



EUROPEAN UNION



AgriNatur AT-HU

**Overall content concept of the visitor programs:
educational trails, workshops, visitor-outdoor
areas**

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To make the text easier to read, the masculine gender form was used, all genders are of course meant.

1. Introduction

Humans are dependent on nature and are a part of it.^{1,2} The diversity of nature is essential for humans in many different ways, creating natural habitats, providing recreation, and providing food. Nevertheless, humans are the cause of a worldwide extinction of species. Intensive agriculture and forestry are one of the main reasons for the loss of biodiversity. Eutrophication and the use of pesticides primarily damage a wide variety of insects, plants, fungi, and soil organisms. Their decline and disappearance as food, pollinators, or for the development of the soil lead secondarily to population declines or the extinction of many other species.³

However, there are also opportunities within this intensive land use to create sustainable habitats for fauna and flora. It is now widely accepted that the conservation of biodiversity is essential for the sustainable survival of mankind, but that agrobiodiversity - the diversity of species of agricultural land and its fringes - can also make a valuable contribution, less so. This overall concept, which was developed across borders, is intended to make a significant contribution to informing the population about the positive species protection potential of sustainably used cultural landscapes and the contribution of agrobiodiversity to the resilience of agroecosystems and to make it tangible.

2. Project objectives, target groups, and sustainability of project outputs

One of the main objectives of the project AgriNatur AT-HU is the implementation of awareness-raising measures of the population on agrobiodiversity in Austria and Hungary. This project goal is achieved by using educational trails, workshops, and visitor-outdoor areas ("Fields of Diversity" and "AgriNatur Garden").

The target groups of the various educational measures include the general public, adults and children, teachers and pupils, and students.

The educational trails, the "Fields of Diversity" and the "AgriNatur Garden" will remain after the end of the project, thus ensuring the sustainability of the educational activities.

¹ (IPBES, 2019)

² (Scheuch, 2019)

³ (IPBES, 2019)

3. Cross-border AgriNatur AT-HU

The alluvial deposits of the Danube with their original and present landscape elements, and their economic use against a similar cultural background, connect the Austrian and Hungarian project areas. Due to the common features of the ecologically cultivated farmland in the Danube Floodplain National Park/Lobau and the Neue Lobau in Vienna and the Wittmann Park, the Burgarten and the Natura 2000 protected area Mosoni-sík, the comparison of these regions in the project is worthwhile and corresponding task areas arise.

3.1. Common main topics of the educational trails, visitor-outdoor areas and workshops in Austria and Hungary

- Historical cultural landscape Lobau and Mosoni-sík
- Agrobiodiversity and its importance for the resilience of the cultural landscape
- Birds
- Flowering plants and their importance for insects/ pollinators
- Biodiversity/agricultural cycles (soil, plants, insects, birds)

3.2. Joint concept of knowledge transfer in Austria and Hungary

The transfer of knowledge is based on nature education, that means interactively - using all senses - real experiences of nature are experienced. The joy of learning should be conveyed through the emotional connection to nature. Creativity and communal cooperation are in the foreground. The teaching content to be conveyed is prepared in a way that is appropriate for the age group.

3.2.1. Nature education

Nature education tries to prevent or reverse man's distancing from nature.⁴ Industrialization and mechanization have led, and continue to lead, to mankind's orientation towards technology and away from nature. Lack of or insufficient contact with nature can lead to various diseases such as attention deficit, obesity, underdeveloped senses, and other mental or physical illnesses.^{5,6} More time is spent at home and on the computer than outdoors. Especially for children in cities, it is becoming increasingly difficult for them to deal with their environment and nature independently. Due to dense development, it is often not possible or too dangerous for them to explore their environment independently.⁷

⁴ (Kalff, 1994)

⁵ (Louv nach Children & Nature Network, 2019)

⁶ (Kesebir und Kesebir, 2017)

⁷ (Braun et.al, 2009)

3.2.2. Why nature education?

Children develop many of their abilities in nature while playing independently, evolutionarily this has always been essential for survival.⁸ Knowing one's environment, perceiving the changes in it, and recognizing connections create self-confidence, satisfies, and stimulates curiosity about life.^{9,10} The great thing about nature for children is that they are neither over- nor under-challenged, it is simply child-friendly. The stimuli that occur in a natural environment alternate between strong and weak and can, therefore, be easily processed by children.¹¹

But not only children benefit from nature. Nature is also very important for adults. As children, they are interested in their environment and want to understand connections. In these fast-moving times, however, nature is especially important for adults as a recreational area. It is not surprising that the trend towards forest bathing, which originated in Japan, has also made its way into the German-speaking world in recent years. It seems that nature simply belongs to man, it does us good, gives us peace, tranquillity, and relaxation.¹²

3.2.3. Central elements of nature education

Joseph Cornell coined the term "Flow Learning" in nature education. He distinguishes four levels of "Flow Learning" to make the holistic experience and learning possible.

1. Level - arouse enthusiasm: Awakening the interest and curiosity of children and adults in the topic through fun and joy.
2. Level - Focused perception: Once enthusiasm for something has been awakened, it is possible to perceive oneself and nature in a targeted manner, for example through age-appropriate games.
3. Level - Direct experience: The experience of nature should create a connection to it, make connections recognizable, and develop a feeling for them.
4. Level - Exchange of experiences: The exchange of experiences with others strengthens social cohesion, inspires, gives joy, and intensifies it.¹³

⁸ (Renz-Polster und Hüther, 2013)

⁹ (Bolay und Reichle, 2012)

¹⁰ (Gebhard, 2013)

¹¹ (Renz-Polster und Hüther, 2013)

¹² (Kemper, 2018)

¹³ (Cornell, 2019)

4. Survey

A survey was carried out to be able to optimally design the overall nature education concept for the educational trails, workshops, and visitor areas. Austrian and Hungarian experts, who have already dealt with the topic of nature education in the project areas in different ways, were asked about their experiences.

4.1 Methodology

To be able to include this knowledge, 29 experts in nature education were consulted. A comprehensive questionnaire was drawn up to collect all information relevant to the educational programs in the best possible way. This included both quantitative and qualitative questions. In the period from 07.01. to 10.02.2020, either personal interviews were conducted or the questions were answered by the experts in writing.

The experts were selected according to the following criteria:

- All respondents have experience in nature education knowledge transfer.
- The experts treat nature education theoretically and/or practically.
- Although the subjects taught by the experts differ, the common denominator is that they all deal with nature in the cultural landscape.
- The experts all deal with nature education within the project or adjacent areas.
- Each interviewee had experience with at least one of the educational focuses of the AgriNatur AT-HU project such as educational trails, workshops, or visitor outdoor-areas.
- They deal with different target groups.
- The experiences of the respondents vary from a few months to several decades.
- The experts include (not all experts wanted to be mentioned by name):

Association Umweltspürnasen-Club		
	Dr. Gerhard Desbalmes	Managing Director
Bio Forschung Austria		
	Ing. Christophorus Ableidinger	Test Engineer
	Dr. Bernhard Kromp	Head of Institute
	Daniela Lehner, MSc	Research assistant
	Christoph Reithofer BSc	Research assistant
	Mag. Katharina Roth, BEd.	Research assistant
Dzsungelország Gardencenter, Elit Garten GmbH.		
	Ákos Lobitz	Managing Director

Environmental Protection - MA22		
	Mag. Harald Gross	Team Leader Nature Conservation - Expert, Nature Conservation, Geodata, Mobility
	Dipl.-Päd. DI Dr. Manfred Pendl	Administrator, Nature Conservation, Geodata, Mobility
Fertő-Hanság National Park		
	István Goda, MSc	Environmental Pedagogue
	Krisztina Mészáros, MSc	Environmental Pedagogue
Forestry and Agricultural Enterprise of the City of Vienna – MA 49		
	Ing. Johann Berthold	Head of Competence Center Forest Pedagogy
	Ing. Markus Breuer	Deputy Manager of the Lobau forest administration
	DI Alexander Faltejsek	Head of the Lobau forest administration
	Ernst Hödl	Competence Center Forest Pedagogy
	Dipl.-Ing. ⁱⁿ Susanne Leputsch	National Park Coordinator
	Dipl.-Ing. Alexander Mrkvicka	Biosphere Park Coordinator, Deputy Head of Division Natural Area
	Dipl.-Ing. Herbert Weidinger	Division Manager Natural Area, Deputy Director of Forestry
National Park Donau-Auen GmbH		
	DI Matthias Kuhn	Visitors & Communication Area
	Mag. ^a Eva Pölz	National Park – Ranger
	Manfred Rosenberger, MSc, MAS, MA	National Park – Ranger
National Park Lake Neusiedl – Seewinkel		
	Dipl.Ing. Harald Grabenhofer	Head of Department Monitoring, Research, and Citizen Science

Széchenyi István University		
	Krisztina Takács , MSc	Senior Expert, Faculty of Agriculture and Food Sciences
	Dr. András Vér	Scientific Staff, Faculty of Agriculture and Food Sciences

4.2. Questionnaire

The questionnaire consisted of 44 different questions, divided into a general and final part, and three specific parts. The focal points of the visitor programs (educational trails, workshops, and visitor-outdoor areas) of AgriNatur AT-HU were covered in the specific sections. Answer options were given for 26 questions, a few of them also contained an open question section, and 18 were completely free to answer. The questionnaire was prepared in German and English.

The questionnaire including possible answers:

General part

1. Would you like to be named in the overall content concept?

- Yes
- No

2. Which instruments do you use to convey nature education content?

- Educational trails
- Workshops
- Visitor areas
- Lectures
- Guided tours
- Educational films
- Other: _____

3. Why did you choose these particular instruments of knowledge transfer?

4. What are your experiences with the different forms of knowledge transfer? Please tick the appropriate box and add the instrument.

- Very positiv _____
- Rather positiv _____
- Mediocre _____
- Rather negativ _____
- Very negativ _____

5. For which target groups do you offer your programs? What instruments do you use for each and why?

- < 3 year old children
- 3-6 year olds
- 6-10 year olds
- 10-14 year olds
- 14-18 year olds
- Families
- Adults
- Students
- Relevant specialist audience

6. Do you integrate "new media" into your programs? If so, which and where?

- QR-Codes
- Apps
- Other _____

Educational trails

7. Do you have experience in planning, implementing or supervising educational trails?

- Yes
- No-> please go to question 20.

8. How are these educational trails structured, which elements do they contain?

- Educational trail signs
- Visual objects
- Stations for resting
- Nature pedagogical play possibilities
- Other _____

9. If there are educational trail signs, how are they constructed?

- mainly with information in text form
- mainly with graphics/images
- Interactive (for flapping, turning, feeling, etc.,)
- with exchangeable elements (e.g. in the course of the seasons,...)

- including QR codes
- Other _____

10. Are guided tours offered for the educational trails? If so, how long do these tours last and how high are any fees charged per participant?

- No -> please go to question 12.
- Yes, with the duration of:
 - < 1 hour, with cost contribution of _____
 - 1 - 2 hours, with cost contribution of _____
 - 2 - 5 hours, with cost contribution of _____
 - 5 - 8 hours, with cost contribution of _____
 - Other duration of _____, with cost contribution of _____

11. What kind of qualifications do the people who lead these guided tours have?

- skilled agricultural or forestry workers
- foresters
- Students of agriculture, forestry or other natural sciences
- Students from teacher training colleges
- Graduates of agricultural, forestry or natural science universities
- Graduates of a pedagogical university
- Other _____

12. On average, how much time is needed to walk the educational trails you are responsible for, on your own without a guide? Please answer separately for several educational trails.

- < 1 hour
- 1 - 2 hours
- 2 - 5 hours
- 5 - 8 hours
- Longer than eight hours, how many hours? _____

13. How long (in m or km) are the educational trails and how many elements (signs, stations,...) do they contain? Please answer separately for several educational trails.

14. At what intervals is the maintenance of the educational trails necessary?

15. What maintenance measures are required? How much do they cost?

16. Is there vandalism along the educational trails? If so, what is the cost of repairing the damage?

17. How frequented are the educational trails you offer? If possible, please indicate the approximate annual frequency of visitors.

- Very positiv _____

- Rather positiv_____
- Mediocre_____
- Rather negativ_____
- Very negativ_____

18. What do you think are the reasons for good or bad frequencies? Please answer separately for any several educational trails.

19. Would you in future again use educational trails to teach nature education? If so, why, or why not?

Workshops

20. Do you have experience in knowledge transfer in the form of workshops?

- Yes
- No-> please got to question 28.

21. How long do your workshops last, and how high are any fees collected per participant?

- < 1 hour, with cost contribution of _____
- 1 - 2 hours, with cost contribution of _____
- 2 - 5 hours, with cost contribution of _____
- 5 - 8 hours, with cost contribution of _____
- Other duration of_____, with cost contribution of_____

22. What kind of qualifications do the people who lead these guided tours have?

- skilled agricultural or forestry workers
- foresters
- Students of agriculture, forestry or other natural sciences
- Students from teacher training colleges
- Graduates of agricultural, forestry or natural science universities
- Graduates of a pedagogical university
- Other_____

23. What tools do you use in your workshops?

- visual objects
- Outdoor - open spaces for nature experience exercises
- simple experiments
- Movies
- New media (e.g. apps)
- Microscopes
- Games
- Other_____

24. Are there any tools that you think should not be missing from any workshop?

25. How frequented are the workshops offered by you? If possible, please indicate the approximate annual frequency of visitors.

- Very positive_____
- Rather positive_____
- Mediocre_____
- Rather negative_____
- Very negative_____

26. What do you think are the reasons for good or bad frequencies? Please answer several workshops separately.

27. Would you use workshops again in the future to impart nature education knowledge? If so, why, or why not?

Visitor – Outdoor Areas

28. Do you have experience with the furnishing of visitor - outdoor areas?

- Yes
- No-> please go to question 42.

29. With what kind of visitor - outdoor areas?

- Vegetables/herbs show gardens
- agricultural show areas
- nature educational playgrounds
- Other fruit and vegetable plantations, experiments on fruit and vegetable growing

30. How do visitors get information about the tangible contents of visitor - outdoor areas (e.g. plant species)?

- Information panels
- Folder
- Guided tours
- Other_____

31. Are guided tours offered for visitors to the outdoor areas? If so, how long do these tours last and how high are any fees charged per participant?

- < 1 hour, with cost contribution of_____
- 1 - 2 hours, with cost contribution of_____
- 2 - 5 hours, with cost contribution of_____
- 5 - 8 hours, with cost contribution of_____
- Other duration of_____, with cost contribution of_____

32. What kind of qualifications do the people who lead these guided tours have?

- skilled agricultural or forestry workers
- foresters
- Students of agriculture, forestry or other natural sciences
- Students from teacher training colleges
- Graduates of agricultural, forestry or natural science universities
- Graduates of a pedagogical university
- Other _____

33. On average, how much time is needed to walk through the visitors' outdoor areas that you supervise on your own without a guided tour? If there are several outdoor areas, please answer them separately.

- < 1 hour, with cost contribution of _____
- 1 - 2 hours, with cost contribution of _____
- 2 - 5 hours, with cost contribution of _____
- 5 - 8 hours, with cost contribution of _____
- Other duration of _____, with cost contribution of _____

34. Are the visitor outdoor areas open all year round? If not, why not?

- Yes
- No, because _____

35. Is there a charge for the use of the visitor - outdoor areas? If so, how high are any fees collected per participant?

36. At what intervals is the maintenance of the visitor – outdoor areas necessary?

37. Which care, management or other maintenance measures are required? What do they cost?

38. Is there vandalism in the visitor – outdoor areas? If so, how high are the costs to repair the damage?

39. How frequented are the visitor - outdoor areas offered by you? If possible, please indicate the approximate annual frequency of visitors.

- Very positive _____
- Rather positive _____
- Mediocre _____
- Rather negative _____
- Very negative _____

40. What do you think are the reasons for good or bad frequencies? Please answer separately for several visitor – outdoor areas.

41. Would you in the future again use visitor – outdoor areas for the mediation of nature educational knowledge? If so, why, or why not?

Finally

42. Is feedback obtained from visitors or participants, e.g. in the form of feedback sheets or other methods, for the purpose of quality assurance or further development of the content conveyed?

43. How do you advertise the nature education knowledge transfer you offer?

- in kindergartens, schools and their administrations (e.g. MA 10 , Directorate of Education), universities
- Advertisements in magazines
- Homepage, Social Media
- word of mouth
- EULE (environmental event brochure)
- Other

44. Anything else you'd like to add?

4.3. Evaluation of the questionnaires

Before starting the evaluation, the answers were checked for plausibility. Conflicting information was excluded. For example, in question 2, an expert stated that he used educational trails to impart knowledge in nature education, later, in the specific questions on educational trails, he ticked off that he did not work with them. Thus the first answer was not included in the evaluation. However, there was also the opposite case, wherein question 2 the option educational trails were not ticked, but later the specific part was filled in. In these questionnaires question, 2 were corrected and included in the evaluation.

To adequately compare the qualitative questions, the answers were assigned to categories. These categories were selected in such a way that they had to differ significantly from each other and included all given answers.

For the quantitative questions, intermediate categories were partly created during the evaluation which was considered necessary based on the answers. For example, the question: "Would you use educational trails again in the future to impart nature education knowledge? If yes, why or why not?" the category "Maybe" was added, as some experts could not commit themselves to "Yes" or "No".

4.3.1. General

4.3.1.1. Would you like to be named in the overall concept?

For data protection reasons it was important to ask this question in advance.

4.3.1.2. Which instruments do you use to convey nature education contents?

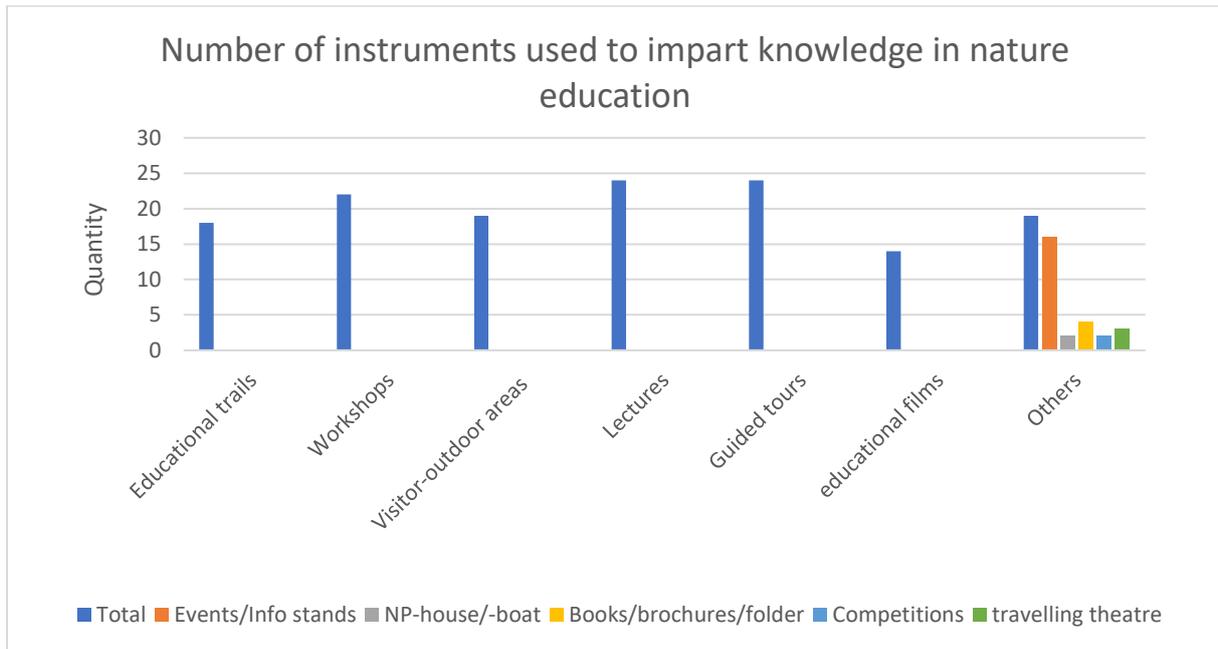


Figure 1: Number of instruments used to impart knowledge in nature education.

To impart nature education knowledge, 18 of the 29 experts interviewed work with educational trails, 22 with workshops, and 19 with open spaces for visitors. Further experience was gained by 24 of them with lectures, 24 with guided tours, 14 with educational films, and 19 with "other", here mainly with events or information stands. With two exceptions, the interviewees do not limit themselves to one type of knowledge transfer but apply at least three different ones.

