled workers to undertake construction and operational duties and estimates the following workforce during the construction and operations phases. This includes direct opportunities (jobs with the Company, both permanent and temporary), indirect employment opportunities (jobs with the contractors and suppliers), and resultant induced employment (employment arising from increased disposable income and demand for additional goods and services).

- Project workforce estimates with Transgaz and contractors are included in the table below

Employment Type	Construction phase	Operation phase
Employees	120	60
Contractors	680	TBD

- Workforce estimates per project phase and activity are detailed in the table below

Stage	Activity	Personnel/objective	Total
Construction phase (contractors)	Construction sites	124	124*5= 620
	Pipe storages	6	6*10=60
PIU (Transgaz)	Management and monitoring	120	120

Stage	Activity	Personnel/objective	Total
Subtotal			800
Operation phase (Transgaz)	Compressor stations	20	3*20=60
Subtotal			60

- **Changes in direct employment (with Project proponent).**

The impact of direct employment is considered a potentially positive impact of the Project. BRHA project will be implemented by contractors, it includes an international tendering system for the selection of construction companies, which in addition to the technical and economic requirements will also be taking into account the capacity of the bidders to comply to EBRD social and environmental performance requirements.

Even though not required, it is expected that the contractors will also employ local work force, mainly unskilled workers. Though this is a possible positive impact of the project, it cannot be maximised or ensured that it will occur, as public procurement rules do not allow adding a requirement to hire locals to the tendering documentation.

As indicated by the public consultation reports elaborated by Transgaz, questions regarding employing local work forced were raised during discussions, both by authorities and general public, indicating an interest of communities in this matter. These aspects were discussed especially in Vulcan and Schela AUs, which are mining areas with a history of lay-offs due to a decrease in mining activities after 1990.

Labour influx

The influx of workers is directly connected to the demand for workforce and entails the arrival and permanence of external workers in the project area, in particular where the camp sites are located. This impact will be more relevant during the construction phase, while it will be limited during the operation phase.

During the construction phase, workers will be accommodated in designated camps, which may cause added pressure on existing utility infrastructure, and will be nodes of increased traffic. In addition, the presence of workers will lead to interactions with the local communities, with potentially both positive and negative consequences. Positive effects include the procurement of goods for workers and opportunities for local businesses. Negative effects include the possibility of tensions between workers and local communities, general nuisances to people's daily activities and the possible increase in transmission of certain diseases.

Supply chain monitoring and evaluation – contractor management

Transgaz has elaborated a Contractors Management Plan, outlining the relationship between the company, represented by BRHA PIU and the contractors for the construction of the pipeline and AGIs.

The Contractor Management Plan also regulates aspects such as work effort integration, interfaces between BRHA PIU and Contractors, interfaces among subcontractors, management of labour,

management of OHS, workers' registration and record keeping, management of worker grievances, worker communication, facilities and worker accommodation, managing and supporting sub-contractors, progress reporting, review and acceptance process.

CSR Programmes

Transgaz, through their CSR policy posted on its website, commits to "supporting the real needs of all those who permanently contribute to the smooth running of its activity" and the "permanent increase of company accountability degree towards its employees, partners, community and environment as well as the impact effectiveness of CSR programs initiated for this purpose".

CSR programmes presented on the company website include actions performed between 2010 and 2014. These include, among others:

- "C. I. Motas Annual Prize", for bachelor and master students in the field of oil and gas;
- The Green Olympics – local project in Medias and neighbouring settlements, to raise awareness among the young population regarding environmental issues.
- "Closer… with a click!" – supporting Transgaz employees' with children with outstanding results in school and low income per family member.
- Volunteering campaigns for blood donations, humanitarian campaigns and donations for orphanages, persons affected by natural disasters, recycling activities for educational purposes, etc.

6. Public consultations, participation and disclosure

This chapter describes the actions carried out by Transgaz as part of their stakeholder engagement process.

Transgaz has identified as affected stakeholders for the BRHA project, the following:

- Local, county, central public authorities and administrations;
- Owners of (public/private) land affected by the exercise of the right of way;
- Owners of (private) land to be acquired for permanent structures;
- Users of land affected by the exercise of the right of way;
- Persons using natural resources;
- Workers and employees of the landowners and users;
- Local communities in the Project area;
- Vulnerable groups in the Project area;
- Transgaz employees working on the Project
- Contractors and their workers
- Local groups of interest, official associations and groups made up of and represented by affected parties;
- Third parties owning affected lines/utilities

Beside the affected stakeholders, a series of relevant affected parties have been identified:

- European/State institutions/ regulatory agencies
- Local, county, central public authorities and administrations;
- Local unofficial leaders, representatives of the communities and opinion leaders;
- Third parties owning affected lines/utilities;
- Local groups of interest, official and unofficial associations and the groups of affected parties and represented by the affected parties;
- Local/national media;
- National and international NGOs.
- Scientific institutions.

Engagement with affected stakeholders (mainly landowners) took place during the land owners identification process and included several notifications sent and pre-agreements signed for easement rights. The text of the sent notifications however was not adjusted to the profile of the recipients, it included legal terms and technical language which might be difficult to fully understand. This was concluded as the socio-economic survey revealed that only 11% of the members of the surveyed household have attended university and most of the recipients of the notifications are elderly people living in rural areas. Even though notifications were signed in the presence of Transgaz representatives, as such giving the landowners the possibility to ask for further clarifications/explanations, it is useful to adjust future communication to the profile of the recipient.

Other stakeholder engagement actions included public consultation meetings in selected affected AUs.

