# REPORT

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT OF THE PROJECT

**RESTORATION OF THE HISTORIC URBAN LANDSCAPE OF MANGALEM QUARTER**

(Administrative Unit– Berat; Municipality - Berat)

**Category (Pursuant to Annex II of Albanian Law No. 10440, dated 07.07.2011 and Directive 2011/92/EU on EIA):**

10. Infrastructure Projects.

b) Urban development projects, including the construction of shopping centres and car parks.

Developer: Albanian Development Fund (ADF)

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## LIST OF ABREVIATIONS

| | |
|---|---|
| ADF | ALBANIAN DEVELOPMENT FUND |
| CHP | CULTURE HERITAGE PLAN |
| CHS | COMMUNITY HEALTH AND SAFETY |
| CM | COUNCIL OF MINISTERS OF REPUBLIC OF ALBANIA |
| DCM | DECISSION OF COUNCIL OF MINISTERS OF REPUBLIC OF ALBANIA |
| EBRD | EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT |
| EPA | ENVIRONMENTAL PROTECTION AGENCY |
| ESIA | ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT |
| ESMP | ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN |
| GHG | GREENHOUSE GASES |
| GIIP | GOOD INTERNATIONAL INDUSTRY PRACTICE |
| GIS | GEOGRAPHIC INFORMATION SYSTEM |
| GLP | GENERAL LOCAL PLAN |
| GoA | GOVERNMENT OF ALBANIA |
| GRM | GRIEVANCE REDRESS MECHANISM |
| ILO | INTERNATIONAL LABOUR ORGANISATION |
| MIE | MINISTRY OF INFRASTRUCTURE AND ENERGY |
| MTE | MINISTRY OF TOURISM AND ENVIRONMENT OF ALBANIA |
| OHS | OCCUPATIONAL HEALTH AND SAFETY |
| OP | OPERATIONAL POLICY OF THE WORLD BANK |
| PIUTD | PROJECT FOR INTEGRATED URBAN AND TOURISM DEVELOPMENT |
| PM | PARTICULATE MATTER |
| PPE | PERSONAL PROTECTION EQUIPMENT |
| REA | REGIONAL ENVIRONMENTAL AGENCY |
| SEP | STAKEHOLDER ENGAGEMENT PLAN |
| UN | UNITED NATIONS |
| UNEP | UNITED NATIONS ENVIRONMENTAL PROGRAM |
| VOC | VOLATILE ORGANIC COMPOUNDS |
| WB | WORLD BANK |

# I. INTRODUCTION

The Project for Integrated Urban and Tourism Development (PIUTD), funded by the World Bank Group and implemented by the Albanian Development Fund (ADF), supports the Government of Albania (GoA) to develop the economy and improve living conditions in its southern region by financing infrastructure projects in the urban centres of Saranda, Gjirokastra, Berat and Përmet.

The objectives of the Project are: (a) improve urban infrastructure; (b) enhance tourism assets; and (c) strengthen institutional capacity to support tourism related local economic development in Selected Areas in the south of Albania. The Project consists of the following parts:

a) Urban upgrading and infrastructure improvement;

b) Touristic sites upgrading;

c) Institutional capacity budding;

d) Implementation Support.

The activity of this project consists in: (a) preparing of feasibility studies and designs (including urban design studies), (b) carrying out construction works to restore selected heritage buildings, (c) upgrading public spaces, the street network and associated infrastructure; and (d) conducting construction supervision.

The project aims the following:

- Improving selected touristic sites along the south of the Albania Touristic Corridor by inter alia: (a) restoring of selected heritage and cultural assets and creating rest stops or viewpoints; (b) repairing and improving site infrastructure such as pedestrian's pathways; (c) preparing the required feasibility studies, site management plans and engineering designs; and, (d) conducting construction supervision.
- Strengthening the capacity of municipalities to deliver municipal services through inter alia: (i) provision of asset management systems, geographic information systems and solid waste collection equipment; and (ii) establishment of site management capacity to enhance the operation of rehabilitated assets.
- Carrying out capacity building activities to strengthen the capacity of: Selected Municipalities to promote sustainable tourism growth including: (A) developing and implementing market research and product development strategies, (B) establishment of pilot Destination Management Entities; and (C) establishment of a system for tracking sustainable tourism indicators, and central government agencies to promote sustainable tourism growth.

Because of the adverse effects that these new developments (the project) might have into the Environment and social life, based on WB and national legislation, the project should undergo the Environmental and Social Impact Assessment (ESIA), which is a tool, used to identify the environmental, social and economic impacts of a project prior to decision-making.

## 1.1. PROJECT PURPOSE

The purpose of this assignment is to contribute to the implementation of component 1 of the PIUTD in the two cities of Berat and Përmet, by preparing Integrated Urban Design Concepts (IUDC), focussed on target areas of the cities, aimed at improving the living conditions of the local community and foster locally based tourism economic development in urban areas. The joint venture of Atelier 4 (Albania) and Keios (Italy) was selected by ADF to carry out the consulting services.

After the validation of the Integrated Urban Design Concept for Berat and of the Investment Program for the Project Area, the following investment sub-projects have been selected for implementation in Berat:

- P01 Restoration of the historic urban landscape of the Gorica quarter;
- P03 Rehabilitation of the Gorica Castle trail & establishment of additional tourism opportunities around the monument;
- P04 Creation of a car parking nearby the Old Gorica Bridge;
- **P05 Restoration of the historic urban landscape of Mangalem quarter;**
- P06 Restoration of the historic urban landscape of the Selamllek square
- P09 Regeneration of the area surrounding the Ethnographic Museum and Mihal Komneno road;
- P11 Street-scape beautification along Antipatrea road in the Town centre;
- P12 Urban upgrading of Iliaz Vrioni square; and
- P15 Tourism signage and interpretation.

The project design and the foreseen activities are in accordance with the recently prepared Berati General Local Plan for territory development.

The sub-project 05 “Restoration of the historic urban landscape of Mangalem quarter” aims to regenerate public space in Mangalem and infrastructure interventions to create a conducive environment for business development and crafts as well as housing improvement. It aims to preserve the architectural and urban values of the entire urban environment of the Mangalem quarter, the

regeneration of public space and the rehabilitation of infrastructure. In other words, "Old places have a soul" - This intervention will preserve and give life.

Mangalemi is the focus area of PIUTD, with projects aimed at restoring the historic urban landscape by developing tourism and the visitor experience. Mangalemi will have a functional orientation to welcome craft activities and recreational spaces along the Antipatrea road, where it lies, and a good part of the businesses. For this reason, the rehabilitation of public spaces and the provision of services is very necessary to create a suitable environment for the development of these activities.

## 1.2. ENVIRONMENTAL AND SOCIAL IMPACT ASESSMENT PURPOSE

This Environmental and Social Impact Assessment document is prepared for the "Project Idea, Implementation and Supervision for Integrated Urban Regeneration – Berati Municipality", sub-project: P05 "Restoration of the historic urban landscape of Mangalem quarter". The Albanian Development Fund (ADF) commissioned the report. The Environmental and Social Impact Assessment is based on the project prepared by the design studios "Atelier 4" and "Keisos".

The purpose of the ESIA is to ensure that the proposed investments implemented through the Project comply with the existing environmental protection laws, regulations and standards in Albania as well as the World Bank safeguard policies. The report aims to give consideration to the environmental and social impacts of the proposed project in order to orient the institutions or decision-making bodies in approving the performance of the activity.

The report aims to identify negative and positive impacts and to propose mitigation measures taking into account the economic interests of the investor as well as rational use of natural resources and coordination of the economic and social development of the area with the requirements of sustainable development. The main purposes of this assessment are to:

1. Identification of potential environmental impacts in the study area during the project implementation which will consist mainly in works for the restoration of historic landscape in Mangalem. Main project activities will include: reconstruction of the existing cobblestone paving by reusing the original materials and texture; demolition of inappropriate interventions, inappropriate cormorants and external stairs; reconstruction of exteriors and external stairs; structural consolidation (as needed) for walls and other elements, etc.

2. Identify possible socio-economic impacts during and after the implementation of the project in this area which has a highly significant strategic location for the image of the city
3. Propose the necessary measures to be undertaken for minimizing and preventing the impact created on the environment by the implementation of this project
4. Ensure that environmental and social considerations are explicitly addressed and considered in the decision-making process.
5. Protect the cultural heritage and promote sustainable development, helping on the local infrastructure development being one of the key elements to the development itself.

# II. LEGAL FRAMEWORK AND SAFEGUARD PROCEDURES

## 2.1. ENVIRONMENTAL LEGISLATION IN ALBANIA

***Law No. 10431 dated 9 June 2011 "On Environmental Protection"*** is the main law in the field of environment is the Law No. 10431, dated 9 June 2011 "On Environmental Protection". This law establishes national and local policies on environmental protection, requirements for the preparation of estimates of environmental impact and strategic environmental assessment, requirements for permitting activities that affect the environment, the prevention and reduction of environmental pollution, environmental norms and standards, environmental monitoring and control tasks of state bodies in relation to environmental issues, the role of the public and sanctions imposed for violation of the Law.

***Law No. 10440, dated 7 July 2011 "On Environmental Impact Assessment",*** sets out the rules, procedures and deadlines for identifying and assessing the impacts of direct and indirect environmental projects or activities. The law defines the steps necessary to implement ESIA procedures: submission of application, preliminary review, selection and classification criteria, hearings and public consultations, access to information, tasks and rights of other bodies. The law also provides the list of activities that should be subject to the Profound and Preliminary ESIA. Some articles of the law were amended by Law No. 12/2015 on Amendments to the Law No. 10 440, dated 07.07.2011, "On environmental impact assessment".

***Law No. 10448, dated 14.7.2011 "On Environmental Permits"*** aimed at preventing, reducing and maintaining control of pollution caused by certain categories of activities, in order to achieve a high level of environmental protection in general, human health and quality of life. This law defines the rules for allowing the development of some activities that cause environmental pollution in Albania. Pursuant to Law No. 60/2014, Appendix 1 of the Law No. 10 448, dated 14.7.2011, "On environmental permits" has changed.

The aim of the ***Law No. 162/2014, dated 04.12.2014 "On Protection of ambient air quality"*** is improving public health and ensuring a high level of environmental protection through integrating ambient air quality issues in other policies as well as establishing requirements on its monitoring, assessment and planning and promoting international cooperation to this end. The Law consists of 6 Chapters: General provisions (I); Environmental air quality (II); Air emissions (III); Trans boundary air pollution (IV); Offences (V); Transitional provisions (VI). This Law fully complies with Directive 2008/50/EC of the European Parliament and of the Council on ambient air quality and cleaner air for Europe.

***Law No. 10463, dated 22.09.2011 "On integrated waste management",*** as amended by the law 156/2013, aims to ensure the protection of environment and human health against pollution and damage resulting from solid waste. To

this end, it sets out rules governing the environmental treatment of solid wastes at every stage: creation, collection, separation, transportation, recycling, processing and disposal. The Law further aims at waste reduction and the reduction of the hazardous and dangerous impact of waste. The Law is implemented by:

- DCM No. 389, dated 27.6.2018 "On some amendments and additions to Decision No. 452, dated 11.7.2012, of the Council of Ministers "On waste landfills"
- DCM No 319, dated 31.5.2018 "On the adoption of measures for the costs of integrated waste management"
- DCM No. 94, dated 14.2.2018 "On some amendments and additions to Decision no. 641, dated 1.10.2014, of the Council of Ministers "On the approval of rules for the export of waste and the transit of non-hazardous waste and inert waste"
- DCM No. 575, dated 24.6.2015 "On approving the requirements for inert waste management"
- DCM No. 641, dated 1.10.2014 "On the adoption of rules for the export of waste and the transit of non-hazardous waste and inert waste"
- DCM No. 99, dated 18.2.2005 "On the approval of the Albanian List of Waste Classification".
- Regulation No. 117 of 13 February 2013 on the criteria used for determining when certain types of metal scrap cease to be waste.
- Regulation No. 177 dated 6 March 2012 on packaging and their residues.
- Order No. 1957 dated 6 November 2014 approving the model of authorization for the export of solid waste and the model of authorization for the transit of non-dangerous solid waste.
- Order No. 893, dated 04 October 2013 approving the model register for operators that generate, collect, and recycle used oils.

In addition to the above-mentioned legislation, the preparation of the ESIA is based on the following legislation:

- Law No. 57/2020, dated 30.04.2020 "On Forests".
- Law No. 81/2017, dated 18.05.2017 "On Protected Areas"
- Law No. 73/2015, dated 09.7.2015 "On some amendments to Law No. 107/2014 "Planning and Territorial Development"

- Law No. 107/2014 dated 31.07.2014 "On the Planning and Development of Territories"
- Law No. 10463, dated 22.9.2011 "On integrated waste management".
- Law No. 9774, dated 12.07.2007 "On the Assessment and Management of Environmental Noise".
- Law No. 9587, dated 20.07.2007 "On Protection of Biodiversity".
- Law No. 9115, dated 24.07.2003 "On Environmental Treatment of Polluted Waters.
- Law No. 8897, dated 2002, "On protection of air from pollution".
- DCM No. 686, dated 29.07.2015 "On approval of the rules, responsibilities and deadlines for development procedures of environment impact assessment (EIA) and procedures for the transfer environmental decision statement "
- DCM No. 419, dated 25.06.2014 "On approval of the special requirements for the review of environmental permit applications for types A, B and C, for the transfer of licenses from one subject to another, the conditions for the respective environmental permits and regulations their detailed examination by the competent authorities to issue these permits by NLC".
- DCM No. 417, dated 25.06.2014 "On approval of the Environmental Permit fees"
- DCM No. 227, dated 30.04.2014 "On establishing the rules, requirements and procedures for informing and involving the public in environmental decision-making".
- DCM No. 47, dated 29.01.2014 "On defining the regulation for the organization and functioning of the National Environment Agency and Regional Environment Agencies"
- DCM No. 48, dated 29.01.2014 "On the creation and manner of organization of the state Inspectorate on Environment, Forestry and Water administration"
- DCM No. 175, dated 19.01.2011 "On approval of the national strategy and waste management plan of the national waste management"
- DCM No. 587, dated 7.07.2010 "On the monitoring and control of noise levels in urban and tourist centres".
- DCM No. 853, dated 28.12.2005 "On approving the list of hazardous wastes, residues and other wastes to be imported for purposes prohibited storage, disposal and destruction".

- DCM No. 248, dated 24.04.2003 "On Approval of the Interim Standards on Air Emission and their implementation".
- DCM No. 435, dated 12.09.2002 "On Approval of the air emission norms in the Republic of Albania".
- DCM No. 103, dated 31.03.2002 "On environmental monitoring in the Republic of Albania".
- Instruction of the Minister of Environment and Minister of Finance No. 7938, dated 17.07.2014 "On the determination of fees and corresponding values for the services performed by the Ministry of Environment for the EIA process'
- Instruction of the Minister of Environment, Forestry and Water Management, No. 8 dated 27.11.2007 "Limiting the noise level in certain environments"

Albania is also a party to international agreements on biodiversity, climate change, desertification process, endangered species, hazardous waste, Protection of Ozone Layer and lagoons. Albania has also ratified the Kyoto Protocol in December 2004 and the Stockholm Convention on Persistent Organic Pollutants in July 2004.

## 2.2. SOCIAL LEGISLATION

### *2.2.1. Legislation on territory planning, cultural heritage and chance finds*

Projects for all types of building above ground and underground and engineering infrastructure projects across the entire country are based on standards and technical requirements of legal acts in force.

Law No. 107/2014 "On territory planning and development" aims at ensuring the sustainable development of the territory through the rational use of land and natural resources; assessing the actual and future potential of the territory development on a local and national level by balancing natural resources with economic demand and public and private interests. It also aim to coordinate the effort for: i) conservation of natural resources such as land, air, water, forests, flora and fauna; ii) creation of territories eligible for functional construction; iii) promoting the economic, social, and cultural life in local and national level; iv) safeguarding the resources of adequate supplies; v) providing for life safety, national security, public order and public health; and vi) promoting the balanced regional development to ensure sustainable distribution of population. The Law is implemented by:

- Regulation No. 408 date 13.5.2015 approving the territory planning and development regulation.
- Regulation 686 date 22.11.2017 on the territory planning.
- Regulation No. 739 date 13.12.2017 amending and supplementing Regulation No. 725 date 2.9.2015 on the organization and functioning of the Territory Development Agency.
- Regulation No. 427 date 8.6.2016 on the organization and functioning of the National Agency of Territory Planning.

Amended by

- Law No. 28/2017 amending and supplementing Law no. 107/2014 on the territory planning as amended.

Law No. 27/2018, dated 17.05.2018 "On Cultural Heritage and Museums" is the primary legal framework governing the management of tangible and intangible cultural heritage in Albania. The Law aims to promulgate and protect the cultural heritage in the territory of the Republic of Albania.

This Law, in relation to the field of territorial planning and development, defines inter alia:

- the cases of construction in public or private properties, which must obtain written approval from the National Council of Restorations and the National Council of Archeology;
- cases of excavations, restorations, uses and any other action in the cultural monuments, as well as any alteration on the ground under their protection, to be done with the authorization of the National Council of Restoration, Archaeological Institute, Archaeological Service Agency;
- the rules and types of constructional interventions in the Museum Areas, museum ensembles, historical centers, archaeological parks.

According to the law, if anything unusual will be found during the digging and excavation process the contractor has to stop immediately works, urgently inform the local authorities, the Culture Monuments Institute and the Ministry of Culture. They will send archaeologists and field specialists in order to check and evaluate the supposed archaeological objects and the works will restart only if the Culture Monuments Institute will issue the official permit.

### *2.2.2. Labour related legislation*

The Labour Code of the Republic of Albania: Law No. 7961, dated 12.07.1995, amended by Law No. 8085, dated 13.03.1996, Law No. 9125, dated 29.07.2003 and Law No. 10053, dated 29.12.2008 "Labour Code of the Republic of Albania" regulates relations between employers and employees. The law reflects Constitutional principles, as well as the basic principles of international conventions on labour, trade unions, prevention of discrimination, etc. The code is widely considered to be a fair and effective law.

The Labour Code provides for basic rights regarding the prohibition of compulsory labour, prohibition of discrimination, the freedom to join a trade union and collective bargaining.

The Labour Code provides general rules for the employee's obligations and responsibilities, as well as the prohibition of competition after the termination of labour relationship. Also, the employer's general obligations are specified in accordance with article 32-38 of this law. Safety and health protection are the responsibility of employers.

Labour Code also stipulates the duration of work and breaks, including daily and night work and extra payment; the weekly working time and holidays, the maximum duration of extra hours and compensation.

The Labour Code provides for special protection for juveniles and women, special provisions on payment and minimum wage. A separate chapter (XIV) provides

rules for the termination of the work relationship. Also, general consideration is provided on the protection of the right to work and the right to strike.

Law "On health and safety in the workplace". On 22.12.2016, the Albanian Parliament approved the law no. 135/2016 "On health and safety in the workplace, emergencies and the salvation in the mining activity and in underground works of hydropower activities". Law 135/2016 was published in the official gazette no. 265, dated 12.01.2017 and entered into force 15 days after its publication.

Law 135/2016 defines the general principles governing health and safety at work in the mining activities and underground works of hydropower activities, and guarantees the safety and protection of the health of employees and other persons working in these sectors.

Pursuant to this law entities engaged in activities, studies or projects in the mining sector and underground works of hydropower activities are obliged to fulfill the requirements of safety in the workplace provided in the law and the secondary legislation.

### 2.2.3. Other Legislation Related to Labour and Health and Safety

Following is a list of the key additional Albanian legislation related to labour and HSE:

- Law No. 9136, dated 11.09.2003 "On collection of compulsory social insurance and health insurance contributions in the Republic of Albania," amended by Law No. 9457, dated 21.12.2005. This law regulates the collection of compulsory social and health insurance contributions;
- Law No. 9198, dated 26.02.2004 "On equal gender society," as amended by Law No. 9534, dated 15.05.2006 and Law No 9970, dated 24.07.2008. The purpose of this law is:
    - To ensure equal rights to women and men as provided for in article 18 of the Constitution of the Republic of Albania;
    - To set out measures to promote equal opportunities for men and women aimed at eliminating direct and indirect discrimination on the grounds of gender in public life; and
    - To set out the responsibilities of central and local administration for drafting policies aimed at promoting an equal gender society.
- Law No. 9959, dated 17.07.2008 "On foreigners." This law regulates the entrance, residence, employment, treatment and exit of foreigners to / from the Republic of Albania. The law defines the functions and powers of state

authorities and other entities, public and private, Albanian or foreign, which have to do with foreigners;

- Law No. 10 383, dated 24.02.2011 "On Compulsory insurance for health care in the Republic of Albania." Compulsory health insurance is based on the contributions of employees and employers of the state and from other sources for other persons, as provided for in this law, based on the principle of solidarity; Professional health care includes preventive measures and security, advising employers, employees and their representatives to demand the creation and preservation of a safe and healthy environment, in-service work and work adjustment skills of employees, taking into account their physical and mental state of health. It also includes the identification and evaluation of workplace hazards, monitoring of work environment factors and work practices that may affect employee health;
- Law No. 10237, dated 18.02.2010 "On safety and health at work." This law ensures the security and protection of health through prevention of professional risks, eliminating the factors that constitute risk and accident, inform, advice, balanced participation in accordance with the law. The present law applies the following:

### *2.2.4. Legislation on Private Property and Expropriation*

Expropriation process. The legislation governing the expropriation process for the private properties is described below:

- Law no. 11/2020, dated 05.03.2020 "On some changes and amendments on Law no. 8651, dated 22.12.1999 'On expropriation and temporary use of private property for public interest.
- Law no. 8651, dated 22.12.1999 'On expropriation and temporary use of private property for public interest', as amended and;
- Decision of Council of Ministers (DCM) no. 126, dated 23.3.2000 'On the composition and procedures of special committees for expropriation',
- DCM no. 127, dated 23.3.2000 'On the content and procedures for submission of request for expropriation and temporary use of private property for public interest',
- DCM no. 138, dated 23.3.2000 'On the technical criteria for the evaluation and calculation for compensation of expropriated properties, devaluated properties and third party rights(as amended)';

Under Law no. 8561, dated 22.12.1999 on expropriation and temporary use of private property for public interest provides for the State's right to expropriate or take private property for temporary use for purposes of a "public interest" that cannot be achieved or protected in another manner. The State must compensate

the value of land expropriated and any reduction in the value of property caused to properties bordering with the expropriated property.

Under the Expropriation Law, the expropriation value (compensation) is calculated by a special committee based on the assessment of the properties subject to expropriation (by considering their initial value, depreciation, destination, location, indexes of the market price changes and of the currency). A Decision of the Council of Ministers no. 138 dated 23.03.2000 explains the evaluation methodology of the land subject to expropriation procedures is defined (in ALL/m2) by decisions of the Council of Ministers approving the price reference according to Law no. 9235, dated 29.07.2004, on restitution and compensation of properties.

The Republic of Albania Law on Expropriation and Temporary Takings of the Private Property for Public Interest (passed in 1999, amended in 2016) guides land acquisition and serves as a general framework for expropriation in the Republic of Albania.

The Law does not use the term „involuntary resettlement", which is used in the relevant World Bank policy documents, but instead uses the term expropriation.

This law enables government institutions, and to a certain extent private legal person to acquire private property for projects that are deemed to be of national and/or local interest, while protecting the interests of all project affected persons with legal title, whose assets are to be expropriated. The law also enshrines the principle of fair compensation.

The most important features of the Law on Expropriation are:

• The Law provides an exhaustive list of what is deemed as public interest (Art. 8/ç of Law "On Expropriation…)";

• The beneficiary subject in the expropriation process will be the relevant Municipality of each city (Art. 9 of the Law "On Expropriation…)"

• The procedure will be considered complete, when the owners through a statement approve the transaction of the property in favor of the Government;

• The decision of expropriation (for owners not agreeing to the expropriation) will be approved by the Council of Ministers and will enter into force immediately, and published in the Official Journal;

• The affected owners have access to judicial procedures if amicable settlement on the compensation is not reached. However, if there is no contest, the decision of the Council of Ministers will be final and binding.

• The devaluation of property. Compensation is due in cases when, although there is no land take but the assets or access to assets, and livelihood is affected (land is devaluated and the livelihood has deteriorated as a result of the project).

The estimation of the value is based on the type of land to be expropriated (agricultural land, woodland, meadow etc.); the characteristics for the estimation are different (i.e. in case of the agricultural land: the land category; the range from the urban zone; situation under or above the water level etc.).

The Civil Code establishes the obligation to compensate for property damage which consists of the value of the damage caused and the expected profit (Art. 640).

Law on Cadastre: The new Law on Cadastre, or Law no.111/2018 on "Cadaster" ("the Law") adopted by the Albanian Parliament on 2 February 2019, entered into force on 21 March 2019. It supersedes Law no.33/2012 dated 21 March 2012 on "Registration of Immovable Properties".

The Law governs the registrations of immovable property transactions that occur after its entry into force. In addition, it introduces certain new principles on registration process, rights over immovable properties and related documents.

Mandatory notification and registration of public authorities' deeds. The Law requires that all deeds related to immovable properties must be registered and undergo a preliminary registration. Such preliminary registration is initiated with the online declaration of deeds by courts, notaries, bailiffs and other state authorities with the digital national cadaster. The online declaration must be done upon formalization of the deed. Any subsequent deed or transaction for disposal of the immovable property which lacks a chronological sequence and creates an overlap will be refused by the Agency. Further to the online declaration, the abovementioned authorities must submit hard copies of such deeds to the Regional Cadaster Directorate within 10 days from the formalization.

Extension of the mortgage over the land into the new building. The mortgage over the land may be extended only to a future building or parts of it that are free of any preliminary transfer agreement. In addition, the land owners are not allowed to transfer their rights over their future parts of a building in case a mortgage is registered over the land. The above provisions aim to improve the practice and solve all disputes arising so far with regard to the extension of mortgage.

Law “On the completion of the ownership transitional processes in the Republic of Albania”. The Law 20/2020 is published on the Official Gazette no. 70, dated 22.04.2020. The purpose of the Law 20/2020 is to establish a simplified and harmonized legal framework for the finalization of the transitional registration procedures of the state and private land consisting of:

- The registration of ownership titles of agricultural land;
- The finalization of the transfer to their users of the ownership of agricultural land previously owned by cooperatives and agricultural enterprises;

- ❒ The legalization and registration of illegal constructions, constructions without an ownership title and yards granted for use;
- ❒ The specification of ownership rights of individuals and entities, which have benefited from the Law no. 7665, dated 21.01.1993 "On development of economic zones with touristic priority", repealed;
- ❒ The finalization of the inventory update process of public real estate; Handling of the problems related to the overlapping of ownership immovable property titles.

### 2.2.5. *Legislation on the Right to Information*

Law No 119/2014 "On The Right to Information" regulates the right of access to information being produced or held by public sector bodies. The rules contained in this law are designated to ensure the public access to information, in the framework of assuming the rights and freedoms of the individual in practice, as well as establishing views on the state and society situation. This law aims also at encouraging integrity, transparency and accountability of the public sector bodies

Law No. 8672, dated 26.10.2000, "On the Aarhus Convention Ratification on public right to information, to participate in decision-making and to have access to justice in environmental matters". The international agreements ratified by the Republic of Albania, pursuant to the Constitution, occupy a privileged rank at the domestic legal order. An international agreement ratified by law of the parliament prevails over the laws of the country that are incompatible with it, and it is directly applicable, except the case when it is not self-executing and its application requires the adoption of a law. In the field of environment the major part of the international treaties are not self-executing and require positive measures in order to be properly implemented at the domestic level.

## 2.3. WORLD BANK ENVIRONMENTAL AND SOCIAL SAFEGUARD POLICIES

Like in any project financed by, or with financial participation of, the World Bank, the environmental and social safeguards as defined in the Bank's Operational Procedures (OPs) will be respected for the purposes of this project implementation.

World Bank classifies its projects into four Environmental Assessment categories according to the likely impacts on the environment they will have. This classification is as follows (only main conditions mentioned):

1. *Category A*: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts.

2. *Category B*: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas— including wetlands, forests, grasslands, and other natural habitats—are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects. This particular subproject has been categorized as B.
3. *Category C*: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further Environmental Assessment action is required for a Category C project.
4. *Category FI:* A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts; this case, in any way, is not applicable to the PIUTD project.

The World Bank's OP 4.01 Environmental Assessment is considered to be the umbrella policy for the Bank's environmental safeguard policies. These policies are critical for ensuring that potentially adverse environmental and social consequences are identified, minimized, and properly mitigated. The WB carries out screening of each proposed project to determine the appropriate extent and type of EA to be undertaken and whether or not the project may trigger other safeguard policies. The safeguard policies, the triggers for each policy, as well as status of their relevancy for the proposed project are presented in the table 1, below:

Table 1. World Bank Environmental and Social Safeguard operational policies

| Operational Policy | Triggers | Status |
|---|---|---|
| Environmental Assessment (OP 4.01) | If a project is likely to have potential (adverse) environmental risks and impacts in its area of influence. | Yes |
| Involuntary Resettlement (OP 4.12) | Physical relocation and land loss resulting in: (i) relocation or loss of shelter; (ii) loss of assets or access to assets; (iii) loss of income sources or means of livelihood, whether or not the affected people must move to another location. | Yes |
| Indigenous Peoples (OP 4.10) | If there are indigenous peoples in the project area, and potential adverse impacts on indigenous peoples are anticipated, and indigenous peoples are among the intended beneficiaries. | No |
| Pest Management (OP 4.09) | If procurement of pesticides is envisaged; If the project may affect pest management in the way that harm could be done, even though the project is not envisaged to procure pesticides. This includes projects that may (i) lead to substantially increased pesticide use and subsequent increase in health and environmental risk, (ii) maintain or expand present pest management practices that are | No |

| | | |
|---|---|---|
| | unsustainable, not based on an IPM approach, and/or pose significant health or environmental risks. | |
| Physical Cultural Resources (OP 4.11) | The policy is triggered by projects which, prima facie, entail the risk of damaging cultural property (e.g. any project that includes large scale excavations, movement of earth, surface environmental changes or demolition). | Yes |
| Natural Habitats (OP 4.04) | The policy is triggered by any project with the potential to cause significant conversion (loss) or degradation of natural habitats whether directly (through construction) or indirectly (through human activities induced by the project). | No |
| Projects on International Waterways (OP 7.50) | If the project is on international waterway such as: any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more states ( or any tributary or other body of surface water that is a component of this waterway); any bay, gulf, strait, or channel bounded by two or more states or, if within one state, recognized as a necessary channel of communication between the open sea and other states-and any river flowing into such waters. | No |

Environmental Assessment (OP 4.01). The project triggers the World Bank safeguard policy on Environmental Assessment (OP/BP 4.01) and is classified as Category B primarily due to the rehabilitation nature of the proposed infrastructure works, which will take place within the footprint of existing infrastructure systems on established lands/zones in known urban areas or might involve limited construction of new facilities such as small visitors' centers near touristic sites in the south of Albania. The physical rehabilitation of the selected existing infrastructure will not involve significant structural modifications or change their operation/scope. Therefore, the envisaged investments are not expected to have irreversible, adverse, and unprecedented environmental and social impacts.

However, there will be temporary, site-specific environmental impacts primarily during the civil works period (due to air pollution, noise, and vibration from the operation of equipment, waste generation at the construction sites, and traffic interferences). During the operational period, the environmental concerns would primarily include maintenance activities; awareness campaigns will be raised for the local people to ensure that the aesthetic and proper functions of rehabilitated infrastructure are in line with agreed monitoring/O&M plans.

The World Bank Operational Policy on Involuntary Resettlement requires that environmental and social impacts of all its supporting projects should be mitigated according to operational polices that spell out the principles and planning methods for mitigation work. This applies whenever land or property must be acquired, or its use modified, for a project, or loss of income because of land take, residence or access to resources, either permanent or temporary whether the occupation is legal or illegal.

In any instance where there is a gap or conflict between the Albanian Law on Expropriation and OP 4.12, World Bank Operational Policy 4.12 will prevail or implementing agencies will provide a solution in compliance with OP 4.12. The World Bank OP 4.12 aims to achieve the following objectives:

a) Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.

b) Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.

c) Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

# III. ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

## 3.1. SOCIAL BASELINE

### 3.1.1. Project Location

The project will be located on the center of city of Berat which is part of Berati Municipality. The municipality, in its present organization was established in 2015 according to the local government reform (Law 115/2014 "On Territorial and Administrative Division of Local Government Units in the Republic of Albania"). The Municipality was formed by merging the previous Municipality of Berat and the communes of Roshnik, Otllak, Sinje and Velabisht. The seat of the municipality is the city of Berat. Today's municipality covers an area of 380 km2 with a resident population of 60432 inhabitants. Berati Municipality is part of the Berati District (Albanian: Qarku i Beratit), one of the 12 Districts of the Republic of Albania, spanning a surface area of 1,798 square kilometres (694 sq mi). Other municipalities are Kuçovë, Poliçan, Skrapar and Ura Vajgurore

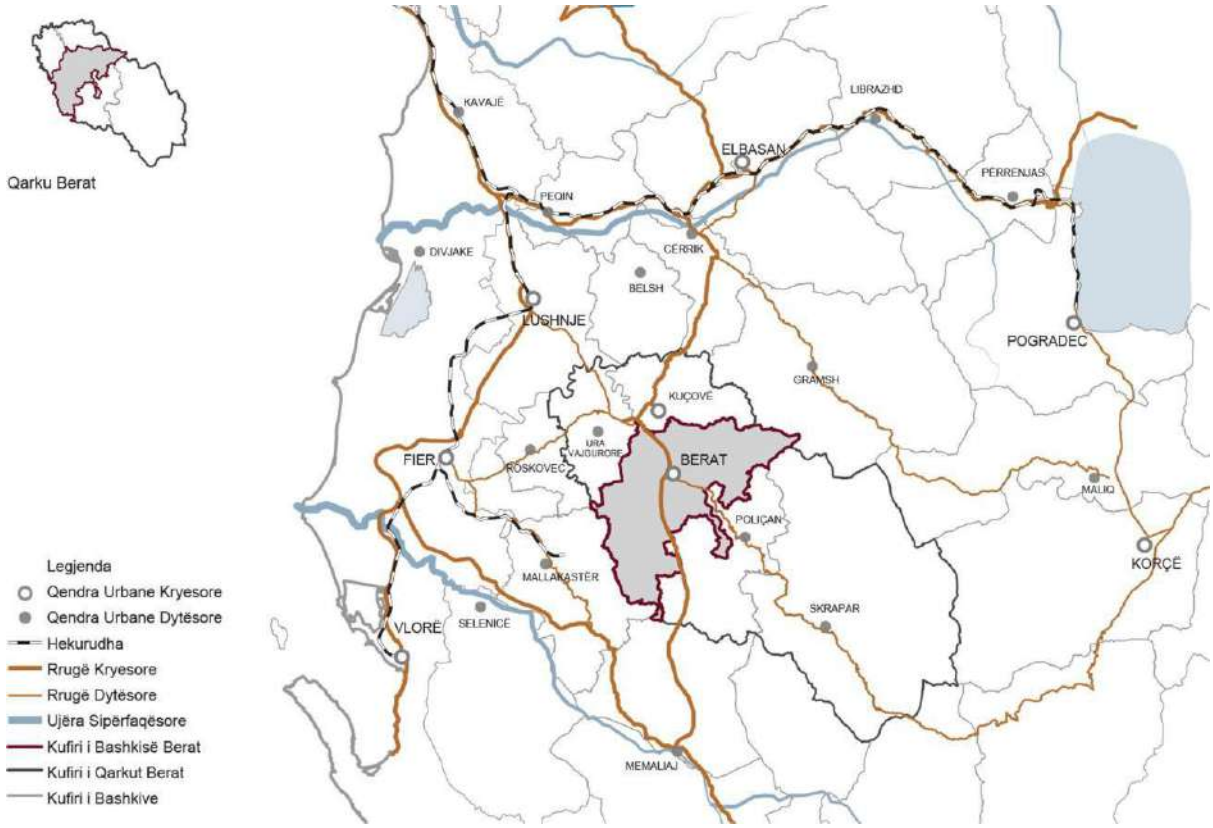


Figure 1. Location of Berat Municipality and conncetion with other urban areas

The city of Berat is located within the Municipality of Berat, which confines with the municipalities of Kuçovë, Gramsh, Poliçan, Skrapar, Mallakastër and Ura Vajgurore. The city of Berat (referred from now on as "the city") is an urban area covering 6.3 km2 and is the administrative centre, concentrating 60% of the population of the municipality1

Berat is a municipality located in south-central Albania. Municipality is developed on the two sides of Osumi River and is generally composed of mountainous and hilly terrain. The city is surrounded by two mountains, on the western side Shpiragu Mountain with a height of 1,218 m and on the eastern side Tomorri Mountain 2,417 m high.

