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Wearables and droneS fOr City Socio-Environmental Observations and Behavioral ChangE

Deliverable

D6.1. Impact Assessment Model

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List of definitions & abbreviations

Abbreviation	Description
AI	Artificial Intelligence
AIIA	Artificial Intelligence Impact Assessment
CNIL	Commission nationale de l’informatique et des libertés
CS	Citizen Science
DPA	Data Protection Authority
DPO	Data Protection Officer
DPIA	Data Protection Impact Assessment
EC	European Commission
EIA	Ethical Impact Assessment
EIGI	European Institute for Gender Equality
GA	Grant Agreement
GDPR	General Data Protection Regulation
GEP	Gender Equality Plan
GIA	Gender Impact Assessment
HRIA	Human Rights Impact Assessment
IA	Impact Assessment
ICO	Information Commissioner’s Office
ML	Machine Learning
SIA	Societal Impact Assessment
WP	Work Package

Executive Summary

Deliverable 6.1 is the first deliverable of WP6 and describes the Impact Assessment Model for SOCIO-BEE. It will serve as a framework for the two impact assessment reports later in the project.

The model introduces three important pillars that discuss the most important and relevant activities regarding the impact assessment in SOCIO-BEE:

SOCIO-BEE impact assessment model

Due to the use of innovative technologies such as drones, wearables, smartphones and AI with the close participation of partly vulnerable citizens and citizen scientists, it is necessary to make a clear impact assessment and recommendations for the SOCIO-BEE project in order to comply with legislation and to serve as best practice. Anticipating certain risks and taking the right measures are of great importance within this Horizon 2020 project. There are no ready-made models for IAs and SOCIO-BEE will cover several.

Methodology

Although the impact assessment model for SOCIO-BEE is ready and some initial questions are drafted, the checking of the various impacts of the project is only for M22 and M36.

The IA will consist of several different parts, but a similar methodology will be applied to each IA which will consist of:

- Questionnaires to be completed by the relevant partner
- Multiple ad-hoc meetings when needed
- A potential workshop in case there are ambiguities and/or there is more need for a closer cooperation between partners and VUB-LSTS
- The use of a software tool for the DPIA
- Multi-stakeholder consultation

An extensive literature review was conducted to identify possible frameworks, methodologies and templates for the SOCIO-BEE Impact Assessment Model.

Description of the four impact assessments in SOCIO-BEE

The Impact Assessment Model for SOCIO-BEE has four different IAs namely: 1) Data Protection Impact Assessment, 2) Artificial Intelligence Impact Assessment, 3) Human Rights Impact Assessment and 4) a Gender Impact Assessment. In this way it complies with T6.1 within WP6 of SOCIO-BEE.

Only carrying out a Data Protection Impact Assessment is legally required in certain situations. In SOCIO-BEE there is an increased risk related to data protection which requires us to perform this assessment. For the other IAs, we looked at the most relevant and recent pieces of work. Some of these works provided the framework, methodologies and templates that SOCIO-BEE will use for the actual reports later in the project, adapting them where necessary to the specific needs of the SOCIO-BEE project.

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1 Introduction

1.1 Purpose of the document

Deliverable 6.1 is part of Task 6.1 Legal Compliance, Assessment and Recommendations (Data Protection and Privacy) where VUB-LSTS is the lead partner. This task builds upon the work performed in T3.1 (baseline report on legal requirements), T1.3 (DMP), the preliminary platform architecture (T3.3) and the preparation for the use cases testing (T3.2). It encompasses four key aspects of action.

First, it includes the continuous monitoring of the project's compliance to the applicable legal and regulatory framework, as defined in D3.1, by safeguarding the rights of the research participants and by following closely the platform's design and specifications. Second, this task establishes the method and performs the impact assessment of the project. The impact assessment is a highly collaborative and interactive process, which requires the contribution of all the partners in the form of an active and continuous dialogue and exchange of input. The outcomes of the first impact assessment will be presented and discussed in a workshop destined for all the partners who will be involved in the pilot testing phase for each use case. Third, VUB will screen relevant legal and regulatory developments and will provide brief updates to the consortium and its key decision makers. Fourth, VUB will translate the impact assessment outcomes into a layered set of recommendations (Whitebook), supporting the decision making inside the consortium and the uptake by potentially interested stakeholders. The outcomes of Task 6.1 are D6.1, D6.2 and D6.3

This deliverable is responsible for preparing the methodology of the IA of the SOCIO-BEE project which will serve as a basis for the two following reports (D6.2 and D6.3). It also provides questionnaires for the partners in SOCIO-BEE that will be needed for the work in D6.2 and D6.3.

1.2 Relationship with other deliverables

Deliverable 6.1 – Impact Assessment Model is closely linked to the other tasks in T6.1, namely D6.2 - 1st Report on Impact Assessment and Recommendations for consortium partners and D6.3 - 2nd Report on Impact Assessment and Recommendations for stakeholders.

1.3 Scope and intended audience

This impact assessment model will be publicly available and will apply to all partners in the consortium.

2 SOCIO-BEE impact assessment model

2.1 The motivation for the impact assessments

As described in the Grant Agreement (GA), an impact assessment (IA) will be carried out for the SOCIO-BEE project.¹ The work within SOCIO-BEE is closely linked to innovative technological developments such as drones, AI (Artificial Intelligence) and wearable technologies and a participatory research model called citizen science. The importance of closely considering the legal and ethical implications of these topics throughout the project was raised initially in the proposal stage and afterwards by work in the project (D3.1 - Report on Legal and Regulatory Requirements and D1.5 - Data Management Plan). In addition, the consortium has promised to conduct an IA to evaluate the risks to the fundamental rights and freedoms of citizens and citizen scientists that might arise during the research activities of the project and beyond. In this deliverable, the first step will be taken, namely the creation of an IA model.

2.2 The architecture for impact assessment

“The ‘architecture’ for IA typically consists of two main elements: the ‘framework’ and the ‘method’. A *framework* constitutes an ‘essential supporting structure’ or organisational arrangement for something, which, in this context, concerns the policy for impact assessment, and defines and describes the conditions and principles thereof. In turn, a *method*, which is a ‘particular procedure for accomplishing or approaching something’, concerns the practice of IA and defines the consecutive and/or iterative actions to be undertaken to perform such a process”.²

There are already multiple frameworks and methods for impact assessments, in many domains of practice and with varying applicability and quality. However, there is a constant need for new ones. It is “a function of the principle of receptiveness of impact assessment, that is, both the framework and the method are to be continuously improved if IA is to serve its goals better (by learning from its own experience or the experience of other evaluation techniques), to respond better to societal change, and to give effect to new domains of practice for impact assessment” (e.g. ‘algorithmic / artificial intelligence impact assessment’).³ Each new and revised framework and method is meant to contribute towards the efficiency (i.e. effectiveness with the least waste of resources), integrity (completeness) and fairness (legitimacy, impartiality and balance) of the assessment process.⁴

In SOCIO-BEE, the first of two main elements of the *framework* is the Deliverable 3.1 - Report on Legal and Regulatory Requirements, submitted on M4 of the project. The deliverable provided the overview of the applicable legal framework to SOCIO-BEE, including, inter alia, the legal and regulatory framework of citizen science and air pollution and the use of different innovative technologies in the context of SOCIO-BEE such as drones, wearables and artificial intelligence. In addition, the participation of vulnerable groups

¹ SOCIO-BEE GA, Part B – p. 120

² ‘D2.2 - SELP Compliance Report’; Kloza, D., Van Dijk, N., Casiraghi, S., Vazquez Maymir, S., Roda, S., Tanas, A., & Konstantinou, I. (2019). *Towards a method for data protection impact assessment: Making sense of GDPR requirements*. d.pia.lab Policy Brief No., 1/2019. Available at: https://cris.vub.be/files/48091346/dpialab_pb2019_1_final.pdf

³ Kloza, D., van Dijk, N., Gellert, R., Böröcz, I., Tanas, A., Mantovani, E., & Quinn, P. (2017). *Data Protection Impact Assessments in the European Union: Complementing the New Legal Framework towards a More Robust Protection of Individuals*, d.pia.lab Policy Brief No. 1/2017. Available at: https://cris.vub.be/files/32009890/dpialab_pb2017_1_final.pdf

⁴ ‘D2.2 - SELP Compliance Report’

in SOCIO-BEE, namely children and the elderly, was also taken into account. The second deliverable concerns the deliverable 1.5 – Data Management Plan, submitted on M6 of the project. The deliverable contained not only an initial report on data management in SOCIO-BEE, but also a second part, namely the ethical management plan. This ethical Management Plan included ethical concerns that might arise out of the project and thus shall be considered by the partners as well as the applicable ethical framework for SOCIO-BEE, all with a focus on the particularity of citizen science research. Deliverable 6.1 – Impact Assessment Model provides the description of the *methodologies* to be applicable in the SOCIO-BEE project for conducting different types of impact assessments.

Conducting IA enables private and public organizations to reflect on consequences of their envisaged initiatives as well as on the means to minimise or avoid negative and unintended consequences before these occur, gaining both in resources and public trust.⁵ Being a ‘best-effort obligation’, IA constitutes evidence of due-diligence and demonstrates accountability towards regulatory authorities.⁶ Eventually, IA, if conducted in a transparent manner, appeal to public confidence, demonstrating that organization is properly concerned about legal and ethical issues and addresses them in a due manner.⁷

As the legal and ethical framework provided in D3.1 and D1.5 describes, SOCIO-BEE’s development and implementation activities touch upon different areas: data protection, regulations on drones, wearables, and artificial intelligence, human rights impact of SOCIO-BEE technologies, the legal and ethical challenges regarding citizen science and air pollution regulation. Thus, the impact assessments in SOCIO-BEE will cover all these areas and will use several types of assessments.

2.3 The methodologies of impact assessments

“Impact assessments are conducted in order to assess the consequences, ‘impacts’, and their severity of activities carried out in the context of a project. The subject of the IA depends on the type of the IA, e.g. environmental, social, ethical, privacy, data protection, different technologies, etc. Impact assessments are carried out, ideally, at an early stage of a project, at the phase of planning or designing, and are designated to anticipate the potential beneficial and adverse impacts. IAs help the decision-makers to find the best and most beneficial solutions”.⁸ As SOCIO-BEE aims to develop social innovation tools to empower communities to adopt pro-environment actions and sustainable behaviours aligned with environmental policy, the mapping of the potential impacts of these tools, used in citizen science, is essential.

⁵ Kloza, D., van Dijk, N., Gellert, R., Böröcz, I., Tanas, A., Mantovani, E., & Quinn, P. (2017). *Data Protection Impact Assessments in the European Union: Complementing the New Legal Framework towards a More Robust Protection of Individuals*, d.pia.lab Policy Brief No. 1/2017. Available at: https://cris.vub.be/files/32009890/dpialab_pb2017_1_final.pdf

⁶ Ibid.

⁷ Ibid.

⁸ E.g. environmental impact assessments originated from green movements in the 1960s. Read more at: International Association for Impact Assessment: Principles of Environmental Impact Assessment Best Practice. Available: <https://www.eianz.org/document/item/2744> and social impact assessments (SIA) were developed in the 1980s. SIAs aim at ensuring that developments or planned interventions maximise the benefits and minimise the costs of those developments, including, especially, costs borne by the community. For more information read: The Interorganizational Committee on Guidelines and Principles for Social Impact Assessment: Guidelines and Principles for Social Impact Assessment. Available: https://www.iaia.org/pdf/IAIAMemberDocuments/Publications/Guidelines_Principles/SIA%20Guide.PDF

It must be underlined that there is no one-size-fits all model for impact assessments. To be practical, impact assessments must be scalable, flexible and applicable for e.g. consortia such as SOCIO-BEE. The tools and methodologies can be tailored based on the scope of application. To be effective, the model of impact assessments must be based on clear goals and principles. A prominent principle of IAs is proactivity: in order to be effective the IA should be carried out at an early stage of the project. “Treating and managing the elements of a project as risks is advantageous, as it facilitates the assessment and treatment of the different aspects of life in a homogeneous system. Generally the assessment of risk forms part of a risk management system, which has an approximately 60 years long history. Risk management can be considered as a systematic process of identifying and assessing risks, avoiding or mitigating them where possible, and then accepting and managing the remaining risks. The advantage of the process is the establishment and application of a framework, which lets risk-takers handle risks”.⁹

In the context of SOCIO-BEE those risks are related to legal norms, ethical principles, fundamental rights affected by the use of innovative technologies that collect large amount of (personal) data. The presence of vulnerable groups is also an important factor that must be taken into account at all times. By carrying out an impact assessment, the actors of SOCIO-BEE should be able to anticipate the occurrence of future events, their impacts and to adopt mitigating measures. The elements of an IA may vary, depending on the specific area in which it is conducted. However, in most cases the steps of these impact assessments are quite similar.

3 Methodology

3.1 The four (4) types of impact assessments

The SOCIO-BEE impact assessment model requires a broader understanding as it consists of several types of IAs. Four different types of IAs will be discussed in this chapter, namely: (a) Data Protection Impact Assessment (DPIA), (b) Artificial Intelligence Impact Assessment (AIIA), (c) Gender Impact Assessment (GIA) and (d) a more general Human Rights Impact Assessment (HRIA). There will be both similarities and differences between these types. Although only the DPIA is legally required (in certain cases) and binding, it is good practice to do other types of IAs as well to have an overall idea of how the project will affect different societal, scientific and technological areas.

3.2 Timeline and general approach of IAs in SOCIO-BEE

3.2.1 When will the IAs be performed?

The first steps for the IAs should take place early in the project and run parallel to the planning, development, validation and implementation phases. The analysis of the applicable legal and regulatory frameworks, data management ethical commitments in SOCIO-BEE were carried out in months 3 and 6. The methodology for the IA of SOCIO-BEE will be ready by the end of M9 so that a first step in the IA has already been taken in time.

⁹ D2.2 – Framework for Impact Assessment against RRI - ELSA requirements

D6.2 - 1st Report on Impact Assessment and Recommendations for consortium partners,

The first IA report will be ready as agreed in the GA by the end of M22 (July) at the latest. By then, the most important initial releases of the technical and innovative tools will be available by SOCIO-BEE. By the time the questionnaire is sent out for input, the partners should have enough information to do the IAs properly.

