Chapter 3
Development of Environmental Management Systems in Ski Areas

Abstract This chapter presents the crucial auditing cycle which is the basis for any eco-management and auditing scheme as introduced by the European Commission. Against these basic principles and their historic development, the main advantages and benefits of a participation in the EMAS system are reported. Finally, the definition and often challenging spatial delimitation of a ski area are described.

Keywords Audit cycle · Risk reduction · Costs · Competitiveness Organisational benefits · Definition of ski areas

3.1 Basic Principles and Requirements

The Eco-Management and Audit Scheme (EMAS) was founded in 1993 by the European Commission as a voluntary instrument for systematic environmental protection. It is a voluntary system in which businesses, but also other organisations and institutions from all economic sectors inside or outside of the European Union, can participate. The aim of this system is to promote continuous improvement of organisations’ environmental protection.

As a future-oriented environmental management system, EMAS can help businesses improve their capacity for innovation, reduce their environmental impact and costs, and strengthen their credibility.

A special characteristic of the EMAS regulation, thanks to the voluntary participation of businesses, is that it is based on businesses’ own initiative towards environmental protection and their control thereof. This is achieved through the integration of environmental matters in all fields of business policy. Article 1 of the regulation states that
the objective of EMAS, as an important instrument of the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan, is to promote continuous improvements in the environmental performance of organisations by the establishment and implementation of environmental management systems by organisations, the systematic, objective and periodic evaluation of the performance of such systems, the provision of information on environmental performance, an open dialogue with the public and other interested parties and the active involvement of employees in organisations and appropriate training.

No concrete details as to the form of environmental policy, programme or management are made by the regulation, nor are any material parameters such as thresholds or environmental standards defined, to which businesses would be bound beyond the legal requirements. This would hardly be possible, especially in light of the diversity of businesses that can participate in the EMAS system. Thus it is up to the individual business to analyse its environmental impact responsibly and to take steps and measures in accordance with its self-set goals. This is significant because it allows businesses to set themselves goals that are timed to match economic requirements and that are adjusted to their existing environmental protection measures. At the same time, the business can satisfy the regulation’s call for continued improvement by steadily increasing its own requirements for optimisation of environmental performance with each cycle (cf. Fig. 3.1).

The last amendment in 2009 saw the addition of global applicability (EMAS Global), increased consideration of the interests of small and medium-sized enterprises (SME), as well as standardised environmental indicators to show improvement of performance (UGA 2014).

Environmental policy, as the roof encompassing all environmental activities, is usually the first step of the procedure. Basic environmental guidelines are formulated here, and are integrated into corporate policy. This ensures that environmental and economic corporate goals are at one level and are pursued equally.

The centrepiece of the environmental management system is the environmental review. It constitutes a first appraisal of an organisation’s environmental performance and impact. Aside from compiling all of the organisation’s environmentally relevant data, the source data is also analysed and evaluated to determine weak points. The environmental review further includes an assessment of compliance with environmental regulatory requirements. The environmental programme is derived from the results of this (first) environmental review. The environmental programme contains all targets and measures aimed at overcoming the weak points, as well as specific deadlines. It also defines individual persons responsible and resources available for implementation of the measures. In the next step, implementation of the measures from the environmental programme begins.

All structures for the implementation of the organisation’s internal environmental protection are defined in the environmental management system as part of the overall management system. Thus, the environmental management system comprises personnel-related organisation structures and responsibilities as well as process control. It also ensures documentation of all environmental activities.

The organisation’s overall environmental activities are to be presented to the public in regular environmental statements. The environmental statement thus constitutes
a gateway to the extra-organisational level and ensures communication with the stakeholder groups. It should therefore be kept simple and easy to understand, and should summarise the environmental performance in brief form.