The 2400 years old ancient town of Berat, with its medieval castle from 13th century, is renowned as 'the town of a thousand and one windows' and white houses. In July 2008, the Historical Centre of Berat was inscribed on the UNESCO World Heritage List as a historic complex that conveys well preserved traditions of Ottoman medieval architecture style, arts, crafts and faith, inherited through centuries.

The Historical Centre is composed of three distinct areas:

1. The castle quarter;
2. Mangalem quarter at the foothill of the castle; and
3. Gorica quarter, on the south bank of the River Osumi.

Osumi Canyons and Tomorri Mountain National Park are two additional distinctiveness of Berat Municipality offering possibilities for adventure and nature-based tourism activities.

### 3.1.2. Demography

The Municipality of Berat has a surface of 380 $km^2$, where there are 60,342 inhabitants according to the 2011 Census and 99,231 registered in the civil state. This difference is mainly due to the fact that the population emigrated abroad is still registered in the registers of civil state. Focusing on the study area, it is estimated that the resident population approximates a value of 7,500 inhabitants.

**Berat's population has a downward trend,** a phenomenon similar to all the local units in the country and according to the 2011 Census, since 1989 some 5,000 people have left the city. The causes of demographic negative trends are related to various factors such as: internal and external migration and the reduction of natural growth. Even if in the past years it has been noticed a return of the migrated population, both the municipality and the city of Berat continue to experience a negative demographic trend.

On the other hand, the analysis of the age structure shows that the average age is 38 years, indicating that the population of the municipality still continues to be young. Likewise, also the population of the city can be considered young. About 69% of the population is on working age, an element that shows a relatively high volume of economically active population.

Table 2. Demographic Structure 2015 (GLP 2016)

| Demographic Structure | Population | 0-14 years | 15-64 years | 65 years |
|---|---|---|---|---|
| Berat Municipality | 60 342 | 11 516 | 41 637 | 7 188 |
| | | 19% | 69% | 12% |
| City of Berat | 36 685 | 6 577 | 25 462 | 4 646 |
| | | 18% | 69% | 13% |

Based on current trends and projections of the population (Census 2011), the total dependency ratio is expected to increase. Actually, the total dependency ratio is 45% (young-age dependency ratio 28% and old age dependency ratio 17%); it constitutes one another important indicator that emphasizes the demographic and social potential of the Municipality administrative unit, for renovating the working age population. The age group 15-64 years old represents 69% of the Municipality population, while the age group 0-14 years' old represents 19%. There are only 42% of people older than 15 years that completed primary education, which is lower compared to the national average (52.1%).

Even if the total **dependency coefficient** is only 45%, the migratory trends, prolonged life expectancy and birth ratios show that generally demographic trends remain negative. In this context, the population of the Municipality is expected to pass from 60,342 inhabitants in 2015 to 47,946 inhabitants in 2031. The same phenomenon is expected to affect the city, where the population of 36,685 in 2015 is expected to fall on 29,149 in 2031 (Census 2011). This population decline is expected to be accompanied by a significant increase in the old-age population, which needs specific services and higher support from the working age group.

### 3.1.3. Social Structure

Households of the city are composed by an average of 3.4 mem- bers and only 8.3% of families can be considered as large families (with more than 6 members). If compared with the national aver- age, the family structure of Berat could be considered as a healthy family situation.

Moreover, the housing units per family ratio is near the national average, with about 2.6 rooms per family and about 13.2 $m^2$ per inhabitant (Census 2011). **Over 69% of the population of the city is on working age.** However, the labour force volume is not enough to ensure economic sustainability; it is necessary for this labour force to have the qualification and orientation towards the labour market.

**The unemployment ratio of 32.9%** of the population becomes even more

significant if considering that 60% of the young age generations (15-25 years) are registered as unemployed. In this regard, the development and creation of economic activities, combined with vocational training, are priorities to improve the labour market and reduce youth migration.

The average age of population for the year 2015 was 38 years. Moreover, 12.5% completed secondary, university and postgraduate education, which is higher compared to the national average (11.8%).


Figure 2. Level of Education in the Munipality of Berat

The employed people structure in the Municipality of Berat is as follows: 41.6% employed people in the service sector, 39.4% in agriculture and 18.9% in industry. The city of Berat has the highest number of the employees in services with 66.9% (national average 53.5%) and industry with 29% (national average is 20.4%). The highest number of people employed in agriculture is in the Roshnik administrational unit with 89.5%. Berat Municipality has a high unemployment rate of 32.9% for the age group 15-64 years old (national average is 29.3%) and the highest unemployment rate of 60.2% for the age group 15-24 years old (national average is 53%). Berat County is facing a high rate of migration. For the year 2014 there were 30% of newcomers compared to 70% of people moving out.

Table 3. Employment Sectors (Census 2011)

| **Employment Sectors** | |
|---|---|
| Agriculture | 4% |
| Industry | 29% |
| Services | 67% |

According to the economic data (National statistics), the GDP in current prices for 2015 in the Berat Region was 389 million EUR. GDP per capita was estimated at 2,841 EUR, and was lower compared to the national GDP per capita that was 3,547 EUR. In 2017, according to INSTAT there were 3,633 registered businesses in the Municipality of Berat, out of which 56.9% were businesses relying on services (trade, transport and storage, accommodation and food service, information and communication, other services). 33.9% of registered businesses were engaged into agriculture, forestry and fishing businesses and 9.2% in industry and construction.

In 2018, key economic sectors in Berat Region were agriculture, forestry and fishing, contributing with 51.1% to the regions' GDP, followed by public administration and defense, compulsory social security, education, human health and social work activities (11.3%), wholesale and retail trade, repair of motor vehicles and motorcycles, transportation and storage, accommodation and food service activities (11.2%) and mining and querying, manufactured products, electricity, gas, water and waste management (11.2%).

Arboriculture has an important place in the overall agriculture production for Municipality of Berat, where peaches, apricots and cherries are one of the most common products. Olive groves and wine making are becoming the main landmark, having both positive impacts on the economy and tourist image.

### 3.1.4. Infrastructure

Berat is accessible only by road, which is in good condition. The main access road to Berat town, linking also local settlements, is from the highway Tirana-Fier. Distance from Tirana Airport to Berat is 118 km and from Vlora to Berat is 96 km. The road access to Tomorri Mountain National Park is in bad condition. A 64 km long access road from Berat to Corovode, the centre of Skrapar Municipality, provides access to Osumi Canyons. From Berat there is also road access to the towns of Kelcyra and Përmet, but the road is in bad condition.

Berat Municipality has an intense intercity transport with the following urban centres: Tirana (15 times per day), Kucova (10 times per day), Vlora (6 times per day) and Fier (5 times per day). The bus terminal of Berat has a capacity of 50 buses and is located at the entrance of the city.

According to the Albanian National Transport Plan (ANTP), the daily traffic flows on these roads, existing and foretasted, is rather low. Nevertheless, the construction of new connections and the up- grade of several of the existing ones, is envisaged (up to 2030) to improve connectivity and safety (the national transport plan envisages to half the yearly death rate by road accidents, aligning Albanian values to European average).

The road network within the project area is very uneven in terms of state of paving and maintenance. A significant part of the urban streets is unpaved and the informal development of large areas of the city favoured an unstructured

road network, both in terms of layout and profile. In addition, the road hierarchy is unclear, as the function of each road is not defined, neither the traffic components and spaces allowed to it.

The municipality offers the majority of communal services. Waste water network covers almost 85% of the city of Berat and a part of Otllak Administrative Unit (35%).

### 3.1.5. Culture and Religion

The main religions in Berat are Islam 20% and Christianity 40%. The landscape of a mixture of minarets of mosques and grand orthodox churches and chapels are a testament to the religious coexistence of Berat inhabitants. In the Middle Ages, Berat was the seat of a Greek Orthodox Bishpric, and today Aromanian and even Greek speakers can be found in the city and some surrounding villages. In 2008, Berat was added to UNESCO's World Heritage list as an example of the coexistence of religions and cultures.

The Albanian iso-polyphony was recognised by UNESCO as an Intangible Cultural Heritage of Humanity.

Berat is often referred as the city of a thousand windows and considered as one of the architectural treasures of Albania. Traces from Illyrians, Greeks, Romans, Byzantines and Ottomans are still evident and well preserved in the city with castles and mansions, old churches and mosques and impressive wall paintings, icons and murals. Throughout the centuries, Berat was the place where various religions and communities coexisted in peace.

A very valuable global treasure that is affiliated with Berat is worth mentioning here. That is the Codex Purpureus Beratinus, a manuscript of a Gospel Book written in Ancient Greek. The Codex was inscribed on the UNESCO’s Memory of the World Register in 2005 in recognition of its historical and liturgical significance. Comprised of two codices, part of the “seven purple codices” written in 13 European countries between the 6th and 8th centuries, its text was published in 1887. The Codex Beratinus was once kept in St. George Church in Berat and is now preserved at the Albanian National Archives in Tirana.

The Saint Mary of Blachernae Church dates back to the 13th century and contains 16th century mural paintings by Nikola, son of the Albania's most famous medieval painter Onufri. The first inscription recording Onufri's name was found in 1951 in the Shelqan church. The Kastoria church dates to 23 July 1547 and has a reference to Onufri's origin: "I am Onufri, and come from the town of Berat." Onufri's style in painting was inherited by his son, Nikola (Nicholas), though not so successful as his father. Onufri's museum contains works of Onufri, Nikola and other painters. There is also a number of icons and some fine examples of religious silversmith's work (sacred vessels, icon casings,

covers of Gospel books, etc.). Berat Gospels, which date from the 4th century, are copies (the originals are preserved in the National Archives in Tirana). The church itself has a magnificent iconostasis of carved wood, with two very fine icons of Christ and the Virgin Mary. The bishop's throne and pulpit are also of considerable quality.

Near the street which descends from the fortress is the Bachelors' Mosque (Albanian: Xhami e Beqareve), built in 1827. It has an attractive portico and an interesting external decoration of flowers, plants, and houses. The King Mosque (Albanian: Xhamia e Mbretit), the oldest in the town built in the reign of Bayazid II (1481–1512), is notable for its fine ceiling. The Lead Mosque (Albanian: Xhamia e Plumbit), built in 1555 and so called from the covering of its cupola. This mosque is the centre of the town. The Halveti Teqe (Albanian: Teqeja e Helvetive) of 1790 is a khanqah (or zawiya) of the Khalwati Sufi order. It has a porch and a carved and gilded ceiling. Near of tekke is purported to be the grave of Shabbatai Zevi, a Turkish Jew who had been banished to Dulcigno (present day Ulcinj) who created controversy among his followers upon his conversion to Islam. Folk music culture exists in Berat County and the performers often wear traditional dress.

### 3.1.3. Tourism in Berat

Considering the existing accommodation capacities in registered establishments and the additional ones identified through online platforms, it results with an approximate number of 1,143 beds present on the market in Berat Municipality. Most of them are small hotels, accounting for 75.4% of total supply, and guesthouses adopted in the renovated old Ottoman style houses in the Castle, Mangalem and Gorica quarters. The accommodation businesses are mostly small and medium enterprises run as family businesses.

Table 4. Registered and identified capacity of accommodation establishments in Berat

| *Type of establishment* | *Number of establishments* | *Approximated number of beds* | *Accommodation structure in %* |
|---|---|---|---|
| *Hotels* | *35* | *862* | *75.4%* |
| *Hostels* | *4* | *60* | *5.2%* |
| *Motels* | *2* | *30* | *2.6%* |
| *Guesthouses* | *30* | *151* | *13.3%* |

| | | | |
|---|---|---|---|
| *B&B* | *4* | *20* | *1.7%* |
| *Apartments* | *4* | *16* | *1.5%* |
| *Homestay* | *1* | *4* | *0.3%* |
| **Total** | **80** | **1,143** | **100%** |

*Source: Berat Municipality, authors search - Booking.com, Trip Advisor and Google Maps (15.06.2018)*

In Berat, there are only 4 hotels with 281 beds (in 145 rooms) that record higher bed capacities per hotel from 53 beds up to 90 beds. The rest of 19 hotels have 341 beds in 161 rooms, with an average of 18 beds per hotel which is insufficient to accommodate one touring bus.

According to Berat Tourism Strategy 2011-2021, in 2010 Berat had 13 hotels with 154 rooms and 318 beds, along with 4 guest houses. Compared to 2010, in 2018 the total number of accommodation establishments is almost 5 times higher, while the number of hotels increased by 171%.

According to the data for Berat in the publication of CHERPLAN project on "Planning, Managing and Monitoring Cultural Heritage Sites in South East Europe" the ADR in the hotels was 25 EUR in 2012. Referring to the interviews carried out with the accommodation establishments during the field mission the ADR increased by 60% and accounted for 40 EUR. Berat attractions can be summarized as in following table:

Table 5. Berat key attractions

| Cultural attractions | |
|---|---|
| UNESCO World Heritage List | *Berat's Historical Centre:*<br>- *Mangalem, Medieval Quarter (old religious monuments of Bektashi sect)*<br>- *Gorica (ruins of Gorica castle, Gorica bridge) and*<br>- *Castle (as well Acropolis and Water cistern within its walls)*<br>*The Codices of Berat* |

| | |
|---|---|
| Museums and galleries | *"Onufri" – Iconographic Museum, Ethnographic Museum, Art; Gallery "Edward Lear''* |
| Sacral heritage attractions | |
| Churches and monasteries | *Cathedral of Sleeping St. Mary (18th century) in the castle, Church of Saint Mary Vlaherna (13th century), Church of Saint Nicola (16th century), Church of Saints Constantine and Helen (17th century), Church of the Holy Trinity (13th- 14th century), Church of Saint Demetrius (16th - 17th century), Church of Saint Theodore (16th century), Church of St. Michael (13th century), Church of Saint Elijah, Monastery of St. Spiridon (18th century), St. Thomas's Church (18th century)* |
| Mosques | *Red Mosque (15th century), King's Mosque (15th century), Bachelor's Mosque (1827), Leaden Mosque (16th century), Tekke of Helveti (15th century), Tekke of Kulmak at the top of Tomorri Mountain.* |
| **Natural attractions** | |
| **Mountains** | *Tomorri Mountain National Park, Shpiragu Mountain* |
| **Rivers and canyons** | *Osumi river and canyon, Gradek canyon, waterfall of Sotira* |
| **Gastronomy** | |
| **Infrastructure** | *42 restaurants (23 registered, 19 additional from TripAdvisor), wine tasting rooms* |
| **Cuisine** | *Traditional and Mediterranean* |
| **Local ingredients** | *Vegetables, fruits, dairy products, meat, olives and olive oil, wine* |
| **Events** | |

| | |
|---|---|
| **Cultural** | *The Carnivals in Berat, Art Colony in Berat, Weekends in Berat, The Friendship Days, The Multicultural Festival, The Song Marathon, Summer and Oranges, Folk Air Festival, BID DAY, The White Night* |
| **Gastronomy** | *Feast of the Grape* |
| **Other** | *Berat - Enduro Summer Fest* |

*Tourism demand*

Statistics regarding demand does not exist, thereby all the data needs to be estimated. Arrivals and overnights were estimated based on data regarding occupancy rate and average length of stay gathered through interviews. Thereby, a total number of 101,184 arrivals in Berat were estimated for the year 2017 with a total of 164,192 overnights. On annual basis, people stay in Berat 1.6 nights on average. The average occupancy of the accommodation establishments in Berat is reflecting the seasonality pattern. Occupancy rates are around 70-80% at the peak months, around 50-60% at the shoulder months and very low, 5-10% at the winter months as a number of businesses operates seasonally and close in the winter.

The only trusted statistics regarding the number of visitors are those recorded from the electronic ticketing in the Castle and two national museums. The table below shows number of visitors to the Castle and two other national museums from 2013-2017.

Table 6. Visitors to the national cultural attractions in Berat

| Key attractions | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Ethnographic Museum | 2,359 | 4,133 | 4,391 | 4,556 | 6,450 |
| Onufri Iconographic Museum | 5,515 | 10,961 | 20,241 | 24,262 | 34,606 |
| Castle | 22,697 | 34,159 | 45,747 | 59,327 | 74,019 |
| **Total visits** | **30,571** | **49,253** | **70,379** | **88,145** | **115,075** |

*Source: Institute of Culture Monuments*

Number of visits to the national cultural attractions is increasing 39% on average annually, with the highest increase in 2014 compared to 2013. Moreover, visits to Onufri Iconographic Museum are increasing more rapidly compared to others.

According to the Ministry of Culture, in the period from January to April 2018, the total number of visitors to the Castle was 27,468 with an increase of 77% compared to the same period of 2017.

Table 7. Domestic and foreign visitors in Berat

| Key attractions | Domestic | Foreigners | Visitors with no tickets | Total Visitors |
|---|---|---|---|---|
| *Ethnographic Museum* | *1,213* | *4,256* | *981* | *6,450* |
| *Onufri Iconographic Museum* | *7,786* | *25,247* | *1,573* | *34,606* |
| *Castle* | *26,590* | *42,350* | *5,079* | *74,019* |
| **Total visits** | **35,589** | **71,853** | **7,633** | **115,075** |

*Source: Institute of Culture Monuments*

In 2017, there were 38% domestic visitors to the Castle and 57% foreigners while the rest (5%) were visitors without tickets. Moreover, foreigners account for a larger share of visitation in Ethnographic and Iconographic museum with a share of 66% and 73% respectively.

In the period observed, total number of visitors to the Berat Castle grew annually by 32% on average.

National Agency for Protected Areas has counted some 1,600 visitors frequented Osumi canyons for rafting. While, according to the information provided by Albanian Rafting Federation[1] some 17,000 tourists participated in rafting and river cannoning in 2017.

The seasonality in Berat is not as sharp as in coastal destination. Still, there is a notable seasonality pattern, beginning from April to end of October with peak during summer period July – August and shoulder season in spring and autumn with more organized groups (70-80%) and individuals all year round.

According to the interviews with tourism businesses during the field mission in Berat, two groups of guests were identified:

- Overnight tourists:
    - Individuals with overnight in Berat town visiting historic area of Berat town. They mostly stay 1 night;

- Package tours of foreign tourists with one overnight in Berat coming with the purpose of visiting historic area of Berat town;
- Business tourists with overnight in Berat town;
- Individuals and package tours spending from 1 to 3 nights in Berat town with the purpose of active and adventure activities in nature (visiting Osumi Canyons, Tomorri National Park);
- Pilgrim tourists who participate in pilgrimages at Kulmaku Tekke (Tomorri Mountain).

- Same day visitors:
  - Individuals and Package same day tours visiting historic area of Berat town.

According to PIUTD baseline survey conducted by the World Bank, daily expenditure of guests in Berat was 47 EUR. According to the recent Tourism Analysis for Berat, tourists visiting Berat mainly belong to the group of 25- 64 years old.

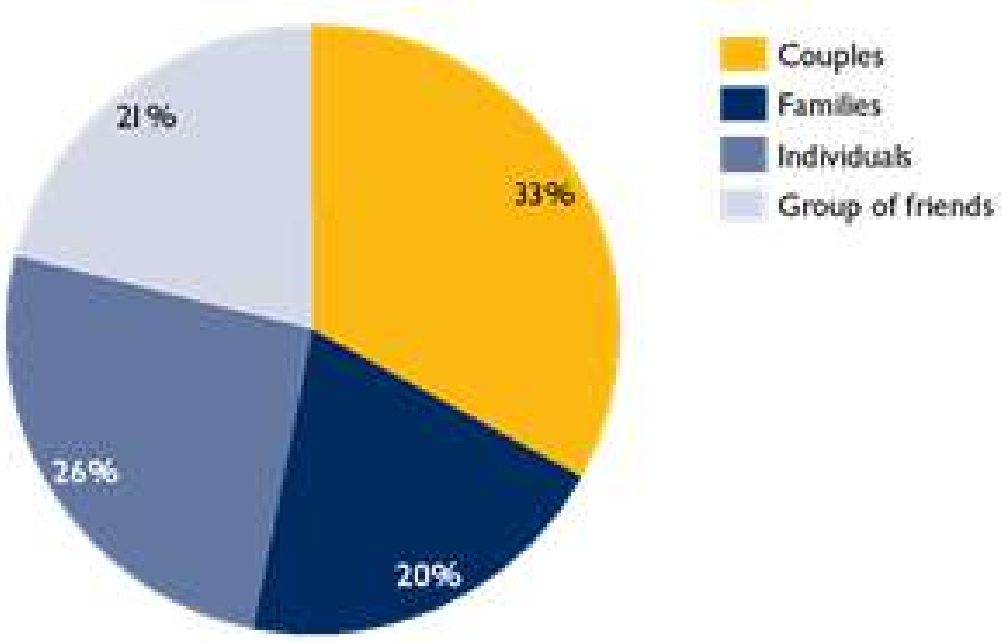


Figure 3. Guests segments traveling to Berat (in %)

There are differences in guest behaviour and motives for travel:

- Western Europeans mostly visit historic area and are older than 40 years of age. They come mostly in organized groups from April to the end of October (70%).

- Rafting in Osumi canyons is limited from February to November. Albanians come for rafting from February to April, mostly on weekends, while foreigners come from May to August. Foreigners participating in nature-based activities are mostly coming from Italy, Poland, Czech Republic, Switzerland, Netherlands, Norway, Sweden and Israel. Tourists visiting the canyons are on average 18-50 years old and travel as couples.
- Another segment, practicing rafting in Osumi canyons are Albanian companies and international donor agencies coming to Berat for Team building activities.
- Hiking is another nature-based activity performed in Tomorri National Park and this activity is organized from April to end of October.
- Pilgrimage of Albanians in Kulmaku Tekke of Bektashi sect at the top of Tomorri Mountain is organized each year, 20-25 August.
- In the summer season, families with kids from Norway, Sweden and Italy come during the week days for rafting or horseback riding with average length of stay of 4 nights.

According to the interviews done with restaurants during the field mission in Berat, the average check payed by tourists in the restaurant was 5-9 EUR for individuals with starter and main dish and 8-10 EUR for groups with 3 course menus with bottle of water. Referring to CHERPLAN project on "Planning, Managing and Monitoring Cultural Heritage Sites in South East Europe", the expenditure in 2012 was 20 EUR/day.

### 3.1.7. The UNESCO protected area

Berat was declared Museum City (*Qytet Muze*) in 1961, as a result of the first attempt of the Albanian Government to preserve the architectural and historic heritage in cities and villages and has been thereafter subject to the national cultural heritage regulation, recently assembled in the Law No. 27/2018 "On Cultural Heritage and Museums". The protected area, consisting of three neighborhoods: Gorica, Mangalem and Kala (Castle), has also been included by UNESCO in the World Heritage List (2008) as "rare example of an architectural character typical of the Ottoman period" clearly defining the limits of the historic core and the buffer zone. According to UNESCO requirements, a Management Plan has been prepared since 2008 and a more recent document has been drafted in the framework of the SUSTCULT project in 2014.

Furthermore, in 2014, the DCM No. 767 has defined a more detailed regulation "For the protection, integrated conservation and administration of Berat's historic centre and the surrounding buffer zone". By this regulation, the possible interventions in the core zone are limited to the restoration of the existing buildings, while in the buffer zone new constructions are allowed with limitation in height, density and architectural style.

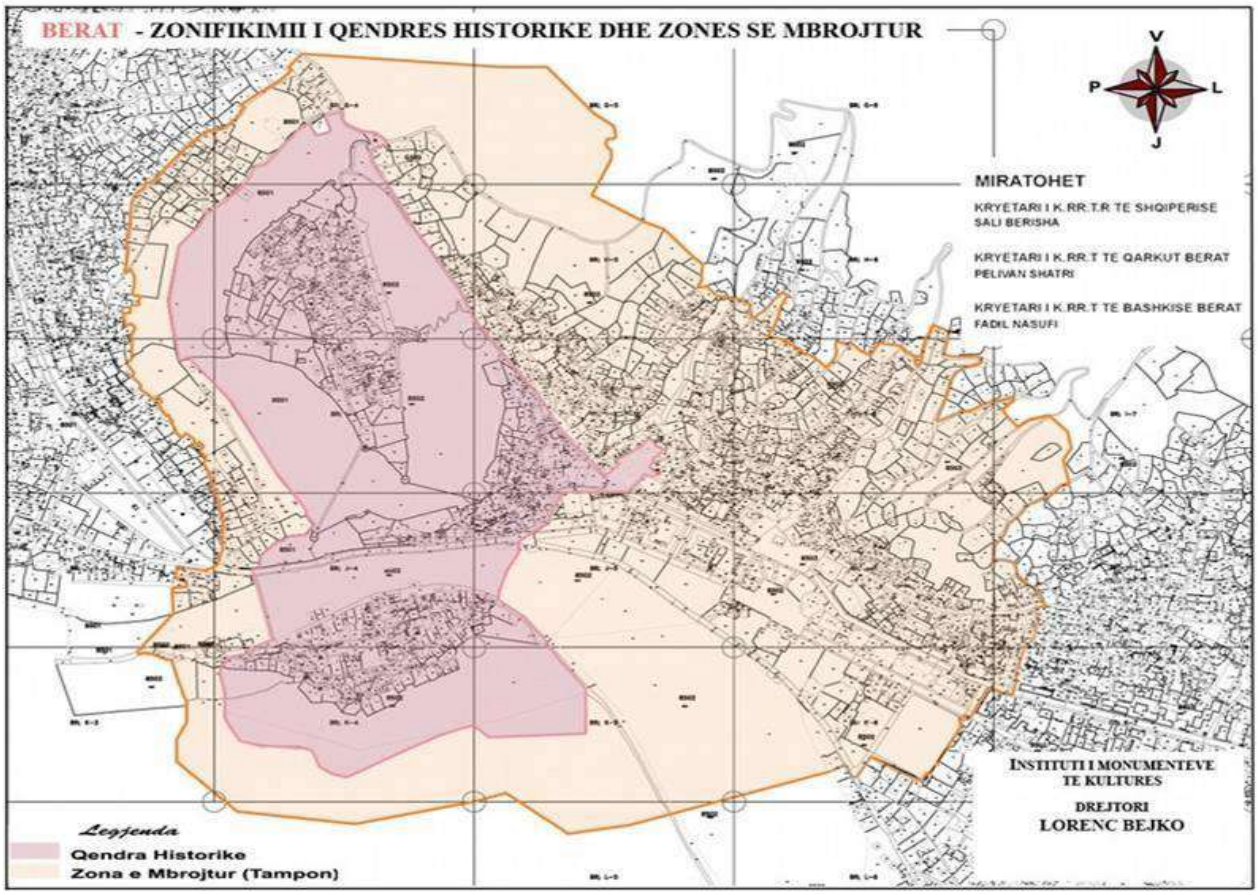


Figure 4. The UNESCO historical centre (in red) and buffer zone (yellow)

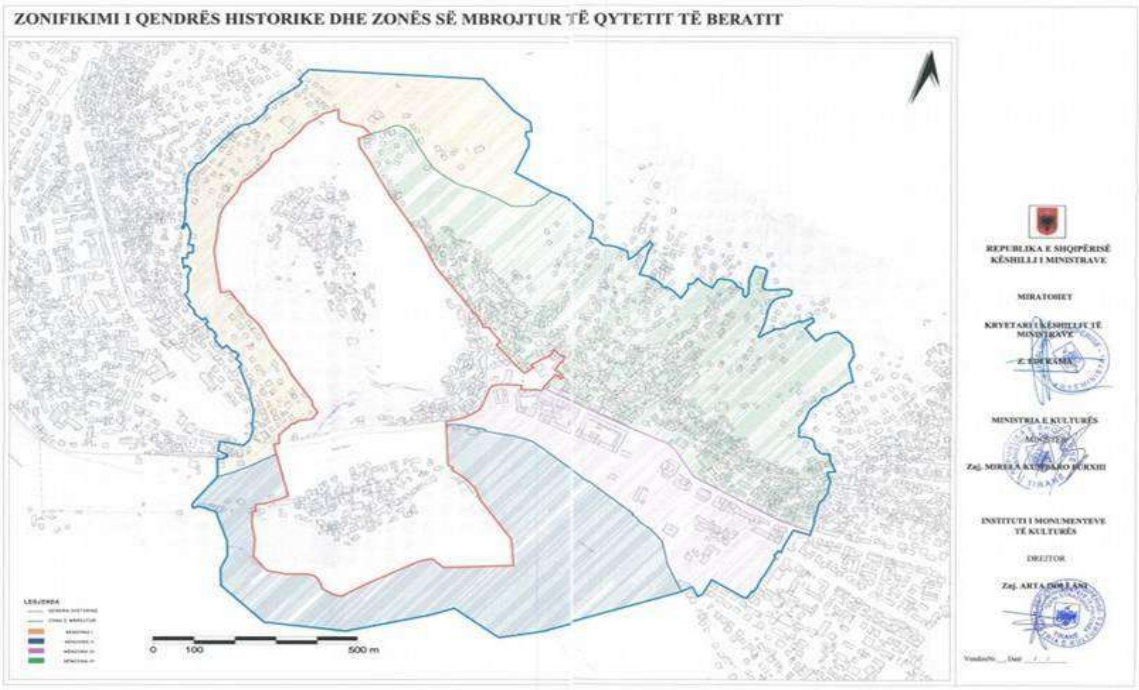


Figure 5. The boundaries of the regulation for the protection, integrated conservation and administration of Berat's historical centre and the buffer zone around it.

## 3.2. PHYSICAL ENVIRONMENT

### 3.2.1. Climate

The geographical position of Albania determines its Mediterranean climate (Figure 6), characterized by mild and humid winters followed by hot and dry summers. Rainfall occurs mainly during the second half of the year. Climatic conditions differ considerably according to regions. The coastal plains have a strong maritime influence, causing a gradient of lower temperatures and reduced precipitation eastwards from the coast (MTE, 2016).

Analysis of mean temperature for the period 1930 to 2006 against the 1961 to 90 average shows that the period 1931 to 1970 had a positive anomaly followed by a negative anomaly between 1971 and 2000 (MTE, 2016). A temperature anomaly is the difference from an average, or baseline, temperature. The baseline temperature is typically computed by averaging 30 or more years of temperature data. A positive anomaly indicates the observed temperature was warmer than the baseline, while a negative anomaly indicates the observed temperature was cooler than the baseline. After 2000 there has been a period with a positive anomaly from 2001 to present. This is a consequence of an increase in both maximum and minimum daily temperatures, especially in summer time. Several years after 1990 are characterized by an increasing rate of minimum temperature, higher than that of the maximum temperature in the summer. Further analysis shows that since the turn of the century there has been a positive trend of increasing temperature for all seasons (winter: from +1.60 to +2.5oC; spring: from +2.00 to +3.0oC; summer: +3.0oC; and autumn: +2.0oC). The northern part of the coastal zone does have lower temperatures in the winter season compared to the middle and southern zones, but summer temperatures are similar across all coastal regions (MTE, 2016).

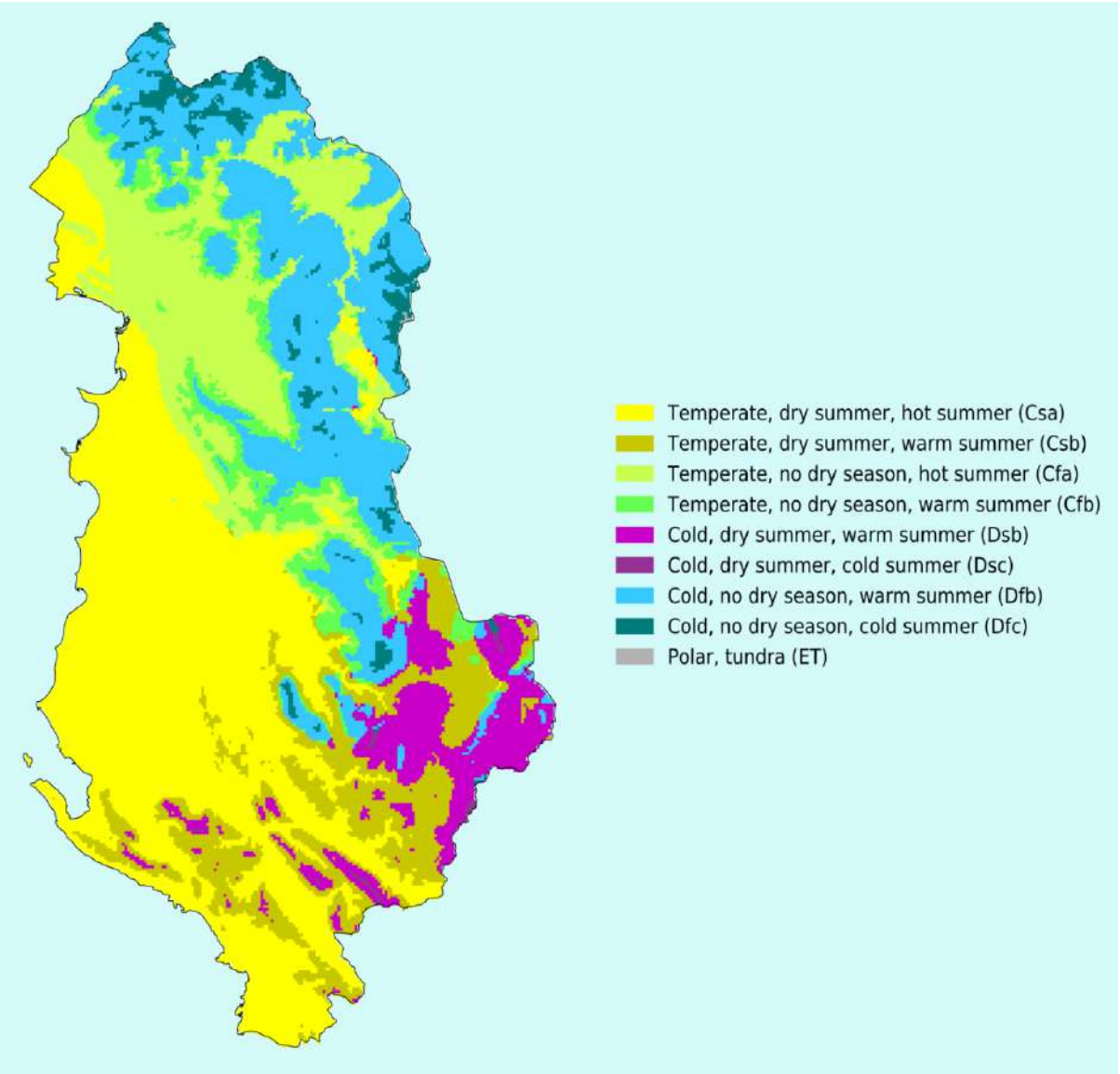


Figure 6. Köppen-Geiger climate classification map for Albania (1980-2016) (Source: Beck et al. 2018).

The climate of Berat is typical Mediterranean characterized with a mild and wet winter and a hot and dry summer. The average annual temperature is 15.9 °C with January being the coldest month with the lowest average temperature of 7.2 °C. The temperatures are highest on average in August, at around 24.4 °C. The average annual rainfall quantity is 928 mm, with November being the wettest months. The favourable climate with around 300 sunny days and 2,500 sunny hours a year allows tourism to be enjoyed almost throughout the whole year.

