

MOST

Meaningful Open Schooling Connects
Schools To Communities

Manual to plan and perform SCP -Draft version-

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Executive Summary

This document is an internal draft version of the ‘Manual to Plan and Perform School Community Projects’ (MPP-SCP) in partner countries. The manual describes important steps that should be taken into account by SCP leaders when carrying out a school community project. The manual aims at teachers, headmasters, and other possible SCP leaders to support them in carrying out School Community Projects. It helps with the question of which teacher, which classes and students are possible participants in such a project, and how to come up with an appealing, socially relevant, the region concerning, topic, as well as the framework within a school community project can be carried out at schools. The manual relates to the ‘Pedagogical guidelines and exemplary science materials’ produced in WP4 by the Norwegian partners.

The objective of this document is to provide an insight into the overall structure (content Table) of a school community project. In addition, preliminary ideas for the content will be given in the following chapters. The sequence of steps (INCREASE-Trail Map) which has already proven to be successful in other open schooling projects will be described to offer first aid support for MOST schools to implement SCPs in the first phase of the project:

INVITE: Invite anybody, who has a certain level of interest.

CO-CREATE: Try to bring different stakeholders and community members together.

ACT: Decide on a topic, set a concrete timeline, and develop a strategy with milestones and objectives to reach

Share: Communicate your project; use all possible channels to disseminate your project

Evaluate: See if you reached your goals!



Fig.1. The INCREASE-Trail Map for School-Community Projects (S. Kapelari, 2021)

The open schooling approach leads to a sustainable networking system between schools and their communities. The MOST project intends that private individuals, companies, and associations work together on strategies to overcome current environmental and social problems. The collaborative work leads to a broader understanding of scientific processes and intends to promote the scientific knowledge and transversal skills of society in the long term.

1. Introduction

MOST - **M**eaningful **O**pen **S**chooling **C**onnects **S**chools **T**o **C**ommunities is a project, funded by the EU, which aims to implement school community projects based on the open schooling approach.

This draft manual wants to support head teachers, teachers, and other project participants in carrying out innovative activities that bring schools and society closer together and run school community projects successfully.

It will give an overview of the implementation of an open schooling approach suggesting necessary steps schools and SCP leaders will need to take to implement SCP's together with stakeholders in their area.

The content of the projects is to work on scientifically questions that belong to the themes of waste or garbage (2021) or energy management (2022) and to develop regionally feasible solutions.

In this way, sustainable networking of schools and communities is established. Innovative approaches suggest developing solution strategies for current socio-environmental problems together as a joint venture of private individuals, companies, and associations. The collaborative work is expected to lead to a broader understanding of scientific, social, and economic processes and is intended to promote the scientific knowledge and transversal skills of society in the long run. In this way, the EU aims to remain competitive worldwide in the competition for jobs in science and to face global challenges more successfully. Especially in areas that have an impact on the everyday life of society, a space in which exchange and inclusion take place is extremely beneficial. One approach that promises success and brings scientific processes and procedures closer to society is that of open schooling:

“Open Science Schooling is finding real science in the community through students’ involvement into local practical activities outside school and bringing the acquired knowledge back to school. Through this, students get a better understanding of how science is applied in real life.”

[\(https://openscienceschooling.eu/about/\)](https://openscienceschooling.eu/about/)

By opening up the school and involving society in scientific processes and innovations, a link is created that takes people's needs and ambitions into account.

In the long run, open schooling processes and school community projects should ensure that Europe remains competitive in technological competition. A large number of European countries already have a shortage of skilled workers. What is also striking is the proportion of female skilled workers, which is just 15%. This quota is to be increased significantly to profitably use the social and ecological opportunities that result from an equal distribution of the sexes.

The MOST open schooling approach covers a 5-step process aiming to engage stakeholders in co-creation activities and to design and implement joint projects. Schools are expected to share their knowledge and experience and contribute to building a network of open schools in the region. The MOST Science Fair will provide a platform for future joint activities. Activities will be evaluated to improve knowledge and skills for future engagement.

2. Everything at a glance

School is often stressful; there is a lot to do, class preparation, corrections and more. To support you we have summarized the most important contents of the manual "to plan and perform SCP" on two pages. In the main part (3. The INCREASE -Trail Map for School Community Projects) you can find further thoughts on the individual points.

The frame of the project

- At the beginning it should be defined who is **SCP leader** (teacher, headmaster, or any community member)
- The SCP leader is in charge **to log the project** (MOST team offers a template)
- **Anyone**, who is interested in the topic and needs of the community can participate, no matter how old or what profession
- The **topics** should be in the area of sustainable development and specifically include the aspects of garbage and waste (2021) and energy management (2022)
- The **duration** of the project can be variable. SCPs can last for a few weeks or several months
- The **subject** of the project can be associated with or even embedded in the curriculum
- an **evaluation** in the beginning and at the end of the project would be desirable

INCREASE -5-steps to success

The path to the results of an SCP is seldom a straight one; rather it meanders through the various phases of a project. In order to be able to follow the process successfully, we recommend orienting yourself to the 5 phases of a project.