A total of 33 public consultation meetings were organised in the AU crossed by the pipeline, reaching more than 500 participants. 21 of these meetings were organised as public debates required by the national legislation under the environmental permitting procedure, while an additional 12 public consultations were organised in line with the Concept on the public participation for Projects of Common Interest as per the provisions of Regulation (EU) no 347/2013 of the European Parliament and of the Council on 17 April 2013.

The AUs in which public consultation meetings were held are detailed in the table below.

Table 17. Location of public consultations held by BRHA PIU

No.	**Public debates under the EIA procedure** August 24th – September 1st 2016	**Public consultations for Projects of Common Interest** October 24th – November 8th 2016
1	Bucșani (Giurgiu)	Mârșa (Giurgiu)
2	Poeni (Teleorman)	Grația (Teleorman)
3	Vladimirescu (Arad)	Bârla (Argeş)
4	Mașloc (Timiș)	Potcoava (Olt)
5	Selaru (Dâmbovița)	Guşoieni (Vâlcea)
6	Recaș (Timiș)	Măciuca (Vâlcea)

No.	**Public debates under the EIA procedure** August 24th – September 1st 2016	**Public consultations for Projects of Common Interest** October 24th – November 8th 2016
7	Corbu (Olt)	Bălăneşti (Gorj)
8	Căldăraru (Argeș)	Turcineşti (Gorj)
9	Lugoj (Timiș)	Toteşti (Hunedoara)
10	Prisaca (Caraș Severin)	Băuţar (Caraş-Severin)
11	Scornicești (Olt)	Obreja (Caraş-Severin)
12	Drăgășani (Vâlcea)	Coşteiu (Timiş)
13	Zătreni (Vâlcea)	
14	Pui (Hunedoara)	
15	Vulcan (Hunedoara)	
16	Hurezani, (Gorj)	
17	Schela (Gorj)	
18	Târgu Crăbunești (Gorj)	
19	Teslui (Olt)	
20	Sarmizegetusa (Hunedoara)	
21	Otelu Rosu (Caraș Severin)	

In house resources of Transgaz as well as resources made available by the municipalities hosting the public consultation were employed in order to ensure that representatives of both affected stakeholders and relevant affected parties take part. During these consultations, best represented were the affected stakeholders, respectively the representatives of the associations of landowners and representatives of the associations of agricultural producers. Less represented were the relevant affected parties, which were present only in some locations.

Transgaz representatives in the consultations included specialists in the legal field, design, land regulations, environment, communication, European financing, archaeology, so that a broad range of possible questions coming from the public could be addressed.

The used presentation techniques facilitated the viewing of the route of the project by pointing out some major aspects such as: the promoter, the technical parameters, the financing sources, the integration in the context of the development of other projects, the execution technology, etc.

The key information transmitted during the consultations included the purpose of the project, advantages and local and national benefits, environmental impact, risks and opportunities.

Examples of most frequently asked questions during the consultations:

- "When will the construction of the pipeline start in our locality?"

- "Where do the works start and how are they developed?"
- "Which are the characteristics of the pipeline?",
- "What benefits will the project bring to the landowners/producers?",
- "How will Transgaz support the local community through which the pipeline passes?",
- "How will the land of each owner be affected?
- "Which is the route in each separate locality?",
- "What concrete compensations are granted per lands and per crops?"
- "Who receives the compensations?"
- "What happens to the local infrastructure?"

A lack of confidence of some land owners related to their compensation was noted during the consultations, making reference to former relations between landowners and various large projects which in the past affected their lands and they did not receive appropriate compensations, if any.

Participants in the public consultations were encouraged to ask questions and express their concerns/suggestions either during the meetings or through question forms handed out during consultations.

Transgaz, as per internal procedures and in accordance with applicable legal provisions (GO 27/2002), respond to all grievances within a maximum of 30 days from receiving such grievance.

7. Impact assessment and mitigation measures

The current chapter focuses on presenting the social impacts and risks associated with the BRHA Pipeline.

7.1 Impact Assessment Methodology

Social impacts/risks are defined as the consequences of the project on individuals, communities and other stakeholders that include changes to their standard of living (livelihoods), overall quality of life and wellbeing, living conditions, lifestyle, cultural traditions, community dynamics, socio-economic infrastructures, and eco-systems.

Possible impacts have been analysed using a simplified methodology addressing the following aspects:

- **Direction of the impact**: whether the interference produced by the Project actions (impact factors) on the environment and/or society is Positive (+) or Negative (-) (see below);
- **Project phase:** Construction (C) and Operation (O);
- **Significance:** Low, Medium, High

The duration, reversibility, presence of stressors and resilience to the stressors were not taken into consideration due to difficulty in assessing these indicators, given the fact that a rapid social impact assessment methodology is applied. Also, there is limited data regarding such aspects related to the AoI and the socio-economic survey carried out was not meant to be a census of PAPs or assets. As such these indicators were not investigated among respondents.

The **Direction of the Impact** addresses whether the interference produced by the Project actions on the environment and/or society are:

Negative: the impact factor causes a worsening of the environmental or socio-economic state or quality;

Positive: the impact factor causes an improvement of the environmental or socio-economic state or quality.

Potential positive and negative impacts and mitigation measures for the negative ones have been analysed with respect to the following:

- Demography
- Settlement and Housing
- Public Utilities, Services and Transport infrastructure
- Land use
- Economic activities
- Livelihood
- Labour influx
- Employment
- Education
- Public health
- Occupational health and safety
- Cultural, Touristic and Recreation sites
- Vulnerable Groups

Potential positive and negative impacts and mitigation measures for the negative ones have been analysed for ***Construction (C)*** and ***Operation (O)*** phases.