The climate is classified as Csa (Hot-summer Mediterranean climate); by the Köppen-Geiger system. The variation in the precipitation between the driest and wettest months is 128 mm. During the year, the average temperatures vary by 17.0 °C.


Figure 7. Berat Climate Graph- weather by month (average). (Source: https://en.climate-data.org/europe/albania/berat/berat-3431/).

Table 8. Climate data for Berat (1982 -2012)

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Avg. Temperature (°C) | 7.4 | 8.6 | 10.7 | 13.9 | 18.1 | 22 | 24.3 | 24.4 | 21.2 | 16.8 | 12.4 | 9 |
| Min. Temperature (°C) | 3.8 | 4.8 | 6.4 | 9.3 | 13.1 | 16.6 | 18.6 | 18.6 | 15.8 | 12.2 | 8.6 | 5.4 |
| Max. Temperature (°C) | 11 | 12.4 | 15 | 18.6 | 23.1 | 27.5 | 30.1 | 30.2 | 26.6 | 21.4 | 16.2 | 12.6 |
| Avg. Temperature (°F) | 45.3 | 47.5 | 51.3 | 57.0 | 64.6 | 71.6 | 75.7 | 75.9 | 70.2 | 62.2 | 54.3 | 48.2 |
| Min. Temperature (°F) | 38.8 | 40.6 | 43.5 | 48.7 | 55.6 | 61.9 | 65.5 | 65.5 | 60.4 | 54.0 | 47.5 | 41.7 |
| Max. Temperature (°F) | 51.8 | 54.3 | 59.0 | 65.5 | 73.6 | 81.5 | 86.2 | 86.4 | 79.9 | 70.5 | 61.2 | 54.7 |
| Precipitation / Rainfall (mm) | 128 | 111 | 86 | 77 | 73 | 41 | 26 | 32 | 63 | 105 | 154 | 136 |

(Source: https://en.climate-data.org/europe/albania/berat/berat-3431/)

### 3.2.2. Hydrology and Hydrogeology

Berat Municipality has a rich hydric network (Figure 8). The Osumi River is the main axis of this network followed by the Molisht stream. Osumi traverses the territory of the Municipality of Berat for almost 21 km; from the south-eastern part in Malinar to Morava in the north where the river flows from the municipality towards the Vajgurore Bridge. The Osum is one of the Source Rivers of the Seman. It is 161 km long and its drainage basin is 2,073 km2. Its average discharge is 32.5 m3/s. Its source is in the southwestern part of the Korçë County, near the village Vithkuq at an altitude of 1,050 metres. It flows initially south to the Kolonjë municipality, then west to Çepan, and northwest through Çorovodë where it flows through the famous Osum Canyon, Poliçan, Berat and Urë Vajgurore. It joins the Devoll near Kuçovë, to form the Seman. The discharge of the river is reported to vary between 5.11 m3/s and 74.11 m3/s). The Osumi tributaries include the Zagoria River, which joins the Uznova, the Gushtavë stream and the Lapardha stream (on the right side of the river). In addition to Osum, the Municipality has a large number of reservoirs scattered throughout the villages.

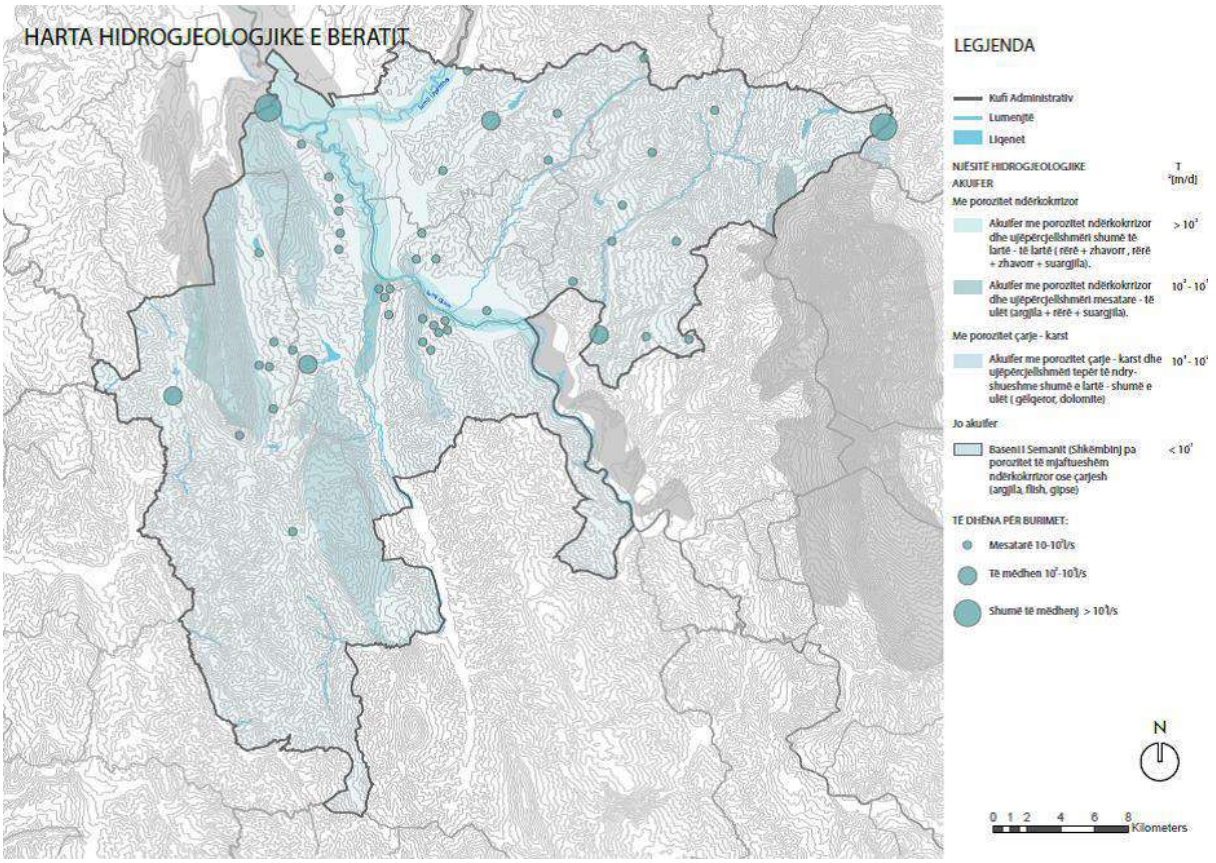


Figure 8. Hydrogeological map of the Berat Municipality (Source: PPV Berat, 2017)

### 3.2.3. Flooding

The city of Berat stretches over the so-called Osumi Valley, traversed by the Osum River. Over the last 100 years the Osum River, which flows through Berat, has flooded several times. The most problematics have been those of winter 1962-1963, 1970-1972 and January 2002 where large areas, mainly agriculture land were flooded (GLP, 2017). One of the reason is the river configuration over the time (Figure 9) associated with heavy rainfall. While flooding is a large issue in most of Albania, it is not an issue that notably affects the monuments in Berat. Only a small number of monuments, 21 in total, could be affected due to their close proximity to the river, which can overflow during periods of heavy rain. A significant rainstorm hit during the first weekend in December 2017 and there was some flooding in Berat. However, there was no damage done to the cultural heritage monuments that were designated as flood risks.

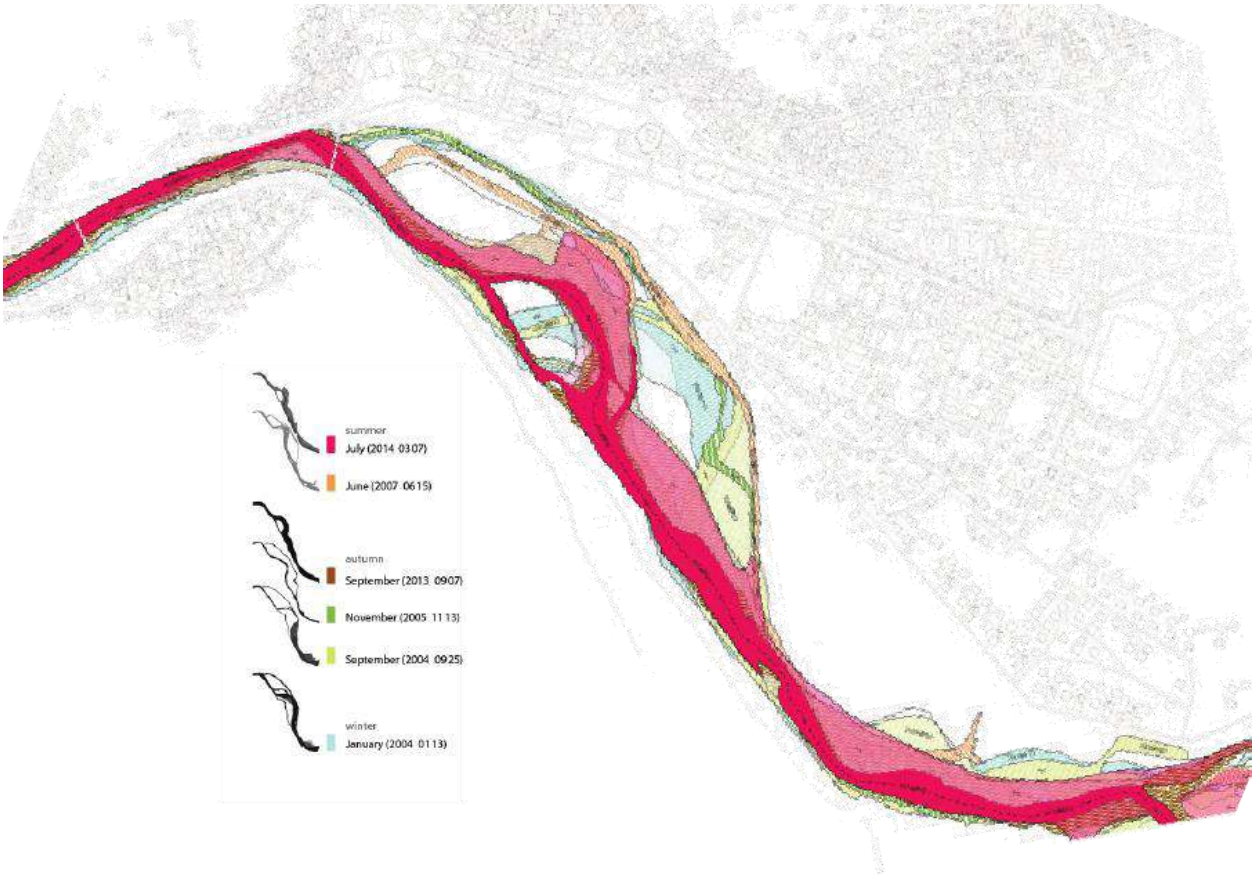


Figure 9. Osumi river configuration over the time (Source: AZPML + Studio ARCH4, 2015)

### 3.2.4. Air Quality

Air pollution should be understood as the presence or introduction of chemical substances, substances and biological materials into the atmosphere,

generated by human activities or natural processes that cause adverse effects on human health and the environment. Air pollutants may be classified as primary and secondary.

*Primary pollutants* are those substances emitted directly to the atmosphere such as carbon monoxide (CO, emitted by old vehicles) and sulphur dioxide (SO2, released from factory chimneys). The primary substances are: - Oxygen sulphur (SOx), especially sulphur dioxide SO2, which is produced by various industrial processes.

*Secondary pollutants* are gases that are usually not emitted directly but are formed in the air when primary pollutants act or interact with each other. The most problematic areas are the spaces of former industrial enterprises.

Albania currently has no comprehensive database about national air quality. However, motor vehicles are major emission sources for several air pollutants, including nitrogen oxides (NOX), carbon monoxide (CO), particulate matter (PM), and hydrocarbons (HCs). They represent the main indicators for the assessment of air quality, based on guidelines EU and reflected in Decision of Council of Ministers of Albania No. 803, dated 04.12.2003 "On approval of the air quality standards".

National Environmental Agency has monitored air quality in the city of Berat. The monitoring station was near the city hall, close to the national road Berat –Skrapar. Coordinates of the stations are 40°42' 11.22" N and 19° 57' 22.86" E

Table 9. Average values recorded for PM10 in the city of Berat (µg/m³)

| No. | City | PM10 ug/m3 | EU Standard |
|---|---|---|---|
| 1 | Berat | **119.16** | **40** |

Source: National Environmental Agency (AKM 2017)

Air quality monitoring is carried out every 30 minutes for gaseous compounds $NO_2$, $O_3$ and every 5 minutes for $SO_2$.

Table 10**.** Mean annual values for 2017 (µg/m³) in Berat

| Indicator (µg/m3) | $SO_2$ | $O_3$ | CO | $NO_2$ | Benzene |
|---|---|---|---|---|---|
| Berat | 3.4 | 25.96 | 0.63 | 41.63 | 1.14 |
| EU Standard | 125 | 120 | 10 | 200 | 5 |

Source: National Environmental Agency (AKM 2017)

### 3.2.5. Noise (Acoustic pollution)

The acoustic pressure is a basic measure of the vibrations of air that make up the noise. Since the acoustic pressure interval that the human auditor can detect is very wide, these measurements are measured at a logarithmic scale with a decibels unit (dB).

*Urban Noise Level (LAeq): is the equivalent continuous weighted acoustic pressure (A0) level, produced by all sources of noise that exist in a given location and during a given time.*

The urban noise monitoring in the city of Berat is conducted by the Institute of Public Health aims to measure the level of acoustic pollution. Monitoring is done at two stations; city hall and hospital road intersection during the day and the night (L*aeq* day and L*aeq* night). When the noise level is about 65 dBA, sleep becomes serious concern and most of the annoying population.

As it can be depicted from the Figure 10, the values recorded exceed the standards (EU norms) for both stations during the day and the night. At the City Hall station, the noise level during the day exceeds the norm by 10% while during the night the norm is exceeded by 9%. At hospital road intersection station, the noise level during the day exceeds the norm by 12% while at night this value is exceeded by 14%.


| | Laeq Day | Laeq Night |
|---|---|---|
| City Hall | 60.47 | 49.08 |
| Intersection | 61.44 | 51.42 |
| EU Norm | 55 | 45 |

Figure 10. Noise monitoring in the city of Berat

### 3.2.6. Seismic Hazardous in Berat

Albania is characterized by shallow crustal seismicity. The different present-day tectonic regime in eastern and western Albania requires the use of separate strong motion relations. The extensional region, into which the normal faulting earthquakes are generated, is located in eastern Albania. The compressional region, into which mainly thrust faulting and much rare strike-slip faulting earthquakes are generated, is located in western part of it.

The main parameters of seismic hazard for Albania: Peak ground Accelerations (PGA) and Spectral Accelerations (SA) damping 5 % are calculated for rock site condition, and in accordance with Eurocode 8 for two levels of probability: 10 % in 50 years (475 years return period) and 10 % in 10 years (95 years return period). The ground motion values are calculated for „firm rock" sites that correspond to a shear-wave velocity of 760 m/s in the top 30 m. These are given in the Table 11 below.

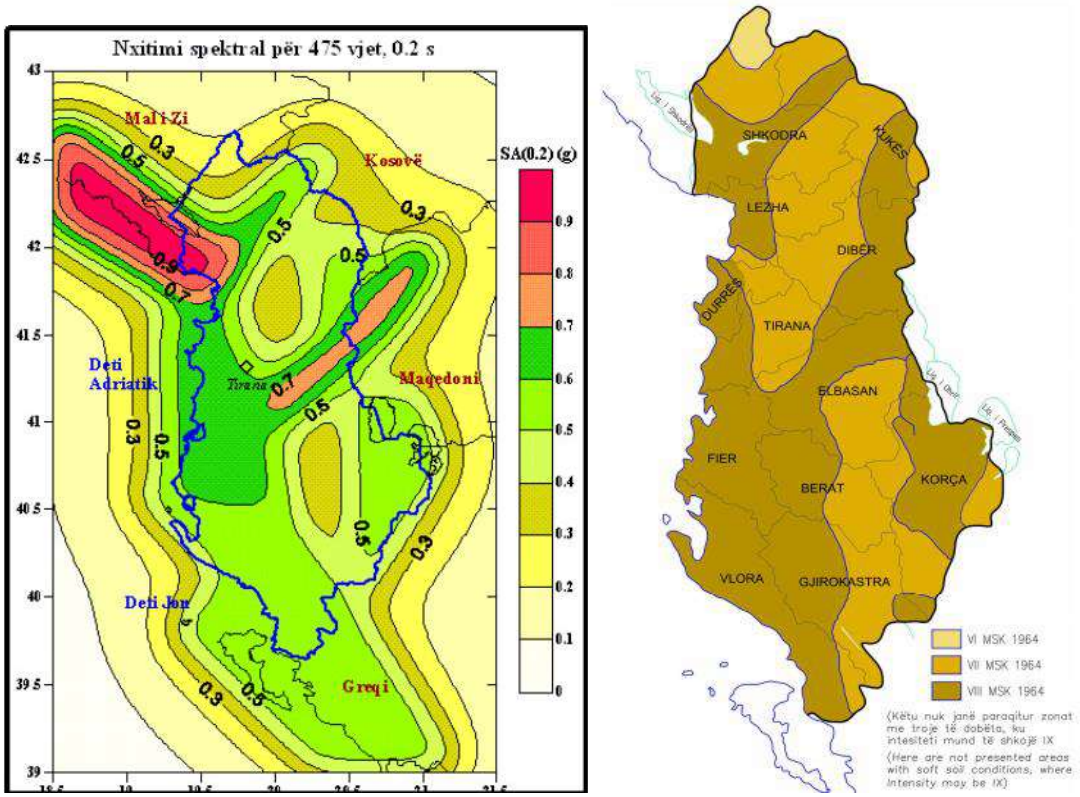


Figure 11. Map of Sa (0.2) 5 % damping for Albania on rock site and for probability 10 % / 50 years or 475 years return period (Left) and the Map of Seismic Hazard in Albania (Right) (Source: Aliaj et al. 2010).

Albania belongs to Alpine–Mediterranean seismic belt which passes from Azores Islands through the Mediterranean region and Balkan eastward through Asia and joins the Circum-Pacific Belt in the Malay Archipelago.

The seismicity of Albania is strongly connected with the contact between Adria and Albanides orogene, which is part of a broader collision between Eurasian and African plates. This contact that probably takes effect through a continental type of collision unceasingly accumulates deformations and propels the longitudinal tectonic faults bordering it as well as transversal tectonic faults cutting it and penetrating to the interior of the peninsula.

According to seismic regionalization map, the municipality of Berat is included in the zone where within the next 100 years, for the average land conditions, earthquakes with intensity I0 = 6 degree (MSK-64) can be expected.

Table 11. Seismic hazard values (PGA and SA (g)) for the Berat municipality with probability 10%/10 years (95 years return period) and 10%/50 years (475 years return period) on rock site conditions.

| **Place** | **Coordinates** | | **Probability** | **PGA 0.01** | **SA** | | | |
|---|---|---|---|---|---|---|---|---|
| | **N** | **E** | | | **0.2 s** | **0.5 s** | **1.0 s** | **2.0 s** |
| Berat | 41.38 | 19.91 | 10%/10 | 0.104 | 0.262 | 0.144 | 0.074 | 0.033 |
| | | | 10%/50 | 0.186 | 0.471 | 0.279 | 0.144 | 0.067 |
| Cukalat | 41.31 | 19.88 | 10%/10 | 0.12 | 0.301 | 0.162 | 0.081 | 0.036 |
| | | | 10%/50 | 0.217 | 0.55 | 0.32 | 0.162 | 0.075 |
| Kutalli | 41.38 | 19.76 | 10%/10 | 0.116 | 0.264 | 0.154 | 0.078 | 0.034 |
| | | | 10%/50 | 0.23 | 0.547 | 0.316 | 0.161 | 0.072 |
| Lumas | 41.35 | 19.70 | 10%/10 | 0.134 | 0.324 | 0.171 | 0.086 | 0.037 |
| | | | 10%/50 | 0.267 | 0.629 | 0.361 | 0.184 | 0.08 |
| Otllak | 41.20 | 19.95 | 10%/10 | 0.139 | 0.34 | 0.184 | 0.091 | 0.04 |
| | | | 10%/50 | 0.256 | 0.642 | 0.371 | 0.189 | 0.084 |
| Poshnjë | 41.25 | 19.65 | 10%/10 | 0.14 | 0.335 | 0.177 | 0.089 | 0.037 |
| | | | 10%/50 | 0.274 | 0.644 | 0.375 | 0.192 | 0.082 |
| Roshnik | 41.35 | 19.80 | 10%/10 | 0.126 | 0.311 | 0.165 | 0.083 | 0.036 |
| | | | 10%/50 | 0.248 | 0.595 | 0.341 | 0.173 | 0.077 |
| Sinjë | 41.32 | 19.81 | 10%/10 | 0.126 | 0.311 | 0.165 | 0.083 | 0.036 |
| | | | 10%/50 | 0.248 | 0.595 | 0.341 | 0.173 | 0.077 |
| Terpan | 40.55 | 20.01 | 10%/10 | 0.114 | 0.269 | 0.14 | 0.071 | 0.03 |
| | | | 10%/50 | 0.243 | 0.565 | 0.316 | 0.159 | 0.069 |
| Ura Vajgurore | 40.76 | 19.84 | 10%/10 | 0.137 | 0.323 | 0.168 | 0.084 | 0.035 |
| | | | 10%/50 | 0.272 | 0.637 | 0.367 | 0.187 | 0.08 |
| Velabisht | 40.70 | 19.91 | 10%/10 | 0.13 | 0.309 | 0.16 | 0.08 | 0.034 |
| | | | 10%/50 | 0.266 | 0.62 | 0.353 | 0.178 | 0.076 |
| Vërtop | 40.63 | 20.05 | 10%/10 | 0.117 | 0.276 | 0.144 | 0.073 | 0.031 |
| | | | 10%/50 | 0.247 | 0.575 | 0.322 | 0.162 | 0.07 |

Given the classification of earthquakes according to their magnitudes, the seismicity of Albania is characterized by an intensive seismic micro activity (1.0 ≤ M ≤ 3.0), by many small earthquakes (3.0 ≤ M ≤ 5.0) by rare medium-sized earthquakes (5.0 ≤ M ≤ 7.0) and very seldom by strong earthquakes (M >7.0) (Muco 1988).

## 3.3. BIOLOGICAL ENVIRONMENT

Biodiversity is a very important component of the natural resources of a country, area or region. The origins of this diversity lie in the geographic position, geological, pedologic, hydrological, relieve and climate factors.

The geographic position, geological construction, climatic conditions, water resources and the soil in the territories of Berati have created habitats suitable for the living plant and animal world.

### 3.3.1. Protected Areas

According to the International Union for Conservation of Nature (IUCN) categorisation, there are several nature monuments and one protected area within the territory of Berat; namely the Tomorr Mountain National Park (Albanian: Parku Kombëtar i Malit te Tomorrit (Figure 12). Tomorr is a national park that lies in southern Albania, nestled in the central and higher portions of the Tomorr massif, spanning an area of 261.06 km2. The park covers a territory of 26,106 ha. The area falls within the Berat County and only 1,278 ha inside the Elbasan County. The park was established in 1956 and is considered one of the most important protected areas for the maintenance of mountainous biodiversity and ecosystem integrity at the national level. The park has been recognised as an Important Plant Area of international importance by Plantlife. The closest point of the city to Tomorr Mountain National Park is 12 km (aerial line).

Tomorr is an anticline composed of limestones and karst. The mountain is one of the highest natural points of southern Albania, rising between the valleys of the rivers Osum and Tomorrica in the east close to Berat.

The park falls within the Pindus Mountains mixed forests terrestrial ecoregion of the Palearctic Mediterranean forests, woodlands, and scrub. It's varied geology and topography have resulted in a unique diversity of flora and fauna. Forests of the Tomorri National Park are composed of diverse species of deciduous and coniferous trees and a great variety of flowers. The park's forests are abundant in species such as European beech, Bosnian pine, Turkish hazel, linaria, great yellow gentian, autumn crocus, Greek whitebeam, European mistletoe, centaury and many others. Numerous species of large mammals such as wolves, foxes, wild boars, roe deer, wild goats, rabbits, golden eagles, owls, and sparrow hawks can be found inside the national park. Small mammals include forest dormouse, and wood mouse.

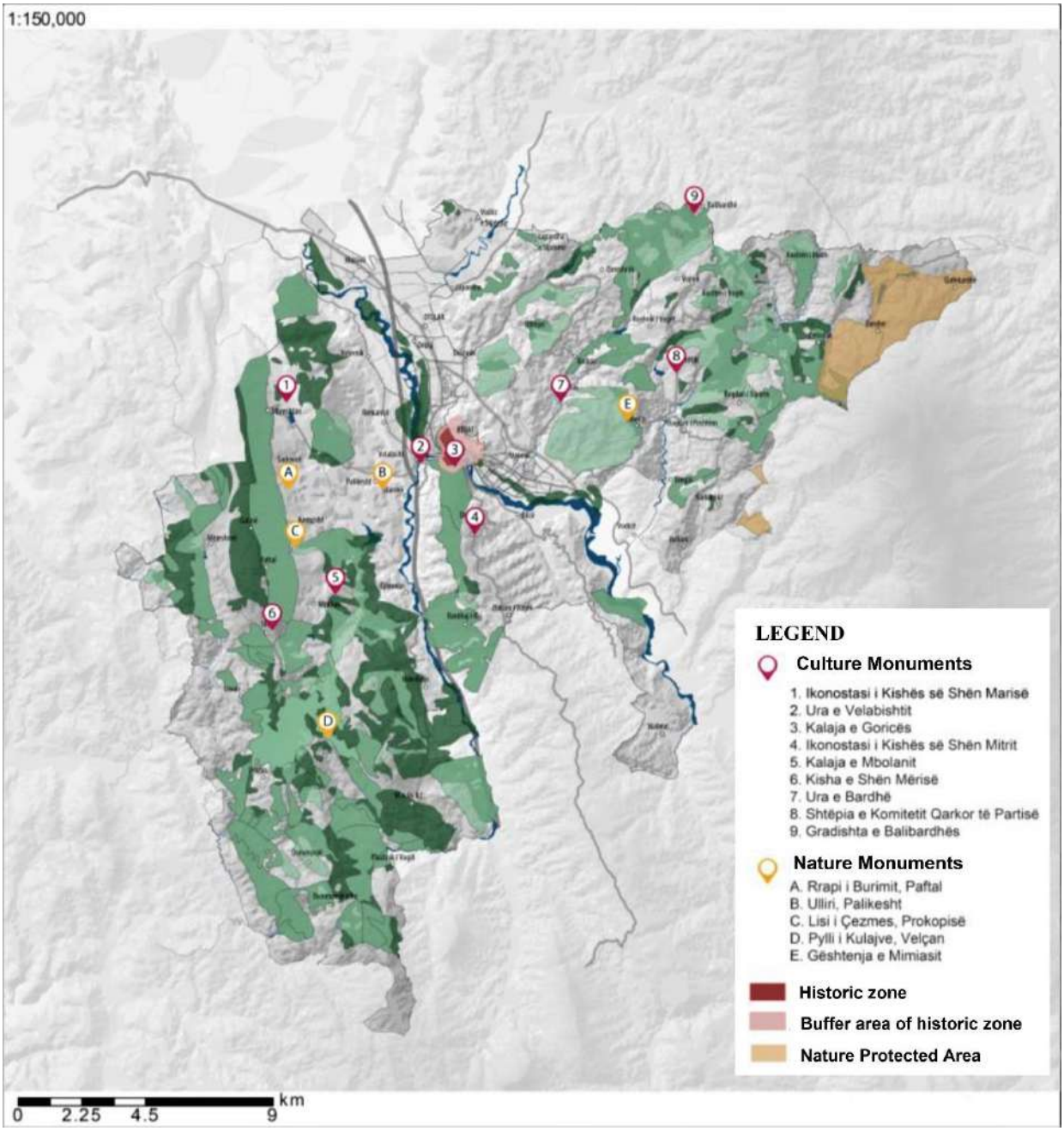


Figure 12. Map of Protected area-Municipality of Berat (Source: GLP Berat)

In terms of vertical zoning, the Municipality of Berat, contains all four phyto-climatic zones encountered in the country: 1) Mediterranean forest belt and shrubs; 2) oaks 3) Beech and 4) Alpine pasture belt. This zonation is due to Berati's physical-geographical position and the presence of Tomorri National Park The presence of these belts is a great reflection of the values of flora, vegetation and habitats in this area. Schematically for Tomorri National Park, they are presented in Figure 13 along a transect on the North-West side, which starts from the village of Vodica and ends at the northern top of the mountain.

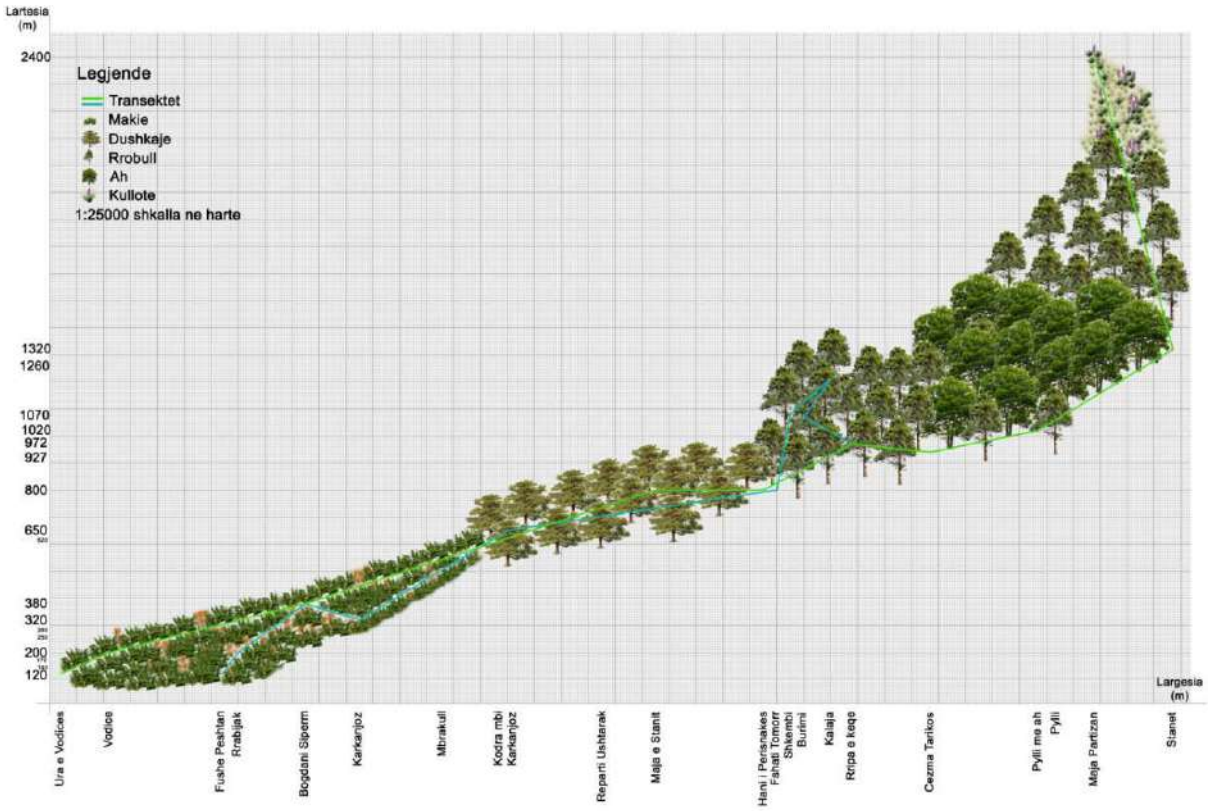


Figure 13. Scheeme of phyto-climatic belts in the Tomorr Mountain National Park (Source: Mahmutaj, 2015)

### 3.3.2. Endemic and endangered species

Six Albanian endemic taxa are reported in Tomorr Mountain National Park: *Arabis tomorensis, Arenaria cikaeae, Astragalus autranii, Carduus cronius ssp. baldacci, Euphorbia cikaea and Onosma mattirolii*. One of these species is included in the Albanian species red list; two of them are mentioned only in the literature and are object of future investigations.

Two endemics, *Arenaria cikaeae and Euphorbia cikaea*, recognized till now only in Acroceraune Mountains, are reported as new for Tomorri Mountain ridge especially in the Eastern slopes

Subendemic species: Eight species from Tomorri National Park which are included in the national species red list share the distribution area with Greece. These species are: *Campanula hawkinsiana, Centaurea epirota, Edraianthus australis, Lilium chalcedonicum, Nepeta spruneri, Pedicularis graeca, Valeriana crinii* and *Viola albanica*

Balkanic species: Flora of Tomorri National Park includes ca. 56 Balkanic species which makes 6% of the entire flora of this Mountain, out of which 16 species are recorded in the Albanian species red list. About 37% plant species reported till now are registered as rare and endangered species.

The total list of plant species in Tomorri National Park registered till now includes 93 medicinal plants. Out of them 27 species are recorded in the Albanian rare and/or vulnerable flora, threaten by human activities. Nine of these species are also part of Albanian species red list.

Attention should be paid to some endangered species which might not be included in the red list of the country. Among them we can list *Ilex aquifolium, Euphorbia cikaeae, Lilium calchedonicum, Arenaria_ cikaeae, Juniperus foetidissima, Quercus trojana, Tulipa sylvestris,* etc. Another group of plants with very limited distribution and 11 representatives such as *Ranunculus brevifolius, Linaria alpina*, etc. is not threatened by human activities, but by the climate changes.

### 3.3.3. Vegetation at the project site

The project area, which lies in Berat urban zone, is not characterized by pristine or natural habitats, landscapes with important scenic values or biodiversity (flora and fauna) of conservation interest.

The flora of the project area is dominated by tree species used mainly for decorative purposes (Figures 14-18) such as: cypress trees (*Cupressum sempervirens*), glossy privet (Ligustrum lucidum), maple trees (*Acer negundo),* plum trees (*Prunus cerasifera 'Pissardii'*); holm oak (*Quercus ilex*); small-leaved linden (*Tilia cordata*), black locust (*Robinia pseudoacacia* L); climbing plants such a European ivy (*Hedera helix*); wild climbing rose (*Rosa Madame Alfred Carriere*) and (*Pyrostegia venusta*), oleander (*Nerium oleander*), Judas tree (*Cercis siliquastrum* L.). In addition several fruit trees such as common fig (*Ficus carica),* grape vine *(Vitis vinifera*) etc. can be found in the yards of many families.

Figure 14. Hibiscus (*Hibiscus vulgaris* L)

Figure 15. Aleppo pine (*Pinus halepensis* L) stand on the Mangalem's hill

Figure 16. Common grape vine (*Vitis vinifera*) in the yards of a house

Figure 17. Mangalem as seen from Antipatrea road

Figure 18. Pomegranate (*Punica granatum*) in the yards of a house in Mangalem

Figure 19. Wild climbing rose (Rosa Madame Alfred Carriere) and (Pyrostegia venusta)

### 3.3.4. Fauna

Fauna of Berat is also rich. The amphibians are a taxonomic group usually connected with different habitats during their lifecycle, both water and terrestrial. The most popular amphibians encountered are the Yellow-Bellied Toad (*Bombina variegata*) and the Common Toad (*Bufo bufo*). Present as well *Rana graeca, Rana balcanica, Triturus cristatus*, etc.

Reptiles are represented by Balkan Whip Snake (*Coluber gemonensis*), Leopard Snake (*Elaphe situla*), four-lined snake (*Elaphe quatuorlineata*), Hermann's tortoise (*Testudo hermanni*), European pond turtle (*Emys orbicularis*) and the European green lizard (*Lacerta viridis*), etc.