Beginning May 2023 in M20, the Project Coordinator and Project Manager will first be contacted to ascertain whether or not the planned methodology from this deliverable needs to be updated. The effective start of the IA is planned around mid-May.

At the end of May, the new version of D1.5 - Data Management Plan is also completed, which can be a useful source for D6.2.

D6.3 – 2nd Report on Impact Assessment and Recommendations for stakeholders

The second IA report will be ready as agreed in the GA by the end of M36 (September) at the latest at the end of the project. The effective start of the IA is planned for M34 (July).

3.2.2 When will the three deliverables give feedback to the consortium?

Once the Impact Assessment Model for SOCIO-BEE has been submitted, it will be shared with the rest of the consortium with the necessary context. Afterwards, partners can still add any comments that will be taken into account in the first report if necessary.

The outcomes of the first IA will be presented and discussed in a workshop destined for all the partners who will be involved in the pilot testing phase for each use case.

For the second report, VUB will translate the IA outcomes into a layered set of recommendations (Whitebook), supporting the decision making inside the consortium and the uptake by potentially interested stakeholders

3.2.3 When will the partners and stakeholders need to provide their input for the IAs?

Since a lot of input is needed from the partners, it is therefore necessary to start sending out the questions in good time and to set a clear deadline.

For the first report, the questionnaires will be sent to the partners by mid-May 2023 (M20), at the latest. Partners are expected to send back the input of these questionnaires to VUB-LSTS by mid-June at the latest. In the meantime, for example, bilateral telcos can be held if partners have questions about this input. It is very important that both partners of SOCIO-BEE, including VUB-LSTS who will write this report, are on time with the information as this is a complex and dynamic deliverable.

For the second report, the questionnaires will be sent to the stakeholders by mid-June 2024 (M33), at the latest. The stakeholders are expected to send back the input of these questionnaires to VUB-LSTS by the end of August / beginning of September at the latest.

3.2.4 General approach of IA in SOCIO-BEE

An important component of an IA is that it ensures strong cooperation, continuous communication and shared understanding between the partners involved. This is certainly vital in a complex and 'next-gen' platform that SOCIO-BEE will be developing where innovative tools and technologies will play a central role.

It is therefore important that each partner and member in the SOCIO-BEE consortium is actively involved in the IA when necessary. Finally, this creates an opportunity to confirm that all partners are on the same page.

As described earlier, there is no 'one size fits all' solution when it comes to the methodology of an IA. Although attempts are made in the academic literature to come to a 'holistic' IA where different IAs are incorporated¹⁰, the Impact Assessment Model for SOCIO-BEE does not have the ambition to pursue this. The main goal is that the right IAs can be carried out so that risks can be spotted in time and mitigating measures can be taken if necessary.

Although the IA will consist of several parts depending on the context, a similar methodology will be applied to each IA which will consist of:

- A questionnaire to be completed by the relevant partner
- Multiple ad-hoc meetings when needed
- A potential workshop in case there are ambiguities and/or there is more need for a closer cooperation between partners and VUB-LSTS
- The use of a software tool for the DPIA
- Multi-stakeholder consultation

An extensive literature review was conducted to identify possible frameworks, methodologies and templates for the SOCIO-BEE Impact Assessment Model. There is a vast amount of literature, methodologies and frameworks on impact assessment. Amidst this multitude and diversity, this deliverable will rely on several tools that have proven to be relevant to the specific nature of the project. In each chapter that further discusses impact assessment, there will be a brief overview of the insights found for each IA. The limitations of each type of IA will also be briefly discussed, as well as why and which specific templates were chosen for each impact assessment.

¹⁰ Mahmoudi, H., Renn, O., Vanclay., & Hoffmann, V. (2013). A Framework for Combining Social Impact Assessment and Risk Assessment. *Environmental Impact Assessment Review* 43, 1-8, doi: 10.1016/j.eiar.2013.05.003

4 Description of the four impact assessments in SOCIO-BEE

4.1 Data Protection Impact Assessment

The following section will explain the approach to be taken with regard to the DPIA to be conducted during the design and development phase of the project according to the requirements of Article 35 GDPR and its findings to be reported as part of the overall IA in D6.2 and D6.3.

Subsection 3.1.1.1 will provide a general overview of a DPIA and its main characteristics. Next subsection 3.3.1.2 will focus on the question of when a DPIA should be performed. In 3.3.1.3 it will explain the process of a DPIA and in 3.3.1.4 it will provide the minimum criteria to be taken into account in such an assessment. In the next subsection, 3.1.1.5, the attention turns upon SOCIO-BEE. In 3.3.1.6 the subsection will briefly mention some useful DPIA templates for SOCIO-BEE. Lastly, a brief overview of the indicative theme of the questions is introduced in 3.1.1.7 to facilitate the partners to carry out an effective DPIA for every technical element they develop, with the guidance of the legal expert of the project. The questionnaires will be explained in more detail in the appendix.

4.1.1 Introduction

With the introduction of the GDPR in 2018 in the European Union, Article 35 of the GDPR introduced the requirement to conduct a Data Protection Impact Assessment in specific situations.

“Although not specifically described in GDPR, DPIA is considered as a process designed to describe the data processing and assess its necessity and proportionality. DPIA is designed to help manage the risks to the rights and freedoms of natural persons resulting from the processing of personal data by assessing them and determining the measures to address them. DPIAs are important tools for accountability, as they help controllers not only to comply with requirements of the GDPR, but also to demonstrate that appropriate measures have been taken to ensure compliance with the Regulation¹¹. In other words, a DPIA is a process for building and demonstrating compliance and to avoid possible consequences of non-compliance such as high fines”.¹²

The GDPR places obligations on both:

- the ‘data controller’, which ‘alone, or jointly with others, determines the purposes and means of the processing of personal data’; and
- the ‘data processor’, which ‘processes personal data on behalf of the controller’.

However, the subject responsible for carrying out of DPIA is data controller.¹³ If the processing is wholly or partly performed by a data processor, the processor should assist the controller in carrying out the

¹¹ See also recital 84: “The outcome of the assessment should be taken into account when determining the appropriate measures to be taken in order to demonstrate that the processing of personal data complies with this Regulation”.

¹² FASTER, ‘D2.2 - SELP Compliance Report’

¹³ Article 29 Data Protection Working Party, ‘Guidelines on Data Protection Impact Assessment (DPIA) and determining whether processing is “likely to result in a high risk” for the purposes of Regulation 2016/679’. [Online]. Available at: https://ec.europa.eu/newsroom/article29/item-detail.cfm?item_id=611236

DPIA and provide any necessary information.¹⁴ In addition, article 24(1) sets out the basic responsibility of the controller in terms of complying with the GDPR: “taking into account the nature, scope, context and purposes of processing as well as the risks of varying likelihood and severity for the rights and freedoms of natural persons, the controller shall implement appropriate technical and organisational measures to ensure and to be able to demonstrate that processing is performed in accordance with this Regulation. Those measures shall be reviewed and updated where necessary”.¹⁵

“A reference DPIA can be drawn up and shared between different data controllers if the same DPIA is applicable to similar processes by them. A justification must still be given for this common DPIA.¹⁶ Where joint controllers carry out processing operations, they should precisely define their respective obligations and indicate which partner is responsible for which type of processing operation. The goal is to share useful information, without revealing trade secrets or vulnerabilities.¹⁷ The controllers must also seek advice from the designated Data Protection Officers (DPOs), if necessary”.¹⁸ The Consortium will also ensure that any partners, contractors or service providers that process research data at our request and on our behalf comply with the GDPR and the H2020 ethics standards.¹⁹

Lastly, the benefits of an IA are numerous:²⁰

- Preventing costly adjustments in processes by mitigating privacy and data protection risks.
- Preventing discontinuation of a project by early understanding of major risks.
- Reducing the impact of oversight involvement.
- Improving the quality of personal data (data minimisation and accuracy).
- Improving service and operation processes.
- Improving decision-making concerning data protection.

4.1.2 When should a DPIA be performed?

Under the GDPR, a DPIA is mandatory for processing operations that are likely to “result in a high risk to the rights and freedoms of natural persons” (Article 35 (3) GDPR) and it is very important in particular when a new data processing technology is being introduced. These include in particular:²¹²²

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid., p. 8

¹⁷ Idem.

¹⁸ CYBERTRUST, D3.3 - Legal and ethical recommendations

¹⁹ European Commission, ‘Ethics and Data Protection’. [Online]. Available at: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ethics-and-data-protection_he_en.pdf

²⁰ HR-Recycler D2.2 - HR-Recycler Impact Assessment Method; List identified in Smart Grid Task Force 2012-14, Expert Group 2: Regulatory Recommendations for Privacy, Data Protection and Cyber-Security in the Smart Grid Environment, “Data Protection Impact Assessment Template for Smart Grid and Smart Metering Systems”, 18 March 2014, https://ec.europa.eu/energy/sites/ener/files/documents/2014_dpia_smart_grids_forces.pdf, accessed 28 August 2019, p 12

²¹ Article 29 Data Protection Working Party, ‘Guidelines on Data Protection Impact Assessment (DPIA) and determining whether processing is “likely to result in a high risk” for the purposes of Regulation 2016/679’. [Online]. Available at: https://ec.europa.eu/newsroom/article29/item-detail.cfm?item_id=611236

²² European Commission, ‘Ethics and Data Protection’. [Online]. Available at: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ethics-and-data-protection_he_en.pdf

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- a ‘systematic and extensive’ analysis of personal data in the context of automated processing, including profiling, where this has a significant effect on the data subject;
- large-scale processing of ‘special categories’ of personal data, or of personal data relating to criminal convictions and offences; or
- a systematic monitoring of a publicly accessible area on a large scale.

High risk in this context means the potential for any significant physical, material or non-material harm to individuals. “To assess whether something is ‘high risk’, (...) both the likelihood and severity of any potential harm to individuals must be considered. ‘Risk’ implies a more than remote chance of some harm. ‘High risk’ implies a higher threshold, either because the harm is more likely, or because the potential harm is more severe, or a combination of the two. Assessing the likelihood of risk in that sense is part of the job of a DPIA”.²³

Additionally, the WP29 Guidelines provide the following criteria that shall be considered to define the need for DPIA:²⁴

1. Evaluation or scoring
2. Automated-decision making with legal or similar significant effect
3. Systematic monitoring
4. Data processed on a large scale
5. Sensitive data or data of a highly personal nature
6. Matching or combining datasets
7. Data concerning vulnerable data subjects
8. Innovative use or applying new technological or organisational solutions
9. When the processing in itself “prevents data subjects from exercising a right or using a service or a contract”

Additional guidance can be found in the Article 29 Working Party Guidelines on Data Protection Impact Assessment, as endorsed by the European Data Protection Board.²⁵

Lastly, it is also encouraged in situations where its necessity is unclear: “In cases where it is not clear whether a DPIA is required, the European Data Protection Board²⁶ recommends that a DPIA is carried out nonetheless as a DPIA is a useful tool to help controllers comply with data protection law”. Since the criteria list is non-exhaustive, in accordance with Article 35 paragraph 4, national supervisory authorities have introduced lists with processing operations which require a DPIA and which do not.

²³ British Data Protection Authority, Information Commissioner’s Office (ICO), ‘When do we need to do a DPIA?’. Available: <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/data-protection-impact-assessments-dpias/when-do-we-need-to-do-a-dpia/>

²⁴ Faster, D2.2 – Compliance Report; Article 29 Data Protection Working Party, ‘Guidelines on Data Protection Impact Assessment (DPIA) and determining whether

processing is “likely to result in a high risk” for the purposes of Regulation 2016/679’

²⁵ Article 29 Data Protection Working Party, ‘Guidelines on Data Protection Impact Assessment (DPIA) and determining whether processing is “likely to result in a high risk” for the purposes of Regulation 2016/679’

²⁶ <https://edpb.europa.eu/>

4.1.3 Process of a DPIA

A DPIA should begin early in the life of a project, before processing commences (Articles 35(1) and 35(10), recitals 90 and 93 GDPR), and run alongside the planning, development, validation and actual implementation phase. According to the British Data Protection Authority, Information Commissioner’s Office (ICO), the following nine steps should be followed:²⁷

- Step 1: identify the need for a DPIA
- Step 2: describe the processing
- Step 3: consider consultation
- Step 4: assess necessity and proportionality
- Step 5: identify and assess risks
- Step 6: identify measures to mitigate the risks
- Step 7: sign off and record outcome
- Step 8: Integrate outcomes into plan
- Step 9: Keep under review

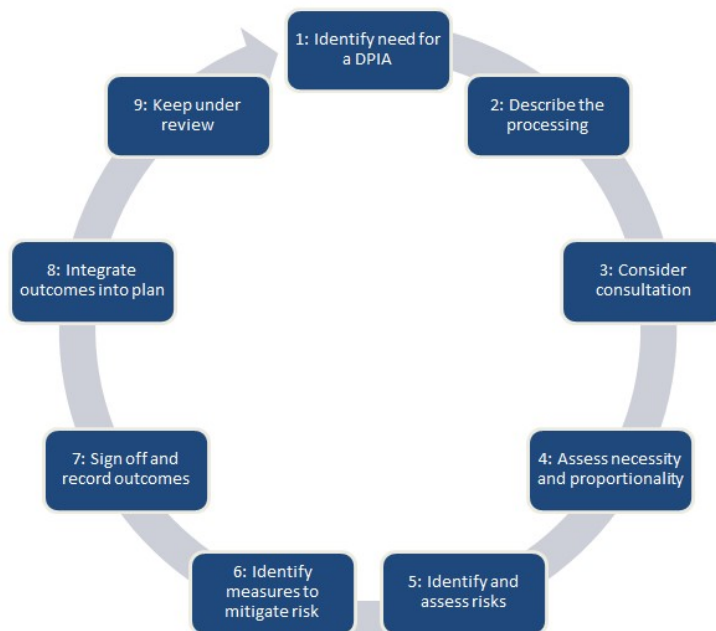


Figure 1. Process of a DPIA²⁸

²⁷ Information Commissioner’s Office (ICO), ‘How do we do a DPIA?’. [Online]. Available at: <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/data-protection-impact-assessments-dpias/how-do-we-do-a-dpia/>

²⁸ British Data Protection Authority, Information Commissioner’s Office, How do we carry out a DPIA?. Available at: <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/accountability-and-governance/data-protection-impact-assessments/>

The detailed description provided by the ICO is useful. However, it is important to note that the United Kingdom is not part of the European Union anymore, so those guidelines are simply mentioned as good practice.

