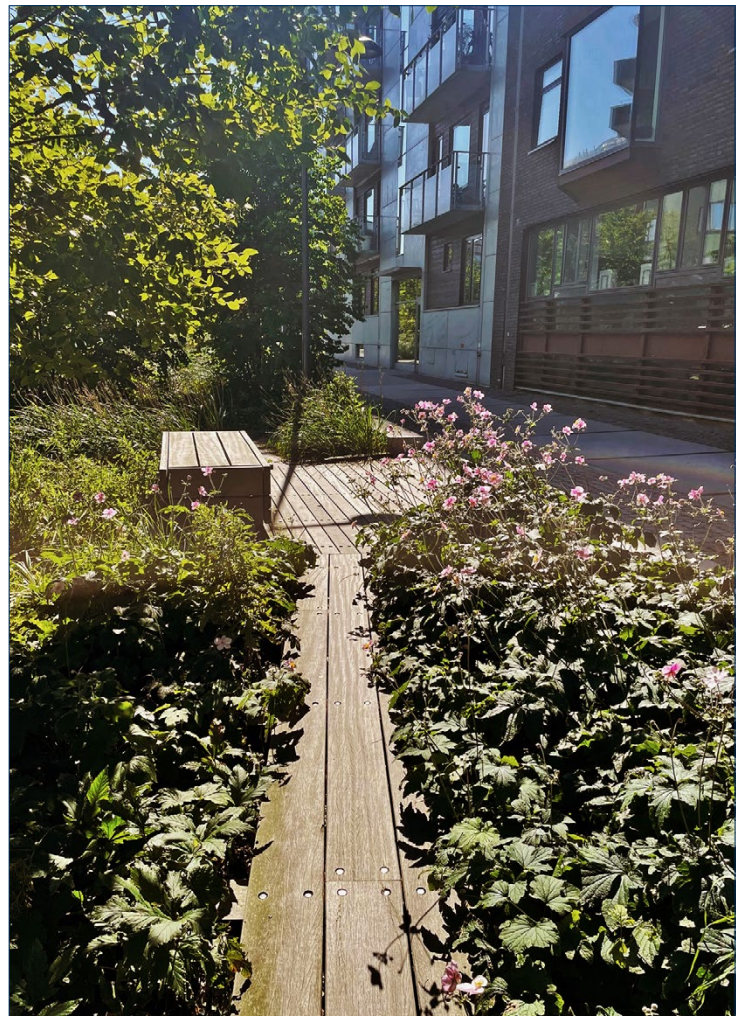


Innovation competition for nature-based solutions and ecosystem services in outdoor environments

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Preface

The project group feels that the competition was a fun, interesting and successful project and thanks the Swedish Environmental Protection Agency for entrusting us to jointly holding this competition with them. We also want to thank Vinnova and Formas for cooperation and support throughout the process.

Lovisa Bengtsson on behalf of the project group
Stockholm 12 January 2022

Summary

Many outdoor environments are currently designed without consider natural-based solutions to promote ecosystem services, such as water regulation and pollination. In addition, there is an increasing trend in the use of non-natural and fossil materials, such as artificial grass and fall protection surfaces. The Swedish Environmental Protection Agency wants to see nature-based solutions being integrated into the planning of outdoor environments to a greater extent and therefore announced funding to conduct an innovation competition. The innovation competition for nature-based solutions and ecosystem services in outdoor environments was run as a project by IVL Swedish Environmental Research Institute (IVL) during the autumn of 2021. The competition's implementation was a further development of the innovation competition on alternatives to artificial grass conducted by IVL in 2020–2021.

The project included the following activities:

- Planning, launch, and marketing plan. Development of project plan, communication, and marketing plan, supporting documents, etc.
- Expressions of interest, where the project received contact information from 40 interested parties. These were given access to the competition documents, an invitation to a digital Q&A session, and regular reminders until the registration ended.
- Full registration, where the contestants were asked to describe their contributions in words and pictures. A total of 16 entries signed up.
- Screening. All entries underwent an initial review, where relevance to the competition was ensured and entries were divided into competition classes based on development and market maturity. All entries passed the screening and were divided into two competition classes.
- Examination by an expert group based on the screening criteria set by the project. The expert group began by making an initial assessment of the contributions, which identified questions and ambiguities. All the innovators were then interviewed before a final assessment was conducted and winners were selected.
- Final seminar with presentation of the winners and inspiration part focused on clients. To increase the benefits of the project and attract the right target group, the focus was on inspiration for potential buyers. More than 200 people signed up and 120 participated live.
- Evaluation of the project and the final event was conducted together with the Swedish Environmental Protection Agency, Formas and Vinnova. Lessons from collaboration were focus for the discussion.
- In Phase 2, Vinnova and Formas invite the winning innovators to a discussion on whether they can offer additional support for the innovators.

