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DELIVERABLE

8.3

External Evaluation Report I

GoNano Deliverable 8.3

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Abstract

This deliverable describes the strategy for the evaluation of the GoNano project impacts, building upon the preparatory activities performed in the first phase of the project (WP1-knowledge base and WP2-methodology development), and initial work on co-creation activities (WP3- deliberation with citizens and WP4 – co-creation with professional stakeholders).

The goal of the external evaluation is to monitor and support the project in achieving the expected outcomes and impacts, by means of bringing a complementary viewpoint and expertise. As such, this report aims at define a methodology for evaluating the impact of (RRI) projects promoting societal engagement in R&I, based on the GoNano case. As far as the scope is concerned, the evaluation covers the efficacy and efficiency of the process, and the efficacy of the project.

Specific indicators have been selected for the measurement, which will be applied in the framework of a mixed methodological approach, in which both primary (interviews) and secondary (e.g., project deliverables) sources will be used.

A series of measurements of these indicators will be then performed and results will be summarized in the second evaluation report. Intermediate reports will be used to inform and advice partner, based on analysis of indicators. This multiple measurements and feedbacks should ensure that the evaluation will be also useful for the partners in order to actively check the progress of the project activities and to be able to improve them when necessary, with the advice and support of the external evaluator.

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1. Introduction to the evaluation report

Nanotechnologies – the purposeful engineering of matter on the atomic or molecular scale – have given rise to great expectations in recent years, unlocking new research opportunities in areas as diverse as energy, healthcare, electronics, food, and construction. At the same time, concerns have been raised about possible unintended consequences of the use of nanomaterials.

The GoNano project aims to improve the responsiveness of research and innovation processes to public values and concerns, focusing on the application of nanotechnologies in the three sectors of food, healthcare and energy. This goal will be pursued through a structured co-creation process involving citizens, civil society organisations, industry, researchers and policy makers across Europe, acting as change agents for the nanotechnology research and innovation system.

Three co "pilot" activities will be performed, using a multi-step engagement process, with the goal to co-create concrete product suggestions within the areas of food, health and energy, illustrate new opportunities for innovation and develop policy recommendations.

GoNano aims to have impacts at the level of improving R&I development processes, providing recommendations for policy making and facilitating stakeholder engagement and co-creation processes on nanotechnologies.

The project plan foresees the involvement of an independent expert to monitor and evaluate the project and provide professional and expert advice, with respect to objectives and expected impacts of GoNano. The external evaluation is complemented by the internal quality assurance process of products and deliverables, carried out by the partners and by the Advisory Panel.

The evaluation activities will be summarized in two reports. This current report uses the preparatory activities performed in WP1 and 2, and initial work in WP3 and 4, to describes the evaluation strategy and the related indicators for the GoNano project activities and impacts. More in detail, after a brief summary of the workflow and expected impacts of GoNano, the description of the goal and scope (section 3.2 and 4.1), and the methodology (section 4.2) and indicators (section 4.3) selected for the evaluation are provided, together with the planning of evaluation measurements along the project, and expected outcomes.

A series of measurements of these indicators will be then performed and results will be summarized in the second report. Intermediate report will be used to inform and advice partner, based on analysis of indicators. This multiple measurements and feedbacks should ensure that the evaluation will be also useful for the partners in order to actively check the progress of the project activities and to be able to improve them when necessary, with the advice and support of the external evaluator.

All partners of the GoNano project have contributed to review indicators and to the overall approach for the external evaluation

2. The GoNano workflow and expected impacts

GoNano activities are structured in eight work packages (see annexes), and the overall project workflow is sketched in figure 1. Main phases include: exploring the knowledge base, co-creation demonstration process by pilot activities citizens and multi-stakeholder engagement), and outreach and capacity building (through policy and governance recommendation and training & capacity building).

The external evaluation will look at all project activities, though with a focus with the most relevant ones with respect to the expected impacts of the project (WP3,4,5,6).