Recital 90 of the GDPR outlines a number of components of the DPIA which overlap with well-defined components of risk management (e.g. ISO 31000²⁹). In risk management terms, a DPIA aims at “managing risks” to the rights and freedoms of natural persons³⁰ where it will first identify the processes that may result in high-risk and second, assess and propose risk mitigation mechanisms.

The DPIA process is designed to be flexible and scalable. After signing-off, the outcomes from the DPIA should be integrated back into the project plan and the DPIA must be kept under review. Throughout this process, all relevant stakeholders and individuals should be consulted when needed. This will be done with the questionnaires related to data protection and privacy.³¹ “As read above, the data controllers should conduct a DPIA “prior to the processing”, so as for the appropriate data protection by design and by default measures to be chosen and compliance solutions to be implemented (Article 25 and recital 78)”.³²

There is no specific methodology for the DPIA in the GDPR, so any framework or methodology could be used as long as it “describes the nature, scope, context and purposes of the processing; assesses the necessity, proportionality and compliance measures; identifies and assesses risks to individuals; and identifies any additional measures to mitigate those risks”.³³ Therefore, there are different methodologies for DPIAs. In the chapter 3.3.1.6 Data Protection Impact Assessment, different types are briefly mentioned.

4.1.4 Requirements

The methodology chosen by the data controller must be in line with the criteria identified in Annex 2 of the aforementioned Article 29 guidelines.³⁴

Article 35 (7) and recitals 84 and 90 of GDPR set out minimum requirements for a DPIA. This includes the following:³⁵

1. “a systematic description of the envisaged processing operations and the purposes of the processing, including, where applicable, the legitimate interest pursued by the controller”;
2. “an assessment of the necessity and proportionality of the processing operations in relation to the purposes”;

²⁹ Risk management processes: communication and consultation, establishing the context, risk assessment, risk treatment, monitoring and review (see terms and definitions, and table of content, in the ISO 31000 preview: <https://www.iso.org/obp/ui/#iso:std:iso:31000:ed-1:v1:en>).

³⁰ Art. 29 WP Guidelines DPIA, p. 17

³¹ Ibid.

³² CYBERTRUST, D3.3 - Legal and ethical recommendations

³³ Article 29 Data Protection Working Party, ‘ Guidelines on Data Protection Impact Assessment (DPIA) and determining whether processing is “likely to result in a high risk” for the purposes of Regulation 2016/679’. [Online]. Available at: https://ec.europa.eu/newsroom/article29/item-detail.cfm?item_id=611236

³⁴ Ibid, p.18

³⁵ Ibid, p. 16

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3. “an assessment of the risks to the rights and freedoms of data subjects referred to in paragraph 1”; and
4. “the measures envisaged to address the risks, including safeguards, security measures and mechanisms to ensure the protection of personal data and to demonstrate compliance with this” Regulation taking into account the rights and legitimate interests of data subjects and other persons concerned.

4.1.5 DPIA in SOCIO-BEE

For the SOCIO-BEE project, there may be several reasons why a DPIA should be carried out. SOCIO-BEE should need to conduct a DPIA due to:

- Collecting of personal data referring to vulnerable subjects
 - Children, elderly, persons with disabilities, ...
- Collecting of special categories of personal data
 - data concerning health or disability (only if necessary for safety purposes or for allowing the adoption of accessibility measures to facilitate participation)
- Activities may lead to the possibility of observing, monitoring or controlling data subjects (citizen scientists) in a systematic way.
 - Tracking of citizen scientists’ routes
- Processing data on a large scale
 - Combining different datasets such as location data and air pollution data
 - Use of SOCIO-BEE platform
- Use of innovative technological solutions
 - Drones, wearables and AI systems

Although the processing operations that are envisaged during the SOCIO-BEE project take place in a highly controlled research context, conducting a DPIA is seen as a best practice which will allow key decision makers inside the project to make informed decisions and help with improving transparency.

Further, as a matter of good practice, “a DPIA should be continuously reviewed and regularly re-assessed”.³⁶ In SOCIO-BEE, two deliverables will emerge that will contain reporting on the results of the impact assessment and recommendations - one addressed to the consortium partners in M22 and the other to the project stakeholders in M36. In the meantime, changes may have occurred in the legal framework, for instance the AI Regulation at EU level may be adopted. These developments will be closely monitored throughout this period so that action can be taken if necessary towards anticipatory compliance.

It is important to consider exactly which tasks and activities will require a DPIA in SOCIO-BEE. The SOCIO-BEE solution will operate at four layers, starting at the Data Layer, SOCIO-BEE Platform Layer, Behavioural Change and Engagement Layer, and Devices Layer, and relying on a set of core technologies and social processes at each of them. For each layer, there will be different data processing activities that will be required to create a 'next-generation CS platform'. The first steps of the SOCIO-BEE platform requirements

³⁶ Ibid, p.14.

definition and analysis in WP3 will be completed in the coming months. The 'Development of SOCIO-BEE enablers for Citizen Science' will also take place then. Also important is the 1st release of the SOCIO-BEE integrated platform in D5.1. This deliverable describes the integration efforts carried out towards the final prototype of the SOCIO-BEE platform and the validation of its smooth function. The data processing that will consequently take place in the context of the SOCIO-BEE platform will therefore be subject to a DPIA as it will involve potential risks.

Hence, the first actual DPIA will be held in M22 and in the meantime, the components of the different layers within SOCIO-BEE, including those of the SOCIO-BEE platform, will be developed, evolve (through different releases) and subject to change. In addition, adjustments may also take place within the legal framework (see for example the new Data Act or new legal cases). All these moving developments can have an effect on the initial questionnaire that will be developed in this deliverable. The questionnaire that will effectively be used for the IA in M22 can then be adapted to the specific urgencies and new circumstances that may arise.

Therefore, the questionnaires include an indicative list of questions, tailored for the components of the SOCIO-BEE platform under assessment, based on the Article 29 Working Party Guidelines and other relevant EDPB guidelines enriched with elements of the sample templates as proposed by national supervisory authorities,³⁷ expert groups³⁸ and legal scholars³⁹.

The partners involved in the development of those components (WP2, 3, 4 and 5) are expected to carry out, to the best of their ability and knowledge, the DPIA by providing as specific as possible replies to the questions. The ultimate goal is to ensure that they take into account the implementation of the legal and ethical recommendations found in the present deliverable, as well as in D1.5 and D3.1 as well as other ethical commitments in WP6.

If the features of the component change in a way that may have an impact on the legal and ethical requirements identified, then the partner in charge should carry out the same process, irrespectively of whether the changes are minor or major. VUB-LSTS within SOCIO-BEE shall attempt to describe the reasoning behind the DPIA, including its methodology and final results, liabilities and possible consequences. The information provided will be collated in two consecutive evaluation reports (D6.2 and D6.3).

4.1.6 Data Protection Impact Assessment templates

The GDPR does not specify which DPIA process must be followed but instead allows for data controllers to introduce a framework which complements their existing working practices provided it takes account

³⁷ See: Information Commissioner's Office, Sample DPIA Template, 9 February 2018, v0.3. See also: CNIL, Privacy Impact Assessment Templates, February 2018.

³⁸ Kloza, D. et al. (2017), Data protection impact assessments in the European Union: complementing the new legal framework towards more robust protection of individuals, d.pia.lab Policy Brief No. 1/2017, Brussels Laboratory for Data Protection & Privacy Impact Assessments (d.pia.lab). See also: Smart Grid Task Force 2012-14, Expert Group 2: Regulatory Recommendations for Privacy, Data Protection and Cyber-Security in the Smart Grid Environment, Data Protection Impact Assessment Template for Smart Grid and Smart Metering systems, 13 September 2018.

³⁹ See: ALLADIN project, D3.3 – Framework for Impact Assessment Against SoEL Requirements, May 2018

of the components described in Article 35(7) (minimum requirements). Such a framework can be bespoke to the data controller or common across a particular industry. Previously published frameworks developed by EU DPAs and EU sector-specific frameworks include (but are not limited to):

- DE: Standard Data Protection Model, V.1.0 – Trial version, 201631 .
 - https://www.datenschutzzentrum.de/uploads/SDM-Methodology_V1_EN1.pdf
- ES: Guía para una Evaluación de Impacto en la Protección de Datos Personales, Agencia española de protección de datos, 2014.
 - <https://www.aepd.es/sites/default/files/2019-09/guia-evaluaciones-de-impacto-rgpd.pdf>
- FR: Privacy Impact Assessment, Commission nationale de l’informatique et des libertés (CNIL), 2015.
 - <https://www.cnil.fr/en/privacy-impact-assessment-pia>
- UK: Data protection impact assessments, Information Commissioner’s Office (ICO), 2018.
 - <https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fico.org.uk%2Fmedia%2Ffor-organisations%2Fdocuments%2F2553993%2Fdpia-template.docx&wdOrigin=BROWSELINK>
- BE: Brussels Laboratory for Data Protection & Privacy Impact Assessments - Data protection impact assessment in the European Union: developing a template for a report from the assessment process
 - https://cris.vub.be/ws/portalfiles/portal/53602836/dpia_lab_pb2020_1_final.pdf
- Other relevant H2020 project deliverables: ALLADIN project, D3.3 – Framework for Impact Assessment Against SoEL Requirements, May 2018; CYBERTRUST, D3.3 – Legal and Ethical Recommendations, FASTER, D2.2 SELP Compliance Report

4.1.6.1.1 Justifying choices

The assessment approach chosen is based on existing best practice and therefore a combination of different templates. This ensures that there is enough room to choose from several approaches. It is based on:

- Article 29 Working Party Guidelines enriched with elements of the sample templates as proposed by national supervisory authorities
 - See: Privacy Impact Assessment, Commission nationale de l’informatique et des libertés (CNIL), 2015 ; Data protection impact assessments, Information Commissioner’s Office (ICO), 2018
- Expert groups:
 - Kloza, D. et al. (2017), Data protection impact assessments in the European Union: complementing the new legal framework towards more robust protection of individuals, d.pia.lab Policy Brief No. 1/2017, Brussels Laboratory for Data Protection & Privacy Impact Assessments
 - Data Protection Impact Assessment template from the DPO course by the University of Maastricht
- Legal scholars:

- Deliverables: ALLADIN project, D3.3 – Framework for Impact Assessment Against SoEL Requirements, May 2018; CYBERTRUST, D3.3 – Legal and Ethical Recommendations, FASTER, D2.2 SELP Compliance Report

4.1.7 Questionnaires

In the context of the DPIA, it is first of all a legal obligation to ask a series of questions in order to have input for the DPIA. Each partner that processes personal data or could be in contact with personal data is asked to answer the questions where possible. This will allow us to verify that everyone is ultimately on the same page within the SOCIO-BEE project. More general information will be asked and in addition to that, e.g. for the technical partners, the technical description of the different parts of the technology used in SOCIO-BEE related to the processing of personal data, their functionality, necessity and interactions.

Then the focus will shift to the requirements of data protection. This refers, among other things, to the scope, nature, purposes and context of the data processing activities, the clarification of the role, obligations and relations of data controllers and data processors, the data subjects and their rights, the identification of risks and respective mitigation measures. It is possible that afterwards, during the preparatory work for the reports, things will change in the questionnaire. This depends on the developments within the SOCIO-BEE project where for example by then more will be clear about the SOCIO-BEE platform and its app.

The various questionnaires can be found in full in Annex of this document.

4.2 Artificial Intelligence Impact Assessment

4.2.1 Introduction

In recent years, there has been a sharp increase in the use of artificial intelligence (AI). This technology can bring great benefits, but at the same time it also raises many concerns about undesirable ethical and social consequences. Recently, many different activities have arisen in light of these concerns, such as the recent proposal for the first ever AI legislation, the EU AI Act, “to ethics guidelines to design methodologies, professional guidance or standardization”.⁴⁰ Within this, an IA specifically for AI can also be an option to estimate the impact of this technology. In the literature, many AI impact assessments (hereafter AIIA) have been proposed that draw inspiration from different angles.

In the context of the European SHERPA (Shaping the ethical dimensions of smart information systems - a European perspective) project, a general recommendation was also listed in D4.3 SHERPA Final Recommendations after a systematic review of existing AIIA. This showed that first of all 1) “there is no agreement on how risk in AI is assessed or measured, therefore there is a need to include a determination of risk levels in impact assessment” and secondly 2) “there are numerous ethical and human rights issues arising from AI. An IA needs to be informed by current research on these issues. Therefore, there is a need for guidance on assessment of specific issues.”⁴¹

⁴⁰ SHERPA, D5.8 Artificial Intelligence Impact Assessments - A Systematic Review, p. 7

⁴¹ SHERPA, D4.3 - SHERPA Final Recommendations; p. 22

The central problem at present within AIIA is the following: “despite much academic research, standardisation activities and policy-oriented work (notably including the HLEG (2020) Assessment List)⁴², there is no universally accepted baseline of what an AIIA should entail. There is broad agreement that a risk-based approach to AI is appropriate. For such an approach to work, there must be guidance on how to define, measure, interpret and address relevant risks.”⁴³ This is also because the EU AI Act takes a risk-based approach. The proposed EU AI Act therefore also includes 4 levels (unacceptable risk; high risk; limited risk and minimal risk) depending on the risk that AI systems may have. In this way, undesirable outcomes could be prevented.⁴⁴ Policy makers have been shown to prioritise the importance of a 'human-centred' approach to AI to ensure that Europeans can benefit from new technologies developed and functioning according to the EU values and principles.⁴⁵ As SOCIO-BEE is a Horizon 2020 project, it is therefore also relevant to look at AIIA following these approaches.

4.2.2 Towards an Artificial Intelligence Impact Assessment (AIIA)

A systemic review concluded that the main consideration was that AIIA can build on and incorporate elements of numerous existing impact assessments, including⁴⁶:

- Data protection impact assessment
- Algorithmic impact assessment
- Human rights impact assessment
- Socio-economic impact assessment
- Environmental impact assessment
- Ethics impact assessment
- Responsible innovation assessment

These AIIAs sometimes overlap or complement each other. The difference between the above mentioned assessments is that they have a different character in terms of being mandatory or voluntary. For example, AIIAs may also be integrated into DPIAs or vice versa.⁴⁷ The main difference with the listed AIs is that an AIIA is technology-specific.⁴⁸ So while AIIA could potentially assess all kinds of different problems, it appears from the literature that most AIIA focus on human (or fundamental) rights, ethics and data protection and privacy.⁴⁹

⁴² HLEG on AI (2020): Assessment List for Trustworthy AI (ALTAI). European Commission.

