

**ENVIRONMENTAL and SOCIAL MANAGEMENT PLAN (ESMP)**  
**for ASBESTOS WASTE from**  
**REHABILITATION of the SUB-SECTOR 'R5' in DUKAGJINI**

**Prepared under**  
**REHABILITATION WORKS IN THE RADONIQI-DUKAGJINI IRRIGATION**  
**SCHEME (Contract No. KARP-W-21.1)**

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## ABBREVIATIONS

AC	Asbestos cement
ACM	Asbestos containing material
ARDP	Agriculture and Rural Development Project
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EC	European Commission
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
MAFRD	Ministry of Agriculture Forestry and Rural Development
MESPI	Ministry of Environment Spatial Planning and Infrastructure
MLSW	Ministry of Labor and Social Welfare
PE	Polyethylene
PIU	Project Implementation Unit
RIC	Regional Irrigation Company
WB	World Bank

## 1. INTRODUCTION

The Kosovo Agriculture and Rural Development Project (KARDP), credited by the World Bank (Ref Number 60170 XK) and implemented by the Ministry of Agriculture, Forestry and Rural Development (MAFRD) in Kosovo, supports implementation of the sub-component ‘Rehabilitation Works in the Radoniqi-Dukagjini Irrigation Scheme’ to enhance and modernize the irrigation capacities and services provided by the Regional Irrigation Company ‘Radoniqi-Dukagjini’.

This Environmental and Social Management Plan (ESMP) has been prepared by ‘XËRXA’ NPT & ‘GASHI ING’ Shpk (the Contractor), supported by the ARDP PIU, in accordance with the ARDP Environmental and Social Management Framework (ESMF) for the activities to be carried out under the sub-component. The ESMP is to highlight the asbestos waste material that might be encountered during the implementation of the project for rehabilitation of the ‘Radoniqi-Dukagjini’ irrigation system, at the Sub-system ‘R5’ to identify and document procedures for asbestos risks and safety that must be conducted to minimize exposure of workers if they come into contact with asbestos containing materials (ACM) in the workplace.

The paper sets out how asbestos will be managed in order to prevent health risk of people who may come into contact with it. It is a document to assist the Contractor in complying with legislative requirements and duty of care to its employees and others who may be affected by its undertaking including the general public.

To ensure compliance with the national environmental and other regulations, and WB operational policies, this ESMP for asbestos waste is required for the Irrigation System ‘Radoniqi-Dukagjini’ activities at the Sub-system ‘R5’.

The Contractor shall ensure that mitigation measures are strong enough to protect workers and people on the site from asbestos short- and medium-term adverse impacts, that the site has some sort of control of access, and can be an environmentally and socially sound protection mechanism until the issue is sorted out and a final disposal is available. In the meantime, the project will continue discussions with the MESPI in order to find a long-term solution for asbestos waste.

### OBJECTIVES AND SCOPE

The objective of this assignment is to develop the ESMP for asbestos waste that will be based on the environmental legislation in force in Kosovo, together with the requirements set forth in the World Bank safeguard policies that are triggered for this project namely Operational Policy OP 4.01 on Environmental Assessment.

The ESMP aims to highlight the measures necessary to ensure that asbestos containing materials present isolated during the activities within the irrigation project at the Sub-system ‘R5’ do not present a health risk to workers, employees, contractors and others.

This ESMP shall govern the removal, disturbance, handling, cutting, and disposal of asbestos cement (AC) pipe and other asbestos containing materials (ACM). Any buried pipe typically containing approximately 15 to 20 percent chrysotile and crocidolite asbestos, is considered to be ACM. The material is classified as non-friable unless broken, at which time its classification changes to friable ACM.

It is the Contractor's responsibility that for the removal and/or disturbance of this material to follow strict health and safety standard requirements.

This project requires workers with specialized training using wet work procedures to cut and remove AC pipe, AC pipe joints, valves (any type) containing ACM, and surrounding soils containing ACM.

## 2. PROJECT OVERVIEW

### The overview of the situation in the 'Radoniqi-Dukagjini' Irrigation System

This project of irrigation system 'Radoniqi-Dukagjini', covers two separate irrigation schemes, which together represents the regional system RIC Radoniqi-Dukagjini. The 'Radoniqi' irrigation scheme which was constructed in '80s, and the 'Dukagjini' irrigation scheme which was constructed in '60s, functions as one integral irrigation system.

The project area covers the part from Gjakova to the Prizren site and is in a size of approximately 15000 hectares. It is to support the modernization of the irrigation system and to significantly increase water use efficiency through the introduction of water saving technologies, on the basis of a sustainable technical, social and institutional design. The purpose is a sustainable increase of agricultural production and productivity in the irrigation area. Water for irrigation is provided to farmers during a period of five months using sprinkler technology. In-field equipment is owned by the farmers.

As it is the case for all irrigation system in the Kosovo, the 'Radoniqi-Dukagjini' scheme suffer from ageing pipes, pumps and canals; backlog in maintenance; unavailability of critical spare parts. However, scope of the irrigation project is not to replace all irrigation pipes but only those which are damaged and get damaged during the rehabilitation works.

In the frame of the project for the Rehabilitation Works in the 'Radoniqi-Dukagjini' Irrigation Scheme, the Feasibility Study with the Stakeholder Engagement Plan was prepared in November 2018.

The environmental aspects are regulated as per ARDP and the MAFRD Environmental and Social Management Framework (2017 updated in April 2021). In accordance with this ESMF, the project is classified as a Category B according to the Environmental and Social Screening therefore the Environmental Social Impact Assessment (ESIA) was prepared and disclosed for the public during May 2020.

In July 2020 it is prepared also the 'Construction Supervision and Quality Control Plan for 'Radoniqi-Dukagjini irrigation scheme' for the controls and tests to be carried out by the Contractor.

In July 2021 the Contactor prepared the ESMP for asbestos waste for the irrigation project 'Radoniqi-Dukagjini' to cover the locations planned for rehabilitation.

## The overview of the situation in the Dukagjini irrigation scheme - Sub-system 'R5'

The Dukagjini irrigation scheme is located in the municipality of Prizren and the water is captured directly from River Lumbardhi i Prizrenit. The Dukagjini irrigation scheme is partially traditional partially modern irrigation system. The system is comprised of two sub-systems: Sub-system "R" and Sub-system "D". The first one, subsystem "R" with area of 3,500 hectares is located in the upper part of the scheme. The second subsystem "D" with area of 1,500 ha is located in the lower part of the scheme.