This chapter is not analysing the potential impacts and risks during the decommissioning phase. Considering the time lapse before decommissioning (40 years), its impacts and risks will need to be re-assessed against an evolved environmental and social baseline. It is however important to note that decommissioning will apply only to AGIs, while the pipeline will remain in place. It is expected that impacts will be of the same nature as in the construction phase, but of much more reduced significance due to the fact that they will be associated only to AGIs. In addition to mitigation measures implemented for the construction phase, lessons learned from the construction will also be considered. A specific Decommissioning Management Plan will be developed before the start of decommissioning on the basis of an updated environmental and social baseline.

The Significance of the impact was analysed using a combination between its ***magnitude*** and its ***likelihood/probability of occurrence.***

Magnitude
Very low or no effect: No or insignificant changes from the baseline conditions at community level
Low: Very small differences from baseline conditions. The impact is mainly local, rare and affects in small proportion the community
Medium: Difference from baseline conditions. The impact affects a medium to large area or number of people
High: High differences from the baseline conditions. The impact affects a large area or number of

people
Very high: Change dominates over baseline conditions. Affects the majority of the area or population in the area of influence

Likelihood/Probability of occurrence
Unlikely: Not known to occur during similar infrastructure projects
Rare: Has occurred in similar infrastructure projects and may occur in exceptional circumstances
Possible: Could occur at least once or in exceptional circumstances during the project life cycle
Expected: Is expected occur during the project life cycle more than once but not frequently repeated
Expected and repeatable: Frequently repeated during the project life cycle

In order to determine which factors have a significant impact on the socio-economic environment from the ones detailed in the previous chapter, an evaluation method has been proposed (as listed below).

Table 18. Negative impact significance matrix

		Likelihood/ Probability of occurrence				
Impact magnitude		**Unlikely**	**Rare**	**Possible**	**Expected**	**Expected and repeatable**
1	Very low or no effect	1	2	3	4	5
2	Low	2	4	6	8	10
3	Medium	3	6	9	12	15
4	High	4	8	12	16	20
5	Very high	5	10	15	20	25

The resulting risk levels and their acceptability are explained below:

Table 19. Colour coding of the Impact significance

Score	**Impact significance/Risk level**	**Description**
1-4	**Low**	Low Risks are largely acceptable, subject to reviews periodically, or after significant change.
5-12	**Medium**	Medium Risks should only be tolerated for the short-term and then only whilst further control measures to mitigate the risk are being planned and introduced, within a defined period. Moderate risks can be an entity's greatest risk, a very sensitive aspect, due to the fact that they can be tolerated in the short-term.
15-25	**High**	High Risks activities should cease immediately until further control measures to mitigate the risk are introduced.

7.2 Identification of impacts

The table below presents the potential impacts that were identified with respect to this project. Positive impacts are also presented in the table and are marked with green colour in the text of the table.

Table 20. Identification of impacts

Aspect	Impact/Risk	Type of impact: Positive (+) or Negative (-)	Project phase (Construction (C) and Operation (O))
Demography	Reduction of the migration out-flows of local migrants due to possible employment opportunities	+	C
Settlement and Housing	Public unrest due to poor management of expectations that the pipeline project will benefit their settlement by providing gas supply (for those settlements that are not connected to gas supply networks)	-	C
	Influence of vibrations caused by heavy traffic and other project related activities, on the structure of the houses, especially old houses in the rural areas	-	C
	Investments in housing and associated structures (renovations, extensions) are expected as a consequence of compensations granted for land take and project employment	+	C
	Possible loss of structures/assets (permanent or temporary) located on the pipeline corridor (either authorized or illegal)	-	C
	Perceived decrease of property value due to proximity of the pipeline to the houses (for the houses located in the AoI).	-	C, O
Public Utilities, Services and Transport infrastructure	Accidental or planned disruptions to the water / waste water / electricity / gas supply during construction works in the area of the intersection points with the public utilities and service networks	-	C
	Potential increased pressure on the public electric grid by the compressor stations	-	O
	Accidental events involving the pipeline/AGIs could affect public utility networks.	-	O
	Increased quantities of domestic,	-	C

Aspect	Impact/Risk	Type of impact: Positive (+) or Negative (-)	Project phase (Construction (C) and Operation (O))
	inert and industrial waste resulted from project related activities may affect communities indirectly by increasing levels of solid wastes and putting pressure on waste collection, treatment and depositing capacities.		
	Local communities and people transiting the area will benefit from the rehabilitation, widening and/or construction of roads for access to construction camps and sites	+	C
	Accelerated deterioration of existing roads as a result of project related heavy traffic	-	C
	Traffic congestion and delays for traffic participants and public transport providers, in case of road/route closure and intense project traffic	-	C,O
Land use	Temporary difficulties for land owners/users /workers to reach their lands. (including animal grazing activities)	-	C
	Decrease of soil quality and productivity due to improper depositing of the top soil during construction works, and/or improper rehabilitation of disturbed land after construction and due to risk of soil contamination from poor waste management or spills/leaks of fuels, lubricants and solvents from equipment used during the construction of the pipeline.	-	C, O
	Decrease of property value due to the restrictions imposed by the Project for land plots situated in the build-up area crossed by the pipeline	-	C,O
	Decrease of property value due to the restrictions imposed by the Project for land plots crossed by the pipeline	-	C,O
	Potential temporary loss of crops for landowners/users in case of maintenance activities	-	O
Economic activities	Provided compensations might be invested in agricultural equipment and land improvements	+	C,O