Verification of the organisation is carried out based on the environmental statement and the environmental management system. The process involves an independent, external environmental verifier who assesses whether an organisation’s environmental policy, (first) environmental review, environmental programme, environmental management and environmental statement comply with the requirements of the EMAS regulation. If all requirements are met, the organisation can take part in
Table 3.1 Potential benefits for ski enterprises of participating in the EMAS system (Pröbstl et al. 2003)

<table>
<thead>
<tr>
<th>Potential benefits for the ski enterprise</th>
<th>Cost reduction</th>
<th>Risk reduction</th>
<th>Improvement of organisation</th>
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<tbody>
<tr>
<td>Appeal to an environmentally sensitive circle of customers</td>
<td>Reduced costs for preparing approval documents</td>
<td>Knowledge about the potential for large-scale damages</td>
<td>Improved knowledge of personnel</td>
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<tr>
<td>Environmental commitment as a key qualification</td>
<td>Lower insurance rates</td>
<td>Reduced risk of damages due to erosion</td>
<td>Detailed knowledge about impact on nature and the landscape</td>
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<tr>
<td>Improved mutual trust with conservation authorities</td>
<td>Cheaper loans from banks</td>
<td>Clarity regarding liability in case of damages</td>
<td>Reduced bureaucratic effort</td>
</tr>
<tr>
<td>Easier candidacy for major winter sports events</td>
<td>Prevention of cost-intensive restoration in case of large-scale damages</td>
<td>Improved knowledge of personnel</td>
<td>Knowledge about the relative contributions of winter and summer tourism</td>
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From the point of view of an organisation, there are a number of arguments in favour of introducing an environmental management system (cf. Table 3.1). A significant factor in relation to the introduction of an environmental management system is an increase of business competitiveness. This is largely thanks to an image boost through an environment-oriented corporate policy. Even if EMAS involves an initial financial burden for the business, the exposure of savings potentials such as energy, water or basic materials can lead to cost reduction.

The (first) environmental review uncovers weak points that are then addressed by the business’ environmental policy and the environmental programme. Compulsory incident and emergency preparedness also results in risk reduction. Establishing an information system for all environmentally relevant corporate activities assists efficient internal controlling. This involves breaking down internal processes into the manageable components planning, implementation, monitoring and correction (Landesanstalt für Umweltschutz Baden-Württemberg 1998). Risk management and the information system have a positive effect on legal security and insurance obligations.

Establishing different process components at all levels of the organisation improves communication with and among personnel. Integration of environmentally oriented principles and their concrete realisation boosts employees’ motivation and contributes significantly to their identification with the business.

Assessing all of the business’ environmental impacts in the first environmental review, as well as how they are handled in environmental policy and the environmental
programme, constitutes the basis for sustainable economic activity. Furthermore, through increased transparency regarding environmental impacts and their publication in the environmental statement, a significant improvement of the business’ external perception is possible.

EMAS also allows registration of larger and more complex units, such as associations of businesses, supply chains, shopping centres, etc. This cluster approach is also interesting for ski areas, because these usually consist of several different businesses that could thereby register under a single EMAS registration number.

The following options of forming a cluster in cableway-related tourism make good sense:

– A cluster with other cableway businesses, i.e. in cases where a number of installations are active in one resort or on one mountain and the ski area is already run collectively (shared ski passes, piste grooming and preparation, etc.) (close functional relationship).
– A cluster with other businesses that are closely connected to the cableway business. This can include ski rentals, sports dealers, restaurants and even accommodation (broad functional relationship).
– A geographically defined cluster around a larger unit of businesses that are not functionally related, e.g. a nature park. New means of cooperation and efficient management make good sense in this respect.

3.2 Special Requirements in Ski Areas

In order to establish an environmental management system in ski areas, an own set of methods and a review framework need to be developed. On the one hand, this is because EMAS and ISO 14001, with their wide range of possible applications, allow for considerable freedom. On the other hand, this means that each business (or each business type) has to find its own specific way to integrate operative aspects with ecological and landscape-related aspects in a responsible manner. This requires an independent methodological design.

The methodological elements described in the following can also be used for ecological improvements irrespective of environmental management procedures (ISO 14001 or EMAS) (Pröbstl et al. 2003).