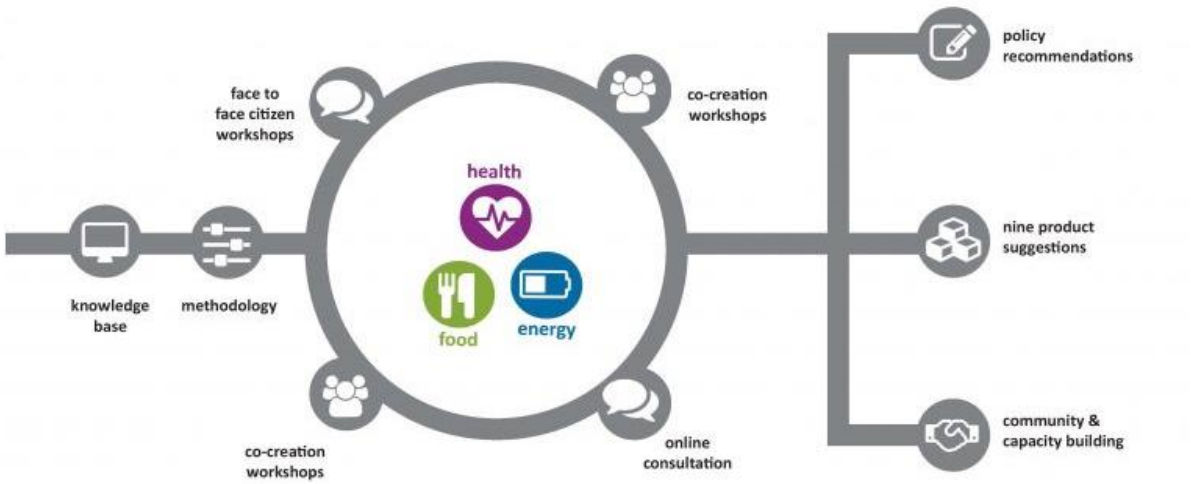

Figure 1: GoNano project workflow. External evaluation mainly focuses on pilot co-creation activities (workshops and online consultation), community and capacity building and development of policy recommendations

The role of the external evaluation is to analyse the workflow of the project and the on-going results of the project activities, with respect to the expected impacts of the project. These are:

GoNano Impact 1 (product level): **Realize R&I products aligned with social needs and values**

The early and continuous engagement of all stakeholders will be essential for sustainable, desirable and acceptable innovation in nanotechnologies, where R&I is aligned to the values, needs and expectations of society

- Show case an early, continuous engagement process with citizens & professional stakeholders, taking into account gender and culture aspects;
- Develop Co-creation of nanotech product suggestions aligned to public values in the sectors of energy, health, and food (understood by co-creation participants as sustainable, desirable and acceptable);

GoNano Impact 2 (policy level): **Support more responsive approaches to strategy building and policy making in R&I**

The outcomes of the project are to be fed back into policy making and innovation partnerships such as ETPs, aiming to achieve a responsive R&I system and co-production of knowledge

- White papers and business case on the value of co-creation and broad inclusion of stakeholders;
- Engaging and disseminating results to policy makers, innovation partnerships and research and innovation communities, to achieve a responsive R&I system.

GoNano Impact 3 (stakeholder level): **Facilitate inclusive approaches for R&I, to increase confidence on R&I**

The project will lead to enhanced public understanding of nanotechnology, will build trust and foster mutual understanding between citizens, and public and private institutions, leading co-creation of new R&I and increased confidence of companies to invest in new tech

- understanding of societal actors of the contribution of nanotechnologies to realize solutions to societal challenges in Health, Food and Energy;
- understanding of industry and researchers of the societal context of their innovation outcomes;
- Building of a community of citizens, consumer and interest organizations, researchers, engineers, and policy-makers working as change agents for RRI conditions in nanotech R&I.

GoNano impacts could be considered more broadly in the context of analysis of social impacts of research and innovation, and in particular with respect to Sustainable Development Goals[1] (Figure 2) and dimensions related to Responsible Research and Innovation. A tentative sketch of this relationship is provided in Figure 3. With respect to SDGs, the following *connections* could be identified with the GoNano impacts:

- GoNano Impact 1:
  - SGD 9 (Industry Innovation and Infrastructure), in particular goals 9.2[2] and 9.5[3];
  - SDG 5 (Gender Equality), in particular 5.5[4]
- GoNano Impact 2:
  - SDG 8 (Decent Work and Economic Growth), in particular goal 8.3[5]

[1] https://www.un.org/sustainabledevelopment/globalpartnerships/
[2] Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries
[3] Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
[4] Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making in political, economic and public life.

- GoNano Impact 3:
    - SDG 17 (Partnership for the goals), in particular 17.14[6], 17.16[7], 17.17[8]

This has been used to inform the development of indicators for external evaluation, as described in the following paragraphs. Note that the list is indicative. RRI is an umbrella term that could be related to all SDGs.

Figure 2: Sustainable Development Goals

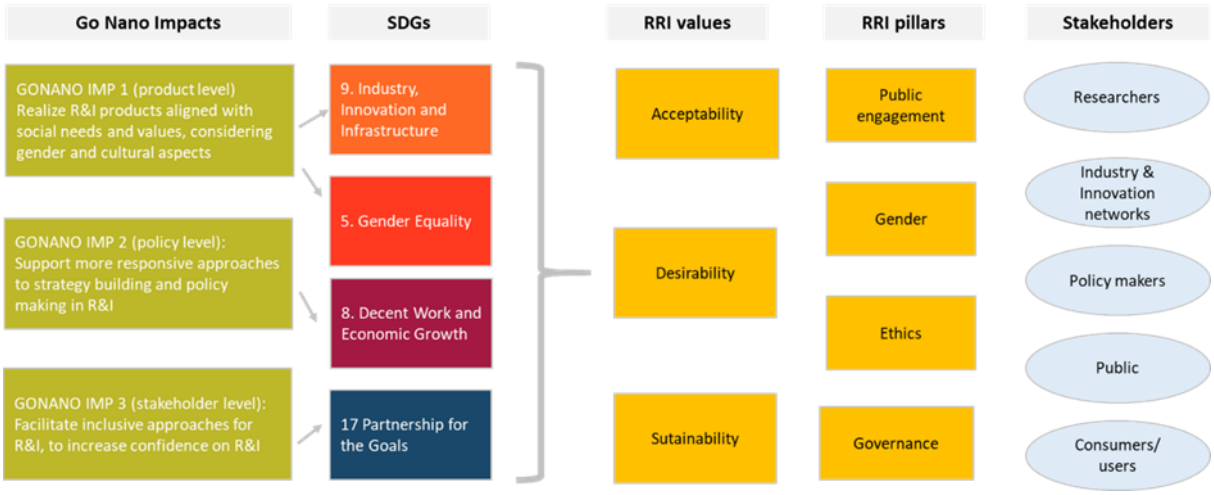

Figure 3: Relationship between GoNano impacts, SDGs, RRI dimensions and stakeholders engaged in the project (only the four RRI pillars more relevant for GoNano are reported).