The winners of the competition were the entries *Nyfiken på naturen* (Curious About Nature) from Flora and Fauna, as well as *Lekotoper* (Playotopes) from Urbio and Örebro municipality. *Nyfiken på naturen* is about creating educational gardens for children with special needs and *Lekotoper* is about creating green play environments that contribute with both play, learning, and ecosystem services.

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Background and purpose

The Government has tasked the Swedish Environmental Protection Agency to work on identifying and addressing important sources of microplastic emissions into aquatic environments in Sweden. This work includes an analysis of the various alternatives for reducing emissions. One way to reduce leakage is to generally reduce the use of plastic-based materials where other alternatives are available. If these options are also multifunctional and provide ecosystem services and other benefits, the effect is even more positive.

Many outdoor environments are currently designed without considering nature-based solutions (NBS) that promote ecosystem services, such as water regulation and pollination. There is also a growing trend in the use of non-natural and fossil materials, such as artificial grass and fall protection in playgrounds and other green surfaces. For this reason, the Swedish Environmental Protection Agency wants to see more integration of nature-based solutions into the planning of outdoor leisure environments and to break the trend of increasing use of artificial grass and fall protection surfaces.

As part of this work, the Swedish Environmental Protection Agency announced project grants in the summer of 2021 to organise an innovation contest for nature-based solutions and ecosystem services in outdoor environments. Supporting innovation in this sector contributes to the achievement of the Swedish environmental objectives of *A Rich Diversity of Plant and Animal Life* and a *Good Built Environment* through increased opportunities for ecosystem services and green infrastructure. By extension, they also promote a *Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos* and *Flourishing Lakes and Streams*, by reducing the emissions of microplastics from these surfaces. To achieve this, the solutions would have to be completely fossil-free, promote biodiversity and promote regulatory and cultural ecosystem services.

As this initiative fitted well in with the work already being conducted by IVL, and because IVL had conducted a similar competition in 2020, an application was submitted. The competition was conducted under IVL's auspices during the autumn and winter of 2021. It focused on nature-based solutions, biodiversity and ecosystem services in outdoor environments and reducing the emissions of microplastics. It was largely a further development of the competition that took place in 2020, which focused on alternatives to artificial grass in school and preschool playgrounds.

New for this year's competition was the collaboration among the Swedish Environmental Protection Agency, Sweden's innovation agency Vinnova and the government research council Formas during the competition and a willingness to discuss potential continued support for a phase 2 of the competition.

This report presents the activities, results and lessons learned from the project.

Objective

The objective of the project was to create a competition that promoted the development of nature-based solutions, products and systems aimed at reducing emissions of microplastics into the environment and increasing biodiversity and ecosystem services. To this end, the competition and the developed evaluation templates were designed to reward solutions that were sustainable in multiple dimensions while also being commercially viable. Key criteria for the entries, which were specified in the competition announcement, were:

1. Nature-based solutions would be rewarded before the development of new materials.
2. Elimination of fossil materials. New materials must be fully bio-based and fossil-free should new materials be considered necessary.
3. The solution must promote biodiversity and promote cultural and regulating ecosystem services.
4. Promote biodiversity.
5. The solution is to encompass added social values, such as education, accessibility, good health and safety.
6. Target conflicts and balances is to be described in detail and well-considered.

The solutions were also evaluated to the extent that was feasible in terms of:

- Operation and maintenance
- Commercial interests
- Synergies
- Economic feasibility and potential scalability
- Extent of innovation
- Societal benefits

The goal was for more than 10 companies or innovators to submit entries.

Implementation

The innovation contest was planned and further developed using proven methods from the previous innovation competition for sustainable alternatives to artificial grass (IHAK), which was held with funding from the Swedish Environmental Protection Agency in 2020. This competition, in turn, was a further development of the successful innovation competition Green Innovation Contest (GIC).

Experiences, lessons learned and extensive material from GIC were reworked and adapted to IHAK. The project generated a great deal of knowledge and insight that was worked into the nature-based solutions competition. These adjustments and their outcomes are described in more detail in the process stages later in this section.

