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✓ **Trail Maintenance** (*Short*)

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Trail Maintenance (*Short*)

Short Focus on some key aspects of the process

Index

1	Introduction.....	5
2	Terms definition and abbreviation.....	5
2.1	Trails.....	5
2.2	Ordinary maintenance	5
2.3	Extraordinary maintenance	5
3	Tasks carried out by the maintenance organization.	5
4	The organizational process:.....	6
5	The Tools and documents used in the organizational process.....	6
	• Cadastre of Trails.....	6
	• Master Database.....	6
	• Accounting Programme	6
	• Warehouse management programme	6
	• Work Protocols	7
	• Work Order	7
	• Work Report.....	7
	• Annual report for the client	7
6	The roles involved in the organizational process.....	7
	• Central Maintenance Manager	7
	• Area Maintenance Manager.....	7
	• Territorial contacts	7
	• Person responsible for the material goods warehouse	7
	• Administrative and accounting support figures.....	7
	• Information Technology specialists	7
7	Focus on types of costs and their use for budgeting	8



1 Introduction

Organizations affiliated with ERA and EUMA often maintain a network of trails. This maintenance can generally be divided into ordinary (periodic) and extraordinary maintenance, i.e., for the improvement of infrastructure on the trails or to deal with damage caused by atmospheric or catastrophic events.

The aim of this document is to give general indications on legislative principles that associations should promote in their country as well as recommendation on how a trail maintenance activity could be organized. It gives indication of procedures that determine measurable activities which can predict budgets for future maintenance.

For example, once the typical cost items have been identified, a cost factor per km of trail network can be calculated and used to estimate the budget required for its maintenance.

Material requirements are to be considered separately, which, especially in the case of Via Ferratas, can have a major impact on economic requirements. It is suggested to carry out extraordinary maintenance in specific projects as will be described later in this document.

2 Terms definition and abbreviation

2.1 Trails

Walking, hiking, and mountain trails are footpaths of public interest, for the purpose of walking, running, or climbing, located in all types of landscapes, visible and clearly recognizable in the terrain and are physically marked and signposted.

In Europe walking, hiking and mountain trails are part of the network of trails under the umbrella of one of the two European NGOs: the European Union of Mountaineering Associations (EUMA) and the European Ramblers' Association (ERA).

2.2 Ordinary maintenance

Ordinary maintenance of a trail includes all those activities aimed at clearing the pathway from leaves, dry branches, stones, brambles, and small trees that have fallen or grown back on the pathway and so on. All activities, therefore, that can also be carried out with the help of simple gardening tools such as a rake, branch shears, hacksaw and pruning shears for example. Tools, moreover, that need neither a license nor special experience to be handled; ordinary maintenance activities include the renewal of trail markers.

2.3 Extraordinary maintenance

Extraordinary maintenance of a trail, on the other hand, refers to all those activities aimed at restoring the site of a trail, or its viability, even with the aid of specific tools/machinery which may require a license to be handled, such as shovels, chainsaws, brush cutters, vibrating plates, earth moving machines or agricultural machinery. Extraordinary maintenance includes the replacement of signposts on the trail.

3 Tasks carried out by the maintenance organization.

There are several tasks that should be carried out by the maintenance organization. These tasks form the basis of the organizational process from which the planning of ordinary and extraordinary maintenance activities derives. It is strongly recommended that all extraordinary maintenance activities be carried out in specific projects, in which the objectives and activities necessary to achieve them are established, financially estimated, and planned over time, with a precise allocation of resources.

An example of typical activities related to routine maintenance is given below:

- **Maintain trail signs,**
 - replace missing or damaged trail signs
 - clean if necessary
 - clear the view to trail signs (cut the vegetation)
 - additional check if hikers give notice to unclear routing
- Check of trail conditions periodically (once a year) and after damaging weather or geological events Report damages of signposts.
- Clear overgrown trails.
- Temporarily close the trail if trail surface is impassable.
- Report damage of trails infrastructure (picnic rests and tables, shelters...).
- Communicate with communities, governments, nature park associations, local action groups (LEADER.)

Extraordinary maintenance can consist of various improvements for example to improve trails safety, traceability (replacement of signposts, additional signs, the construction, or repair of infrastructure such as bridges, bivouacs, steel cables, iron rods and other equipment to facilitate upward movement) and planning and marking of new trails.

4 The organizational process:

Generally, the association/organization (body) that maintains the trails copes with typical organizational processes that lead to the identification of certain roles and consequently the typical expenses of the activity, to be distinguished between current/recurring and extraordinary expenses.

Key activities affiliated with trail maintenance:

1. The organization proposes itself as the maintainer of the network of trails to receive an explicit mandate which may be exclusive or shared with other associations.
2. The organisation analyses and identifies its scope of operations, liaising with any other parties with whom it shares maintenance activities. At this stage it sets up a land register, preferably a computerized one.
 - a. Personnel database (with information on individuals in the organizational structure and their roles):
 - b. Of the material and instrumental goods available to local maintenance contacts
 - c. The technical and functional documentation of the trails, including periodic reports based on the annual activity reporting document to the client.