Aspect	Impact/Risk	Type of impact: Positive (+) or Negative (-)	Project phase (Construction (C) and Operation (O))
	Potential contract opportunities with the Project for local business: catering, accommodation facilities, maintenance, health and safety equipment suppliers, etc.	+	C,O
	Local construction firms can be exposed to loss of skilled and semiskilled staff due to opportunities available within the project.	-	C
	Increased levels of consumption at local level, due to increase in disposable income, presence of non-locals, and compensations granted	+	C
	Increase stability of macroeconomic environment due to energy security	+	O
Impacts related to labour influx	Social tensions related to influx of non-local workers (detailed in table 21 below)	-	C, O
Livelihood	Temporary/permanent loss of livelihood, income, land use rights for owners, users and workers due to land-take by the project	-	C
	Potential Project employment will increase the level of disposable income available at the level of individuals and households, especially benefiting those in rural areas	+	C,O
	Increased level of public income due to taxes paid by the project	+	C,O
	Inadequate levels of compensations due to lack of property transactions data in the area, when expert evaluators establish compensation levels.	-	C

Aspect	Impact/Risk	Type of impact: Positive (+) or Negative (-)	Project phase (Construction (C) and Operation (O))
	The compensations provided for temporary and permanent land take may be potential sources of conflict and community tensions, and may include - Tensions between land owners and land users in case of informal (verbal) land lease/ land use agreements - Tensions in the community caused by different levels of compensation (or lack of transparency about eligibility criteria and entitlements) - Conflicts between multiple owners of the same land plots	-	C, O
	Social tensions resulting from competition for employment	-	C
	Public perception of negative impacts of the pipeline project, especially for those not benefiting from compensation	-	C,O
Employment	Individuals and their families might benefit from employment of skilled and unskilled personnel. This has a direct consequence in reducing the unemployment rate	+	C,O
	Improved skills through training and know-how for employees	+	C,O
	Increased demand for local services and products for the construction of the pipeline	+	C, O
	Potential temporary loss of employment for seasonal or permanent workers especially those engaged in agricultural activities.	-	C,O
Education	Increased expenditures in education as a result of increased income	+	C,O
	Levels of noise from heavy traffic and other related activities may affect the educational process within schools	-	C
	Possible delays of school transportation for children traveling to school in other localities due to possible traffic congestions	-	C
Public health	Possible increased response time for emergency services due to possible	-	C

Aspect	Impact/Risk	Type of impact: Positive (+) or Negative (-)	Project phase (Construction (C) and Operation (O))
	traffic congestions		
	Increased health problems due to the increased level of noise and dust caused by construction activities.	-	C
	Traffic and other related activities might affect the activities of hospitals (or medical centres)	-	C
	Pressures on the local health system due to presence of non-local workers using the local health infrastructure	-	C
	Perceived health safety risks at the level of the community living in the proximity of the pipeline	-	C,O
	Risk of accidents due to open trenches and other project related accidents for community members	-	C
	Risk of car accidents as a result of project related traffic	-	C
Occupational health and safety	Risk of labour accidents for workers associated with construction activities	-	C
Cultural, Touristic and Recreation Sites	Risk of disruptions to local cultural sites of community importance	-	C,O
	Temporary visual impact on the landscape and aesthetic value of the area	-	C
	Permanent changes in the landscape and aesthetic value of the area of impact due to establishment of the AGIs and the visibility of the pipeline right-of-way in forested areas	-	O
Vulnerable Groups	Temporary/permanent loss of livelihood for persons depending on affected land or natural resources as a result of land acquisition and construction works	-	C, O
	Temporary/permanent impact on the livelihood of Roma people depending on agricultural labour and/or natural resources due to construction activities and land acquisition	-	C, O
	Increased exposure , especially for children, to accidents caused by	-	C

Aspect	Impact/Risk	Type of impact: Positive (+) or Negative (-)	Project phase (Construction (C) and Operation (O))
	open trenches, heavy vehicles and equipment		
	Possible limitation of access to services for elderly people or disabled people	-	C
	Possible reduced engagement of elderly or disabled people due to low levels of mobility and other health issues	-	C

7.3 Evaluation of impacts

7.3.1 Potential positive impacts

The overall positive impact of the project is generated by its international characteristic and its aim to provide access to alternative sources of gas thus contributing to stabilizing the energy supply market and assuring that sufficient gas resources are available at a regional level. Beside this, the project might also have other positive impacts at the level of local communities that are crossed by the pipeline. The following positive impacts have been defined during the preparation of the current assessment:

- The Project may bring positive changes in the community demographics especially in the reduction of the migration out-flow due to the exposure to new job opportunities in the construction period.
- The settlement and housing structure may show improvements due to the option of using the compensations granted for land take and project employment in housing investments. The community will also benefit from the rehabilitation, widening and/or construction of roads for access to construction camps and sites.
- A potential positive impact is represented by the possible investments of part of the compensations granted for land take in agricultural equipment and improvements to the agricultural land, increasing future levels of productivity and efficiency.
- Furthermore, it may also contribute to the local economy considering that the construction and operation activity will need supporting activities such as: catering, accommodation facilities, maintenance, health and safety equipment suppliers, etc. These services may be supplied by local or regional businesses. The level of consumption due to the presence of non-locals and compensations granted will also contribute to the local economy.
- The project may also have a potential of creating new job opportunities during both construction and operation phase. Direct employment as workforce and associated engineering jobs (e.g. supervision) and indirect employment as services provided to the workers like catering, transport, etc. could be generated.
- Potential Project employment may reduce the unemployment rate at community level and may increase the level of disposable income available at the level of individuals and

households. This may also contribute to the local economy. The taxes paid by the Project will have a potential benefit for investments in the improvement of social services and community wellbeing.

Transgaz will try to maximize all the positive impacts by including recommendations for contractors to use local labour force that is available during construction period.

