



# Involving societal stakeholders as a source of creativity in research

A co-creation toolkit for researchers and engineers



# Introduction

## Enabling co-creation

The EU-funded GoNano project enables co-creation between citizens, researchers, industry, civil society organisations and policy makers across Europe to align future nanotechnologies with societal needs and concerns. Co-creation is a widely used, but loosely defined term that has been applied in different contexts. Co-creation can be understood as the collaborative development of new value. It is a form of collaborative innovation: ideas are shared and improved together<sup>1</sup>. GoNano has defined co-creation as the emergence of productive collaborations between researchers and societal stakeholders over longer timeframes, focusing on specific nanotechnology research lines, leading to tangible outcomes such as a new research avenue, proposal, product or prototype. GoNano developed pilot projects in the areas of food, health and energy to explore how researchers can work with publics and professional stakeholders to create novel suggestions for future nanotechnology products.

## Why this toolkit?

With this toolkit we would like to share our lessons learned. We hope it will support researchers and engineers who would like to engage with citizens and societal stakeholders as a source of creative thinking. The toolkit offers a six-step approach to help researchers and engineers define their goal, identify the relevant stakeholders and design, implement and reflect on the co-creation process. By offering this six-step approach to co-creation, we hope to inspire researchers and engineers to continue this journey, working together with citizens and societal stakeholders to create value in new settings, with new topics and with creative outcomes.

1. Video clip of the Amsterdam based firm Fronteer, explaining the concept of co-creation [https://www.youtube.com/watch?v=VID2EyW5W\\_k](https://www.youtube.com/watch?v=VID2EyW5W_k)

## Six steps

Based on our experiences in the GoNano project we have identified the following six steps to enable co-creation in your own work:

1. Define your goal
2. Identify the stakeholders
3. Start planning
4. Organise your co-creation event
5. Evaluate and reflect on the process
6. Share the results

Each step in this guide is illustrated by a brief summary of the step, followed by an example or exercise to help you visualize and guide you through the step. For each step we present a tip or provide advice based on the experience gained during the GoNano project, including links to background information, tools or inspiring ideas.

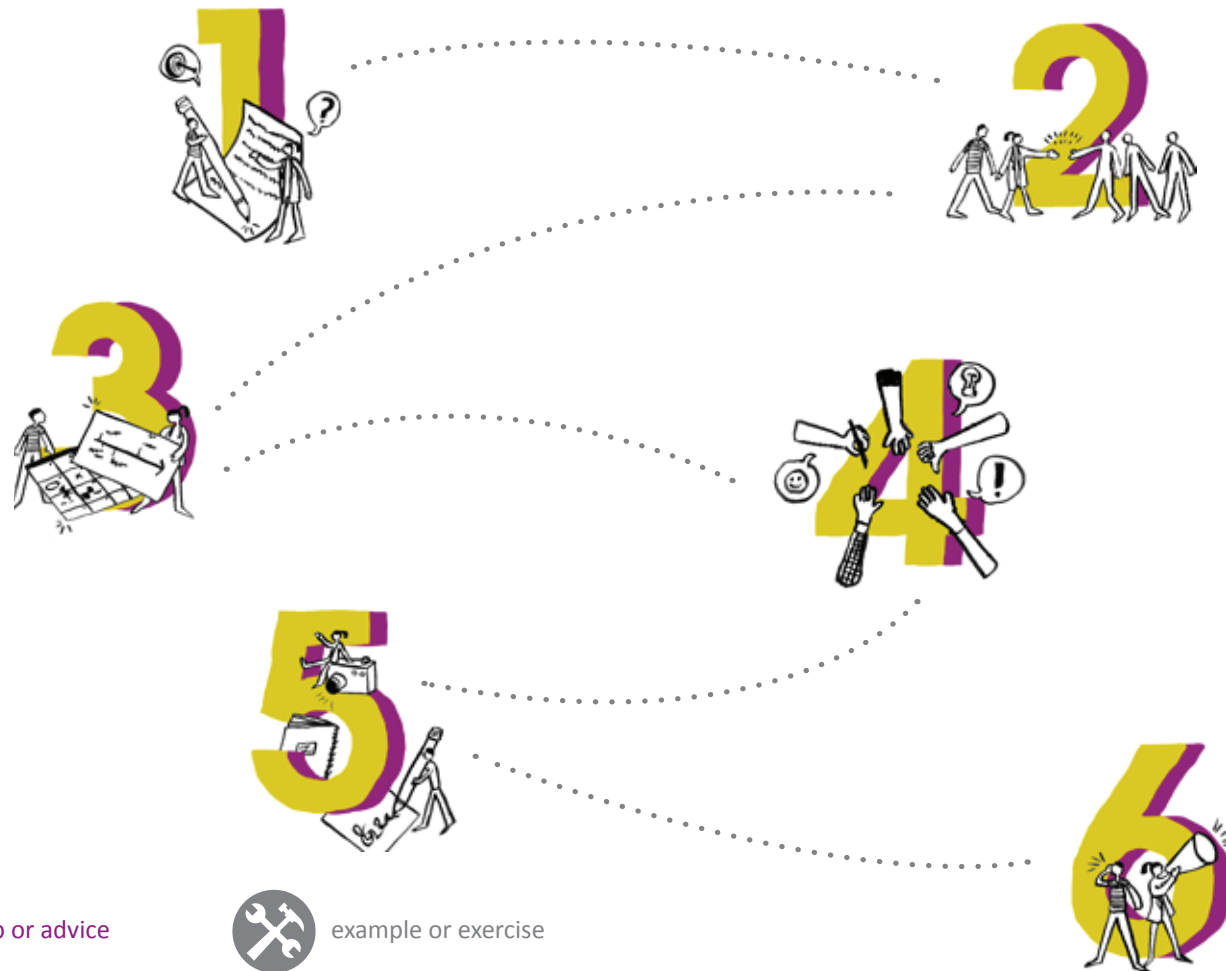
Co-creation is an iterative process: this means that you may need to move back and forth between each of the consecutive steps and cycle through the process several times. For instance, initial conversations with future stakeholders might help you to (re)define your purpose. And sharing your results may lead you to initiate another co-creation cycle.