[5] Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

[6] Enhance policy coherence for sustainable development

[7] Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries

[8] Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

3. Role of the external evaluation process

3.1. Models and indicators for the evaluation of social impacts in cooperative projects

In order to define a structured approach for evaluating the GoNano project, a literature review on evaluation of RRI, stakeholder engagement, and co-creation processes has been undertaken

As far as the RRI is concerned, an important reference is represented by the Report from the Expert Group on Policy Indicators for Responsible Research and Innovation, in which a dynamic framework for RRI indicators is recommended in order to capture the full range of ways to implement RRI as a cross-cutting issue at EU level. The defined indicators are the results of an extensive review and analysis of how RRI has been defined in scientific literature and in EU policy reports, which resulted in a lack of consensus on what RRI exactly entails, and on how to measure its impacts.

The list of indicators suggested by the RRI expert group of the European Commission is shown in Figure 4. These have been analysed in order to define tailored indicators for the GoNano project.

Criteria	Performance indicators		Perception indicators
	Process indicators	Outcome indicators	
Public engagement	Number and degree of development of formal procedures for citizens' involvement (consensus conferences, referendum, etc.) Number of citizen science projects, discriminating from those supported by institutions and those that are created at grassroots level, by field	Number (absolute and percentage with respect to the total) and the percentage in terms of funding of projects and initiatives (a) led by citizens or civil society organisations and (b) including research done by citizens or civil society organisations (citizen science) Number of advisory committees including citizens and/or civil society organisations Percentage of citizens and civil society organisations with special responsibilities within advisory boards, committees and consultant bodies (chair, rapporteur, etc.) Number of citizens engaged in citizen science projects	Degree of public interest in science and technology issues: percentage of the total population declaring themselves interested; percentage of citizens indirectly showing interest in science and technology (percentage visiting science centres, percentage participating in demonstrations about scientific issues, etc.) Expectations of responsible science: percentage of population that sees science as part of the solution rather than the problem; percentage of population with high expectation
Gender equality	Percentage of research institutions that document specific actions that aim to change aspects of their organisational culture that reinforces gender bias	Percentage of women that are principal investigators on a project Percentage of women that are first authors on research papers Percentage of research projects including gender analysis/gender dimensions in the content of research	
Science education	The inclusion of an initiative or requirement for RRI-related training in a research strategy/call/work programme, etc. (yes/no, percentage)	At the level of R & I projects, whether they encourage or require young researchers to take RRI-related education/training and to apply it in the project (e.g. in an integrated ELSA model) Percentage of research projects with at least one educational resource deliverable	
Open access Ethics	Inclusion of open science measures in research policies and calls for proposals Documented ELSI/ELSA project component and/or transdisciplinary component that addresses societal relevance and ethical acceptability (presence/frequency; qualitative descriptions; best practices)	Percentage of research projects that report real added value by an open science mechanism (for themselves and/or other actors) Documented change in R & I priorities (research or research funding) attributable to multi-stakeholder and/or transdisciplinary processes of appraisal of societal relevance and ethical acceptability. (presence/frequency; qualitative descriptions; best practices)	The extent to which members of the public have visited vital virtual project environments and found them useful
Governance	Identification of formal and informal networks of R & I that promote RRI, at both the national and the EU level	For each of these networks: • number of RRI debates • number of RRI protocols • number of RRI policies • number of RRI agreements	Involvement of the wider public in RRI debates measured, for example, through social media Involvement of the wider public in RRI policy, the development of policy, protocols

Figure 4 Performance indicators for RRI (Source: Strand et al., 2015).

The above-mentioned indicators are meant to be used for monitoring and evaluating RRI activities in the framework of the H2020 projects, and are set in a way to:

- Include indicators for all RRI pillars;
- Have a balance between outcome, process and perception indicators;
- Be meaningful and informative to various R&I actors.

The proposed list represents a framework, within which more specific indicators need to be defined, according to the project at hand.

A more detailed investigation was carried out in relation to the measurement of the stakeholder engagement and the co-creation process, which represents a key aspect of the GoNano project.

Literature shows a limited number of studies on evaluation of the co-creation process and related indicators (the references are reported in section 7). Concrete measurement methods are lacking, and very few indicators are identified, most of them qualitative and hardly measurable (Schuck-Zoller et al., 2015).

The process of co-creation can be structured along three consecutive phases, namely

i) Identification and structuring of the problem;

ii) Dealing with the problem;

iii) Implementation.