7.3.2 Potential negative impacts

All the negative impacts have been assessed using the above mentioned method and classified using the colour coding specified in Table 16. Rates in terms of magnitude and likelihood were assigned based on expert judgement, following also observations made during the field survey. The proposed mitigation measures for each potential impact/risk will be addressed through the implementation of the Environmental and Social Management Plans (ESMPs) or in the Stakeholder Engagement Plan (SEP) and Land Acquisition Framework (LAF).

The most important negative impacts that need to be properly addressed will occur during construction phase of the project and are related mainly to land acquisition and livelihood restoration process. These impacts were rated as "red" in table 21 and are described below:

- Possible loss of structures/assets (permanent or temporary) located on the pipeline corridor (either authorized or illegal)
- Perceived decrease of property value due to proximity of the pipeline to the houses (for the houses located in the AoI).
- Decrease of property value due to the restrictions imposed by the Project for land plots situated in the build-up area crossed by the pipeline
- Temporary/permanent loss of livelihood, income, land use rights for owners, users and workers due to land-take by the project
- Inadequate levels of compensations due to lack of property transactions data in the area

The table below present the impacts and their mitigation measures. The impacts are structured based on the phases of the project: construction and operation phase.

Table 21 Social negative impacts/risks assessment during construction phase

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
Settlement and Housing	Public unrest due to poor management of expectations of residents that the pipeline project will benefit their settlement by providing gas supply (for those settlements that are not connected to gas supply networks)	High	Possible		Appropriate communication tools and information disclosure procedures will be described in the SEP.
	Influence of vibrations caused by heavy traffic and other project related activities, on the structure of the houses, especially old houses in the rural areas	High	Possible		Initial assessment of the structures located in the proximity of access roads and construction areas will be performed. A grievance mechanism will be described in the SEP and will be available at community level. Constant monitoring of grievances will be performed by the Stakeholder Engagement Department of Transgaz. An appropriate Route and Traffic Management Plan, including speed restrictions in sensitive areas, a Pollution Prevention Plan (which includes noise and vibration management commitments) and a proper Construction plan will be developed and included in the ESMP.
	Possible loss of structures/assets (permanent or temporary) located on the pipeline corridor (either	Very high	Expected		Compensations will be provided in accordance to the national legislation and with the LAF.

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
	authorized or illegal)				
	Decrease of property value due to proximity of the pipeline to the houses (for the houses located in the AoI).	High	Expected		Compensations will be provided in accordance to the national legislation and with the LAF.
Public Utilities, Services and Transport infrastructure	Accidental or planned disruptions to the water / waste water / electricity / gas supply during construction works in the area of the intersection points with the public utilities and service networks	Medium	Possible		An efficient SEP to assure that communities are timely informed about possible disruptions will be developed. The SEP will describe the appropriate communication tools and the grievance mechanism. Close cooperation with Relevant Public Utilities authorities for optimal timing of the works (infrastructure crossings). A proper Construction plan will be described in the ESMP.
	Increased pressure on the public electric grid by the compressor stations, construction camps and construction sites	Medium	Expected		An efficient SEP to ensure that communities are timely informed about possible accidental or planned disruptions. The SEP will describe the appropriate communication tools and the grievance mechanism. Close cooperation with the electricity supplier in the design of the electrical system within camps and facilities. Ensure the presence of an electrical engineer (or a contracted firm) on the construction site/camp site on a permanent basis. Proper and regular maintenance at all AGIs in order to prevent possible dysfunctions that may increase the level of electricity needed. All these will be addressed in the

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					Maintenance and Operation Plan of the AGIs.
	Accidental events involving the pipeline/AGIs could affect public utility networks.	High	Unlikely		Transgaz will comply with national and EBRD requirements and implement good international practices to minimize risks involving Project facilities (regular inspections, maintenance and monitoring). An Emergency Preparedness and Response Plan with the involvement of local authorities and local emergency services will be developed and included in the ESMP.
	Increased quantities of domestic, inert and industrial waste resulted from project related activities may affect communities indirectly by increasing levels of waste and putting pressure on waste collection, treatment and depositing capacities.	Low	Possible		Transgaz will make sure that contractors will implement an adequate Waste Management Plan considering all the aspects required in the legal framework and EBRD requirements. The Waste Management Plan will be developed and included in the ESMP. Close cooperation with the local authorities and waste management companies for monitoring the waste management.
	Accelerated deterioration of existing roads as a result of project related heavy traffic	Medium	Expected		On-going consultation process with communities and grievance mechanism will be in place and complaints will be monitored so that community's opinions are integrated into decision making process. This will be addressed in the SEP. The road conditions will be assessed prior to initiating construction works and remediation works will be implemented as needed.

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					An appropriate Route and Traffic Management Plan will be developed and permanently monitored. Contractors will have to adhere to Route and Traffic Management Plan for best practices related to traffic activities.
	Traffic congestion and delays for traffic participants and public transport providers, in case of road/route closure and intense project traffic	Medium	Expected		Consultations with local government representatives, competent authorities and public transport providers will take place in the process of establishing the routes used by project transportation. An efficient SEP will be developed to ensure that communities, public transport companies are timely informed about local traffic levels and alternative routes in case of road closure (on newspapers, radio, notice panels and boards). The SEP will describe the appropriate communication tools. A grievance mechanism will be established and continuously monitored. Code of conduct for project drivers will be established by all contractors in respect to speed limits, parking, restrictions, times schedule for transportation, etc. This will be addressed in the Route and Traffic Management Plan.
Land use	Temporary difficulties for land owners/users/workers to reach their lands. (including animal grazing activities)	Medium	Expected		An efficient SEP will be developed to ensure that communities and local authorities will be informed and consulted on a regular basis on the status of the construction works and the crossing areas along the open trenches and special crossings for vehicles and animals. A grievance mechanism will be established and continuously monitored.