There is a wide variety of bird species present in the area such as Eagle Owl (*Bubo bubo*), Long-legged Buzzard (*Buteo rufinus*), Levant Sparrow hawk (*Accipiter brevipes*), Lanner Falcon (*Falco biarmicus*), Sparrow hawk (*Accipiter*

*nisus),* European Honey Buzzard (*Pernis apivorus*), Gosshawk (*Accipiter gentilis*), Egyptian Vulture (*Neophron percnopterus*), Grey-headed Woodpecker (*Picus canus*), Barn Owl (Tyto alba) and Kestrel (Falco tinnunculus) are present and good indicators of the areas ecosystems condition.

The mammals are also presented by bats (*Rhinolophus euryale), Rhinolophus blasii* and *Myotis cappaccinii, Myositis bechsteinii,* red squirel (*Sciurus vulgaris*), fat dormouse (*Glis glis),* hazel dormouse (*Muscardinus vellanarius*), beech marten (Martes foina), badger (*Meles meles*), and red fox (*Vulpes vulpes*)

The fauna at the site included butterflies, birds of different species and which are not endangered species. Amongst the birds found in the area, there are species of genus *Alauda,* species of sparrows (*order Passeriformes*); ducks and geese from the order *Anseriformes*); some birds from the order of wild pigeons (*Columbiformes*); whistles (*Lucinia megarhyncha),* species of genus *Sylyvia,* etc. None of the birds found nest on site, rather use the area for feeding and resting.

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# IV. DESCRIPTION OF THE PROJECT

After the validation of the Integrated Urban Design Concept for Berat and of the Investment Program for the Project Area, the following investment sub-projects have been selected for implementation in Berat:

- P01 Restoration of the historic urban landscape of the Gorica quarter;
- P03 Rehabilitation of the Gorica Castle trail & establishment of additional tourism opportunities around the monument;
- P04 Creation of a car parking nearby the Old Gorica Bridge;
- **P05 - Restoration of the historic urban landscape of Mangalem quarter;**
- P06 Restoration of the historic urban landscape of the Selamllek square
- P09 Regeneration of the area surrounding the Ethnographic Museum and Mihal Komneno road;
- P11 Street-scape beautification along Antipatrea road in the Town centre;
- P12 Urban upgrading of Iliaz Vrioni square; and
- P15 Tourism signage and interpretation.

This report, presents the preliminary design for the investment sub-project: *P05 - Restoration of the historic urban landscape of Mangalem quarter.*

This intervention aims to regenerate the public space in Mangalem, including interventions in infrastructure, creating a suitable environment for the development of businesses and crafts as well as the improvement of residential buildings. The project will include the restoration of horizontal alley surfaces of the historic Mangalem center and public lighting. Rehabilitation of small squares inside the neighborhood, preserving their urban structure, cleaning and securing small recreation areas will improve the tourist experience and create attractive observation points of the historical context. The restoration of the facades and the surrounding walls of the roads will be carried out, which will be restored. A special importance in the neighborhood of Mangalem will be given to the lighting where all the objects which are a monument of the first category and some objects of the second category will be illuminated. Lighting will be done on the rock in the castle, emphasizing the lines of the castle wall.

## 4.1 SUB-PROJECT SITE LAYOUT

The Mangalem area is located at the base of the rocky hill, on the right side of the river, below the Castle. Most of the neighbourhood is still made up of most of the original buildings, which still contain antique decorations and furniture in their interiors.

Numerous narrow, winding, and sloping pedestrian streets make up the neighbourhood road network. The walkways in this neighbourhood are so narrow that they are often hidden by the corners of roofs that are almost adjacent to each other. The ensemble of apartments built on the steep slope of the hill is one of the main attractions of Berat (called "the city of one on one windows" because of the special character that this neighbourhood has. Being inhabited, the apartments are in a good maintenance condition.

Most of the monuments located in this neighbourhood are dwellings. This area is considered as Varosh (a community just outside the castle walls), whose origins date back to the XXI - XXII Centuries. Their current construction is from the XVIII and XIX centuries. There are 134 monuments, 16 of which are richly decorated with Category I monuments. In addition to these residences, there are Orthodox and Muslim religious temples. They are in good condition. The district is open to visitors and its cobbled streets and trails are in good condition. Mosque “Beqarëve” is one of the temples located within the Mangalem quarter. Although an infrastructural adaptation and a general adjustment are sufficient, there is a need to stimulate the adaptation of dwellings to today's needs while respecting their historical characteristics. Since there is no vehicle road, there is no traffic problem: on the contrary access for the vehicle can be difficult in case of need.

### 4.1.1. The General Local Plan

The GLP Berat was prepared in 2016. The proposed vision for the development of Berat aims to harmonize economic, infrastructural and spatial development with the protection of natural resources, mitigation of social inequalities and promotion of the intellectual development of society.

Subproject P05 regarding to the GLP land use falls into unit 1/18 "Historical-cultural monuments and heritage". Referring to the traffic network, the subproject includes the road "Antipatrea" a main road, and the historic alleys, are not considered part of the main road network by the GLP.

Figure 20. GLP (snippet from akpt.maps.arcgis.com)

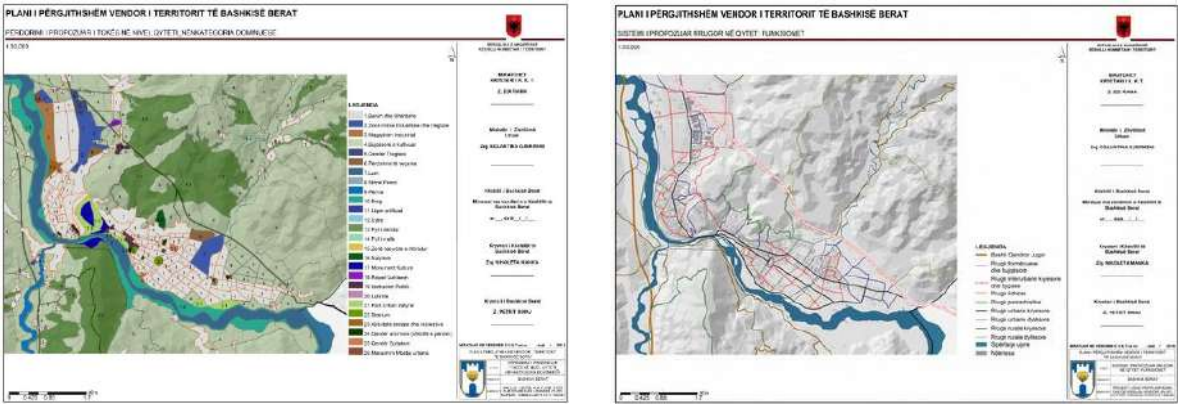



Figure 21. GLP land use (light gray - residential; blue - cultural monument) / GLP transport network

### 4.1.2. Land Ownership and Intervention

**Intervention area**

Project **P05 - Restoration of the historic urban landscape of Mangalem quarter** includes the public space of the historic neighbourhood. The intervention will focus on: cobbled streets and lighting of buildings which are monuments of the first category and partly monuments of the second category. It is worth noting that the Mangalem objects are all monuments of the first and second category. Significance is also given to the lighting of Monuments and alleys and the public landscape space along the alleys as

well as the restoration of the facades and surrounding walls along the alleys as well as the restoration of the buildings that will be restored. To facilitate "understanding" and implementation, the entire network of alleys is divided into segments as shown in the map below.

Figure 22. Inetrvention area

Intervention in the public space of the historic center is presented in mini brochures that provide detailed modelling of each segment and the respective facades.

- “Antipatrea” Street
- “Kostaq Stefa” Street
- “Kol Myzeqari” Street
- “Llambi Guxhumani” Street
- “St. Mëhilli” Street
- “Zoi Tola” Street
- “Xhymyrteka” Street
- “Mihal Komneno" Street
- Path to the church "Shën Mëhilli"
- Artistic lighting of monumental objects.

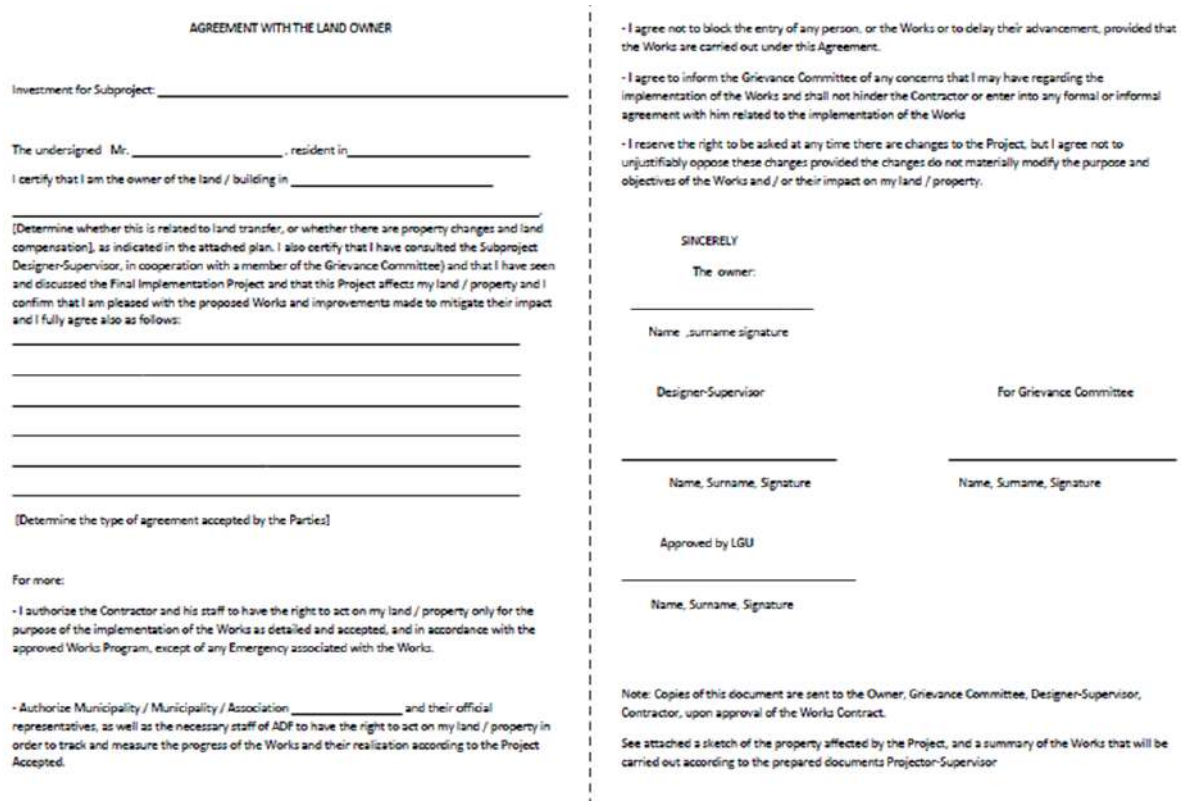

Figure 23. Project area coordinates.

Table 12. Coordinates of project areas according to the Gauss - Krüger coordinate system

| Point | Gauss-Krüger System | | Point | Gauss-Krüger System | |
|---|---|---|---|---|---|
| | East (E) | Nord (N) | | East (E) | Nord (N) |
| **1** | 4411375.51 | 4508734.91 | **2** | 4411414.11 | 4508689.66 |
| **3** | 4411450.44 | 4508620.63 | **4** | 4411496.50 | 4508562.01 |
| **5** | 4411441.16 | 4508544.41 | **6** | 4411437.82 | 4508496.86 |
| **7** | 4411394.33 | 4508472.34 | **8** | 4411296.07 | 4508406.75 |
| **9** | 4411198.66 | 4508390.06 | **10** | 4411255.34 | 4508456.92 |
| **11** | 4411343.16 | 4508483.93 | **12** | 4411329.51 | 4508514.89 |
| **13** | 4411343.31 | 4508558.92 | **14** | 4411366.83 | 4508596.68 |
| **15** | 4411391.92 | 4508646.21 | **16** | 4411370.67 | 4507686.65 |

**The Current land use: Public space.**

The project area is currently in public / state ownership, as confirmed by the National Cadastre Agency and their documents: Nr. Prot. 5606/1 dated 19/10/2018, no. Prot. 5606/3 dated 25/10/2018, no. Prot 2448/1 dated 30/04/2019, no. Prot. 2448/3 dated 30/05/2019 and No. Prot. 2448/4 dated 05/06/2019. Based on their data the consultant has digitized the map of assets and determined the boundary of the intervention. The boundary of the intervention is determined by all the surrounding walls and private plots. As the project does not require expropriations, there is no need to prepare a Land Expropriation Plan. However, the intervention affects all walls, fences and doors of private properties at the project boundary. In this case, based on previous best practices and in accordance to World Bank's OP 12 Involuntary resettlement, the ADF prepares RAP and reaches to all affected property owners in order to achieve an agreement for replacement of structures that needs to be affected with this project/investment, free of charge to the property owners.



AGREEMENT WITH THE LAND OWNER

Investment for Subproject: _____

The undersigned Mr. _____, resident in_____

I certify that I am the owner of the land / building in _____

_____.

[Determine whether this is related to land transfer, or whether there are property changes and land compensation], as indicated in the attached plan. I also certify that I have consulted the Subproject Designer-Supervisor, in cooperation with a member of the Grievance Committee) and that I have seen and discussed the Final Implementation Project and that this Project affects my land / property and I confirm that I am pleased with the proposed Works and improvements made to mitigate their impact and I fully agree also as follows:

_____

_____

_____

_____

_____

_____

[Determine the type of agreement accepted by the Parties]

For more:

- I authorize the Contractor and his staff to have the right to act on my land / property only for the purpose of the implementation of the Works as detailed and accepted, and in accordance with the approved Works Program, except of any Emergency associated with the Works.

- Authorize Municipality / Municipality / Association _____ and their official representatives, as well as the necessary staff of ADF to have the right to act on my land / property in order to track and measure the progress of the Works and their realization according to the Project Accepted.

- I agree not to block the entry of any person, or the Works or to delay their advancement, provided that the Works are carried out under this Agreement.

- I agree to inform the Grievance Committee of any concerns that I may have regarding the implementation of the Works and shall not hinder the Contractor or enter into any formal or informal agreement with him related to the implementation of the Works

- I reserve the right to be asked at any time there are changes to the Project, but I agree not to unjustifiably oppose these changes provided the changes do not materially modify the purpose and objectives of the Works and / or their impact on my land / property.

SINCERELY

The owner:

_____

Name ,surname signature

Designer-Supervisor

_____

Name, Surname, Signature

For Grievance Committee

_____

Name, Surname, Signature

Approved by LGU

_____

Name, Surname, Signature

Note: Copies of this document are sent to the Owner, Grievance Committee, Designer-Supervisor, Contractor, upon approval of the Works Contract.

See attached a sketch of the property affected by the Project, and a summary of the Works that will be carried out according to the prepared documents Projector-Supervisor

Figure 24. Example of ADF-Private Owner Agreement

### 4.1.3. The UNESCO buffer zone

Berat was declared a Museum City in 1961, as a result of the first attempt of the Albanian Government to preserve the architectural and historical heritage in towns and villages and then submitted to the national regulation on cultural heritage, most recently summarized in Law no. 27/2018 *"On cultural heritage and museums"*. The protected area, consisting of three neighborhoods: Gorica, Mangalemi and Kala, was included by UNESCO in the World Heritage List (2008) as a "Rare example of a typical architectural character of the Ottoman period" clearly defining the boundaries of the historic center and protected area. According to the requirements of UNESCO, since 2008 the Management Plan has been prepared and in 2014 a new document has been compiled within the SUSTCULT project.

Further, in 2014, DCM no. 767 has defined a more detailed regulation "On the protection, integrated conservation, administration of the "Historic Center and the protected area of the city of Berat". By regulation, possible interventions in the area of the Historic Center are limited to the restoration of existing buildings, while in the protected area are allowed new constructions with restrictions on height, density and architectural style. The sub-project is located in the historic area.

## 4.2. URBAN AND ARCHITECTURAL ELEMENTS ASSESSMENT

### 4.2.1 Urban and architectural elements

This intervention aims to regenerate the public space in Mangalem, including interventions in infrastructure, creating a suitable environment for the development of businesses and crafts as well as the improvement of residential buildings. The main challenges of the area which are related to free spaces are:

- basic services are in poor condition or do not exist at all;
- electrical cables are a visual barrier and pose a fire threat;
- road layers are often damaged;

Mangalemi is one of the focus areas of KIPU, with projects aimed at restoring the historic urban landscape by increasing tourism and the visitor experience. For this reason, the rehabilitation of public spaces and the provision-rehabilitation of services are very necessary to create a suitable environment for the development of these activities. The need may arise for coordination with the project in the process of KFW for service delivery.

This project responds to two PIUDT development objectives: (1) improving the living conditions of local residents; (2) promoting economic development based on local tourism in urban areas.

**Urban street silhouettes**

The main lines of the neighborhood follow the contours of the slopes and give it an organic and somehow a curved shape. The main lines do not intersect at right angles, but are crossed and fused to join each other at different angles, with widths and slopes that allow pedestrian movement or sufficient passage for loaded horses and donkeys. Intersections at right angles occur only between horizontal lines and small alleys that serve as cuts to connect the lower terrains with the higher ones of both neighborhoods.

Doors open on the sides of houses, the ground floors of which are always made of visible carved stone. The windows on the ground floor are positioned quite high. The stone walls surrounding the gardens or courtyards are also built of stone, high enough to protect the privacy of the occupants. Where houses are built on both sides, especially in the smaller alleys, the console upper floors and the edges of the roofs cover almost the entire road. The main axes are paved with stones and take a slope towards the center of the road, in order to avoid the penetration of water along the

base of the walls of houses and gardens. The road axis is marked by larger stones that play the role of linear ditches to collect and channel rain. Important buildings, such as mosques or tekkes, are located at the bottom of the hill, and, in some cases, can be identified by the presence of domes.

### 4.2.2 Buildings

The typical plan and traditional dwelling of Berat differs in the floor used, from one dwelling to another, due to the conditioned changes from the terrain and the slopes in which they occur. The resulting premises are used for storage or services, while the upper floors follow a constant organization and design, consisting of a linear open veranda, known as a "porch", usually adapted to an enclosed stall or canapes that extend and open towards the valley. It is illuminated and ventilated by a series of regular windows - before the epithet of "a thousand windows" comes. The outer hallway, or "porch", comes in a variety of shapes, with "porches" that can also be placed on the sides or in the middle of the building. However, the functioning "porch" is a hallway that connects to different rooms of the house. The stairs are either external, as a case of the Ethnographic Museum of Berat, or be built as a vertical connecting element positioned inside the "porch". The rooms are generally square and in most cases and fit suspended ceilings are square to form with wooden panels lined with decorative motif.

The use of rooms varies, but, as often happens in traditional homes, each combines multiple functions and acts as an independent unit serving to sleep, rest and work. Peripheral benches are used for sitting and sleeping, and at least one side contains storage cupboards. Often, the front door is integrated into the locker system. On one side of the room is the hearth or in the most elaborate cases, the hearth is decorated with a chimney.

### 4.2.3 Materials and construction features

Most houses are two storeys high, with *perimeter walls* of ground floors built of limestone bound with mud or lime mortar on stone foundations. These have a depth of 70 to 120 cm located on the rocky base of the hill. The stone walls are left exposed and have a width varying between 60 and 90 cm. In some cases, the presence of horizontal wood elements in the form of belts in the construction of stone walls serves as an antiseismic belt. As a result of the devastating earthquakes that occurred over the past 150 years, the upper floors were built almost unchanged during the nineteenth and early twentieth centuries with lightweight materials, generally roof walls. The upper walls are rarely thicker than 20 cm.

***The floors*** are constructed of beams connected by wooden architraves that act as a level bed and help distribute the load along the length of the walls. The beams are covered with layer, plank floor, and carpets are laid on top. Beams below the floor surface are treated differently depending on the importance of the house and the rooms themselves, with wooden ceilings that in some cases display elaborate decorative patterns. Wooden bins support the floor of the upper rooms and, as a rule, work as the supporting structures of the ground floor of the houses. The bay windows are almost always covered by a sloping roof surface and are plastered. These elements, known as "*çikma*" in Turkish, are constructed by extending the wooden floor beams of the first floor floor beyond the boundaries of the ground floor walls.

***The roofs*** are always four-sided, supported by a structural beam and rails covered with equal size tiles, placed in alternating rows with elements of moss and spoons. The sloping ridges are also covered with tiles placed in the spoon position, which is covered by two rows of musky tiles. In some cases, a panel at the end of the roof shelves prevents the tiles from slipping. The roof beams are wide without any bottom layer, leaving beams, rails and tiles visible from the bottom.

***The windows*** are with shutters hanging vertically along each side and are divided into a number of small square panels. In some cases a decorated architrave is placed on top of these.

*Doors* are different, with exterior doors usually made of vertical planks. These are nailed to the horizontal rails on the opposite side with blacksmith nails that also function as a decorative element. Double-leaf doors often feature a decorated central beam. Important doors that have retained their original appearance hold rosette-shaped handles as well as decorated latches.

### 4.2.4 Challenges

Continuous degradation and loss of historical heritage

- material loss in the lower strip of the walls due to water penetration and erosion of the mortar binder, which reduces the structural strength and cohesion of the lower parts of the retaining walls;
- rare vertical cracks, generally evidenced near the corners, possibly due to the presence of different living environments below ground level or due to past seismic phenomena;
- the presence of constructions of an earlier stage in the upper level walls built with wooden construction (roofs), which manifest diagonal cracks near the cantilever elements, as well as the lack of plaster protection

at the level of the foundations and the ground floor which brings rainwater infiltration and further destruction to the upper floors;

- water penetration and damage to the roof due to broken or broken tiles, vegetation growth, frost damage, decay or rot affecting key wood elements and weak layers or repairs that may have occurred on roofs and chimney spaces;
- organic growth and decrease of lime;
- the presence of capillary moisture that affects the inner walls, especially at ground level;
- Lack of domestic services and heating, considered as one of the main factors limiting the use of housing in these neighbourhoods, especially during the winter season;
- lack of effective measures against fire;
- damage caused by landslides and risk of future occurrences, especially on dwellings in Mangalem neighbourhood due to unstable conditions on steep terrain.

For these isolated issues, which affect to varying degrees most of the existing private property, the need to maintain, improve and repair public spaces and infrastructure must be increased. Specially:

- reduction of impact and damage caused by uncontrolled plant growth;
- dismantling of poles and surface lines and installation of underground electrical connections;
- repair of water supply and improvement of branch connections with private properties;
- installation of effective systems for rainfall drainage and sewerage;
- repair or reconstruction of traditional cobblestones in areas where this is missing or can not be repaired;
- introduction of road and heritage signs, as well as better controls on shop signs / advertisements to ensure that they are in line with the traditional character of the neighbourhoods;
- Improving access and signalling to “Shën Mëhilli” church to be promoted as an alternative destination

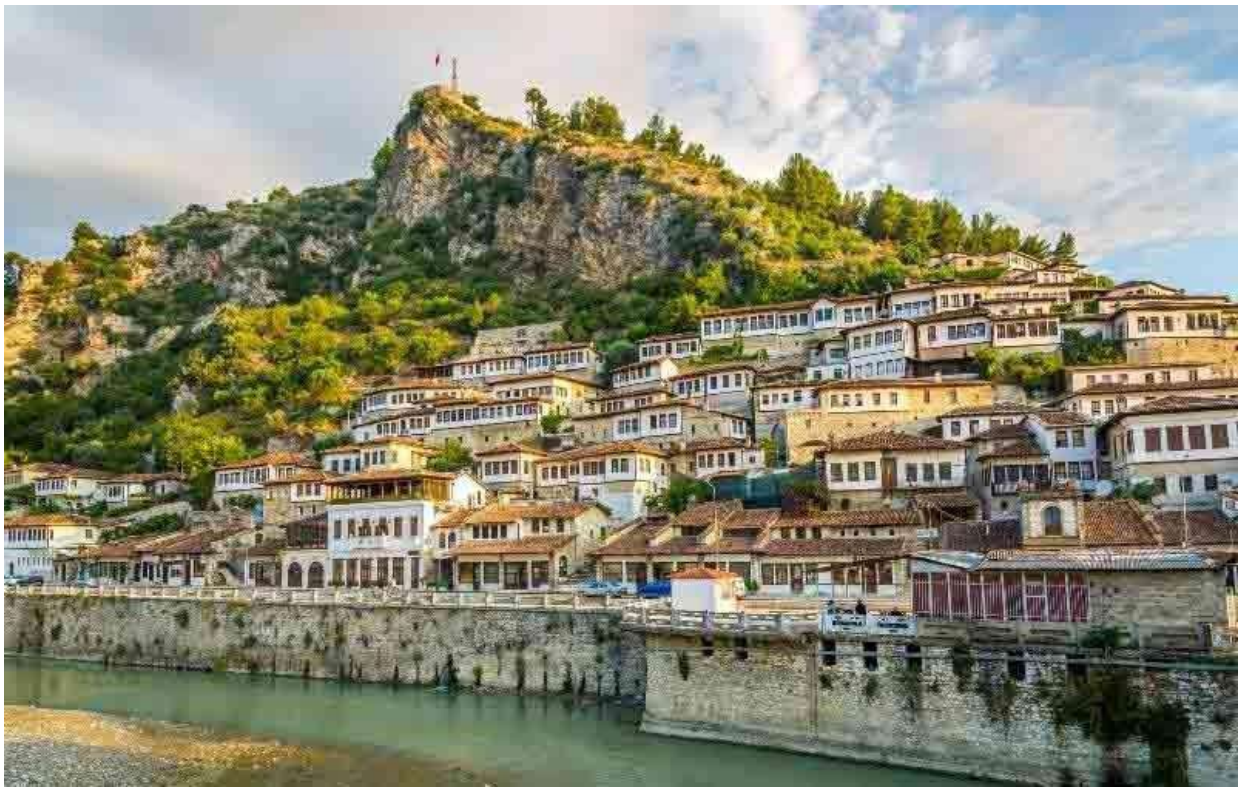


Figure 25. Panoramic view of Mangalem from Gorica

## 4.3. ASSESSMENT OF INFRASTRUCTURE NETWORK

### 4.3.1. Assessment of the road conditions

The study area includes the area of "Mangalem", along the road Antipatrea and part of the neighborhood at the foot of the hill.

Figure 26. General road plan

**The alleys of the historic Mangalem neighbourhood**

The alleys of Mangalem are in acceptable conditions, built of river gravel cobblestones, with ditches in the middle of the road. There are occasional damages to the road body as a result of the interventions that have been made over the years. The area is generally paved uniformly due to the occasional investment in Mangalem. Concrete materials are generally thrown in front of the entrances of the houses by the residents themselves. All the axes of the alleys are connected to each other. These axes are roads used only for pedestrians. Given that these roads envisage another project in terms of sewerage, it is necessary that these alleys be rebuilt for most of their length. The cobblestones which are mostly in good condition will be reused to preserve their originality.

Figure 27. Existing condition of alleys in Mangalem

Figure 28. Existing condition of alleys in Mangalem

Figure 29. Existing condition of alleys in Mangalem

### 4.3.2. Existing sewerage network, rainwater and water supply network

The sewage network in the study area exists, and has recently been completed and is in very good condition, as the pipelines with which it is built are pipelines according to construction standards. From the verification and inspections carried out in the field in cooperation with the staff of the sewerage company and from the updates provided by the Berat Water Supply and Sewerage Company, the engineering infrastructure of the sewerage network meets the criteria and technical conditions of use. As for the wells of the WWS network in the historic area, they are wells

built many years ago but well calculated in a genuine project and currently continues to be in very good condition normally in need of adjustments.

Figure 30. Sewage network

Figure 31. Waste water sewage network

Regarding the waste water sewerage network, in the historical area it is of the surface type, where all rainwater flows freely on the road surface, negatively affecting the quality of life of residents due to floods and alluvium which they carry with you when creating feeds.

From the updates made available, the on-site inspections and from the information made available by contacting representatives of the UKB company, the water supply network is new. This network has been built in recent years.

### 4.3.3. Existing electrical network

The electricity distribution and supply network of the neighborhood consists of medium voltage lines 10 KV, power conversion booths 10/04 KV and low voltage lines from electrical booths to the input cassettes of end subscribers. All this infrastructure is in use and use by the company OSHEE which is responsible for ensuring the supply of electricity to subscribers of any category, household or business. Of course, the investment in this direction is an investment made by OSHEE which for the most part is inherited from the pre-democracy period but also the necessary partial investments have been made in many cases due to maintenance services or even the adaptation of this infrastructure with the development that the area has received in recent years.

What is worth mentioning is the fact that this electrical infrastructure in both medium and low voltage lines has been with overhead infrastructure and the ongoing interventions that have been made have also been overhead. So the cables pass with poles on the side of the road or in other cases have intersections with the road according to the position of the subscriber and the solution given to him at the time of intervention. Naturally, this air infrastructure has a negative impact both in terms of aesthetics but also in terms of the way this infrastructure is built. In many cases, partial interventions have been made which have been solved in an unstudied way, but above all they have not taken into account the development needs of the neighborhood in the following years.

In this context, OSHEE has planned to make interventions in the electricity network and from the meetings we have held with both local and central representatives we have agreed that this intervention be made in accordance with the requirements of this project for revitalization of the area, and improving road infrastructure and engineering by modifying the existing design of the overhead power line and crossing it over underground lines. Thus OSHEE has taken over the adaptation of this project and its investment as well as its coordination at the same time with the interventions of the historical area regeneration project. Since the road

infrastructure is part of this project, then the infrastructure for the passage of underground cables will be part of this project. This infrastructure, ie the laying of pipes and wells along the entire road infrastructure of the historic area will be part of this project and then OSHEE will use these pipes for the installation of medium or low voltage electrical cables according to the needs of the electrical network.

### 4.3.4. Telecommunication

A very important service for the community is already the network of telecommunications, internet, fiber optics which is an integral part of life and services that family users, institutions or businesses have necessary for the smooth running of their activity.

Currently this network is provided by various companies that offer these services such as Albtelekom, or other local companies which offer internet services, telephony, television signal, etc.

The infrastructure of these networks is also with overhead lines and adapted as appropriate using electrical poles, trees or other auxiliary elements for the passage of cables. All this has a negative impact on the quality of service but also on the aesthetic and visual aspect of the environment.

Given that the intervention of this project consists in the regeneration of the historic area and the systematization of these airlines will have to be foreseen to be done during the implementation phase of road works.

For this we have also received meetings and exchanged correspondence with the Municipality of Berat which has made possible the organization of technical meetings with representatives of local companies operating in this area which currently operate and have made relevant investments for these services. It has been agreed that even for these services we will prepare the road infrastructure with pipes and wells which can be used by these companies to extend the lines and cables to the end subscriber. Information on the routes of this infrastructure has been made available to the Municipality, which has also exchanged them with the relevant operators.

### 4.3.5. Street and Public Lighting

The historic area is a very populated area and covers a considerable area which communicates through cobbled streets and alleys of different widths. What is immediately noticeable is the lack of lighting in this area making it difficult and not at all safe for the public to use these accesses,

especially after sunset. Occasionally a certain area is illuminated but even in this case are used technology luminaires with gas discharge, or with halogen lamps which have high electricity consumption, short life and cause many defects during their work.

In general, the lighting in this area leaves much to be desired, and significantly reduces the use of public spaces but also the safety of the public in these spaces.

In this respect, the selection of street and square lighting must meet the requirements for lighting according to the standards and be adapted to the place where it will be installed.

## 4.4. DETAILED ASSESSMENT OF THE PROJECT'S SEGMENTS

### 4.4.1. "Antipatrea" street

"Antipatrea" street is one of the main streets of the city of Berat and borders the neighborhood of Mangalem in its southern part. The paving in this segment of the road "Antipatrea" will not be treated, but only its facade. The typology of Mangalem buildings is residential and commercial and the buildings which stretch along Antipatrea Street are almost all commercial activities such as hotels, inns, bars and shops. Construction in Mangalem is homogeneous and traditional and this is reflected in the buildings along this road, but again there is a slight interference from residents and the presence of moderate degradation in some of the buildings present.

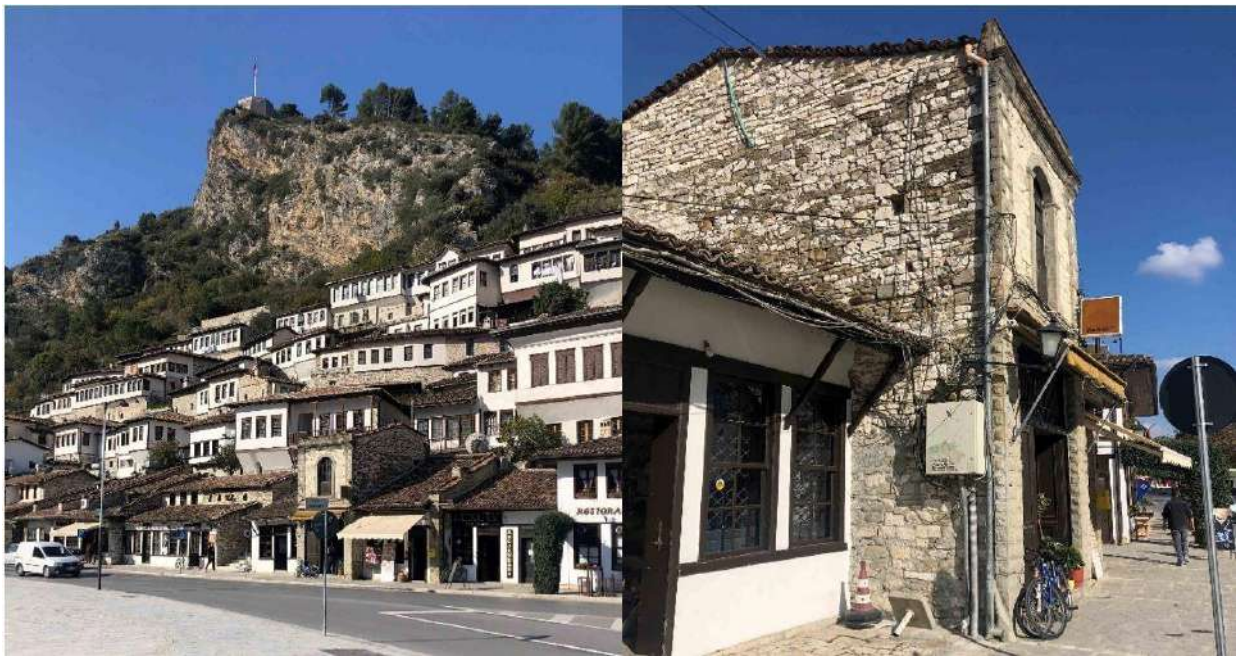


Figure 32. View of Mangalem

### 4.4.2. “Llambi Guxhumani” street

Llambi Guxhumani street is one of the main arteries in the Mangalem area and extends from north to south. Like all access roads in the area, this road is characterized by the small width of the road and the traditional cobblestone which has small to medium degradations along the entire length of the axis. The ambiance of the street is characterized by a typical Berati Ottoman house with a loggia. This environment is loaded with cables that hang in the air, and by additional unsuitable elements of the houses as well as an insufficient and inadequate lighting system. Some fragments of the façade that stretches along the road have a high presence of degradation, but in general the façades of the road are in good condition, also because Mangalemi, unlike Gorica, is more inhabited and better maintained.

Figure 33. Individual residential building on “Llambi Guxhumani” street

### 4.4.3. “Kol Myzeqari” street

"Kol Myzeqari" street together with "Llambi Guxhumani" street are the main arteries of Mangalem, characterized by the slope. The street connects the "Mihal Komneno" street and "Llambi Guxhumani" street. This road is mostly pedestrian like all the other alleys of Mangalem.

Cobblestone is traditional though degraded due to lack of maintenance. Cobblestones have also been degraded by the earlier state of the sewers and water supply system. Both of the latter are a major subject for environmental, health and cobblestone pollution.

The alley environment is characterized by a typical Berati Ottoman house with a loggia. This environment is loaded with cables that hang in the air, and from additional unsuitable elements of houses as well as an insufficient and inadequate lighting system.

Figure 34. Kol Myzeqari street

Figure 35. Surrounding walls facing the road, inappropriate or damaged doors, damaged or cumbersome road cobblestones and unsuitable concrete elements.