Each of these phases can be evaluated in terms of quality of the output, outcome and impact (Figure 5).

While tangible and measurable indicators can be identified for the **quality of the output** (e.g., number of participants), in order to measure the **quality of the outcome** non-quantitative indicators are generally considered. As far as the **quality of impact** is concerned, it is considered that the evaluation of the societal impact should be carried out after the end of the project, to get more reliable and structured information. In this regard, projects should allow for a subsequent evaluation phase, in order to better measure this aspect.

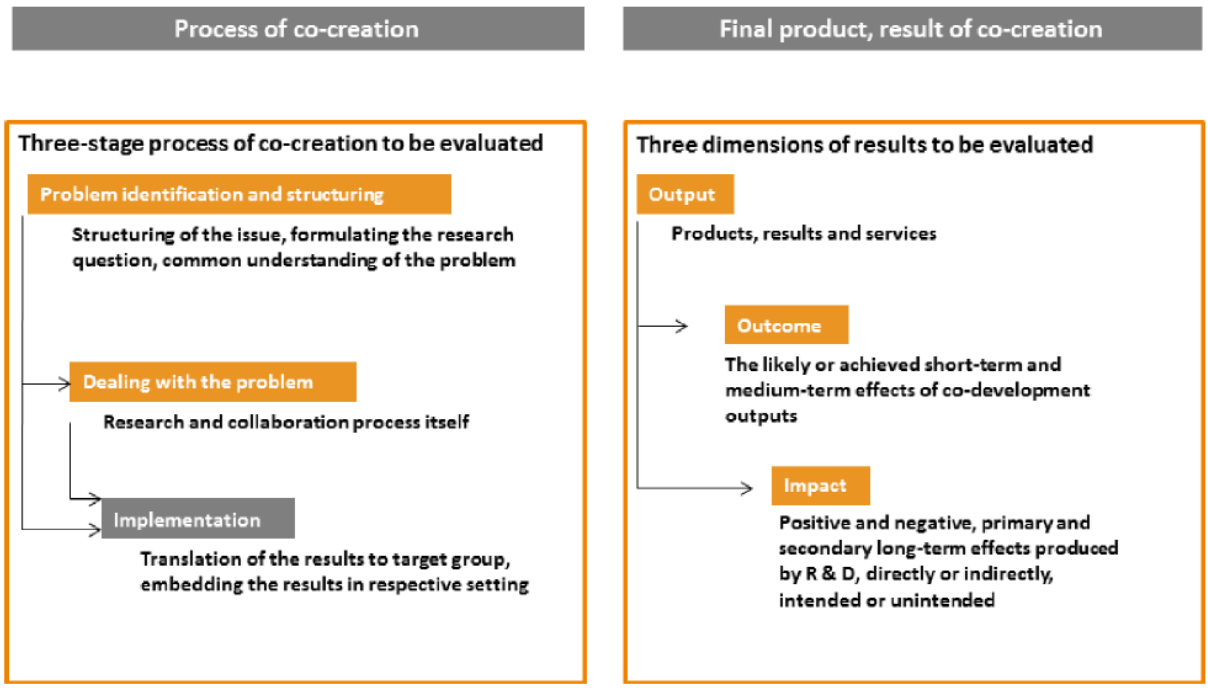

Figure 5: Representation of the process of co-creation and of its final products, which can then be evaluated (Source: Schuck-Zoller et al., 2015).

Overall, a common understanding is that there is not a one-size-fits-all scheme for the evaluation, and that every project needs its own set of evaluation criteria and indicators.

When looking at evaluation of the co-creation, the two key issues addressed are **efficiency** and **effectiveness** of the process. Most of the approaches build upon the assessment of the deliverables and KPIs defined in the project itself, complemented with interviews with key stakeholders (project's partners and/or key stakeholders affected by the project's outcomes).

In this regard, the methodology proposed for assessing the GoNano project is built upon the praxis available in literature, integrating it with additional aspects:

- Adopting a co-creation approach for the evaluation method itself, by involving the project's partners in the design of the methodology and indicators;
- The definition of specific indicators for capturing the quality of the outcome and of the impacts.

3.2. The goals of the evaluation process in GoNano

The goal of the evaluation process in GoNano is twofold:

- Support the effective achievement of the main objectives of the GoNano project, in line with the original NMBP-34-2017 scope and challenges, namely:

- Show case an early-stage state-of-the-art continuous citizen and stakeholder engagement process, which takes into account gender and differences in culture and communication traditions across EU;

- Develop nine concrete product suggestions for future nanotechnologies in each of the nanotechnology research areas “Health”, “Energy” and “Food” (three for each area), which are aligned with societal needs, values and concerns;

- Consolidate a network of European Technology Platform (ETPs), innovation networks, EU and national R&I policy makers;

- Provide concrete policy recommendations for governing the development of conditions and actors responsive to societal needs, values and concerns;

- Establish a community of citizens, consumer and interest organisations, researchers, engineers, and policy-makers working as change agents for the development of RRI conditions in nanotechnology R&I;

- Make companies convinced of co-creation and broad inclusion of stakeholders for alignment with societal values as a valuable business case for their portfolios.