For the intake structure for Sub-system 'R', reconstruction was carried out few years ago, but the current condition of the mechanical equipment is rather poor, so a complete replacement of the mechanical equipment is proposed. And for the intake structure of sub-system 'D', complete replacement of the mechanical equipment should be carried out also and rehabilitation of the intake structure as well.

Over the years the Dukagjini irrigation scheme was neglected, also here is the urbanization of the town of Prizren that at parts overlaps with the irrigation system are the main problems and reasons of the poor present state of this scheme.

Regarding the main canals as crucial part of the irrigation system for the both subsystems (R and D) over the years are partially adjusted to the new build out of the town i.e. canals was closed and in some parts converted into pipelines. The remaining parts that were left open and exposed to impact of the people of Prizren are the ones for which is elaborated a technical solution.

For the irrigation networks of the both subsystems is foreseen replacement of the not functional hydro mechanical equipment (valves, air valves, outlets) having in mind the excluded areas of the subsystems due to the urbanization and the construction of the highway Pristina – Tirana.

This ESMP has been prepared by the Contactor for rehabilitation/reconstruction activities to be carried out in the RIC 'Radoniqi-Dukagjini' irrigation system- Dukagjini scheme -Sector 'R5' in Prizren municipality.

## Short description of the subproject

The Dukagjini irrigation scheme was constructed in 1963 it is located in the center part of the municipality encroached by the town of Prizren.

The scheme does not have an accumulation reservoir. It derives water from River Prizren before the river crosses the city of Prizren, and therefore the quality is good for distribution to the fields (with the exception of a limited area of about 150 - 250 hectares that derives water by means of a weir after Prizren). The scheme is comprised of two subsystems: Sub-system 'R' and Sub-system 'D'.

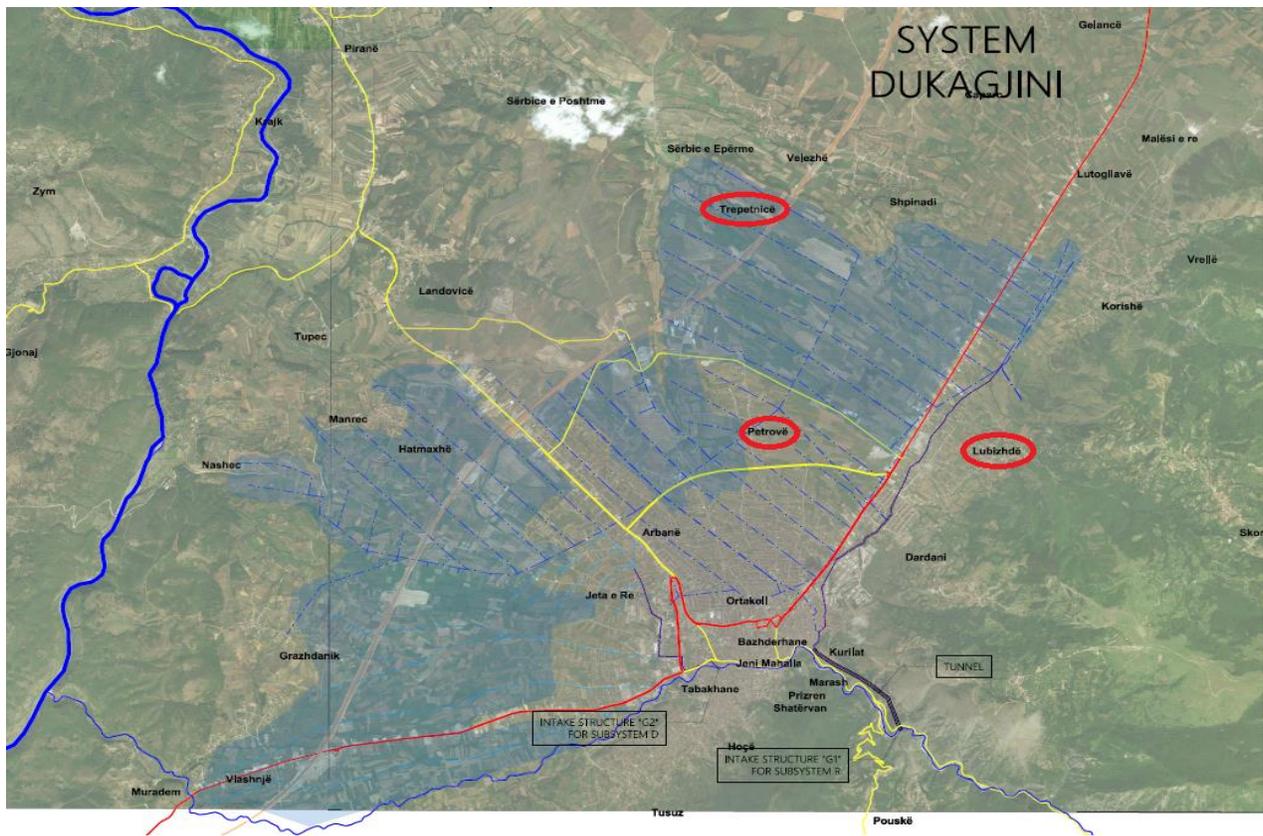
The first one, Sub-system 'R' with area of 3,500 hectares is located in the upper part of the scheme. This part of the irrigation network is consist of asbestos cement pipes network while the farmers irrigate by gravity or using sprinklers.

The second Sub-system 'D' with area of 1,500 ha is located in the lower part of the scheme. It consists of an open canal network which suffers of poor maintenance and is partly used to deposit urban waste.

General problem with the both subsystems is the uncontrolled urbanization in the irrigated areas. There are new buildings built in what were once peri-urban rural areas and all these buildings were legalized and now there is no chance that portion of land to be converted back to agriculture. Sustainability and future improvements of both sub schemes are threatened by high costs, poor maintenance and urbanization.

In the Dukagjini irrigation scheme due to the uncontrolled development of the Prizren town, the R3 and R4 subsectors are not useful to be rehabilitate, therefore the highest priority is given to rehabilitate the Sub-sector 'R5' which activity will cover area form 500 ha under the irrigation.

The farmers of these areas, in the absence of irrigation, have planted mainly wheat, the wheat variety that does not need irrigation. After the improvement of irrigation in these area, it is expected that these farmers will diversify the planted crops and instead of wheat they will be able to plant more profitable crops which are requested in export (vegetables-peppers, soft fruits-raspberries, MAPs, etc.



**Figure 1. Dukagjini Irrigation Scheme –Sub-systems 'R' and 'D'**

The rehabilitation/reconstruction works will be supervised by a Contractor's engineer for this type of works, project supervisor, RIC Radoniqi-Dukagjini, ARDP/MAFRD, as well as by the inspectorates of the Municipality of Prizren and the Ministry of Environment Spatial Planning and Infrastructure.