### 4.4.4. “Kostaq Stefa” street

“Kostaq Stefa” street is located in the northern part of Mangalem and connects with Mihal Komneno Street and Antipatrea street. In the Mangalem project the final part of it will be treated as the rest is treated in the Ethnographic project. This segment of "Kostaq Stefa" street borders Selamllëk Square and ends at "Mihal Komneno" street. The cobblestone is in good condition and its design is distinguished from other typologies

distinguished in the historical areas in Berat. In the restoration of this segment will be preserved cobblestone and design as in figure bellow.

Figure 36. Cobblestone on Kristaq Stefa Street

### 4.4.5. "Shën Mëhilli" street

This alley is a continuation of "Llambi Guxhumani" street and ends in "Antipatrea" street. It is characterized by slope and scaling. Cobblestone is traditional although degraded due to lack of maintenance or intervention of residents. There is also an average level of degradation that the facades have suffered. As in the other streets of Mangalem, in this alley you face the rock masses which are an integral part of the spatial image in the alleys of Mangalem.

Figure 37. Shën Mëhilli alley

## 4.5. DESCRIPTION OF CONSTRUCTION PROCESSES

The area regeneration project has initially identified the degradation of buildings and public space and further appropriate interventions to restore the authentic historic urban landscape. The project will focus on public space and will include the restoration of horizontal alley surfaces of the historic Mangalem center and public lighting. Rehabilitation of small squares inside the neighborhood, preserving their urban structure, cleaning and securing small recreation areas will improve the tourist experience and create attractive observation points of the historical context. The restoration of the facades and the surrounding walls of the roads will be carried out, which will be restored. A special importance in the neighborhood of Mangalem will be given to the lighting where all the objects which are a monument of the first category and some objects of the second category will be illuminated. Lighting will be done on the rock in the castle, emphasizing the lines of the castle wall.

### 4.5.1. Construction works, hard and soft landscaping

Works will include:

- lighting of monumental buildings
- removal of paving and excavations for laying pipelines;
- installation of an effective system for rainwater drainage;
- underground installation of the electricity network and internet-telecommunication network;
- stabilization and reinforcement of road layers, in relation to the level of degradation;
- anticipation of manhole covers with closing plates to fit the alleys;
- reconstruction of the existing cobblestone paving by reusing the original materials and texture with replacement in kind in cases where the stone is missing according to the level of degradation;
- demolition of inappropriate interventions, inappropriate cormorants and external stairs;
- reconstruction of exteriors and external stairs;
- structural consolidation (as needed) for walls and other elements;
- treatment of surfaces with bioxides for the removal of invasive vegetation;

- reconceptualization of the sidewalk for pedestrians and paving with stone tiles
- greening and planting of new plants (only autochthonous trees);
- provision of African Teak wood benches (or locally equivalent wood approved for outdoor use);
- lighting of monumental buildings
- placement of pillar lights or wing lights along the Antipatrea road
- placement of illuminating wings along the alleys

### 4.5.2. Urban furniture

Urban furniture will include the following:

- lighting;
- benches;
- garbage bins

*Public lightin*g will be decided taking into account the residential character of the neighbourhood. The lighting will respect as much as possible the privacy of the residents of the area, and will provide enough light to facilitate movement and avoid hazards in the alleys, potential hazards as in the vicinity of stairs, curves and consoles. Street lights will illuminate with orientation perpendicular to the street. Illuminators with warmer and lighter light are preferred, as opposed to cold and white lights. The luminaires will have a simple and functional design. The proposed models will be pillar lighting and with wings caught in the wall. In the segments where the road is narrower in order not to hinder the movement of pedestrians, lights will be used with wings caught in the wall, as are all the Mangalem alleys except the sidewalk of the road "Antipatrea".

### 4.5.3. Restoration of cobblestone alleys and restoration of facades

*Road paving restoration* will be based on the level of degradation. Where underground piping for underground infrastructure is envisaged, the existing road pavement will be removed and rebuilt. In both cases, the paving will be restored as in the original condition, with the same materials, paving motifs and construction techniques. In wells the best option for closing them is to create lids with stone paving over their metal structure. Laying on the cover should be carefully chosen to coincide with

the laying around the well, to ensure continuity in the material and motive of laying the alley.

In parts where there are traces of existing cobblestones, intervention should consider restoration. If a portion of existing cobblestone is to be removed to allow underground infrastructure to be installed, it must be catalyzed and rebuilt as such.

The following intervention is the standard used on all existing historic core cobblestones.

- Removal of existing stones, cleaning and storage
- Removal of soil and dismantling of existing Electric and Hydro-technical lines and wells provided in the project.
- Placement of a stabilizer layer, which is glued to the machinery.
- Installation of new installations foreseen in the Electric and Hydrotechnical project.
- A layer of sand is placed on the stabilizer and then the original stones according to the drawing are placed and the new stones with the same size and the same technique as the existing ones in the places where they are missing.
- Sand filling and manual compaction of spaces between stones.

*Restoration of facades* will include the restoration of masonry along with the removal of intrusions and inappropriate elements. Only facades that are in relatively good condition are proposed for intervention, leaving aside those that present structural problems to avoid issues related to private property and interference inside the building. Improvements to the perimeter walls and removal of unsuitable elements have been proposed. Unlike the facades of buildings, the surrounding walls that present problems will be consolidated.

- **Filling with cement mortar of the joint in stone walls.**

Intervention: Masonry grouting (mechanical cleaning of joints, pressure washing with water, refluxing with lime mortar 1: 2 according to traditional width and depth)

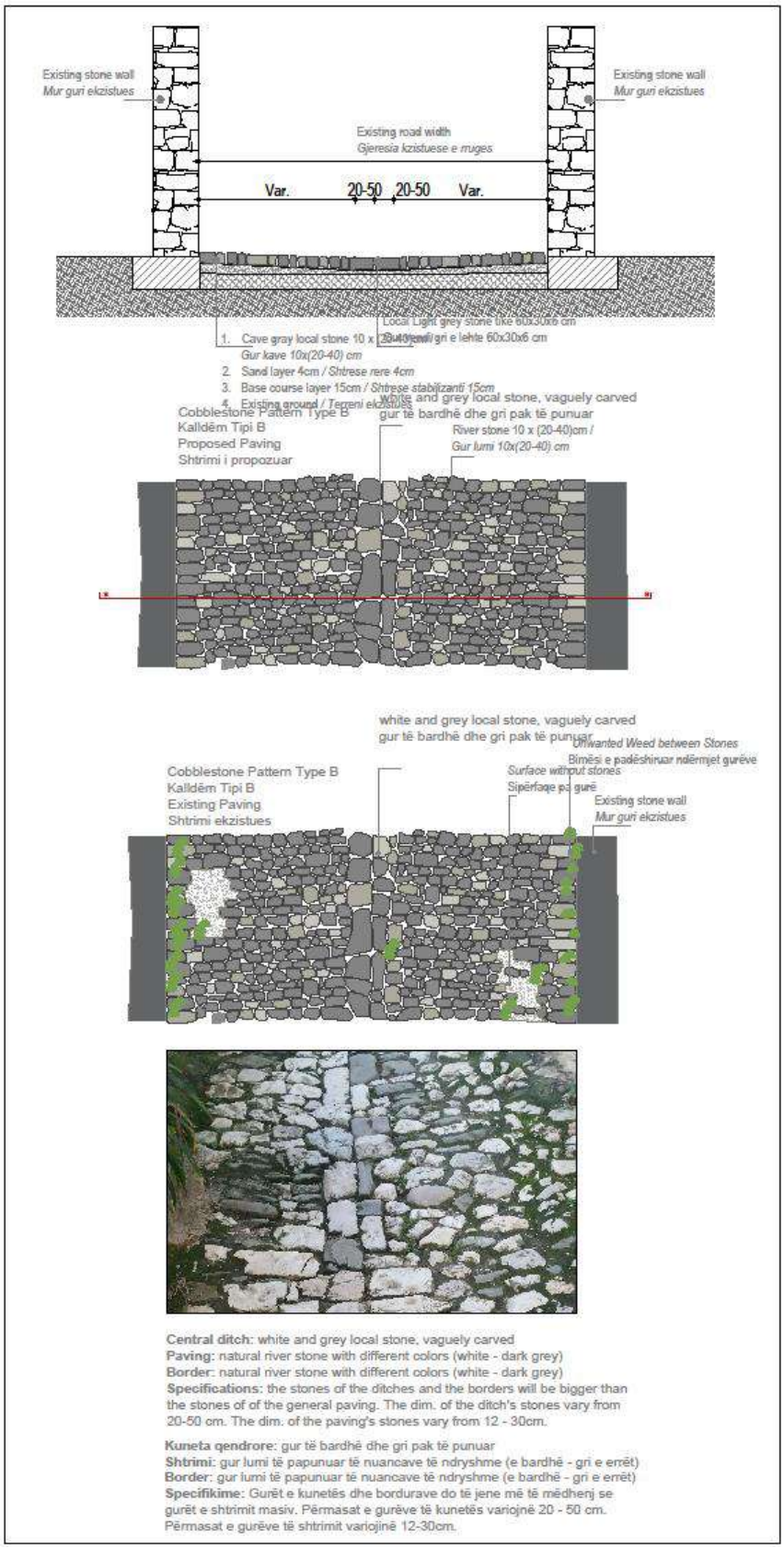



Figure 38. Local stone

- **Vertical or diagonal structural cracks in the corners of the walls or in other places**

Intervention: Restoration of the cleft with the injection technique

The way of closing the cracks in the masonry elements will depend on the width of the cracks. In summary, the table below presents three main ways to consolidate cracks.

| | *Crack Width* / Gjeresia e Plasaritjeve | *Recommended procedure* / Proçedura e rekomanduar |
|---|---|---|
| **A** | < 0.1mm | *Injection with epoxy*/ Injektim me rezina epokside |
| **B** | 0.3m to 3mm | *Injection with cement grout that contains shrinkage reducing admixture* / Injektimi me llaç cimento i cili përmban shtesa për zvogëlimin e tkurrjes |
| **C** | >10mm | *Reconstruction of damaged area with new units. Cracks may sealed with mortar if the wall thickness is relatively small* / Rikonstruksioni i zonës së dëmtuar me metodën shqep-qep. Çarjet mbyllen me llaç nëse trashësia e murit është relativisht e vogël. |
| **D** | *Stitching of stone masonry* / Fugatimi i muratures se gurit | |

Figure 39. A / B. Injection procedure

Reinforcement steps are:

a. In case the injection nozzle is not inserted directly into the blasting, it is necessary to drill with a rotary drill (diameter 14 mm) in the blasting track. In case cracking will be detected on both sides, the holes will be made on both sides of the masonry. The holes will have depth that varies from the thickness of the masonry, while their minimum depth is 20 cm. The maximum distance between the injection holes should be 40 cm.

b. Insert the nozzles into each of the holes, to a depth of about 5 cm.

c. Plastering externally degraded cracks or joints with the same mortar to be injected or if this is not possible with a quick-setting mortar.

d. Prepare the microwave to be injected with a drill and brush and then inject the microwave into the masonry starting from the lower holes and continuing to the upper holes.

e. If the masonry inside is filled with unbound material and there are gaps, then to save the material and avoid local over-strengthening of the masonry, apply non-very fluid mortar.

- **Electrical cables and visible distribution boxes**

Intervention: Discipline, removal or repositioning of underground electrical cables. The electrical or telephone / internet cables, as well as the hydraulic elements will be reorganized. This type of intervention can be done in accordance with other engineering groups: infrastructure, mechanic, etc.)

- **Uncontrolled growth of plants and biological skates or moisture**

Intervention: Cleaning of biological skates with a metal brush. Cleaning of biological skates should be done by washing the covered surface in the patina layer, with a metal brush and then washing with many dishes. After that, on the surface where the biological patina exists, some antifungal substances should be applied to prevent their reproduction.

- **Uncontrolled growth of aggressive plants**

Intervention: Cleaning aggressive plants with herbicides. The surface of the walls has the presence of low vegetation. Cleaning of this vegetation will be done completely manually, uprooting the plant with all its roots. After removing the plants, the joints should be cleaned with a wire brush and plenty of water to enable the total removal of even the remnants of small roots that may remain in the joints.

- **Missing or damaged volumes of stone walls or -and damage or fragmentation of stones**

Intervention: Restoration of the stone wall, restoration of the missing units. Restoration of the stone wall with the seam-sew technique

- **Inappropriate intervention**

Improper use of materials, finishes or use of non-original elements such as (doors / gates / windows / railings) during previous restoration works.

Intervention: Removal of unsuitable elements. Repair by removing degraded elements and separating new elements. If the degradation goes beyond repair, it will be replaced. Replacement with traditional wood elements. In cases where the existing doors are not original they will be replaced with new wooden doors, and their configuration will strictly follow the original configuration.

- **Added volumes**

Intervention: Removal of added volumes or inappropriate layers

- **Inappropriate intervention sip. concrete or volume**

Intervention: Removal of concrete volumes and replacement as appropriate with traditional techniques

- **Damage or lack of plaster layer and mortar layer**

Intervention: Restoration of existing plaster, construction of new plaster

- **Detachment, lack of paint or lime layer**

Intervention: Application of new painting with lime or paint. Initially, the current paint layer is scratched, the whole layer (not only the degraded one) and the new paint layer is applied, the type and color of which will be determined by the restoration specialist. It must first be assessed whether the plaster on it is authentic plaster or is a replacement plaster. In case it is the original plaster, surveys are made at several points of the masonry to extract the first layer of paint applied to the wall. Surveys are made by light stroking with a spatula, over the layers of paint, to separate these layers one by one until the initial layer is reached. The color identified in the object is given on the graphic sheets.

- **Presence of moisture**

Intervention: Finding the cause of moisture and cleaning the stone from moisture

- **Damaged frames and decorations**

Intervention: Restoration or completion of decorative elements

- **Lack of wooden windows**

Intervention: Restoration of structure / timber / degraded elements

- **Degradation of door and window material**

Intervention: Restoration of structure / timber / degraded elements. First, as in any process, the assessment will be made of whether the timber is authentic material or a replacement made at another time. In case the material does not turn out to be authentic, then it is replaced with new timber. If the material used in the facility is authentic material then an assessment of its conservation status will be made, if it is possible to store it for use or if its replacement will be necessary. In cases where the material will be stored, it will be restored, treated with insecticides and anti-moisture. In case it will be necessary to replace it, then the new fragments must be made with the same type of wood as the current material and with the same profile.

- **Deterioration of wooden structures, scaffolding and roof tiles**

Intervention: Restoration of wooden structures, scaffolding and roof tiles

- **Graffiti, vandalism paintings on the walls**

Intervention: Cleaning of graffiti through a non-chemical process

- **Damaged head wall**

Intervention: Consolidation of the wall head and F.V. of tiles according to the traditional pattern.

## 4.6. DESCRIPTION OF INTERVENTIONS IN SPECIFIC SEGMENTS OF THE PROJECT

### 4.6.1. "Antipatrea" street

The project envisages the intervention in the sidewalk of the street "Antipatrea" by adapting it to the paving of the street "Kostaq Stefa", achieving the unification of the road. In the neighborhood of Mangalem, many two-day streets in the form of alleys lead to the Antipatrea road, such as Kostaq Stefa street, which is the continuation of the sidewalk of Antipatrea street, Xhymyrteka, Zoi Toli has three exits to Antipatrea street and Shën Mëhilli street with two exits to and is seen. Unification needed in bedding and cobblestones. In the design of the project it has been noticed that the current existing condition of the sidewalk needs improvements and the need for paving is increasing. Another intervention is the systematization of the entire dop electricity network to pass to the underground infrastructure by cleaning the silhouette of the Mangalem. The sidewalk profile is an average two meter profile whose dimensions will not change. The two-lane highway will not be touched and we will not interfere in it. Unlike traditional pebble cobblestone paving, the entire pavement will be paved with regular stone slabs to reflect the temporal distancing of the intervention.

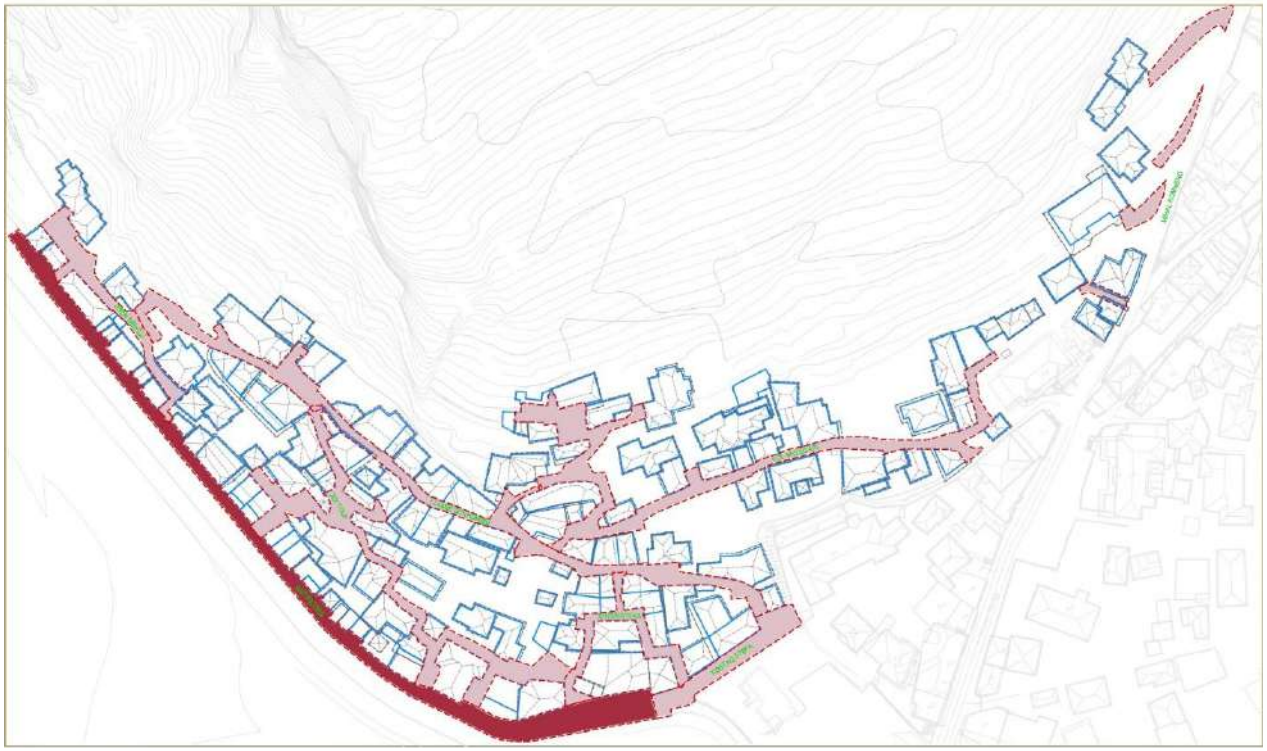


Figure 40. “Antepatrea” street

The project envisages restoration interventions for the longest possible preservation of historical elements. Replacement of unsuitable doors and windows with doors, modern windows that follow the lines of development of the neighborhood and reflect the time, change the parapet with the traditional wooden ones.

### 4.6.2. “LLambi Guxhumani” street

The project envisages the conservation of the existing traditional paving. Removal of unsuitable concrete materials and cement mortar and replacement with new cobblestones with new techniques to make differentiation in time of development. Restoration of green side elements and restoration of curbs and stairs along the road. The project envisages the conservation of special paving that takes place at the entrances of the apartments, which have been realized.

Figure 41. “Llambi Guxhumani” street

### 4.6.3. “Kol Myzeqari” street

The project envisages the restoration of the cobblestone according to the traditional technique with a central dome with wrought stone, two side borders with the same material and the paving of the road body with river stone. The stones should be natural with different dimensions and colors of different tones of traditional white and gray. Existing stones will be used in the paving of the very western road, while the north-eastern road will be rebuilt as most of it is paved with concrete. Replacing concrete stairs with traditional stone stairs

The project envisages careful restoration interventions, replacement of unsuitable elements with traditional wooden element, masonry consolidations, restoration of doors, windows.

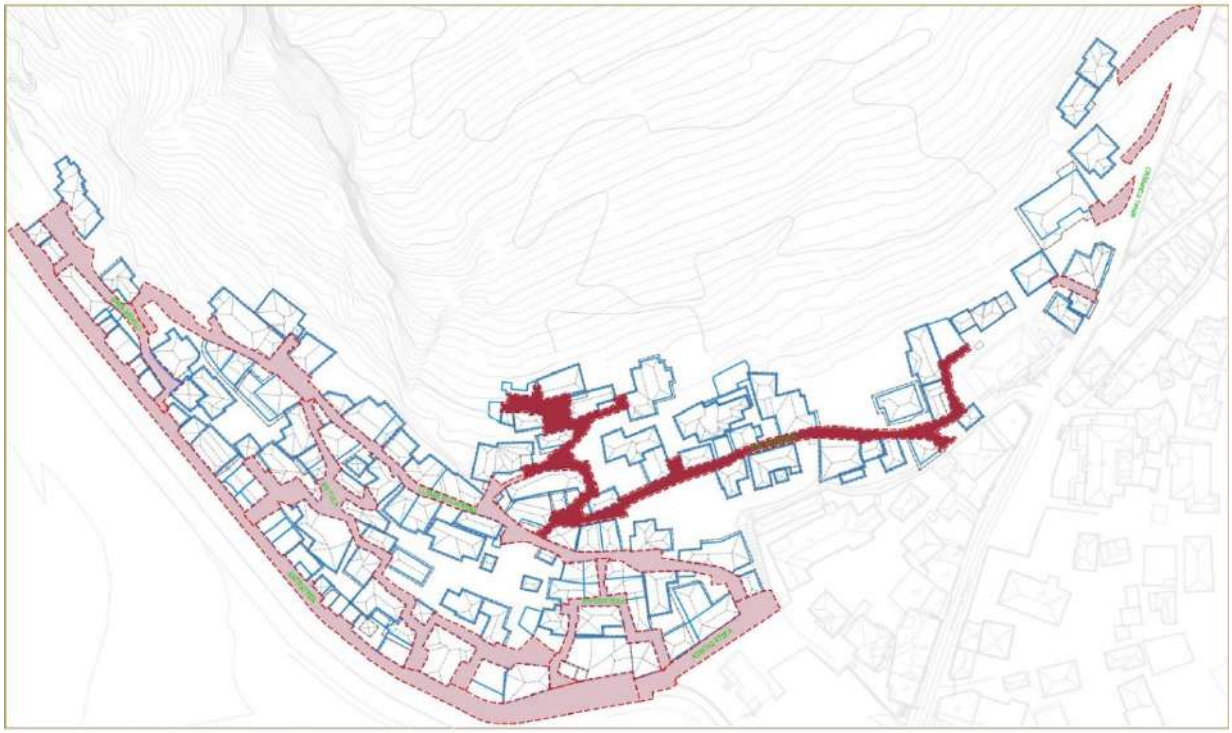


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Figure 42. "Kol Myzeqari" street

### 4.6.4. "Kostaq Stefa" street

Existing cobblestones will be restored by preserving existing stones as well as replacing those that are missing. Special paving elements will be preserved and restored. The alley will be extended to meet the sidewalk of Antipatrea Street. The laying of the systemized part will be done with the existing cobblestone. Interventions across the facades will be restorative only. Doors and windows need restorations of special elements.

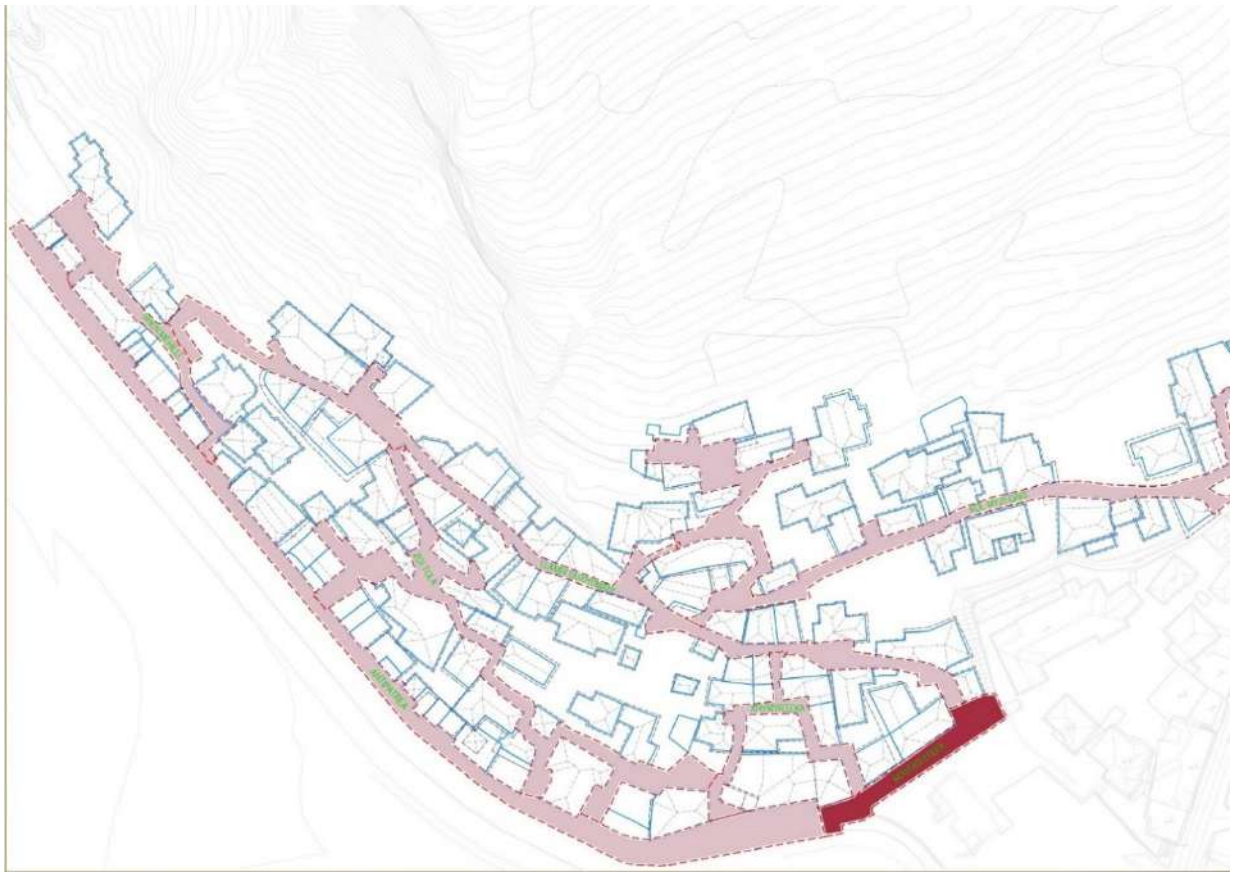

Figure 43. “Kostaq Stefa” street

### 4.6.5. “Shën Mëhilli” street

The project envisages the restoration of the cobblestones with traditional methods. Cleaning of uncontrolled greenery, restoration of alley curbs with wrought stone or suitable natural stone, replacement of cornet stones, paving of the alley with river stone. Cobblestone leveling will be done on the parts of the exaggerated slopes. Rainwater will be collected through underground sewers along the entire alley.

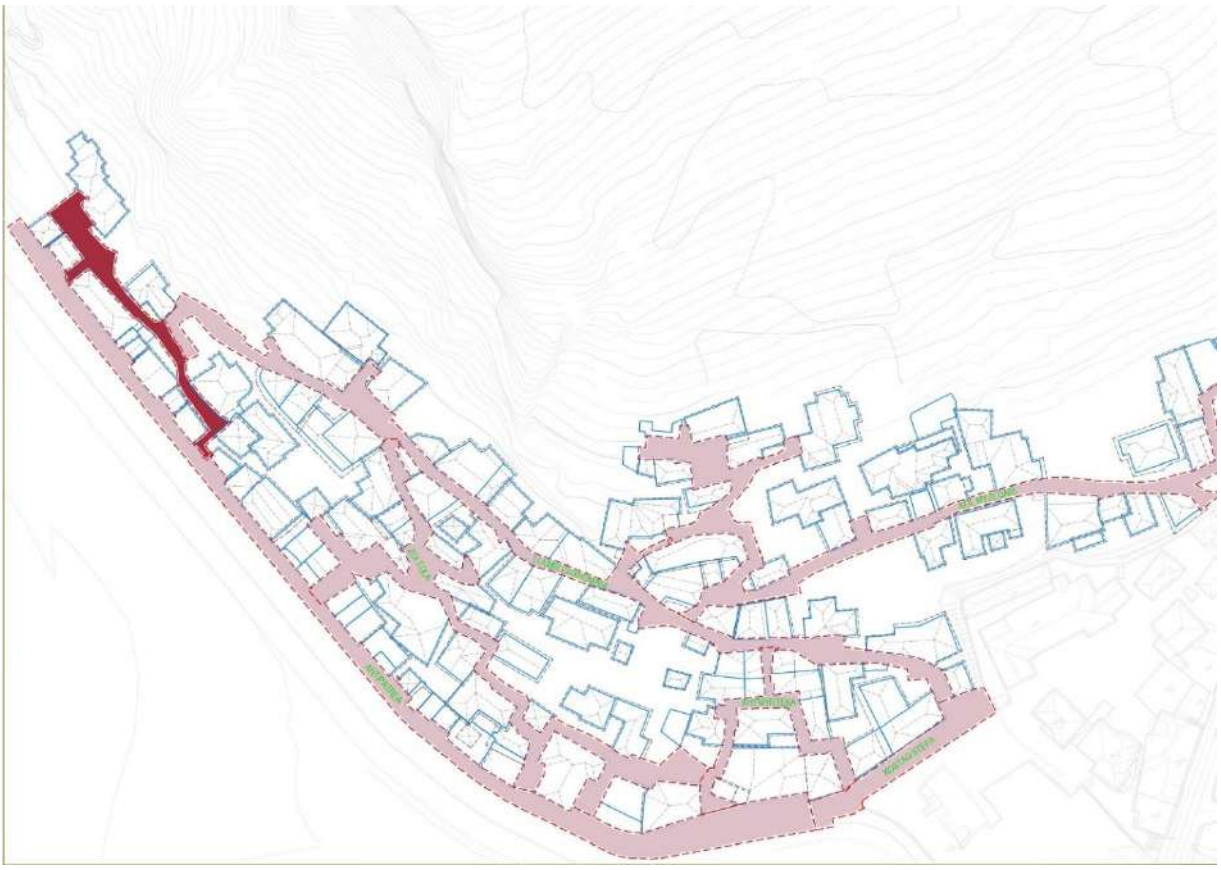

Figure 44. “Shën Mëhilli” street

### 4.6.6. “Zoi Toli” street

The alley is projected to undergo a delicate restoration which will preserve any existing stone and replace broken stones or non-traditional paving. The non-traditional cobblestone will be replaced with the characteristic one of Mangalem quarter. Rainwater will be collected through underground sewers along the entire alley. Special importance will be given to the restoration of the stairs that lead to the road "Antipatrea" referring to the existing condition.

The facades of the entrance part of the alley will be carefully treated while preserving the traditional elements and replacing the foreign elements with a traditional element. It is planned to replace doors and windows with unsuitable materials with traditional ones. Careful restoration of the masonry according to traditional techniques will be carried out throughout the alley. The degraded elements of windows and doors will be restored and those that are of a high level of degradation will be replaced.

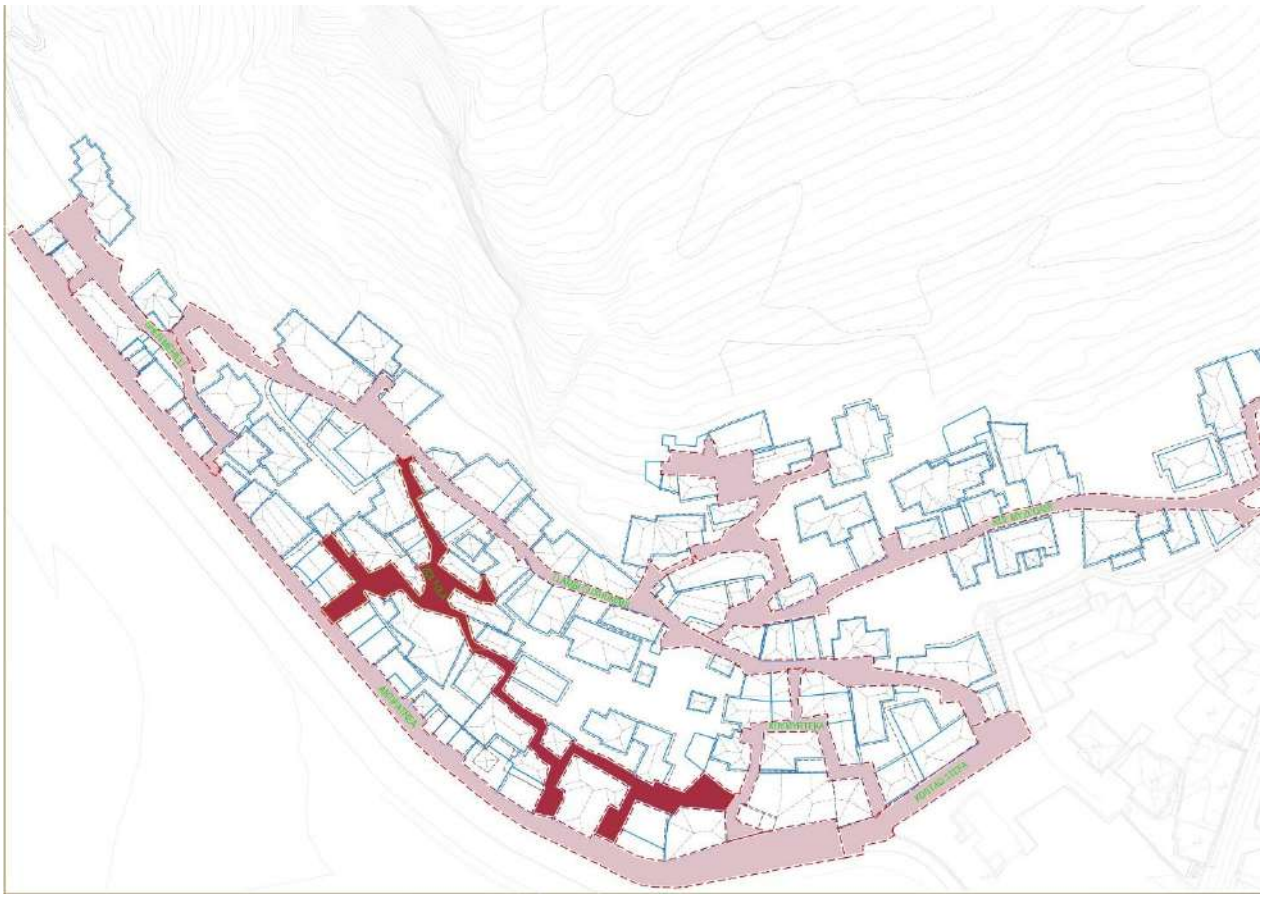

Figure 45. “Zoi Tola” street

### 4.6.7. “Xhymyrteka” street

The project envisages restoration of existing cobblestone while preserving existing stones. The central dome with two rows of stones will be added, which will be made of wrought stone or suitable natural stone. Existing cobblestone will be leveled. Inadequate housing entrances will be brought to the initial state. They will be realized, as the case may be, with stone stairs or with paving with stone tiles connected with lime mortar. Rainwater will be collected through underground sewers along the entire alley. Special importance will be given to the restoration of the stairs that lead to the road "Antipatrea" referring to the existing condition.

Interventions through the masonry will be restorative only. Particular care will be taken at the head of the wall which is often covered with spot tiles. Doors and windows need restorations of special elements.