4.3.1.3. Why did you choose these instruments of knowledge transfer?

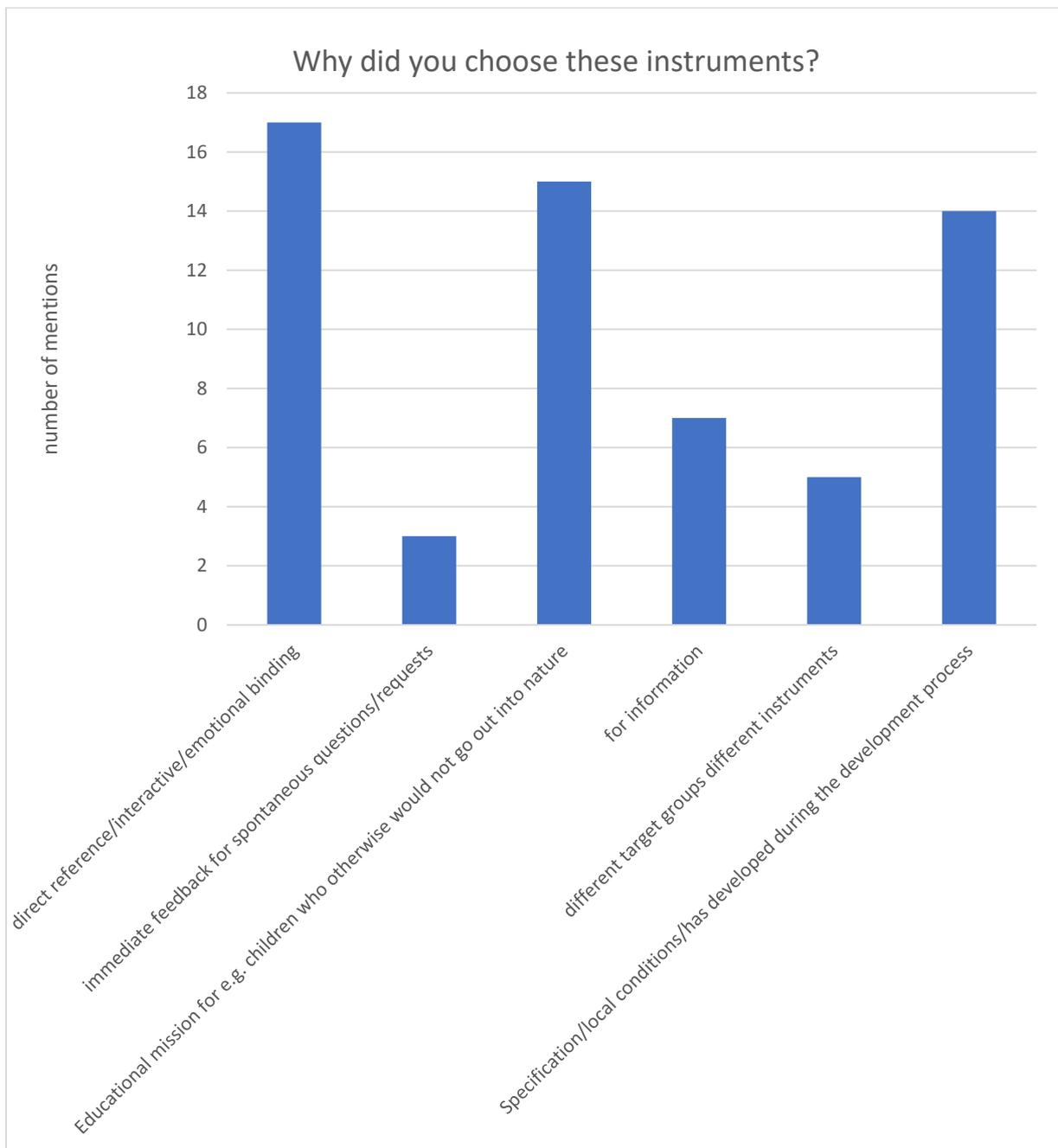


Figure 2: Why did you choose these instruments?

The reasons why respondents use certain instruments in nature education can be divided into 6 categories. 28% of the respondents chose the instrument because they appreciated the direct reference to the subject matter, the interactivity, and the emotional attachment of the participants to the topic. The second most common reason (25%) for choosing an instrument is its suitability for educational mediation. Frequently, in 23% of the cases, it is the superior authorities, the client, or the localities that determine which methodology is desired or possible. Further reasons given by experts for choosing a certain tool are that different target groups require different instruments for information purposes so that spontaneous questions can be answered immediately.

**4.3.1.4. What are your experiences with the different forms of knowledge transfer?
Please tick the appropriate box and add the instrument?**

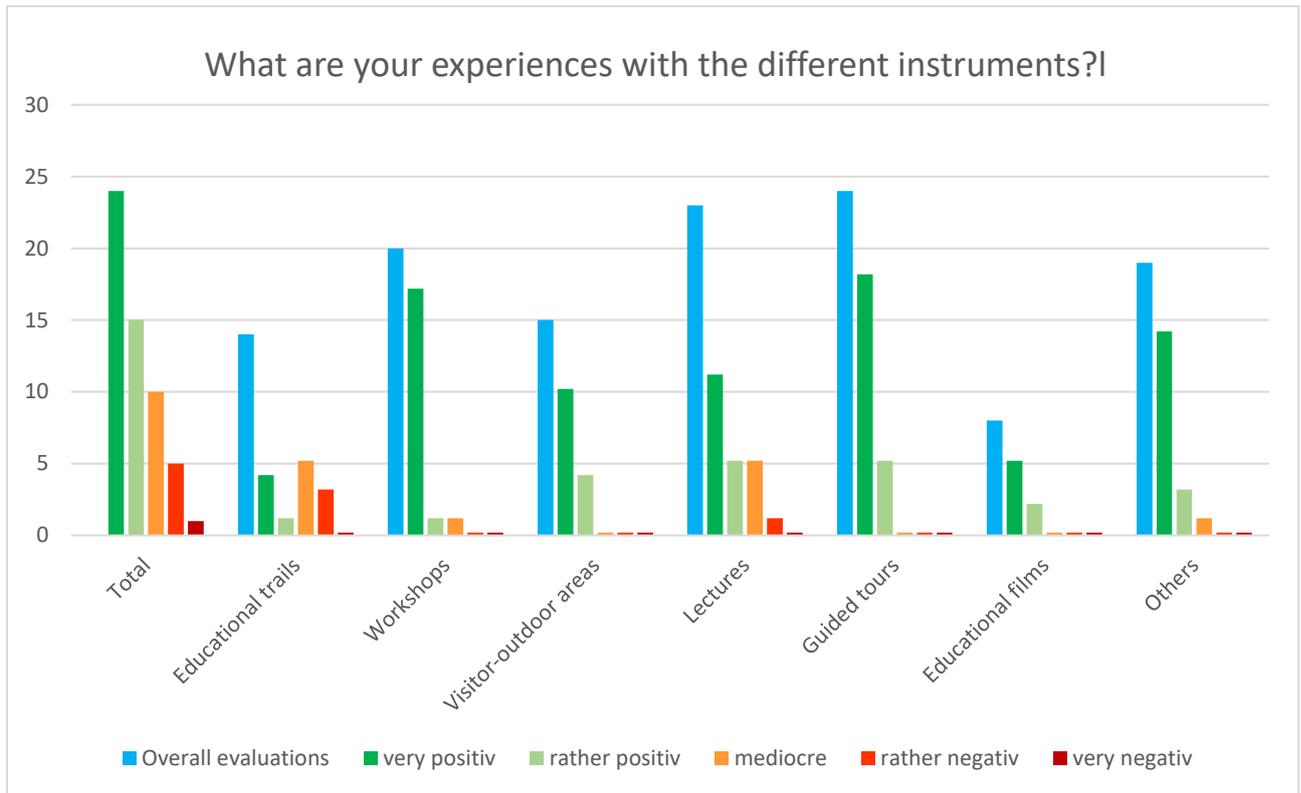


Figure 3: What are your experiences with the different instruments?

In this question, the experts were asked to assign the instruments they used to the answer options very good, rather positive, average, rather negative, and very negative. One expert indicated that he would rate all instruments from very positive to very negative, depending on the corresponding quality and target group. Workshops were rated most positively, with almost 86% of those who held workshops rating them as very positive. The reason given for the positive evaluation of the workshops is that they can be adapted to the target group, are well accepted by the visitors, the participants appreciate the personal support if long-term support takes place the better. It should be noted that very good workshops depend on the quality of the content and the leader. Guided tours are also mainly evaluated very positively, by about 76% of those experts who have experience with these. The visitor-outdoor areas are rated very positively by 68% and the educational trails by 30%.

47% of the experts find educational trails only moderately suitable for imparting nature education knowledge, as they are often not even noticed by visitors, it is difficult to arouse their interest, the information is often not updated and therefore they are only read through once and quickly become "boring". One possibility to counteract this would be exchangeable elements, whereby the effort of the exchange is perceived by some as great. Besides, it is difficult to address many different target groups at the same time, so it is often exhausting for parents to turn to an educational path board in peace, since their children are often not addressed by the content and therefore quickly urge them to continue. This is because educational trails often

appeal to too few senses, as they are mostly visually designed and often contain too much information.

If the answers are summarised as positive, average and negative, 92% of the workshops, 96% of the open spaces for visitors, 97.5% of the guided tours, 92.5% of the educational films and 91.5% of the "other" are assessed as positive (very + rather positive) by the experts. Presentations are evaluated positively by more than 71%, mediocre by 23% and negative by 6%, because they are sometimes perceived as too frontal, it is too much theory and the participants want to do and experience something themselves. Teaching paths are rated approximately equally positive and mediocre (about 39% and 37%), and negative by 24% of the experts.

4.3.1.5. For which target groups do you offer your programs? Which instruments do you use for each and why?

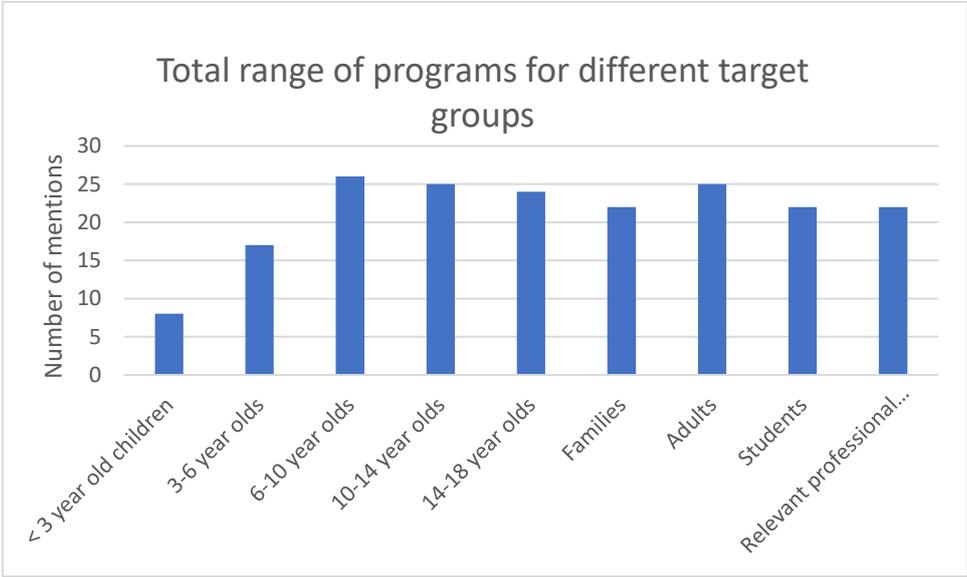


Figure 4: Total range of programs for different target groups.

In roughly equal shares, the experts offer programmes for the target groups of 6-10 year olds (14%), 10-14 year olds (13%), 14-18 year olds (12.5%), families (11.5%), adults (13%), students (11.5%) and the relevant professional audience (11.5%). Slightly less offers are available for 3-6 year olds (9%) and much less for under 3 year olds (4%).

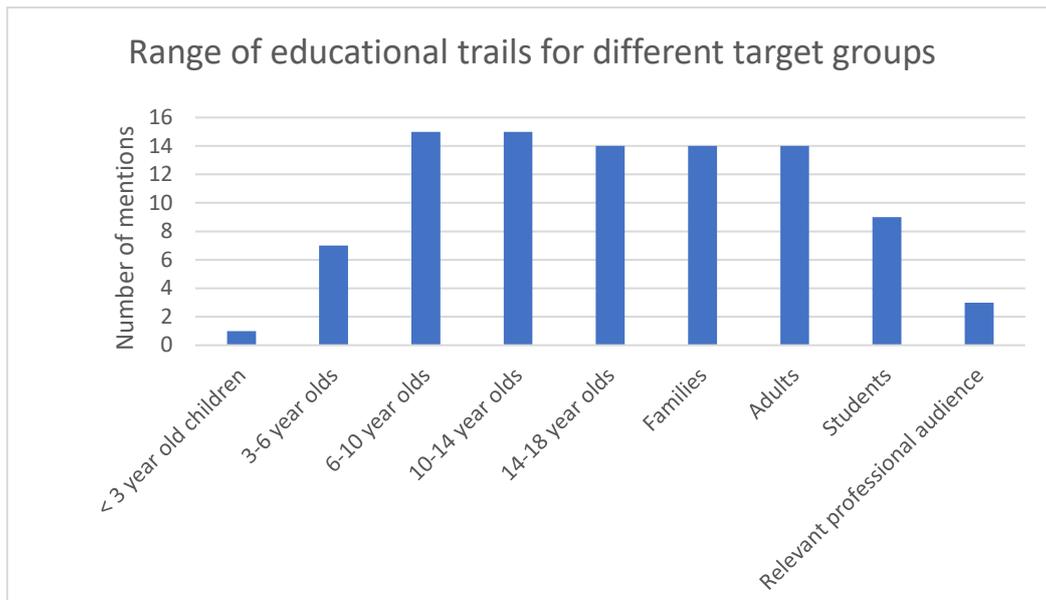


Figure 5: Range of educational trails for different target groups.

The educational trails of the interviewed experts are mainly intended for 6-10 year olds (16%), 10-14 year olds (16%), 14-18 year olds (15%), families (15%) and adults (15%). There are fewer educational trails for the target groups of students (10%) and 3-6 year-olds (8%). The experts offer hardly any educational trails for the relevant professional audience (4%) or children under 3 years of age (1%).



Figure 6: Offer of workshops for different target groups.

The workshops offered by the experts mainly target 6-10 year olds (16%), 10-14 year olds (15%), 14-18 year olds (14%) and students (13%). Workshops for 3-6 year olds (10.5%), adults (11.5%), relevant experts (9%) and families (9%) are offered somewhat less frequently. Only 2% of the expert workshops are for children under 3 years of age.

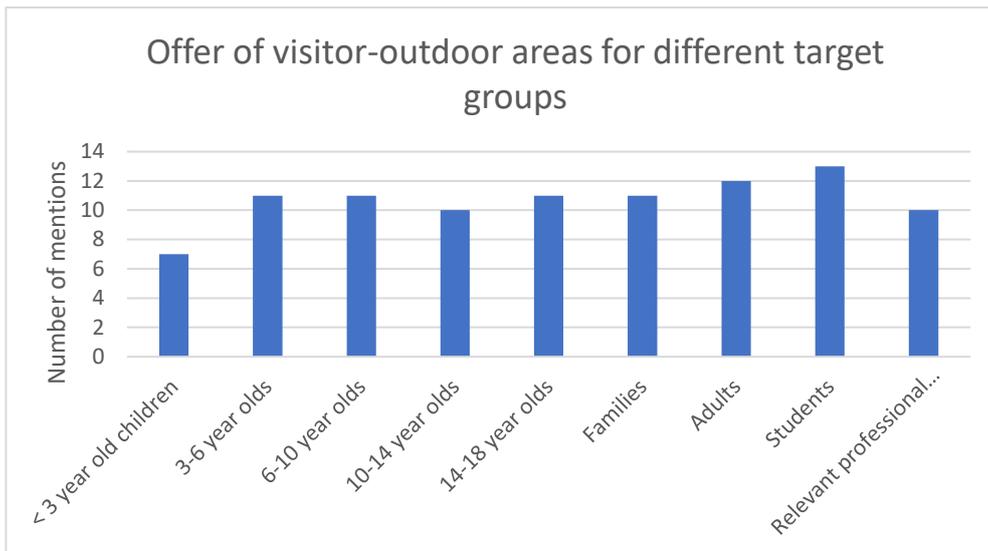


Figure 7: Offer of visitor-outdoor areas for different target groups.

Visitor-outdoor areas are created by the experts mainly for students (13.5%), adults (12.5%), 3-6 year olds (11.5%), 6-10 year olds (11.5%), 14-18 year olds (11.5%), families (11.5%), 10-14 year olds (10.5%) and relevant trade visitors (10.5%). Rarely are they intended for and under 3 years of age (7%).

The experts offer lectures mainly for relevant professional audiences (24%), adults (18%) and students (18%). Guided tours are mainly offered for adults (17%), relevant professional audience (15%), students (14%), 6-10 year olds (13%), 10-14 year olds (12%) and 14-18 year olds (11%). Educational films are produced by experts in the field of nature education, preferably for 6-10 year-olds (16%), 10-14 year-olds (16%), 14-18 year-olds (15%), adults (13%) and students (12%). "Other" such as events, information stands etc. are offered for all target groups, but rather less for relevant professional audiences and under 3 years of age.

When asked why certain programs are used for specific target groups, unfortunately, there were few, and even fewer concrete answers from the experts. Three times it was stated that it was important to prepare the contents in a way that was appropriate for the target group, twice that it was appropriate and once each time that it was predetermined, and that these tools (workshops and guided tours) were well suited for the participants' self-experience of nature. It was also mentioned once that the programs are flexible and can be adapted to each target group, except for the professional audience, where lectures and guided tours are best suited.

4.3.1.6. Do you integrate 'new media' into your programmes? If so, which and where?

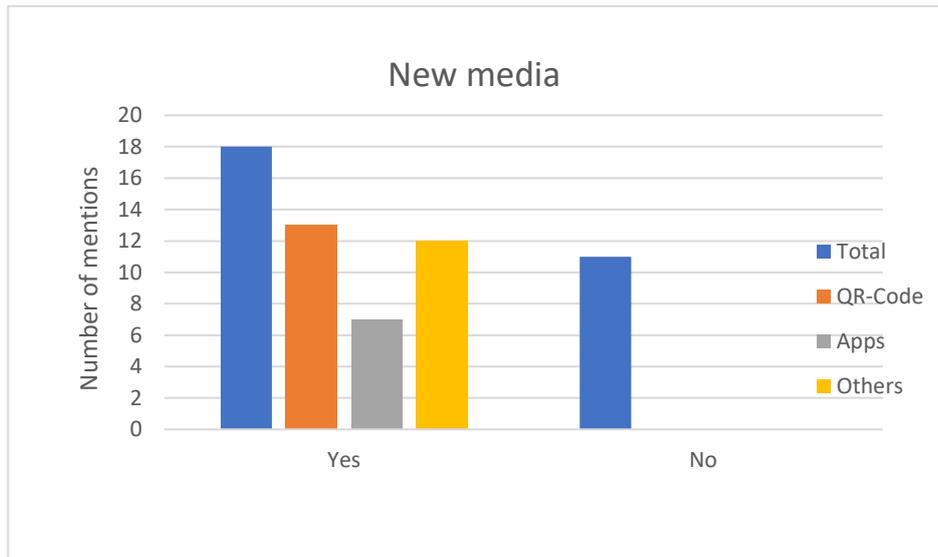


Figure 8: Do you integrate 'new media' into your programmes?

18 of the 29 experts integrate "new media" into their programs, once it was added that these are, however, hardly used by the visitors (tablets). Twice it was mentioned that they exist but are not used by the leaders during guided tours or workshops (QR codes on educational trail signs). 73% of the experts surveyed who use "new media" do so using QR codes, 67% with "other" and 39% with apps. Under "Other", the experts mainly use social media channels and tablets, while short and demo videos, PowerPoint and laptop, links to educational trail signs, and a digital microscope were also mentioned.

4.3.2. Educational trails

4.3.2.1. Do you have experience in planning, implementing or supervising educational trails?

The following questions could not be answered by all experts, but only by those 18 who had experience with educational trails.