In general terms, the innovation competition was conducted in the manner and order described in Figure 1 below. Phase 2 started after the end of the year. Vinnova and Formas assumed responsibility for discussions with the winning innovators about options for continued support.

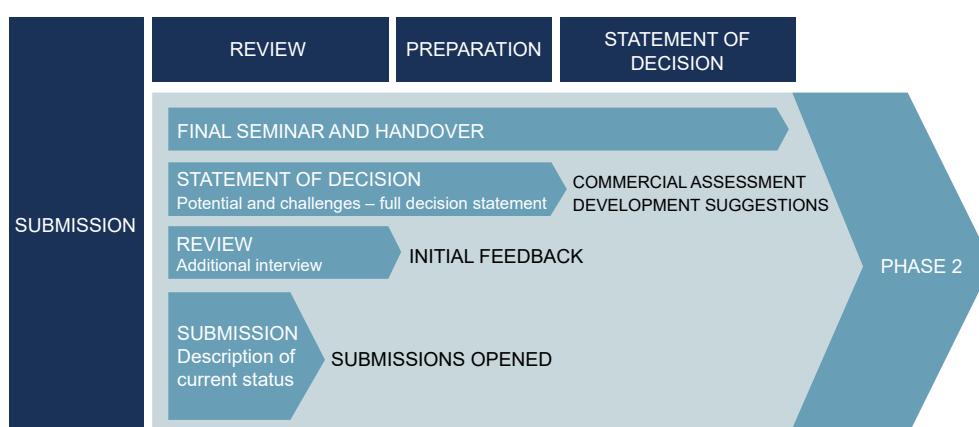


Figure 1. Process for the innovation competition.

The competition was conducted during a part of the COVID-19 pandemic, which required a high degree of flexibility and adaptability throughout the project. As an example, the concluding seminar had been planned to be broadcast live from the studio but needed to switch to a fully digital set-up only one week before broadcast due to revisions to restrictions. The short implementation time has also placed great demands on the project, but the project team is nevertheless very satisfied with the project and the results delivered.

The competition

Planning and initiation

AUGUST–SEPTEMBER

The project team started design of the competition in August, dividing responsibilities between project members and planning communication efforts. Meetings with the Swedish Environmental Protection Agency, Vinnova and Formas were held early to establish a common understanding of what the competition was intended to achieve and the criteria that were important for ensuring as smooth a transition to Phase 2 as possible. These meetings also laid the foundation for the joint communication efforts that were conducted during the competition.

Launch – dissemination and marketing

SEPTEMBER–DECEMBER

The competition was launched by direct and indirect information to interested parties via relevant communication channels. Examples of this included IVL's website, IVL's newsletter, IVL's press room and IVL's accounts on LinkedIn and Twitter. Media contacts who showed interest in the previous competition were also contacted with advance information.

To expand dissemination, a great deal of effort was put into making communication clear and engaging for the target group. A review of the competition's different target groups formed the basis for sponsored advertisements, together with an evaluation of additional marketing channels.

Registration and verification

SEPTEMBER–OCTOBER

Registration was in two steps to gather contact information and follow up the interested parties. In the first step, only contact information was entered, and in the second, the form used for initial assessment of the innovations was completed. To lower the threshold for registration, the form was short and easy to complete.

All interested parties were invited to an online question session where questions could be asked about the registration form, the competition's focus and other matters. Thirteen external participants attended and asked questions about the registration form and the focus of the competition. When the application to show interest closed at the beginning of October, 41 individuals and organisations had registered and received the competition documents. Sixteen of these submitted the final application form.

All entries were then screened to ensure they were relevant to the competition but also to determine appropriate competition classes in which the innovators could be fairly compared against each other. The screening managers found two classes of competition appropriate, one for ideas in an early stage of development and one for more advanced entries. The 16 entries were evenly distributed among the groups, which meant eight entries per class.

Expert groups

NOVEMBER–DECEMBER

Having completed the grouping of the entries, the expert groups began assessing the entries. The members of the expert groups were chosen to ensure that all the established review criteria could be evaluated in a professional and impartial manner.

To keep the workload at a reasonable level, two expert groups were appointed, each responsible for one class. To ensure uniformity and high quality of their work, the expert groups were led by the project group's Eskil Mattsson, who has a high level of expertise in nature-based solutions. Apart from that, the expert groups worked without the involvement of the project group. Both expert groups also had observers from Formas and Vinnova involved in the process.