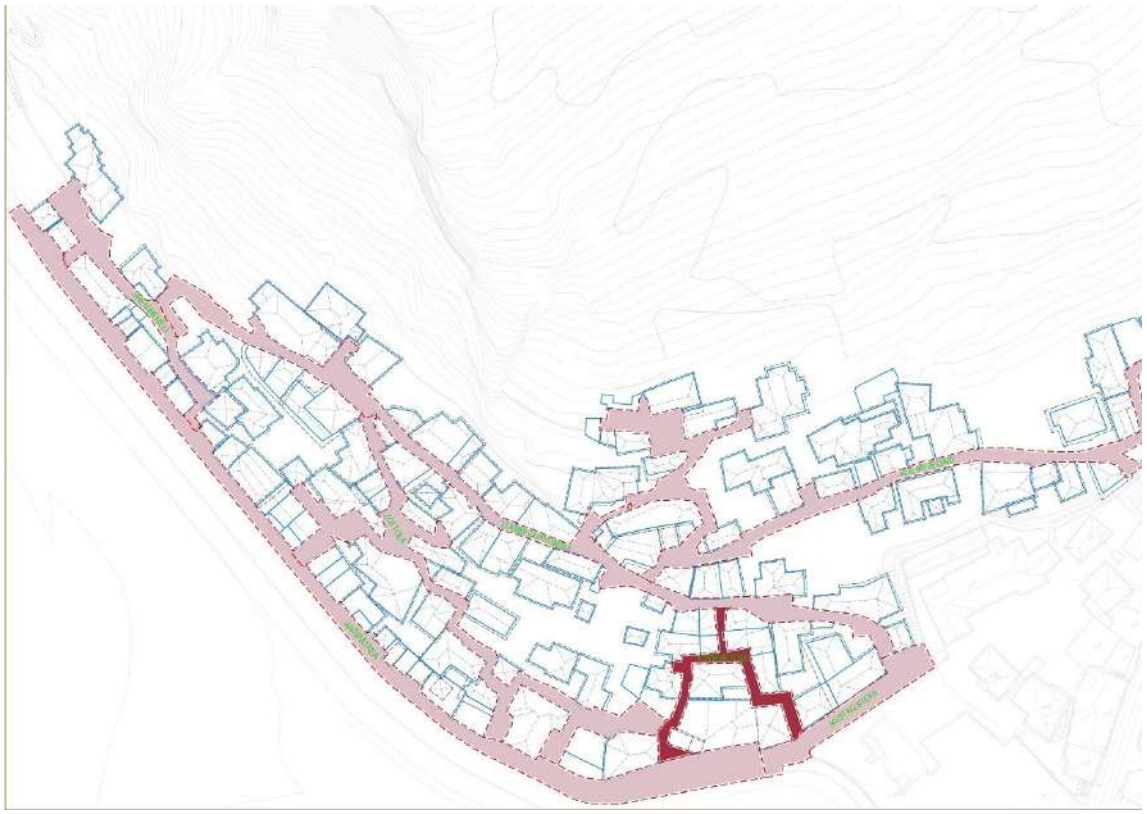

Figure 46. “Xhymyrteka” street

### 4.6.8. “Mihal Komneno” street

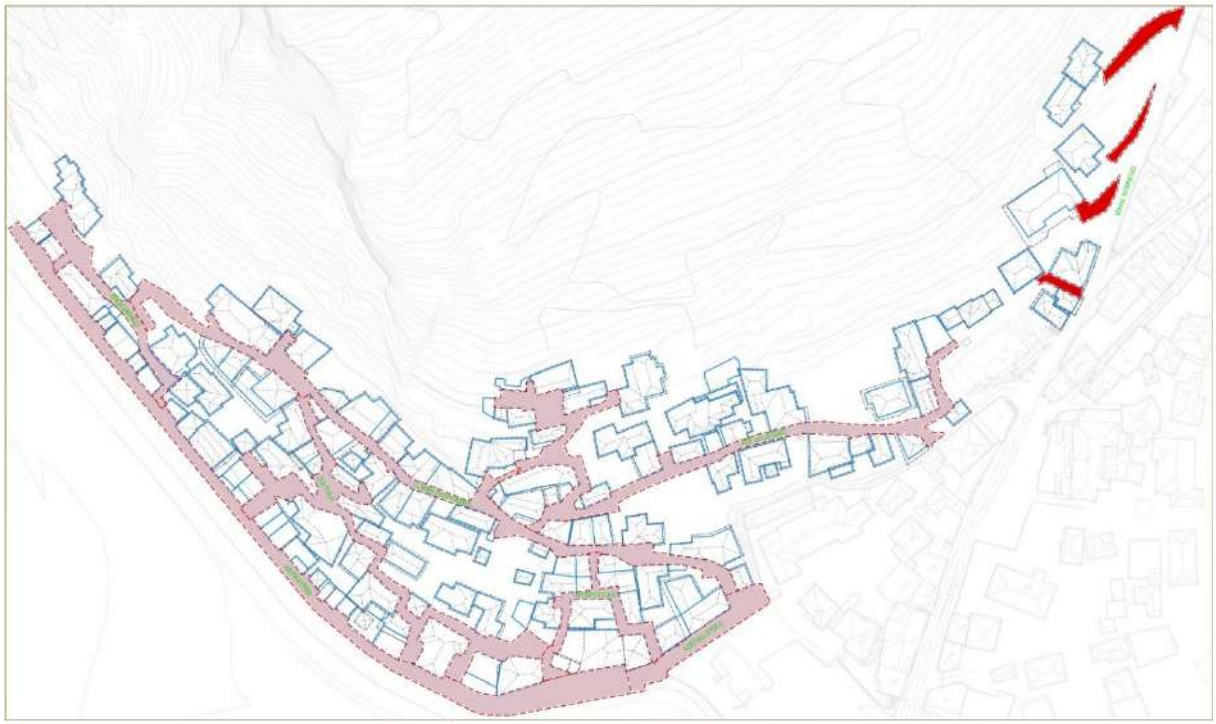

Figure 47. “Mihal Komneno” street

The project is intended to intervene in four alleys which are not continuous and have the entrance from Mihal Komneno street. The alleys are on a considerable slope as they are part of the hill where the Mangalem neighborhood was built. The alleys will be paved with existing cobblestones referring to the existing traditional condition. The entrance part of the northern alley will be restored by removing the unsuitable concrete elements and by constructing the side curb with suitable natural stone or with cave stone worked according to the traditional method. The unpaved parts of the alleys will be clad with the second type of traditional cobblestone as are the existing tracks. To the alley will be added the characteristic stone wall for holding the soil on the south side and the low wall 50cm in the southern part. Facades that are along the alleys will also be treated, referring to the traditional ones and removing inappropriate materials that have come with time.

### 4.6.9. "Church road" street

The entrance part of the cobblestone will be restored according to traditional techniques by referring to the existing paving, arranging it and filling in the missing stones. The church path is a panoramic path from which Gorica is clearly visible. Sloping stairs will also be restored. Another intervention will be the replacement of existing railings which will be made new due to damage due to the existing condition.

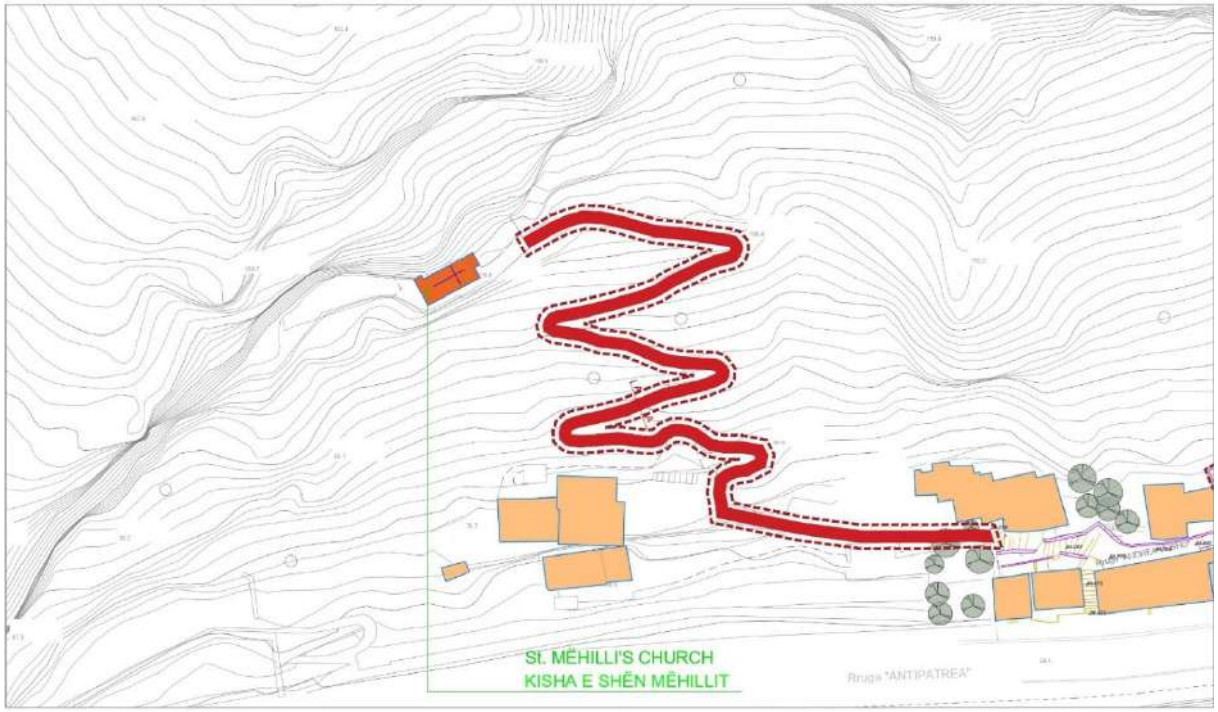


Figure 48. The road to the "Shën Mhilli" church

### 4.6.10. Artistic lighting on selected objects

Artistic lighting will be done for objects with special architectural values, cultural monuments of the first and second category with a uniform distribution in the historic neighborhood. The lighting of special architectural elements will be done. In total there are about 22 objects.

In addition to lighting interventions, the facades which will be illuminated will also be restored in the same typology of interventions as well as the facades that are affected by the road by replacing the damaged doors and windows and painting the facades.

Figure 49. Special objects

# V. METHODOLOGY FOR IMPACT IDENTIFICATION AND ANALYSIS

## 5.1. DETERMINATION OF IMPACT SIGNIFICANCE

Impact significance is determined as a function of the receptor's sensitivity (environmental value) and the magnitude of the impact (degree of change). The Environmental impact significance will be determined through:

Assigning receptor sensitivity; Assigning impact magnitude; Assigning impact significance; and, Cumulative Impacts.

### 5.1.1. Assigning Receptor Sensitivity

The typical descriptors and criteria for the sensitivity of a receptor are listed below in Table 2.1 Determination of Receptor Sensitivity. The ES will present detailed sensitivity and magnitude tables for each chapter. In accordance with DMRB Volume 11, Section 2, Part 5, Tables 2.1 and 2.2 should be taken as examples of assigning sensitivity and magnitude respectively.

**Table 2.1 Determination of Receptor Sensitivity**

| Sensitivity | Typical Criteria Descriptors |
|---|---|
| Very High | Very high importance and rarity, international scale and very limited potential for substitution |
| High | High importance and rarity, national scale and limited potential for substitution |
| Medium | High or medium importance and rarity, regional scale, limited potential for substitution |
| Low | Low or medium importance and rarity, local scale |
| Negligible | Very low importance and rarity, local scale |

**Assigning Impact Magnitude**

In accordance with DMRB Volume 11, Section 2, Part 5, the typical descriptors and criteria which define the impact magnitude are listed in Table 2.2 below.

**Table 2.2 Determination of Impact Magnitude**

| Impact Magnitude | Typical Criteria Descriptors |
|---|---|
| Major | Loss of resource and/or quality and integrity of receptor, severe damage to key characteristics<br>Large scale or major improvement of receptor quality, extensive restoration or enhancement, major improvement of attribute quality. |
| Moderate | Loss of Resource, but not affecting integrity, partial loss of / damage to key characteristics<br>Benefit to or addition of key characteristics, features or elements. An improvement of attribute quality |
| Minor | Some measurable change in attributes, quality or vulnerability, minor loss of or alteration to one<br>Minor benefit to or addition of one (possibly more) key characteristics, features or elements, some beneficial impact on attribute or reduced risk of a negative impact occurring |

| | |
|---|---|
| Negligible | Very minor loss or detrimental alteration to one or more characteristics, features or elements. Very minor benefit to or positive addition of one or more characteristics, features or elements. |
| No Change | No loss or alteration of characteristics, features or elements, no observable impact in either |

**Assigning Impact Significance**

Assigning impact significance relies on reasoned argument, professional judgement and the consideration of the various views, raised during the consultation process. Some assessment topics may have their predicted impacts compared with quantitative thresholds and scales in the determination of significance.

Assigning each impact to one of five significance categories enables different topic issues to be placed within the same scale, to facilitate the decision-making process. The five significance categories are illustrated in Table 2.3 below.

It is important to note that significance categories are negative (adverse) impacts unless otherwise stated as positive (beneficial).

**Table 2.3 Impact Significance Categories**

| Significance | Typical Criteria Descriptors |
|---|---|
| Very Large | Only adverse impacts are normally assigned this level of significance, and represent key factors in decision-making process. These impacts are generally but not exclusively associated with sites or features of International, National or |
| Large | These beneficial or adverse impacts are considered to be very important considerations. |
| Moderate | These beneficial or adverse impacts may be important, but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision- making if they |
| Slight | These beneficial or adverse impacts may be raised as local factors. They are unlikely to be critical in the decision-making process, but are |
| Neutral | No impacts or those that are beneath levels of perception, within normal bounds of variation or |

There are eight potential outcomes of the significance categories. Applying the formula, the greater the receptor sensitivity and the greater the impact magnitude, the more significant the impact. The determination of impact significance is summarised in Table 2.4 below.

**Table 2.4 Determination of Impact Significance**

| | | Impact Magnitude (Degree of Change) | | | | |
|---|---|---|---|---|---|---|
| | | No Change | Negligible | Minor | Moderate | Major |
| Receptor Sensitivity (Value) | Very | Neutral | Slight | Moderate or Large | Large or Very Large | Very Large |
| | High | Neutral | Slight | Slight or Moderate | Moderate or Large | Large or Very Large |
| | Medium | Neutral | Neutral or Slight | Slight | Moderate | Moderate or Large |
| | Low | Neutral | Neutral or Slight | Neutral or Slight | Slight | Slight or Moderate |
| | Negligibl | Neutral | Neutral | Neutral or Slight | Neutral or Slight | Slight |

- Very High (VH) and High (H): These denote that the impact is unacceptable and further mitigation measures must be implemented to reduce the significance. Shaded red in Table 14.
- Medium (M): Impacts in this region are considered tolerable but efforts must be made to reduce the impact to levels that are as low as reasonably practical. Shaded yellow in the impact significance matrix.
- Low (L): Impacts are considered acceptable. Shaded light violet.
- Negligible (N): Impacts are very low or no impact at all. Shaded green.

Table 12. Matrix to determine significance level based on criteria importance and impact magnitude.

| | | | Sensitivity of receptor | | | |
|---|---|---|---|---|---|---|
| | | | Very low | Low | Medium | High |
| | | | 1 | 2 | 3 | 4 |
| Intensity of impact | Very low | 1 | 1<br>Negligible | 2<br>Minor | 3<br>Minor | 4<br>Minor |
| | Low | 2 | 2<br>Minor | 4<br>Minor | 6<br>Moderate | 8<br>Moderate |
| | Medium | 3 | 3<br>Minor | 6<br>Moderate | 9<br>Moderate | 12<br>Major |
| | High & Very High | 4 | 4<br>Minor | 8<br>Moderate | 12<br>Major | 16<br>Major |

## 5.2. IMPACT DESCRIPTION

Describing a potential impact involved an appraisal of its characteristics, together with the attributes of the receiving environment. Relevant impact characteristics included whether the impact is:

- Adverse or beneficial;
- Direct or indirect;
- Short, medium, or long-term in duration; and permanent or temporary;
- Affecting a local, regional or global scale; including trans-boundary; and
- Cumulative (such an impact results from the aggregated effect of more than one project occurring at the same time, or the aggregated effect of sequential projects. A cumulative impact is “the impact on the environment which

results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions").

Each of these characteristics is addressed for each impact. Consideration of the above gives a sense of the relative intensity of the impact. The sensitivity of the receiving environment was determined by specialists based on the baseline data collected during the study.

## 5.3. IMPACT EVALUATION

Each impact is evaluated using the criteria listed in Table 15. To provide a relative illustration of impact severity, it is useful to assign numerical or relative descriptors to the impact intensity and receptor sensitivity for each potential impact. Each is assigned a numerical descriptor of 1, 2, 3, or 4, equivalent to very low, low, medium or high. The severity of impact was then indicated by the product of the two numerical descriptors, with severity being described as negligible, minor, moderate or major, as illustrated in Table 15. This is a qualitative method designed to provide a broad ranking of the different impacts of a project. Illustrations of the types of impact that were assigned the different grades of severity are given below.

Table 13. Classification of impact evaluation

| | **Classification** | **Description** |
|---|---|---|
| **1** | Extent: | Evaluation of the area of occurrence/influence by the impact on the subject environment; whether the impact will occur on site, in a limited area (within 2 km radius of the site); locally (within 5 km radius of the site); regionally (district wide, nationally or internationally). |
| **2** | Persistence/ Duration: | Evaluation of the duration of impact on the subject environment, whether the impact was temporary (<1 year); short term (1 – 5 years); medium term (5 – 10 years); long term (>10); or permanent. |

| | | |
|---|---|---|
| **3** | Social Context/ Sensitivity or Potential for Stakeholder Conflict: | Assessment of the impacts for sensitive receptors in terms of ecological, social sensitivity and such things as rare and endangered species, unusual and vulnerable environments, architecture, social or cultural setting, major potential for stakeholder conflicts. The sensitivity classification is shown below:<br><br>*High sensitivity:* Entire community displacement, destruction of world heritage and important cultural sites, large scale stakeholder conflict, etc.<br><br>*Medium sensitivity:* Displacement of some households, moderate level of stakeholder concern<br><br>*Low sensitivity:* No displacements, no potential for stakeholder conflict. |
| **4** | Regulatory and Legal Compliance: | Evaluation of the impact against Local and International legislative requirements.<br><br>*High:* Prohibition terms for specific activities/emissions. Major breach of regulatory requirements resulting in potential prosecution or significant project approval delays.<br><br>*Medium:* Potential breach of specific regulatory consent limits resulting in non-compliance.<br><br>*Low:* No breach of specific regulatory consent limits anticipated. |
| **5** | **Overall Impact rating (Severity):** | Using a combination of the above criteria, the overall severity of the impact was assigned a rating Severe, Substantial, Moderate, Minor and negligible. Refer to Table 15 for broad categories of impact for each rating |

Note: These are only guidelines that will lead the professional judgment required for every case.

Lastly, appropriate **significance category** has been attributed to each impact against aforementioned criteria: sensitivity (value) of the resources (receptors) and the magnitude of impacts (Table 14).

Table 14. Arriving at the Significance of Effect Categories

| | | MAGNITUDE OF IMPACT (DEGREE OF CHANGE) | | | | |
|---|---|---|---|---|---|---|
| | | **No Change** | **Negligible** | **Minor** | **Moderate** | **Major** |
| **ENVIRONMENTAL VALUE (SENSITIVITY)** | **Very High** | Neutral | Slight | Moderate or Large | Large or Very Large | Very Large |
| | **High** | Neutral | Slight | Slight or Moderate | Moderate or Large | Large or Very Large |
| | **Medium** | Neutral | Neutral or Slight | Slight or Moderate | Moderate | Moderate or Large |
| | **Low** | Neutral | Neutral or Slight | Neutral or Slight | Slight | Moderate |
| | **Negligible** | Neutral | Neutral | Neutral or Slight | Neutral or Slight | Slight |

For each resource/receptor, impacts have been distinguished based on the period of occurrence: **Project Construction and Operational phases**.

In *Chapter 6,* observations of assumptions made and limitations encountered for each resource/receptor were summarized, along with the change management process accompanying next stages of the design. This analysis informed the development of the *Environmental & Social Management & Monitoring Plan.*

In *Chapter 7, m*itigation measures were defined. The effectiveness of proposed measures in attenuating the impact was then evaluated and residual impacts were identified. The statement made with regard to the certainty of the assessed significance is valid and all measures that are not based on sound knowledge of affected environmental and social resources will have to be updated.

*In Chapter 8*, as part of the *Environmental & Social Management Plan,* mitigation measures, associated targets and timelines, as well as institutions responsible to meet these targets, have been defined for each resource / receptor. In addition, monitoring location/parameters, frequency and period of monitoring, as well as responsible institution, have been set.

*In Chapter 9*, the monitoring of the proposed mitigation are discussed. The

monitoring will verify whether the predicted impacts have actually occurred and check whether the mitigation actions recommended in the ESIA and ESMP, accordingly, have been implemented in total and what their effectiveness is. Monitoring will also identify unforeseen impacts that may arise from project implementation.

# VI. ENVIRONMENTAL AND SOCIAL IMPACTS ASSESSMENT

## 6.1. ENVIRONMENTAL IMPACTS

### 6.1.1. Impact on flora and fauna

❒ **Construction Phase**

The construction area is located in the heart of Berati city. There are few trees and shrubs growing along the streets that may be affected during site preparation, construction and operation activities. Impacts could result from the excavation and earthworks for construction of the carriageway. Dust depositing on surrounding vegetation will also form a layer that reduces photosynthesis until it gets washed by the rains.

During the construction phases of the project, small areas covered by grasses may be disturbed.

Considering the positioning of the project site, there will be no overall loss of terrestrial habitat, and disturbance of the part of the surrounding ecosystem.

Duration of the impact will be *short*-term occurring only during the construction phase. Extent of the impact will be local. The likelihood of the impact occurring is *low* considering the limited vegetation in the area. The sensitivity of receptors is *low*. Therefore, significance of the impact is *minor.*

❒ Operational Phase

During the operational phase, planted activities will lead to an increase in the number of tree and shrubs used for decorative purposes

### 6.1.2. Construction waste

❒ Construction Phase

The project includes several waste-generating processes such as:

- dismantling of paving and excavation for pipe laying;
- reconstruction of the existing cobblestone paving by reusing the original materials and texture with replacement in kind in cases where the stone is missing according to the level of degradation;
- demolition of inappropriate interventions, inappropriate cormorants and external stairs;
- reconstruction of exteriors and external stairs

- provision of sewerage conducts;
- improvement of water supply branch connections to private properties;
- restoration of the cobblestone according to the traditional technique of the streets “Kol Myzeqari” and “Shën Mëhilli”.
- intervention in the sidewalk of the street "Antipatrea", etc.
- Restoration of the cobblestones of the streets “Zoi Toli”, “Shen Mehilli”, “Kostaq Cepa”, etc.

All these interventions and several other operation will be associated with the generation of solid (inert) waste

This waste can be made up, inter alia, of wood pieces or metal cuttings, stones, various plastic materials, paper /cement bags, etc. Some of the waste materials such as paint, cement, adhesives and cleaning solvents contain hazardous substances, while some of the waste materials, including metal or plastic pieces, are not biodegradable and may have long-term and cumulative effects on the environment. These affect the environment by blocking drainage systems and at the same time have negative impacts on human health. Other wastes that may arise from non-construction activities due to the presence of workers in the construction site and these include food waste, contaminated water from washing and cleaning of construction equipment or tools.

Improper disposal of construction waste or spillage may have medium or long-term impacts on the environment or on public health. The extent of this impact will be local in the areas where waste will be thrown, or in neighbourhoods nearby.

The possibility that this impact will occur is *high* considering the typology of the work that undoubted generates construction waste. If disposed of in inappropriate places, construction waste contaminates environmental sources (soil and water) or causes public health effects, so the significance of this impact will be *high*. The impact intensity will be low and given that it has minimal water resources in this area, the sensitivity of the receptors is assessed as *Low*. Therefore, the importance of impact is moderate.

❒ Operational Phase

The implementation of the project P05 “Restoration of the historic urban landscape of Mangalem quarter” is expected to increase the number of peoples living or visiting the area and the number of businesses operating there. Therefore, different waste is expected to be generated. These residues will mainly be of the character of household waste, without risk. Unsuitable collection, treatment and disposal of these wastes can cause public health hazards due to environmental pollution: air pollution, water contamination, and infections when people or children require wastes.

The impact will *be long-term* that can last throughout the project's lifespan. The impact intensity is *low* if the Municipality and community take the necessary measures to address them. The sensitivity to the receptors will be *low*, giving little impact to the effect.

### 6.1.3. Soil and geology

❒ Construction Phase

The proposed development, with respect to soils and geology, includes the following characteristics:

- Stripping of topsoil
- Excavation of basements and foundations
- Excavation of drainage sewers and utilities (main deep trunk sewer already constructed under parent planning permission)
- Minor regrading and landscaping
- Disposal of any surplus excavated soils including any contaminated material

The removal of topsoil during earthworks will expose subsoil to weathering and may result in the erosion of soils during adverse weather conditions. Surface water runoff from the surface of the excavated areas may result in silt discharges to the creek nearby. Although the slope below the Castle, in the past, has been prone of landslides, based on the nature of intervention and the limited working area it is unlikely that project activities may cause landslides.

Duration of the impact will be *short-term* occurring only during the construction phase. Extent of the impact will be local. The likelihood of the impact occurring is *low* considering the limited project area. The sensitivity of receptors is *low*. Therefore, significance of the impact is *minor*.

### 6.1.4. Impact on Water Regimes

❒ Construction Phase

Potential impacts on water-related construction activities include increase of suspensions in groundwater; and the risk of negative impact on water supply facilities.

During construction, depending on rainfall, a considerable amount of water can be accumulated and as a result, the collection of these waters and their orientation in the sewage system may be necessary, in part, they infiltrate underground. Consequently, the construction works should not be prolonged and exceed the deadlines set in the construction permit.

There is a potential for pollution from discharge of different solid waste, including hazardous waste in the project site. The waste generated in the project area, if left for a longer period on the soil/sand can infiltrate in the groundwater hence contaminating it.

No harmful substances should be discharged to the site as they can infiltrate together with the precipitation waters and consequently cause groundwater. No hazardous materials will be stored on the site and consequently there will be no contamination of groundwater or surface water. Pollution can only come from the spillage of hydrocarbons or lubricants when supplying heavy duty tools.

Duration of the impact will be *short-term* occurring only during the construction phase. Extent of the impact will be local considering the limited amount of possible discharges into the waters. The likelihood of the impact occurring is *medium*. The sensitivity of receptors is *medium* given that some of the spillage might contain compounds which would lead to serious damage of water biota. Therefore, significance of the impact is *moderate*.

### 6.1.5. Generation of Noise and Vibration

❒ Construction Phase

The project would cause a temporary increase in *noise levels* during construction. The primary noise sources during typical construction activities will be from construction equipment such as jackhammer, chainsaw, concrete saw, leaf blower, portable generator. No pile driving or blasting would occur during construction of the proposed project. However, nearby receptors would be exposed to occasional high noise levels associated with the operation of equipment during construction.

As indicated above in Section 5.2, use of any single piece of construction equipment that produces noise that exceeds 85 dBA Lmax at a distance of 30 m would result in a significant impact.

In addition to on-site activities, construction activities could include the import or export of excavated soils and other materials using large diesel trucks. A dump truck would generate a noise level of 70 dBA at a distance of 30 m, which is below the construction noise limit of 85 dBA at 30 m. Therefore, impacts associated with construction-related trucks would be less than significant and no mitigation is required.

Construction machinery will move about the Project site area, altering the directivity of the noise source with respect to individual receptors. During any given period the machinery items to be used in the Project area will operate at maximum sound power levels for only brief stages. At other times the machinery may produce lower sound levels while carrying out activities not requiring full power. It is unlikely that all construction equipment would be operating at their

maximum sound power levels at any one time. Finally, certain construction machinery will be present for only brief periods during construction.

The proposed project would contribute operational (post-construction) noise to the existing environment through (1) the addition of traffic on local streets, (2) on-site stationary sources, and (3) on-site outdoor activities.

Impact receptors include local community and clients of the bars and restaurants in the project area. The impact intensity will be *medium* if an experienced contractor is contracted to carry out the construction activities. However, sensitivity on receptors will be *high* since the proposed site is highly populated, hence *a major* impact significance.

Vibration is the periodic movement of mass over time. Construction of the proposed project has the potential to generate vibration that would be experienced by nearby structures and their occupants. Vibration from operation of this equipment can result in effects ranging from annoyance to damage to buildings. It is generally accepted that for most humans, vibration levels between 0.15 and 0.3 mm/s are only perceptible. The only vibration sources that will be considered will be heavy trucks during traffic on the project site.

Reoccurring primary and secondary vibration effects often lead people to believe that the vibration is damaging their home, even when vibration levels Vibration-sensitive receptors are generally considered to be (1) persons who may be annoyed by the vibration; (2) persons who are engaged in activities that may be subject to significant interference from vibration, such as working with delicate instruments; and (3) structures that are susceptible to damage from vibration (e.g., older fragile buildings). may be well below minimum thresholds for damage potential.

The nature and levels of vibration emitted by the site will vary with the activities being carried out on site. Table 18 outlines typical vibration levels for different plant activities that may be generated on the Project site.

Impact receptors include local community and clients of the bars and restaurants in the project area. The impact intensity will be *medium* if an experienced contractor is contracted to carry out the construction activities. However, sensitivity on receptors will be *high* since the proposed site is highly populated, hence a major impact *significance*.

Table 15. Typical vibration levels for construction equipment

| Plant item | Peak particle velocity at 10 m (mm/s) |
|---|---|
| Pile driving (impulsive) | 12.0-30.0 |
| Roller (15 tonne) | 7.0-8.0 |
| Dozer | 2.5-4.0 |
| Compactor (7 tonne) | 5.0-7.0 |
| Rock breaking | 7.0 |
| Backhoe | 1.0 |

❒ Operational Phase

The proposed project would contribute operational (post-construction) noise to the existing environment through (1) the addition of traffic on local streets, (2) on-site stationary sources, and (3) on-site outdoor activities.

The proposed project would contribute operational (post-construction) noise to the existing environment through (1) on-site stationary sources, and (2) on-site outdoor activities.

*Outdoor Activities.* Noise from landscape maintenance equipment would be similar to noise currently generated by the same activities on the project site and would not result in a substantial increase in noise above existing noise levels. Noise impacts from use of landscape maintenance equipment would be less than significant.

### 6.1.6. Air quality, dust and traffic-borne emissions

The project aims at preserving the urban and architectural values of the Mangalem quarter including work in the sidewalk of the street "Antipatrea", street "Kostaq Stefa", repair of the facades of the entrance part of the alley Xhymyrteka, Zoi Toli, Shën Mëhilli, Rruga e Kishes street with two exits.

The project will focus on the public space and includes two components: (i) the restoration of the horizontal surfaces of the streets and public lighting; and (ii) the restoration of some façades. Restoration of facades will include the restoration of masonry along with the removal of intrusions and inappropriate elements. Only facades that are in relatively good condition are proposed for intervention, leaving aside those that present structural problems to avoid issues related to private property and interference inside the building. These interventions are dust-generated thus influencing the air quality.

❒ Construction Phase

The construction phase is likely to generate some short-term dust emissions and may have the potential to impact air quality. Dust emissions can lead to elevated PM10 and PM2.5 concentrations and may also cause dust soiling. The potential for dust to be emitted depends on the type of construction activity being carried out in conjunction with ambient conditions, including rainfall, wind speed and the distance to potentially sensitive locations.

Traffic-borne emissions include dust and exhaust fumes. Dust emissions will arise from construction activities, earthworks and construction traffic. The trucks used to transport various building materials from their sources to the project site generate emissions of SO2, CO2, CO, NOx and particulates. The impacts of such emissions can be greater in at the construction site and through communities which construction vehicles will travel. Impact receptors include communities along the haulage routes, road- side markets and shops, construction workers and possibly guest. The majority of any dust produced during the construction phase will be deposited close to source and as such, any impacts from dust deposition will typically be close to the source.

The significance of impacts due to vehicle emissions during the construction phase will be dependent on the quantity of HGVs and the number of additional vehicle movements where it may generate levels of exhaust emission compounds for example nitrogen oxides, carbon dioxide and hydrocarbons such as benzene.

The project area is located along to the main road with low traffic thus the impact intensity will be moderate. This is in addition to the intermittent and short term nature of activities. Duration of this impact will be short-term only lasting through the construction phase. The likelihood of occurring is moderate considering the relatively large area of intervention. The impact intensity will be low therefore sensitivity on receptors will be low, hence minor impact significance.

- ❒ Operational Phase

The pollutant emissions from traffic related air emissions may generate quantities of air pollutants during the operational phase and may cause impacts at both the local and national level. At the local scale the principal pollutants are NO2 and PM10.

## 6.2. SOCIAL IMPACT

### 6.2.1. Organization of labor: Incomplete compliance with World Bank Standards with regard to workers and working conditions

Overlooking the application of World Bank standards and requirements can make the developer (contractor, subcontractor) a loss of a significant amount of resources, especially if an incident occurs at the workplace.

The investor (ADF), as well as the contractor, are obliged to follow the national regulations for safety and health at the workplace, but sometimes, inadvertently, they pay less attention to job-related requirements, such as workers' rights, negotiation rights, which may result in endangering the health and safety of workers.

Based on the set criteria, this impact can be defined as: negative, indirect, of a local character, short-term (it will be manifested only in the pre-construction phase), with the possibility of occurrence-probably, reversible, with low magnitude and low significance (impact can be mitigated and managed).

### *6.2.2.* Employment Creation, Skills Enhancement and Local Business

- ❒ Construction Phase

The Project is expected to generate positive impacts on the local economy and livelihoods in terms of employment and skills enhancement and local business opportunities through the procurement of goods and services.

Positive impacts will be primarily associated with the construction phase and therefore temporary in nature. The expiring of construction contracts will occur once construction activities are completed.

Those who have worked on the Project will have an advantage when seeking alternative jobs on similar projects due to the experience and any training received through this Project. The construction phase will last approximately 12 months and it is expected that approximately 50 direct employment opportunities will be available during the peak of construction.

Local procurement is going to benefit the hospitality and service industries primarily, such as accommodation, catering, cleaning, transport and security services. Local businesses will benefit during the construction phase as there will be increased spending within the area by the wage labor who will have improved buying power while employed by the Project

Development of the project will entail civil works requiring materials such as gravel, bricks, lumber, steel reinforcement and cement. This is a positive but short-term and reversible impact. Considering that construction labour would be local or national this impact has local and national spatial extent.

### 6.2.3. Improving aesthetics and increasing the value of real estate property.

During the construction, fencing of the construction site or perhaps piles of materials on the site will create a scenic blight, giving a *negative* impact. Duration of visual impact will be *short-term* only lasting through the construction phase. The impact *intensity* will be *very low* considering the dilapidated state of all existing facilities; therefore *sensitivity* on receptors will be *low*, hence *minor* impact significance.

During the operational phase, the proposed activity will have a great visual impact on the aesthetics of the site by substantially improving it. In addition to increasing the interest of locals, the value of the area is expected to increase. The proposed activity will have a great visual impact on the aesthetics of the site by substantially improving it.

The foreseen interventions such as: replacing unsuitable doors with metal doors with railings; replacing the gate with a traditional wooden gate; repair of traditional wooden gates; coating plastered surfaces with stone tiles; removal of unsuitable elements such as fencing, etc., will give another view of this area

In addition to increasing the interest of local and foreign tourists, the value of the area will increase as it automatically turns into a very important tourist attraction.

### 6.2.4. Private Property (Loss/ Replacement/ Resettlement/ Access to) and Livelihood

The project includes two components: the restoration of the horizontal surfaces of the streets (Llambi Guxhumani, Kostaq Stefa, Shen Mehilli and Zoi Toli) and public lighting; and the restoration of some façades overlooking the streets. Only facades that are in relatively good condition are proposed for intervention, leaving aside those that present structural problems to avoid issues related to private property and interference inside the building. Improvements to the perimeter walls and removal of unsuitable elements have been proposed. However, no expropriation will take in place and no change will be made to the land plot configuration.