4.3.2.2. How are these educational trails structured, what elements do they contain?

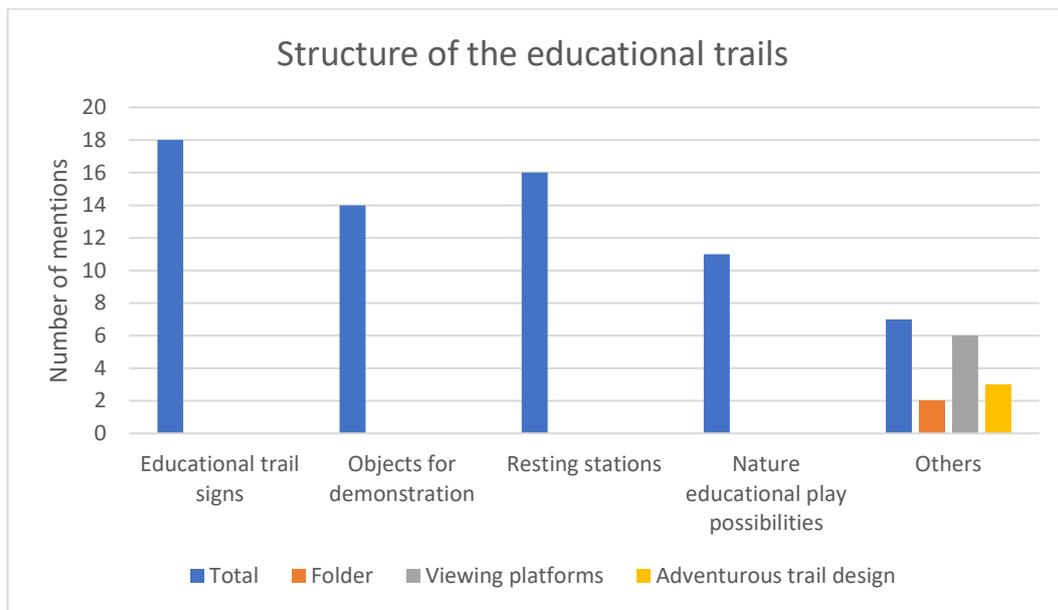


Figure 9: Structure of the educational trails.

Along most of the educational trails, or even adventure trails, with which the interviewed experts have the experience, there are nature trail signs that draw attention to attractive places in the surroundings. Rest stops are another important element, so perhaps less interested visitors are also invited to stay a little longer, and thus also turn their attention to the nature trail. In many of the educational trails, visitors will find objects of interest, often plants or animals that can be seen in the surrounding area. Some of the adventure trails offer nature educational games, often simple things like tree trunks for balancing and climbing, sometimes real playgrounds, or instructions for games that can be played along the trail. Otherwise, you will find viewing platforms, folders (sometimes in combination with symbolic pegs instead of signs), and adventurous path design (e.g. many turns, hollow paths, paths "across" the forest).

4.3.2.3. If there are educational trail signs, how are they constructed?

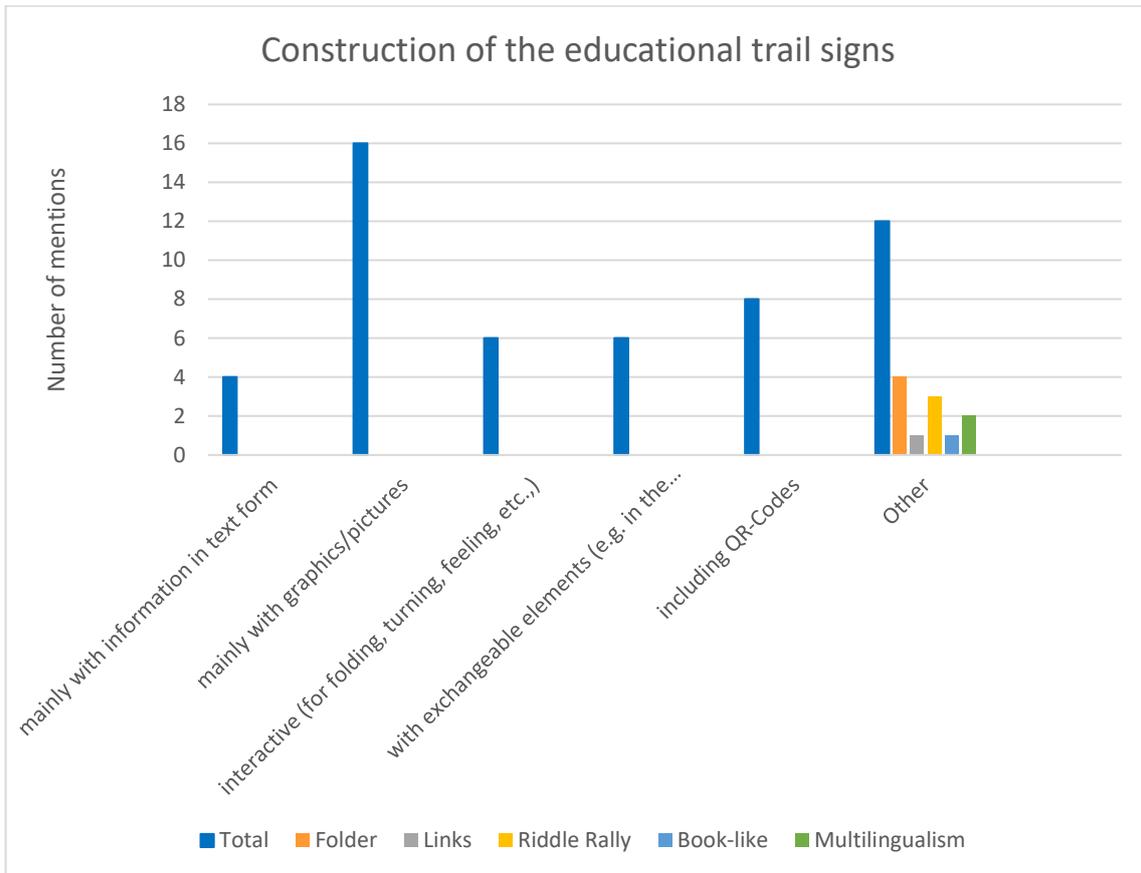


Figure 10: Construction of the educational trail signs.

According to experts, the majority of the educational trail signs with which they have experience are constructed with graphics and pictures. The second most common answer is that the signs contain QR codes, after which interactive and exchangeable elements are given in equal proportions. Rather fewer signs are designed with mainly text and in combination with folders. Rarely are educational trail signs designed in several languages, in book form, and as puzzle rally, or printed with links.

4.3.2.4. Are guided tours offered for the educational trails? If so, how long do these tours last and how high are any fees charged per participant?

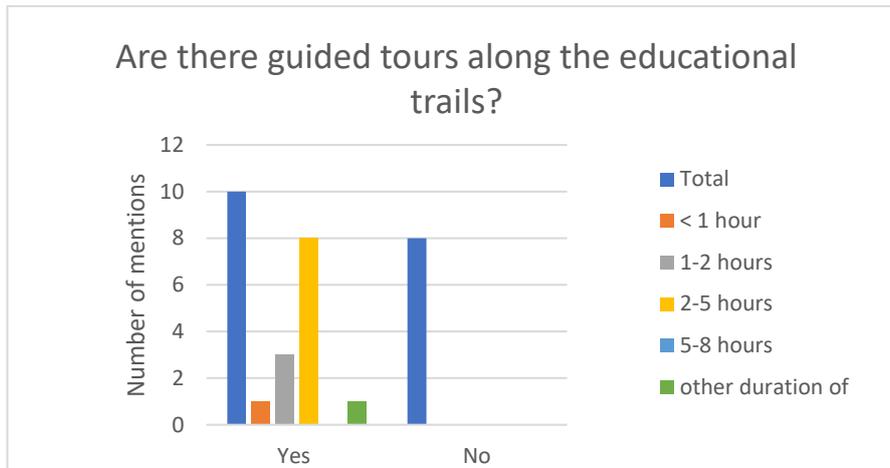


Figure 11: Are there guided tours along the educational trails?

10 of 18 experts offer guided tours along the educational trails. Most of the time these are in the time frame of 2-5 hours, rather rarely between 1 and 2 hours, and very rarely they last less than 1 hour or longer than 8 hours.

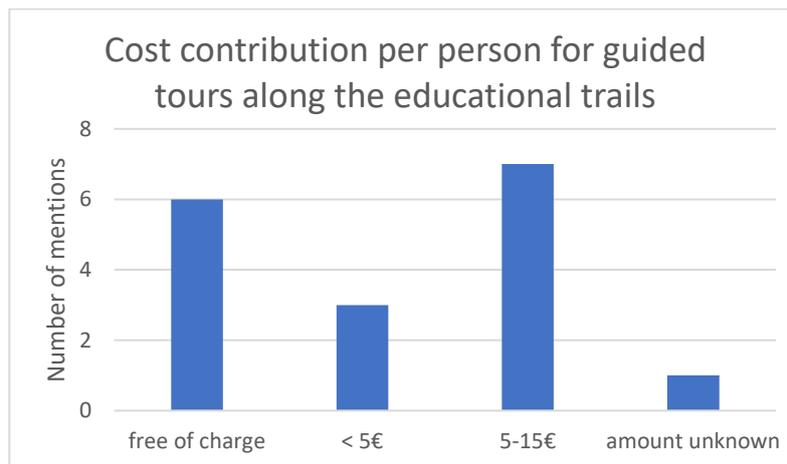


Figure 12: Cost contribution per person for guided tours along the educational trails.

41% of the participation fees for guided tours along the educational trails range between 5 and 15€ per person, 35% of which are free of charge. 17.6% of the guided tours cost less than 5€, once it was stated that the cost was unknown.

4.3.2.5. What kind of qualifications do the people who lead these guided tours have?

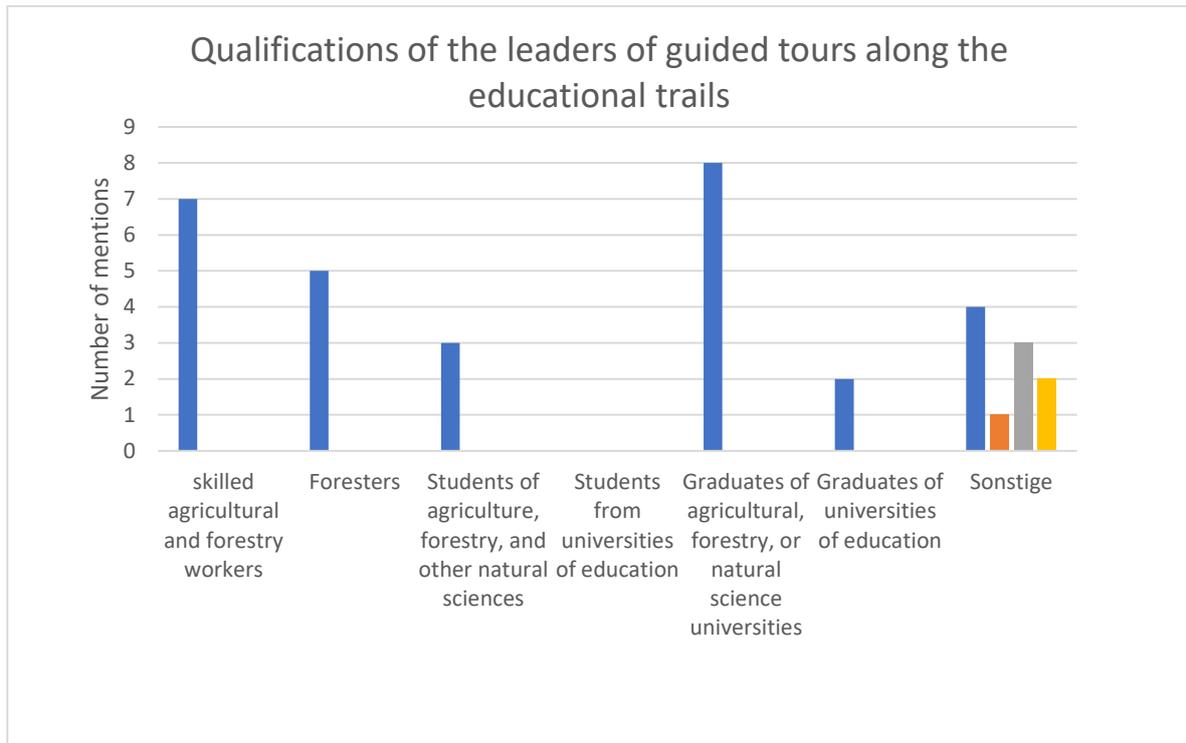


Figure 13: Qualifications of the leaders of guided tours along the educational trails.

51% of the guided tours along the educational trails are carried out by graduates of agricultural, forestry, or natural science universities (27%), and by skilled agricultural and forestry workers (24%). In addition, 17% of these tours are led by foresters, 10% by students of agriculture, forestry, and other natural sciences and 7% by graduates of universities of education. In the information on further training courses, forest pedagogues, rangers, and external guides are mentioned, whereby persons with training as forest pedagogues or rangers also appear within the other categories. According to the information provided, students from colleges of education do not lead any of these tours.

4.3.2.6. Hon average, how much time is needed to walk the educational trails you are responsible for, on your own without a guide? Please answer separately for several educational trails.

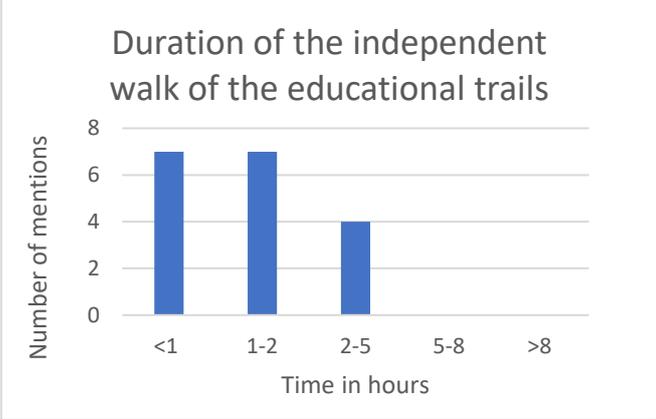


Figure 14: Duration of the independent walk of the educational trails.

In most cases, it takes less than 1 or between 1 and 2 hours to walk the trails independently. A little less frequently, one needs between 2 and 5 hours. None of the experts stated that it takes more than 5 hours to walk the trails.

4.3.2.7. How long (in m or km) are the educational trails and how many elements (signs, stations, etc.) do they contain? Please answer separately for several educational trails.

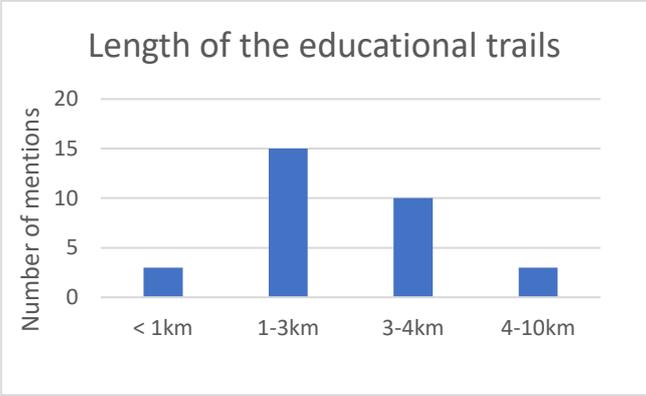


Figure 15: Length of the educational trails.

According to the data, most experts have experience with educational trails in the length of 1-3 (about 83%), as well as 3-4 km (about 55%). About 16.5% are familiar with those under 1, or of 4-10 km.

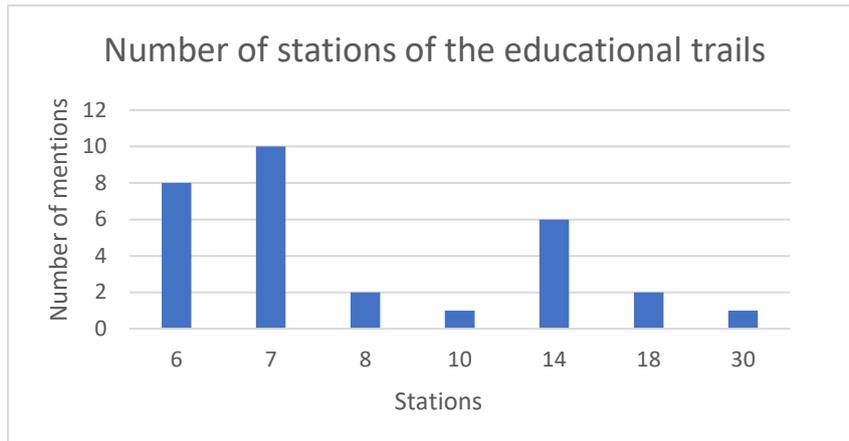


Figure 16: Number of stations of the educational trails.

Along these educational trails, there are usually 7 different stations installed. Often it also consists of 6, or even 14 different sections. 8 or 18 stations are rather rare, 10 or 30 very rare.

One of the experts was involved in the creation of a very short nature trail, where boards and nature educational objects were installed at intervals of about 13 m. On the most extensive nature trail, however, the signs are located about one kilometer apart. These two are extreme examples, in the other adventure trails the stations are located at a distance of about 83-390 m.

One expert remarked that he thought it would be ideal if the stations of the educational trails were at a distance of about 500-600 m, as this would give you about 5-10 minutes of walking time to "refresh yourself" and then get information again.

4.3.2.8. At what intervals is the maintenance of the educational trails necessary?

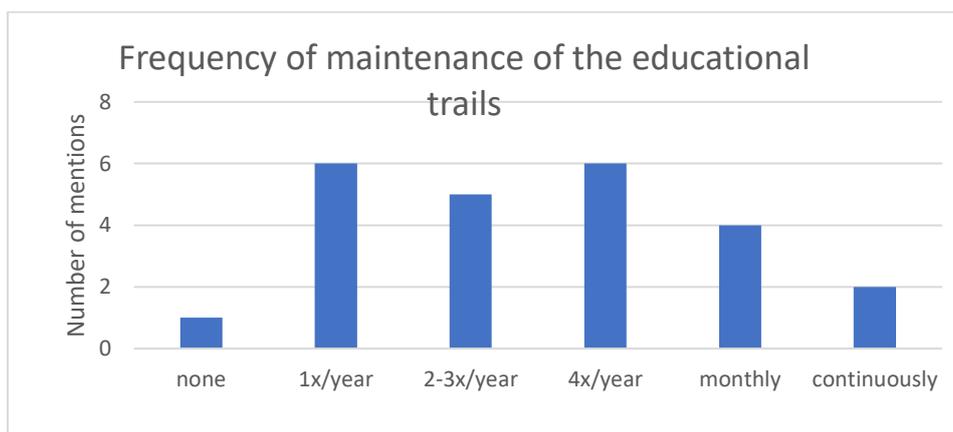


Figure 17: Frequency of maintenance of the educational trails.

In one case, no maintenance was necessary because the nature trail was only installed for one summer. Most often, at 25% each, it was stated that the educational trails had to be maintained four or once a year. 21% stated that maintenance was necessary two or three times a year. Monthly maintenance was mentioned by 16.5%, and 8.5% said that continuous inspection was necessary.

4.3.2.9. What maintenance measures are required? How much do they cost?

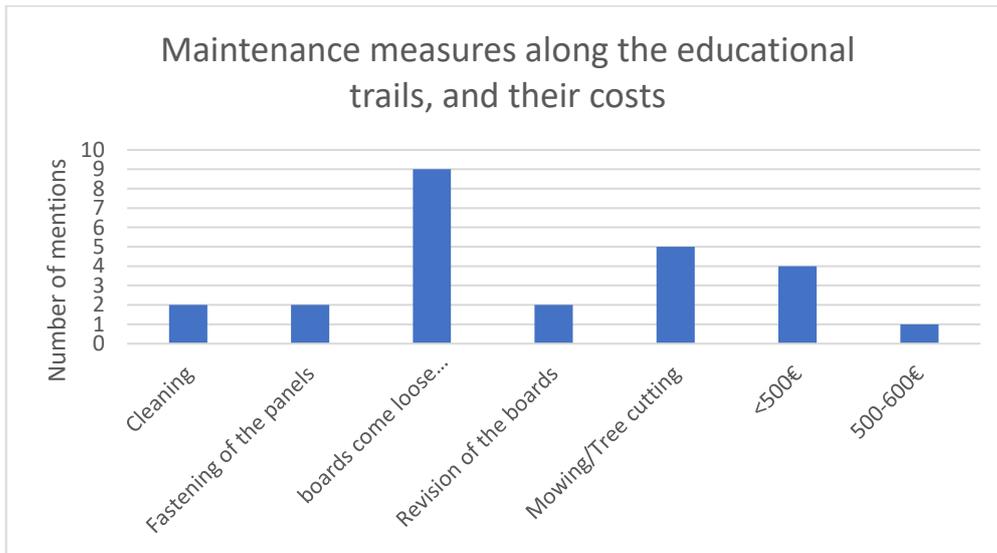


Figure 18: Maintenance measures along the educational trails, and their costs.

Only five experts were able to provide information on the number of costs incurred by maintenance measures. Four of them amount to less than 500€, one to 500-600€ per year.