However, as environmental and social safeguards instruments are considered an integral and important component in the implementation of World Bank-financed projects, monitoring and reporting will be performed as required.

The Contractor and Supervisor should be fully aware of the provisions of the ESMP and its implementation.

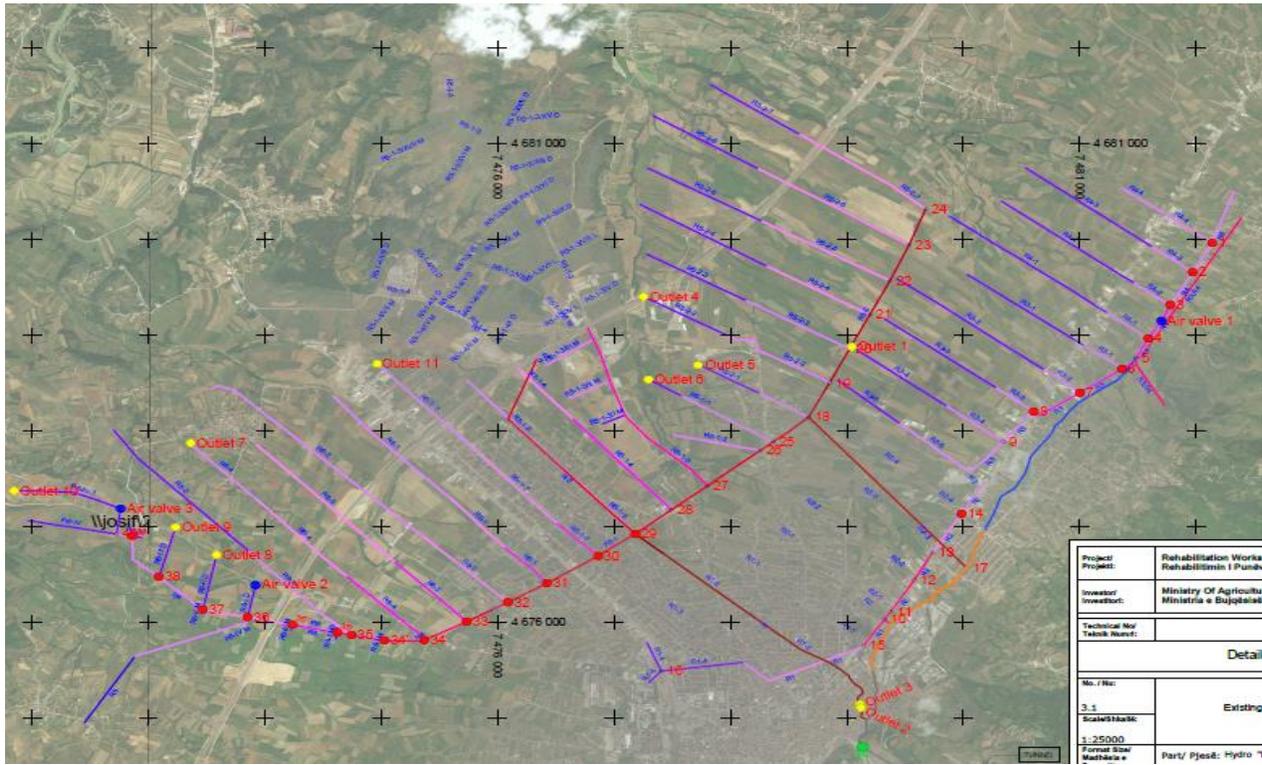


Figure 2. Dukagjini Irrigation Scheme with expansion of urbanization in the town of Prizren

Hydro-mechanical equipment:

The necessary equipment for normal operation of the irrigation network is as follows:

- Valves, fittings and manholes with service valves;
- Diversion manhole
- Junctions on secondary network in sector R5

Diversion manholes and junction nodes:

Diversion manholes are one of the most important structures in this subsystem, because they regulate and control the distribution of water to the secondary network of the Dukagjini irrigation scheme.

Currently the manholes are placed on concrete base of lean concrete covered with cast iron with lock and their reinforcement of the manhole will be according reinforcement plans.

The planned rehabilitation will be in the diversion manholes located in three different villages of the R5 subsector. Several types of diversion manholes are foreseen depending on the diameter.

Fittings are proposed as fitting with mobile flanges of ductile iron, internally and externally protected with blue epoxy protective layer in accordance with the standard requirements.

The control valve will be flat valve with manual drive and body and bonnet of ductile iron, with quality certificate, epoxy powder coated inside and outside, wedge of ductile iron encapsulated with vulcanized with integrated slider from polyamide to reduce friction

Every diversion manholes, is equipped with valves and fittings for opening and closing, i.e. for operation and control of each secondary pipeline.

The rehabilitation of the junctions for secondary network is also important, because through them the water is distributed to the end users.

In the diversion manholes there are mechanical valves with all necessary equipment.

Depending on their diameter and location, some of them are placed in a reinforced concrete manhole.

Most of the junctions that are subject to rehabilitation (junctions: 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 29), are foreseen in ground and are operated by telescopic extension spindle fittings.

The operation of the secondary and tertiary pipelines is conducted from the diversion manholes and junction nodes located in the network.

### Planned works

Rehabilitation activities of the irrigation Sub-system R, will improve the performance of the Dukagjini irrigation system in Prizren region. In cooperation with the client and the water users, a full inventory of the equipment that needs replacing was completed, so that the irrigation system can function properly.

The following rehabilitation/reconstruction activities are planned to be undertaken:

- Rehabilitation of concrete manholes for the Sub-system 'R5' and replacement of hydro mechanical equipment. The diversion manholes are in a very bad conditions, some of them un-functional and the only way for this subsystem to functionalize is their reconstruction/rehabilitation.
- The project foresees the replacement of all valves and fittings that are in poor condition or not operational.
- The junctions with existing fittings (junctions: 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 29, which are out of function will be replaced with new fittings for normal operation of this subsystem.

### Potential Environmental Impacts

The environmental impacts of the subproject are expected to be manageable, temporary and local impact, as they relate to the overall rehabilitation/reconstruction activities at the previously known and used site.

The main potential impacts arising from rehabilitation are as follows:

- Dust and noise due to excavation, demolition and construction;
- Waste from manhole demolition and reconstruction/rehabilitation: the construction activities will generate waste from replacing old concrete manholes with new ones
- Hazardous waste is expected to be generated from potentially broken asbestos pipes. **Isolated asbestos pipes will be temporarily stored in purchased metallic containers until the Kosovo**

**government / Ministry of Environment Spatial Planning and Infrastructure provides a disposal site for permanent disposal.**

- Traffic deterioration;

To avoid this impact it should follow the best building practices and applied locally and should be assigned to the ESMP.