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					Where crossings are not possible, alternative routes will be developed and communicated in advance.
	Decrease of soil quality and productivity due to improper depositing of the top soil during construction works, and/or improper rehabilitation of disturbed land after construction and due to risk of soil contamination from poor waste management or spills/leaks of fuels, lubricants and solvents from equipment used during the construction of the pipeline.	High	Possible		Proper management and protection of topsoil during construction and adequate reinstatement at the end of construction. The Reinstatement Plan will be included in the ESMPs. Transgaz will make sure that the contractors fulfil all national requirements regarding Pollution and Prevention Control and regarding the topsoil depositing and final reinstatement of land. The contractors should instruct their employees with respect to the use of potentially polluting materials and with respect to topsoil depositing during construction. Transgaz should monitor the reinstatement process and should ask the contractors to have a type of proof of acceptance from land owners that they are satisfied with the top soil reinstatement. This is addressed through the Contractors Management Plan and LAF.
	Decrease of property value due to the restrictions imposed by the Project for land plots situated in the build-up area crossed by the pipeline	High	Expected		Transgaz will engage in regular consultations with landowners and land users. The SEP will describe the appropriate engagement measures. Compensation system will be fair and in compliance with national legislation and EBRD requirements as outlined in the LAF. A grievance mechanism will be established and

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					continuously monitored.
Economic activities	Local construction firms can be exposed to loss of skilled and semiskilled staff due to opportunities available within the project.	Medium	Unlikely		Engage the local community through communication on features of the project and expected impacts. The engagement measures, as well as grievance mechanism will be described in the SEP. Require contractors to elaborate a Manpower study, as well as a Recruitment and retrenchment plan, in accordance with existing legislation and EBRD's PR2 requirements.
Impacts related to labour influx	Social tensions related to influx of non-local workers, such as: - Conflicts between workers and/or workers and local community due to gambling practices, drug and alcohol use and misuse, etc. - Conflicts between workers and employer related to food quality and security, housing availability and conditions, etc. - Conflicts between workers/contractor and local community due to overcrowding of local housing facilities or uncontrolled	Medium	Possible		Clear code of conduct for workers related to their activities on construction sites, working camps and in relation to the local community, with regard to gambling practices, drug and alcohol use, violence, etc. Limit interactions between workers and local communities to avoid general nuisances and disruptions to locals' daily activities. Engage 3rd party verifications of food & water quality and quantity provided to workers, as well as worker's accommodation conditions, in relation to minimum international standards, based on complaints, and/or at least once per year. Grievance mechanism communicated and accessible to workers and local community, according to SEP.

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
	development of working camps/squatter settlements and possible increase of local violence.				Development of Labour and Working Conditions Management Plan, Occupational Health and Safety Management Plan, as well as the Recruitment and Retrenchment Plan in line with the provisions mentioned above.
Livelihood	Temporary/permanent loss of livelihood, income, land use rights for owners, users and workers due to land-take by the project	High	Expected		Transgaz will engage in regular consultations with landowners and land users. The SEP will describe the appropriate engagement measures. Compensations will be paid to land owners and users for the permanent loss of asset and income, including loss of structures (i.e. fences, irrigation systems). Compensation system will be fair and in compliance with national legislation and EBRD requirements, as outlined in the LAF. A LAAP is to be developed by the project to detail the way to deal with land acquisition aspects. A grievance mechanism will be established and continuously monitored so that affected landowners/users/workers can be compensated in accordance with the losses incurred.
	Reduced levels of compensations due to lack of property transactions data in the area	High	Expected		Transgaz will make sure that the Evaluation will be performed in compliance with national legislation and EBRD requirements as outlined in the LAF and the compensation system will be fair.

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
	The compensations provided for temporary and permanent land take may be potential sources of conflict and community tensions, and may include: - Tensions between land owners and land users in case of informal (verbal) land lease/land use agreements - Tensions in the community caused by different levels of compensation (or lack of transparency about eligibility criteria and entitlements) - Conflicts between multiple owners of the same land plots	High	Possible		The LAF and to be developed LAAP will also take into account the potential sources of conflicts and ways to reduce their impact on community relations. The LAF and LAAP will be publicly disclosed to all interested parties. On-going consultation with local authorities and informal leaders so as to be aware and proactive in case of social conflicts. Consultations on a regular interaction basis with land owners/users on the compensation process, requirements and land acquisition' objectives. The consultations measures will be described in the SEP. Project liaison officers (at least 1 per lot) will be available at community level for clarifying issues related to compensating land owners/users/workers. Grievance mechanism will be established and continuously monitored.
Social unrest and social tensions	Social unrest due to perception of negative impacts of the pipeline project, especially for those not benefiting from compensation	Medium	Expected		Consultations with local communities and public authorities to identify possible negative perception in this matter. An efficient SEP will be developed to assure that communities are informed about the project. The SEP will describe the Appropriate communication tools. Grievance mechanism in accordance with SEP will be in

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					place and complaints will be continuously monitored through grievance records. Project liaison officers will be available at community level to identify and address possible concerns.
	Social tensions resulting from competition for employment	Low	Possible		Implementation of an equitable and non-discrimination employment policy and a transparent employment procedure within the entire procurement documentation. These requirements are to be included in the Contractors' Management Plan. Ongoing consultation with local authorities and businesses. Implementation of grievance procedures for local stakeholders and workers to proactively identify and address possible conflicts. Grievance mechanism is described in the SEP.
Employment	Potential temporary loss of employment for seasonal or permanent workers especially those engaged in agricultural activities.	Low	Rare		Impact can be mitigated through proper stakeholder engagement.
Education	Levels of noise from heavy traffic and other project related activities may affect the educational process	Low	Possible		Transgaz will make sure that contractors will minimize the nuisances during construction works through the implementation of best practices. This requirement is to be