⁴³ Ibid.

⁴⁴ European Commission, Regulatory framework proposal on artificial intelligence, [Online] Available: <https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai#:~:text=or%20no%20risk,Unacceptable%20risk,assistance%20that%20encourages%20dangerous%20behaviour>.

⁴⁵ SOCIO-BEE, D3.1 – Report on Legal and Regulatory Requirements

⁴⁶ SHERPA, D4.3 - SHERPA Final Recommendations

⁴⁷ Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 'Impact Assessment Mensenrechten en Algoritmes' [Online] Available: <https://www.rijksoverheid.nl/documenten/rapporten/2021/02/25/impact-assessment-mensenrechten-en-algoritmes>

⁴⁸ This can refer to AI itself, although this term is not used uniformly (see e.g. algorithm systems, automated decision making systems etc.), the application area or domain or the uses of technology. They can cover more than one of these.

⁴⁹ SHERPA, D5.8 Artificial Intelligence Impact Assessment – A systemic Review, p. 14

There are many advantages to doing an AIIA. These may include functional⁵⁰, organisational⁵¹, individual⁵² and social⁵³. “The description of many AI-IAs makes significant use of the concept of risk management. AI-IAs are described as facilitating risk estimation, risk analysis, audit and mitigation”.⁵⁴ Looking at the disadvantages, the wide variety of AI applications can be a stumbling block, as this “makes it harder to understand the nature of AI and its effects, and how these are reflected in social norms”.⁵⁵ AI systems are not so ‘static’ on top of that, but rather have a very dynamic nature where this can clash with more traditional impact assessments. In any case, a central point in AIIAs is that transparency and communication about AI systems is very important so that individuals and organisations can better understand why certain decisions are made.

As a general rule (also with other IAs), an AIIA should not be an *a priori* activity. It should be an ongoing process that is regularly reviewed and updated. AIIA could be implemented as part of due diligence processes.

All in all, AIIAs can thus provide a further practical perspective on the ethical, social and human rights aspects and consequences of AI rather “which is lacking in the guideline-oriented approach that currently dominates the debate”.⁵⁶ Initial developments for AIIA are already taking place. In the next chapter we will discuss this in more detail and eventually choose a template / perspective for the SOCIO-BEE project.

4.2.3 Human rights and ethics in AI

Although there is no specific legislation yet that covers the human rights challenges of AI in a comprehensive way, recent reports show that 1) there are several possible human rights that may be affected by AI 2) there are already partial international legal instruments that indirectly deal with some aspects of AI. Possible human rights on which AI may have an impact are (non-exhaustive): the right to non-discrimination, the right to the protection of privacy and personal data, particularly in the context of automated personal data processing.⁵⁷ The impact of AI on human rights, among others, can be addressed by introducing “certain existing compliance, accountability and redress mechanisms could be further developed, and new mechanisms”.⁵⁸ The possibility of a legal requirement for an AI Human Rights, Democracy and Rule of Law Impact Assessment is therefore being considered in EU.⁵⁹ Currently, there are

⁵⁰ Functional aims to achieve better AI systems by finding certain weaknesses in the system (such as biases in machine learning for example).

⁵¹ The use of assessments promises to strengthen different structures and thereby ensure better compliance with regulations.

⁵² In this way, the fundamental rights of individuals such as their right as data subjects can be better safeguarded.

⁵³ Thus, the further strengthening of individual rights can also strengthen fundamental rights in society in general.

⁵⁴ *Ibid.*, p. 13

⁵⁵ *Ibid.*, p. 17

⁵⁶ *Ibid.*

⁵⁷ For a more detailed analysis see SOCIO-BEE D3.1 Report on Legal and Regulatory Requirements

⁵⁸ Council of Europe, ‘Towards Regulation of AI Systems - Global perspectives on the development of a legal framework on Artificial Intelligence (AI) systems based on the Council of Europe’s standards on human rights, democracy and the rule of law’, DGI (2020)16. Available; <https://rm.coe.int/prems-107320-gbr-2018-compli-cahai-couv-texte-a4-bat-web/1680a0c17a>, p. 21

⁵⁹ Council of Europa, ‘Human Rights, Democracy and Rule of Law Impact Assessment of AI systems’, CAHAI-PDG(2021)02 Provisional.

also other AI specific impact assessments being developed as discussed in the chapter above and further in this deliverable.

There is also a great deal of empirical evidence on how, for example, AI can affect rights and freedoms. This can be seen in the EU in the context of the “long-standing and persistent focus on human rights – partly through the role of the European Court of Human Rights – and a theoretical approach that has intertwined data processing and human rights since the early data protection regulations”.⁶⁰

The potential impact of these technologies has thus triggered many debates that are brainstorming on future approaches to addressing the human rights challenges posed by AI. With the rapidly growing use of AI and data-intensive systems in recent decades, the debate surrounding these technologies has shifted rapidly, changing its trajectory from law to ethics.⁶¹ The emphasis within ethics is then mainly e.g. on the ethical dimension of using algorithms.⁶² This is evident not only in the literature⁶³ but also in the political and institutional debate⁶⁴. In this regard, an important turning point was the EDPS initiative on digital ethics⁶⁵ which led to the creation of the Ethics Advisory Group. (...) The main reason for this emphasis on ethics in recent years has been the growing concern in society about the use of data and new data-intensive”.⁶⁶ However, according to a recent article from the authors Mantelero & Esposito⁶⁷, there are too many ambiguities within this ethical approach and that we must shift back to law, more specifically human rights again.

As discussed earlier, the emergence of an AI-driven society suggests a potential impact on individual and collective rights and freedoms. This therefore implies two things: 1) “a reaffirmation of the central role of the legal instruments, not replaceable by ethical guidelines” and 2) “the need for a more comprehensive analysis of the rights and freedoms concerned”.⁶⁸ Although a central role of ethics does have its advantages⁶⁹, this is only partially solvable according to the authors. They state that “(...) it is true that

⁶⁰ See e.g. Lee Andrew Bygrave, *Data Privacy Law: An International Perspective* (Oxford University Press, 2014); Gloria Gonzalez Fuster, *The Emergence of Personal Data Protection as a Fundamental Right of the EU* (Springer 2014)

⁶¹ See Charles D Raab, ‘Information Privacy, Impact Assessment, and the Place of Ethics’ in this Review, 2020, 37, DOI: 10.1016/j.clsr.2020.105404, para 3.)

⁶² See Luciano Floridi et al. (2018). ‘AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations’, *Minds & Machine*, doi: 10.1007/s11023-018-9482-5; Brent Daniel Mittelstadt et al., (2016). ‘The ethics of algorithms: Mapping the debate’, *Big Data & Society*, 1–2

⁶³ See e.g. Floridi Luciano and Taddeo Mariarosaria, ‘What is data ethics?’ (2016) 374(2083) *Phil. Trans. R. Soc. A.*, DOI: 10.1098/rsta.2016.0360

⁶⁴ See e.g. David Wright, ‘A framework for the ethical impact assessment of information technology’ (2010) 13 *Ethics Inf. Technol.* 199–226.

⁶⁵ See EDPS, ‘Decision of 3 December 2015 establishing an external advisory group on the ethical dimensions of data protection (‘the Ethics Advisory Group’), 2016/C 33/01 OJEU.

⁶⁶ Mantelero, A., & Esposito, M.S. (2021). An evidence-based methodology for human rights impact assessment (HRIA) in the development of AI data-intensive systems, *Computer Law & Security Review*, 41, doi: doi.org/10.1016/j.clsr.2021.105561., p. 3

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Thus, ethics can play a central role from two approaches: “1) ethics first approach: ethics plays a central role in technology regulation because it is the root of any regulatory approach, the pre legal humus that is more important than ever where existing rules do not address or only partially address technological challenges; 2) ethics after’ approach: in the concrete application of human rights we necessarily have to balance competing interests. This balance test is not based on the rights themselves but on the underlying ethical values, meaning that the human rights framework is largely incomplete without ethics.” In Mantelero, A., & Esposito, M.S. (2021), p. 4

human rights have their roots in ethics. There is an extensive literature on the relationship between ethics and law, which over the years has been described by various authors as identification, separation, complementation, and interweavement.^{70 71} Therefore, they also note that “the point is not to cut off the ethical roots, but to recognise that rights and freedoms flourish on the basis of the shape given them by law provisions and case law. There is no conflict between ethical values and human rights, but the latter represent a specific crystallisation of these values that are circumscribed and contextualised by legal provisions and judicial decisions. (...) Ethics can play an important role in AI regulation, not as a backdrop to a human rights-based approach, creating confusion about the existing definition of these rights, but as a complementary element. Ethics can cover those issues that are not addressed, or not fully addressed, by the human rights framework, and revolve around a discretionary evaluation based on the socio-ethical values of a given community with respect to the various human rights-oriented options to be chosen”.⁷² ⁷³ Mantelero and Esposito (2021) therefore concludes that (re)focusing on the human rights framework is important and crucial for an effective development of a human-centric AI (which is also the starting point for the EU in its digital strategy).

As mentioned earlier, an ex-ante Human Rights Impact Assessment (HRIA)³⁶ is also needed here. In this way, it should avoid any prejudice to human rights and fundamental freedoms and promote human rights-oriented AI.⁷⁴ He ends with stating that “at the same time, a positive outcome of such an assessment does not exclude the presence of ethical issues related to the proposed solution, which should be further investigated. The HRIA thus makes the role of human rights in technology development evident and, in this way, helps to avoid improper overlap with ethical issues”.⁷⁵

4.2.4 AI in SOCIO-BEE

4.2.4.1 Aim of AI technology in SOCIO-BEE

One of the goals of SOCIO-BEE is to establish an open and sustainable decision-making process with a data analysis platform for the entire CS process. This will be as follows: cross-linking of environmental data in collaboration with citizens, scientists, citizen observatories and local decision makers. In order to manage this, the SOCIO-BEE project will develop new AI and Machine Learning (ML) algorithms.

The main functionality of the SOCIO-BEE AI/ML Algorithms rests on three main pillars:

- Recognition of patterns in vast datasets coming from any kind of air monitoring and/or mobile sensors that will be engaged in SOCIO-BEE

⁷⁰ See Adela Cortina, ‘Legislation, Law and Ethics’ (2000) 3 Ethical Theory and Moral Practice 3-7.

⁷¹ Mantelero, A., & Esposito, M.S. (2021). An evidence-based methodology for human rights impact assessment (HRIA) in the development of AI data-intensive systems, p. 4

⁷² See Mantelero, S. (2018). ‘AI and Big Data: A blueprint for a human rights, social and ethical impact assessment’, 34(4), 754-772.

⁷³ Mantelero, A., & Esposito, M.S. (2021). An evidence-based methodology for human rights impact assessment (HRIA) in the development of AI data-intensive systems, p. 7

⁷⁴ See Council of Europe – Ad hoc Committee on Artificial Intelligence, ‘Feasibility Study’, Strasbourg, 17 December 2020, accessed 23 January 2021, 44, 50; European Union Agency for Fundamental Rights (FRA), ‘Getting the Future Right – Artificial Intelligence and Fundamental Rights’ (2020)

⁷⁵ Mantelero, A., & Esposito, M.S. (2021). An evidence-based methodology for human rights impact assessment (HRIA) in the development of AI data-intensive systems, *Computer Law & Security Review*, 41, doi: doi.org/10.1016/j.clsr.2021.105561.

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- Personalization of strategy of actions for each user, user group or other local interest groups, by applying AI/ML to optimize the matching between the existing situation and the features and dynamics of each user or group
- Visual Analytics with identification of insights and representation in an optimal way through effective web and mobile front-ends

Among others, examples of AI/ML application in SOCIO-BEE will be the following:

- “Micro Volunteering Engine integrated with Personalized Messaging and Task engine: the MVE aims to be used by the Working Bees, with the scope of solving the requests allocation problem i.e. the allocation of tasks to available Working Bees or other users to support and provide data for open requests and campaigns existing in the SOCIO-BEE platform”
- “Individual Exposure Analytics: this SOCIO-BEE module will collect air pollution concentration values and exposure data for the users. It will work together with behavioural analytics and would be possible to be accessed by an API or by the mobile and web dashboard that SOCIO-BEE develops. The module will track the aggregated exposure of citizens to pollutants and will compute the expected exposition of a route between two locations. It will analyse and correlate, using AI/ML algorithms, which activities are more likely to put the user under high air-pollution exposure and which are not. It is important to mention that the AI/ML in SOCIO-BEE will only provide functionality regarding the collection and interpretation of data towards pattern recognition and insights, optimization of strategies and visual analytics. No use of actuators, neither any interaction with such devices is foreseen during the project.”⁷⁶

The presence of vulnerable groups in SOCIO-BEE, must be kept in mind at all times. When it comes to a new technology such as AI, there are always new opportunities and risks involved. One potential risk with SOCIO-BEE is that identifying and personalising feedback for users may be a risk, especially with children and the elderly as they are less aware of these techniques.

4.2.4.2 Fundamental rights and AI in SOCIO-BEE

AI systems may potentially violate fundamental rights such as inter alia the right to nondiscrimination, freedom of expression, human dignity, personal data protection and privacy.⁷⁷ In the context of SOCIO-BEE there is especially an increased risk for freedom from discrimination. One has to be careful that no discriminatory practices will take place in the context of the foreseen automatic decision-making and profiling of different citizen scientists. The negative consequences of this could, for example, perpetuate existing stereotypes or lead to further social segregation. Especially in the case of participation of vulnerable groups, this should be taken into account. Finally, the use of algorithms is often vague and opaque. Individuals may not know the exact way in which profiles are created of them or understand the possible consequences. More thoughts on these rights will become clear in the artificial intelligence impact assessment.

⁷⁶ SOCIO-BEE D3.1 Report on Legal and Regulatory Requirements, p. 65-66

⁷⁷ See for instance, High-Level Expert Group, Ethics Guidelines for Trustworthy AI, 2019.