### The asbestos in the Irrigation System 'Radoniqi-Dukagjini' – Sub-sector 'R5'

Infrastructure of the irrigation system Dukagjini, in total has a length of 109 km. It is quite old, and almost the whole is built of pipes of cement-asbestos material of different sizes (A, B, C). Therefore, it is expected that more asbestos waste will be generated from this part of the investment.

During the rehabilitation of the irrigation system, at the Sub-sector 'R5', there is a potential to disturb the existing irrigation pipes. The replacement of obsolete metal joints, the irrigation pipes may be damaged. Those pipes will be replaced with new pipes made of PE material.

Asbestos cement (AC) pipes are non-friable asbestos-containing materials (ACM) and does not represent a significant hazard to public health in normal use. However, repair, rehabilitation and removal of AC pipes involve cutting, polishing, and demolition can release asbestos fibers into the air, posing risk to public health.

The project requires workers with specialized training using wet work procedures to cut and remove AC pipe, AC pipe joints, valves (any type) containing ACM, and surrounding soils containing ACM.

AC pipe debris and asbestos-contaminated items shall be properly double bagged; labeled; loaded in a fully enclosed, lined, transported and disposed in compliance with the legal requirements.

The location for the temporary disposal of asbestos waste is proposed by RIC Radoniqi-Dukagjini and the activity is approved by the MESPI. This location is in Gjakova municipality and is under ownership of RIC Radoniqi-Dukagjini.

The two cargo metallic containers that will be purchased by the project, will enable the safe temporary storage of the asbestos waste isolated from the project activities. It is expected that the Government of Kosovo soon, will create conditions and find location for permanent storage of the asbestos waste and other hazardous waste.

### 3. REGULATORY CONTEXT FOR ASBESTOS CONTAINING MATERIALS

#### European Union legislation on asbestos

According to European legislation, marketing and use of substances or products containing asbestos were banned in January 2005 (Directive 1999/77/EC). Starting from April 15, 2006, more compelling measures to protect workers from exposure to asbestos fibers entered into force Directive 2003/18/EC, followed by Directive 2009/148/CE. Even though there has been legislative progress on prevention of exposure to asbestos, in the storage, demolition and maintenance works, materials containing asbestos still exist.

#### Kosovo legislation on asbestos

Waste management in the Republic of Kosovo is regulated through a legal framework which is harmonized with European legislation, namely with EU directives and regulations that regulate the waste sector.

The main law that regulates in details the waste management is the *Law No.04/L-060 on Waste*. It defines and regulates waste planning and management, conditions for waste collection, transportation, treatment, storage and disposal, types and classification of waste, the responsibilities of legal and natural persons regarding waste management, conditions and procedures for licenses and permits for waste management, sanctions for non-compliance with legal provisions and other issues related to waste. Article 38, 47 and 71 of this law defines the asbestos as specific waste and sets the rules for management and the infractions of waste containing asbestos materials. The legal framework for waste management comprises a considerable number of other laws and sector laws which indirectly regulate the waste management, such as: *Law No.03/L-025 on Environmental Protection*, *Law No. 03/L-040 on Local Self-Government* -Article 17 defines the waste management as full and exclusive competence of the municipalities.

The *AI (MEE)-No.01/2020 on Waste Management Containing Asbestos* sets out the measures needed to manage the prevention and reduction of the negative impact of asbestos containing waste. The *AI (GRK)-No.03/2021 on Administration of Hazardous Wastes* is partly in line with Directive 2008/98/EC of the European Parliament and of the Council and it defines the rules of collection, sorting, storage, transportation, treatment, disposal and packaging of hazardous waste, including asbestos. This legislation in brief, defines asbestos (and asbestos containing material - ACM), declares it a hazardous substance and bans any new use, re-use or import of ACM into Republic of Kosovo.

The *Regulation (MLSW)-Nr.02/2021 on Workplace Risk Assessment* lays down the minimum requirements necessary for the protection of the employees from the risk *Regulation (MLSW)-No.07/2017 on the Protection of Employees from Risk Related to Exposure to Asbestos at Work* related to exposure asbestos at work. The requirements of the Regulation shall apply to activities in which employees, during the work, are or are likely to be exposed to dust arising from either or both asbestos and materials containing asbestos. This Regulation sets the measures for demolition works, safety information on handling asbestos waste, exposure limit values, training for workers and labeling of asbestos waste.

## 4. TYPE OF ASBESTOS CONTAINING MATERIALS

### Distinctions and products containing asbestos

Asbestos has been used in the manufacturing of various products. These products can be found in either friable or non-friable form. All products are also known as asbestos containing material. (ACM)

#### i. Friable asbestos

Friable asbestos products are generally quite loose and, when dry, can be crumbled into fine material or dust with light pressure, such as crushing with hands. These products usually contain high levels of asbestos (up to 100% in some cases), which is loosely held in the product and asbestos fibres can be easily released into the air.

If disturbed, friable asbestos products are dangerous because the asbestos fibres can get into the air very easily, and may be inhaled by people living or working in the area.

Non-friable asbestos products that have been damaged or badly weathered (including hail damage), may also become friable.

Friable asbestos products have been commonly used in commercial and industrial settings since the late 1800's for fireproofing, soundproofing and insulation. Some friable products were also used in houses and may still be found in houses built before 1990. Examples of friable asbestos-containing material include: pipe lagging, boiler insulation, fire retardant material on steel work, sprayed insulation.

#### ii. Non-friable (bonded) asbestos

Non-friable asbestos products are made from a bonding compound (such as cement) mixed with a small proportion (usually less than 15%) of asbestos. Non-friable asbestos products are solid, rigid and non-friable, and cannot be crumbled, pulverized or reduced to powder by hand pressure.

The asbestos fibres are tightly bound in the product and are not normally released into the air. Common names for non-friable asbestos cement products are 'fibro', 'asbestos cement' and 'AC sheeting'.

When they're in good condition, non-friable asbestos products do not normally release any asbestos fibres into the air. They are considered a very low risk for people who are in contact with them, as long as appropriate safety precautions are used when they are disturbed. However, when non-friable asbestos products are damaged or badly weathered (including hail damage), they may become friable.

Examples of non-friable ACM include: asbestos cement pipes, asbestos cement sheet, moulded products, bitumen-based water proofing, vinyl floor tiles. Examples of non-friable ACM that can become friable as

a result of a work process include: asbestos cement sheeting that has been crushed, asbestos cement sheeting that has deteriorated from long-term exposure to a chemical mist.

