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## 1 Introduction

This project intends to improve an environment of exceptional green value, by enhancing his ecological matrix and the tourist potential offered by the area, that the municipality wants to improve. The project involves operations of ordinary reclamation with the removal of waste classified as "[...] household waste, also cumbersome, from places for civilian use."(art. 184 subparagraph 2 Environmental Code Decree-Law No 152/2006, April). The actions proposed are in line with the Management Plans Guidelines adopted and approved by the competent authorities for the Natural Oasis of Campochiaro and Guardiaregia, and written by WWF. The environmental reclaimed operations provided by the project and described in this report, are an integral part of "Quirino Canyon Habitat Conservation Plan ». This planning is included in the interregional IPA CBC Program Italy-Albanie - Montenegro 2014-2020, in application of the project « Law Adriatic Species and Habitat (LASPEH).

Specifically, the identified area is part of Quirino Canyon close to the residential area of Contrada Formelle. Therefore, it is intended to achieve an operation of environmental reclamation designed to an area of great landscape importance. The canyon is located in the Natural WWF Oasis of Guardiaregia- Campochiaro, but at the moment it is exposed to a degradation that have caused adverse effects on the environmental parameters and a reduced area liveability and usability.

This area has an extension of about 12 hectares and after a recent inspection activity, the presence of various kind of waste was found, therefore there is an urgent need to take action with appropriate tools, to reclaim the area and to promote management proposals for promotional activities (rafting, sport climbing and trail).


Specifically, the following activities are necessary:


1. Remote research with the use of SAPR (remotely piloted aircraft) and following feedback onsite in the "Vulnerable area".
2. Descent with rope technique and collection of materials to be reclaimed.
3. Helicopter transport in free zone for transport to landfill.


The achievement of these actions with Italia- Albania- Montenegro Programme have the aim to bring successfully experience realised in areas with the same characteristics, in order to be

part of a territorial valorisation circuit that could promote the eco-compatible use of these areas.

## 2 Concrete Actions

<b>Concrete Action</b>	<i>ACTION 1</i>	
<b>General objective</b>	Environment monitoring	
<b>Specific objective</b>	Identification of bulky urban waste	
<b>Description</b>	Remote research with the use of SAPR (remotely piloted aircraft) and subsequent feedback onsite in the "vulnerable area".	
<b>Beneficiaries</b>	Habitat and population	
<b>Connection with the other actions of the Conservation Plan</b>	The action is directly related to the study of habitats that is propaedeutic for the conservation of Quirino Canyon.	
<b>Stages of implementation</b>	Remote research with the use of SAPR (remotely piloted aircraft).	
	<i>Activity description</i>	<p>The inspection with the use of SAPR was affected by climatic factors. In particular, it was possible to make flights in a short and positive climatic period, in the late spring and during June 2019. It was excluded the month of May that would be the best month for this kind of analysis.</p> <p>After the adverse weather conditions during the month of May, it was possible to make flights, also in inaccessible areas, but vegetative restart with the leaf cover, was an obstacle for the soil's inspection.</p> 

		<p>In the picture above, taken in April, it is well noticed the presence of not natural materials along the over flight crevice.</p>  <p>The inspections with the drone, have showed a considerable amount of reclaimed materials in the valleys close to the town, and the presence of a body made of sheet, close to the stream.</p>
	<p><i>Human Resources</i></p>	<p>The technical Studio Eden GP that operates in Campobasso was involved in this project's phase. The operation was conducted by a drone operator and a pilot.</p>
	<p><i>Materials used</i></p>	<p>For the inspections, two machines were used :</p> <ul style="list-style-type: none"> <li>• DJI Matrice 200</li> <li>• DJI Mavic 2 Pro</li> </ul> <p>The first one has a high-resolution optical instrumentation and it was possible to use it only</p>

		in June's flights because of the strong updrafts found in April.
	<i>Output</i>	Identification of 12 hectares to be reclaimed and localisation of 8 "vulnerable areas "
<b>2) Please insert here the name of second stage</b>		
	<i>Activity description</i>	<p>After drones inspections, it was decided to check with reliefs onsite the areas most covered by vegetation.</p> <p>From this research a large accumulation of waste was found that come from production or consumption residues. They are located mainly in the impluvium areas, close to the town and with forest formations.</p> 
	<i>Human Resources</i>	The technical Studio <b>Eden GP</b> that operates in Campobasso was involved in this project's phase. The operation was conducted by planners selected by the Municipality of Guardiaregia.
		.
	<i>Output</i>	From the researches carried out, all the waste found can be classified according to the Decree Law No 152/2016 as " [...] household waste, also cumbersome, from places for civilian use." (art.184 subparagraph 2).