tip or advice



example or exercise



## Enabling co-creation: terms of engagement

Co-creation usually involves collaboration between individuals with very different backgrounds. To work together effectively, participants have to learn where the others are coming from and what they would like to achieve. The ‘symmetry of ignorance’ is a key principle here: this means that we are all expert in some fields, but laypersons in most others. In other words, all participants are equal and have something unique to bring to the table. The challenge is to build a shared language that allows each participant to meaningfully discuss the ‘value’ of their contribution with the other participants.

Building shared understanding between participants also implies that clear ground rules for discussion should be in place: everyone should be allowed to speak; participants should actively listen to what the others have to say; they treat each other as equals; they explore what new and crazy ideas might contribute to the overall aim, rather than simply dismissing them; differences in opinion are valued, not suppressed.

The following criteria should be taken into account when designing co-creation processes:

- The purpose of the initiative should be made clear to all participants;
- Defining what is at stake is key;
- Discussions should be specific enough to affect the decisions of actors;
- The process of what happens with the input should be transparent.



**“We have one common goal, to help people with type 1 diabetes to have better health outcomes and higher quality of life”**

*Software developer and type 1 diabetes, participant in GoNano workshop*

## 1. Define your goal

The first step is to define your own motivation and expectations: why would you want to engage stakeholders in your research? What do you expect to get out of it?

You might want to explore new research lines in consultation with product developers and producers further down the innovation chain. Or you might like work with consumers or professional stakeholders to envision possible applications of a research finding. Or you may want to find out how stakeholders respond to a prototype that you have been developing. In each of these cases, it makes sense to ask yourself what exactly you would like to know from your stakeholders, and what a satisfactory response to your questions would look like.

As a researcher or engineer, you are used to talking about your project in scientific terms. If you want to engage stakeholders in co-creation, you need to focus on the goal or problem that you aim to solve and present it in a way that non-experts can understand. What problem are we addressing? Who's affected by this problem? What makes this problem so complex? The goal should be as concrete as possible, so that discussions can be specific enough to affect the decisions of the actors and specific courses of action can be identified.



### **Prepare a 60-second pitch about your research topic**

Describe your research in lay words (to a non-expert audience). Find a hook with a personal story to make your pitch memorable and unique. Try to avoid technical words. Why does your research matter? What problem does it aim to solve? And why do you need help from your audience to address this problem?