4.2.5 Artificial Intelligence Impact Assessment templates

As described earlier, AI impact assessments can get their inspiration from / build on various existing IA like DPIA, HRIA, Environmental IA etc. After an extensive literature study, it appears that several developments have already been started that try to elaborate AIIA. There are many different types of impact assessments for AI but to see the wood for the trees, we divide up the templates that are useful for SOCIO-BEE according to the starting point they take. The following review is merely indicative and more templates can be found. These are: ethics, human rights, data protection, common wellbeing and focus on algorithms.

ALTAI – Emphasis on Trustworthiness:

- <https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai>

Emphasis on Ethics:

- Dutch ECP AI Impact Assessment.
 - o ECP Platform for the Information Provision. Artificial Intelligence Impact Assessment. <https://ecp.nl/wp-content/uploads/2019/01/Artificial-Intelligence-Impact-Assessment-English.pdf> (2019).

Emphasis on Human (fundamental) rights:

- Council of Europe, series of important documents: https://www.coe.int/en/web/artificial-intelligence/home?_82_struts_action=%252Flanguage%252Fview&_82_languageId=en_GB
- The Alan Turing Institute, 'Human Rights, Democracy, and the Rule of Law Assurance Framework for AI Systems: A proposal prepared for the Council of Europe's Ad hoc Committee on Artificial Intelligence':
 - o <https://zenodo.org/record/5981676>
- Mantelero, A., & Esposito, M.S. (2021). An evidence-based methodology for human rights impact assessment (HRIA) in the development of AI data-intensive systems, *Computer Law & Security Review*, 41, doi: doi.org/10.1016/j.clsr.2021.105561.
- Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, Impact Assessment Mensenrechten en Algoritmes
 - o <https://www.rijksoverheid.nl/documenten/rapporten/2021/02/25/impact-assessment-mensenrechten-en-algoritmes>
- Muller, C. (2020). The Impact of Artificial Intelligence on Human Rights, Democracy and the Rule of Law. <https://rm.coe.int/cahai-2020-06-fin-c-muller-the-impact-of-ai-on-human-rights-democracy-/16809ed6da>

Emphasis on Wellbeing

- IEEE 7010-2020 standard on Recommended Practice for Assessing the Impact of Autonomous and Intelligent Systems on Human Well-Being
 - o <https://ieeexplore.ieee.org/document/9084219>

Emphasis on Algorithms

- Ada Lovelace Institute
 - o <https://www.adalovelaceinstitute.org/resource/aia-template/>
- Algorithmic Justice League
 - o <https://www.ajl.org/library/research>
- Corriveau, N. The Government of Canada’s Algorithmic Impact Assessment: Towards Safer and More Responsible AI. https://aiforsocialgood.github.io/2018/pdfs/track2/83_aisg_neurips2018.pdf (2018).
- Dillon R., Jason S., Kate C., Meredith W., (2018). Algorithmic Impact Assessments: A practical framework for public agency accountability
 - o <https://www.government.nl/binaries/government/documenten/reports/2022/03/31/impact-assessment-fundamental-rights-and-algorithms/Fundamental+Rights+and+Algorithms+Impact+Assessment.pdf>
- Metcali, J., Moss, E., Watkins, E. A., Singh, R. & Elish, M. C. Algorithmic Impact Assessments and Accountability: ACM (2021) doi:<https://dl.acm.org/doi/proceedings/10.1145/3442188>.

4.2.5.1 Justifying choices

The choice we try to make for SOCIO-BEE in relation to the AIIA is based on a further consideration of the different potential examples listed in the previous section. The impact assessment model for SOCIO-BEE recognises the different approaches that can be taken towards an AIIA and chooses the one that can be most relevant to the project, both the one that can be most effective and the one that the literature shows can be useful also in the future if we take into account the developments at the European level and within the literature. It is for this reason that we will go for an adapted version of the recently elaborated concept model from the work of Mantelero and Esposito (2021).⁷⁸ As we have mentioned before, a human rights approach to AIIA not only provides an answer to the regulatory developments in the EU, but also fills in the existing gap between ethics and human rights within the AI debate. It also provides a model in which one can make a risk assessment and thereby assess whether proposed mitigation measures can have an impact on the situation of the use of AI in the SOCIO-BEE project.

4.2.5.2 Method of the Human Rights Artificial Intelligence Impact Assessment

The use of a HRIA ensures that there are both similarities and differences with the traditional HRIA. Whereas the latter models are often characterised by a focus on territory-based (business) activities within a project with respect to the territory or communities present there, this will be less the case with an AI-specific HRIA. Unless the AIIA is dealing with an AI that has a territorial impact and can have a high impact on social dynamics (e.g. in the roll-out of smart city plans), the other case will rather focus on “those where AI solutions have a more limited impact as they are embedded in globally distributed products/services (e.g. AI virtual assistants, autonomous cars, recruiting AI-based software, etc.) and do not focus on a given socio-territorial community.” “(...) This difference has a direct effect on the structure and complexity of the model, as well as the tool employed.”

⁷⁸ Mantelero, A., & Esposito, M.S. (2021). An evidence-based methodology for human rights impact assessment (HRIA) in the development of AI data-intensive systems, *Computer Law & Security Review*, 41, doi: doi.org/10.1016/j.clsr.2021.105561.

In summary, the model for an AIIA will be as follows, with two main building blocks:

1. Planning and scoping
2. Data collection and analysis

Planning and scoping

During the first phase of the HRIA, the focus is on defining the HRIA target, “identifying the main features of the product/service and the context in which it will be placed, in line with the context-dependant nature of the HRIA. Three are the main areas to consider at this stage:”⁷⁹

- description and analysis of the type of product/service, including data flows and data processing purposes
- the human rights context (contextualisation on the basis of local jurisprudence and laws)
- identification of relevant stakeholders.

A questionnaire will therefore be drawn up and submitted to the relevant actors. The questionnaire follows in another chapter.

Data collection and analysis

The second step thus involves collecting the relevant empirical material to assess the impact of the product/service on human rights and freedoms. The collection thus largely relates to the characteristics of the product/service and to the feedback from stakeholders.

Based on the first step, we can therefore proceed with "a contextual assessment of the impact of data use on human rights, to understand which rights and freedoms may be affected, how this may occur, and which potential mitigation measures may be taken."⁸⁰ This assessment will also be like a DPIA in terms of a range of risks (i.e. low, medium, high, or very high). The benchmark of this IA will be various fundamental rights and freedoms that may be relevant depending on the specific nature of the given application.

4.2.6 Questionnaires

Regarding the potential questionnaire for an AIIA, they can refer to the following issues such as: human rights, existing legislation, ethical issues, principles of sustainability and responsible innovation so that they can assess different challenges of AI with issues related to these issues.⁸¹ “The extent and content of these questions will also depend on the specific nature of the product/service and the scale and complexity of its development and deployment”.⁸² The questionnaire takes inspiration from examples in

⁷⁹ Mantelero, A. (2022). Beyond Data – Human Rights, Ethical and Social Impact Assessment in AI, *Information Technology and Law Series 36*, doi: 10.1007/978-94-6265-531-7_2, p. 52

⁸⁰ Ibid, p. 54

⁸¹ SHERPA, D5.3 Artificial Intelligence Impact Assessment – A Systematic Review

⁸² Mantelero, A., & Esposito, M.S. (2021). An evidence-based methodology for human rights impact assessment (HRIA) in the development of AI data-intensive systems, *Computer Law & Security Review*, 41, doi: doi.org/10.1016/j.clsr.2021.105561., p. 18

the work of Mantelero and Esposito (2021)⁸³, publications of the CNIL⁸⁴ and the HRIA of the Dutch government⁸⁵. The comprehensive questionnaire will be available in Annex.

4.3 Human Rights Impact Assessment

4.3.1 Introduction

Human Rights Impact Assessments (HRIAs) have developed from other types of IA such as Environmental Impact Assessments (EIAs) and Social Impact Assessments (SIAs) which already consist of several steps and comprehensive best-practices to evaluate the environmental or social impact of proposed policies, programs and projects. Nevertheless, they differ from these IAs to varying degrees, as will be pointed out later in this chapter. The HRIA is an emerging practice and can best be described as “a process for identifying, understanding, assessing and addressing the adverse effects of a [project, product, services, or activities] on the human rights enjoyment of impacted rightsholders.”⁸⁶

HRIA has seen an increase in use in recent years due to growing efforts by the human rights community to operationalise the relevance of human rights in various fields. HRIA can be used in situations that could indirectly have a negative impact on human rights, especially in the implementation phase. HRIAs are therefore particularly useful in cases where the human rights implications of a proposed policy or project are not clear at the outset. They can also be used to assess actions specifically designed to have an impact on human rights. As a result, they are used to have the maximum positive impact.

What makes HRIA so useful, however, is that they have a capacity “to enhance accountability for impacts on human rights. HRIAs promote accountability through their anchorage in binding legal frameworks since they are based on human rights legal obligations which bind states. This changes the language and emphasis in a project to ‘rights-holders’ and ‘duty-bearers’ and gives the recommendation that ensues from HRIAs additional force and significance.”⁸⁷ Because HRIA therefore withholds a “comprehensive appraisal of the impacts of an intervention on a wide array of rights”, it therefore underlines “the interconnectedness of rights concerns and obligations.”⁸⁸

Finally, HRIA can also be part of business activities. This method is therefore also part of the due diligence processes on human rights for business. “Its use is implicit in the recent UN principles on business and human rights.”⁸⁹

⁸³ Ibid.

⁸⁴ CNIL, ‘Self-Assessment Guide for Artificial Intelligence (AI) Systems’, <https://www.cnil.fr/fr/intelligence-artificielle/guide>

⁸⁵ Rijksoverheid, Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, <https://www.rijksoverheid.nl/documenten/rapporten/2021/02/25/impact-assessment-mensenrechten-en-algoritmes>

⁸⁶ Data & Society and ECNL: Recommendations for Assessing AI Impacts to Human Rights, Democracy, and the Rule of Law [Online] Available at: https://datasociety.net/wp-content/uploads/2021/11/HUDIERA-Full-Paper_FINAL.pdf

⁸⁷ Worldbank, ‘Study on Human Rights Impact Assessments – A Review of the Literature, Differences with other Forms of Assessments and Relevance for Development’, [Online], Available at: <https://documents1.worldbank.org/curated/en/834611524474505865/pdf/125557-WP-PUBLIC-HRIA-Web.pdf>, p. IX

⁸⁸ Ibid.

⁸⁹ Ibid.; see UN Guiding Principles

4.3.1.1 Methodology

“HRIAs are an evidence-based exercise, which aim to contribute to a more informed policy-making process. As such, the effectiveness of HRIAs largely depends on the robustness of the methods used and the quality of the evidence gathered by those methods”.⁹⁰ Like other IA, the HRIA then consists of several stages. The different stages are summarised below⁹¹:

1. Planning and scoping
 2. Data collection and baseline development
 3. Analysing impacts
 4. Impact mitigation and management; and
 5. Reporting and evaluation
- Cross-cutting component: stakeholder and right-holders engagement

For a thorough and well-considered HRIA, it is important that the content, process and outcomes of the HRIA are both applied and compatible with (international) human rights standards and principles. Drawing on the UN Guiding Principles, as well as current guidance and literature on HRIA, a number of aspects can be identified as essential for HRIA of (business) projects or activities⁹²:

- “International human rights as benchmarks: International human rights standards and principles must constitute the basis and benchmarks for the assessment.”⁹³
- “Human rights-based process: The assessment process itself needs to respect human rights by paying particular attention to human rights principles such as non-discrimination, participation, empowerment and transparency.”⁹⁴
- “Focus on accountability: The assessment process and content need to emphasise accountability, including by recognising the entitlements of rights-holders to have their rights respected and the corresponding duties and responsibilities of duty-bearers to uphold and respect these rights.”⁹⁵

Thus, HRIA can make use of various rights such as economic, social and cultural rights (ESC) and civil and political rights (CP). The substantive content of human rights is elaborated in sources such as⁹⁶:

- International treaties, conventions and declarations on human rights, including elaboration of these in general comments, recommendations and concluding observations by UN treaty bodies, as well as reports by UN special procedures on specific themes
- Regional human rights instruments and jurisprudence
- State constitutions and human rights legislation

⁹⁰ Worldbank, ‘Study on Human Rights Impact Assessments – A Review of the Literature, Differences with other Forms of Assessments and Relevance for Development’, [Online], Available at: <https://documents1.worldbank.org/curated/en/834611524474505865/pdf/125557-WP-PUBLIC-HRIA-Web.pdf>

⁹¹ The Danish Institute for Human Rights, [Online], Available at: https://www.humanrights.dk/sites/humanrights.dk/files/media/dokumenter/udgivelser/hria_toolbox_2020/eng/dihr_hria_guidance_and_toolbox_2020_eng.pdf

⁹² Ibid., p. 11

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ Ibid.

⁹⁶ Ibid, p. 43

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- State thematic legislation and jurisprudence

Such sources should inform HRIA and be carefully consulted by HRIA practitioners in impact assessment

There is no one specific type for HRIA, but rather a wide variety of HRIA have developed over time. These have all been shaped by factors “such as the type of measure being assessed, the nature of evaluation, its timing, what data is being assessed and who is undertaking the assessment and depending on the goal of the assessment, HRIA can be used to evaluate the impact of legislation, public policy, a business project or a program.”⁹⁷ Therefore within emerging HRIA practice, several different approaches have developed.⁹⁸

The approaches may therefore differ with regard to the right-holders and duty-bearers involved, the level of detail of the methodology and analysis, and the purpose and design of the impact assessments. HRIA have an open and flexible methodology, allowing for a more comprehensive assessment. There are not fixed predetermined set of human rights. But for SOCIO-BEE as an EU project, we therefore first follow the EU Charter of Fundamental Rights as primary guide. And secondly our focus is on the Council of Europe’s European Convention on Human Rights.

They have been used as a mechanism for assessing ex ante or ex post the human rights impacts of a business practice, technology, or policy. Therefore, if an ex ante assessment is done, it may help to improve and/or adjust the policy, programme etc. so that it prevents a possible violation of human rights. With ex post HIRA measure the actual impact of implementing policies, programs or projects, when the current situation is compared with the situation before the intervention or policy was adopted. Most of the HRIA are ex post assessment instead of ex ante like other types of IAs. This mostly depends on the type of actor conducting the HRIA.