UV radiation and weathering have a strong impact on the educational trail boards, causing, according to experts, almost half of all maintenance measures. Other important maintenance measures are mowing and tree pruning. In equal parts, the cleaning of the surroundings, the fixing of the boards, and the revision of the contents are considered necessary.

4.3.2.10. Is there vandalism along the educational trails? If so, what is the cost of repairing the damage?

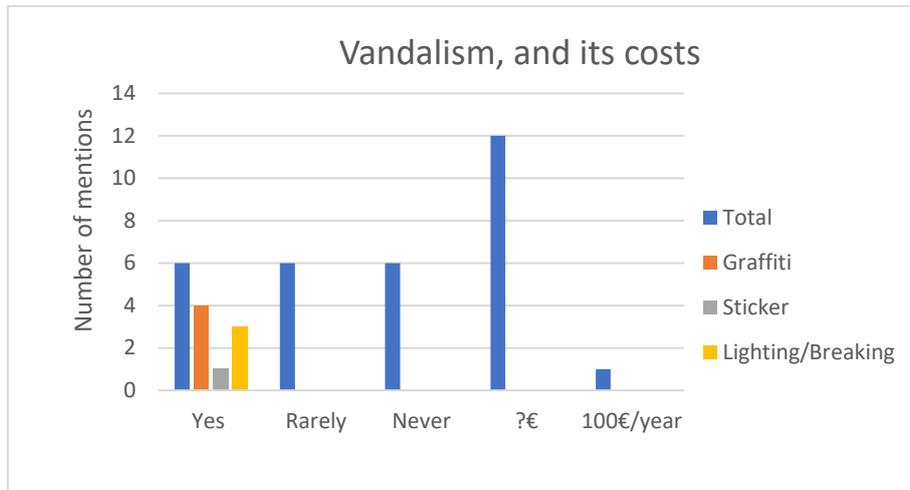


Figure 19: Vandalism, and its costs.

Out of 18 experts, six states that vandalism (33.33%) occurs along the nature trail, six that it is rare (33.33%), and six that it never occurs (33.33%).

When vandalism occurs, it is mainly graffiti, or the stations are violently destroyed and set on fire. Stickers are less common. However, not all experts provided information on the type of vandalism.

Only one expert estimated the costs caused by vandalism along the nature trail at 100€ per year, all others could not give any details.

4.3.2.11. How frequented are the educational trails you offer? If possible, please indicate the approximate annual frequency of visitors.

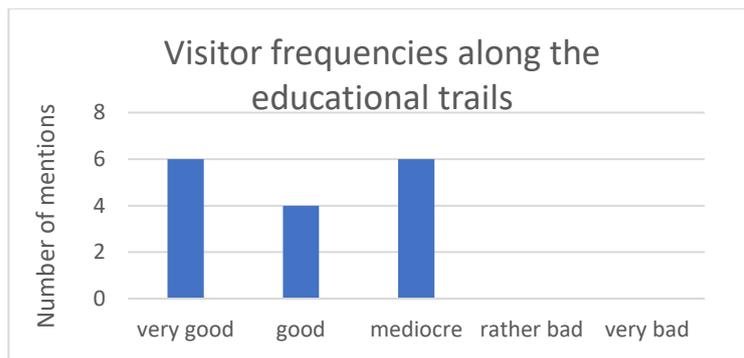


Figure 20: Visitor frequencies along the educational trails.

Not all experts were able to give an evaluation (very good to very bad) on the use of the educational trails by visitors. In six out of 16 evaluations, the frequency of use was rated as very good or average. Four times it was rated good, rather bad and very bad by none.

The number of visitors could mostly only be estimated, as hardly any specific counts are made and not all people who are along the educational trails look at the boards. The experts gave figures between 500 and 400,000 nature trail visitors annually.

4.3.2.12. What do you think are the reasons for good or bad frequencies? Please answer separately for any several educational trails.

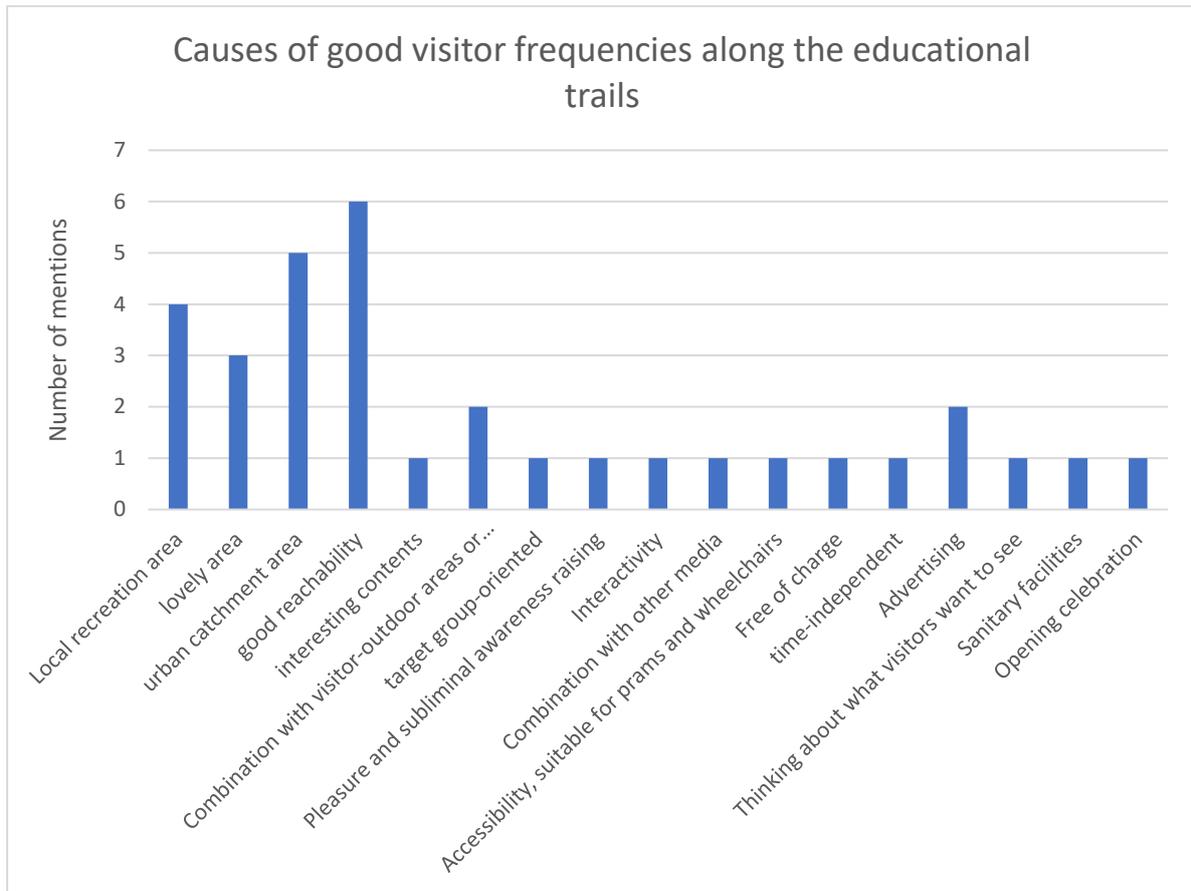


Figure 21: Causes of good visitor frequencies along the educational trails.

37.5% of the 16 experts indicate that good location and accessibility have a positive effect on the frequency of the educational trails. Those that are located in the Vienna catchment area, have good public transport connections and can be reached by car are very well frequented (31%) according to the experts. If the adventure trail is located in a local recreation area (25%) where the area is attractive (19%), this also has a very positive effect on visitor numbers. The experts think that the combination of educational trails with viewing platforms, visitor-outdoor areas, or gastronomy, as well as the fact that they are free of charge, also contribute to this. The advantage of an educational trail is that you can visit it independently of time and that it provides information about the surroundings. It is important to think about what visitors want to see when planning the trail so that only the contents that are interesting for them are conveyed. In addition, interactivity, the combination with "new media", the accessibility as well as the suitability for prams and wheelchairs play an important role in ensuring that an educational trail is well frequented. It is also essential to keep the target groups that are to benefit from the nature trail in mind and to actively draw their attention to it through advertising. Opening events to attract the first visitors have proven to be positive. It may be possible to get people interested in the nature trail who are not familiar with the topic.

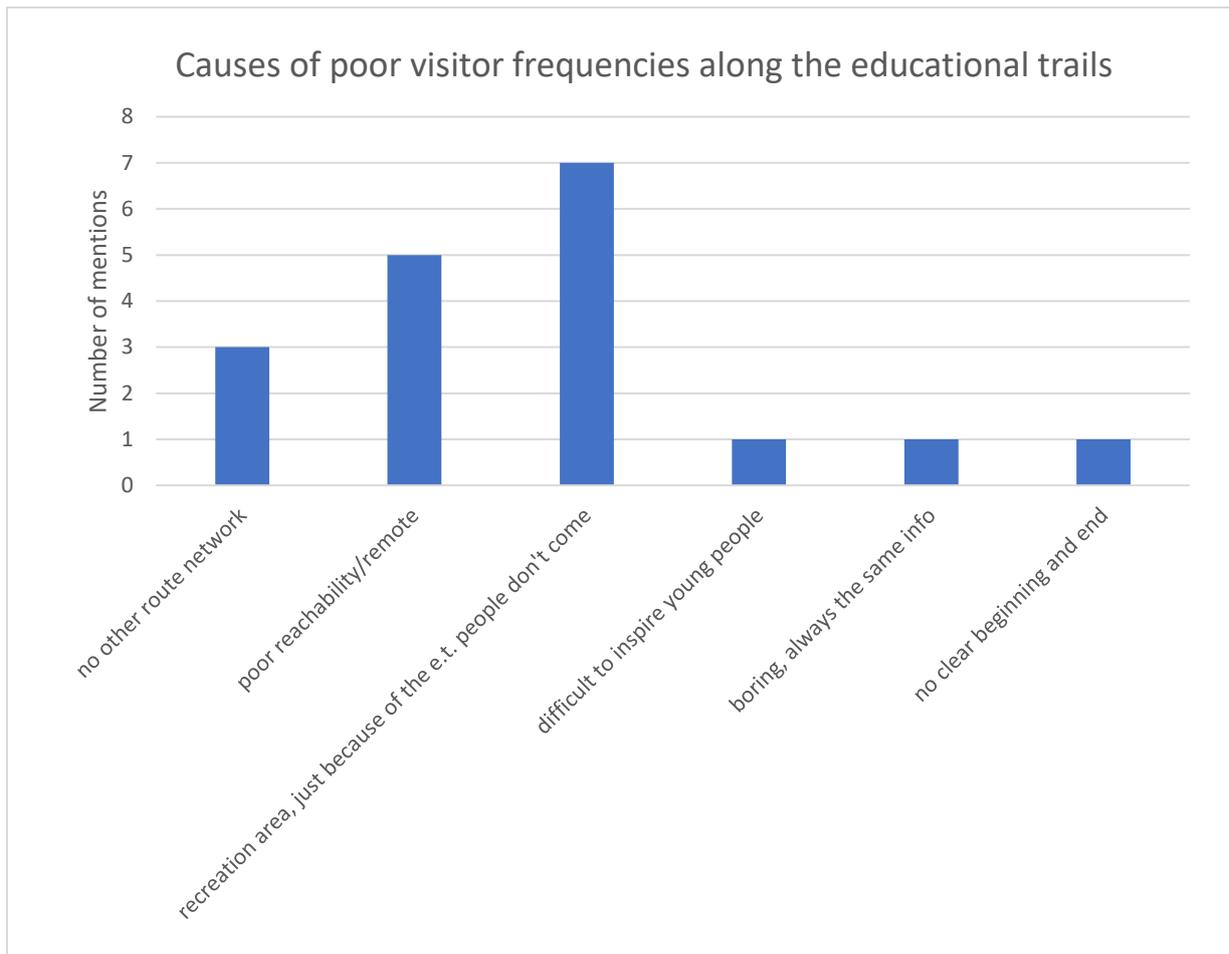


Figure 22: Causes of poor visitor frequencies along the educational trails.

As read above, experts consider it positive for visitor numbers if an educational trail is located in a local recreation area. However, 39% of the experts also see this as a disadvantage, as people come for other things, such as recreation or sports, and therefore lack interest in an educational trail. There would be hardly any people who would come especially because of an educational trail. According to experts, the most positive effect on the number of visitors to the educational trails is when they are easily accessible. Therefore it is not surprising that if the nature trail is not easily accessible or remote, visitors are absent (28%). If there are no other paths besides the nature trail, the motivation of the visitors to come to the area of the nature trail is low. Moreover, it is difficult to inspire young people. Often educational trails have no clear beginning or end and quickly become boring for visitors because the information is often the same over a long period of time and therefore not varied enough.

**4.3.2.13. Would you in future again use educational trails to teach nature education?
If so, why, or why not?**

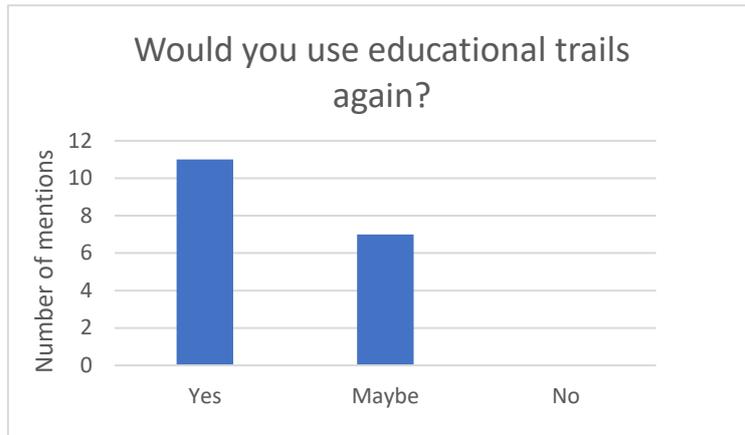


Figure 23: Would you use educational trails again?

Eleven out of 18 experts would use educational trails again, the other 7 perhaps. However, even those who answered "yes", only under certain conditions.

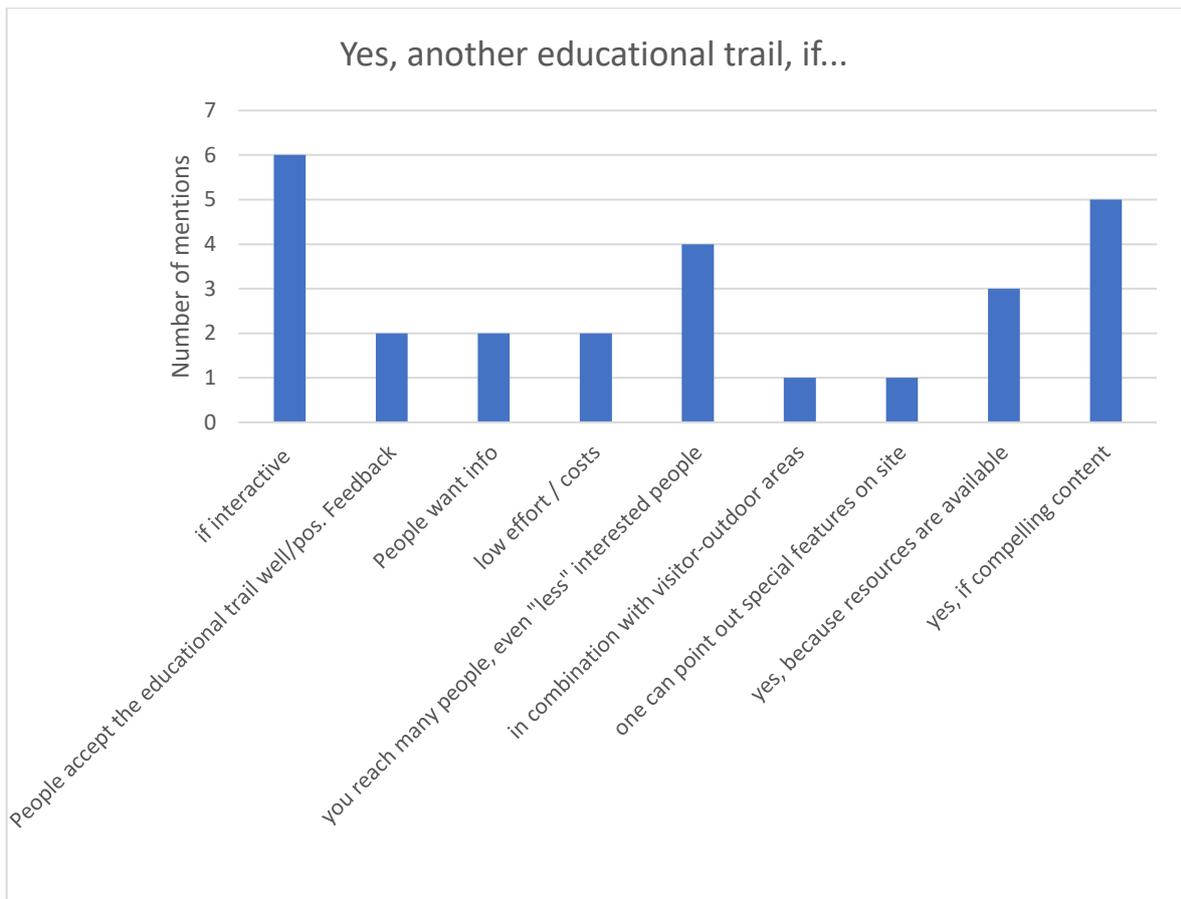


Figure 24: Yes, another educational trail, if..

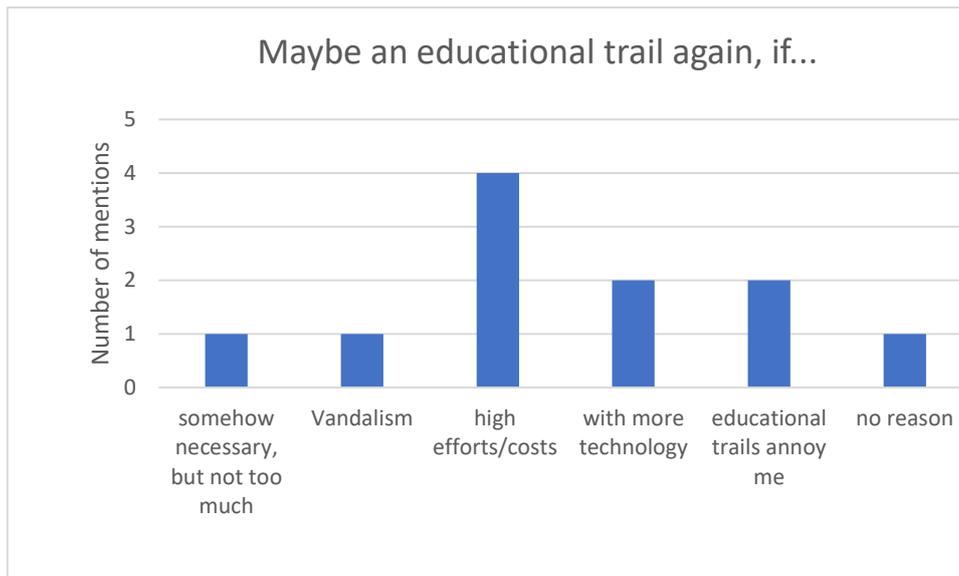


Figure 25: Maybe an educational trail again, if...

55% of the experts (6 out of 11) each stated that they would use educational trails again if they were interactive and 45% if they had compelling content. 36% of the experts answered "yes" because it would reach many people, even "less interested", and 27% because the resources are available. People accept the trails well, and they want information, was given twice as a reason for reinstalling them. Two experts would perhaps use educational trails again to impart knowledge about nature education if they were linked to more technology. It is interesting to note that the experts have completely opposite views regarding the effort and costs involved in an educational trail. Two would set up an educational trail again because of the low effort and costs involved, while four would only perhaps do so because they consider them to be high. In each case one expert would reinstall an educational trail because it is so easy to point out special features on-site, another would only do so in combination with a visitor-outdoor area, and one more would not do so in Vienna because of vandalism, but would do so in the other provinces of Austria. Two further statements were that the expert himself felt disturbed by the increasing blurring of the landscape and that the undisturbed, spontaneous experience of nature was thus taken away from him/her. Another statement was that educational trails were somehow necessary, but that there needed not to be too many. One expert did not give any reason for his statement.

4.3.3. Workshops

4.3.3.1. Do you have experience in knowledge transfer in the form of workshops?

A total of 22 of the experts have experience with nature education knowledge transfer in the form of workshops.