INVITE

After a rough topic or initial ideas for the SCP have been determined, the search for possible participants begins. The project team from the local higher education institution can provide support by informing their network about the ongoing project. As a teacher, you can invite other community members or people relevant to your projects as well. At a later point in time, after a topic has emerged, your students can also look for other participants who are interested in the topic.

Here are a few tips:

- Search for possible partners in the region
- Invitations should be explicit and short
- Make phone calls, to get into a conversation or use online conference tools (zoom, Teams, ...)
- Invite as many people as possible and bundle common interests
- Support conversations between stakeholders and students
- Invite community members from different areas

CO-CREATE

Co-creation enables specialists and experts to **cooperate** with other groups with whom an exchange normally does not take place. Co-creation processes help to find a **topic**, and similar **interests** of the participants become visible, from which **project groups** can be derived. A selection of methodological approaches to facilitate the process can be found in the Co-creation Navigator (<https://ccn.waag.org>).

ACT

This step marks the start of the visible part of a project and makes it clear to what extent the previous steps were successful. The implementation of the project will promise success, provided the following tips are implemented.

- Define the goals – Which objects should be achieved with the implementation of the project?
- Share responsibilities by assigning individual members of the project team a role that suits them
- Keep in touch – regular project meetings support the exchange
- Set a timeline – a list of milestones helps the students to orientate themselves in the project
- hygiene and safety plan – due to the pandemic situation, talk about hygiene and protection in class.
- you can find examples on how to run a SCP in the description on p.13

SHARE

Since this is a school community project, it is advisable to present the completed projects to the community. Various channels can be used for this:

- presentation via poster in school
- presentation on congregation evenings
- use the billboard in the school and the community
- project website
- school website
- video formats (e.g. YouTube channel hosted by the city or community members)
- local newspaper or radio station

EVALUATE

Since it should be part of every scientific process, this project is also subjected to an evaluation. At the beginning and at the end of the project, the SCP leader will distribute evaluation sheets to students (pre- and post) and teachers (only post). In addition, SCP leader are also supposed to report about the number of participants and meetings held during the SCP and to write a final report at the end of the project.

3. The INCREASE -Trail Map for School Community Projects

3.1 Why do School Community Projects (SCP) increase the quality of teaching and learning?

In various debates on current topics, it is visible that science and society have drifted apart. There are several reasons for this; the most striking is a lack of understanding predicated on a lack of exchange among each other. The core of the problem is that people have difficulties relating the processes and innovations of scientists to their everyday lives.

Humanity is facing considerable global challenges that need to be tackled now. Current and future generations will need to propose innovative solutions for problems, which have been created in the past and are still created in the present. To address these challenges and to change traditional ways of thinking and acting, innovative and collaborative strategies are required. Individuals, single institutions, or single governments cannot address these challenges. They demand collaborative action amongst stakeholders and ask schools to create learning environments that inspire young people to exploit their full potential.

Responsible research and innovation (RRI)¹ implies that societal actors (researchers, citizens, policymakers, business, third sector organizations, etc.) work together during the whole research and innovation process to better align both; the process and its outcomes with the values, needs, and expectations of society. School Community projects integrate actions to foster the uptake of the RRI approach and provide a learning space for all stakeholders involved.

An intensive insight into research and science at school age is also beneficial for all students, not only those interested in STEM subjects in general. School community projects start here by opening up the participating school to the community including researchers and scientists.

Open schools are places where people meet, where experts share their knowledge, where individuals act jointly and reach a shared goal. Such a learning environment supports students as well as teachers to engage in real-life activities that are relevant for the local community, the city, or region. Students will experience that their work impacts societal development, teachers will become change agents, and schools will transform into platforms for inspiration and change.

In general, the school community project idea is predicated on four assumptions:

- Innovation processes in science education require meaningful cooperation between various stakeholders.
- Innovations should derive from the needs and context of the region.
- The educational research provides methods for successful project work in the context of education.
- In approaches to institutional change in schools, the systemic context of the schools must always be taken into account.

3.2 5-steps to success

The INCREASE-Trail Map for school community projects is a guide for school leaders and teachers that offers an overview, which phases a school community project should go through to become successful.

INCREASE stands for the five trail phases **INVITE**, **CO-CREATE**, **ACT**, **SHARE**, and **EVALUATE**. The trail map metaphor was chosen to show that the path taken might not always be predictable. It takes detours and loops. Inviting stakeholders to accompany a school project has a great potential to explore

¹ <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation>

unexpected sights, set new goals, and finally arrive somewhere else. A school community project will always be rewarding for everyone participating.