4.3.1.2 Essential elements of HRIA

The HRIA differs from other IAs by some important distinguishing features. Based on the work of the World Bank⁹⁹, the Danish Institute for Human Rights¹⁰⁰, and the PANEL principles from the Scottish Human Rights Commission¹⁰¹, we arrive at the following list:

⁹⁷ Green Alternative, ‘Human Rights Impact Assessment (HRIA) Toolkit [Online] Available at: https://greenalt.org/app/uploads/2021/04/HRIA_Guide_toolkit.pdf

⁹⁸ Impact assessments of business projects and activities; HRIA in the field of development; Assessments on health and human rights; Children’s rights impact assessments; HRIA of international trade and investment agreements; Impact assessments conducted for public authorities; Community-based HRIA processes; Sector-wide impact assessments; Summary from The Danish Institute for Human Rights, https://www.humanrights.dk/sites/humanrights.dk/files/media/dokumenter/udgivelses/hria_toolbox_2020/eng/dihr_hria_guidance_and_toolbox_2020_eng.pdf, p. 12;

⁹⁹ Worldbank, ‘Study on Human Rights Impact Assessments – A Review of the Literature, Differences with other Forms of Assessments and Relevance for Development’, [Online], Available at: <https://documents1.worldbank.org/curated/en/834611524474505865/pdf/125557-WP-PUBLIC-HRIA-Web.pdf>

¹⁰⁰ The Danish Institute for Human Rights, [Online], Available at: https://www.humanrights.dk/sites/humanrights.dk/files/media/dokumenter/udgivelses/hria_toolbox_2020/eng/dihr_hria_guidance_and_toolbox_2020_eng.pdf

¹⁰¹ Scottish Human Rights Commission, A human rights based approach: an introduction, [Online], Available: <http://www.scottishhumanrights.com/rights-in-practice/human-rights-based-approach/>

Table 1. Essential elements of HRIAs

Normative human rights framework	Because an HRIA is explicitly based on (international) human rights framework, it is an essential feature that distinguishes it from other IA
Public participation	On the one hand, HRIA should assess whether effective participatory mechanisms are in place during the whole lifecycle of the intervention (from formulation to evaluation); on the other, it should ensure that such mechanisms are integrated in the process of HRIA itself.
Equality and non-discrimination	The issue of equality is intrinsically related to the human rights notion of non-discrimination. HRIAs can draw on decades of national and international jurisprudence on this right to help analyze the meaning of disparate impact. As a result, the human rights framework considerably broadens and deepens the analysis on equality.
Transparency and access to information:	Access to information is critical for both meaningful participation processes and effective accountability mechanisms. Transparency relates to: 1) The extent to which the policy or project being assessed is transparent and its contents available to the public in sufficient detail before its adoption; 2) The extent to which the HRIA process itself is transparent both in terms of the methodologies used and the findings of the particular assessment.
Accountability	HRIAs contribute clarity about the nature and locus of responsibility for particular human rights processes and outcomes and usually analyze the extent to which the policy, program or project being evaluated include effective accountability mechanisms that enable redress in cases where interventions might undermine the enjoyment of human rights.
Inter-sectoral approach:	The human rights framework considers all rights—civil, political, economic, social and cultural—as interdependent and interrelated. Drawing on these human rights principles, HRIAs measure the cumulative impact of policy and projects by diverse sectors on the rights of individuals.

4.3.2 HRIA in SOCIO-BEE

HRIA can be particularly useful for SOCIO-BEE because it has a focus on the empowerment and ownership of right holders. Just as citizen scientists, the right holders in HRIA are not seen as passive subjects but are encouraged to fully participate in the impact assessments. Vulnerable groups in particular are also more likely to be heard in this way, in contrast to other IAs.

What follows is a initial non-exhaustive list of possible risks to human rights and freedoms in SOCIO-BEE. Deliverable 3.1 - Report on Legal and Regulatory Requirements already briefly mentioned the human rights on which AI, drones, wearables and citizen science could have an impact. These and additional human rights are therefore quoted below. This overview may also partly apply to the AIIA of SOCIO-BEE.

4.3.2.1 Human dignity¹⁰²

Possible negative outcomes for individual dignity in SOCIO-BEE could be:

- data-intensive systems collecting mobility data and (driving) behavioural information (e.g. GPS; Wi-Fi tracking devices)
- Use of sensitive data: the use of wearable and IoT devices to gather sensitive data (e.g. health data) or profiling information¹⁰³

These practices are regarded as potentially oppressive or demeaning, if associated risks are not mitigated.

4.3.2.2 Freedom from discrimination¹⁰⁴

Possible negative outcomes through discriminatory practices in SOCIO-BEE could be:

- Discriminatory practices may occur in many contexts and in relation to different types of personal data processing. Negative consequences may result, for example, from automated decision-making and profiling activities, which may perpetuate existing stereotypes and social segregation.¹⁰⁵ Moreover, as the criteria and functioning of algorithms are often opaque, individuals might not know that they are being profiled or not understand the potential consequences.

4.3.2.3 Personal integrity: physical, psychological and moral integrity and the intimate sphere¹⁰⁶:

In this sense, a natural person must be free from any interference, both in relation to the body and the mind. Respect for the intimate sphere of the data subject is also an important aspect of safeguarding individuals' integrity, referring to its moral dimension.

In SOCIO-BEE, drones, wearables and smartphones will be used in a way that may have an effect such as monitoring and tracking certain activities. Thus with regard to the individual's intimate sphere, focusing on monitoring tools, including video-surveillance in environments where privacy expectations are high, which could interfere with the data subject's intimate sphere in an excessive way.

¹⁰² European: Article 1, EU Charter of Fundamental Rights: Human dignity is inviolable. It must be respected and protected.; International framework: see UDHR, Preamble, which refers to dignity as an inherent value of each human being, simply as an innate consequence of human existence. In particular, dignity is seen as the core value that underpins human rights to which three basic values refer: liberty, equality and solidarity.

¹⁰³ See ART29WP, 'Opinion 8/2014 on the on Recent Developments on the Internet of Things', WP 223 (2014); ART29WP, WP 185 (fn 69). With regard to the collection of sensitive data likely to cause embarrassment and discomfort to the data subject, see also ART29WP, 'Opinion 2/2010 on online behavioural advertising', WP 171 (2010).

¹⁰⁴ See, FRA (2011). 'Handbook on European non-discrimination law', [Online] Available: <https://fra.europa.eu/en/publication/2011/handbook-european-non-discrimination-law-2011-edition>

¹⁰⁵ See ICO (2017). 'Big data, artificial intelligence, machine learning and data protection'

¹⁰⁶ See article 12 UDHR; article 7 EUCFR ; article 8 ECHR. ;

4.3.2.4 Self-determination and personal autonomy¹⁰⁷

Personal autonomy is protected as an aspect of individual private life and safeguards individuals against a wide range of external interference. Within the use of data, these aspects emerge in both individual and relational contexts and involve freedom of choice, including freedom of movement and action, the free development of human personality and the right to informational self-determination.

With the use of drones in SOCIO-BEE, there could also be the possible adverse effects of continuous and invasive monitoring. They could be considered cases of data processing carried out using video surveillance systems in workplaces and schools or in public spaces¹⁰⁸. Similarly, smartphones are almost always on and strictly personal, so other things like GPS data etc. also count. This may also include the negative impact of devices such as wearables devices as for example using an app specifically for SOCIO-BEE may count as monitoring activity. The use of profiling can also have a possible impact as it may lock data subjects into a specific category and restrict them to their suggested preferences within the SOCIO-BEE platform if there are no good measures in place. Similarly, negative consequences may also derive from data processing operations involving special categories of individuals, such as minors, or sensitive data.

4.3.3 Human Rights Impact Assessment templates

For HRIA, too, there are various templates that depend somewhat on the type of activity being studied. However, the HRIAs do have some common elements as mentioned earlier. From a literature review conducted for this deliverable, two templates emerged that may not only be relevant to SOCIO-BEE, but at the same time provide a comprehensive description of and many resources for conducting a HRIA. What follows is first of all a short overview of several sources that have useful templates. This is followed by a brief discussion of the sources finally chosen. But ultimately most of the information will come from the Danish Institute for Human Rights because it provides very comprehensive manuals for all steps of an HRIA. For the SOCIO-BEE project, those different templates have been scrutinized and a simpler, combined version will be provided only to the extent that some issues are not covered by other IAs that will take place throughout the project lifecycle.

- The Danish Institute for Human Rights
 - o <https://www.humanrights.dk/tools/human-rights-impact-assessment-guidance-toolbox>
- The World Bank
 - o <https://documents1.worldbank.org/curated/en/834611524474505865/pdf/125557-WP-PUBLIC-HRIA-Web.pdf>
- ÖFSE
 - o Baxewanos, Fabiane; Raza, Werner (2013) : Human rights impact assessments as a new tool for development policy?, ÖFSE Working Paper, No. 37, Austrian Foundation for Development Research (ÖFSE), Vienna

¹⁰⁷ See, in particular: article 12 UDHR; article 7 EUCFR; article 8 ECHR.

¹⁰⁸ ICO, 'CCTV code of practice. Draft for consultation' (2014); ART29WP, WP 231, 'Opinion 01/2015 on Privacy and Data Protection Issues relating to the Utilisation of Drones' (2015)

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- https://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP37_Human_Rights.pdf
- Scottish Human Rights Commission
 - <http://www.scottishhumanrights.com/rights-in-practice/human-rights-based-approach/>

At first sight, these sources have good templates that can serve as inspiration for SOCIO-BEE. For SOCIO-BEE they will all serve as inspiration for further work. However, it is the 'Guidance' and 'toolbox' of The Danish Institute for Human Rights that has especially many relevant sections for this SOCIO-BEE model.

4.3.4 Questionnaires

A initial questionnaires will be based on the previous templates and specifically adapted to the needs of SOCIO-BEE. Later on the questions will be checked if they are still applicable to the project and / or if new items should be added / removed. The questionnaire is in Annex. There will also be a screening of all potential stakeholders who will be involved. Depending on these results, additional specific questions will be drawn up if necessary.

4.4 Gender Impact Assessment

4.4.1 Introduction

Gender Impact Assessments are situated within gender equality, which is a fundamental principle of EU law covering all aspects of social life. For the EU, there is a dual approach to gender equality¹⁰⁹ that combines specific measures with gender mainstreaming.¹¹⁰ The definition of gender mainstreaming is therefore the following: “the (re)organization, improvement, development and evaluation of policy processes, so that a gender equality perspective is incorporated in all policies at all levels and at all stages, by the actors normally involved in policy-making”¹¹¹. Gender equality has been formalised at European level over the years and has become a central element of EU policy. GIA is increasingly used to actively take into account the implementation of gender equality when formulating laws, regulations, administrative provisions, policies, programmes and projects.¹¹²

¹⁰⁹ “Gender equality refers to the principle where rights, responsibilities and opportunities are equally accessible and not determined on the basis of sex or gender. It seeks to promote the basic and universally recognised civil, cultural, economic, political and social rights of women and men. Thus, gender equality occurs when the different behaviours, aspirations and needs of women and men are favoured and valued equally. On the other hand, gender discrimination occurs when persons are excluded or restricted from opportunities and treated differently due to belonging to a particular sex or gender” from National Commission for the Promotion of Equality (NCPE). Gender Mainstreaming – in Practice. Step-by-step guide for Gender Impact Assessment [Online] Available: https://ncpe.gov.mt/en/Documents/Projects_and_Specific_Initiatives/Gender_Mainstreaming-in_Practise/gmip_step_by_step.pdf

¹¹⁰ European Institute for Gender Equality. Gender Impact Assessment - Gender Mainstreaming Toolkit. [Online] Available: <https://eige.europa.eu/publications/gender-impact-assessment-gender-mainstreaming-toolkit>

¹¹¹ Council of Europe, 2009. *Equality between Women and Men*. [Online] Available at: http://www.coe.int/t/dghl/standardsetting/equality/02factsheets/Factsheet-Equality_en.pdf

¹¹² National Commission for the Promotion of Equality (NCPE). Gender Mainstreaming – in Practice. Step-by-step guide for Gender Impact Assessment [Online] Available: https://ncpe.gov.mt/en/Documents/Projects_and_Specific_Initiatives/Gender_Mainstreaming-in_Practise/gmip_step_by_step.pdf

“The gender impact assessment is one of the methods for gender mainstreaming. It should be used in the very early stage of any policymaking, i.e. when designing it. The GIA is an ex ante assessment¹¹³ and this implies the integration of a gender analysis at the ‘define’ stage of the policy cycle. The aim is to achieve a significant impact not only on the policy design but also on its planning, in order to ensure adequate equality outcomes”.¹¹³ The application of the GIA is therefore a learning process at the moment. At the moment, the EU Gender Equality Strategy 2020-2025 presents policy objectives and actions with the aim to instill substantial progress towards gender equality by 2025.

The key principles for this strategy are:

- Ending gender-based violence
- Challenging gender stereotypes
- Closing the gender gap within the labour market
- Attain equal participation across different sectors
- Tackle the gender pay and pension gap
- Tackle the gender care gap
- Attain a gender balance in decision making and politics

4.4.2 Requirements

4.4.2.1 What is a GIA?

It is an ex-ante evaluation, analysis or assessment of laws, policy or programme. It can therefore be a preventive tool to identify the likelihood of a given decision having a negative impact on gender equality. The central question of the GIA is: Does a law, policy or programme reduce, maintain or increase the gender inequalities between women and men?¹¹⁴

As stated above, the GIA involves a dual-pronged approach: “the current gender-related position in relation to the policy under consideration, and the projected impacts on women and men once the policy has been implemented. It is important that the assessment is structured, i.e. systematic, analytical and documented”.¹¹⁵

Consequently, in order to avoid the negative impact on gender equality, firstly, the design and planning of the relevant policies must be improved. Secondly, gender equality can also be strengthened through better designed, transformative legislation and policies. This creates an opportunity to both remove or mitigate the discriminatory effects and use it as a tool to define gender equality objectives and formulate policies that proactively promote gender equality. The GIAs is part of a several analytical tools that are available for gender mainstreaming.