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
	within schools.				included in the Contractors' Management Plan. Consultations with local authorities, school representatives and communities for identifying optimal solution in reducing the impact on the educational process. A Route and Traffic Management Plan will be included in the ESMPs and will provide specific measures in relation to heavy traffic in the proximity of schools (reduced speed, avoidance of class hours, etc). Grievance mechanism will be in place in accordance with the SEP, and complaints will be monitored and used in the process of reducing adverse impacts. Construction workers will fall under strict code of conduct and avoid disruptions to classes.
	Possible delays of school transportation for children traveling to school in other settlements due to possible traffic congestions or road closure	Low	Possible		Consultations with local government representatives, competent authorities and public transport providers will take place in the process of establishing the routes used by project transportation. An efficient SEP will be developed to assure that communities are timely informed about local traffic levels and alternative routes in case of traffic congestions or road closure (on newspapers, radio, information panels and boards). The SEP will describe the appropriate communication tools. A grievance mechanism will be established as part of SEP

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					and continuously monitored. Code of conduct for project drivers will be established by all contractors with respect to speed limits, parking, restrictions, schedule for transportation, etc. Measures will be described within the Route and Traffic Management Plan.
Public health	Possible increased response time for emergency services due to possible traffic congestions	Medium	Rare		Consultations with local authorities and emergency management services in identifying alternative routes and design of transport operations. The SEP will describe the consultation methods. Transgaz will make sure that the contractors train their employees accordingly on behaviour towards emergency services. Measures will be described within the Route and Traffic Management Plan. Grievance mechanism will be in place under SEP, and complaints will be used in the decision making process.
	Increased health problems due to the increased level of noise and dust caused by construction activities.	Medium	Possible		Tansgaz will make sure that the contractors fulfil the national requirements and best construction practices to reduce the levels of air pollution. A Pollution Prevention Management Plan will be developed and included in the ESMPs, and it will contain measures for impact mitigation. Grievance mechanism will be in place under SEP, and complaints will be used in the decision making process

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
	Traffic and other related activities might affect the activities of hospitals (or medical centres)	Low	Possible		Transgaz will make sure that contractors will minimize the nuisances during construction works through the implementation of best practices. Consultations with local authorities, hospitals and communities for identifying optimal solution in reducing the impact on the activities of hospitals. A Route and Traffic Management Plan will provide specific measures in relation to heavy traffic in the proximity of hospitals. The Route and Traffic Management Plan will be included in the ESMPs. Grievance mechanism will be in place in accordance with SEP, and complaints will be monitored and used in the process of reducing adverse impacts.
	Overwhelming the local health system and increase in communicable disease (respiratory and gastrointestinal disease) due to presence of non-local workers in the community and using the local health infrastructure.	Low	Rare		Transgaz will make sure that the contractors fulfil all the Health and safety requirements in order to avoid possible accidents and communicable disease incidence at workplace and limit contact of workers with local communities, as per the Health and Safety Management Plans (workers' and community) and Labour and working conditions management plan. A first aid centre should be available on the construction site/camp or optional contracted medical services which can reach the construction camp in relative time. Consultations with local authorities, hospitals and communities for identifying optimal solution in case of

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					non-local workers' needs in using the local health infrastructure. The communication methods will be described via SEP. Grievance mechanism will be in place under SEP, and complaints will be used in the decision making process.
	Risk of accidents due to open trenches and other project related accidents for community members	High	Possible		Transgaz will make sure that the contractors will implement safety measures such as fences at project facilities: trenches, construction camps, storage yards and appropriate signalizing (warning signals, informational panels) of construction area. These measures will be included in the ESMPs. An efficient SEP to assure that communities are timely informed about the schedule and status of construction works. The SEP will describe de appropriate communication tools and the grievance mechanism. Where crossings are not possible due to open trenches, alternative routes will be developed and communicated in advance.
	Risk of car accidents as a result of project related traffic	High	Possible		Consultations with local government representatives, competent authorities and public transport providers will take place in the process of establishing the routes used by project transportation. An efficient SEP will be developed to ensure that communities, transport companies are timely informed about local traffic levels and alternative routes in case of road closure (on newspapers, radio, information panels

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					and boards). The SEP will describe the appropriate communication tools. Transgaz will make sure that the contractors will Implement appropriate signalizing (warning signals, informational panels) of the construction area. A grievance mechanism will be established as part of the SEP and continuously monitored. Code of conduct for project drivers will be established by all contractors with respect to speed limits, parking, transportation schedule, etc. A Route and Traffic Management Plan will be developed and described as part of the ESMPs.
Occupational health and safety	Risk of accidents due to open trenches and other project related accidents for community members	High	Possible		Transgaz will make sure that the contractors will implement safety measures such as fences at project facilities: trenches, construction camps, storage yards and appropriate signalizing (warning signals, informational panels) of construction area. These measures will be included in the ESMPs. An efficient SEP to assure that communities are timely informed about the schedule and status of construction works. The SEP will describe de appropriate communication tools and the grievance mechanism. Where crossings are not possible due to open trenches, alternative routes will be developed and communicated in advance.