INCREASE-Trail Map for School-Community Projects

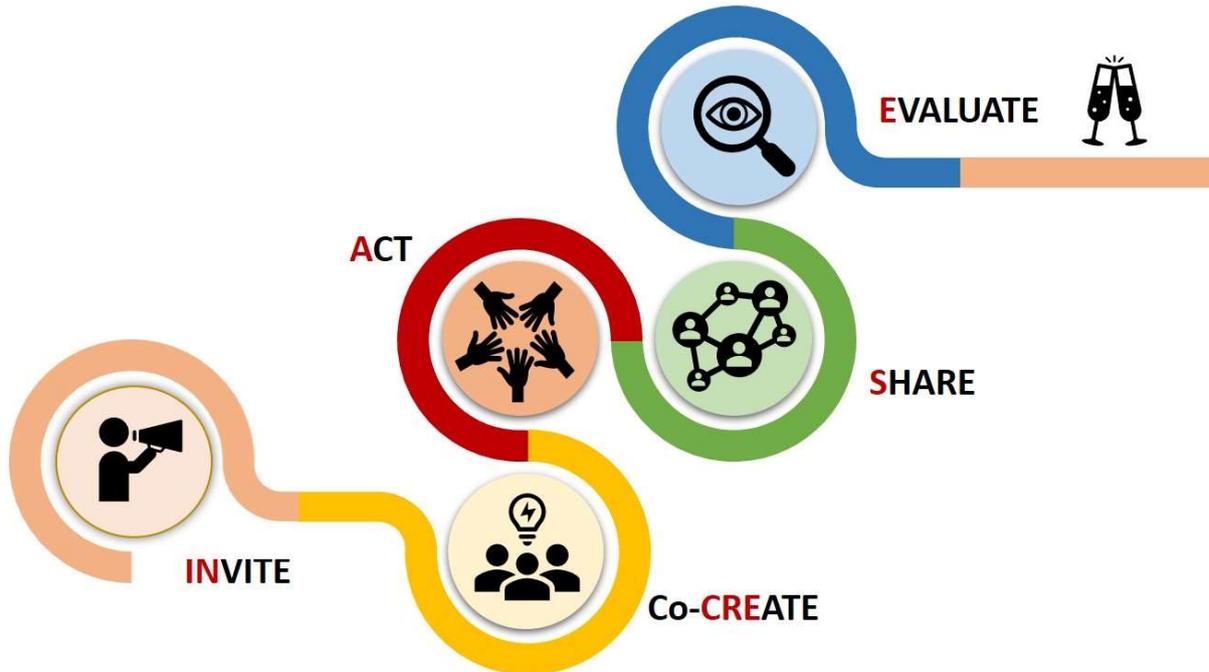


Fig.1. The INCREASE-Trail Map for School-Community Projects (S. Kapelari, 2021)

The INCREASE-Trail Map is a systematic guide that intends to serve as an orientation for SCP leaders. With the help of this 5-step plan, every phase can be worked on one after the other. It explains each phase a school community project passes through, how it looks like and what needs to be done to become successful. Schools have much to gain by fostering connections between formal and informal learning, NGOs, the local government, researchers, committed lay people, young people, and senior citizens.

Throughout the MOST project, these trail phases will be refined while MOST partner institutions gain experience and learn more about how to facilitate and support each trail phase preferably. Project partners will study the specific context and the local environment and will learn how to establish an open schooling culture in their socio-cultural environment.

Participating schools focus on environmental school community projects addressing the subject areas of *waste management* and *energy*. Thus, trail sections use these fields of action as an example.

The INCREASE Trail Map should be used in parallel with the *MOST Pedagogical guidelines and exemplary science materials*, produced by the Norwegian team in WP4.

- INVITE

Anyone who has a certain level of interest in RRI and actively advocates sustainable development can participate in an SCP. As the SCP leader, you should make sure that you schedule the dates for any

meetings so that as many people from the community as possible can participate (for example, pay attention to ordinary working hours). Further, it can be helpful to set up a rough timeline for the duration of the project, so that everyone who is involved can see if it is even possible to participate.

Students and teachers

To a positive start, students should be interested in making a difference and giving something back to the community. The motivation of the students to participate is intrinsic as the students are willing to do research and follow their interests and give something to the community. Motivation for schools, on the other hand, can be based on a certification system. For this, it is necessary to consult the responsible policymakers.

Since SCPs address socially relevant topics concerning waste/garbage (2021) or energy management (2022), a successful implementation can lead to an increase in life quality for everyone. It is suggested to hold a kick-off lesson on the subjects of waste management, energy consumption, and aspects of sustainability and environmental awareness in the classroom, carried out by the teachers or the SCP leaders. There is also the option of inviting experts to a workshop to increase the interest of the Students.

In addition, the advantages of an open schooling approach should be presented to the participants. It is also helpful if the teacher has a certain level of environmental awareness and interest in the topic and prefers student-centered teaching approaches and sees an advantage in being able to work with experts from different areas.

Stakeholders:

At the beginning of a school community project, we recommend searching for possible partners from the local community. When looking for stakeholders, it is advisable to formulate explicit invitations that contain specific information about the project. It may also be recommendable to contact possible participants by telephone for the first time, as there is the possibility of a conversation or use online conference tools to create an official frame where you and your project team can present the idea of the project.