Review of the competition entries was guided partly by expectation documents, which described the project's purpose and scope, and partly by templates with evaluation questions and assessment bases. The templates were drawn up based on the basic criteria set out in the competition notification and the other criteria set (see the heading 'Objective'). To avoid misunderstandings about the competition entries, the expert group contacted all the competitors once it had conducted their initial review of the entries. During this discussion, issues were addressed, in-depth questions were asked and the application was supplemented if necessary. The process was appreciated by both the competition participants and the expert group.

The expert groups then compiled their respective assessments/evaluations in each competitor's review protocol and each selected a winner, based on the relevance to the competition and an overall assessment that considered all the assessment criteria. The review protocols were then sent to each competitor together with an offer to go through the results with a participant from the expert group, approx. 1 h/grant.

Members of the expert groups:

- Eskil Mattsson, expert on nature-based solutions and biodiversity, IVL, member of both groups.
- Group 1 (early innovations):
- Jenny Järvelä, Järvelä Consulting AB, focuses on innovation and commercial viability. Jenny has run the Green Innovation Contest for many years and led the expert groups for the competitions.
- Mikael Olshammar, IVL, focuses on NBS, ecosystem services and technical feasibility. Mikael is a graduate engineer in urban and regional engineering and has worked extensively on sustainability issues at IVL for many years, running projects related to nature-based solutions in cities.
- Mats Westling, CEO PB Mark och Miljö AB and chairman of the Stockholm section of Trädgårdsanläggarna, the industry association for landscape contractors, focuses on operations, finance and management. Economist with 20 years in the landscaping industry with good knowledge of business and societal benefits.
- Hanna Ahlström Isacson, Urbio, focuses on architectural composition, social and cultural ecosystem services. Landscape architect with extensive experience and knowledge of ecosystem services and how to integrate these into planning and decision making.

Group 2 (more market-ready innovations):

- Martin Persson, IVL, focuses on innovation and commercial viability. Has previously conducted innovation assessments for Vinnova and has extensive experience in nature management issues and procurement. Board member of the Eco-Innovation Foundation.
- Tanja Hasselmark Mason, Green Roof Institute, focuses on NBS and ecosystem services. Qualified within sustainable urban development and landscape architecture, now working with the centre of expertise for blue-green solutions in Malmö.
- Emilia Stridsberg, sustainability specialist, Riksbyggen, focuses on finances, operations and administration. Can apply her sustainability expertise and client perspective in both upgrading existing properties and planning new production to test innovators' offerings against reality.
- Liisa Perjo, IVL, focuses on sustainable urban planning, optimisation of social and ecological sustainability. Background in urban planning and particular interest in such social sustainability aspects as accessibility, equality and safety, and the child's perspective.

Concluding seminar and Phase 2

DECEMBER

The winners were presented at a concluding seminar organised by IVL, the Swedish Environmental Protection Agency, Vinnova and Formas. In addition to the prize of moving on to step two, the winners could also make a presentation about themselves at a concluding seminar to raise interest among municipalities, property owners and others. This was intended to create a double benefit, both as a prize to the winners by letting them be seen by clients and to increase knowledge of, and interest in, these issues in those who have influence over planning and procurement.

The event included a fruitful discussion between the directors-generals of public agencies on why innovation and collaboration are important, a section with inspirational speakers who focused on knowledge, research and good examples, and finally a presentation of all the competitors and pitches from the winners.

More than 218 individuals signed up and 120 participated live. Many had announced in advance that they could not attend but would like to see a recording, so one is available on the project website.

A lot of hard work went into the planning and preparation of the concluding seminar, especially when the pandemic forced changes to official recommendations right at the last minute. The concluding seminar also had one less moderator and fewer speakers than planned, as illness prevented some from participating.

The hand-over has now reached Phase Two, in which Formas and Vinnova will discuss with and potentially continue to support the winners. The hand-over process has been facilitated by Formas's and Vinnova's participation as observers during the review process. An evaluation of the project was conducted with the public agencies after the end of the year.

Results

The project structure has achieved its purpose and objectives as defined in the announcement for the competition. The competition has been conducted together with the Swedish Environmental Protection Agency, Formas and Vinnova, a successful concluding seminar has been held, the competition has since been evaluated in several different stages and, finally, support for Phase 2 has been granted.