- Ensure the effective implementation and achievement of the building blocks of the RRI, with a focus on those which are key to the GoNano project.

According to these two major goals, the external evaluation is meant as a process to monitor the project achievements and support the project in achieving the expected outcomes and impact, by means of bringing a complementary viewpoint and expertise. As such, it aims at evaluating the impact of (RRI) projects promoting societal engagement in R&I, based on the GoNano case.

Note that the evaluation of the project implementation, in terms of management aspects (project meetings, milestones and deliverables, task progress, schedule control, risk indicators and mitigation strategies), is out of the scope of the present activities. An internal quality assurance process of products and deliverables will be carried out by the partners of the project, by the Advisory Panel, and by the Project Officer.

A description of the relationship between the external evaluation and the other evaluation steps planned in the project is described in section 5.1.

4. Evaluation methodology

4.1. Scope

In line with the above goals, the external evaluation adopts a top-down approach, according to which it focuses on the relationship between the objectives of the project and the measures set up to achieve them. Thus, it covers:

- the **efficacy** and **efficiency of the process**, i.e., the way in which the co-creation process has been set up and implemented. This is strictly connected to the Impact 1 and 2 of the project (section 2);

- the **efficacy of the project**, i.e., the impact generated. This is strictly connected to the Impact 3 of the project (section 2).

The ***process*** will be analysed in relation to the following aspects:

- The knowledge about the topic (knowledge before and after the process)

- How the co-creation has been set up;

- How the stakeholders have been involved;

- The possibility for stakeholders to contribute (how stakeholders at different levels, were able to build their own opinion);

- Capability (by stakeholders) to analyse the problem, before and after the project;

- Final vision and results.

Regarding the ***impact***, the following aspects will be analysed:

- behaviour/change of the addressed stakeholders along the project;

- Relationships within the same group and among different groups of stakeholders;

- Increased capability of stakeholder to act as agents outside the project.

4.2. Methods and tools

A mixed methodological approach has been adopted, as represented in Figure 6, which consists of the use of both primary and secondary sources:

- **Participation in selected project's meeting and project's events** (primary source)

  Providing the opportunity to follow the status of the activities, and to collect – through interviews with the project's partners – the qualitative and quantitative information necessary for assessing the indicators described in section 4.3.

  The participation to selected project's events, such as stakeholder workshop, will provide the opportunity to collect primary information on the *process*, which will be used to triangulate the feedback and data collected by the partners.

- **Interviews with partners** (primary source)

To gather information about both the process and the impact, the project's partners will be interviewed. The approach adopted is "*Interview the mediators of the co-creation process*", i.e., only the partners will be interviewed, considering their different role during the setting up pf the co-creation process:

- Organizers of the co-creation events (citizens' and stakeholders' workshops, policy makers' events) (TC CAS, RMIT, UT). These partners will provide direct insights and feedback about the co-creation process, by reporting both indirect information (perceptions and background information) and by testifying the participation level, the level of interest, the strengths and weaknesses of the methodology for co-creation in practice;

- Partner responsible for the pilot studies' methodology definition (ITA-OeAW), providing feedbacks about the strengths and weaknesses of the methodology (what can be improved, what works well and can be replicated in other contexts, training of the facilitators), and about their expectations;

- Other WP leaders: HIOA (WP1), DBT (WP2), TC CAS (WP3), DPF (WP4), OeAW (WP5), RMIT (WP6), DPF (WP7). They will be asked to provide their views on the overall process, from the different angles from which they are participating in the project;

- Project Coordinator (DBT): with the broad overview of the overall project, and also based on previous experience in other RRI-related project, the coordinator is in the position for providing views about the achievement of the expected outcomes and impacts;

- Other partners: CIEL, EIWH. These partners will be asked to provide their views on how they see the overall co-creation process developed in the project, in relation to the key aspects of RRI they are dealing with.

- **Evaluation interviews and questionnaire prepared and used in task 4.3** (secondary source)

  The evaluation questionnaire developed in task 4.3 are meant to monitor the changes in behaviour, perspectives, expectations and outcomes of stakeholders all along the project. Results will be used to inform task 8.5 activities.

- **Desk analysis** (secondary source)

  The desk analysis will consider:

  - Extracts of project's deliverables;

  - Outcomes of WP5 (Workshop to discuss Industry Briefs) and WP6 (Final conference and Policy Roundtable; Summer School) events;

  - Social networks (mainly Facebook), and co-creation platform.