A well-thought-through search for associations and companies that like to carry out environmentally based projects influences the course of the project. At the beginning of the project, it is better to invite as many people as possible. Common interests can be bundled, which will primarily support the students at a later point in time.

The question of who will take part is revealed through an initial meeting with possible stakeholders. Consequently, from a certain point on, participation is regulated by the students' project ideas. In an exchange between the students and the stakeholders, it becomes clear which experts can support the students in a particular project.

However, since the core topics of the MOST project are "waste management" and "energy", on the one hand, and to foster the RRI approach, on the other hand, it must be ensured that the stakeholders invited are not only from science and research but include laypeople and representatives from NGOs. In addition, numerous companies and institutions are pursuing an educational mandate, which is covered by participating in the project.

Furthermore, it must be ensured that the invited stakeholders and community members, who are participating, can adequately answer questions from the students. Community members can be experts in a specific field but also interested persons and neighbors, parents, family, and friends,

business partners, or policymakers. It is important to ensure that the experts can talk about their area of expertise in a language that can also be understood by laypeople and students. All people interested should be able to follow the explanations.

It is also helpful to invite universities. Usually, the universities have a substantial network, which can be convenient for the upcoming tasks of the project. Additionally, universities often bundle their ongoing projects and initiatives in the context of sustainability in so-called green offices.

Invitations can be made on three levels:

- *Principal:* The headmaster of a school can use his channels and network to woo participants and interested parties. The headmaster's network is practical to find participants and interested parties in the first part of the application.
- *Class level and teacher:* At the class level, the students can share the project ideas with friends and other class associations. In addition, the teachers can use their networks to get other interested parties to the project idea. In this way, the MOST idea finds its way from the classroom to the staff room the community.
- *Individuals:* Specific topics and thus specifically interested stakeholders can be acquired through individual students. The level of the individual also promotes cooperation, this way people can be won for the project who are specifically pursuing the same ideas.

Incentives to join

Formulate Invitations in a way that the main points are easy to understand. Moreover, use the invitations to convince people to participate in an open schooling project (e.g. “use the opportunity to be part of an open schooling project...” or “Use the rare opportunity to work on eye height with students and people from different parts of society”). In addition, certain incentives can increase the motivation to participate. The invitation should therefore explain why participation in an open schooling project is beneficial and profitable. Strengthen the incitement by explaining explicitly that the emerging projects intend to address the needs and challenges of the region.

Incentives can also be created by trying something new, for example, project work with an app (e.g. Litterati app; <https://litterati.org/>). In this way, the aspect of gamification comes to the fore, which can serve as an incentive as well. Gamification appeals to curiosity and engages students and stakeholders to participate.

Checklist for SCP leaders:

- Search for possible partners in the region
- Create incentives to participate
- Formulate an explicit invitation
- Make phone calls to get into a conversation
- Invite as many people as possible and bundle common interests
- Support conversations between students and stakeholders
- Make sure that you invite people from different areas

[.. the final version of this manual will present best practice examples for how to engage and invite community partners collected by MOST partners]

- CO-CREATE

Co-creation is an innovative and participatory process that aims to bring together stakeholders from different parts of society. Co-creation enables specialists and experts to cooperate with other groups with whom an exchange normally does not take place. The positive consequence of the dialogue is learning from one another besides developing cooperation between different groups in a society. The appreciable output arises when people from unlike areas and with heterogeneous cultural and social backgrounds come together.

When choosing a topic in a school community project, we recommend using a co-creation approach. For the successful completion of an SCP, it is most important that all partners fully support the project. Usually, this happens if individuals and organizational needs are covered, and each participant (including students) can recognize an advantage for themselves and the community. You can find a selection of methodological approaches to facilitate the process the Co-creation Navigator (www.ccn.waag.org).

"To facilitate co-creation, you need to understand the process; you need to have a good sense of the steps to take to be co-creative in the entire undertaking. On top of it is useful to have plenty of tools and methods in your back pocket, that can help you host that process" (WAAG Society).

[.. the final version of this manual will present best practice examples from MOST partners]

In the INVITE Phase, SCP community partners were selected and invited to join a Kick-off meeting and engage in a co-creation process. In an ideal SCP setting, co-creation starts from the scratch and the group designs a project jointly including the area of action. However, formal educational frameworks a school is restricted to, and in our particular case the MOST topic areas are already set and partners invited to the co-creation process are already selected by their expertise and engagement in the given area of action.

A particular aspect of co-creation processes is working together on an equal footing. To realize this setting, consider the following aspects:

- Introduce everyone – not only the stakeholders (e.g. students, teachers, ...)
- Name everyone the same, first name or last name
- Integrate an ice-breaker action (Here you can find a list of activities: <https://blog.hubspot.com/marketing/ice-breaker-games>)
- If it is possible, the whole class who is participating in the project should be involved
- The role of the facilitator is essential. It is his/her responsibility that everyone involved can state their opinion. The facilitator has to keep an eye on the time and cut off people that destroy the discussion by monologues. Possible phrase to cut off people during a monologue: "Thank you very much. You have stated your opinion that you would like to have this and that. I would like to hear the opinion of... now."