The requirements and criteria for the entries and assessments were integrated into both entry forms and assessment templates.

The concluding seminar targeted potential clients with both knowledge-enhancing and inspiring parts to promote further utilisation of the project funds. A recording from the event is also available to interested parties who found out about the competition after the event. This, too, is intended to maximise the societal benefit.

The competitors

The competition attracted everything from established, larger companies to individual innovators and innovations ranging from low to high maturity. The goal of receiving ten entries was exceeded, as sixteen entries were registered and screened. The following is a list of the innovations and the individuals or organisations behind them:

- Andreas Markewärn – Tjänsteplattform för ekosystemtjänster i smarta städer (Service platform for ecosystem services in smart cities)
- Boodla AB – Greenhoods
- Calluna AB – Framgångsrika fröer (Successful seeds)
- Cassandra Kestran – Nordens flora: “Lek och lär med Floris” (Nordic Fauna: Play and learn with Floris)
- Flora & Fauna Sverige AB – Nyfiken på naturen! (Curious About Nature!)
- Fredriksdal Museums and Gardens, City of Helsingborg – Kontorslandskap på riktigt (Office landscape in the right way)
- Greenworks AB – Växtpanel som främjar ekosystemtjänster i byggd miljö (Plant panel that promotes ecosystem services in an urban environment)
- Johanna Ronnheden – Växterna har lösningen (Plants have the solution)
- Kvartersutveckling Sverige AB – Kvartersträdgården (The city block garden)
- Lead for ESD – Utemiljövärde (Outside space value)
- Lisa Bond – Hållbar skötsel för kommunala grönytor (Sustainable care for municipal green spaces)
- SL Consulting AB – STOODID
- Ur Jord Österlen AB – Boosta gräsyten! (Promote grassy spaces!)
- Urbio – Lekotoper: Lekvärde i naturlika gröna leklandskap (Playotopes: Play value in boosting grassy places)
- Virbela Ateljé AB – Aquairis
- White Arkitekter AB – Climate Shelter Parasol & Pavilion

Winners and explanation of their selection

Because of the different levels of development and range of the entries, even within the competition classes, comparison of overall scores, regardless of the weighting system, was not suitable for selecting a winner. However, the expert group found that each category had a clear winner that stood out by scoring highly or having good potential in several areas of evaluation.

Winner in class 1, early innovations: Nyfiken på naturen

The innovation project Nyfiken på naturen was chosen as the winner of class 1. The innovation comes from Flora and Fauna AB, in collaboration with Årsta farm, and the entry was submitted by Valdemar Pietsch. The scheme creates educational gardens for children with special needs, with co-determination, co-creation and learning at its heart, while also promoting biodiversity.

The expert group's reasons for the choice of this solution:

Well-formulated, delimited and realistic innovation that includes many dimensions, like cultivation, stimulation and co-creation for an overlooked target group. The submission considers the different parts of the competition in a thoughtful way. The solution is also scalable to a larger target group, so the innovation can generate knowledge and learning for a wider audience. In the future, the knowledge gained and educational material developed from the innovation need to be gathered and documented so that they result in a guide that can be customised for different target groups and disseminated, communicated and act as a road map for target groups outside the test bed.

Winners in class 2, market-mature innovations: Lekotoper

The innovation Lekotoper (Playotopes) was chosen as the winner of class two. The innovation is the work of landscape architects at Urbio in partnership with the municipality of Örebro, and the entry was submitted by Emma Simonsson. By not focusing play environments on individual play equipment but creating areas where play and landscapes are interwoven, the playotopes contribute to both play value and ecosystem services, and nature becomes a part of the play.

The expert group's reasons for the choice of this solution:

Playotope meets the requirements of the competition in an excellent way and more clearly than competing entries. Eco-system services and outdoor values have been considered, integrated and well catered for with a focus on social values for children. Realistic innovation yielding great societal benefits that have potential for further development. The issues of safety and accessibility are clearly highlighted. The ambition to move from simplicity and safety and add nature-based solutions through exploration of functions, values and ecosystem services is innovative. The combination of different values and functions, the conceptualisation and packaging make it an innovation that satisfies market demands.

Marketing

Statistics, social media and the internet

We have focused heavily on targeted dissemination and marketing on LinkedIn with very good results. The dissemination has mainly taken the form of information about the competition, getting as many as possible to submit relevant entries and inviting them to the final seminar.