Duration of this impact will be *long-term*. The likelihood of occurring is moderate considering the relatively large area of intervention. The impact intensity will be

moderate therefore sensitivity on receptors will be moderate, hence moderate impact significance.

### 6.2.5. Disruption of Public Utilities

In principle, intervention in the framework of this project might require:

- overhauling the supply of water and improve branch connections to private properties;
- installing effective storm drain and sewer provisions;
- placing electric cables underground.
- patching up or reconstruction of traditional cobblestone paving by re-using the original materials and textures with replacement in kind of missing or deteriorated stones, according to the level of decay;
- provision of manhole trays to be finished with applied stone paving to match paved surfaces; etc.

Despite the care showed by the contractor there is the possibility of accidental damages to the public utilities such as water pipeline, waste-water sewage network; electrical network, etc.

As per information gathered during stakeholders consultations, underground utilities present some level of intervention that will be more deeply analysed in coordination with the utility providers and the ongoing projects at the detailed design phase.

Based on the set criteria, this impact can be defined as: *negative, direct, local, long-term,* with the possibility of occurrence - probably, reversible, with low magnitude and moderate significance (impact can be mitigated and managed).

### 6.2.6. Access Problems and Traffic Disruption

❒ Construction Phase

This project will improve the pedestrian accessibility for all of the overall urban setting, by upgrading the walkability on the historic alleys. All the streets retained for intervention are in fact highly utilized by pedestrians.

This intervention will also improve the visibility and the accessibility for all by providing a system of lighting and street furniture. It is expected that there will be some traffic disruption during construction.

Based on the set criteria, this impact can be defined as: *negative, direct, local, long-term*, with the possibility of occurrence - *probably, reversible*, with *low* magnitude and minor significance (impact can be mitigated and managed).

### 6.2.7. Direct or indirect hazards to pedestrians and retail services

The restoration work of the horizontal surfaces of the streets Llambi Guxhumani, Kostaq Stefa and Kol Myzeqari and the work on restoration of façades facing the other streets represent direct and indirect hazard for both pedestrians and small shops.

On the ground floors small and medium retail activities of any kind (crafts, food and beverage) contribute creating a lively environment. Restoration of façades along the road (the project construction phase) will have a negative impact and pose a risk to pedestrians and retails activities.

Based on the set criteria, this impact can be defined as: *negative, direct, local, short-term*, with the possibility of occurrence - *probably, reversible*, with *moderate* magnitude and low significance (impact can be mitigated and managed).

### 6.2.8. Occupational health and safety (OHS)

- **Workers' health**

Construction activities have potential to pose occupational risks some of which could be life- threatening, for example, working with high voltage and hot works (welding) pose a risk of electrocution. In addition, falling debris could injure workers if personal protective equipment (PPE) are not provided or properly used. Back injury could occur if workers lift heavy objects using inappropriate body posture.

Other potential hazards might be: inadequate lighting during the night working hours or limited level of visibility during rainstorms creating difficulty for staff driving heavy equipment, driving equipment with improper brake system, lack of concentration while working and exposure to hazardous wastes such as paints, cement, adhesives and cleaning solvents.

Based on the set criteria, this impact can be defined as: negative, direct, local, long-term, with little possibility of occurrence - likely, reversible, with low magnitude and moderate significance.

- **Accidents**

The project area is located in highly inhabited and culturally very important zone. With an increase in number of vehicles during transportation of construction materials and equipment, there will be an increase of workers risk of traffic-related accidents or injuries.

Duration of the impact will be *short*-term occurring only during the construction phase. Extent of the impact will be local or regional depending on origin of construction workers. The likelihood of the impact occurring is *medium* considering the usually low level of road safety caution by drivers and pedestrians in Albania. The sensitivity of receptors is *high* given that some accidents would lead to permanent damage and others loss of life while the intensity of the impact is low given the relatively high volume of traffic assessing the area. Therefore, significance of the impact is ***moderate.***

- **Spread of COVID -19**

The virus COVID 19 possess a very high risk of being spread from the workforce to the surrounding communities. Some of the important issues to be considered include:

- Due to COVID-19 circumstances, it may not be possible to conduct stakeholder engagement as they would under normal circumstances.
- Due to COVID-19 circumstances, it might not be possible to have the whole crew in the project area.
- There is an increase on the probability of spreading the virus from the workers to the community

Potential sources of exposure include having close contact with a coworker or member of the public who is ill with COVID-19 and touching your nose, mouth, or eyes after touching surfaces contaminated with the virus or handling items that others infected with COVID-19 have touched. Actions to be taken include the following:

- Limit close contact with others by maintaining a distance of at least 6 feet, when possible.
- Limit the number of workers in small workspace areas such as job site elevators, trailers and vehicles, and spaces under construction if possible.
- CDC recommends wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain, especially in areas where there is significant community-based transmission of COVID-19.
- Cloth face coverings may prevent people who don't know they have the virus from transmitting it to others.
- Cloth face coverings are NOT surgical masks or respirators and are not appropriate substitutes for them in workplaces where masks or respirators are recommended or required.

- ❒ Clean and disinfect frequently touched surfaces such as shared tools, machines, vehicles and other equipment, handrails, ladders, doorknobs, and portable toilets.

Based on the set criteria, this impact can be defined as: negative, direct, national, long-term with high significance (impacts are hard to be mitigated and managed).

### 6.2.9. Community Health and safety (CHS)

The presence of the Project could affect the health, safety and security of the communities in the area of influence as a result of worker-community interactions, immigration to the area, and the risk of injury associated with construction.

***Construction Phase***

- ❒ **Working in an open environment.**

The intervention foreseen in this project, will take place in open locations highly exposed to environmental agents (wind, rain, etc.), with execution of several tasks and use of singular equipment might endanger people's lives and property.

Duration of this impact will be *short-term* only lasting through the construction phase. The likelihood of occurring is moderate considering the relatively large area of intervention. The impact *intensity* will be *very low* therefore *sensitivity* on receptors will be *low*, hence *minor* impact significance.

- ❒ **Workforce, Jobseekers and Social Disagreement.**

Often, the Contractor is not part of the project's development process, and therefore there is no complete picture of the sensitivity of the project area, because its approach, more or less, is mechanical without paying too much attention to the local human environment. In such cases, workers from other regions may be employed by the Contractor. This could lead to minor tensions and slight potential conflict if these workers are not aware of local customs and practices.

Duration of the impact will be *short-term* occurring only during the construction phase. Extent of the impact will be *local or national* depending on origin of construction workers. The likelihood of the impact occurring will be *medium*. Intensity of the impact will be *low*. Sensitivity of the receptor is *medium* resulting in a *small* impact significance.

- **Disturbance from noise and vibration due to construction activities**

Noise and vibration will undoubtedly be the main problems in the construction phase. Apart from works for refurbishment of the horizontal space of Llambi Guxhumani, Kol Myzeqari, Kostaq Stefa, Shen Mehilli streets, the intervention on the walls in the residential buildings in these and three other streets, and the increased volume of traffic of people, will contribute significantly to the anxiety of the population in these settlements.

Based on the set criteria, this impact can be defined as: *negative, direct, on the spot, short-term* (it will be manifested only in the construction phase), with the possibility of occurrence - probably, reversible, with *medium* magnitude and *moderate* significance (impact can be mitigated and managed).

### 6.2.10. Traffic safety and Accidents

The project area is located in zone with high human activity on it and at the adjoining roads. With an increase in number of vehicles during transportation of construction materials and equipment, there will be an increase of community risk of traffic-related accidents or injuries.

Duration of the impact will be *short-term* occurring only during the construction phase. Extent of the impact will be local or national depending on origin of construction workers. The likelihood of the impact occurring is *medium* considering the usually low level of road safety caution by drivers and pedestrians in Albania. The sensitivity of receptors is *high* given that some accidents would lead to permanent damage and others loss of life while the intensity of the impact is *moderate* given the relatively high volume of traffic assessing the area. Therefore, significance of the impact is *moderate*.

### 6.2.11. Cultural heritage

Known characteristics of cultural heritage site and Project activities were used to determine which impacts will be relevant to the site. Due to the nature of construction activities, all cultural heritage sites, whether above or below ground, are at risk of direct physical impacts.

Pollution (mainly dust) and vibration will affect above ground standing features or buildings.

Impacts on user access, setting, and ambience are applicable to the project site because of users of the area and the visitors they receive. Using this approach, the magnitude and nature of impacts on different categories of cultural heritage have been assessed

Direct physical disturbance of or damage to cultural heritage site will result in the loss of scientific, historic, or cultural value. Ground-disturbing activities, including vegetation and topsoil removal, grading, and excavations, are the key sources of impact, as these activities have the potential to damage archaeological resources. This impact will be minor, since no archaeological finding are expected to be found there

The area of direct physical impacts is defined as the Project footprint. *Direct physical impacts* are only anticipated during the construction phase of the Project.

Hammering, the operation of machinery and the movement of vehicles along unpaved areas, are likely to produce vibration and dust which will impact cultural heritage resources. These types of impacts will be *most significant* during the construction phase.

During the operation phase, vehicle traffic is not anticipated to reach thresholds that will cause negative effects.

## 6.3. POTENTIAL POLLUTIANTS RELEASED INTO THE ENVIRONMENT

### 6.3.1. Air Emissions

Air quality may be affected during site preparation, construction activities, and the potential occurrence of non-routine events.

*Dust and Particulates*

During construction, there may be a localized and temporary reduction in air quality as a result of dust and particulate generation. It is considered to be significant, with the potential to affect workers on-site as well as the local people. Creation of access roads, excavation and earthworks may lead to the temporary air borne transport of particulates (increased dust). The majority of the dust generated during construction is likely to be deposited within 100 Meters of the site. In absence of data from Albanian Institution, we used the data from UK environment agency. According to the UK Environment Agency Technical Guidance Document, circa 85% of particulate matter in the ambient air is deposited within 100 Meters of the source while approximately 10% is deposited between 100 and 500 Meters.

Air quality will also be reduced by emissions from machinery and vehicles used for transportation to and from the site and on the site. These emissions are not expected to be significant.

*Gaseous and Exhaust Emissions*

Emissions of pollutants during the testing and start-up phase of the Project. The gaseous emissions may include: NOx, CO2, CO, NH3, SOx, and particulate matter. The start-up phase is necessary to enable testing of the machinery and installations. The start-up/pre-commissioning stage generally lasts for few weeks. During construction, there may be a localized and temporary reduction in air quality as a result of emissions from site machinery and equipment. Furthermore, heavy equipment such as bulldozers and other construction equipment will produce exhaust emissions from diesel engines leading to temporary increase in SOx, NOx, and CO2 concentrations. Emissions may occur in the event of an emergency. The main gases of concern include:

*Sulphur dioxide SO2.* The amount of SO2 in exhaust gases is directly dependent on the sulphur content of the used fuel. Reducing SO2 emissions from engines can be implemented by using low sulphur fuel for machinery and equipment. The Project Company will instruct the contractors to use low sulphur fuel, to the extent available locally.

*Nitrogen oxides NOx. NOx* emissions from contractor equipment/activities will need to be minimized. Construction equipment and machinery may need to modified, to the extent necessary.

*Carbon Oxides. CO2* is a greenhouse gas and emissions may occur during the construction phase. The emission of carbon dioxide, while not directly harmful to human health or the environment, contributes to global warming and climate change. Carbon dioxide may be generated and emitted both directly and indirectly during the construction phase of the project. It is important that all energy consuming and CO2-generating activities are conducted as efficiently as possible to minimize CO2emissions.

The release of carbon monoxide (CO) may occur as a result of incomplete combustion of fuel in engines. Under normal conditions, air emissions will have minor impacts on the surrounding environment during the construction phase.

In cases where different types of pollution can be caused, the "Polluter's Pay Principle" will apply, as defined in Article 12 of Law no. 10431, dated June 9, 2011 "On the environment protection".

Environmental impacts during the operation phase will be normal and relate to emissions from commercial activities as well as services.

In order to calculate the Gaseous and Exhaust Emissions from transportation during the construction phase we are based on the norms of European Environmental Agency published in 2016 (EMEP/EEA Air Pollutant Emission Inventory Guidebook, 2016)(Table 19).

Table 16. Exhaust emission factors for heavy-duty vehicles (7.5-16 ton).

| Technology | CO | NMVOC | NOx | N2O | NH3 | Pb | CO2 lube |
|---|---|---|---|---|---|---|---|
| | g/km | g/km | g/km | g/km | g/km | g/km | g/km |
| | | Give as THC-CH4 | Given as NO2 equivalent | | | | due to lube oil |
| Conventional | 2.13 | 0.776 | 8.92 | 0.029 | 0.0029 | 9.48E-06 | 4.86E-01 |
| Euro I - 91/542/EEC I | 1.02 | 0.326 | 5.31 | 0.008 | 0.0029 | 8.36E-06 | 4.86E-01 |
| Euro II - 91/542/EEC II | 0.902 | 0.207 | 5.50 | 0.008 | 0.0029 | 8.05E-06 | 4.86E-01 |
| Euro III - 2000 | 0.972 | 0.189 | 4.30 | 0.004 | 0.0029 | 8.39E-06 | 4.86E-01 |
| Euro IV - 2005 | 0.071 | 0.008 | 2.65 | 0.012 | 0.0029 | 7.85E-06 | 4.86E-01 |
| Euro V - 2008 | 0.071 | 0.008 | 1.51 | 0.034 | 0.011 | 7.85E-06 | 4.86E-01 |
| Euro VI | 0.071 | 0.008 | 0.291 | 0.033 | 0.011 | 7.85E-06 | 4.86E-01 |

Considering a heavy-duty vehicles of technology Euro IV – 2005, a transportation distance 5 km per vehicle every day and considering that the company will have 10 vehicles of this type working every day, exhaust emission will be as following:

CO: 0.071 x 5 x 10 = 3.55 g/day

NMVOC: 0.008 x 5 x 10 = 0.4 g/day

NOx: 2.65 x 5 x 10 = 132.5 g/day

N2O: 0.012 x 5 x 10 = 0.6 g/day

NH3: 0.029 x 5 x 10 = 1.45 g/day

Pb: 7.85E-06 x 5 x 10 = 3.92 E-04 g/ day

$CO_2$: 4.86E-01 x 5 x 10 = 2.43 g/day

As can be seen, the gaseous and exhaust emission from the transportation during construction of the project “Integrated Urban and Tourism Development” are negligible.

### 6.3.2. Solid Waste Generation

Solid waste will be generated at the site during site preparation and construction phases. The waste may consist of timber or metal cuttings, excavated materials, paper/cement bags, empty paint and solvent containers, broken glass among others. It impacts on the environment through blockage of drainage systems and negative impacts on human health. Other wastes which will be generated by excavated earth will be reused to the maximum extent possible. Construction activities will produce excess excavated soils, excess

construction materials, and solid wastes (such as removed concrete, wood, trees and plants, packaging materials, empty containers, oils, lubricants, and other similar items). These impacts are negative but short-term and reversible by mitigation measures.

Waste can be generated also from non-construction activities because of the presence of the workers at the site include food debris, contaminated water from washing, cleaning equipment, construction tools and vehicles.

Waste should be managed in cooperation with the Local Government Unit and the territorial cleansing firm and in accordance with the Decision of the Council of Ministers no. 575, dated 24.6.2015 "On approval of requirements for inert waste management". Waste collection should be differentiated at the source. Solid waste, or even excavated soil, construction materials should be treated in a special way. The landfill where the waste will be deposited must be licenced and posses environmental permit.

In this report of Environmental Impact Assessment, only the waste streams classified under chapter 17 (construction and demolition wastes) of the European Waste Catalogue (EWC) were accounted for, because these streams contribute more to the overall percentage (by weight) of waste generated on-site. Although it is classified under chapter 17 and represents a significant portion of CDW, excavated soil was not accounted for in this study for lack of available information, as mentioned. Table 20 lists the waste streams accounted for by the six-digit code of the EWC. There are several codes for contaminated wastes in chapter 17 but in this study they were all included in code 17 09 03 as there was not enough information to differentiate the hazardous wastes generated on-site.

Table 17. Waste streams accounted for

| No. | Waste stream | EWC code |
|---|---|---|
| 1 | Concrete | 17 01 01 |
| 2 | Bricks | 17 01 02 |
| 3 | Tiles and ceramics | 17 01 03 |
| 4 | Mixture of concrete, bricks, tiles and ceramics | 17 01 07 |
| 5 | Wood | 17 02 01 |
| 6 | Glass | 17 02 02 |
| 7 | Plastic | 17 02 03 |
| 8 | Bituminous mixtures | 17 03 02 |

| | | |
|---|---|---|
| 9 | Mixed metals | 17 04 07 |
| 10 | Insulation materials | 17 06 04 |
| 11 | Gypsum-based construction materials | 17 08 02 |
| 12 | Mixed construction and demolition wastes containing dangerous substances | 17 09 03 |
| 13 | Mixed construction and demolition wastes | 17 09 04 |

In the absence of reliable studies in Albania, the calculation of the possible amount of waste that can be generated during the implementation of this project, was based on the indicators collected from several studies carried out in several other European countries. The amounts of waste generated during construction and demolition work is very variable, depending first on the usage category (residential, commercial/ industrial buildings. Studies also show that this amount of waste varies from study to study. The calculation shows that the maximum amount of waste that can be generated is less than 75 tonnes.

## 6.4. POSSIBLE IMPACT ON TRANSBOUNDARY ENVIRONMENT

The proposed project will not have negative impacts on the transboundary environment. The Municipality of Berat in located inside the country and has no shared borders with other countries. As noted above, the impact on the environment is very small and within the Albanian territorial waters without any impact on international waters.

## 6.5. CUMULATIVE IMPACT ASSESSMENT

- Identification of Relevant Cumulative Impacts Sources

Prediction and evaluation of cumulative impacts is not straightforward as it is not always possible to directly combine different types of environmental impacts on an objective basis. Nevertheless, international ESIA best practice recognises that an impact that has cumulative effects is likely to be a more serious concern and should be highlighted.

Cumulative impacts may be broadly defined as impacts that result from the accumulation of a number of individual impacts (European Commission DG XI (1999). They may result from various types of interaction, including:

- impacts which are the result of the combination of activities associated with this sub-projects of PIUTD together with other development projects;

- impacts that arise from the accumulation of different impacts at a specific location (e.g. construction noise and visual intrusion affecting the same receptor – individually these may not be significant, but the accumulation of different impacts may give rise to an overall significant impact) and
- the accumulation of impacts of the same type at different locations (e.g. non-significant individual ecological impacts at different sites collectively may give rise to an overall significant ecological impact in a route-wide context)

Cumulative impacts result from the successive, incremental and/or combined effects of a project or activity, when added to other past, existing, planned and/or reasonably anticipated future ones. They may occur because, for example, several projects of the same type are being developed in close spatial or temporal proximity.

World Bank ESIA procedures require for the ESIA process to consider cumulative impacts of the project in combination with impacts from other relevant past, present and reasonably foreseeable developments as well as unplanned but predictable activities enabled by the project that may occur later or at a different location.

Based on review of General Local Plan and consultation with Local government representatives, the following known and foreseeable developments in the Berati Municipality are considered:

- Urban Upgrading of Iljaz Vrioni Square (Project 1)
- Requalification of Urban areas in the “Murat Çelebiu” quarter (Project 2)
- Requalification and Reconstruction of urban areas in the “Barrikada” quarter (Project 3)
- “Street-scape beautification of Antipatrea road” (Project 4)
- Restauration and maintenance of architectonic view of “Mangalem” quarter (Project 5)
- Restoration of the historic urban landscape of the Selamllek square (Project 6)
- Construction of the road “Unaza e re- Godina e SHISH” (Project 7)
- Rehabilitation of the Gorica Castle trail & establishment of additional tourism opportunities around the monument; (Project 8)

Potential environmental and social impacts caused by a combination of planned projects and the “Restoration of the historic urban landscape of

Mangalem quarter" project have been assessed and results are set out in Table 21 below, where an "X" denotes a potential adverse cumulative impact; a "-" denotes that no potential cumulative impact is expected, while " * " denotes a positive cumulative impact.

Table 18. Cumulative Impacts Assessment Matrix

| Development Name | Air Quality | Biodiversity | Soils | Water Resources | Noise and Vibration | Visual | Waste | Traffic | Population Influx | Economics | Employment | Livelihoods | Community Health and Safety | Cultural Heritage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project 1 | x | x | - | x | x | x | x | x | - | * | * | * | x | - |
| Project 2 | - | - | - | - | - | - | - | - | - | - | * | - | - | - |
| Project 3 | - | - | - | - | - | - | - | - | - | - | * | - | - | - |
| Project 4 | x | x | x | x | x | - | - | x | - | - | * | - | x | - |
| Project 5 | - | - | - | - | - | - | - | - | - | - | * | - | - | - |
| Project 6 | x | - | - | x | x | - | x | x | - | - | * | - | x | - |
| Project 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Project 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

# VII. ENVIRONMENTAL & SOCIAL MITIGATION MEASURES

## 7.1. ENVIRONMENTAL AND SOCIAL IMPACT MITIGATION MEASURES

This Chapter highlights the necessary mitigation measures that will be adopted to prevent or minimize significant negative environmental, health and safety impacts associated with the activities of the project during its construction, operation and decommissioning phases.

Allocation of responsibilities, time-frame and estimated costs for implementation of these measures are presented in the ESMP in Chapter 8.

## 7.2. ENVIRONMENT AND SOCIAL RESIDUAL IMPACTS

As previously established, the assessment of impacts will be resource/receptor led. In the previous sections were presented the following:

- The predicted impacts – the sensitivity of the affected resource/receptor and the magnitude of the potential impact/risk, prior to the implementation of any mitigation measure; and
- Mitigation measures to address the impact / risk – the key measures adopted, as well as a discussion on the various alternatives considered where appropriate

Following the mitigation measures, below is given the Significance of residual impacts – the significance of any remaining impacts after the incorporation of mitigation, whether not significant, minor, moderate or major (major impacts are likely to be of high stakeholder concern).

Table 19. Negative Impacts and proposed mitigation measures

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| ENVIRONMENTAL IMPACTS | | | |
| Solid Waste | ♦ Potential solid waste generated from the intervention in the sewerage, the underground electric cables, pavement of the streets and restoration of the facades.<br>♦ Solid waste generated from operation of the facilities by commuters, e.g. plastics, paper, etc | ♦ Contractor to establish a solid waste management plan for solid disposal of debris/ garbage at the construction site to be approved by the Project Engineer<br>♦ All construction waste shall be removed from site when the contractor complete the works<br>♦ Contractors should do the waste separation and encourage the recycling of appropriate waste<br>♦ Contractors must make the separation of waste to separate hazardous and non-hazardous waste<br>♦ Waste should be taken from the square at least once every 24 hours and when temporarily kept in place should be covered to minimize unpleasant odors and parasites.<br>♦ The Contractor and the Municipality shall work together to facilitate proper disposal and disposal of waste from the project area. All waste should be disposed of in approved dumpsites. | ♦ Provision of disposal bins at designated areas along the Llambi Guxhumani, Kol Myzeqari, Kostaq Stefa, Shen Mehilli and Zoi Toli.<br>♦ Regular collection and disposal of garbage by the municipality<br>♦ Clean storm water drains to minimize clogging |
| ♦ Residual impact: The implementation of the mitigation measures will result in no residual effect of solid waste | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Soil erosion | ♦ An increase in paved areas means that there will be more runoff than normal, which will affect the drainage systems, hydrological regimes and storm drains. | ♦ Construct efficient drainage structures (culverts, mitre drains, scour checks, etc.)<br>♦ Protect excavated sections of the route of storm water during heavy rains<br>♦ Provide erosion channels to natural drains to minimize erosion | ♦ Regular cleaning and proper maintenance /repair of drainage structures |
| ♦ Residual impact: With the implementation of the mitigation measures, residual impacts are negligible | | | |
| Loss of vegetation, flora and fauna | ♦ Loss of vegetation through clearance to pave way for construction | ♦ Minimize clearing of unnecessary areas at the construction site<br>♦ Replant vegetation through landscaping upon completion<br>♦ Where feasible, noise levels during dawn, dusk, and night hours should be minimised to reduce disturbance to mammals and birds. | ♦ Replenish vegetation at the roads regularly. Proper maintenance of trees and other vegetation along the streets |
| ♦ Residual impact: With the implementation of the mitigation measures, residual impacts are negligible | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Water Pollution | ♦ Contamination of water resources with oil and fuel spills by construction equipment at construction site<br>♦ Other construction materials such as paints, bituminous materials and other associated chemicals may also find their way into adjacent streams near the project.<br>♦ Contamination of water and underground water resources due to wastewater. | ♦ Incorporate erosion control measures during construction at the site<br>♦ No oils and fuels should be stored on the construction site – small works<br>♦ Maintenance, re-fueling and cleaning of equipment should NOT be done at construction site by the contractor – but in a licensed garages outside the project area.<br>♦ No solid waste, fuels or oils shall be discharged on land surface, into drains or streams.<br>♦ Working site run-offs with possible charge with suspended matter should be filtered before discharging to natural flows.<br>♦ Install leak control equipment. Have a leak control mechanism in place (bunds, leak proof containers, containment systems, etc.) and emergency interventions/ procedures to control spills.<br>♦ Sanitary facilities will be provided for workers and no wastewater will be discharged to the natural recipient.<br>♦ There will be no unauthorized use of water resources | ♦ Monitor oil spills and other leakages at the station and parking lots<br>♦ Regular cleaning of oil sumps and storm water drains at the station |
| ♦ Residual impact: With the implementation of the mitigation measures, residual impacts are negligible | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Air quality, dust and traffic borne emission | ♦ Degradation of Air through dust emissions<br>♦ Air pollution from emissions by construction vehicles and other equipment during their operations<br>♦ Increased dust and air pollution levels could impact on public health | ♦ Regular watering of access roads and work sites to reduce dust emissions<br>♦ Vehicles and machinery engines should always be switched off when not in use<br>♦ Vehicles and equipment should be well maintained to minimize unnecessary emissions and leaks.<br>♦ Established vehicle tracks and roads should be used to minimize habitat destruction from off-road travel.<br>♦ Emergency response plans will be in place to mitigate any accidental event.<br>♦ Adequate materials and product storage and handling practices should be followed to reduce uncontrolled releases. | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Noise Pollution | ♦ Noise generated during construction activities such as operation of construction equipment, excavations, etc<br>♦ Increased noise pollution levels could impact on public health. | ♦ Construction activities should be carried out only during the day to minimize noise levels to the residents<br>♦ Explosive blasting shall not to be used<br>♦ Contractor will be careful when selecting equipment to avoid use of old or damaged machinery with high level of noise emissions.<br>♦ Contractor will ensure that equipment is properly serviced and efficient.<br>♦ When possible, contractors will cordon off construction site with noise absorbing materials, for example, plywood rather than iron sheets.<br>♦ Construction workers will be aware of the sensitive nature of workplaces they are operating in and advised to limit verbal noise or other forms of noise.<br>♦ The contractor shall ensure that noise levels emanating from machinery, vehicles and noisy construction activities are kept at a minimum for the safety, health and protection of people in the nearby buildings.<br>♦ Noise and vibration will be minimized at the project site and surrounding areas through sensitization of construction truck drivers to switch off vehicle engines while offloading materials.<br>♦ All generators and heavy duty equipment will be insulated or placed in enclosures to minimize disrupting ambient noise levels | ♦ Sensitize operators on hooting unnecessarily |
| ♦ Residual impact: With the implementation of the mitigation measures, no residual impact are expected because of noise vibration | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Social impacts | | | |
| Management of the social environment management system | ♦ Improper management of the implementation of the social environment management system | ♦ Appoint an employee in ADF who will be responsible for managing and monitoring the implementation of mitigation measures, as well as monitoring the programs, and to regularly report to the highest authorities in the company and external stakeholders.<br>♦ The person must be familiar with the requirements, plans and programs to be achieved during the implementation of the Project, as well as relevant Environmental and Social requirements and valid company documentation). | ♦ |
| ♦ Residual impacts: With the implementation of the mitigation measures, no residual impacts are expected | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Organization of labour | ♦ Employee information to prevent certain specific types of behaviour | ♦ The investor (ADF), as well as the contractor, are obliged to follow the national regulations for safety and health at the workplace<br>♦ A company code of conduct shall be prepared for employees of a company to inform the employees of the company's expectations.<br>♦ Codes of Conduct will be considered as guidelines to prevent certain specific types of behaviour (e.g. conflict of interest, self-dealing, bribery, and inappropriate action).<br>♦ The code of conduct shall be developed based on the following key points:<br>♦ • Loyalty (following codes of conducts, commitment to work, commitment to environmental and social, health and safety measures)<br>♦ Prohibited behaviours like gambling, drunkenness, and irregular and immoral habits.<br>♦ Refrain and avoidance of practicing Gender Based Violence and Harassment GBVH)<br>♦ This environment and social incidents response toolkit (ESIRT) will be used in case such incidents occur during the implementation of the project. | ♦ |
| ♦ Residual impacts: With the implementation of the mitigation measures, no residual impacts are expected | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Private properties | ♦ Intervention that affect private properties at the boundary of the project. | ♦ A Stakeholder Engagement Plan will be created. The plan shall include Grievance Mechanism, and this will be publicly available.<br>♦ Since private property is affected, ADF will create appropriate resettlement instrument: RAP or ARAP.<br>♦ In case of intervention on the façades that are private properties, an agreement will be reached.<br>♦ A template agreement developed by legal department of ADF which has been used in other similar project will be applied.<br>♦ In case of damage of private properties, parties should solve the dispute based on understanding and a mutual agreement can be reached. Compensation for incurred damage must be paid in any case.<br>♦ In case that no agreement is reached, parties should refer to Civil Code of Republic of Albania: Articles 608- 652: Obligation for compensation of damages. | ♦ |
| Injury or damage to people and private property | ♦ Employees and other people in the area might lose their life as a result of the project construction | ♦ Contractor shall maintain records and making reports concerning health, safety and welfare of persons, and damage to property,<br>♦ Insuring against liability for any loss, damage, death or bodily injury which may occur to any physical property or to any person which may arise out of the contractor's performance of the contract | ♦ N/A |
| ♦ Residual impacts: With the implementation of the mitigation measures, no residual impacts are expected | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Disruption of public utilities | ♦ Disruption of water used in the area or reduction in regular flow | ♦ Contractor to generate utility management plan<br>♦ Contractor to minimize damage to public utilities | ♦ Contractor to minimize damage to public utilities during routine maintenance |
| Access problems to pedestrians and vehicle along the Llambi Guxhumani street and Kol Myzeqari, Kostaq Stefa and Shen Mehilli streets | ♦ Congestion and disruption of traffic | ♦ A pedestrian management plan should be prepared by the contractor in cooperation to ADF<br>♦ The contractor shall ensure that the roads remain open to traffic during construction activities;<br>♦ Prior to construction activities, the Contractor will install all signs, barriers and control devices needed to ensure the safe use of the road by traffic and pedestrians, as required by the traffic control plan;<br>♦ Signs, crossing guards and other appropriate safety features will be incorporated at road crossings;<br>♦ Local authorities and residents in a working area will be consulted before any detours for construction or diverted public traffic are established;<br>♦ Disposal sites and haul routes will be identified and coordinated with local officials;<br>♦ Construction vehicles will use temporary roads constructed for that purpose to minimize damage to local access roads.<br>♦ Where local roads are used, they will be maintained and reinstated to their original condition after the completion of work. | ♦ |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| ♦ Residual impacts: With the implementation of the mitigation measures, no residual impacts are expected | | | |
| Direct or indirect hazards to pedestrians and retail services | ♦ Difficulties walking by and supplying the shops | ♦ Implementation of a guardrail system or arrest system in in situations that don't allow the use of guardrails.<br>♦ Implement netting to assure workers they can safely and efficiently do their job<br>♦ Use the debris netting system to protect those on the ground from falling tools, materials, or other debris, especially the pedestrians walking underneath the scaffolds.<br>♦ Leave open spaces between the scaffolds that enable entering in the shops | ♦ |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Occupational Health and Safety | ♦ Construction workers will be exposed to risks of accidents and injuries as a result of construction activities including use of machines, use of scaffolding for above ground works, metal grinding and cutting, concrete work, steel erection and welding among others | ♦ Contractor shall provide an Occupational Health and Safety Policy and OHS Plan for the work to be performed at the sites<br>♦ Provide medical and insurance cover for all workers<br>♦ In collaboration with local health authorities, ensuring that medical staff, first aid facilities are available at all times at the site<br>♦ Appoint an Occupational Health and Safety (OHS) officer at the site, with necessary authority and resources to manage OHS issues<br>♦ Provision of adequate and right safety tools and personal protective equipments (PPEs) to protect and prevent possible injuries to the workers<br>♦ The site shall be fenced off and provided with security at the access gates to reduce potential accidents and injuries to the public | ♦ |

| | | | |
|---|---|---|---|
| Occupational Health and Safety | ♦ Construction workers will be exposed to risks of accidents and injuries as a result of construction activities including use of machines, use of scaffolding for above ground works, metal grinding and cutting, concrete work, steel erection and welding among others | ♦ The working areas must surrounded by warning tapes and signal panels will be positioned at the entrances within the perimeter of the site<br>♦ The pedestrian circulation plan will be drawn up at the beginning of the works for each point of work by the supervisor on the line of safety and health at work, together with the representatives of the beneficiary and the contractor and will be improved over the work with the indications of the constructors.<br>♦ The circulation paths, must be calculated, placed and arranged so that they can be used easily, in accordance with their intended purpose.<br>♦ The circulation paths used by the workers in order to execute the works assigned to them must be maintained free, without irregularities, stable and solid so that the works to be carried out in a safe manner.<br>♦ During the night the circulation paths, ways of emergency and workstations must be artificially lit properly and sufficiently.<br>♦ When on the circulation paths risky manoeuvres are executed (turns, lever back etc.) the vehicles or machines will be routed. The persons who are doing this should be placed in areas where they may be seen by the driver of the vehicle and can view the manoeuvring zone in such a way as to prevent access in the area of persons or other equipment. In the case of observation of a danger they will immediately signal and stop the handling / machine. The driver of the vehicle will start/resume manoeuvres only after having received a signal from the person who controls the operation.<br>♦ It is expressly forbidden to handle motor vehicles or machinery by unqualified people. | ♦ |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Occupational Health and Safety | ♦ Construction workers will be exposed to risks of accidents and injuries as a result of construction activities including use of machines, use of scaffolding for above ground works, metal grinding and cutting, concrete work, steel erection and welding among others | ♦ The areas for the parking of the motor vehicles will be signalled in an appropriate manner. The motor vehicles and equipment will be parked only in areas specifically provided for them. While parked these will have the engine stopped and will be properly secured (parking brake or locking method).<br>♦ The emergency routes and exits must be clear at all times and lead by the most direct means possible to a safe area<br>♦ In the event of danger, all work stations should be able to be discharged quickly and as safely as possible for the workers.<br>♦ The number, distribution and size of the emergency routes and exits are determined according to the use, equipment and dimensions of the site and the maximum number of persons that may be present.<br>♦ Implementing administrative controls into work processes. | ♦ |
| ♦ Residual impacts: With the implementation of the mitigation measures, no residual impacts are expected | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Community Health and Safety | ♦ Risk of COVID-19 outbreak among workers and transmission to the community at work requires first assessing the risks, and then implementing the hierarchy of controls. | ♦ The contractor should carry out only essential work for the time being; it may be possible to postpone some work to when the risk is lower.<br>♦ Ensure that only workers who are essential to the job are present at the workplace and minimise the presence of third parties.<br>♦ The contractor should reduce, as far as possible, physical contact between workers (e.g. during meetings or during breaks).<br>♦ Isolate workers who can carry out their tasks alone safely and who do not require specialised equipment or machinery that cannot be moved.<br>♦ The contractor should place an impervious barrier between workers, especially if they are not able to keep a two-metre distance from each other. Barriers can be purpose-made or improvised using items such as plastic sheeting, partitions, mobile drawers, or storage units.<br>♦ If close contact is unavoidable, keep it to less than 15 minutes.<br>♦ Soap and water or appropriate hand sanitiser should be supplied at convenient places. Clean your premises frequently, especially counters, door handles, tools and other surfaces that people touch often and provide good ventilation if possible. | ♦ |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Community Health and Safety | ♦ Disclosed information and stakeholders engaged in the process | ♦ Design alternative approaches to engagement that: i) enables two-way communication; ii) prioritizes engagement activities; iii) communicates timely updates;<br>♦ Prioritize critical engagement activities<br>♦ Consider virtual and remote alternatives that best meet the objectives of the planned activities;<br>♦ Based on the analysis of factors such as access to and quality of connectivity, use the social media platforms, mobile phone coverage, internet access, mobile network providers and alternate nonelectronic engagement channels to provide a range of options to meet different stakeholders' needs<br>♦ Providing alternate secure channels for grievances to protect complainants against potential retaliation. These options should consider factors such as accessibility, confidentiality, privacy, anonymity, digital protections, and secure communication through electronic and nonelectronic methods. | ♦ |
| ♦ Residual impacts: With the implementation of the mitigation measures, no residual impacts are expected | | | |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Traffic safety | ♦ During construction, there will be some increased danger to workers, motorists, pedestrians, as a result of increased traffic in the area<br>♦ There will also be risks of accidents from the contractor's vehicles | ♦ Initiate a safety program and measures by creating awareness and educational campaigns for workers and local communities<br>♦ Install appropriate road signage for safety of workers and road users during construction<br>♦ Install speed signs at high risk areas near the construction site-especially on the access road to the station<br>♦ Copies of insurance policies for the contractor's drivers and vehicles should be provided to the Supervision Consultant.<br>♦ The contractor's vehicles and equipment must be in proper working condition and have registration plates, and numbering.<br>♦ The contractor ensures proper driving discipline by its employees, and sanctions those in breach.<br>♦ Excavated sites, embankments, and dangerous locations are protected with proper safety barriers, tape and warning signs.<br>♦ Maintain a log detailing every violation and accident on site or associated with the project work activities, including the nature and circumstances, location, date, time, precise vehicles and persons involved, and follow-up actions with the police, insurance, families, community leaders, etc. | ♦ Maintain road and warning signs for road users to the station |

| Impacts on or due to | Anticipated Impacts / Remarks | Proposed Mitigation during the Design and Construction phases | Proposed Mitigation during the Operation phases |
|---|---|---|---|
| Accidents | ♦ Construction workers will be exposed to risks of accidents and injuries as a result of construction activities | ♦ A Traffic Management Plan, which will organize the traffic throughout the city during construction activities, will be prepared and adopted by the contractor.<br>♦ The traffic management plan will need the approval from Municipality and ADF and its implementation will be supervised by the Municipality<br>♦ Traffic routes, including stairs, fixed ladders and loading bays and ramps, must be calculated, placed and arranged and be accessible so that they can be used easily, in complete safety and in accordance with their intended purpose and the workers employed in the vicinity of these traffic routes are not exposed to any risk. | ♦ |
| Cultural Heritage | ♦ Minimizing the possibility of damage to archaeological sites and objects | ♦ Workers should undergo basic training on the procedure for a randomly discovered archaeological site. | ♦ |
| Cultural Heritage | ♦ Degradation or damage to Mangalem Cultural Heritage Site due to Pollution or Vibration | ♦ The contractor should avoid blasting and use of highly producing pollution, noise and vibration during construction activities. | ♦ |

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| Cultural Heritage | ♦ Disruption to Visitor Access of Castle and the Ethnographic museum | ♦ The working areas must be surrounded by warning tapes and signal panels will be positioned at the entrances within the perimeter of the site<br>♦ No materials will be stacked outside the perimeter of the site<br>♦ During the night the circulation paths, ways of emergency and workstations must be artificially lit properly and sufficiently.<br>♦ The pedestrian circulation plan will be drawn up at the beginning of the works for each point of work by the supervisor, together with the representatives of the beneficiary and the contractor and will be improved over the work with the indications of the constructors. | ♦ None |
| Cultural Heritage | ♦ During the construction phase, accidental destruction of cultural heritage objects may occur | ♦ A Cultural Heritage Management Plan shall be developed for the project before construction works start in line with the provisions of the Law on Protection of Cultural Heritage and international treaties;<br>♦ The construction works will start only after all relevant permits are provided by the Ministry of Culture;<br>♦ Training shall be provided to construction workers before the start of works to improve their awareness on the importance of protecting Berati's cultural heritage.<br>♦ Local UNESCO office shall be informed on the planned interventions into the protected area. | ♦ |
| Residual Impacts: With regards to the cultural heritage, following the implementation of the mitigations measures, there will be no residual impact on the Cultural heritage | | | |

# VIII. ENVIRONMENTAL AND SOCIAL MANAGEMENT

## 8.1. THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The Environmental and Social Management Plan (ESMP) will be implemented by the Contractor in cooperation with ADF and Municipality. The Contractor will also be responsible for developing and implementing a site- specific induction for all construction workers. The Contractor will ensure that all construction workers are trained and competent and hold the appropriate certification for the tasks that they will be undertaking.