Given the recent policy development in the EC (EU Gender Equality Strategy 2020-2025), the obligations contained in GA (art. 33 – Obligation to aim for gender equality and consequences of non-compliance)

¹¹³ European Institute for Gender Equality. Gender Impact Assessment - Gender Mainstreaming Toolkit. [Online] Available: <https://eige.europa.eu/publications/gender-impact-assessment-gender-mainstreaming-toolkit>

¹¹⁴ Ibid., p. 8

¹¹⁵ Ibid.

and the mandatory requirement of Gender Equality Plans (GEP) in Horizon Europe, it is important to mention the specific role of the GEP. The introduction of the Gender Equality Plan (GEP) eligibility criterion aims to support the EU efforts, reflecting the Horizon Europe legal basis which strengthens gender equality as a cross-cutting priority. “A GEP is a set of commitments and actions that aim to promote gender equality in an organisation through institutional and cultural change”.¹¹⁶

The use of GIA has both advantages and disadvantages:

Table 2. Strengths and weaknesses of a GIA¹¹⁷

Strengths	Possible weaknesses
When it is carried out at an early stage of policy development and eventually, throughout the entire policy implementation, then it may be considered to be a key and central tool to redesigning policies from a gender “lens”.	It is a complex process and due to the fact that it is based on judgement, an element of uncertainty exists. However, this may be curtailed by using up to date and relevant statistics.
Departments can improve their efficiency and effectiveness by maximising human resource potential and identifying and addressing local needs more effectively.	Lack of knowledge of gender issues may lead to restrictions in using this tool.

4.4.2.2 Why use a GIA?

While policies, legislation, programmes and projects are often seen as 'gender- and value-neutral'¹¹⁸ by assuming that their formulation and implementation will equally benefit all members of the public, this perspective actually states that these measures will be 'gender-blind' i.e. gender impacts are not taken into account. This term further points to the fact that structural gender inequalities do exist in society where, for example, women, despite all efforts, are still disadvantaged on a daily basis in different contexts. Gender impact assessments are therefore the first step toward avoiding such unintended effects.

There exists several toolkits for gender mainstreaming in the EU. Firstly, there is the Gender Mainstreaming Toolkit from the European Institute for Gender Equality (EIGE) which recognizes e.g. four additional ways that GIAs can provide added value: 1) “a tool to strengthen gender equality” 2) “contributes to making better policy and legislation, since it provides information about the foreseen result” 3) (...) “policymaking and legislative work that is more relevant for society, because it is responsive to the needs of all citizens” 4) (...) “allows policymakers etc. to see the challenges in terms of gender equality and to identify actions needed to bridge the gender gaps”.

¹¹⁶ European Commission, ‘Horizon Europe guidance on gender equality plan’, [Online], Available at: <https://op.europa.eu/en/publication-detail/-/publication/ffc06c3-200a-11ec-bd8e-01aa75ed71a1/language-en/format-PDF/source-232129669>

¹¹⁷ National Commission for the Promotion of Equality (NCPE). Gender Mainstreaming – in Practice. Step-by-step guide for Gender Impact Assessment [Online] Available: https://ncpe.gov.mt/en/Documents/Projects_and_Specific_Initiatives/Gender_Mainstreaming-in_Practise/gmip_step_by_step.pdf, p. 27

¹¹⁸ This has been highly contested by gender literature.

Secondly, there are also other toolkits that deal more specifically with research projects and academic contexts. One such tool is the Gender Equality in Academia and Research (GEAR) tool, which provides both universities and research organisations with practical advice and resources. This applies to all phases of institutional change, from setting up a gender equality plan to evaluating its actual impact. This tool takes an intersectional approach.¹¹⁹ Different areas and themes can be addressed in a GEP where the GEAR tool can be used.

Specifically for Horizon 2020 project the checklists of among others Gendered Innovation project¹²⁰ tool is also suggested by the EC via the H2020 manual to integrate the gender dimension in your project.

Finally, there is the Toolkit – Gender in EU-funded research¹²¹. This toolkit “clearly explains and provides guidance on how to integrate gender in research. It addresses both the gender dimension of research content (with case examples from nine different scientific fields) and women’s participation in research activities”.¹²² The toolkit and training packages give the research community practical tools to integrate gender aspects into FP7 research, including equal opportunities for women and men and the gender dimension of research, thereby contributing to excellence in research.

4.4.2.3 Who will use a GIA?

There is no specific model or way to conduct a GIA as it depends both on the setting and the different actors involved in conducting the GIA. For instance, it can be carried out by officials from different institutions or gender equality units. However, it also happens that it is part of a broader impact assessment. Thus, social, economic or data-related IA can also take place. In this case it is important not to lose the relevance of the GIA within the broader IA.

In case of the SOCIO-BEE project, there will be a Gender Focal Point (María López Belloso) who will make sure that all criteria are fulfilled in relation to gender mainstreaming and will be the contact point if training on gender equality and diversity is needed.

¹¹⁹ Intersectionality in this approach indicates the following: “Analytical tool for studying, understanding and responding to the ways in which sex and gender intersect with other personal characteristics/identities, and how these intersections contribute to unique experiences of discrimination. Gender analysis considers the different experiences of women and men depending on their different characteristics, such as age, socioeconomic background, poverty, race, ethnicity, location (rural/urban), disability, sexual orientation (lesbian, gay, bisexual, transgender and others) or religion. This intersectional analysis of the characteristics that affect women’s and men’s daily lives is essential to understand inequality”. Excerpt from: European Institute for Gender Equality’s terms and definitions, [Online] Available at: <https://eige.europa.eu/gender-mainstreaming/toolkits/gear/terms-and-definitions>

¹²⁰ Stanford University, ‘Gendered Innovations’, [Online] Available at: <http://genderinnovations.stanford.edu/researchers.html>

¹²¹ Yellow Window, ‘Gender in EU-funded research – Toolkit and Training’, [Online], Available at: https://www.yellowwindow.com/genderinresearch/index_downloads.html

¹²² EIGE, ‘Gender Equality in Academia and Research - Integration of the sex/gender dimension into research and teaching content’, [Online], Available: <https://eige.europa.eu/gender-mainstreaming/toolkits/gear/integration-gender-dimension-research-and-teaching-content>

4.4.2.4 When would a GIA be needed?

“The Council of the European Union, in its conclusions from 2006, noted that despite some progress toward gender mainstreaming in Member States, gender impact assessment still needs to either be put in place or reinforced. The Council urged in particular to improve and strengthen the development and regular use of gender impact assessment when drafting”:¹²³

- Legislation
- Policies
- Programmes
- Projects

It is thus recognised that GIAs have a broader scope than just being an ex-ante tool for legislation. This can ensure a greater positive impact.

To determine whether a GIA will be necessary, there are two criteria that must be met:

- Target group: whether the ultimate target group is people (women and men), both as individuals and as legal entities.
- Impact on the target group: whether the proposal directly or indirectly affects women and men, regarding their access to and/or control of resources, their social position or the gender-based social rules and norms.

In any case, it is best practice to carry out a gender impact assessment, even if certain policies, programmes and services are deemed not to have a direct and significant effect on the public.¹²⁴

4.4.3 GIA in SOCIO-BEE

Horizon 2020 was the first framework programme to set gender as a cross-cutting issue. Therefore, gender equality concerns all parts of Horizon 2020. The SOCIO-BEE proposal has to pay attention to gender equality from different angles:

- Human resources: balance between women and men in the research teams who will implement your project
- Content: analysing and taking into account the possible differences between men and women, boys and girls, or males and females, in the research and innovation content of your project.

With the new Research & Development programme, Horizon Europe (2021-2027), the European Commission has introduced stricter requirements for promoting gender equality in research grant contracts. For example, a requirement has been introduced to have a Gender Equality Plan (GEP) in all

¹²³ National Commission for the Promotion of Equality (NCPE). Gender Mainstreaming – in Practice. Step-by-step guide for Gender Impact Assessment [Online], p. 11

¹²⁴ The Commission for Gender Equality in the Public Sector. Is a gender impact assessment required? [Online] Available: <https://www.genderequalitycommission.vic.gov.au/is-gender-impact-assessment-required>

public bodies, higher education institutions and research organisations in Horizon Europe Associated Countries and EU Member States applying for calls with a deadline in 2022 or later.¹²⁵

In SOCIO-BEE, gender equality is firstly enshrined in the GA in Article 33 where it is stated that there is an obligation to strive for gender equality. It says the following: “the beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level”.¹²⁶ In more detail, the sex and gender balance strategy was also described: “in line with the concept of RRI [36], SOCIO-BEE will include a gender perspective throughout its work plan, ensuring that gender norms and stereotypes are questioned and avoiding (unconscious) bias and discrimination. SOCIO-BEE will generate gender-specific knowledge, for example, about the different attitudes towards air pollution, the use of innovative technologies, barriers and opportunities experienced by women and men, using this knowledge to develop gender tailored citizen science initiatives and recommendations. It will include several user categories and develop services and solutions to accommodate the specific needs, primarily in line with the goals set in the Union of Equality strategies for 2020-2025 concerning Gender and LGBTIQ Equality. SOCIO-BEE will ensure that an adequate number of women are participating in the innovation action[32]. This is particularly important in the system development, piloting and evaluation, where each of these tasks will need to ensure adequate representation of women. At proposal submission time, there were 19 women in a total 68 total staff identified as key personnel in the SOCIO-BEE project team, i.e. about 28%. The project will also address “gendered innovations”[33] by ensuring that the technology is intuitive and easy to use for all genders, by incorporating gender analysis in user preferences to build interfaces more generally accepted. SOCIO-BEE will be also supported by a) the Gender and Equality Manager (DEUSTO) of the project and b) the Gender, Technology & Law initiative sustained by the VUB Law, Science, Technology and Society Research Group (LSTS) and the Fundamental Rights Centre (FRC)[34]. Finally, gender dimensions are also addressed internally in the project team as a whole but also in the project coordination team (e.g. scientific coordinator is a woman). Moreover, the project in its kick-off meeting, as part of its law and ethics workshop, hold an internal training in sex, gender, and intersectional analysis to strengthen researchers’ skills and promote common understanding at the beginning of the project (DEUSTO is the main coordinator of this initiative as leader of <https://gearingroles.eu/>). The aim of this training was to provide a gender- and equality-mainstreaming perspective upon all the project’s actions[32] and cross-disciplinary experts, which will be further developed into a full strategy in WP6 and specifically Task 6.3 [35] upon the principles of inclusion and diversity. Citizen scientists in SOCIO-BEE, as co-researchers will be actively engaged in all the research stages, from research design to result interpretation and decision making and will be equally involved in trainings to recognize bias and how to avoid malpractice. The project further considers gender-related implications of the devices that will be used, by ensuring that such smart tools will be only used by trained participants in controlled environments and under the close supervision of experts. Additionally, it will develop guidelines for the use of the developed tools after the project, including an extensive Knowledge Powerhouse (T6.2) to store and deliver widely the knowledge achieved

¹²⁵ NCP Flanders, Gender equality in Horizon Europe [Online] Available: <https://ncpflanders.be/infosheets/gender-equality-in-horizon-europe>

¹²⁶ SOCIO-BEE, - GA, p. 52-53

during the project, extending the aspect of gender through the lenses of intersectionality and different grounds of discrimination in the SOCIO-BEE contexts. Lastly but importantly, T6.3 will ensure that tools are developed in line with the principles for inclusive participation, taking into particular account the most vulnerable.”¹²⁷ The Gender Impact Assessment will be done in cooperation with the DUESTO partners as they are leading the discussion around gender issues in the SOCIO-BEE project.

Since SOCIO-BEE has a dimension of citizen science in which diverse groups of people thus participate in the research, it can be said that one of the target groups will be people in SOCIO-BEE. Furthermore, this research will affect both men and women directly and indirectly as participation in scientific research, use of technologies etc., may differ among genders.

4.4.4 Gender Impact Assessment templates

Various templates already exist for Gender Impact Assessments. All templates have in common that they consist of a step-by-step process. After a desk research of the available literature, we list below the most relevant tools and templates.

- Women Engage for a Common Future
 - o <http://www.wecf.org/wp-content/uploads/2019/01/FINAL-GIM-Tool-Jan-19.pdf>
- European Institute for Gender Equality
 - o <https://eige.europa.eu/publications/gender-impact-assessment-gender-mainstreaming-toolkit>
- The Equality Institute
 - o <https://www.equalityinstitute.org/projects/gender-impact-assessment>
- Gendered Innovation Project
 - o <http://genderedinnovations.stanford.edu/methods-sex-and-gender-analysis.html>
- Yellow Window
 - o https://www.yellowwindow.com/genderinresearch/index_downloads.html

The GIA's choice for the SOCIO-BEE project is a combination of: 1) the EIGE roadmap (as this toolkit that draws on best practices and experiences from Member States in the EIGE network), checklists and methods from the Gendered Innovations Project and the Gender in EU-funded research Toolkit and training from Yellow Window. EIGE is an autonomous body of the EU that "established to contribute to and strengthen the promotion of gender equality, including gender mainstreaming in all EU policies and the resulting national policies, and the fight against discrimination based on sex, as well as to raise EU citizens' awareness of gender equality".¹²⁸ This toolkit contains a clear roadmap for carrying out a GIA and has a clear link to the work that the European Commission is carrying out in its own GIA under an integrated approach to IA.

4.4.4.1 Method of the Gender Impact Assessment

A GIA has three assessment phases consisting of:

¹²⁷ SOCIO-BEE – GA – PART B, p. 25-26

¹²⁸ EIGE, 'About EIGE', [Online], <https://eige.europa.eu/about>

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- Gender relevance assessment
- Gender impact assessment
- Gender quality assessment

“The first two stages may be organised into several steps in the performance of a gender impact assessment. The third one, for its part, is closely related not only to the GIA’s own content but also to the design of the internal procedure to ensure the quality of that content”.¹²⁹

Specifically, the GIA process will be organised around the five successive steps:

- Step 1: definition of policy / law / programme / proposal etc. purpose and showing how it connects with gender equality
- Step 2: checking gender relevance
 - o Analysing whether or not the planned activity is likely to impact on gender equality
 - Recommendations from EIGE
 - Analyse the situation of women and men in the field
 - Identify existing gender inequalities
- Step 3: gender-sensitive analysis
 - o Involving a process of analysis to determine the impact (tangible results) that the intervention could have on the effective equality of women and men
- Step 4: weighing the gender impact
 - o Establishing how the measure will contribute to gender equality, as well as to assess the foreseen impact on gender relations
 - Recommendations EIGE: possible criteria
 - Participation of women and men
 - Access to and control of resources
- Step 5: findings and proposal for improvement
 - o Conclusions must be formulated in terms of the impacts on women and men within the target group(s). Furthermore, proposals should be put forward that will promote gender equality in response to the existing situation

An important part of the GIA is also that in addition to carrying out the GIA internally, there is a system in place to check the quality of it, as well as the proposed measures if possible. This allows the GIA to be forwarded to an internal or external partner who has fundamental knowledge and expertise in gender equality. Possible processes to reverse any negative impacts include specific studies on gender in SOCIO-BEE's activities as well as any gender training. These are eligible costs.