The result was 55,000 views of the information, 399 of whom clicked to read more or register. As we said above, a total of 218 individuals registered for the seminar. Interaction with the competition has been higher than the average for the posts that IVL publishes on LinkedIn.

The Innovation Competition website was visited by 1,193 people and will remain open to the public even after the end of the competition. The video of the final seminar is also available [here](#).

Media and external stakeholders

In total, three news items and press releases were published by the IVL press room. All of them were disseminated externally, but the last press release was most successful, which also became an article on TT. As such, it also appears in new news articles below.

A summary of articles picked up around the last press release is given below:

- “Space for play” was awarded the Innovation Award for Sustainable Green Spaces – Arkitekten, 11 Jan. 2022
- Play in focus when concepts for green spaces win awards – Gotlands Tidningar, 10 Jan. 2022
- Play in focus when concepts for green spaces win awards – Norrbottens-Kuriren, 10 Jan. 2022
- Play in focus when concepts for green spaces win awards – Folkblad Östergötland, 10 Jan. 2022
- Play in focus when concepts for green spaces win awards – Södermanlands Nyheter, 10 Jan. 2022
- Concepts for green areas win awards – Värmlands Folkblad, 7 Jan. 2022
- Concepts for green areas win awards – Karlskoga Tidning – Kuriren, 7 Jan. 2022
- Concepts for green areas win awards – Mariestads Tidning, 7 Jan. 2022
- Play in focus when concepts for green spaces win awards – UNT, 7 Jan. 2022
- Concepts for green areas win awards – Skaraborgs Allehanda, 5 Jan. 2022
- Concepts for green areas win awards – Nya Wermlands-Tidningen, 4 Jan. 2022
- Concepts for green areas win awards – Filipstads Tidning, 4 Jan. 2022
- Play in focus when concepts for green spaces win awards – Sydöstran, 31 Dec. 2021
- The Innovation Competition for sustainable green spaces – Byggnorden, 20 December 2021
- Municipality of Örebro wins the Innovation Competition on sustainable green spaces – Örebro Nyheter, 20 Dec. 2021
- Two winners of the Innovation Competition on sustainable green spaces – MyNewsdesk, 20 Dec. 2021

Hållbart Samhällsbyggande also conducted a long interview, which was widely republished and Formas and Vinnova helped spread information about the competition through press releases and interaction on social media.

Expert group evaluation

The members of the expert group were asked to complete an anonymised evaluation form about their work. Six of the eight members responded to the survey. When asked whether the expectations to the expert groups were clear, everyone thought that was the case, especially after the kick-off meeting. They considered the work to have been fun and instructive, and the fact that the groups were well-composed groups contributed to this experience. The expert group considered the documents and templates good support in their assessment, and the majority believe that they also supported the process of collaboration, but some members of the group thought that there were many questions that limited their work. If a similar competition is conducted in the future, it may be a good idea to see whether the evaluation can be condensed further and to consider whether a qualitative or quantitative assessment should be made (both options were in place this time for the expert groups, who were allowed to make the choice themselves).

The benefits of including Vinnova and Formas observers were also emphasised as positive for the process. They were considered to have provided good support and complemented levels of knowledge about evaluating and assessing.

Survey of competition participants

A survey was sent to the participants with the review protocols. As it was sent just before Christmas, not many responses were received. For that reason, no conclusions can be drawn from the survey.

One participant, however, contacted the competition management via email and wrote 'I am very pleased that I submitted my entry, because I had wanted to work on the area of my innovation for a long time. This was the impetus I needed and as you write, it helped me think through my ideas more carefully. Thank you very much for the evaluation protocol, I find it very useful.' Overall, the winners have also been positive in their responses.

Another opportunity for the participants to submit their feedback was during the on-line question time before the application closed. Their view was primarily that the participants were very positive to cooperation with the authorities and that the possibility of obtaining potential funding outside existing competitions was also very interesting. The participants had a greater understanding of the issue after the competition management explained the limitations of being able to promise support.

Financial accounting

IVL has followed the budget largely as outlined in the application, with a total cost of SEK 1,440,728. Since it is a supported project, IVL's hourly rate has been applied. As this competition had a broader target group than the previous one, up to three expert groups consisting of external experts were planned for. As two competition classes were considered appropriate and about half of the expert groups could be recruited internally, there was a reduced need for the funds budgeted for external services and they were mainly used for the same work but using internal resources

instead. Material costs were reduced due to the increase in the number of COVID-19 infections during the autumn. The funds were used instead for planning and holding the final event, which consumed more time than planned due the event conditions changing on more than one occasion because of the pandemic.