4.3.3.2. How long do the workshops last, and how high are any fees collected per participant?

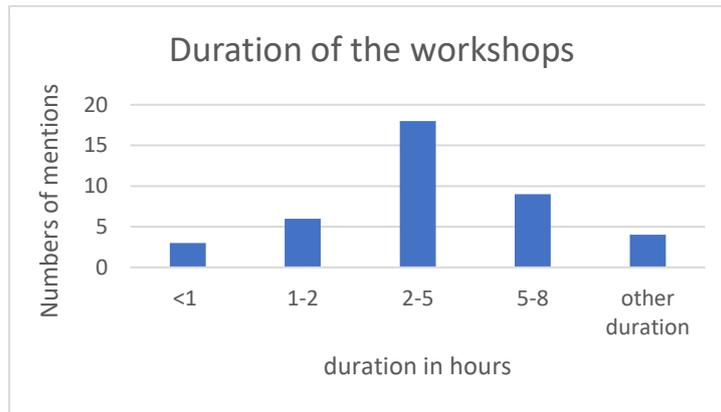


Figure 26: Duration of the workshops.

Most of the workshops are held in a time frame of 2-5 hours (45%). 22.5% last between 5 and 8 hours, 15% from 1 to 2, 7.5% less than 1 hour, and 10% are workshops lasting several days.

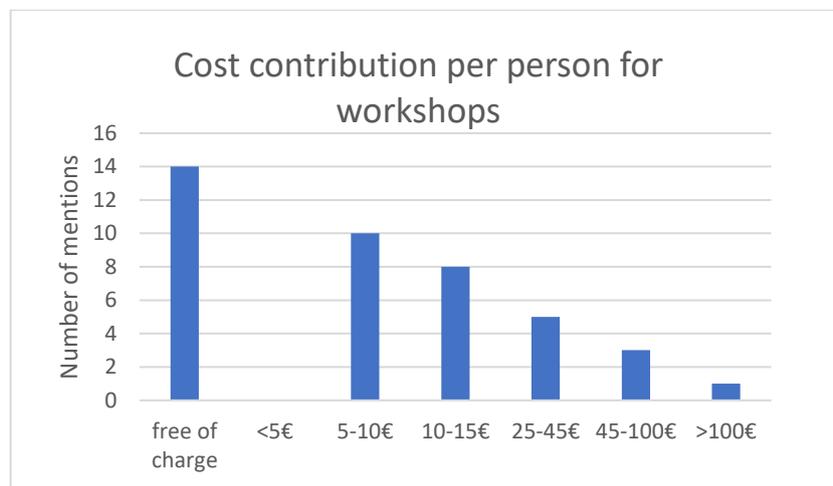


Figure 27: Cost contribution per person for workshops.

14 experts hold their workshops free of charge for the participants. In ten cases, cost contributions of between €5 and €10 are levied, and in eight cases €10 to €15. Five times it was stated that workshops cost between 25 and 45€, and three times that they cost between 45 and 100€ per participant. More than 100€ is charged for a workshop.

4.3.3.3. What kind of qualifications do the people who lead these guided tours have?

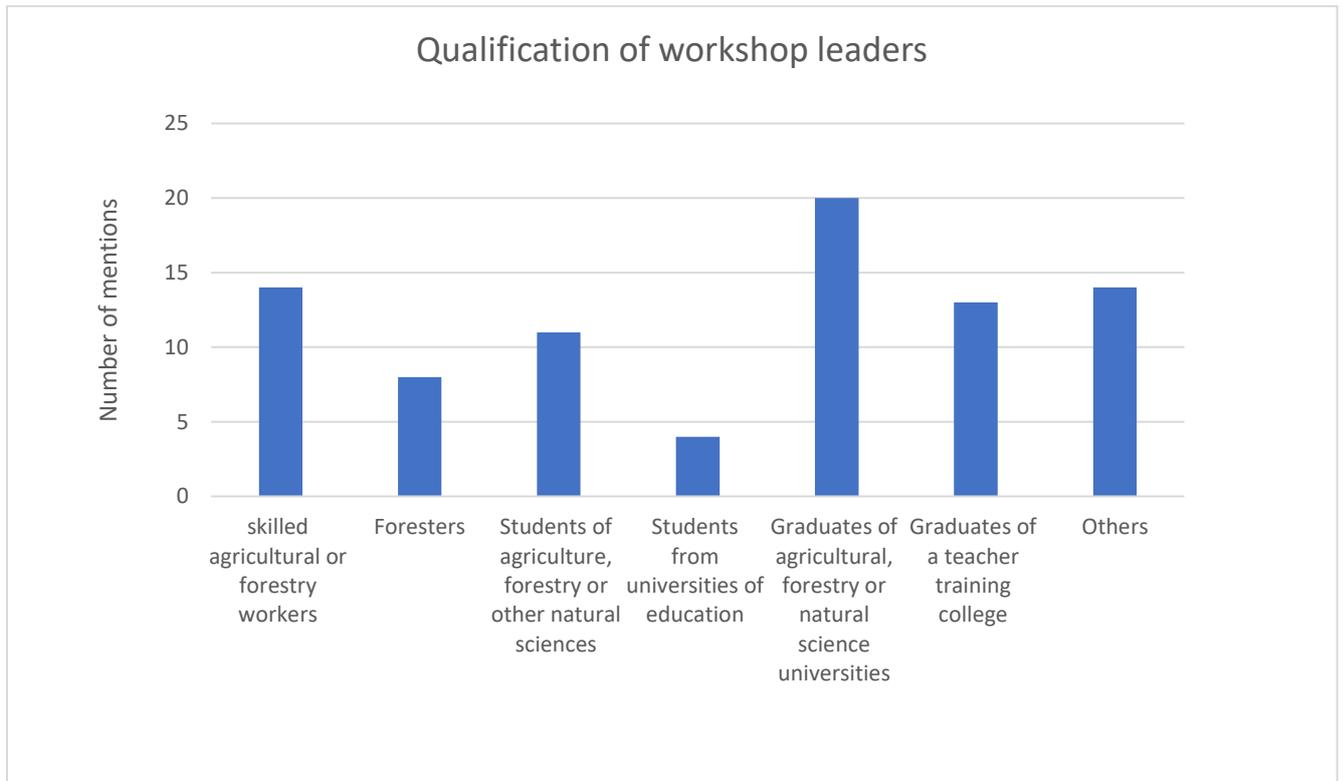


Figure 28: Qualification of workshop leaders.

Almost a quarter of the workshops are held by graduates of agricultural, forestry, or other natural science universities. 16.5% of the workshops are led by skilled agricultural or forestry workers, and 15.5% by graduates of universities of education. In 13% it was stated that students of agriculture, forestry, and other natural sciences and in 9.5% foresters are the leaders. In contrast to the guided tours along the educational trails, workshops are also held by students from universities of teacher education (4.5%). In 16.5% of the cases, it is stated that the workshops are supervised by "others", including external persons, horticultural engineers, ambitious laymen, national park rangers, and forest pedagogues. As already mentioned in the section on educational trails, some of the leaders of the other training categories are also National Park rangers and forest pedagogues.

4.3.3.4. What tools do you use in your workshops?

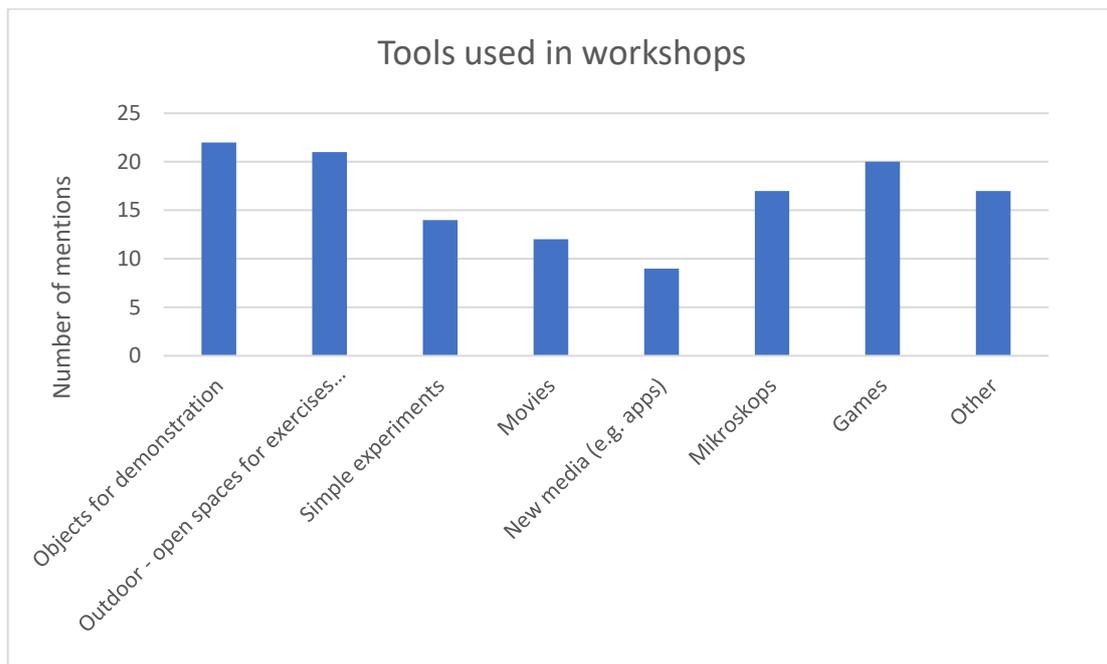


Figure 29: Tools used in workshops.

A total of 132 details were provided on tools used by experts at workshops. The following information refers to all workshops offered by the experts, i.e. not that everyone in each workshop uses all the tools he or she has indicated, but rather target group and topic-specific.

None of the experts uses only one tool, but at least two, usually several. All 22 experts who have experience with nature education workshops use these visual aids. 21 of them stay with their participants on outdoor open spaces where they can experience nature up close. 20 experts also play games during their workshops that are tailored to the target group. 17 experts stated that microscopes are used, 14 carry out simple experiments. In slightly more than half of them (12) films are used in the workshops. About one third use new media, such as apps during the workshops. 17 experts stated that other tools such as identification literature, magnifying glasses, nets, picture cards, everything found in nature, theatre pedagogy, vegetables for tasting, and much more will be used in the workshops.

4.3.3.5. Are there any tools that you think should not be missing from any workshop?



Figure 30: What tools should no workshop be without?

Out of a total of 35, 10 of the experts' statements are thus accounted for by living organisms and objects of illustration, which should not be missing at any of their workshops. Seven times it was stated that open spaces, six times a competent workshop leader, and five times individuality/flexibility are essential when conducting workshops. Twice it was stated that the clothing of the leaders and participants is adapted to the weather and the workshop. Once each time, aids such as stereomicroscopes, pictures, computer/laptop/PowerPoint, and tools were mentioned. According to one expert, there is no tool for him that has to be present at every workshop.

4.3.3.6. How frequented are the workshops offered by you? If possible, please indicate the approximate annual frequency of visitors.

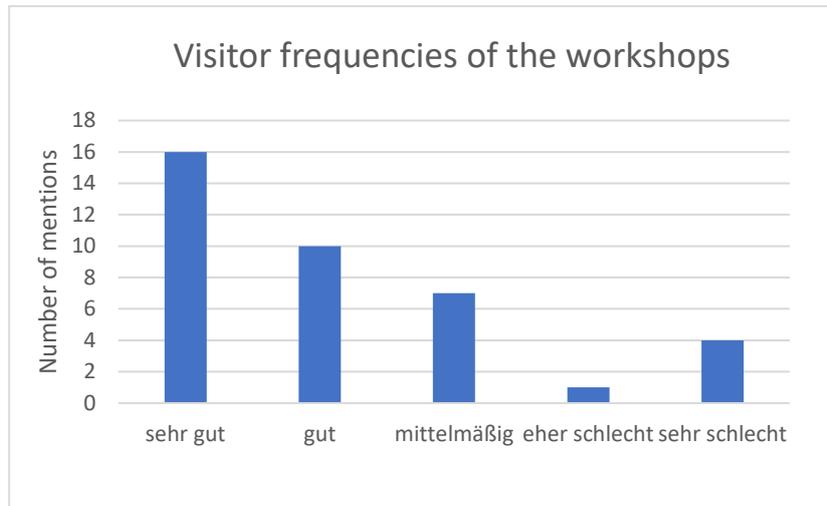


Figure 31: Visitor frequencies of the workshops.

Approximately 42% of the experts estimate that workshops on nature education knowledge transfer are very well attended. Approximately 26% rated them as good, 18% as mediocre, 3% as rather bad, and 11% as very bad.

If one compares positive, mediocre, and negative, the following evaluations result. Workshops are assessed as positive by 68.5%, 18.5% as mediocre, and 13% negative.

From the number of visitors, the workshops offered by the experts are between 3 and 11,700 people per year.

4.3.3.7. What do you think are the reasons for good or bad frequencies? Please answer several workshops separately.

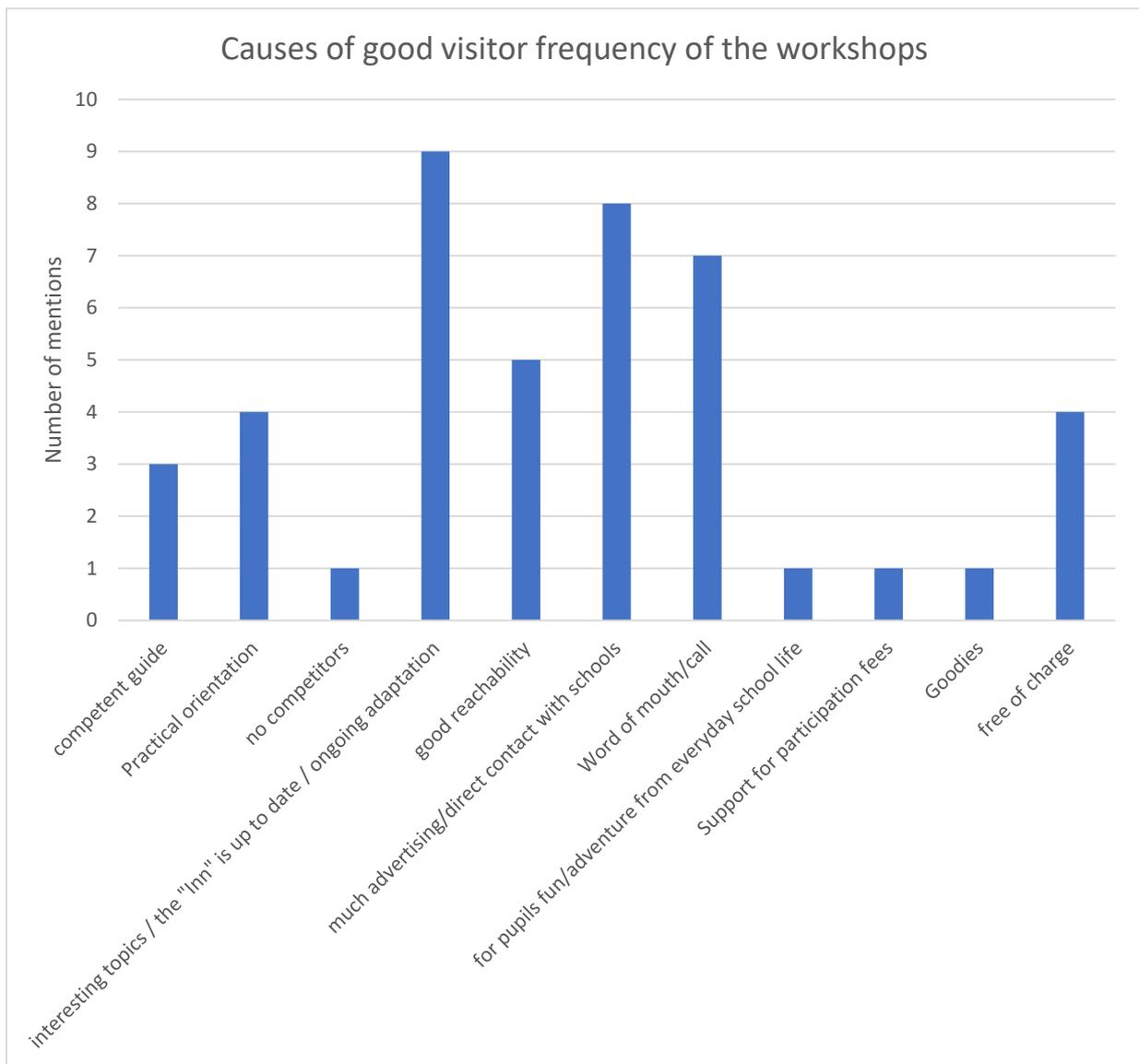


Figure 32: Causes of good visitor frequency of the workshops.

According to experts, the reasons for well-attended workshops are manifold. However, almost half of the experts believe that workshops are well attended because the topics are interesting and "in" and the program is constantly being adapted. The second most frequent mention of positive visitor numbers is advertising and direct contact with target groups, such as schools. Seven of the 22 experts justify their well-running workshops, among other things, by the fact that they already have a good reputation and therefore recurring visitors, and are often recommended by word of mouth. Good accessibility is also a decisive factor in ensuring that workshops are well attended. Other reasons are free of charge and practical relevance. Three times good workshop leaders were mentioned, and once the promotion of participation fees, from which especially socially weaker people benefit. The following reasons for good visitor numbers were given once each time: there was no competition, the workshops were fun, especially for pupils, and a change in everyday school life and goodies were distributed.

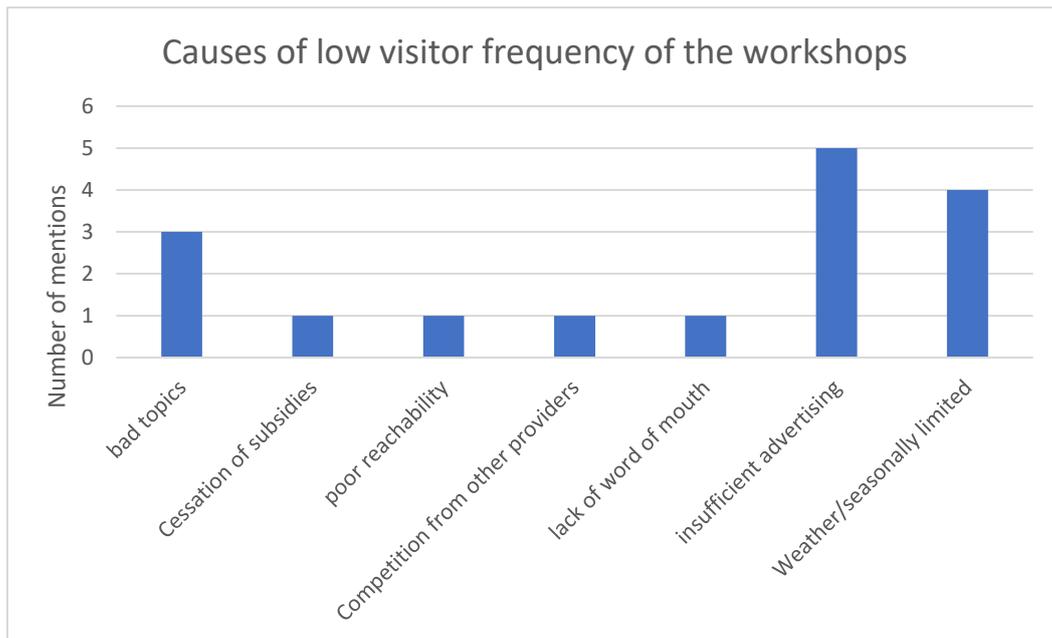


Figure 33: Causes of low visitor frequency of the workshops.

The main reasons for the poor ratings of the workshops are that they are not sufficiently advertised (5) and because they take place outdoors, depending on the weather and the season (4). There are also "bad" topics (3) which simply attract less interest. In each case, poorly attended workshops were justified by the fact that subsidies were no longer available, the locations were difficult to reach, there was a lot of competition from other providers, and there was no word of mouth.

4.3.3.8. Would you use workshops again in future to impact nature education knowledge? If so, why, or why not?

Here all 22 experts agree that they would and will use workshops again in the future to teach nature.