### Asbestos cement pipes

Asbestos cement products account for approximately 90% of all asbestos containing products worldwide.

Asbestos cement pipes are used in a variety of applications. AC pressure pipes are used primarily for the distribution of potable water, as well as for sewer force mains and industrial effluent and process piping.

AC non-pressure pipes are used for sanitary and storm drainage systems, casings for electric cables and for duct work.

In all critical parameters, the evidence weighs heavily in favor of asbestos-cement over competitive products such as polyvinyl chloride (PVC) and ductile iron.

### Asbestos cement water pipes

Asbestos cement pipes have been widely used and are present in water networks throughout Kosovo and the world, including the Europe, the United Kingdom, United States, Canada, and Australia. In most countries asbestos cement pipes were used widely in the water industry until the mid-1980's when they were restricted or banned from use.

From numerous studies, these appears to be no concern for the health of consumers receiving water and no programs is to specifically replace asbestos cement pipes for this reason.

However, should the pipes become damaged with time, or during a natural weathering process, their handling, disposal or replacement could release asbestos fibers and cause health risks.

In some developed countries, the effects of asbestos in the water supply have been studied extensively and results shows that there is no elevated risk of asbestos-related diseases from drinking or using water delivered through asbestos cement pipe network. They pose no health risk to the water supply and that maintenance, replacement and disposal of all pipes and infrastructure, which may contain asbestos, is carried out safely. This finding is consistent across the World Health Organization (WHO).

Asbestos cement pipes in good condition should not be disturbed. However, if removal is required then the pipes should be safely removed and disposed of as asbestos waste.

## 5. CONTROLLING THE RISKS - Disposal of Asbestos Waste Materials

Although Kosovo has drafted legislation on asbestos, it has not solved the problem of its disposal.

Actually, there is very little information available for the asbestos situation in Kosovo, although the quantity of asbestos materials used in the past were quite significant.

### Landfills in Kosovo

There is no hazardous waste landfill available in Kosovo. Many companies dealing with asbestos waste materials are in difficult situation trying to find their best solutions by storing wrapped/packed asbestos waste materials in different warehouses until the asbestos waste will be solved by the government.

The condition of municipal landfills throughout Kosovo operates in difficult conditions too, they are overfilled and many of them leaking.

Hazardous materials and waste, currently are stored in poor conditions scattered in many places throughout Kosovo, mainly in the industrial facilities, where they are located, have been used or produced. There is no place suitable for storage of hazardous waste, although there is a plan to build it for temporary storage.

Currently, there are 4 regional waste landfills (Prizren, Pristina, Podujeva, Gjilan). These landfill types are not approved for the disposal of construction waste and/or hazardous waste like asbestos cement materials. They operate by the municipalities or privately.

### Prizren Landfill

Regional landfill of Prizren covers the territory where the irrigation project is implemented. It serves the municipalities for Prizren, Gjakova, Rahovec, Malisheva, Suhareka, Dragash, Mamusha. The designed life time is 15 years with the total capacity of 2.6 million m<sup>3</sup> and monthly capacity of 3,500,000 tons. This landfill is located close to the town of Prizren and it serves a catchment of approximately 317,000 inhabitants. The landfill covers a surface area of 24 ha. It was constructed under an European Agency for Reconstruction grant of € 2.6 million. Prizren landfill began operation (the receipt of waste) in the middle of 2004. The active area is lined with a clay liner and a High-Density Polyethylene (HDPE) liner in order to meet sanitary landfill standards. Some small sections of the HDPE liner have been cut away and removed. Leachate is collected and conveyed by gravity to a leachate lagoon (3,000 m). In this landfill, the water pumping system does not work, while water from the landfill and surface waters can mix, causing environmental hazard. Waste compression is not done according to standards. (AMMK, 2008).

## Landfill waste acceptance criteria

The AI (GRK)-No.08/2017 of Waste Landfills Management sets the criteria and procedures for the acceptance of waste at landfills. Article 9 sets the type of the wastes that are accepted in the municipal landfills and different classes of the waste (municipal waste; commercial and industrial, relevant with industrial housing waste which are known as nonhazardous waste; inert waste (soil) for landfill operation and closure measures. The inert waste is accepted, treated for the use of disposal at the landfill and disposed of, only if, inert waste does not exceed the limit values defined with the law.

According to this AI, the hazardous waste may be disposed in non-hazardous waste landfills, if the specific requirement is fulfilled by the landfill and with the permit of the Ministry of Environment. These wastes should be landfilled in a separate cell of a landfill for nonhazardous waste, if the cell is sufficiently self-contained. But, as the landfill conditions are poor, it is not permitted for such landfilling method.

## 6. ABATEMENT ASBESTOS CONTAINING MATERIALS (ACM)

### Avoiding Fiber Exposure

The Contractor shall remove, seal, transport and dispose of all impacted ACM in compliance with Regulation (MLSW)-No.07/2017 on the Protection of Employees from Risk Related to Exposure to Asbestos at Work and other legislation in force. To avoid fiber exposure there are general rules for abatement of ACM.

In the case of certain activities such as demolition, asbestos removal work, repairing and maintenance, the employer shall determine the measures intended to ensure protection of the workers while they are engaged in such activities, in particular the following:

- workers shall be issued with suitable respiratory and other personal protective equipment, which must be worn;
- warning signs shall be put up; and
- the spread of dust arising from asbestos or materials containing asbestos outside the premises or site of action shall be prevented.

The workers and/or their representatives in the undertaking or establishment shall be consulted on these measures before the activities concerned are carried out.

The general approach while handling this ACM is that Contractor shall avoid crushing/destroying pipes and any other asbestos materials, and deposit them in an organized manner on the approved site.

## Tools and equipment

Equipment used to cut, break, or otherwise disturb AC pipe and associated ACM may include, but are not limited to: wet-cutting saws, saws equipped with point of cut ventilator (saw equipped with a water mister) or enclosures with filtered exhaust air, snap cutters, manual field lathes, and pressure and non-pressure tapping devices.

Certain equipment must not be used on asbestos. It is therefore important to select the correct equipment to minimize the generation of airborne asbestos.

Unacceptable Work Practices are: Dry-abrasive disk tools; disk sanders; carbide-tipped cutting blades; rasps; shell cutters; drills; and hammer and chisels.

## Personal Protective Equipment (PPE)

All work which will or may disturb ACM shall be accomplished utilizing, as a minimum, disposal suits with protective head cover, gloves, boots, eye protection and proper respiratory protection.