Students and teachers

In a school context, social forms such as the *world café* or the *fishbowl* method are suitable for finding a topic together. You can find method sheets and tips for implementation in the appendix (p.).

[.. the final version of this manual will present best practice examples from MOST partners]

In principle, every topic with **social relevance** can be viewed as a good topic for a school community project. However, the topic should be based on everyday life in a diverse society.

Television, social media, or newspapers can always be recommended as a source of information on currently discussed topics. Controversial topics are always a sign of enthralling themes! (e.g. climate change, sustainability, energy, waste management, food waste, ...)

The framework of the MOST project specifies to deal with the choice of topics in the areas of "waste management" and "energy". A Kick-off lesson should offer students basic knowledge about the relevant topics addressed by the SCP. As a result, individual project teams based on their specific interests will come together.

We recommend inviting students' representatives to participate in co-creation sessions with community partners, to be able to take up any ideas and thoughts of the participants. In this wise, every suggestion flows into the topic finding process, project ideas that pursue similar topics can be bundled, and students and community members come together.

Define the goals

The success of an SCP project, regardless of the context in which it takes place, is measured by achieving the goals set. However, objectives also provide a framework for orientation within the project. It is indispensable that the objectives are defined within the school-community project team from the beginning. Goals can be achievable in the short term (e.g. reduce the weekly amount of waste) or feasible in the long run (e.g. people's shopping behavior is influenced over the long term). Objectives need to be measurable to recognize whether they have been achieved or not. On the way to the higher-level project goal, further steps can be interposed for control reasons. A list of **milestones** that build on one another is helpful here.

Hint: Create a list of milestones to document the progress of the project!

[.. the final version of this manual will present best practice examples for goals set by MOST partners]

Hint: In order to be able to look again afterwards what has been said on which topic, it makes sense to keep minutes!

Share responsibilities

The work that has to be done, roles must be assigned as early as possible. In this way, every team member has responsibility for the project and is motivated to drive the project forward successfully. In the ongoing pandemic situation, it can be helpful to lay as much of the coordination capacities on the HEI. Hence, a basic principle is to offer the schools relatively well-defined "offers". You can find examples on our website (<https://www.uibk.ac.at/projects/most/>).

Talk to each other. As in many areas of society, while carrying out a project, regular consultations are helpful to clarify and inform partners. To arrange a fruitful consultation setting amongst project group members, we suggest the following guide:

Guide to successful project management discussions	
Theme	In the run-up to the conversation, try to find a topic that you want to talk about.
Agenda items	A guide or a list of the items on the agenda will help you to get a structural conversation. In addition, the dots will help you orientate yourself, in case you lose the thread.
Invitations	Invite all relevant persons. Anyone who participates in the project should be informed about the conversation.
Minutes	Recapitulate individual conversations afterward it's helpful to appoint a person to take the minutes.
Conversation rules	Follow the rules of conversation: <ul style="list-style-type: none"> • Opinions and ideas can be freely expressed • Express your expectations and wishes • Let other members speak • Accept feedback and criticism
Distractions	Make sure that your project meeting is free from distractions; put everything that could distract you aside so that you can work purposefully.
Feedback	Mutual feedback promotes the culture of dialogue and active exchange processes among themselves.

If the duration of the project expands over a longer period, it is helpful to arrange regular project meetings. (Especially in times when you do not meet the project team regularly, it makes sense to arrange a "jour fix".) Regular meetings at weekly intervals help to create a productive working atmosphere and promote fruitful exchange.

Digression digital communication:

Through the Covid19 year, we have all become experts in digital communication; the list in the appendix (p.12) should be an aid to support your reciprocity within the project. The link list should also help in advance to query prior knowledge and interests to find project groups.

[.. the final version of this manual will present best practice examples for sharing responsibility by MOST partners]

- ACT

Set a timeline

The question after the duration of an SCP is probably the one that has the most lasting effect on the framework of the project. Because with the time available, the scope of the project is determined. School community projects can run for several weeks or months but could end after one or two weeks, too. It is important, that the basic idea of learning together and from one another between students

and community members (e.g. experts, researchers, practitioners, etc.) endure. In addition, keep in mind that a project not only the implementation takes time, also the evaluation phase requires a few hours of work from the participants.

The duration also depends on whether the project can be embedded in the curriculum. SCPs do not have to run outside the curriculum if it is possible to embed it in everyday school life and the curriculum. Interdisciplinary treatment of the projects is also possible.