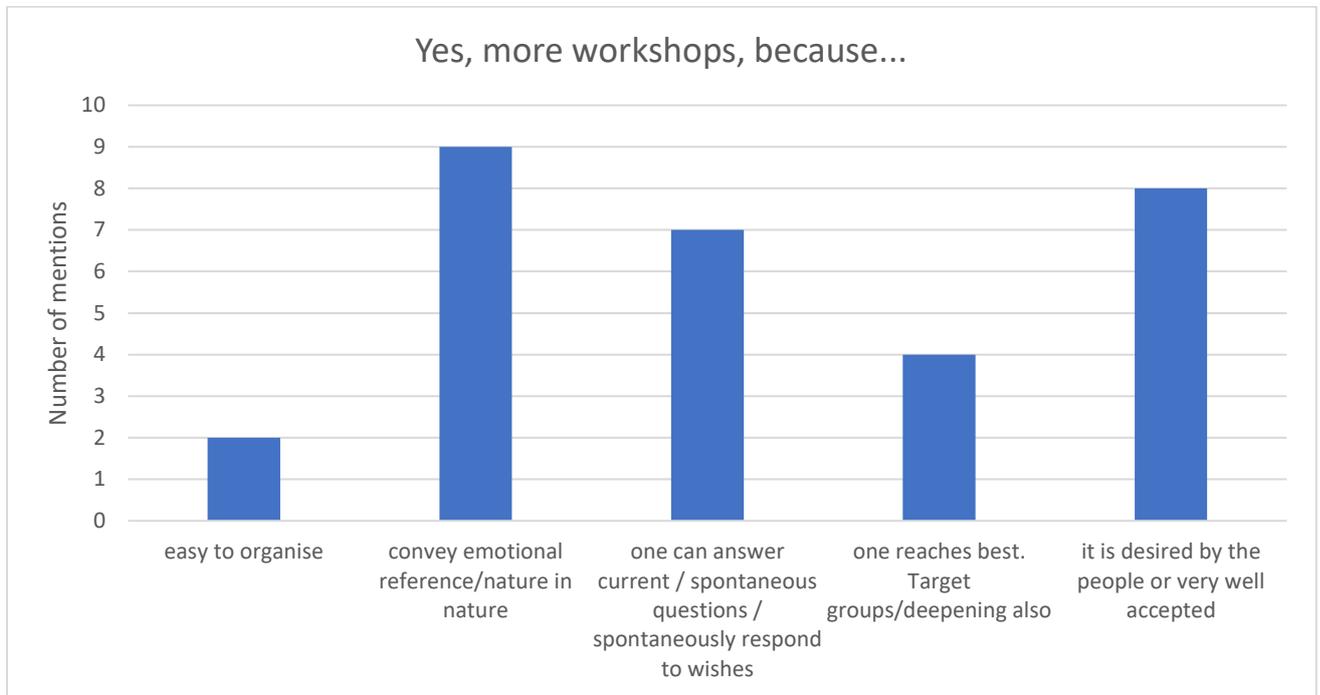


Figure 34: Yes, more workshops, because...

Nine times the answer came that the emotional connection to the topic was so important, and therefore nature is best communicated in nature. Furthermore, the workshops are very well received by the people and are also in demand. The good thing about a workshop is that one can spontaneously respond to questions, also on current topics, as well as to the wishes of the participants. With this kind of nature education, you can reach certain target groups very well and also more interested people can be informed in depth. Furthermore, workshops are relatively easy to organize.

4.3.4. Visitor-Outdoor Areas

4.3.4.1. Do you have experience with the furnishing of visitor-outdoor areas?

A total of 18 of the experts have experience with nature education visitor-outdoor areas.

4.3.4.2. With what kind of visitor-outdoor areas?

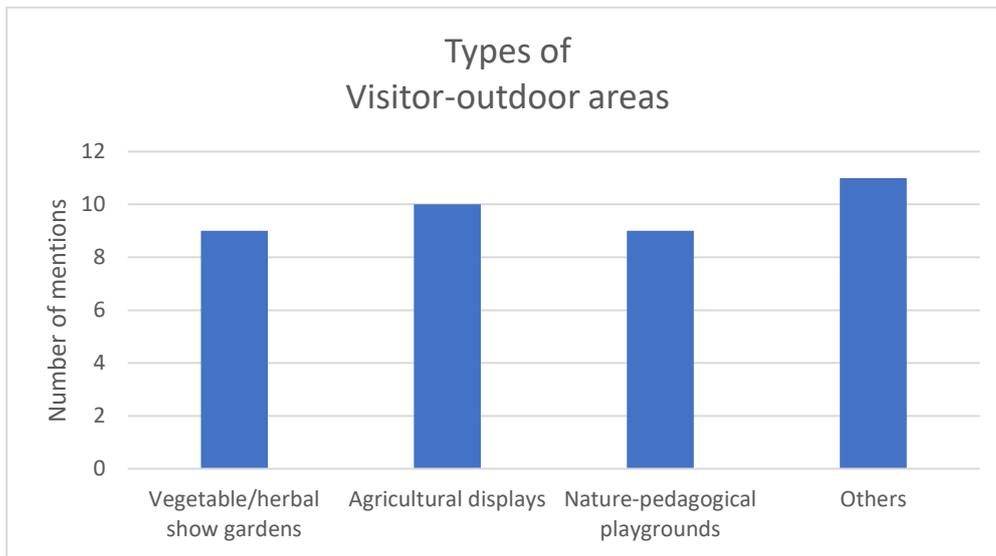


Figure 35: Types of Visitor-outdoor areas.

The experience of the experts is divided roughly one-quarter each between agricultural display areas, vegetable/herbal gardens, nature education playgrounds, and others. Others include orchards, gardens, ponds, exhibitions, stables, bathing areas, sunbathing lawns, and settlements from NAWAROs (renewable raw materials).

4.3.4.3. How do visitors get information about the tangible contents of visitor-outdoor areas (e.g. plant species)?



Figure 36: How do visitors get information on the outdoor areas?

The surveyed experts state that visitors to the outdoor areas are mainly informed about the surroundings by boards (33%). In 28%, they access the information via

guided tours, in 20% via folders, and 15% via "Miscellaneous". Under the heading "Other", personal information is mainly given, i.e. there is often or permanent staff at the outdoor areas who can help with any questions that arise. In addition, the homepage and workshops were mentioned as sources of information.

4.3.4.4. Are guided tours offered for visitors of the outdoor areas? If so, how long do these tours last and how high are any fees charged per participant?

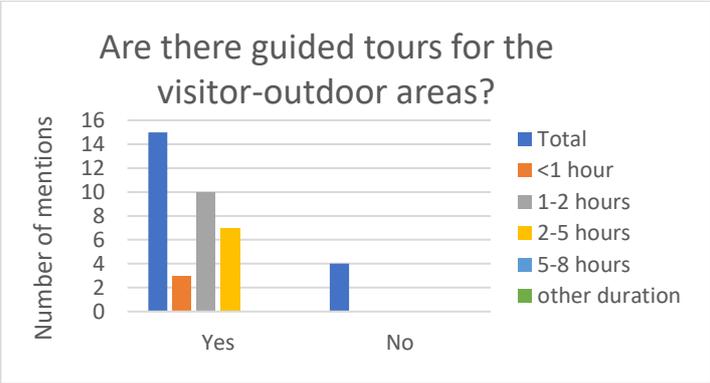


Figure 37: Are there guided tours for the visitor-outdoor areas?

Guided tours are offered for 15 of the 19 experts for visitor-outdoor areas. Half of these tours last between 1 and 2 hours. About a third is 2-5 hours, and a seventh is under 1 hour.

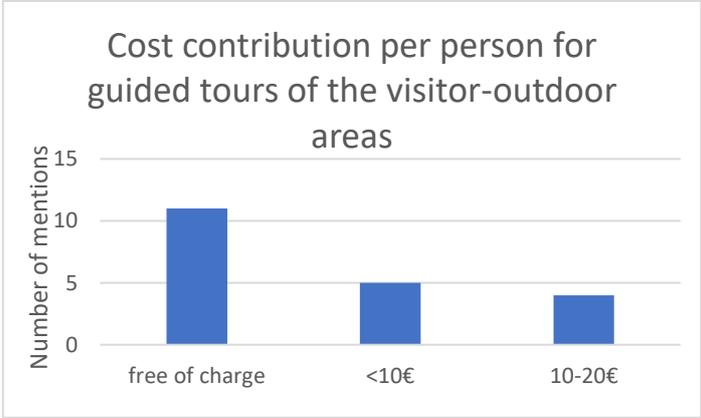


Figure 38: Cost contribution per person for guided tours of the visitor-outdoor areas.

According to the experts, these tours are mostly free of charge, with a small part costing up to 10€ and an even smaller part 10-20€.

4.3.4.5. What kind of qualifications do the people who lead these guided tours have?

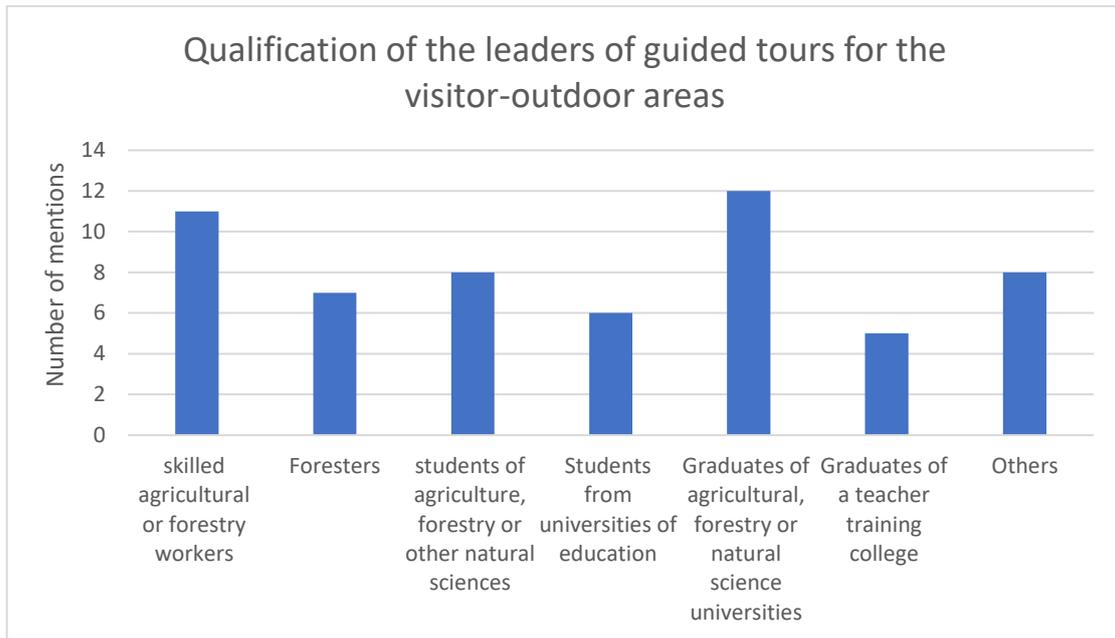


Figure 39: Qualification of the leaders of guided tours for the visitor-outdoor areas.

In 21%, graduates of agricultural, forestry or other natural science universities give guided tours of the visitor-outdoor areas. Skilled agricultural and forestry workers lead 19%, students of agriculture, forestry or natural sciences 14%, and foresters 12% of the visitors. According to the experts, 11% of the tours are led by students from universities of education and 9% by graduates of these universities. In 14%, these tours are conducted by people with "other" training, such as forest pedagogues, national park rangers, or horticultural engineers.

4.3.4.6. On average, how much time is needed to walk through the visitors' outdoor areas that you supervise on your own without a guided tour? If there are several areas, please answer them separately.

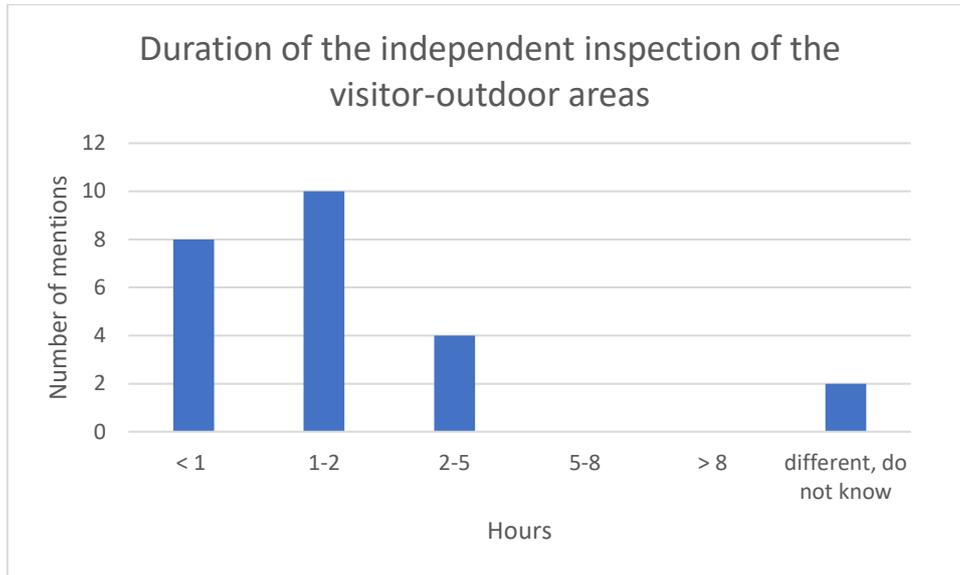


Figure 40: Duration of the independent inspection of the visitor-outdoor areas.

The majority of the visitor-outdoor areas of the interviewed experts can be visited independently within 1 (33%), or 1-2 hours (42%). For 17% of the areas, it takes between 2 and 5 hours. Two experts could not give any information about the length of the visitors' stays, as these are different or unknown.

4.3.4.7. Are the visitor-outdoor areas open all year around? If not, why not?

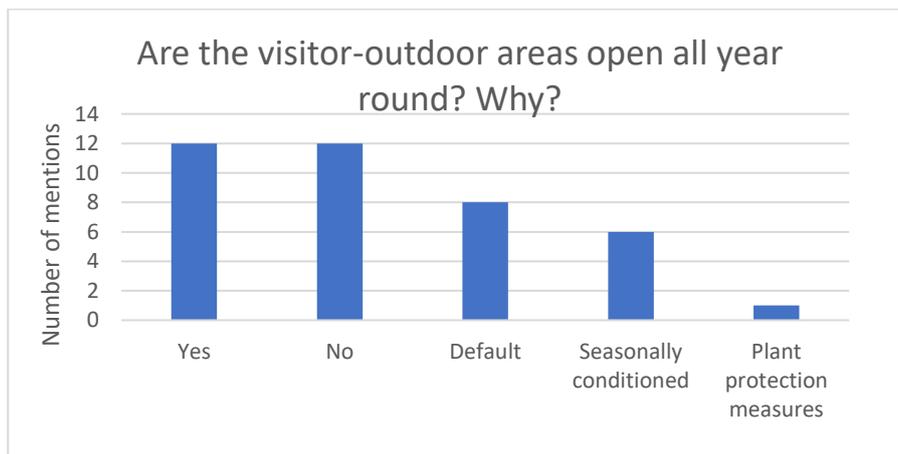


Figure 41: Are the visitor-outdoor areas open all year round? Why?

12 experts stated that the visitor-outdoor areas are open all year round, 12 that they are not. Some experts have experience with several visitor-outdoor areas, so multiple answers such as "yes" and "no" were possible. If areas are not open all year round, this is because it is mainly predetermined or seasonal. Once it was stated that it was not possible to be open all year round due to plant protection measures.

4.3.4.8. Is there charge for the use of the visitor-outdoor areas? If so, how high are any fees collected per participant?

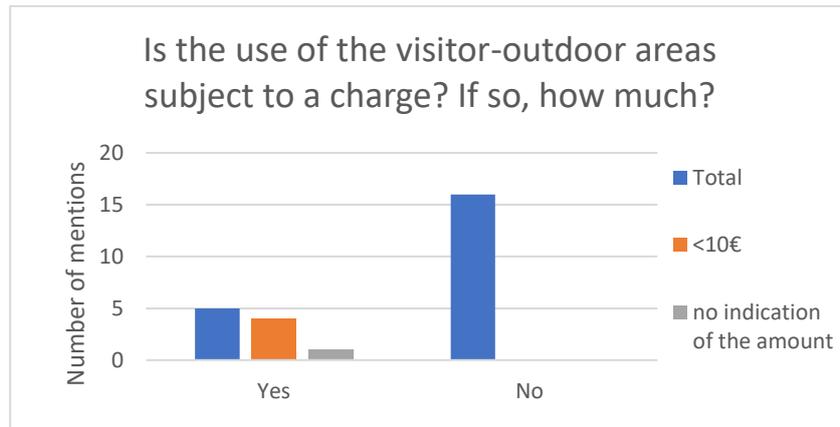


Figure 42: Is the use of the visitor-outdoor areas subject to a charge? If so, how much?

16 times it was stated that the use of the visitor-outdoor areas was free of charge, five times that it was subject to a fee. In four cases the cost contribution is less than 10€, once the amount could not be stated.

4.3.4.9. At what intervals is the maintenance of the visitor-outdoor areas necessary?

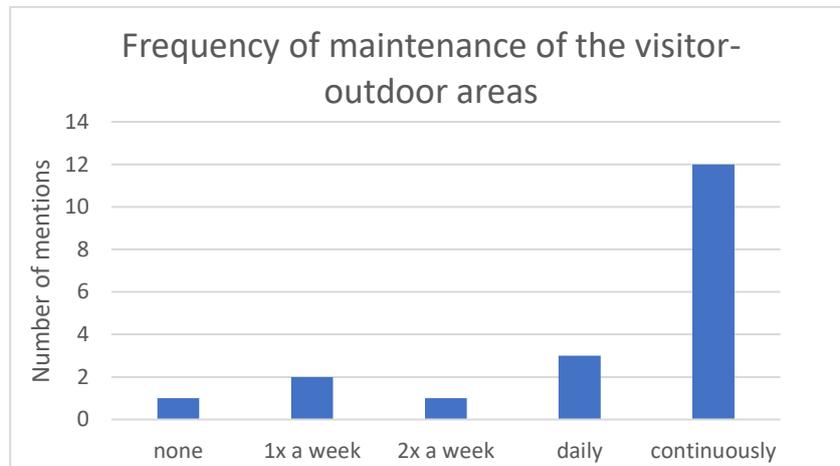


Figure 43: Frequency of maintenance of the visitor-outdoor areas.

63% of the experts state that ongoing maintenance of the visitor-outdoor areas is necessary. 16% of the areas are checked daily, 11% once, and 5% twice a week. Once (5%) it was stated that no maintenance work was necessary because the visitor-outdoor area was only open for one season.

4.3.4.10. Which care, management or other maintenance measures are required? What do they cost?

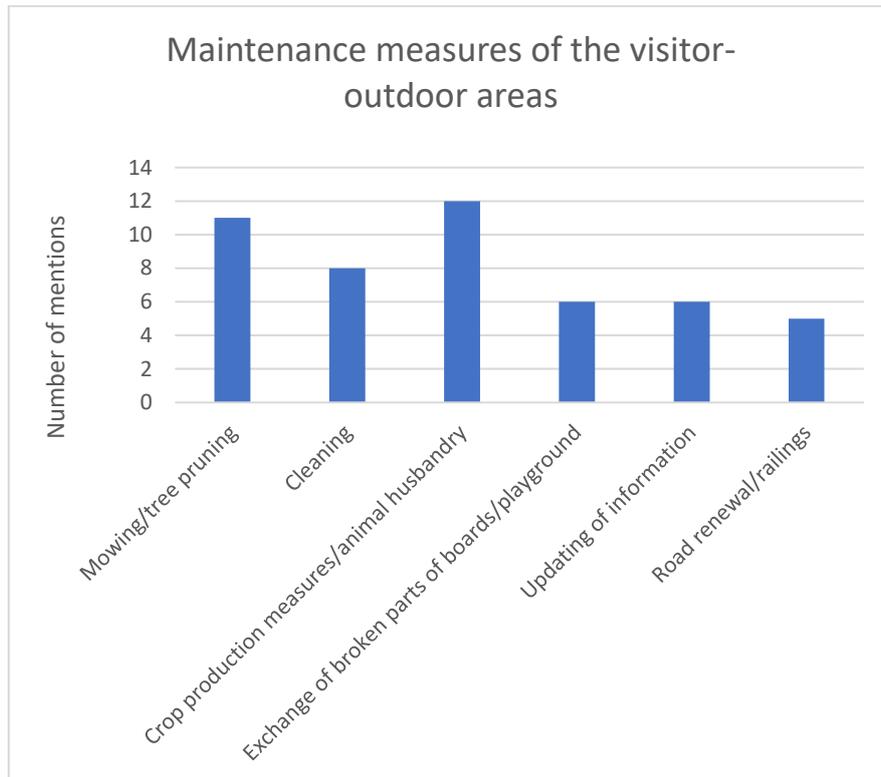


Figure 44: Maintenance measures of the visitor-outdoor areas.

The care, management, and maintenance measures largely consist of plant cultivation measures and the care of the animals (25%), as well as mowing and tree and shrub cutting (23%). Cleaning is also one of the tasks to be carried out on visitor-outdoor areas (17%). It was stated at 12.5% in each case that the replacement of broken parts, for example, signs and in playgrounds, and the updating of information was necessary. Railing and path maintenance was mentioned as a necessary maintenance measure by 10%.