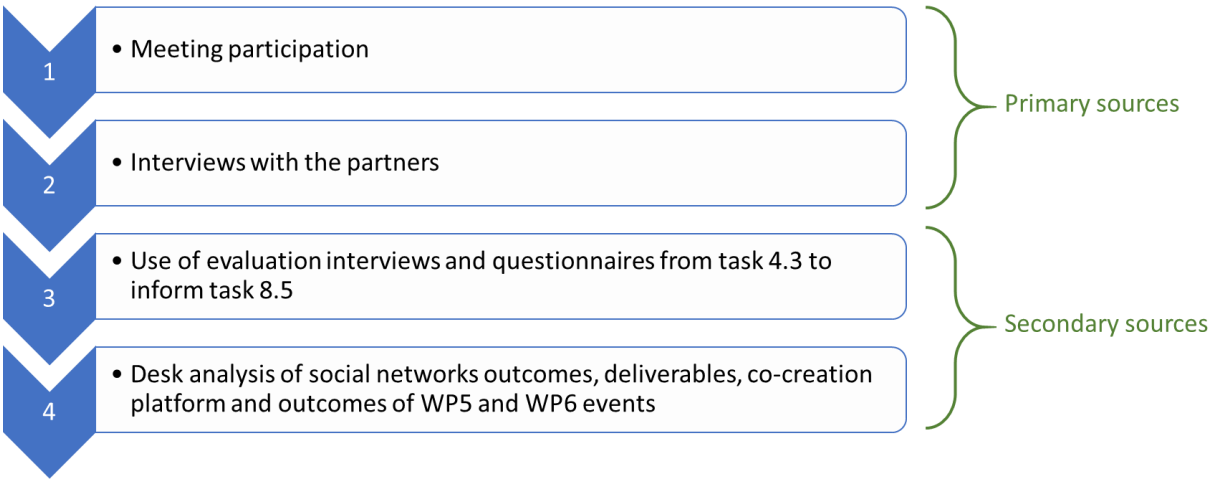

Figure 6: Methods and tools used for the external evaluation

The evaluation will occur at different and multiple steps of the project: a detailed description is provided in section 5.

4.3. Indicators

The proposed indicators for the external evaluation are reported in Table 1, together with the type of measure (qualitative, semi-quantitative, quantitative), the GoNano impact and objective addressed by the indicators.

Table 1: Proposed indicators for the external evaluation

Objectives	Indicators	Measure	GoNano impact addressed	GoNano objectives
Efficiency and efficacy of the process	Awareness of the value added by citizens and other stakeholders to technology innovation	Qualitative and semi-quantitative	Impact 2 Impact 3	Obj 5
	Quality engagement and interaction along the project	Qualitative	Impact 1	Obj 1
	Level of participation	Quantitative	Impact 1	Obj 1 Obj 2
Efficacy of the project (impact)	Implementation of the citizens and other stakeholders views into the pilot project	Qualitative	Impact 1 Impact 2	Obj 2 Obj 3 Obj 6

For each indicator in the table, a specific set of questions will be developed, to be addressed either during the interviews and through the questionnaires. The questions will be developed for the Project Consortium meeting in Barcelona (March, 2019), and will be included in the updated version of the external evaluation report. Measurements of the indicators will be performed based on steps described in 4.2.

An overview of the overall external evaluation process is provided in

Table 2.

Table 2 Overview of the external evaluation process in terms of: objectives, indicators used, method, data source and moment in the project during which the measurement will be carried out.

OBJECTIVES	INDICATORS	METHODS	DATA SOURCES	WHEN
Efficiency and efficacy of the process	Awareness of the value added by citizens and other stakeholders to technology innovation[9]	• T4.3 Quest. (for the post measurement) (time 0 and 1) • Interviews (time 0 and 2) • Secondary sources	Primary (partners)	• Barcelona Project's Meeting (time 0) • Stakeholder WS 2(time 1) • WP5 Workshop (time 2)
	Quality of engagement and interaction along the project		Primary (partners) Secondary	
	Level of participation		Primary (partners) Secondary	
	Implementation of the citizens and other stakeholders views into the pilot project		Primary (partners)	
Efficacy of the project (impact)	More positive attitude vs nanotechnology innovation and development		Primary (partners)	

4.4. Expected outcomes

The result of the external evaluation will be delivered in terms of:

- Overall assessment of the *process* and *impact* of the project;
- Results of the measurement of the indicators;
- Suggestions for partners, structured along the expected outcomes, and along the targeted actors (citizens, professional stakeholders, policy makers);
- Ongoing feedbacks to project's partners, so to allow the partners taking them into account for further tuning the project.

[9] Stakeholders need to recognise the value and contribution of their participation in the results and in the process of co-creating

In addition, the evaluation process will deliver also a proposal of which KPIs, among those proposed within the GoNano project, are more relevant and suitable for describing the impact and efficacy of the project, and the engagement process.

The final results of the evaluation will be described in deliverable D8.4, but feedbacks from the evaluation will be provided at the different steps of the process during which the evaluation will be carried out. A first update will be provided after the Consortium Meeting in Barcelona (March 2019).

5. Planning of evaluation compared with project workflow

The activities in WP1 and WP2 have been dedicated to create the knowledge base and the methodology for the pilot activities), including analysis of co-creation processes, stakeholders' opinions on nanotechnologies and co-creation, analysis of gender and cultural differences in R&I in nanotechnologies.

The definition of the evaluation strategy (methodology and indicators) has been informed by the preparation activities done in WP1 and 2 (closely related to GoNano impacts 1 and 2) and the initial results of WP3 (outcomes of citizens workshops reported in D3.2).

The Figure 7 highlights the different measurement steps for the evaluation process, based on primary and secondary sources (see methodology section).