5 The Tools and documents used in the organizational process

Usually, an organizational process requires the use of tools and documentation to support it, here are some suggestions:

- **Cadastre of Trails**

It is the principal database, containing, all the paths that form the network. For each one, useful technical data and, in particular, the gpx track and georeferencing of the signposts and markers are available.
- **Master Database**

It contains the master and contact data of all personnel involved in the maintenance activity as well as the stakeholders of the activity.
- **Accounting Programme**

This is the programme in which all costs related to the administration and maintenance activities of the organization are managed and documented.
- **Warehouse management programme**

This is the programme in which the loading and unloading of materials necessary for the organization's activities, in particular trail maintenance activities, is managed.

- **Work Protocols**
Individual maintenance activities are governed by certain protocols that provide a mode of engagement (usually through work orders) and a mode of activity reporting (usually through work reports)
- **Work Order**
Individual/team order containing the maintenance task to be done, typically issued by the Central or the Area Maintenance Manager
- **Work Report**
For each maintenance activity, the individual or the team of territorial contact persons, report on the activity carried out, including the condition of the trail, the travel or accommodation costs incurred, and the hours of work required to complete the activity.
- **Annual report for the client**
This report summarizes all the activities carried out during the year, specifying the costs incurred and any extraordinary maintenance to be carried out on a project basis.

6 The roles involved in the organizational process

The number of organizational roles acted upon within the process depends essentially on the size of the trails network, that is on the extent of the maintenance to be carried out.

For example, if the network of trails is very extensive, it will be necessary to divide it into areas, for each of which there will be an Area Maintenance Manager with the task of coordinating and reporting on activities to the Central Manager. Conversely, if the network is relatively small, it may be sufficient to have a Central Maintenance Manager with the task of coordinating and reporting activities.

The main organizational roles that might be required by the process are described below.

- **Central Maintenance Manager**
He/she is the reference figure for the entire waymarking and maintenance process and is responsible for drawing up the ordinary plan and any extraordinary maintenance plans, to be shared, prior to start-up, with the geographical area contacts, if any, or with the territorial contacts.
- **Area Maintenance Manager**
In extended maintenance contexts, in addition to the Central Maintenance Manager, it may be useful to have Area Maintenance Managers to coordinate territorial contacts.
- **Territorial contacts**
These are the people on the grass roots level who are responsible for marking and maintaining the trails, receiving the necessary materials, and planning the activities which they will carry out expertly, organizing themselves into maintenance teams.
- **Person responsible for the material goods warehouse**
He/she oversees storing material provided by the commissioning body, tools and other material goods that are needed by the maintenance teams.
- **Administrative and accounting support figures**
They are responsible for the proper maintenance of accounting records, which are useful for producing the year-end profit and loss statement. They support all others in carrying out activities within their own competencies.
- **Information Technology specialists**
The cadastre of trails, the administrative and accounting activities, have an important impact in terms of the Information Technology needed, it is therefore necessary to have one or more support figures who can take care of the IT equipment available to the association in terms of software licenses and hardware devices. They functionally report to the Central Maintenance Manager.

7 Focus on types of costs and their use for budgeting

Three typical costs can be identified in a typical maintenance activity, those are: the Effort Cost, the Travel Cost, and the Accommodation cost.

It is strongly recommended to keep an account of the costs incurred during the maintenance activity. Having an effective administrative management is not only useful to manage maintenance activities well, but it could also be used to build rationales or indicators to be used in estimating new maintenance or simply to plan it correctly in terms of time and budget needed.

The subject of rationales/indicators is very broad; below, by way of example, just a few possible indicators are described, certainly not exhaustive:

- It is useful to calculate a **Partial Cost per km** indicator of trail.
- Knowing the total sum of the costs incurred, both by the maintenance teams and the organization's logistics departments, it is possible to obtain the rationale of the **Total Cost per km**.

The first rationale can be used to get a rough estimate of the cost of a maintenance activity to be performed.

The second rationale can be used to estimate the financial requirements for the management of a new section of trail, based on the average cost per km.

It should be kept in mind how material and tools will impact on the planned activities, as these cannot be effectively traced to a cost-per-kilometer concept. With regard to material, it should be noted that there is a start-up cost for maintenance activities given by the purchase of tools (e.g., brush cutters, shears, brushes) and consumables such as paints, screws, etc. Obviously, with use, these tools will wear out and the consumables will run out.

The assessment of the need for tools and material is the responsibility of the Warehouse Manager together with the Maintenance Managers.

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Partner associations:

- ✓ Alpine Association of Slovenia
- ✓ Austrian Alpine Club
- ✓ Charles University
- ✓ Czech Mountaineering Federation
- ✓ European Ramblers' Association
- ✓ German Alpine Club
- ✓ Hellenic Federation of Mountaineering and Climbing
- ✓ Mountaineering Federation of North Macedonia