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
Cultural, Touristic and Recreation Sites	Risk of disruptions to local cultural sites of community importance	Low	Possible		Transgaz will make sure that the contractors will fully implement the national requirements regarding cultural heritage. The contractors will be continuously monitored in this matter. Transgaz will make sure that a Chance finds procedure will be elaborated and implemented, as part of the Cultural Heritage Management and Monitoring Plan which will be developed and implemented as part of the ESMP. Selected transport routes and traffic restrictions will be employed as a measure to reduce adverse impacts on cultural sites, as part of the Route and Traffic Management Plan.
	Temporary visual impact on the landscape and aesthetic value of the area	Low	Expected		Transgaz will make sure that contractors will implement the best practices in organization of work sites and camps in order to minimize visual impact. Transgaz will make sure that prompt and proper reinstatement activities of each section after construction will be carried out in order to minimize the impact on the landscape and aesthetic value. All these will be addressed in the ESMP, namely in the Reinstatement Management Plan, as well as Contractors' Management Plan. Grievance mechanism will be in place under SEP, and complaints will be taken into consideration in the decision making process

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
	Permanent changes in the landscape and aesthetic value of the area of impact due to establishment of the AGIs and the visibility of the pipeline right-of-way in forested areas	Medium	Expected		Consultations with local authorities, communities, competent authorities, architects, NGOs and other interested stakeholders on the measures to improve integration of AGIs in the natural landscape. Transgaz will make sure that the removal of vegetation will be kept to a minimum by the contractors and landscaping and reinstatement activities will be implemented at the end of the construction works. All these will be addressed in the ESMPs (Reinstatement plan, Construction Plan). Grievance mechanism will be established part of SEP, and complaints will be used in the decision making process.
Vulnerable Groups	Temporary/permanent loss of livelihood for persons depending on affected land or natural resources as a result of land acquisition and construction works	High	Possible		Compensation system will be fair and in compliance with national legislation and EBRD requirements as outlined in the LAF. Grievance mechanism will be established as part of SEP, and complaints will be taken into consideration in the decision making process. Project liaison officers will be available at community level for carrying out consultations with affected people.
	Increased exposure, especially for children, to accidents caused by open trenches, heavy vehicles and equipment	High	Possible		Transgaz will make sure that the contractors will implement safety measures such as fences at project facilities: trenches, construction camps, storage yards and appropriate signalizing (warning signals, informational panels) of the construction area. This measures will be described in the Health and Safety Management Plans

Aspect	Potential impact/Risk	Magnitude	Likelihood	Colour code	Proposed Mitigation measure
					concerning the community. An efficient SEP to ensure that communities are timely informed about the schedule and status of construction works. The SEP will describe de appropriate communication tools and the grievance mechanism. Where crossings are not possible due to open trenches, alternative routes will be developed and communicated in advance.
	Possible limitation of access for elderly people or disabled people	High	Possible		Transgaz will make sure that best construction practices will be applied by the contractors to minimize inconveniences in circulation for elderly and disabled people. A grievance mechanism will be established as part of SEP and made available to all vulnerable groups.
	Possible reduced engagement of persons with health issues	Medium	Possible		Transgaz will develop specific measures to assist persons with health issues to get adequate and timely information about the Project. Project liaison officers will be available at community level for carrying out consultations with affected people. A grievance mechanism will be established as part of SEP and made available to all vulnerable groups.

Residual impacts

With the proper implementation of the mitigation measures proposed above for the identified adverse impacts, residual impacts are expected to be minor or negligible. These will be easily managed by the Transgaz team during construction and operation if the case, via the internal procedures and social management plans that will be developed for this project. Transgaz is committed to develop a dedicated project grievance mechanism that will enable to identify and remedy any residual impact.

The project has created a number of specific management plans which outline general mitigation and management requirements or discipline-specific mitigation and management requirements as relevant. The management plans being produced are listed below:

- General Framework ESMP 1062-BRUA-FCESMP-0001
- Contractor Management Plan 1062-BRUA-CMP-0003
- Pollution Prevention Management Plan 1062-BRUA-PPMP-0005
- Reinstatement Management Plan 1062-BRUA-RMP-0015
- Waste Management Plan 1062-BRUA-WsMP-0006
- Hazardous Materials Management Plan 1062-BRUA-HMMP-0007
- Road and Traffic Management Plan 1062-BRUA-RTMP-0016/HSSMS1062-BRUA-HSSMP-0010
- Labour and Working Conditions Management Plan 1062-BRUA-WCAMP-0009
- Water Management Plan 1062-BRUA-WMP-0012
- Water Crossing Management Plan 1062-BRUA-WcMP-0013
- Cultural Heritage Management Plan 1062-BRUA-CHMP-0011
- Biodiversity Management Plan 1062-BRUA-BMP-0004
- Emergency Response Management Plan 1062-BRUA-ERMP-0017
- Stakeholder Engagement Plan 1062-BRUA-SEP-0002
- Community Health and Safety Management Plan 1062-BRUA-CHSMP-0008
- Hydrostatic Management Plan 1062-BRUA-HMP-0014
- Land acquisition framework and Action Plan (Action Plan to be developed)

8. References

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- Mobile Emergency Service in Romania
- Atlas of Rural Marginalized Areas and Local Human Development in Romania

Appendices

Appendix 1 Main characteristics of BRHA pipeline

Appendix 2 Total length in built-up and non-built-up area in the AUs crossed by BRHA pipeline

Appendix 3 Template of the socio-economic questionnaire

Appendix 4 Demography in the AUs crossed by BRHA pipeline

Appendix 5 Gender distribution in the AUs crossed by BRHA pipeline

Appendix 6 Proximity of settlements to the construction corridor

Appendix 7 Existing infrastructure elements in the Podişor - Recaş Section

Appendix 8 Land use in the AUs crossed by BRHA pipeline

Appendix 9 Land use in the 14 m working strip

Appendix 10 Active population in the Counties crossed by the pipeline

Appendix 11 Public health and safety in the AUs crossed by the BRHA pipeline