The starting phase will be the Consortium Meeting in Barcelona (T0: March 2019), where interviews will be performed to gather qualitative evaluation of indicators, concerning in particular the outcomes of the citizens workshops and the first round of stakeholder workshops: the deliverables 3.2 and 4.2 will be important in order to understand the results and efficacy of the co-creation process, but the interaction with the project partners is crucial in order to identify the weaknesses and strengths of the methodology or its implementation, the reaction of the citizens and the stakeholders, the actions or the discussions that stimulated the best response from the public and even the things to avoid.

The second measurement step will be at the end of the second stakeholder workshop, where information will be gathered on the overall pilot activities, together with those on on-going activities in terms of design of policy recommendations (WP5) and building of a stakeholder community (WP6, 7).

The results of the WP5 will be evaluated in order to assess the efficacy of the project, in particular in terms of providing policy recommendations to strengthen responsiveness to societal needs, values and concerns and in terms of ensuring a strong degree of governance and policy outreach and alignment. Beyond the Deliverables provided by the work package, the WP5 workshop to discuss business cases and the Final Conference with the policy roundtable could be important situations to discuss and improve the draft of the second evaluation report (D8.4).

The information about the Summer Schools and the webinars, the data collected on social platforms and media, together with the D6.2 will provide guidance for public and stakeholders involved in

nanotechnology R&I, and will be important for the evaluation of the Training and community capacity building part of the project.

The last measurement step will be at the Policy workshop in Bruxelles, where the whole co-creation process will be assessed. The White papers (D5.3) will be available and it will be possible to evaluate the work done through the co-creation platform. Also the business cases will be defined (D5.4) and there will be a final check in order to establish if they are actually aligned both with the requirements by the citizens and those by the stakeholders.

GoNano – External Evaluation workflow

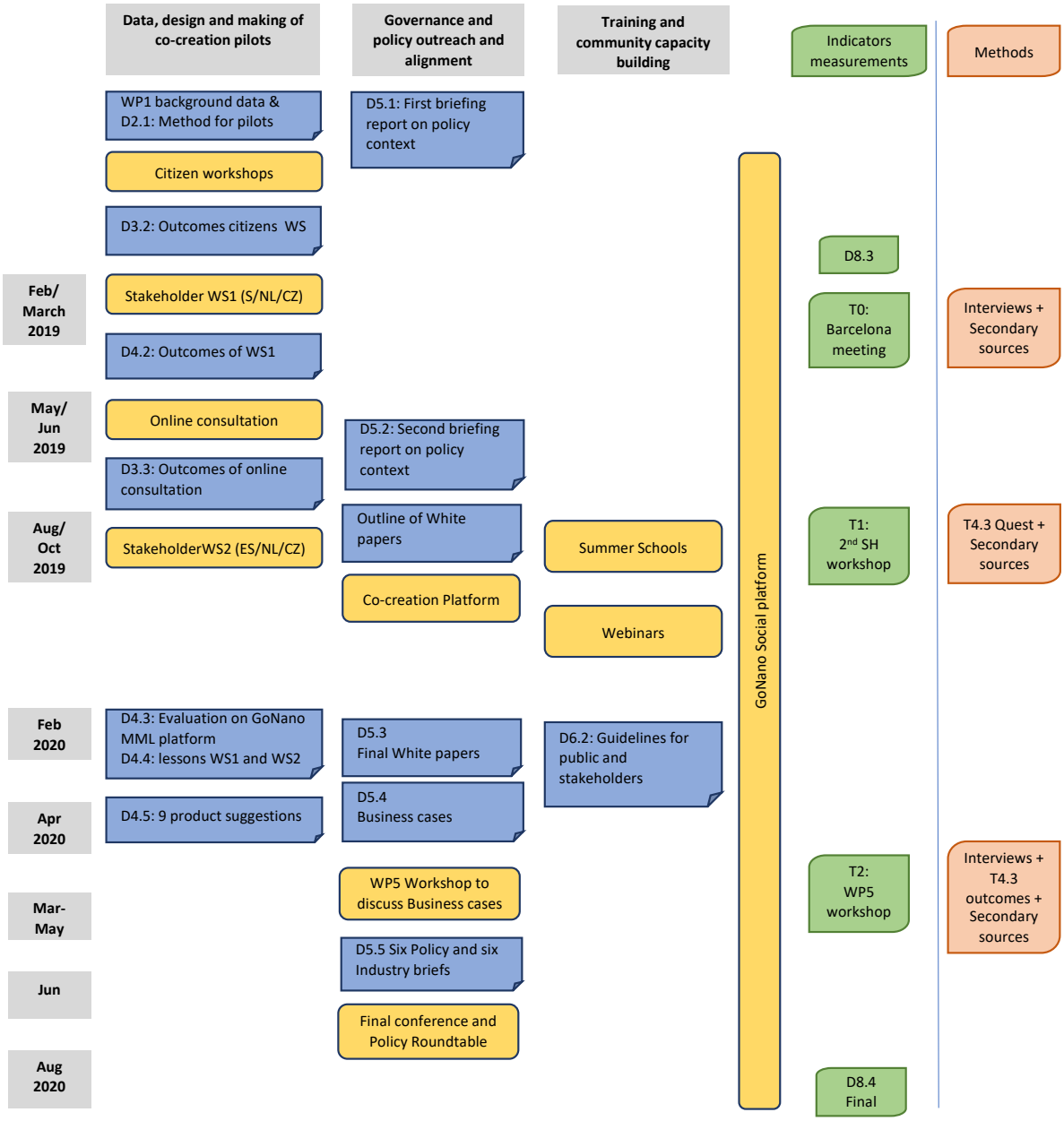

Figure 7: The picture shows the project workflow (left part), with the indication of the, deliverables (blue boxes), events and other engagement initiatives (yellow boxes), and the time plan (grey boxes). On the right part, the methods and measurement steps for external evaluation, as described in section 4.2, are shown