Figure 1: Example for personal protective equipment: clothing, full mask and FFP3 respiratory masks

Typically, different types of respiratory masks exist on the market. For the abatement of weakly bound asbestos materials full face respiratory masks are recommended. For handling of strongly bound asbestos containing materials such as asbestos cement the utilization of FFP3 'half' masks are recommended. The filter class for respiratory masks is described in the European Standard EN 149. A summary is presented below:

Table 3: Type of the filters which can be used during asbestos waste material activities

Filter Class	Filter penetration limit (at 95 L/min air flow)	Inward leakage
FFP1	Filters at least 80% of airborne particles	<22%
FFP2	Filters at least 94% of airborne particles	<8%
FFP3	Filters at least 99% of airborne particles	<2%

The Contractor shall provide hard hats and/or other protection as required for job conditions for safety of the workers. Disposal suits consisting of material impenetrable by asbestos fibers shall be provided to all workers. Workers shall be provided protective clothing from the time of first disturbance of ACM until final cleanup is completed.

### Temporary storage of asbestos

Stockpiling of construction material should be avoided if possible. If not, asbestos should be stored properly on the construction site, and protected from weathering.

Asbestos waste material should be safely disposed of on-site by burying it, immobilized by encapsulation with cement or other acceptable material and covering the surface with soils or gravel, in the meantime it can be stored in a safe place, in locked container, until a long-term settlement is reached by the authorities.

The Contractor shall be responsible for site safety and for taking all necessary precautions to protect the workers, personnel, and the public from asbestos exposure and/or any injury.

The Contractor shall be responsible for maintaining the integrity of the work area.

### Handling during transport

In order to minimize the risk of exposure to asbestos, the following management measures should be implemented during handling and the transport of asbestos:

- All asbestos loads should be wetted with water;
- All asbestos loads must be covered during transport;
- All vehicles and machinery must ensure that closed doors are used with loads during transport from the place of load to the temporary depot.
- All personnel should wear appropriate PPE when dealing with asbestos waste from identification, pipe extraction, transportation to disposal;
- Loads should be handled, unloaded and placed carefully to avoid packaging damage and dust generation.

The Contractor shall be responsible for the transport and disposal of ACM to a duly location permitted to accept asbestos waste. Waste register shall be used to transport the AC pipes from the project site to the disposal site. The Contractor shall sign the form with the name of the owner/generator of the AC pipes. The Contractor shall be responsible for obtaining and coordinating waste disposal authorization.

## The labelling

Asbestos labels play an important role in the safety management of asbestos waste.

Asbestos waste and raw asbestos must be labelled with the 'Asbestos warning label'. This must be firmly stuck (or directly printed) onto the outer packaging. The warning label is shown below.

The dimensions in millimeters of the label referred to in Figure (2) shall be those shown on the diagram, except those larger measurements may be used, but in that case the dimension indicated as 'h' on the diagram shall be 40% of the dimension indicated as 'H'.

Asbestos labels must be used on: (i) raw asbestos, (ii) asbestos waste and (iii) products containing asbestos, including used protective clothing.

Where the label is printed directly onto a product, a single-color contrasting with the background color is be used.

The label shall be clearly and indelibly printed so that the words in the lower half of the label can be easily read, and those words shall be printed in black or white.



Figure 1 – Example of label for asbestos

## Health aspects of exposure to airborne asbestos fibers

Employer shall ensure health monitoring to workers exposed to the asbestos when carrying out asbestos removal work or asbestos-related works.

Asbestos is a known carcinogen. The inhalation of asbestos fibers is known to cause mesothelioma, asbestosis and lung cancer (bronchial carcinoma and gastro-intestinal carcinoma).

- Malignant mesothelioma is a cancer of the outer covering of the lung (the pleura) or the abdominal cavity (the peritoneum). It is usually fatal.
- Mesothelioma is caused by the inhalation of needle-like asbestos fibers deep into the lungs where they can damage mesothelial cells, potentially resulting in cancer.
- The latency period is generally between 35 and 40 years, but it may be longer, and the disease is very difficult to detect prior to the onset of illness.
- Mesothelioma was once rare, but its incidence is increasing throughout the industrial world as a result of past exposures to asbestos. Australia has the highest incidence rate in the world.
- Asbestosis is a form of lung disease (pneumoconiosis) directly caused by inhaling asbestos fibers, causing a scarring (fibrosis) of the lung tissue which decreases the ability of the lungs to transfer oxygen to the blood. The latency period of asbestosis is generally between 15 and 25 years.
- Lung cancer has been shown to be caused by all types of asbestos. The average latency period of the disease, from the first exposure to asbestos, ranges from 20 to 30 years. Lung cancer symptoms are rarely felt until the disease has developed to an advanced stage.

Asbestos poses a risk to health by inhalation whenever asbestos fibers become airborne and people are exposed to these fibers. Accordingly, exposure should be prevented and the 0.1 fibers/mL should never be exceeded.

ACM can release asbestos fibers into the air whenever they are disturbed, especially during the following activities:

- any direct action on ACM, such as drilling, boring, cutting, filing, brushing, grinding, sanding, breaking, smashing or blowing with compressed air;
- the maintenance or servicing of materials from, plants, equipment or workplaces, vehicles; or
- the renovation or demolition of buildings containing ACM.

Non-friable ACM that has been subjected to extensive weathering or deterioration, also has a higher potential to release asbestos fibers into the air.

## Recording

The entire identified amount of asbestos waste removed during the rehabilitation works must be mapped in GPS, recorded in an asbestos register and reported to ARDP/MAFRD. The information will be shared with MESPI.

After inspecting all declared loads of waste, the responsible person of the company will accept the load in the temporary landfill, asbestos loads should be introduced in asbestos register.

Details required for accepted asbestos loads include: Date; Name of staff members; Transport Vehicle Registration No; Source (location) of asbestos pipe extraction; Quantity, length and weight of asbestos pipes. Format for Asbestos register is provided in the ANNEX 1 of this ESMP.

Any asbestos-related incidents should also be recorded in the asbestos register and the responsible local and central authorities informed.

The asbestos records must be kept in the Contractor's archive for a minimum period of 10 years even if this amount of asbestos is moved to an adequate landfill.

## Trainings

Employer shall provide appropriate training for workers on proper detection, inspection, treatment and disposal of asbestos materials. Such training must be provided at regular intervals and at no cost to the workers. Training should be undertaken by a qualified internal or external expert. The content of the training must be easily understandable for workers. It must enable them to acquire the necessary knowledge and skills in terms of prevention and safety. The training will include, but will not be limited to the following topics:

- the properties of asbestos and health effects;
- the products/materials that may contain asbestos; Common sources of asbestos waste; types, uses and likely presence of asbestos in the workplace;
- the operations that could result in asbestos exposure and the importance of preventive controls to minimize exposure;
- safe work practices, controls and protective equipment;
- the appropriate role, choice, selection, limitations and proper use of respiratory equipment;
- emergency procedures;
- decontamination procedures;
- waste disposal;
- medical examination requirements.