Activity	Budget			Results		
	Salary costs IVL	Expenses IVL	Externally purchased services	Salary costs IVL	Expenses IVL	Externally purchased services
Project and quality management	SEK 125,000			SEK 113,775		
Develop the competition and website	SEK 100,000			SEK 107,688		
Verification template	SEK 50,000			SEK 56,393		
Submission system	SEK 50,000			SEK 46,838		
Launch and dissemination	SEK 100,000	SEK 50,000		SEK 124,855	SEK 48,263	
Administration & support notification	SEK 60,000			SEK 59,860		
Remuneration for expert groups	SEK 250,000	SEK 20,000	SEK 250,000	SEK 345,903	SEK 0	SEK 102,094
Event planning	SEK 100,000			SEK 233,715		
Event costs	SEK 100,000	SEK 100,000		SEK 98,163	SEK 4,751	
Evaluation and handover	SEK 40,000			SEK 57,750		
Closing statement	SEK 30,000			SEK 40,683		
Total	SEK 1,005,000	SEK 170,000	SEK 250,000	SEK 1,285,620	SEK 53,014	SEK 102,094
Total entire project			SEK 1,425,000			SEK 1,440,728

Lessons learned, reflections and future work

Preparations

The outcome of this year's competition was more successful than its predecessor, thanks to the combination of experience gained and development opportunities from the previous innovation competition. One of the key success factors for more applicants is that the competition could be kept open longer, leading to more entries, and the shorter registration form probably led to a simpler registration procedure. The wider area of innovation in the competition invitation was probably also a major contributor to this.

Expert groups

By deciding not to apply the jury system used in the artificial grass competition, the expert groups had more time to do their work, which was necessary to allow them to hold phone calls with the innovators and conduct the additional review round. Given the quality of the review protocols and feedback on both competitions, this provided a better and fairer review and selection of winners. The participants' pitches and the jury, which were a big part of the final event during the last competition, were enjoyed by the clients in the audience, but this new procedure was more successful in terms of the benefits achieved.

Leveraging experience and material from the previous competition

The success of the procedure was a result of materials from the previous competition being able to be re-used and adapted. Had the competition needed to be developed once again from the beginning, there would not have been enough time to collect the corresponding results.

Competition classes

The division into classes made it much easier to make a fair assessment of innovations at different points in their development stages. It was still a challenge for the expert groups to compare products against systems and service solutions, but it still felt more logical to split the groups at development level once all entries had been screened.

Collaboration

Good collaboration between IVL and the agencies has once again proved to be a success factor and enabler for the competition. To strengthen the benefits of collaboration, it would be useful if the previous ideas and motives from the preparatory discussions were made available to those who hold the competition. It would also be advantageous to allow Vinnova and Formas to participate earlier and more clearly in the design of the assessment process and to ensure that the necessary formalities are in place. For example, it would have been impossible for the agencies to fund individual innovators not working with companies in phase two. This should not prevent them from participating but should be made very clear from the start. Early involvement would also exploit the high levels of expertise in innovation evaluations found in the agencies.

To maximise the benefit creation at the societal level, it would also be wise to put together a communication group from all participating parties that can ensure that the information dissemination and communication work are carried out in a coordinated manner, which is in line with the organisations' procedures and goals for communication.

Challenges and success factors

One potential improvement from the previous competition was that a clearer prize would increase the attraction of spending the time and effort that is still required to participate. This was clearly introduced in this competition, through both phase two and the requirement to hold a final seminar together with the agencies in which the winners would be presented. As the review protocols were appreciated in the previous competition, it was also easier to point out their usefulness in this competition. The most positive response from the participants was undoubtedly to the involvement of Formas and Vinnova, and the opportunity for discussing additional support outside the usual invitations to competitions.

Improvement opportunities in future work

One of the participants in their feedback asked whether it is an innovation competition when the design only allows existing solutions to participate. They suggested a "development" competition in which innovators can participate and receive future support. This would, however, require a completely different approach, time span and resource allocation but is definitely possible and a fun idea. erVICES.

The authors assume sole responsibility for the contents of this report, which therefore cannot be cited as representing the views of the Swedish EPA.

Innovation competition for nature-based solutions and ecosystem services in outdoor environments