If projects already exist, they can also be pursued with an open schooling approach and receive support from the MOST project. It is also possible to roll up projects again. In this way, students can deal with a project topic on different levels in a sustainable and long-term manner. In this way, knowledge and insights can be sustainably secured. However, the project idea is also subject to a sustainable implementation because the projects have no expiry date and can therefore continue and represent a sustainable benefit for the local community. As already mentioned in Section '*share responsibilities*', a constant and regular exchange between the project partners is necessary to develop learning processes and to promote the scientific knowledge and transversal competencies of the participants.

[.. the final version of this manual will present best practice examples for putting the SCP into practice by MOST partners]

Themes and Topics

The topics of the projects should be in the areas of waste (2021) and energy management (2022). In addition, the projects have a benefit for the community and address the needs of the region.

Besides, all members of the SCP should jointly decide on a topic of the SCP to create ownership. The topic should be socially relevant and require scientific or technological solutions. The decision on a socially significant headline concerning the region increases the interest and participation of the community members.

Pursuing a common goal that serves community needs will develop not only shared ownership of possible solutions among project participants but also raises the acceptance of outcomes. Sometimes the best project results out of the easiest ideas. So go for the "low hanging fruits" and start with recycled toilet paper, soap bars, bags for bread (instead of paper bags)...

To get the students excited about the project, the SCP leader or the teacher should conduct a kick-off unit on the topic, as already mentioned above. In this way, you draw attention to observable problems within the region. At this point, the students can be included in the decision-making process. At the level of the headmaster, attention can already be drawn to the issues addressed, for example by initiating a project week or actions such as an energy week (e.g. the school as a whole unit tries to save energy) or a waste avoidance week.

Develop a Hygiene and Safety Plan

Because we are currently in a pandemic, it is central to develop a Health and Safety strategic plan, which will be applied in the context of all SCP activities. Current national codes of conduct and guidelines must be followed, and appropriate precautions need to be taken.

In many cases, projects and project work are associated with regular face-to-face exchanges. To avoid infection with unwanted viruses, thorough hand washing is essential. In addition, the specified safety and precautionary measures should always be observed. Special situations require special actions to be taken. Contact with the project members involved should be avoided as far as possible during an ongoing pandemic unless otherwise specified by the government. Teachers should be informed at all

times about the progress and procedures of the project groups to provide any safety instructions (e.g. working with garden tools, hazardous substances).

Since this is a community project, permission from parents or the rectorate are obtained. The permission from parents or the rectorate is inevitable as soon as groups of students outside the school and with people from the community work on their projects. In addition, the SCP leader should be informed about the individual steps taken by the students.

In the following, find two examples for a school community project. It works as an exemplary instruction on how to implement SCPs. The first one shows a general example. In the second, a possible concrete action plan is shown.

It is necessary to mention, that the framework (time and topic) in which these SCPs take place is variable. Projects can last for an entire school year but can also be completed after a few weeks. But it is essential, that at least five school community members participate in the project. To evaluate the project, it is necessary to fill out a questionnaire, before and after the project. As mentioned above (p.5), it is required to evaluate the project and to fill out the questionnaire the SCP leader handed to you before (only students) and after (students and teacher) the project.

Example 1:

As part of their math class, an 8th grade teamed up with a salesperson from the local organic shop, an employee of the regional waste management, an environmental consultant, and a freelance journalist. The topic is the question of how garbage from private households can be reduced in their city.

After a joint brainstorming session, small groups take on different tasks: One group, for example, analyzes the needs of residents and interviews passers-by about their shopping behavior. Others collect household rubbish over a while and compare it to the amount of rubbish created by more conscious shopping.

The seller gives valuable advice on this. The result is extrapolated to the garbage consumption of the entire city. Finally, the participants draw up a list of tips on how waste can be reduced in their city and what effects this has. The results are appropriately prepared for an exhibition in the school and the local shopping center, and the local press reports.

As all participants contribute their knowledge and skills to the project, they don't learn just from and about each other but also expand their (natural) scientific knowledge and transversal skills (teamwork, strategic and innovative thinking, time management, etc.). The aim is to arouse interest in the natural sciences and scientific work in all participants. In the long term, this will lead to more students in Europe embarking on a scientific career in the future - a goal that, given the advancing technical developments and global environmental challenges are of great concern to the EU.

(c.f. <https://icse.ph-freiburg.de/freiburgprotectstheplanet/ueber-das-projekt-most/>, 04.02.21)

Example 2:

Date	Duration	Activities
04.02.21	2h	Fill out the questionnaire, Find a topic: Waste separation at our school
04.02.21	2h	Set up a project plan

11.02.21	2h	Lecture on the topic of waste separation by the local waste company
11.02.21	2h	Discussion on how and in what form rubbish should be separated at the school in the future - the procurement of rubbish bins is initiated
18.02.21	2h	What's the point in recycling rubbish? – Calculations in class
25.02.21	2h	Production of signs and stickers for garbage cans for waste separation
04.03.21	2h	Attach the information signs and stickers, take photos, design posters for the regional fair and shoot a video clip that shows on the homepage how the students should separate rubbish. In the end, fill out a questionnaire.