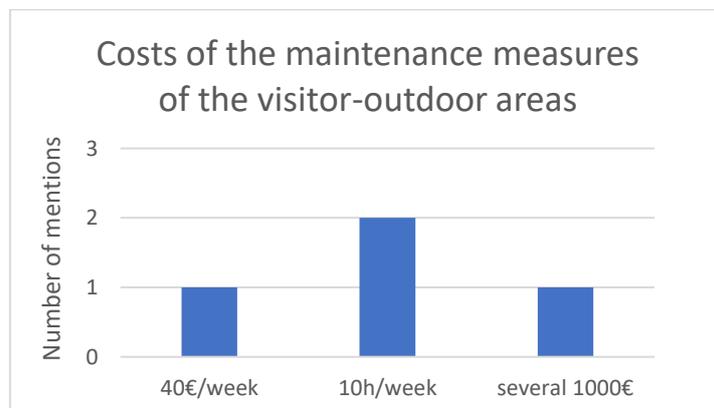


Figure 45: Costs of the maintenance measures of the visitor-outdoor areas.

Unfortunately, only four of the 16 experts for visitor-outdoor areas were able to provide information on the costs incurred by care, management, and other maintenance measures. Two of them stated that these costs were roughly equivalent to personnel costs of 10 hours per week. In each case, one expert stated that the

work would cost €40 per week (approx. €2,000 per year), and another that it would cost several €1,000 per year.

4.3.4.11. Is there vandalism in the visitor areas? If so, how high are the costs to repair the damage?

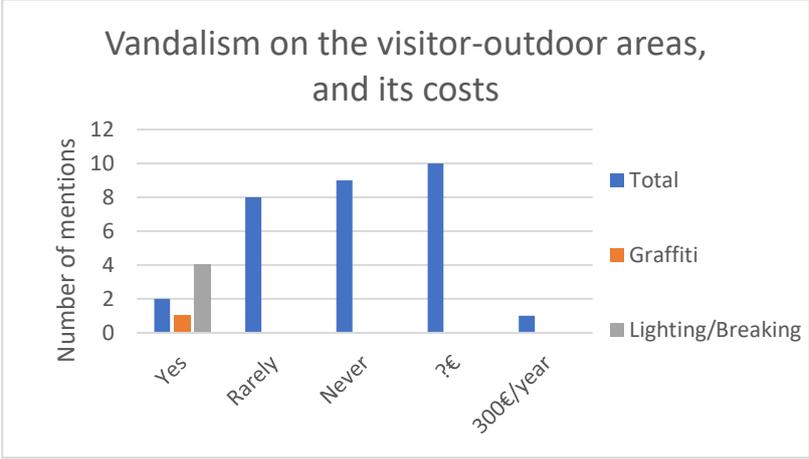


Figure 46: Vandalism on the visitor-outdoor areas, and its costs.

Nearly half of the experts have so far had no incidents of vandalism within the visitor-outdoor areas. The other ten stated that vandalism does occur, but in six of them only rarely.

When vandalism occurs, things are smashed or set on fire, rather rarely graffiti is smeared on anything.

Only one expert was able to give an estimate of the costs caused by vandalism on the visitors' outdoor areas, which he estimates at 300€ per year.

4.3.4.12. How frequented are the visitor-outdoor areas offered by you? If possible, please indicate the approximate annual frequency of visitors.

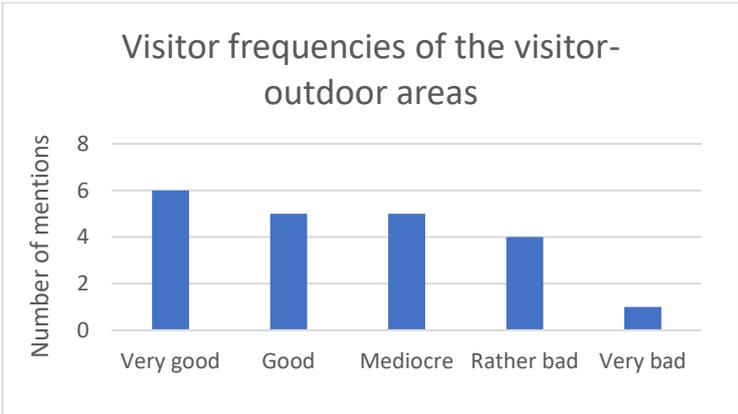


Figure 47: Visitor frequencies of the visitor-outdoor areas.

28% of the experts state that the visitor-outdoor areas they offer are very well attended. In each case, 24% rate the areas as good or average, 19% as rather poor and 5% as very poorly visited. If the evaluations are divided into the three categories positive, average, and negative, it can be seen that 52% of the experts assess the

frequencies of the visitor-outdoor areas as positive, 24% as average, and 24% as negative.

The number of visitors per year ranges from a few 100 to 60,000.

4.3.4.13. What do you think are the reasons for good or bad frequencies? Please answer separately for several visitor-outdoor areas.

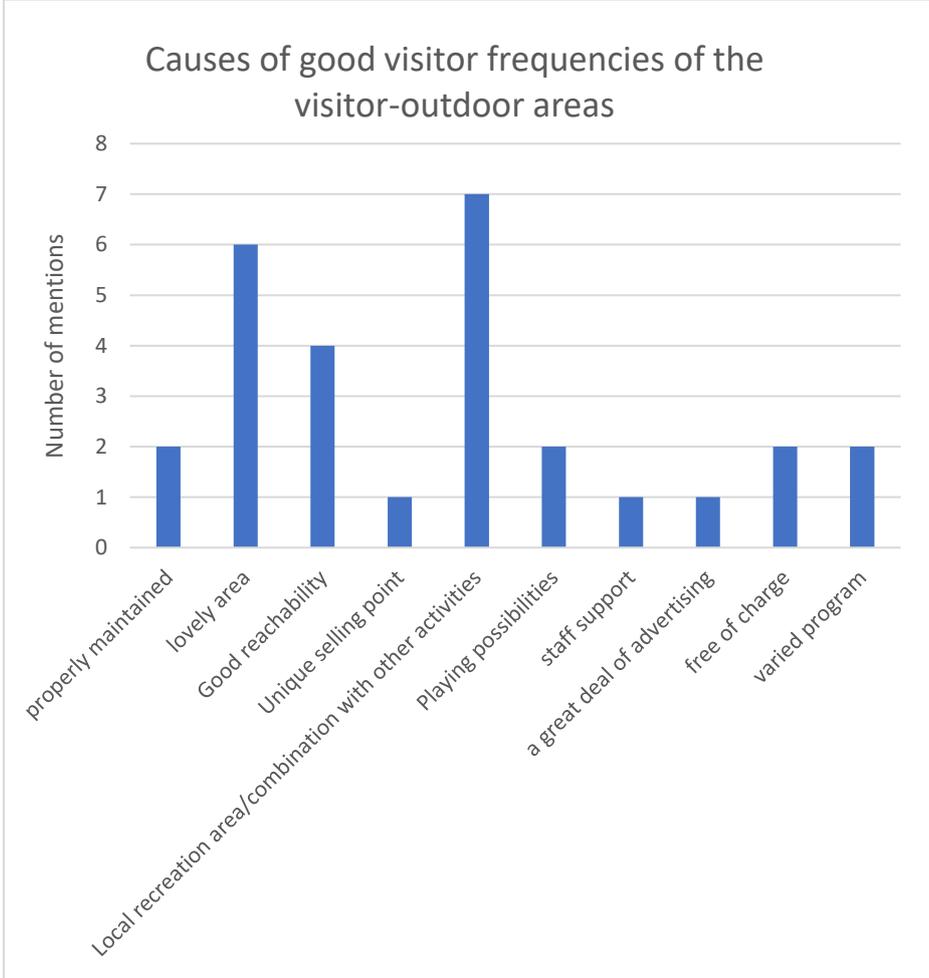


Figure 48: Causes of good visitor frequencies of the visitor-outdoor areas.

The most frequent responses for good visitor frequencies of outdoor areas were that they are located in a local recreation area and that a visit to the outdoor areas can be well combined with other activities (29%). 25% said that the outdoor area sites were located in a beautiful area and 17% said that they were easily accessible and therefore well visited. Two experts (9%) each cited the following reasons for positive visitor numbers, good maintenance, the presence of play facilities, that a varied program was offered, and that they were free of charge. The unique selling proposition of the visitor-outdoor area, the support provided by the staff, and the fact that a lot of advertising has been/will be done are further reasons that were mentioned once each.

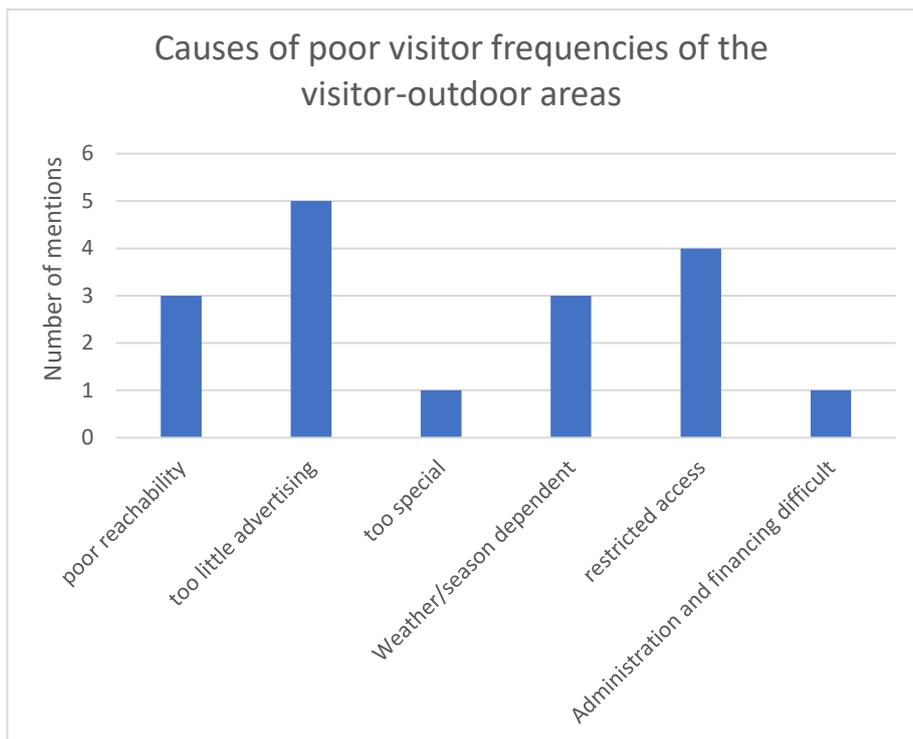


Figure 49: Causes of poor visitor frequencies of the visitor-outdoor areas.

The main reason given by experts for poor visitor frequency is a lack of or too little advertising (29%). Limited access to the areas, e.g. by opening hours, is the reason for poor visitor numbers according to 24% of the data. Poor accessibility and dependence on weather conditions each account for 17.5% of the mentions. For one expert (6%) each, the poor frequencies are due to complicated administration and lack of financing, as well as the fact that the visitor-outdoor area is too special.

4.3.4.14. Would you in future again use visitor-outdoor areas for the mediation of nature educational knowledge? If so, why, or why not?



Figure 50: Would you use visitor-outdoor areas again?

18 of 19 experts would clearly use visitor-outdoor areas in nature education again, only one expert would "perhaps" reintegrate them into their work. None of the experts answered this question in the negative.

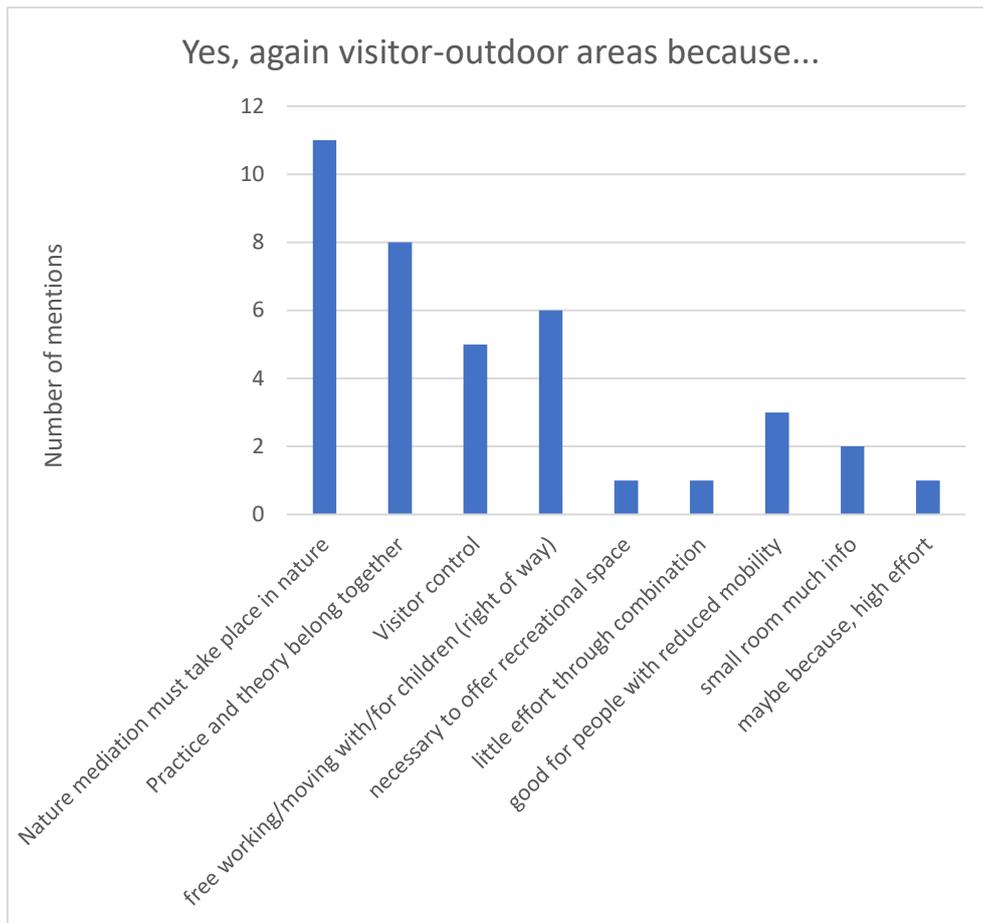


Figure 51: Yes, again visitor-outdoor areas because...

The main motivation of the experts to design visitor-outdoor areas again is that, in their opinion, nature education must take place in nature (29%). The second most frequent statement was that practice and theory belong together (21%). 16% would again use visitor-outdoor areas because working and moving around freely is so important, especially for children. One aspect of outdoor areas is also visitor control (13%) so that especially in conurbations the visitor pressure can be taken away a little from the national parks. 8% would again create outdoor areas for visitors because they are well usable also for people with restrictions, and 7% because a lot of information can be transmitted in a small space. 2% each, i.e. exactly one vote, are allotted to the following reasons: it is necessary to offer the population recreation areas and visitor-outdoor areas are to be combined well with other offers and therefore low in expenditure. The "maybe" was justified by the fact that the expenditure was very high (2%) in terms of finance, personnel, and time.

4.3.5. Finally

In the concluding part all experts could again answer questions.

4.3.5.1. Is feedback obtained from visitors or participants, e.g. in the form of feedback sheets or other methods, for the purpose of quality assurance or further development of the content conveyed?

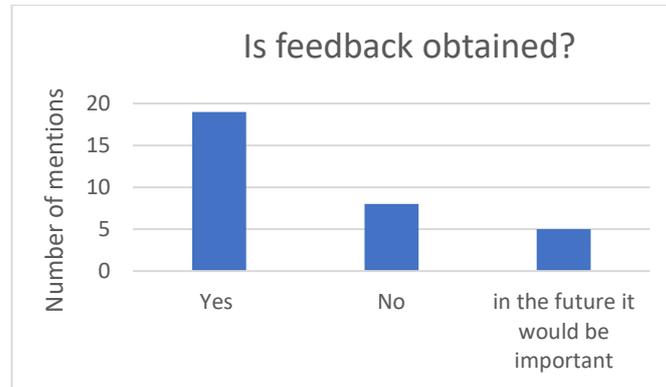


Figure 52: Is feedback obtained?

Out of 29 experts, 19 stated that they collect feedback from visitors on their offers, 8 do not collect any feedback and another 5 do not collect any but would consider it useful in the future.

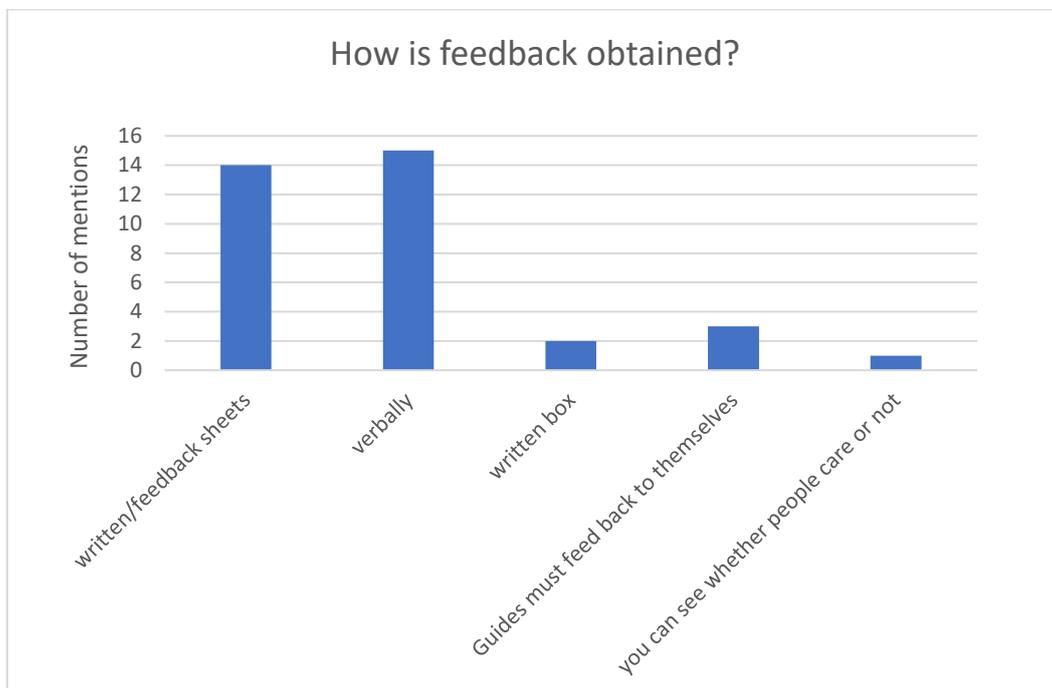


Figure 53: How is feedback obtained?

Most of the feedback given is obtained orally (43%), 40% is in writing via feedback forms. Three times it was stated that the workshop leaders have to give feedback to themselves, twice that feedback can be given in writing by dropping it in a box and once that during a lecture/workshop it is immediately apparent whether the visitors are interested or not and thus have their feedback.

4.3.5.2. How do you advertise the nature education knowledge transfer you offer?

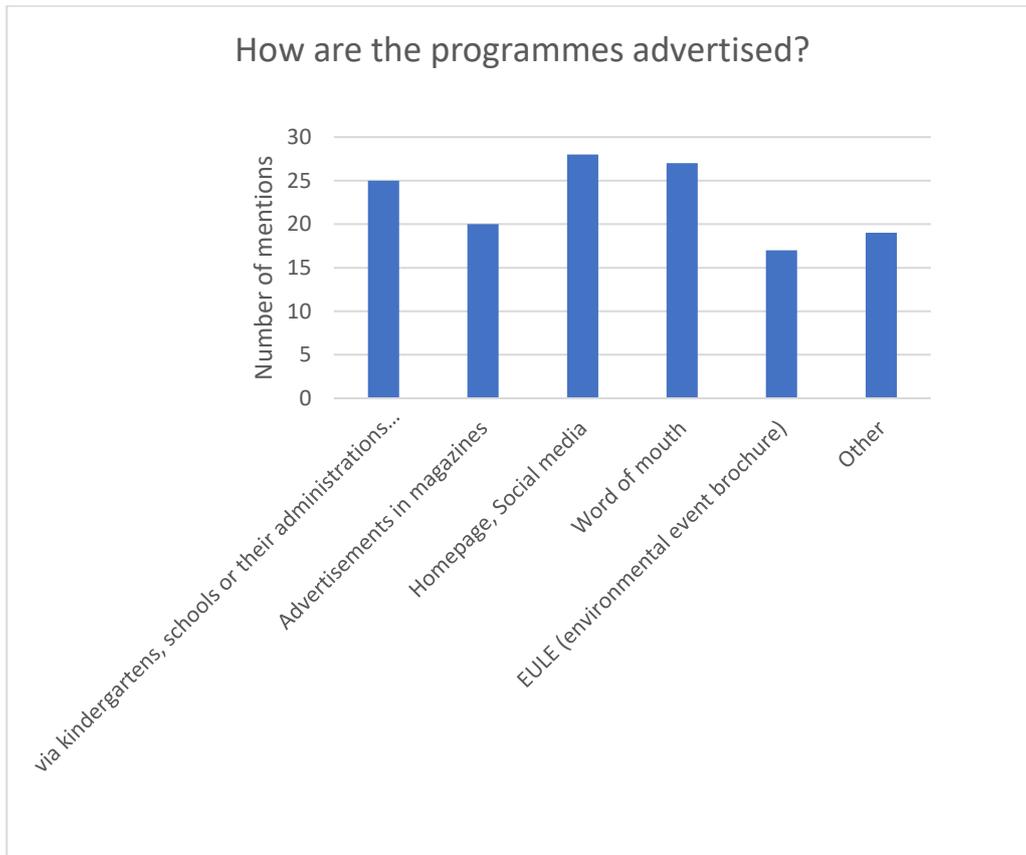


Figure 54 How are the programmes advertised?