Specific internal evaluation activities are planned in the project, besides external evaluation. Evaluation questionnaires will be delivered to participants in each of the workshops organized in WP3 and 4, and results will be included in the formal deliverables of the events (D3.2, D4.2, D4.4).

In task 4.4 post-measurement will be conducted to evaluate the outcomes of the stakeholder engagement and co-creation activities in the pilot regarding: increased mutual understanding (via tracing learning about each other's perspectives), trust and confidence in nanotechnologies of participants to the stakeholder workshops. The aim is to measure the effectiveness of the mutual learning platforms, also in terms of the suggestions for product development. A questionnaire and selected interviews to stakeholders participating to the workshops will be used to this end. Results of this evaluation will inform D4.3.

Task 4.4 will perform a final analysis about the impacts and value of the co-creation platform, reflecting on the outcomes of each of the engagement steps (the citizens workshops, the stakeholder workshops, the citizens online consultation, the use of the co-creation platform "EngageSuite") and will extract "lessons" for the co-creation and RRI.

The activities of Task 4.3 and 4.4 will provide specific and in some cases quantitative measurements of particular indicators, based on questionnaire and interviews targeted to stakeholders involved in the project (looking at aspects such as the level of awareness of the participants about the importance of societal engagement for innovation, the relevance of the concrete design suggestions emerged, the responsiveness of the design suggestions to societal needs and values, the willingness of the stakeholders involved to continue in this process).

A continuous exchange of information between partners and Airi (coordinating the work of the external evaluator) and the external evaluator will ensure alignment of evaluation activities in WP3 and WP4, with the external evaluation strategy.

The external evaluation strategy will follow a top-down approach, analyzing the activities (and related outcomes) of partners, while the internal evaluation will follow a bottom-up approach, gathering inputs from stakeholders engaged in the project.

6. Conclusion

The methodology for the external evaluation of the GoNano Project is based on a mixed approach, which consists of the use of primary and secondary sources available within the partnership, namely: interviews with project's partners, questionnaire, desk analysis, and participation in selected project's meetings and events. A list of five macro indicators has been defined, which will be measured along the projects in three steps, starting from the Project Meeting in Barcelona, March 2019. These multiple measurements and feedbacks will allow to check the progress of the project activities and will be useful for the partners for improving – if necessary – the identified issues.

The proposed methodology can be considered as a first step towards the definition of an evaluation strategy for co-creation processes, to be further refined and improved with the outcomes of and feedback from the application in the GoNano project.

7. References

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8. Annexes

8.1. GoNano Work packages

WP1: Turning lessons into action

To understand what drives mutual learning among different stakeholders in relevant nanotechnology engagement projects, explore societal debates on nanotechnologies, in particular the role of values, culture, gender, asses views and opinions of policy makers, and research and innovation players on societal engagement in nanotechnologies

WP2 The co-creation platform, methods and manuals for pilot studies

To lay the foundation of the pilot studies by providing a coherent and equally responsive methodology for the citizens and stakeholder engagement and the corresponding infrastructures

WP3: Envisioning and deliberating with citizens

To organize pilot co-creation cases, through organization of deliberation and envisioning workshops and on-line interaction with citizens, in order to generate suggestions which align research & innovation with the values, needs and expectations of society during early-stage product development.

WP4: Co-creation with professional stakeholders

To follow-up the pilot co-creation cases in WP3, through organization of co-creative workshops with citizens and stakeholders, in order to explore needs and concerns of societal actors and design suggestions for R&I and product development.

WP5: Governance and policy outreach and alignment

To develop white papers, business cases, and policy and industry briefs, based on the outcomes of the WP3 and WP4 pilots, and through a process of engagement and review with stakeholders involved in the project. The aim is to ensure a strong degree of policy alignment between the design of the pilot studies, GoNano's policy recommendations and innovation partnerships, such as European Technology Platforms, and relevant policy initiatives

WP6: Training and community capacity building

Organize training activities, including a summer school and a series of webinars, to stimulate integration and learning of responsiveness both vertically, across different levels of governance (e.g. local, national and international), as well as horizontally, across different disciplines and groups of 'expertise' (e.g. among natural, social, humanities, engineering, policy, industry, consumer and special interest and professional groups)

WP7: Communication and dissemination

Communicate about the pilot projects and policy recommendations to policy-makers, ETPs, innovation partnerships and industry, and CSOs.

WP8: Project Management

Secure efficient and effective management of the project.