(c.f. <https://icse.ph-freiburg.de/freiburgprotectstheplanet/werde-aktiv/>, 03.02.21)

List of examples from the European MOST community:

Theme and Topic	Invited Stakeholder	Reason why we invited these stakeholders	Which schools are participating	SCP leader
Waste at the community	School, Municipality, NGO	Their involvement in this topic	Elementary School (11-15)	Teacher
Unpackaged shopping	School company, municipality	Their involvement in this topic	Elementary School (11-15)	Teacher
Local sustainability issues	Students, teachers, municipality, community members, and stakeholder	Their relevance in local development	Elementary and secondary (9-18)	Student future teacher
...

- **SHARE**

- *MOST Fair:*

At the end of the school year, as soon as all SCPs have been completed, all projects can be presented on the **MOST Fair**. Here, the students and project partners get the opportunity to present their projects to a wider audience. All interested parties, as well as community members, should be invited to this celebration to reach a broad public.

As one goal for the MOST project is to establish Open School Networks, the MOST Fairs will support the establishing process and will bring together schools who are already a member of the school-

community teams and representatives from potential partner schools will be invited to learn more about the Open School-RRI-Idea.

SCP presentation can be done via:

- poster
- video
- slide presentation
- hands-on activities
- theater play/role play
- young researchers conference
- etc.

The MOST Fair is intended to provide the framework for all those involved (students, teachers, community members, ...), to meet again to promote cooperation and networking at the regional level.

Presenting the results publicly is an exciting side effect for the students, as this offers them visibility and approval for their work. It generates motivation to become active yourself. In addition, social skills are strengthened through the exchange with other SCPs.

The MOST Fairs can also create synergies between the individual schools and various stakeholders and community members, which can be beneficial for future projects and work (e.g. exchange of experiences, work materials, etc.). MOST Fairs are organized and carried out by the regional MOST partners.

Public Relation Strategy

A well-planned and comprehensive public relations strategy should be part of the project design. Public relations work should span different ranges:

- the local community in the SCP environment (e.g., municipalities also have “notice boards” or billboards)
- Stakeholders, the government, and the population in the region (e.g., via the school website, social media posts, local and regional newspapers, etc.)
- The national and international society (e.g., school website postings translated into English, the international MOST website, etc.)

To reach those goals, schools can use different channels to communicate their projects:

- MOST project website
- school website
- video formats (e.g., YouTube channel hosted by the city or community members)
- local newspaper
- social media channels (as long as the school runs some)
- podcast
- bulletin board of the school
- use the MOST fair
- local radio or television broadcasts

The more people and policymakers will learn about successful SCPs, the more will be inspired to become change agents themselves and to support the Open School movement.

e.g. particularly catchy activities can be used as figureheads to showcase project goals and actions.

[.. the final version of this manual will present best practice examples for successful public relations strategies implemented by MOST partners]

- **EVALUATE**

In addition to the evaluation within the MOST project and its related research, it is advisable to evaluate for the class and the school itself to determine to what extent a school community project was successful. Each SCP should be evaluated as an individual to learn what should be done differently or improved in future projects with a similar approach. Further, evaluation needs to be seen as a part of any scientific process, so it should be included in the SCPs, to give students an understanding of how scientific processes work out.

Various methods like a questionnaire, checklists, or internal feedback talks can be useful. For an evaluation within the school, we recommend a five consecutive step strategy to implement a successful evaluation:

1-Pre-evaluation:

What are the goals of our project and how can we observe the development towards our objectives to find out whether we have achieved them?

2- Develop an evaluation design:

- What do we want to learn from evaluation?
- Which questions shall we ask and when?
- Which methodology shall we choose?

3- Collect and analyze data

This phase is dedicated to collect and analyze data. It is important to plan when and in which context the data will be collected. A wide range of data collection tools are already available: e.g., for questionnaires: online survey platforms (LimeSurvey, SurveyMonkey, etc.), database systems or paper-pencil tests, audio/video graphs, photos, collections of artefacts produced during activities (e.g., students project ideas, participants expectations in the jointly produced poster during a meeting, etc.).

4- Reflect and review the lessons learned

Evaluation results should be discussed within the SCP team (students included) at the end of each SCP. This reflection process is needed to provide a space in which all members of the team can talk about their perception of the trail they have traveled together.

5- Improve and modify your SCP strategy

Experience gained while moving along the INCREASE trail and lessons learned from reflecting and reviewing evaluation findings will contribute to the improvement of the SCP strategy regardless of the context in which it will be applied. These lessons learned will inform future SCP activities, will improve the quality of science teaching and learning, and will contribute to the establishment of successful open school networks.

On the individual school level, the evaluation process relates to the project carried out by the school and serves as a source of information for the SCP leader and the school itself. In compliance with the general rules of project management, at least a short evaluation phase should be part of every project. In addition, a scientific evaluation of lessons learned out of all conducted SCPs will take place on a larger scale while using the evaluation report that results out of WP8. To ensure the quality of this overall evaluation results, all participants (students, teachers, etc.) must fill out the evaluation forms presented in WP 8.