The specific challenges that suggest a separate approach for ski areas can be summarised as:

– Combination of high standards regarding passenger transportation and system safety
– Influence of weather conditions on operation and usage of installations
– Safety in the mountains and during activities
– High resource effort for operation
– Great sensitivity of the affected natural habitats due to the high altitude (e.g. vegetation, water, soil, wild animals).
Table 3.2  Definition of a ski area as the area in a landscape influenced by skiing activities (Pröbstl et al. 2003: 42)

<table>
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<tr>
<th>Landscape</th>
<th>Ski area</th>
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<tr>
<td><strong>Ski pistes</strong>, i.e. usually groomed slopes signposted by the operator and which the operator is required to secure</td>
<td><strong>Area used directly by skiing activities</strong></td>
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<tr>
<td><strong>Routes</strong>, i.e. unmarked and unsecured slopes that skiers use at their own risk</td>
<td><strong>Area influenced by skiing (impacted area)</strong></td>
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<tr>
<td><strong>Alternative routes</strong>, i.e. unmarked and unsecured slopes that skiers use at their own risk</td>
<td><strong>Areas affected by noise</strong>, that surround the used area and have an impact on adjacent habitats</td>
</tr>
<tr>
<td><strong>Infrastructure</strong>, lift installations, reservoirs for snowmaking, restaurants, etc.</td>
<td><strong>Piste-forest edges</strong>, that can be affected by skiing activities</td>
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<td></td>
<td><strong>Other knock-on effects</strong>, emanating from pistes and alternative routes, such as water discharge from pistes, snow gliding or avalanche blasting</td>
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On top of this there are the matters of waste generation and disposal and supply of drinking water, both of which are difficult in mountainous areas.

Above all, the challenges include the geographic delimitation of the ski area, identification and overview of relevant ski area data, and examination of thematic and geographic priorities. For this step in particular, cooperation with external offices already in the preparatory phase is advisable. This is handled differently by different businesses. The ski area Zell am See has installed a permanent ecological advisory board, whose duties include consulting services regarding the established environmental management system. The ski area Kaprun has entered a permanent cooperation with an advisory office for environmental issues. Other ski areas like Lech/Zürs am Arlberg draw on the advice of technical offices when and as needed. In the beginning phase, it is important to focus especially on those areas where internal competence is missing or lacking.

The geographic delimitation should include all areas that are influenced by skiing activities. This project area is defined as the “ski area” (Pröbstl 2001) (cf. Table 3.2).

This comprises not only all sports facilities (lifts, snowmaking and floodlight systems, etc.) and the pistes themselves, but also adjacent areas and off-piste terrain used by skiers.

A number of studies in ski areas (Pröbstl 2001; Dietmann and Kohler 2005) have shown that the project area must be adequately defined. Exclusion of alternative off-piste or lesser frequented routes, for example, is not justifiable from a technical point of view, because valuable habitat for wild animals could be disturbed as a consequence of the operation. Broad delimitation is also important when it comes to
management, especially where neighbouring forms of use (hunting, forestry, nature conservation) could be impacted.

Such delimitation is also strongly recommended for the establishment of an environmental management system. Many ecological questions regarding e.g. water balance and fauna, but also recreation, can only be properly answered if considered on a sufficiently large scale (Pröbstl et al. 2003: 41).

Ideally, concrete delimitation is undertaken using topographic maps with altitudinal information or an appropriate digital terrain model (DTM). The delimitation should consider land use in both winter and summer.

The project area is mostly delimited by natural structures such as streams and rivers or mountain ridges. In the case of large, geographically divided ski areas, the project area can also consist of a number of geographically disjunct sub-areas.

Aside from the geographic delimitation with the help of experts, a thematic delimitation is also necessary. In this case, legal aspects, safety issues (Seilbahnen Schweiz 2011) and protection against avalanches and other natural hazards are of particular relevance (cf. BMVIT 2011). Here, again, expert assistance could be advisable in the first stages.

References

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