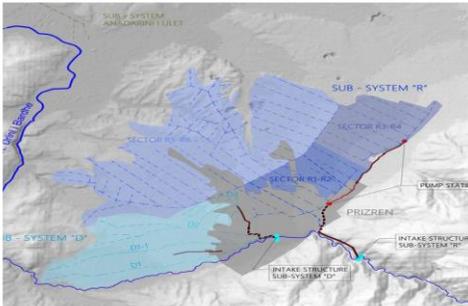
## 7. PUBLIC CONSULTATION

To fulfill disclosure requirements, the electronic copy of this draft ESMP was disclosed on the webpages of the ARDP and RIC Radoniqi-Dukagjini. Hard copy of the ESMP has been made available at PIU – ARDP office in Prishtina, the RIC Radoniqi-Dukagjini in Prizren office

Stakeholder consultations by the PIU, Contractors, consultant will remain an on-going exercise throughout the duration of the entire project.

## 8. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR ASBESTOS WASTE

### PART 1: GENERAL PROJECT AND SITE INFORMATION

<b>INSTITUTIONAL &amp; ADMINISTRATIVE</b>			
Country	<b>Republic of KOSOVO</b>		
Project title	Agriculture and Rural Development Project (KARDP) – Sub-project for Rehabilitation Works in the Radoniqi-Dukagjini Irrigation Scheme IDA  KARP-W-21.1		
Scope of project and activity	The specific Project purpose is a sustainable increase of agricultural production and productivity in the irrigation schemes of Dukagjini. So, the scope of the project is the rehabilitation works as specified in the BoQ and Project Desgn - Sub-system 'R5'.		
	<b>Project management</b>		
Institutional arrangements  (Name and contacts)	WB Task Team Leader Silvia Mauri	Agriculture and Rural Development Project (ARDP) Project Implementation Unit (PIU) Director: Arlinda Arenliu	Local Counterpart and/or Recipient  Regional Irrigation Company 'Radoniqi Dukagjini', Gjakova
	<b>Supervision</b>		
Implementation arrangements  (Name and contacts)	WB Safeguard Supervision Shpresa Kastrati  ARDP Safeguard Supervision Laura Gjakova	Supervisory engineering company Hydro Energo Engineering DOO, Skopje  Commission for technical acceptance of the subproject (MAFRD/ARDP)	Contactor: Joint venture 'Xërxa' NPT and 'Gashi ING' Shpk, Therande
<b>SITE DESCRIPTION</b>			
Name of site	<b>Dukagjini irrigation scheme – Sub-system 'R5'</b>		
Describe site location	Municipality: Prizren Village: Petrove, Lubizhde, Trepetnice,		

Who owns the land?	Farmer's private land.  Along the secondary and tertiary network, the RIC Radoniqi-Dukagjini has the right of servitude which gives the right of company to do rehabilitation, but with compensation of damages, if any.
Description of geographic, physical, biological, geological, hydrographic and socio-economic context	The municipality of Prizren is located in south-eastern Kosovo. It covers an area of approximately 640km <sup>2</sup> and includes Prizren town and 74 villages. Approximately 40% of the population lives in the rural areas. Thus, the agriculture sector remains one of the most important sources of employment and income in Prizren municipality. Other sources of economy are based on trade, construction and food processing - all private enterprises. Tourism is showing progress, and lately the rural tourism as well.  The subproject will extend to three villages of Prizren municipality: Petrove, Trepetnice and Lubizhde. The main works will occur in Petrove village, along the village road.
<b>LEGISLATION</b>	
Identify national & local legislation & permits that apply to project activity	<i>Law No.03/L-025 on Environmental Protection; Law No.04/L-147 on Waters of Kosovo; Law No.03/L-160 on Air Protection from Pollution; Law No.03/L-233 on Nature Protection; AI (GRK) No.08/2017 Of Landfills Management; Law No. 03/L-214 on Environmental Impact Assessment; AI (MESP)-No.01/2021 on the Environmental Authorization; Law No.02/L-102 on Noise Protection; Law No.04/L-110 on Construction; Law No.04/L-040 on Land Regulation; Law No.04 /L-060 on Waste; AI (MEE)-No.01/2020 on Waste Management Containing Asbestos; Regulation (MLSW)-No.07/2017 on the Protection of Employees from Risk Related to Exposure to Asbestos at Work; Regulation (MLSW) Nr.02/2021 on Workplace Risk Assessment; AI (GRK) - No.03/2021 on Administration of Hazardous Wastes; AI (MESP)-No.02/2017 for a List of Hazardous Waste According to the Origin; Law No.03/L-198 on the amending and supplementing of Law No.02/L-9 on Irrigation of Agricultural Lands; Law No.04/L-175 on the Inspectorate of Environment, Waters, Nature, Spatial Planning and Construction; Law No.07/L-006 on Preventing and Fighting the Covid-19 Pandemic in the Territory of Republic of Kosovo;</i>  Necessary permits from mentioned municipalities in accordance with relevant laws.
<b>PUBLIC CONSULTATION</b>	
Identify when / where the public consultation process took place	The ESMP will be published in on the ARDP and RIC Radoniqi-Dukagjini's websites, along with a call for comments, for at least 14 days. During this time, it will be made available to the public for comments and suggestions. A mailing address and an email address will be made available to the public to submit their comments. A hard copy of the ESMP will be made available to the public at the reception of RIC Radoniqi-Dukagjini's office in Prizren throughout the consultation period.  All comments, questions and suggestions will be addressed and the ESMP will be changed accordingly. The latest version of the ESMP will also include the public consultation report.
<b>INSTITUTIONAL CAPACITY BUILDING</b>	
Will there be any capacity building?	[x ] N or [ ]Y if Yes