[.. the final version of this manual will present best practice examples for evaluation questions and tools tested by MOST partners]

This evaluation plan helps to create an “in-school lesson learned”- list, which helps to improve SCPs. Furthermore, stumbling blocks from school projects can be discussed on the international MOST website

[.. the final version of this manual will present lessons learned collected by MOST partners]

4. Conclusions and Recommendation

This manual provides information and recommendations for the implementation of SCPs. The presented 5-phase model (INCREASE) describes the individual steps that an SCP leader should follow to be able to implement a project successfully. In addition to the description of the phases, there are recommendations for action for the actors involved, as well as implementation examples. To achieve the best possible results, it is advisable to address the first phase "INvite" to a broad audience to reach as many people as possible from the most diverse directions and sectors of society. Another sticking point is the first meeting of the students with stakeholders, which should be well-planned and thought out to guarantee the best possible cooperation throughout the project. The success of an SCP stands or falls with the interaction between everyone involved in the project, which is why we recommend regular and well-thought-out exchange and communication, which culminates in the jointly developed Science Fair.

[.. the final version of this manual will address conclusion, and recommendations]

5. Appendices

Appendix 1: Links to CO-CREATION and EVALUATION tools

Here are some links to activities/digital tools, which might be useful in meetings, online teaching and evaluation.

Open schooling EU-Projects

Link	Description	Information
https://www.openschools.eu/	A recently finished European Project offers a wide range of ideas and theoretical background	Ideas for teachers, school leaders, parents, student's policymakers, businesses
Open Science Schooling – Open Science Schooling	EU project finished Feb 2020	Idea for School guide online
https://www.phereclos.eu/	Currently running Eu Project -Higher Education Institution engage in open school hubs	Will establish Local Education Clusters

CO-CREATE and ACT

Link	Description	Information
https://ccn.waag.org/navigator/	The website offers various thoughts and inputs on co-creation workshops. Many of these can also be implemented digitally, although tools such as those listed below are sometimes required for this.	Free! Works as a navigator on Co-creation processes.
https://www.mural.co/	Mural is a whiteboard tool, whiteboards can be prepared here before the meeting. Invitations are sent by email	Various templates are already activated in the free version. Already offers templates for Icebreaker or collaborative methods.
https://miro.com/	Another Whiteboard tool	Free!
https://www.mentimeter.com/	Mentimeter loosens up longer meetings. Quizzes and opinion polls are possible. Participants can take part and vote via cell phone.	Free!

https://www.sli.do/	Any questions and answers that arise must be actively managed. Survey is possible in real-time.	Questions can be asked anonymously (via cell phone). A projector makes sense to make the question accessible to a wide audience.
https://www.mindmeister.com	Ideal for creating mind maps. The created mind maps can be designed intuitively, shared and edited together	Promotes co-creation and brainstorming processes - but subject to a charge as soon as more than 3 mind maps are designed.
https://www.wortwolken.com/	Can be used as a mood picture or opinion poll in meetings and conferences. Ideas are presented anonymously.	Limiting thought to 1-2 words. The project groups recognize possible similarities.
https://padlet.com/	Website that makes collaboration easier. Ability to create boards, documents and websites. Easy to use. Documents can also be stored on the platform.	Free!
https://answergarden.ch/	Tool to ask for opinions	Free!

Quiz, tests and online games for students

Link	Description	Information
https://kahoot.com/	Popular and well animated quiz duel. Answers can be saved in the form of an Excel file, so it makes sense to instruct students to use their correct name	Free! Good to check the students' knowledge
https://www.socrative.com/	Socrative is more used to test knowledge; the playful character is disappearing more and more compared to Kahoot. Results can be downloaded as PDF.	Free!
https://de.actionbound.com/	Digital scavenger hunt. The action must be created via the browser, the app must be downloaded to play. The	Free! But the app must be downloaded. Takes time to prepare the game.

	program allows audio, images, text, quizzes and more to be integrated.	
https://www.suchsel.net/	The site allows moderators or teachers to create puzzles.	Can be mastered as a joint task and thus promote a cooperative work process. Schoolchildren and workshop participants get into a conversation.
https://quizizz.com/join	Another tool to check the knowledge of the students	Free!
https://www.xwordsgenerator.de/de	Crossword puzzle generator	Free!

EVALUATE

Link	Description	Information
https://blog.hubspot.com/service/survey-software	The 18 Best Survey Software and Questionnaire Tools applied in marketing campaigns in 2020	A ranking is provided
http://www.communityschools.org/resources/community_schools_evaluation_toolkit.aspx	Community Schools Evaluation Toolkit	Free!
https://www.informalscience.org/evaluation/evaluation-tools-instruments	Self-Evaluation tools and instruments for informal science	Free!

Appendix 2: Method sheets