20-30 min



pen&paper



**Specify your pitch with different stakeholders in mind: the funder for your research, the company that will produce the final product, the regulatory officer, the user of the final product. Experience how it changes the language and focus.**



**“Team chemistry is essential and diversity is key to produce the best results when bringing those great minds together”**

*Fronteer, an Amsterdam-based strategy consulting firm*

## 2. Identify the stakeholders

Once you have defined your goal and know how to pitch your co-creation topic, you have to identify the right people to collaborate with.

First, you have to identify who your envisaged stakeholders are: are they customers, private actors, public actors, knowledge institutes or NGOs? You have to understand the stakeholders and their interests. Once you have established contact, it is essential to motivate the potential partners to collaborate on the topic of the suggested idea or problem. To convince your participants, they also need to see the added value of these interactions in relation to their own goals and objectives. The key is to identify a shared goal(s) that drives collaboration; there has to be a ‘matter of common concern’.

There can be different kinds of motivation for your collaborators to engage:

- Some people are interested in the technology: measuring and sensing, the technologies used, and the science behind it;
- Some people are interested in the environment: they want to act on their concern and expect that their involvement may lead to better environmental outcomes.

- Some people are motivated by participation: they wanted to become involved in the political or deliberative process, expand their network, or even just to get to know people in their city better.

Ideally, your offer simultaneously addresses different kinds of motivation.



### **Draft your ideal participant list**

Start by making a list of key stakeholders to achieve your goal or solve your problem. Think of individuals that you know yourself or that you can reach through your network. Make sure you have at least one participant who is the basis around which you can build the other participants for your workshop. Select all participants on a combination of proven track record and expertise, creative and constructive thinking, communicative and connecting qualities and leadership.



60 - 120 min



pen&paper



**When inviting citizens, they should be facilitated to have a genuine influence on something that is important to them rather than something on which they may have no influence or interest at all.**



**“We develop concepts and business models to create a win-win situation; to come up with a model that allows all stakeholders to profit and to integrate sustainability into the innovation process”**

*Elise Kissling, Director, Creator Space frontend innovation program at BASF*

### 3. Start planning

Once you have defined your goals and have identified your stakeholders, the time has come to start planning your event. It needs to be designed in such a way that it addresses your strategic goals. This requires close attention to practical organisation.

#### Strategic canvas

- Stakeholder: map the stakeholders you want to invite
- Results: Define what you want to get out of the event (a direct effect, or wider benefit and long term impact?)
- Ethical, legal and social issues: define what issues you want to address
- Milestones: What are the due dates to accomplish major tasks?
- Critical success factors: what specific dynamics of stakeholder sectors should you be aware of?
- Risks and contingencies: What circumstances could stand in the way of the successful completion of the event? What are possible risk-mitigation measures?

#### Practical canvas

- Team: Build an organising team, including a workshop organiser, facilitators with experience in discussion techniques and a communications expert for internal and external communication.
- Resources: Your event will require financial, political and social resources. Make sure you have the support of institutes and build relationships with the communities you want to work with.
- Venue: Find the right place for your workshop. If at all possible, the event could be hosted in the place that is related to the problem you are trying to address (for instance, in a hospital, farm or production site) to bring the real-life context into view.
- Tools for co-creation: prepare tools and material
- Time schedule: Draft a plan from start to finish, including start dates, due dates for milestones and communication timelines.



#### Use the canvases to define your planning

This task consists of two phases. First download (<http://gonano-project.eu>) and print the canvases and describe all aspects that you can think of. Then prepare your team and refine the canvases together (phase two).



60-90 min  
each phase



canvas  
pen&paper



“The nice thing is that in conversation with others, your thinking about this issue is being sharpened; I go home with new insights”

*Participant in GoNano citizen workshop*

## 4. Organise your co-creation event

After planning your event strategically and practically, it's time to start organising the co-creation sessions.

There are many resources that can help design co-creation processes (see the link below for further information). In the GoNano project, we structured our collaborative workshops around the four main pillars of co-creation: **exploration**, **ideation**, **prototyping** and **reflection**.

In the exploration session, participants get to know each other and share their wishes, needs and values. In the ideation session, participants imagine and co-create responses to these wishes, needs and values, building on the varied expertise around the table. In the prototyping session, participants generate an action plan that visualizes in discrete steps how the wishes, needs and values will be integrated in product suggestions. The concluding reflection session aims to consider broader reflective questions about the feasibility of the action plan and the overall outcomes.