In the operational phase, ESMP will be implemented by Municipality with all its structural units.

## 8.2. SIGNIFICANCE OF ESMP

The purpose of the Environmental and Social Management Plan is to initiate a mechanism for implementing mitigation measures for the potential negative environmental impacts and monitor the efficiency of these mitigation measures based on relevant environmental indicators. The ESMP assigns responsibilities of actions to various actors and provides a timeframe within which mitigation measures can be implemented, supervised and monitored. Further, it provides a checklist for project monitoring and evaluation. The objectives of the ESMP are:

- ❒ To provide evidence of practical and achievable plans for the management of the proposed project.
- ❒ To provide the Proponent and the relevant Agencies with a framework to confirm compliance with relevant laws and regulations.
- ❒ To provide community with evidence of the management of the project in an environmentally acceptable manner.

The ESMP outlined below will address the identified potential negative impacts and mitigation measures on the following project stages:

I. Pre-construction

II. Construction Phases

III. Operation Phase

Table 24 below presents the necessary measurements for mitigation of adverse impact on environment, while Table 25 presents the necessary measurements for mitigation of adverse social impacts.

Table 20. Environmental Management Plan

| Areas/ aspects of the environment | Proposed mitigation measures | Objective | Competent institution | Timetable | Costs for implementation |
|---|---|---|---|---|---|
| **WASTE** | | | | | |
| ***Pre-construction and construction*** | | | | | |
| **General Solid Waste** | • Preparation of the Waste Management Program. | Fulfillment of the legal obligations for waste management and protection of the environment and the health of the population | Design team | Pre- construction | Included in the project design costs |
| | • Signing agreements with authorized companies for collection, transport and treatment of waste and handing over of waste | Fulfillment of the legal obligations for waste management | Contractor/Subcontractor/Supervision | Pre- construction and construction | The price will depend on the offers of the authorized waste handlers |
| | • Engagement of waste manager expert, which will ensure full implementation of the Program in accordance with the legal obligations | Fulfillment of the legal obligations for waste management and protection of the media and areas of the environment. | Contractor/Subcontractor/Supervision | Pre- construction and construction | The price will depend on the offer of the waste manager |
| ***Operation*** | | | | | |

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| **Waste** | Placing containers with different colors for disposing of different waste streams, | Protection of the media and areas of the environment and the health of the population | Municipality of Berati | Operation | Depends on the capacity of the containers |
| | Signing agreements with authorized companies for collection, transport and treatment of waste and handing over of waste | Fulfillment of the legal obligations for waste management and protection of the media and areas of the environment and the health of the population | Municipality of Berat | Operation | The price will depend on the offers of the authorized waste handlers |
| | Preparation of Waste Management Program in accordance Law on Waste Management. | Fulfillment of the legal obligations for waste management and protection of the media and areas of the environment and the health of the population | Municipality of Berat | Operation | The cost of the measures arising from the Program will be included in the operating costs |
| **SOIL** | | | | | |
| ***Pre-construction and Construction*** | | | | | |
| **Soil** | • Inspect the site for potential surface erosion.<br>• The surface runoff management will be applied in the entire Llambi Guxhumani street and Kol Myzeqari, Kostaq Stefa and Shen Mehilli streets road and connection streets;<br>• Cleaning the channels, culverts/ box culverts and having a good maintenance of | Soil and other environmental components and areas protection | ADF | Continuously during the entire construction phase | Included in the construction costs |

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| | drainage system will ensure effective protection of the road from erosion and sedimentation;<br>• Where works are necessary, they will be undertaken in such a way to minimize the occurrence of soil erosion, even for short periods. They will be rehabilitated (greened) as soon as possible.<br>• Stockpiles will not be placed on the site. | | | | |
| | | ***Operation*** | | | |
| **Soil** | If there is a risk of serious soil contamination in the event of a major hazard or incident, it is recommended that a detailed analysis and assessment of the scope and intensity of contamination be carried out, and in accordance with the findings, to propose a Remediation Plan for contaminated soils or replace the contaminated soil with a new uncontaminated soil and store it in special landfills. | Soil and other environmental components and areas protection | ADF, Supervisor | Operation | It depends on the pollution scope, the parameters to be analyzed. |
| **Soil** | Continuous monitoring of possible erosion, maintenance of vegetation and, if required, increase of green areas, maintenance of facilities, etc. | Soil and other environmental media and areas protection | ADF, supervisor | Continuously during the entire operational phase | |
| | | | | | |
| | | **BIODIVERSITY-PLANT SPECIES** | | | |
| | | ***Pre-construction and construction*** | | | |
| **Flora and Fauna** | ♦ Minimize clearing of unnecessary areas at the construction site | Protection of biodiversity, i.e. plant species with | Independent expert engaged by | Construction | The cost of the measures will be |

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|---|---|---|---|---|---|
| | ♦ Replant vegetation through landscaping upon completion<br>• Where feasible, noise levels during dawn, dusk, and night hours should be minimised to reduce disturbance to mammals and birds. | conservation significance and increasing the green areas | the contractor of construction work | | included in the construction costs |
| **WATER REGIMES** | | | | | |
| ***Construction*** | | | | | |
| **Water** | • Working site run-offs with possible charge with suspended matter should be filtered before discharging to natural flows.<br>• Install leak control equipment. Have a leak control mechanism in place (bunds, leak proof containers, containment systems, etc.) and emergency interventions/procedures to control spills.<br>• The site will establish appropriate water and sediment control measures to prevent water sediment from moving off site and causing excessive turbidity in the channel.<br>• On site painting or applying protection coatings should be done in the way that annuls the risk of leaking or spilling to waters (e.g. using trays).<br>• Sanitary facilities will be provided for workers and no wastewater will be discharged to the natural recipient.<br>• There will be no unauthorized use of water resources. The exploitation will require obtaining a special permit from the | Protection of waters and other environmental media and areas | Contractor/ Supervision in cooperation with project beneficiaries | Construction and operational phase | The costs will be determined additionally, based on additional project documentation |

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| | competent authorities. | | | | |
| **Waters** | Regular control and maintenance of the drainage and stormwater systems (channels, culverts, etc.), as well as the application of good operational practice. | Protection of waters and other media and areas of the environment | ADF | Continuously during the operational phase | Operating costs |
| **NOISE** | | | | | |
| ***Pre-construction*** | | | | | |
| **Noise** | A noise management plan in the construction phase, which will envisage appropriate measures for noise reduction and its implementation | Protection of sensitive receptors and fulfillment of legal obligations | Contractor | Pre- construction | The cost of the measures that will emerge from the Plan will be included in the construction costs |
| ***Construction*** | | | | | |
| **Noise** | Setting of permanent sound barriers or sound insulation of the affected objects | Protection of sensitive receptors and fulfillment of legal obligations | Contractor/ Subcontractor/ Supervision | During construction | |
| | | | | | |
| **AIR QUALITY, TRAFFIC & ASSOCIATED EMMISIONS** | | | | | |
| ***Pre-construction*** | | | | | |
| **Air quality** | Preparation of:<br>• Plan for the organization of the construction site;<br>• Traffic Management Plan. | Protection of ambient air and fulfillment of legal obligations | Contractor | Pre- construction | The cost of the measures arising from the plans will be included in the |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | construction costs |
| ***Construction*** | | | | | |
| **Air quality** | Minimizing the dust generated during transport of cobblestones, aggregate or other materials<br>• Wet or covered truck load.<br>• Unload trucks while preventing dusting, e.g. avoid free-falling and use dust protection sheets.<br>• Sites must be maintained in tidy condition,<br>• Keep drop height to the minimum. | Protection of ambient air and fulfillment of legal obligations | Contractor | Construction | Costs are included in construction costs |
| **Air quality** | Minimizing air pollution and noise from machinery on site, transport and combustion on site<br>• Do not allow vehicles or machinery to idle on site.<br>• Use attested and proper equipment only.<br>• No open burning or combustion of any sort is allowed on site. | Protection of ambient air and fulfillment of legal obligations | Contractor | Construction | Costs are included in construction costs |
| **Air quality** | Setting a protective fence around construction sites at sensitive locations (in settlements) | Protection of ambient air and sensitive receptors | Contractor/ Supervision | Continuously during the construction phase, at sensitive locations | Costs are included in construction costs |
| | | | | | |
| **VISUAL CHARACTERISTICS** | | | | | |
| ***Construction*** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Visual characteristic** | Revitalization / rehabilitation of disturbed locations (areas) should be carried out immediately after the completion of the construction work at the specific locations and in accordance with the project documentation prepared for this purpose | Protection of the visual characteristics of the landscape | Contractor/Supervision controlled by competent inspection authorities | Continuously during the construction phase | Included in the construction costs |

Table 21. Social Management Plan

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| | | | | | |
| Improper management of the implementation of the social environment management system | • Appoint an employee in ADF who will be responsible for managing and monitoring the implementation of mitigation measures, as well as monitoring the programs, and to regularly report to the highest authorities in the company and external stakeholders. | Successful organization and management of the negative impacts of the project, as well as the undertaken obligations related to the project. | ADF<br>Municipality | Pre-construction | Operating costs of the company |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| Delay in the implementation of the project | • Procurement must be carefully planned and carried out, so that the realization of the investment is not delayed<br>• The developer must start early consultations with all potentially interested companies that can engage in construction work.<br>• The developer must either allocate staff or hire an experienced external associate that will prepare all necessary documents and procedures before the tender is announced. | Timely internal organization and selection of the most suitable contractor who will be able to implement the received tasks within the given deadline.<br>The external person will be unbiased in the assistance that should be provided to the developer. | ADF | Pre-construction | Operating costs of the company |
| Access problems and Traffic disruption | ♦ The contractor shall ensure that the roads remain open to traffic during construction activities;<br>♦ Prior to construction activities, the Contractor will install all signs, barriers and control devices needed to ensure the safe use of the road by traffic and pedestrians, as required by the traffic control plan;<br>♦ Signs, crossing guards and other appropriate safety features will be incorporated at road crossings;<br>♦ Local authorities and residents in a working area will be consulted before | Provide continuous access to the road and reduce traffic disruption and congestion | ADF<br>Berati local police<br>Contractor<br>Municipality | Pre-construction | Operating costs of the company |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| | any detours for construction or diverted public traffic are established;<br>♦ Disposal sites and haul routes will be identified and coordinated with local officials; | | | | |
| Community involvement | • Realization of a series of consultative activities with stakeholders. A mechanism for grievance and complaints must be created, and it should be publicly available in every affected settlement, at the Berati City Hall.<br>• Drafting a Stakeholder Engagement Plan (SEP) that will be developed in accordance with good international practice that WB promote<br>• Organization of an office that will serve as an information office of the project. It will be a public location where all information and documents related to the project will be available to the public. | Reduce the negative impacts of the project, but also the negative attitude towards the project and better and timely information of stakeholders concerned. | Consultant/ADF<br><br>Contractor | Pre-construction | Operating costs of the consultant |
| | • | | | | |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| Community involvement | • Maintain an open communication channel with stakeholders and project stakeholders in the construction phase.<br>• The consultant must regularly hold meetings with representatives of local populations and other interested stakeholders. | Maintaining contact with affected communities | Contractor/ADF | Construction | Operating costs of the company |
| Problems related to the organization of the workforce | • Preparation of the Employment Plan for the needs of the project, in cooperation with the Berati Municipality Employment office, with a special emphasis on engaging the local workforce and reducing the pressure from losing qualified personnel at the other economic entities in the Municipality | Engaging the available local workforce<br>Minimizing the potential adverse economic effects | Contractor | Pre-construction | Operating costs of the company |
| Occupational Health and Safety | • The developer must implement the Occupational Safety and Health Management System (OHSMS).<br>• Occupational Safety and Health Plan (OSHP) of temporary and mobile construction sites with implemented grievance mechanism for workers, as well as a statement of safety with risk assessment for construction site workplaces | Minimizing the negative risks to the health and safety of workers, as well as the society | ADF<br>Contractor | Pre-construction. Construction | Operating costs of the company |
| Occupational Health and Safety | • Proper training of employees for using, servicing and integrity of PPE (personal | Minimizing the risks to the safety and health of workers | Contractor | Construction | Operating costs of the company |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| | protection equipment). Use of anti-fall devices. | | | | |
| Occupational Health and Safety | • Training and licensing of industrial vehicle operators for safe handling of specialized vehicles such as forklifts, including safe (un)loading, load limits, and regular control of their health, in accordance with the Law. | Minimizing the risks to the safety and health of workers | Contractor | Construction | Operating costs of the company |
| | • Development and application of procedures for protection of the health and safety of local communities.<br>• Plan for the organization of a construction site in order to respond to the unfortunate and urgent cases in a manner appropriate to the construction risks<br>• Safe pedestrian and traffic corridors through the construction site marked with visible signs, but also communicated with the representatives of the local communities, as well as the schools.<br>• Creation and implementation of a Campaign for the safety of the population during the construction | Minimizing the risks to the population | Contractor | Pre-construction, Construction | 2000 EUR for the Plan for organization of a construction site<br><br>The remaining costs are unknown at this stage of the project |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| Direct or indirect hazards to pedestrians and retail services | • Implementation of a guardrail system or arrest system in situations that don't allow the use of guardrails.<br>• Implement netting to assure workers they can safely and efficiently do their job<br>• Use the debris netting system to protect those on the ground from falling tools, materials, or other debris, especially the pedestrians walking underneath the scaffolds.<br>• Leave open spaces between the scaffolds that enable entering in the shops | Easily access to main services and minimizing the risk of offering them | Contractor | Pre-construction, Construction | The remaining costs are unknown at this stage of the project |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| Problems related to workers' behavior towards the local environment | • In terms of labor rights, all workers (including contractors and subcontractors) will have contracts with clearly expressed rights and conditions for their employment, and their legal rights.<br>• Contracts will be explicitly explained to all workers when necessary to ensure that workers understand their rights.<br>• Contracts must be concluded before the commencement of the working activities.<br>• All workers (including contractors and subcontractors) will be able to join trade unions of their choice and have the right to collective negotiations. | Reducing the risks associated with the workforce, and the attitude of workers | Contractor | Construction | Operating costs of the company |
| Problems related to workers' behavior towards the local environment | • All employees, must sign a Code of Conduct, which should be accessible and visible, and each employee must understand the weight of the document and the consequences it brings if it violates it. | Reducing the risks associated with the workforce, and the attitude of workers | Contractor | Construction | Operating costs of the company |
| Community Safety and Health | • Preparation and full implementation of the Traffic Management Plan in the settlements, actively communicated with the stakeholders from the affected settlements and the local public.<br>• All critical points that must be covered by the plan must have the appropriate traffic | Reducing the traffic jams and the risks of road accidents | Contractor | Construction | Operating costs of the company |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| | signalization during the construction phase and the speed limit that will correspond to the newly occurred situation. The notification of the existence of the plan must be communicated in a timely manner with the local communities, and publicly displayed in the municipality and the premises of the project's information office | | | | |
| Community Safety and Health | • Meetings with the local population, where all the negative consequences of the project will be explained, in particular a review will be given of the noise, the frequency of vehicles and workers, as well as the safety of the population during the upcoming period of construction activities in the immediate vicinity of their homes. | Minimizing the disturbance of the local population due to noise from construction activities | Contractor and ADF | Construction | Operating costs of the company |
| | • | | | | |
| Community Safety and Health | • Public availability of the timeframes of construction activities, especially for each Sub-projects, to reduce the impact that stems from the lack of availability of desired destinations.<br>• Engaging an appropriate % of the workforce for this project from the entire project area, with a special advantage given to the | Informed local community | Contractor | Construction | Operating costs of the company |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| Community Safety and Health | • Record the baseline scenario of all houses located in the project area, and document the situation that will serve for proper compensation of possible damages caused by the vibrations generated in the construction phase. | Minimizing the potential risk of causing negative social impacts related to housing | Contractor | Construction | Operating costs of the company |
| Community Safety and Health | • In case of interruption of access to communal infrastructure, the contractor is obliged to service the interruption as soon as possible or to provide an alternative approach.<br>• The Contractor will compensate for any damages incurred. | Successful organization and management of the negative impacts of the project, as well as the undertaken obligations related to the project. | Contractor | Construction | Operating costs of the company |
| Community Safety and Health | • A communication and information channel must be established between the contractor and the local authorities and the affected communities, at the very beginning of the construction phase. It should be maintained until the very completion of the construction activities. | Reducing the harmful consequences on the local population | Contractor | Construction | Operating costs of the company |
| Occupational Health and Safety | • Provide special training for workers for handling flammable materials and protection and fire prevention. | Minimizing the risks to the safety and health of workers | Contractor | Construction | Operating costs of the company |
| Occupational Health and Safety | • Proper training of employees for using, servicing and integrity of PPE (personal protection equipment). Use of anti-fall devices. | Minimizing the risks to the safety and health of workers | Contractor | Construction | Operating costs of the company |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| Occupational Health and Safety | • The use of specially designed machines that eliminate the danger of a trap (when workers are nearby or work with rotating and moving equipment), as well as ensuring that the limbs are secured from danger of injury under normal operating conditions. | Minimizing the risks to the safety and health of workers | Contractor | Construction | Operating costs of the company |
| Occupational Health and Safety | • Training and licensing of industrial vehicle operators for safe handling of specialized vehicles such as forklifts, including safe (un)loading, load limits, and regular control of their health, in accordance with the Law. | Minimizing the risks to the safety and health of workers | Contractor | Construction | Operating costs of the company |
| Chance finding | • Workers should undergo basic training on the procedure for a randomly discovered archaeological site. | Minimizing the possibility of damage to archaeological/ cultural sites and objects | Contractor | Construction | Operating costs of the company |
| Private Property | ♦ A Stakeholder Engagement Plan will be created. The plan shall include Grievance Mechanism, and this will be publicly available.<br>♦ Since private property is affected, ADF will create appropriate resettlement instrument: RAP or ARAP.<br>♦ In case of intervention on the façades that are private properties, an agreement will be reached. | Minimize property related impacts | ADF | Pre-construction | Operating costs of the company<br>Additional costs related to resettlement, not known at this stage |

| Social Impact/Area/ Issue | Mitigation Measures | Objective | Competent Institution | Timetable | Cost of Implementation |
|---|---|---|---|---|---|
| | ♦ A template agreement developed by legal department of ADF which has been used in other similar project will be applied.<br>♦ In case of damage of private properties, parties should solve the dispute based on understanding and a mutual agreement can be reached. Compensation must be paid in any case.<br>♦ In case that no agreement is reached, parties should refer to Civil Code of Republic of Albania: Articles 608- 652: Obligation for compensation of damages. | | | | |

## 8.3. STRUCTURES AND RESPONSIBILITIES

The institutional responsibility for the implementation of this ESIA falls on ADF and the Municipality of Berat. One of the key ADF roles will be the review of consultants' reports on EMSP compliance. Other roles will be:

- Monitoring the implementation of mitigation actions by contractors
- Coordination of trainings and capacity building, when planned
- Periodic reporting on the implementation of ESMP

Berat Municipality should ensure that all its personnel involved in the implementation of this ESIA have the necessary qualifications and have been appointed on the basis of their qualification and suitability for relevant roles, as no trainings have been provided for them in this ESIA.

Berat Municipality will require contractors to fully implement this ESIA and contractors should designate an Environmental Specialist who will oversee the environment during construction. However, in case the contactor does not have an Environmental Specialist, the supervising engineer or building site manager should be trained on important environmental issues for this ESIA so that he also plays the role of overseeing environmental issues when required. In addition, the Municipality should designate a specialist to represent the client's environmental objectives and interests during the construction phase. The basic employment criterion for such a person is to have a background in environmental issues, in particular related to construction projects.

In Berat, environmental inspectors from the Regional Environmental Agency (ARM) of Berati are responsible for overseeing environmental protection on behalf of the Environment Protection Agency (EPA). They will also have the role of the monitors during the implementation of this ESIA and the associated ESMP. Based on their professional knowledge or recommendations in this ESIA, local environmental officials may play a role in project design as consultants for consultant engineers in different aspects.

# IX. MONITORING AND REPORTING

The monitoring will verify whether the predicted impacts have actually occurred and check whether the mitigation actions recommended in the ESIA and ESMP, accordingly, have been implemented in total and what their effectiveness is. Monitoring will also identify unforeseen impacts that may arise from project implementation.

Who monitors and how: The monitoring will be carried out by Berat Municipality and Environmental Inspectorates of the Regional Environmental Agency (REA) Berat representing EPA. Monitoring by REA in this case can be considered as "Monitoring by a third party" but this is its regulatory mandate in accordance with DCM No. 47, dated 29.01.2014 "On the definition of a regulation on the organization and functioning of the National Environmental Agency and Regional Environmental Agencies".

A government agency that can undertake "Monitoring by a third party" is the State Labor Inspectorate. This unit has the authority to inspect any structure for enforcing legality for workplace safety.

Monitoring will be done through inspection, review of complaints registered by interested parties and "ad hoc" discussions with potentially affected persons (construction workers, residents near the project area, etc.).

Frequency: Monitoring will be carried out every month throughout the intervention period.

*Audits*: Audits will be needed both during construction and during project operation. While construction audits will aim at verifying compliance with the requirements for mitigation measures of impact, post-construction audits are a legal requirement and should be performed as a rule within 12 months but not later than 36 months after completion of construction.

Both construction and post-construction audits can be internal (carried out by the Municipality of Berat) or external (by a consultant engaged by the Municipality).

*Reporting:* The Municipality should prepare monthly monitoring reports. These reports should be shared with stakeholders. The municipality may allocate its audit reports during the construction and post-construction phase with KTA or other interested stakeholders but has no obligation to disclose audits at the construction stage.

Table 22. Monitoring plan

| Phase | What<br>(Parameter will be monitored?) | Where<br>(Is the parameter to be monitored?) | How<br>(Is the parameter to be monitored?) | When<br>(Define the frequency / or continuity?) | Why<br>(Is the parameter being monitored?) | Cost<br>(If not included in project budget) | Who<br>(Is responsible for monitoring?) |
|---|---|---|---|---|---|---|---|
| During activity **preparation** | All required permits are obtained before works start. | At Berati municipality | Inspection of all required documents | Before works start | To ensure the legal aspects of the rehabilitation activities | - | Contractor; Supervisor of the construction works; Construction inspector; Contract Manager |
| | Public and relevant institutions are notified | Contractor's premises | Inspection of all necessary documents | Before works start | To ensure public awareness | - | Contractor; Supervisor of the construction works |
| | Safety measures for workers, employees and visitors | On site | Visual checks and reporting | Before works start | To prevent health and safety risks – mechanical injures and to provide safe access and mobility | - | Contractor, Supervisor of the construction works |
| | Technical progress and implementation of mitigation measures, compliance with Albanian E&S law, World Bank OP | All areas | – Observations during normal activities<br>– Inspections<br>– Monthly reports and incident reports | Continuous or as necessary | Verify implementation of mitigation measures | | Supervision Consultant |

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|---|---|---|---|---|---|---|---|
| | Waste management | On site | Waste is separately collected and disposed in line with the national regulation; | Continuously, i.e. during operation | Required by series of regulation on waste | Part of the regular operation costs | Contractor,<br>Supervisor of the construction works<br>REA |
| | Collection, transport and final disposal of the solid waste | At and around the site | Waste accompanying documentation that is submitted to REA in which type and quantities of the waste are identified | Daily level after the collection and transportation of the solid waste | Do not leave the solid waste on the construction site and to avoid negative impact to the local environment and the local inhabitants' health | - | Contractor, Supervisor of the construction works. |
| | Sanitary water collection | On site; standard parameters | Visual observation; use of kit tests; samples when required by competent authorities | Based on which authorized company is called for cleaning | To prevent accidents | Part of the regular contractor cost | Supervising engineer costs, Inspection |
| | Level of noise | At and around the site | Monitoring on the level of noise dB (with suitable equipment) in two points in eastern and western part | Upon complaint or inspection finding | To determine whether the level of noise is above or below the permissible level of noise | - | Contractor, Supervisor of the construction works, Accredited company for measuring the level of provided by the contractor; |

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|---|---|---|---|---|---|---|---|
| | Air pollution parameters of dust, particulate matter | Particulate matters, dust at the site | Visual observation; measuring air quality (PM10) in the case of complains | Continuous on a daily basis, however special attention should be put during transport of material and excavation works | To keep the dust level at minimum to protect health and prevent irritations and to keep visibility for safety purposes | Contractor bears full cost, usually is not identified as separate category in bill of costs | Site supervising engineer, Municipality |
| | Flora and fauna/ trees | On site/ along Llambi Guxhumani, Kol Myzeqari and 4 connected streets | Surveys, visual observation | Spot checks | Verify surveys are identifying species of concern, mature trees, natural habitat | | Contractor E&S manager & specialists |
| | Vibration | Sensitive receptors | Vibration meter recording for 24hrs (follow testing equipment specifications for use) | Weekly, for a full day (24h period) | Construction activities can create vibration (damage, property, disturb fauna…) | To be covered by the contractor | Contractor |
| | Provision of uniforms and protective gear to the contractor's personnel and enforcement of | Construction site | Inspection of the activities | Entire period of construction | Reduce the probability of accidents | | Contractor |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | their use by contractor;<br>Consistency with the rules of exploitation of the construction equipment and usage of private safety means | | | | | | |
| | | | | | | | |
| During activity **implementation** | Safe traffic flow | On site | Visual checks and reporting | During equipment delivery and works along the road | To ensure coordinated traffic flow | - | Contractor, Supervisor of the construction works |
| | Work safety | On site | Visual checks and reporting;<br>Unannounced inspections during work | Unannounced controls during work | To prevent health and safety risks – mechanical injures and to provide safe access and mobility | - | Contractor, Supervisor of the construction works, Contract Manager |
| | Site is well organized: fences, warnings, sign postage in place, as needed. | On site | Inspection | Unannounced controls during work | To prevent accidents | - | Contractor, Supervisor of the construction works, Contract Manager |
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|---|---|---|---|---|---|---|---|
| | Worker grievance register | Work sites and records office | Review of register | Weekly | Verify grievances are being recorded and resolved | - | Contractor, and PM |
| | Grievance handling and resolution | Work sites and records office | Interviews of managers responsible for resolution and with complaining workers | Before monthly progress meeting | Verify grievances are being addressed properly | - | Contractor, supervisors |
| | Stakeholder grievance register | Records office | Review of register | Weekly | Verify grievances are being recorded and resolved | | Contractor HR manager and PM |
| | Grievance handling and resolution | Community | Interviews of selected stakeholders who submitted grievances and with persons responsible for addressing | Before monthly progress meetings | Verify grievances are being addressed properly | | Contractor E&S manager, social specialist |
| | Worker behavior in communities | Community | Reviews of grievance log Interviews with community leaders | Quarterly | Determine need for training/dismissals/ etc. | | Contractor, social specialists |
| | Project area residents and business | Community | Reviews of grievance log | Quarterly | Identify community issues | | Social specialist |

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|---|---|---|---|---|---|---|---|
| | satisfaction with project | | | | | | |
| | Traffic disruption and limitation of pedestrian access | At and around the construction site Construction supervisor | Inspection | In the course of construction works | Prevent traffic accidents;<br>Limit nuisance to local residents | | Supervising engineer |
| | Hazard to public traffic and pedestrian safety | On site and on roads permitted to use for accessing site, traffic plans | Visual observation and potential complains from the public | Daily checking the signs, fences, accesses and traffic signalization and patterns | To prevent traffic disruption and accidents | Part of the regular contractor costs | Supervising engineer costs, Inspection, Consultants |
| | Architectural artifacts/Cultural heritage | On site visual assessment | Full supervision by site supervising engineer during excavation works; daily supervision of cultural heritage expert. | During excavation works for foundations | To prevent degradation of potential archeologically important artifacts | Part of the supervising engineer and contractor cost | Supervising site engineer. Municipality, Inspection |
| | Information sharing and Grievance redress | Construction site and/or nearby and buildings which facades will be refurbished | In person, by mail, phone or other means (with records)<br>Evidence of GRM | Prior to beginning of construction works (min 2 weeks) | Minimize nuisance to local population, give opportunity for questions and feedback | | Information available on accessible place |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Construction site. Nearby settlement and buildings | Evidence of GRM information available on accessible place Evidence of grievance log and timely response/resolution of feedback and complaints | Throughout the duration of the sub-project | Ensure that questions and grievances are addressed in a timely manner | | Evidence of grievance log and timely response/resolution of feedback and complaints |
| | Disruption of Public Utilities | On site and on roads | Visual observation and potential complain from the public | Daily checking the water pipelines, waste-water sewage, other cables | To prevent public utilities disruption | Part of the regular contractor costs | Supervising engineer costs, Inspection, Consultants |
| During activity **supervision** | Waste management | On site | Visual report from supervision. | Control after completion of the activity. | To make sure the wasted material is treated properly based on the respective law | - | Contractor, Supervisor of the construction works |
| | | | | | | | |

# X. CONCLUSION

This action envisages the improvement of the walkability and public spaces. The project is intended to intervene in four alleys which are not continuous and have the entrance from Mihal Komneno street. The alleys are on a considerable slope as they are part of the hill where the Mangalem neighborhood was built. The alleys will be paved with existing cobblestones referring to the existing traditional condition. The entrance part of the northern alley will be restored by removing the unsuitable concrete elements and by constructing the side curb with suitable natural stone or with cave stone worked according to the traditional method. The unpaved parts of the alleys will be clad with the second type of traditional cobblestone as are the existing tracks.

This area has a highly significant strategic location for the image of the city and its upgrading will ensure consistency of authentic patterns and rehabilitates pieces throughout the historic center. The project will allow a significant refurbishment of the street with pedestrian-friendly improvements to ensure pedestrian safety and restore visual integrity, both considering the horizontal and vertical components of the public realm.

Key environmental significant negative impacts during construction phase will arise from waste handling and management, increase on air pollutions and noise. During operational phase, most of the impact will be positive, such as increase of real estate value of the area, increase the number of businesses operating in the area, etc.

The assessment also found that the Project is unlikely to cause any major social impacts. The Project does not involve any physical and economic displacement of families. The positive social impacts identified include employment and business opportunities for the local people. On the other hand, the possible negative impacts include risks of injuries and accidents to workers and members of the public; disturbance from noise and vibration due to construction activities, among others. Most of the adverse impacts are short-term or temporary and will be more felt during the construction phase of the project. However, most of them can be mitigated with appropriate mitigation measures built in as part of the Project planning process.

Environmental monitoring is essential to track and sustain the effectiveness of the mitigation measures proposed in this report. An environmental monitoring plan has been prepared as part of the ESMP, to be used during the implementation of the proposed project. The focus areas of monitoring cover air, noise, water, waste, occupational health and safety as well as local employment and economy. The burden of mitigation largely lies with the Project Contractor under supervision by the ADF.

All potential adverse impacts are litigable when measures proposed (Chapter 7) are implemented, in which case benefits of this project to the municipality of Berat would by far outweigh potential negative effect.

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