All offers of the experts are advertised via at least two, but usually three different channels. 21% of the programs are advertised via a homepage and/or social media, 20% via word of mouth, and 18% via kindergartens, schools, their administration, and/or universities. Advertisements in magazines are used as an advertising medium in 15% and the EULE (environmental event brochure) in 12%. About 14% use "other" ways of advertising, of which flyers and folders, which are often distributed at events, account for almost two thirds. Otherwise, newsletters are sent out by e-mail either regularly or shortly before events.

4.3.5.3. Anything else you'd like to add?

Some of the experts added some more, each of them had his or her focus that was particularly important to him or her, sometimes overlapping with those of the others.

Especially important for a successful workshop or tour is the person who leads it. According to the experts, it is most important that this person "burns" for the topic, because as a participant you notice whether something is done with heart or not. The leader should be authentic, give vividness to the topic, have a feeling for the visitors, and actively involve them. In order to guarantee this, it is especially important as a leader to know which target groups you like. The preparation of the speakers is indispensable, their documents and contents must be constantly updated and the location of the workshop must be known very well.

During the workshop or tour, it is important that they have a structure and a clear concept, as well as that there is tension. The topic should captivate the participants, it is best if the leader has to speak little and the nature or objects of illustration do that for themselves. According to experts, workshops that are closely linked to practical matters are best received by the visitors.

Especially for educational trails, but of course also for visitor-outdoor areas, care and maintenance measures are essential to ensure continuous quality. Another important aspect is the topicality of these. According to an expert, visitor programs should be re-created every 2-3 years.

One expert stated that he does not consider educational trails within the national park to be very useful, in his opinion theme tours are more profitable here. Another one has a similar view and says that an educational trail outside the national park would be good because it would really get something across. Another expert pointed out that it would be useful to obtain continuous feedback from experts and, above all, from target groups during the development process of an educational trail. It was also important to break down technical information into simple language and not overload the boards with information. The contents of the educational trail should trigger an "aha effect" among visitors, the core message could be something funny or surprising. She also thinks it would be good if the educational trail stations appeal to several senses. One could also include practical information, for example why it is sensible to follow the path in the national park. Another expert is aware that it is very difficult to make educational trails attractive to the public. In his opinion it would be useful if the boards of the educational trails were interactive, which of course increases the risk of vandalism, one would have to organize all parts three times, so one would be secured for 10 years. Another way to create interactivity and be less susceptible to vandalism would be to combine it with virtual information, apps and games. A further tip from an expert, both for workshops and educational trails, was that especially in nature education, positive and negative examples could be contrasted with each other, all the more to arouse people's interest. Another expert suggested to orientate oneself towards Citizen Science to get visitors more interested in the topic.

On the subject of agrobiodiversity, an expert points out the importance of field margins, which accumulate the species density and number of species and individuals. This requires a strip along the fields that is at least three metres wide and may be mowed no more than once a year. Farmers should be given more responsibility, trial areas should be created and the diversity of the field margins should be shown. For example, one could show children what all would grow in marginal areas by letting them fill pots with the soil from these areas and water them for a while. For an educational trail, he would find it useful to inform people about what grows in the respective fields and why these crops are grown. Most people drive past fields and do not know what they see here. One could create areas with old varieties to show the diversity of the cultures and their benefits.

Advertising must never be missing and can be decisive for the success of a program. Also one can inspire people with good give aways. Specials such as children's gardening competitions, where the children plant beds and then set them up in the

city, or painting and handicraft competitions are very popular with schools and families.

It is important to maintain existing relationships between the different experts and to share experiences. One expert suggested that it would be useful to get continuous feedback from educators in the workshops. The exchange is immensely important to come up with new ideas and because there is always something that can be improved in order to reach the visitors more effectively. According to this expert, it would also be useful to regularly exchange information with agricultural science universities about the way in which knowledge is conveyed, since their students and their parents shape the landscape.

One expert added that her offers are very well received by the visitors, she noticed that they are developing in the right direction, as they are not only attracting older but also increasingly young audiences.

Another expert remarked that the goal that every Viennese student should be able to experience nature once under expert supervision is far from being achieved and remains a challenge.

5. Summary and Discussion

The survey reflects the experiences and opinions of various nature education experts in the project areas. The survey aimed to gather as much information as possible about the optimal design of the educational programs of the Interreg project AgriNatur AT- HU. It was not possible to compare individual existing educational trails, workshops or visitor-outdoor areas in detail, because the experience of the experts was too extensive and the extent of this work would not be sufficient. Rather, existing successful and less successful structures of nature education should be questioned as to their causes to be able to conclusions the planned AgriNatur AT- HU activities.

In nature education, it is essential to establish a relationship with nature through direct contact with the environment. Theory and practice must be combined to understand other living beings and their meaning.

The choice of the instrument for nature education knowledge transfer must be adapted to the respective target group and of course to the available resources. Whether the educational mission is successful and whether participants of workshops and guided tours are enthusiastic depends decisively on the leader. If the quality of the topic and the preparation, the adaptation to the target group as well as the leader have been chosen correctly, then, according to experts, any instrument can be successfully used in nature education.

5.1. Educational Trails

While it seems to be relatively easy to make workshops, guided tours, and visitor-outdoor areas in nature education more appealing to the public, educational trails pose a challenge. How do you motivate people so that educational trails are noticed at all? How do you manage to address the general public, i.e. several target groups at the same time?

Educational trails need to appeal to multiple senses, be interactive, be regularly updated and their content captivating to keep visitors interested. The interactivity is especially important for children, they can do little with information alone. But adults benefit from it just as much; information that is perceived with several senses is also more memorable for them. Also, adults are on the trail with children, and by keeping them occupied with interactive tools or games, it is also easier for them to devote themselves to the content of the trail.

Another way to keep the trail exciting is to use seasonally replaceable trail boards. This way the information for the visitors remains variable and more exciting. Although this sounds good, some experts consider this exchangeable elements to be negative due to the amount of work involved and the lack of visitors..

Along educational trails there should be objects of interest, signs should point out something worth seeing on site. At rest stops, visitors to the educational trail can recharge their batteries, but also people who happen to be passing by can relax and perhaps even become aware of the contents of the nature trail. It is considered useful

if educational trails are combined with viewing platforms or outdoor areas for visitors. The adventurous design of the path along the educational trails, for example through ravines, bends, bridges, etc., would make it even more appealing to visitors. Even if they are adventurously designed, the paths should be suitable for prams and wheelchairs. Folders and QR codes can provide in-depth information for the particularly interested educational trail audience. Likewise, guided tours along the educational trails can also be used to answer spontaneous questions and at the same time act as an advertisement for them. If possible, they should be free of charge for the participants, so that socially weaker people can also benefit from them. In any case, an opening ceremony for the educational trail also contributes to its popularity.

The length of the educational trails should be chosen in such a way that the visitors can also visit them completely during an afternoon excursion. It would be possible to inspire less interested people. If you have the feeling from the beginning that you cannot see the whole trail, maybe you do not even begin to deal with the contents. However, the distances between the stations should also not be too small, so that the visitors can "refresh" themselves, as one expert called it. On the one hand to let the information sink in, and on the other hand to be able to enjoy the surroundings.

In addition to the construction of the educational trails, the decisive factor for good visitor frequencies is that they are easily accessible and ideally located in the urban catchment area, as well as having a varied network of paths. If it is a local recreation area in a beautiful area, one can definitely expect many visitors.

Maintenance and repair work is of course dependent on the stations of the educational trail and its surroundings. The more elaborate it is, the more often inspections and repair work as well as maintenance measures are necessary. According to the experience of the experts with already existing educational trails, costs of up to 600€ per year can be expected. Of course, this cannot be taken as a lump sum, if larger repairs are necessary, one must expect higher costs.

Whether vandalism occurs or not depends on the location, more often in urban areas than in the countryside. It cannot be predicted how much it will cost, the only information the experts could give was 100€ per year.

Visitors benefit from more elaborate, interactive educational trails, the information of which is constantly updated, but the supervision and maintenance of these must be feasible in terms of personnel and financial resources. An educational trail that is decaying due to lack of maintenance is anything but inviting.

With educational trails you can reach even those people who would never attend a workshop or a guided tour, they can inform themselves independently of time and in a flexible way. Even if individual experts of educational trails feel disturbed in their natural experience of nature and are skeptical about them, there is also the view that educational trails are simply necessary because people want to be informed.

As already mentioned above, it is a great challenge to design an educational trail in such a way that it is well accepted and can fulfill its educational mission.

5.2. Workshops

Even though workshops and visitor-outdoor areas are usually well received by the participants, there are still some things to consider.

The success of a workshop depends largely on the leader. He or she must show enthusiasm for the topic and be there with all his or her heart to pass on this enthusiasm to the visitors. This is why a significant number of experts stated that a competent leader is one of the most important "tools" for a successful workshop. Of course, the leader must also have the appropriate specialist knowledge, and anecdotes from everyday working life add an additional stimulus to the workshop.

It is therefore important to think carefully about who you are going to use to run workshops.

Essential for workshops is that they take up interesting topics, such as those that are currently "in", which also implies that they are constantly adapted. One expert remarked that it is often not only the topics that determine whether a workshop is attended or not but also the title. So the experience was made that if people cannot imagine anything under this title, it will not be booked. If you change the title to something more striking, the workshop on the same topic is suddenly booked out.

As in all areas of nature education, active "understanding" should be the main focus of a workshop. Therefore, objects of visualization, living organs, and open spaces are fundamental for a successful implementation. Depending on the target group and the workshop, it makes sense to use different games, small experiments, microscopes, and other tools adapted to the topic.

For workshops to be well received, appropriate advertising is also necessary. It makes sense to address target groups directly, for example schools can be contacted directly and informed about workshops, or newsletters can be sent to interested parties before events.

As with educational trails, positive visitor frequencies of workshops are also influenced by accessibility and free or low costs.

Factors that can only be influenced to a limited extent are seasonal and weather-related.

Workshops not only provide excellent in-depth knowledge, direct contact with the leader and the possibility to respond spontaneously and flexibly to questions and wishes of the participants, as well as the emotional connection to nature, which can only arise in nature, make workshops so important and indispensable in nature education.

5.3. Visitor-Outdoor Areas

Visitor-outdoor areas, like educational trails, allow for a combination of leisure activities and information gathering. This can also sensitize less interested people to certain topics.

In local recreation areas and beautiful surroundings, visitor-outdoor areas can be optimally integrated, where they can be combined with other activities and impart knowledge "on the side". As with educational trails and workshops, good accessibility for many visitors is a decisive factor in finding the areas.

Visitor-outdoor areas can be designed in a variety of ways and thus offer a lot of variety. It is ideal if they contain play facilities, so that children can experience "nature" in a playful way and are also a little busy, while their parents can devote themselves in peace to the information on boards or in folders.

Even people with disabilities can thus experience and enjoy nature without much effort.

Guided tours through the outdoor areas are often offered, where more in-depth content can be conveyed. Sometimes trained personnel can be found on site to help with any questions that may arise.

The fact that visitor-outdoor areas are limited by opening hours is often necessary due to the conditions and the location, this naturally limits visits in terms of time. Therefore the areas are usually accessible without any cost contribution.

For the areas to be well received, they must be properly maintained, and this usually on an ongoing basis, care and maintenance measures are immensely important. In the case of nature educational outdoor areas, these mainly include plant cultivation measures and care of the animals, mowing, tree and shrub cutting, cleaning, replacement of broken parts, renewal of railings and paths, as well as the updating of information. The costs incurred by these works vary greatly and depend on the offers of the visitor-outdoor area.

Just like workshops, visitor-outdoor areas are also dependent on the season and the weather.

Vandalism hardly seems to play a role in the visitor-outdoor areas of the interviewed experts. This is probably also because there are often opening hours and sometimes staff is present.

Visitor-outdoor areas are similar to educational trails, they should offer variety, be exciting and be constantly updated. As the complexity of the area increases, so does the amount of personnel and money involved. Ongoing work and costs must be taken into account in the planning.

Visitor-outdoor areas are so successful in nature education because they convey nature in nature, and practice and theory simply belong together. The free work and movement is especially important for children and is thus made possible.

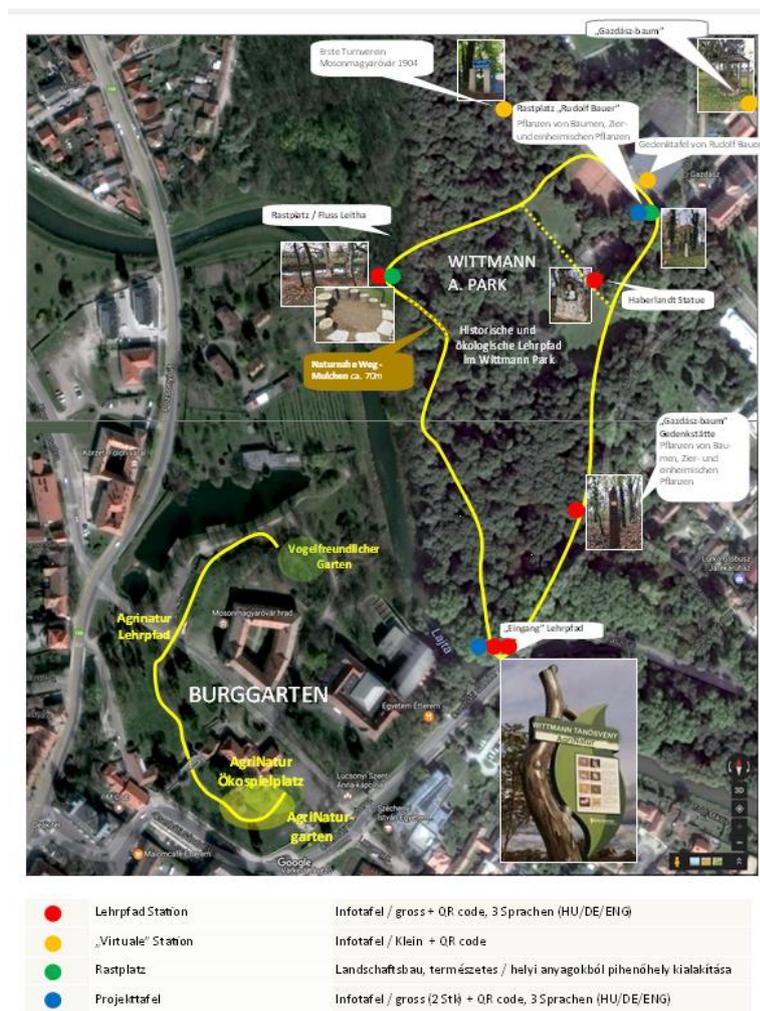
For all nature education programmes, advertising is one of the keys to bringing them successfully to the people. If different channels are used for this purpose, of course a greater reach can be achieved.

Getting feedback from (potential) visitors, even during the planning process, makes sense in any case, as it allows you to make continuous improvements to existing programs.

6. Implementation of the survey results in the AgriNatur AT - HU Visitors - Programs

6.1. Educational Trails and Visitor-Outdoor Areas

In the Austrian project area there will be 6 boards along the **AgriNatur Educational Trail** and the "**Fields of Diversity**". In Hungary, a total of 6 signs will be installed in the **Burggarten** and the "**AgriNatur-Garten**", and 6 educational trail signs will also be installed in **Wittmann-Park**. No signs will be installed directly in the Danube Floodplain National Park or the Mosoni-sík Natura 2000 area.



Konzept: Takács Krisztina, 2019.05.06.

Figure 1: Project Area HU: Location of the educational trails and visitor-outdoor areas in the Burggarten and Wittmann-Park

The educational trail signs are designed to be self-descriptive and easy to understand, and information in text form is deliberately kept short. Especially the part that is intended for children should contain many pictures, but also the adults should not feel overwhelmed by the amount of text. The content is designed to be visually inviting and emotionally appealing. If visitors want more in-depth information, they can obtain it via a link or a QR code attached to the signs. In addition to more detailed information, it will be possible to access various worksheets via these links or QR codes. These worksheets are mainly intended to support teachers who are visiting the educational trails with their groups of students but will also be accessible to all other visitors.

The signs along the educational trails will show selected plant and animal species (e.g. birds, butterflies) that have been found in the monitorings. These should then be reliably observable living on site. To explain different stages of flora and fauna during the year, the signs will contain

interchangeable, seasonally adapted elements.



Figure 2: Project area AT: Location of the educational trails and visitor-outdoor areas in the Lobauer Vorland

6.1.1. AgriNatur- Educational Trail, „Fields of Diversity“ (AT) and Educational Trail in Wittmann-Park (HU)

The boards of the **AgriNatur-Educational Trail**, as well as those of the "**Fields of Diversity**" (AT) and those in **Wittmann-Park** (HU), will be similarly designed. To create a uniform overall picture in the Austrian project area and to show the similarities with the Hungarian Wittmann-Park, proven sheet steel constructions with information boards suitable for outdoor use will be used, such as those already in place in the Esslinger Furt recreation area as part of the EU project urbANNatur (www.urbannatur.eu).



Figure 57: A educational trail sign in the Esslinger Furt, similar to the ones you will find along the AgriNatur educational trail, the "Fields of Diversity" and the Wittmann-Park.

The boards will take up common themes appropriate to the location and refer to the other locations via link or QR code. For example, in the Hungarian Wittmann-Park the great spotted woodpecker could be thematized, and on the Austrian AgriNatur educational trail the lark.

The educational trail in Wittmann-Park will also introduce visitors to eco-historical sights.

So that the "Fields of Diversity" can be enjoyed and experienced in peace and quiet, attractive rest areas will be set up alongside the educational trail signs.

6.1.2. Educational Trail, “AgriNatur-Garden“ and Ecological Playground in Burggarten (HU)

In the **Burggarten** there will be an **Educational Trail** and an **AgriNatur-Garden** with an **Ecological Playground**. Along this trail, the flora and fauna of the Burggarten will be presented, as well as implementation measures to promote biodiversity in nature and bird conservation. The aim is to stimulate and promote environmentally conscious thinking among visitors to the Burggarten.



Figure 3: Example of an element of an ecological play possibility

Thus, the diversity of plants and animals in the castle garden can be admired, rest areas invite visitors to stay, and children can let off steam in the ecological playground.

The **Burggarten educational trail boards** will be designed somewhat differently than in Wittmann-Park and on the Viennese AgriNatur Educational Trail. They will contain mechanical moving elements for turning and folding, sight glasses, and listening stations for birdsong. The signs invite visitors to actively discover the biodiversity of the Burggarten for themselves.



Figure 4: Design of an ecological play possibility in the form of mushrooms

The nature education trail boards also have a uniform line here, such as less text and more appealing visual impressions. Thus they will be easy to understand for different age groups, deeper penetration into the knowledge matter will again be possible via links or QR codes.

The **ecological playground** will contain elements of the biodiversity of the castle garden, certain play equipment will be designed in the form of animals or plants.

6.2. Workshops (AT+HU)

The workshops will be organised according to target group and location. They will be held in the "Fields of Diversity" embedded in the nature trails in AT as well as in the "AgriNature Gardens", so that the agro-ecological background information available there can be experienced by visitors on the spot. The unifying element of the workshops is the preparation of the information, including playful elements and simple experiments. The workshop participants can thus "understand" complex ecological interrelationships. This should be given enough space to make their own experiences with agrobiodiversity and to find pleasure in it.

The following workshops are planned:

- AgriNatur Science Days (AT+HU)
- Training workshop for farmers (HU)
- Cross-border AgriNatur Field Days (AT+HU)
- Guided tours along the educational trails (HU)
- Guided ornithological monitoring (HU)
- Expert workshops (HU)
- Guided tours along the educational trail and the visitor-outdoor area (AT)

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