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)				Cost		Institutional Responsibility		Comments (e.g. secondary impacts)
Phase	Issue	Mitigating Measure	Monitoring Measures	Install /Operate	Monitor	Install/ Operate	Monitor	
Identification	Identification of asbestos materials in the project activities (pipes for replacement and any other ACM)	<ul style="list-style-type: none"> <li>Fencing of the working area;</li> </ul>	Supervision by the engineers of the contracting company	10 €/ rehabilitation for each pipe junction	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company  PIU	
Rehabilitation	Generation of the dust emission that contain asbestos, from removing broken irrigation pipes	<ul style="list-style-type: none"> <li>Demolition debris shall be kept in controlled area and sprayed with water to reduce debris dust;</li> </ul>	Supervision by the engineers of the contracting company		Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company  PIU	
Rehabilitation	Threatened health of workers exposed to asbestos containing materials	<ul style="list-style-type: none"> <li>The training should be made available to all persons involved in rehabilitation working activities;</li> </ul>		Approximately 10 € per employee		Contractor Subcontractor Supervisor	Contractor (engaged expert) Supervisor PIU Inspectorate for Occupational Safety and Health	Impact on community and environment
Rehabilitation	Removal of asbestos pipes for replacement	<ul style="list-style-type: none"> <li>Sensitize workers on asbestos hazard and acceptable environmental and health practices;</li> <li>Workers should use adequate PPEs (disposable nose mask, gloves, overall, boot, eye goggles) to avoid exposure to asbestos dust;</li> </ul>	Supervision by the engineers of the contracting company	200 €/ unit	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company	

		<ul style="list-style-type: none"> <li>• All asbestos-containing waste material is to be wetted and placed in polyethylene bags (double-bagged) at least six (6.0) mil in thickness bearing the information/label;</li> <li>• Spraying with water before wrapping to prevent the spread of dust in the air;</li> </ul>						
Rehabilitation	Transport of the asbestos waste material to the designated location	<ul style="list-style-type: none"> <li>• Transport vehicles must meet regulatory specifications;</li> <li>• Transportation of asbestos waste is done in accordance to <i>Administrative Instruction (MEE) No.01/2020 on Waste Management Containing Asbestos – specifically referring to Article 8 “Transportation, storage or disposal of waste containing asbestos”.</i></li> <li>• Loads must be handled, unloaded and placed carefully to avoid damaging packaging and generation of dust in accordance to hazardous waste regulations;</li> <li>• Use of appropriate PPEs (disposable nose mask, gloves, overall, boots, eye goggles);</li> <li>• Transportation should be done by closed type truck;</li> <li>• Wash down vehicles and all other equipment after use.</li> </ul>	Supervision by the engineers of the contracting company	20 €/ km	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company	

Rehabilitation	Storage - Selection of the temporary location for storage of asbestos pipes	<ul style="list-style-type: none"> <li>Selected site should have authorization by MESPI;</li> <li>The space should be surrounded and marked on the signs for asbestos content;</li> <li>Removed asbestos should be properly stacked at a designated, demarcated (red tape) and restricted area on-site;</li> <li>Site should have an impermeable platform;</li> </ul>	Supervision by the engineers of the contracting company	10 €/ per meter of asbestos pipe  Cost for impermeable platform;	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company	
Rehabilitation	Disposal of Asbestos Containing Waste – Care for temporary area for asbestos pipes Continuous maintenance, care and supervision of asbestos pipes	<ul style="list-style-type: none"> <li>Fencing of the temporary area on the premises of the contracting company, reporting to the responsible institutions;</li> </ul>	Supervision by the engineers of the contracting company	500 €	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company  PIU	Impact on environment, workers, community health and safety
Rehabilitation	Temporarily storage of the asbestos waste pipes in the metallic, locked containers until the permanent solution is provided by the government authorities	<ul style="list-style-type: none"> <li>Records identifying exact location and quantities; The location of the pipes should be recorded on Geographic Information System (GIS)</li> <li>Monitor to ensure it remains undisturbed;</li> <li>Special precautions use to remove and discard AC pipe;</li> <li>Minimum requirements for management include:</li> </ul>	Supervision by the engineers of the contracting company	20000 € / per metallic locked container	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company  PIU	Impact on environment, workers, community health and safety

		<ul style="list-style-type: none"> <li>✓ an exclusion zone must be established during the unloading of asbestos;</li> <li>✓ all untrained personnel must remain outside the exclusion zone;</li> <li>✓ all asbestos loads should be wet down (with a fine mist) prior to unloading;</li> <li>✓ asbestos must be unloaded using either front end loader or excavator;</li> </ul>						
Social Impact - Occupational Health and Safety								
Rehabilitation	Worker health and safety	<ul style="list-style-type: none"> <li>• Provide training on Occupational Health and Safety Standards for employees – using training topics specified in this ESMP;</li> </ul>		Training: Cost for engaged trainer and Approximately 10€ per employee	Contracting company	Contracting company	Client (engaged expert), Inspectorate for Occupational Safety and Health MLSW	
Rehabilitation	Exposure to asbestos can cause serious health disease and implications	<ul style="list-style-type: none"> <li>• Wearing appropriate disposable PPE is mandatory - that includes coveralls or similar whole-body clothing, head coverings or hood, gloves and foot coverings, and adhere to decontamination procedures;</li> <li>• No one wearing a beard shall be permitted to wear a respirator</li> <li>• Following removal of PPE, personnel are to thoroughly clean their face, hands and fingernails with soapy water;</li> </ul>	Supervision by the engineers of the contracting company	100 €/ for PPE for each worker involved in activity with ACM	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company PIU	

Rehabilitation	Posting warning signs practices	<ul style="list-style-type: none"> <li>• Post warning signs bearing the following information: DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS;</li> </ul>	Supervision by the engineers of the contracting company	10 €/ for each sign	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company	
Rehabilitation	Incidents and Accidents Management	<ul style="list-style-type: none"> <li>• Any incident must be reported to the site manager immediately;</li> <li>• If a person is exposed to asbestos without the use of appropriate PPE the following decontamination procedure must be undertaken: <ul style="list-style-type: none"> <li>✓ immediately wet down the person with fine spray/mist of water;</li> <li>✓ the person must then walk to the nearest shower facility (if not, vehicles or machinery may be contaminated);</li> <li>✓ gently remove all contaminated clothing and place in a sealed bag; shower to remove all dust and asbestos fibres with particular focus on the hair, face, hands and fingernails; Change into clean clothing; and</li> <li>✓ the bag must be labelled with “Asbestos Waste” and disposed of appropriately;</li> </ul> </li> <li>• All personnel assisting with the decontamination procedure must wear, as a minimum, a P2 dust mask;</li> <li>• Incidents must be duly documented.</li> </ul>	Supervision by the engineers of the contracting company		Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company	

Operation	Record keeping practices	<ul style="list-style-type: none"> <li>• Owner of waste containing asbestos is required to keep records on the amount of waste stored or disposed and such records shall be presented to the authorities;</li> <li>• Records to track the lifecycle of the asbestos waste must be kept by every institution involved;</li> <li>• Store all records for a minimum of 10 years;</li> </ul>	Asbestos register available	Administrative costs	Engineers of the contracting company	Contracting company	Supervision by the engineers of the contracting company PIU	
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