The whole co-creation process combines individual contributions, group discussion, presentation and hands-on work. It is essential to create an environment where people feel comfortable. A safe environment invites participants to act and discuss.

After the first co-creation event you can decide to design a follow-up event to zoom in on specific aspects of the problem, or to invite different groups of stakeholders.



### GoNano co-creation sessions with citizens and stakeholders

Watch these video clips from the GoNano project and reflect on the process and quotes from the participants in the Netherlands (health), Czech Republic (food) and Spain (energy). What would you do differently?



20-30 min



Video clips online  
<http://gonano-project.eu>



There is a wide range of toolkits that may help you to design creative work forms for your event. GoNano has created an overview of toolkits for co-creation and Responsible Research and Innovation.  
<http://gonano-project.eu/toolkits-for-co-creation/>



**“Today I built the next three years of my research life”**  
*Researcher, University of Twente and participant in GoNano workshop*

## 5. Evaluate and reflect on the process

After completing your co-creation event, it is helpful to evaluate and reflect on the outcomes of the overall process. Did you achieve your goal? Were you able to co-create solutions to the problems that you identified? Do the results match your initial assumptions? What went well? What could have been better? Analyse all successes and failures.

It is also essential to get feedback from your participants during and after the co-creation activities. Did their experiences meet their expectations? What have they learned? Carefully documenting and objectively analysing feedback from participants will help you (and possibly other organisers) to replicate and enhance the co-creation process.



### Evaluation sheet

Prepare a questionnaire for your participants on a sheet of paper. Include questions like: Was this event worthwhile for you? To what extent did your experience meet your expectations? Which part of the process did you like most and why? Would you participate next time? Why (not)? Do you have any suggestions for the participants or organisers?



15-20 min



pencil & paper



In the GoNano project, we sent round short questionnaires after each co-creation activity and conducted follow-up interviews with different kinds of stakeholders after all co-creation activities were completed. (<http://gonano-project.eu>)



**“To communicate our methodologies, we have created a very readable book that other people can use to do their own experiments and projects”**

*Frank Kresin, former Managing Director Design Lab at the University of Twente*

## 6. Share the results

Communication and dissemination are essential to keep your collaborators engaged, to invite others to join the co-creation process and to share the outcomes of the process with wider audiences.

The findings and results obtained during the entire process need to be translated into compelling narratives for specific or wider audiences. You can use different channels depending on the audience you want to reach: think of online tools such as websites, social media or newsletters, but also face-to-face meetings at conferences and networking events. It's even possible to make a brochure or book about the process and its outcomes.

Although this step comes last in the toolkit, it's important to collect images, quotes and insights all through the process. Sharing and communicating at all stages of the process is important to keep participants informed and to build a community of interested people. This also makes it easier to disseminate results after the project and to ensure that other people get to know about the project.

Download the [EU Helpdesk booklet](#) to learn more about sharing your results. They distinguish three levels to maximize the impact of your project: communication, dissemination and exploitation.



### Create your own communication strategy

Identify the different steps of the project. For each step, describe what you want to communicate and for which target group. Then describe the mean(s) you can use for each action.

Also consider whether you need help from some third parties: a journalist, a videographer, an important player in your field. Make sure they know why you are inviting them and what you want from them.



30-40 min



pencil & paper



**Use hashtags (#co-creation, #RRI), tag others and add visual content to increase your visibility on social media. Always comply with the General Data Protection Regulation (GDPR): make sure that you have the permission of all participants to use their personal information (names, photos, affiliation, etc.).**

# Involving societal stakeholders as a source of creativity in research

## A co-creation toolkit for researchers and engineers

The EU-funded GoNano project has organised a series of co-creation workshops to explore how the needs and values of citizens and societal stakeholders could be taken into account in early stages of nanotechnology research and innovation.

This co-creation toolkit invites all researchers and engineers to engage with citizens and societal stakeholders as a source of creative thinking. The toolkit offers a six-step approach to help researchers and engineers define their goal, identify the relevant stakeholders and design, implement and reflect on the co-creation process. The aim is to encourage new forms of collaboration that helps to align technological innovation to social needs and interests, creating social value in a wide range of technological settings.



[www.gonano-project.eu](http://www.gonano-project.eu)



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