		<p>All the waste found in the inspection, fall into the category similar to abandoned waste in urban areas.</p> <p>Specifically the waste found come from domestic activities of the town, plastic, metal objects and sheets. According to the European Waste Catalogue (CER CODE) it's possible to list the following waste present in place:</p> <table border="1" data-bbox="810 772 1364 1989"> <tr> <td data-bbox="810 772 1002 1104">Cod. 200140 Metal</td> <td data-bbox="1002 772 1364 1104">Sheet of car, the carcass of washing machines, or small not electric household appliances, knives, pots, etc.</td> </tr> <tr> <td data-bbox="810 1104 1002 1216">Cod. 150102</td> <td data-bbox="1002 1104 1364 1216">Plastics packaging</td> </tr> <tr> <td data-bbox="810 1216 1002 1328">Cod. 150106</td> <td data-bbox="1002 1216 1364 1328">Mixed packaging</td> </tr> <tr> <td data-bbox="810 1328 1002 1440">Cod. 150103</td> <td data-bbox="1002 1328 1364 1440">Wood packaging</td> </tr> <tr> <td data-bbox="810 1440 1002 1664">Cod. 200136</td> <td data-bbox="1002 1440 1364 1664">Electrical panels of eventual household appliances</td> </tr> <tr> <td data-bbox="810 1664 1002 1989">Cod. 200138</td> <td data-bbox="1002 1664 1364 1989">Wood different from that stated under the n. 200137 (contaminated wood)</td> </tr> </table>	Cod. 200140 Metal	Sheet of car, the carcass of washing machines, or small not electric household appliances, knives, pots, etc.	Cod. 150102	Plastics packaging	Cod. 150106	Mixed packaging	Cod. 150103	Wood packaging	Cod. 200136	Electrical panels of eventual household appliances	Cod. 200138	Wood different from that stated under the n. 200137 (contaminated wood)
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		Cod. 020300	Cooking oil	
		Cod. 160103	Disused tyres	



<b>Concrete Action</b>	<i>ACTION 2</i>	
<b>General objective</b>	Restoration of Quirino Canyon environmental conditions.	
<b>Specific objective</b>	Waste removal from the natural environment	
<b>Description</b>	Descent with rope technique and collection of materials to be reclaimed.	
<b>Beneficiaries</b>	Habitat and population	
<b>Connection with other actions of the Conservation Plan</b>	The action is directly linked to the study of habitats that is propaedeutic for the conservation of Quirino Canyon.	
<b>Stages of implementation</b>	<b>1) 1) Waste removal activity</b>	
	<i>Activity description</i>	As a result of the analysis about the type and the extent of contamination of the sediment volumes to be reclaimed, the more suitable reclaimed technologies will need to be identified. They may consist of : <ul style="list-style-type: none"> <li>• Removal activity destined to landfilling or to an appropriate treatment plant in the case of health or environmental risk.</li> <li>• Treatment activity onsite in the case of small contamination.</li> </ul>
	<i>Human Resources</i>	The reclaimed operations will require highly qualified professionals belonging to the category of « work on cable » according to the decree No 81 all. « rope access and positioning techniques » and in canyoning skills. In detail, specialised access work that require climber skills and the use of appropriate tools, which means works at high, on high structures.
	<i>Materials used</i>	Use of PPE (personal protective equipment) specific for rope works, harnesses and helmets, -ropes, lanyards, slings, energy absorbers, -connectors, brakes, ascenders, pulleys for access, positioning and suspension.

	<i>Output</i>	Collection and accumulation of material to be reclaimed.
	<b>2) Waste accumulation and removal of reclaimed material</b>	
	<i>Activity description</i>	<p>Collection of material to be reclaimed through propylene bags 150 gsm (or similiar) for small objects, through appropriate anchorage the others. The box full of waste for disposal will be closed and carry out to the valley through rope or winches system.</p> <p>Subsequently, the free transport was carried out to the transport to landfill. The means of implementation of that operation may be realised through collection by cable with the helicopter in vertical stationary position.</p>
	<i>Human Resources</i>	<p>Team composed of n. 5 qualified operators for work on cable;</p> <p>Team composed of n. 2 skill-workers, for work in helicopter and helicopter pilot.</p>
	<i>Materials used</i>	Helicopter and 35 propylene bags (150 gsm) with the following size: 90x90xh120cm.
	<i>Output</i>	The objects reclaimed were not large, except for the metal sheets in oxidation state, located in the south area closed to San Nicola waterfall. From the canyon, a total amount of 35 (1mg ) bags have been extracted as well as reclaimed sheet for a total of about 50 m3 of waste.

<b>Concrete Action</b>	<i>ACTION 3</i>	
<b>General objective</b>	Landscape Protection	
<b>Specific objective</b>	To enhance the surveillance and the fire prevention.	
<b>Description</b>	Monitoring and installation of camera.	
<b>Beneficiaries</b>	Habitat and population	
<b>Connection with the other actions of the Conservation Plan</b>	The action is directly related to the study of habitats and to the conservation of Quirino Canyon.	
<b>Stages of implementation</b>	<b>1) Waste removal activity</b>	
	<i>Activity description</i>	As a result of savings in project's implementation, 2 cameras have been installed for the surveillance of the part of the urban centre that faces the canyon, and a thermal imaging camera that frames a part of the canyon, exactly where fires have been set in past years.
	<i>Human Resources</i>	n. 2 workers
	<i>Materials used</i>	n. 2 cameras n. 1 thermal imaging camera
	<i>Output</i>	Constant monitoring

### 3 Time schedule

Action	Years Period	2018				2019				2020				2021			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
<b>Action n°1</b>																	
<i>Investigation with drones</i>						X	X										
<i>Investigation with reliefs on the field</i>							X	X									
<b>Action n°2</b>																	
<i>Reclaimed works and waste recovery</i>									X	X							
<i>Concentration of waste and transport to landfill</i>										X	X						
<b>Action n°3</b>																	
<i>Selection of the most appropriate monitoring system</i>													X				
<i>Installation of camera</i>													X	X			