¹²⁹ European Institute for Gender Equality. Gender Impact Assessment - Gender Mainstreaming Toolkit. [Online] Available: <https://eige.europa.eu/publications/gender-impact-assessment-gender-mainstreaming-toolkit>

4.4.5 Questionnaires

The questionnaire will be based on previous work in the literature¹³⁰ and will fit the tailored needs of SOCIO-BEE. A questionnaire is ready and is presented in Annex of this deliverable.

5 Conclusion

This document contains the impact assessment model for SOCIO-BEE. The means and mechanisms of IAs were considered and questionnaires were prepared. Four different IAs were examined and the relevant issues and questionnaires from each of these were prepared for SOCIO-BEE.

As the developments within the SOCIO-BEE project are still in progress, the initial questions in the appendix and the methodologies within this document will first be checked to see if they are still valid for the situation at hand during month 20. Subsequently, work will start with the drafting of the IA report.

D6.1 will provide the baseline work to D6.2 (1st Report on Impact Assessment and Recommendations for consortium partners) and D6.3 (2nd Report on Impact Assessment and Recommendations for stakeholders). Those two next deliverables will provide an extensive assessment of the different risks involved in the SOCIO-BEE project. There will be intensive cooperation with all partners for these reports.

¹³⁰ See for instance: EIGE, 2017 Gender Mainstreaming Toolkit

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Annex I: Questionnaire for the SOCIO-BEE Impact Assessment

Dear SOCIO-BEE partner,

The present questionnaire is the part of WP6, T6.1 Legal Compliance, Assessment and Recommendations (Data Protection and Privacy), and more specifically, the SOCIO-BEE D6.1 Impact Assessment Model.

The key legal and ethical issues that might arise out of the project are preliminary described in D3.1 - Report on Legal and Regulatory Requirements and D1.5 - Data Management Plan.

This questionnaire aims to collect information from the partners and, on that basis, to tailor the framework set out in D3.1 and D1.5 with regard to the legal and ethical risks the project poses to the individuals. Depending on the type of IA, the questionnaires will be applicable for all or some SOCIO-BEE partners.

The answers to this impact assessment questionnaire are necessary for us to anticipate the risks and adopt a mitigation strategy for the further development of the technologies, the participation of citizen scientists and vulnerable groups in the project and running pilots. This first questionnaire aims to get a clear overview of the overall intended functioning of the SOCIO-BEE platform, the use of drones, AI and wearables, the particularities of citizen science research together with vulnerable groups, and project as a whole. As the project proceeds, the impact assessment will be repeated on a regular basis and the assessment will evolve towards progress of the project.

This process will ensure that the technologies used in SOCIO-BEE, as well as the participation of citizen scientists and vulnerable groups, and any new aspects thereof, will be tested against the relevant legal, ethical and gender concerns, through the implementation of the impact assessment outcomes by all partners, that it will be compliant with relevant laws and best practices.

As an outcome of this process, a series of recommendations for consortium partners and stakeholders will be provided concerning the implementation of the project (D6.1 1st Report on Impact Assessment and Recommendations for consortium partners, M22 and D6.2 2nd Report on Impact Assessment and Recommendations for stakeholders, M36).

Instructions for completion

- Please read the below instructions carefully prior to completing the questionnaire.
- Please fill in this questionnaire for the impact assessment of your contribution to the project for each WP you are involved in (separately).
- Where a question is accompanied by instructions, please read them carefully. The instruction will provide you with guidance on what information is sought, explain certain terms or refer you to where further guidance can be found. Should a question remain unclear, please reach out to Luka van der Veer (luka.van.der.veer@vub.be) for assistance.
- Please answer each question in as much detail as possible and try to answer each question in plain language. This will avoid the VUB having to reach out to seek clarifications. In the event a certain question cannot be answered because 1) an aspect is still under development, please indicate this clearly and provide, where possible, a brief description of the intended approach or options that are being considered 2) it is not applicable, then you may write that stating why this is not applicable.
- Check in with your Data Protection Officer, if necessary, in order to provide concrete answers, in compliance with your GDPR obligations, if personal data is being processed. Also, mention any relevant Codes of Conduct or certifications.
- Please answer the questions in connection to the specific component(s) that you are developing, contributing to, using or testing, or, where possible and appropriate, in relation to SOCIO-BEE as a whole. If you are answering in connection to SOCIO-BEE as a whole or multiple components, please indicate this clearly and, where possible, separate your answer per component.
- We will review the answers and contact you asap in case if there is any additional information or clarification to be provided.
- Please fill out the questionnaire as soon as possible, but no later than Friday, 16 June 2023.

Structure of questionnaire

This questionnaire has 4 (four) sections divided in accordance with the different impact assessments.

- The first section is devoted to the Data Protection Impact Assessment
- The second section is devoted to the Artificial Intelligence Impact Assessment
- The third section is devoted to the Human Rights Impact Assessment
- The fourth section is devoted to the Gender Impact Assessment

If your organization is involved into several sections, please fill in all the relevant sections.

All the partners should also fill in the table below.

Name of respondent(s):	
Consortium Partner(s):	
Work package:	
Title of the task:	
Task description:	
Name of the tool/solution/method/mechanism/system to be developed:	
Description of the tool/solution/method/mechanism/system to be developed:	
What role will this tool/solution/method/mechanism/system play in relation to other tool/solution/method/mechanism/system (to be developed) in the project?:	
Email contact:	

1 Data Protection Impact Assessment

1.1 Questions related to your role in the project and the technology used

Question 1: Will your organization / company develop any technology or component for the project or contribute thereto?

If yes, please name and describe it.

Input:

Question 2: Will your organizations / company use the technology for the project?

If yes, please name, describe it and specify the source of the technology (developed within the project/received from external suppliers (specify the country of origin)) and the purpose of its use.

Input:

1.2 Requirements related to Data Protection

1.2.1 Scope of processing

Question 3: What is the nature of the data that will be collected? Are the partners able to identify a natural person based on the collected data (as such or combined with other data)?

Reason: Data which relate to an identified or identifiable natural person are personal data. In that case, data protection law becomes applicable.

Input:

Question 4: Will any personal data be collected during the project? If so, please describe the type of data

Where possible, please separate this with respect to the relevant technologies and other data collecting methods (e.g. xx data is collected with xx sensor, xx component will process xx data). The categories below are provided as an example. The categories below are provided for orientation and are not necessarily needed for the purposes of the project. Please specify those relevant to your activities.

- Identification data (e.g. name, last name, data of birth, age, gender, email, phone)
- Personal features
- Financial data
- Physical, physiological or behavioural characteristics of a natural person, allowing or confirming their unique identification (please specify)
- Genetic data
- Biometric data
- Other information regarding health, incl. mental health
- Habits
- Family composition
- Hobbies and interests
- Consumption patterns
- Residence or home address
- Education

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- Occupation and employment
- Social security number
- Racial or ethnic background
- Philosophical or spiritual orientation
- Information on sexual preferences
- Political orientation or opinion
- Membership of trade union or affiliation
- Other memberships
- Video footage
- Other, namely:

Input:

Question 5: If the processing operation includes the processing of personal data, will you process special categories of personal data (“sensitive data”)?

Reason: Special categories of data, such as e.g. health data, political opinion, ethnicity etc fall under the scope of stricter rules as their processing may result in a higher risk to the rights and freedoms of the data subjects. For instance, it may lead to discrimination against them.

Input:

Question 6: Whose personal data is being processed?

Please describe the data subjects, i.e. the (groups of) individuals whose personal data will be collected and processed..

Input:

Question 7: If the processing of personal data occurs, would you be able to estimate the amount of processed data, the number of data subjects involved and the geographical area covered?

Reason: A larger number of processed personal data and data subjects would mean higher severity of impact in case of a data breach. The same if a bigger geographical area is affected.

Input:

Question 8: If the processing of personal data occurs, how frequently will the data be collected?

Reason: More frequent collection entails a larger number of data and higher severity of impact in case of a data breach.

Input:

Question 9: If the processing of personal data occurs, how long will you store the data? What will happen with the personal data afterwards [art.5 GDPR]?

Reason: The data should be kept no longer than the period necessary for the purposes pursued

Input:

1.2.2 Data controller(s) and data processor(s)

Question 10: Who is in charge of the processed personal data and who decides how the data will be used [art.24 GDPR]? Who determines the purposes and the means of the processing operation(s)? Please indicate the full contact details of the data controller(s) or joint controllers [art.27 GDPR].

Reason: The controller is held accountable for the processing operation. The determination of the data controller is also of paramount importance for the effective enforcement of the data subjects' rights. Thus, the roles and responsibilities of the controller(s) and processor(s) should be clarified.

Input:

Question 11: If the processing of personal data occurs, will you hire a data processor? If yes, please provide a justification of this decision and include full contact details, information about the implemented technology, and if applicable, the data processing contract [art.28-29 GDPR].

Reason: The data processor processes data on behalf of the data controller. The role of data processors should be explicitly discussed in terms of a contract, which ensures that processing will be carried out in line with the controller's instructions and the applicable data protection law.

Input:

Question 12: How do you demonstrate compliance with data protection law, including the measures that you take in order to ensure that the data processors also comply? Do you or/and the data processor(s) have appointed a DPO [art.37 GDPR] or/and did you conduct a DPIA [art.35 GDPR]? Do you adhere to any approved Code of Conduct [art.40 GDPR] or a certification scheme [art.42 GDPR]?

Reason: The principle of accountability is a cornerstone in GDPR. The data controller must proactively demonstrate compliance with data protection law.

Input:

Question 13: What security measures do you implement in order to ensure data security and integrity [art. 32 GDPR]?

Reason: Appropriate technical and organisational measures should be put in place to guarantee a suitable level of security. This includes measures for secure storage, transfer and access to the personal data as well as precautions against cyberattacks and unauthorised access

Input:

Question 14: What Privacy Enhancing Technologies (PETs) are used and if so, how? What Data Protection by Design and by Default techniques are implemented [art.25 GDPR]?

Reason: The data controllers must have in place a system of ICT measures which eliminate or minimise personal data, thereby preventing unnecessary or unauthorised processing, for instance, encryption or anonymisation.

Input:

Question 15: If processing of personal data occurs, is the access to the personal data restricted? What are the rules of access (with special attention to its conditions, mode, and limits) [art.5 GDPR]?

Reason: The details of processing operations should be clarified and documented (via, e.g. logs, permissions).

Input:

1.2.3 Nature, purposes and context of data processing

Question 16: Please describe the data processing, with special attention to the method and the tools (e.g. cloud computing solution) to be used. Be specific about the source of the data (from data subjects, other partners/sources) and the ways you will collect (sensors/ video recordings/ software/ questionnaires/ other means), use, store (e.g. office servers, cloud, third parties) and delete them [art.35 GDPR].

Reason: The systematic description of the envisaged data processing operation is a minimum requirement for a DPIA and a crucial element for any further analysis.

Input:

Question 17: What is your lawful basis for processing [art.6 GDPR]?

Reason: Every personal data processing activity under the GDPR must have a legal basis

Input:

Question 18: Where the processing is based on consent, will it be possible to demonstrate that the data subject has consented to the processing of his or her personal data [art.7 GDPR]? how do you guarantee that the consent is informed, specific and freely given?

Reason: This condition is of utmost importance for the accountability of the data controller as well as the assessment of whether consent was given under the necessary conditions (freely given, specific, informed).

Input:

Question 19: If processing personal data, what is the purpose of that? What are the expected benefits of the processing for you, as a data controller, and more broadly? [art.5 GDPR]

Reason: The processing of personal data shall be conducted for fulfilling specified purposes.

Input:

Question 20: Does the processing actually achieve your purpose? Is there another way to achieve the same outcome? In other words, is the processing of personal data really necessary to achieve the purpose identified above? Why would other means (mock data, anonymous data set, fewer variables of personal data) be less satisfactory to achieve the same outcome?

Reason: The question is about necessity and proportionality. The processing must be necessary and proportional for the intended purpose. This question is also asked to make sure that there is compliance with the data minimisation principle.

Input:

Question 20: What types of processing identified as likely high risk are involved?

Reason: Since the GDPR requires the data controller to perform a DPIA for this type of processing activities.

Input:

Question 21: What is the nature of your relationship with the individuals whose personal data will be collected? Would they have a reasonable expectation that their data are used this way?

Reason: In order for some legal grounds to be applicable and the data subjects to be able to enforce their rights and freedoms fully, it is important that the data subjects have a reasonable expectation that their data are processed

Input:

Question 22: Is the processing activity novel in any way? Are there prior concerns over this type of processing or any known security flaws?

Reason: Compliance of a novel processing activity may be challenging. Therefore, assessing a technological application in its infancy may require the input of external experts

Input:

Question 23: How do you document your processing operations? Who has access to this documentation and up to what extent?

Reason: Record-keeping and appropriate documentation may improve the process for the identification of risks both for the controller and the supervisory authority. However, unauthorised access to this documentation may pose security risks

Input:

1.2.4 Data subjects

Question 24: If processing personal data, how do you ensure that data subjects can exercise their rights?

Reason: Proper documentation should be kept and a platform of communication where data subjects can practice their rights should be established.

Input:

The data controller provided information to the data subject [art.13-14 GDPR]. Please describe methods to be used to provide information to the data subjects, including content and communication platform.

Is the right of access by the data subject guaranteed, and how? [art.15 GDPR]

Is the right to rectification guaranteed, and how? [art.16 GDPR]

Is the right to erasure guaranteed, and how? [art.17 GDPR]

Is the right to restriction of processing guaranteed, and how? [art.18 GDPR]

Is the right of data portability guaranteed, and how? [art.20 GDPR]

Is the right to object to processing guaranteed, and how? [art.21 GDPR]

If applicable, is the right to object to a decision based solely on automated processing, including profiling, guaranteed, and how? [art.22 GDPR]

Question 25: Have you adopted or will you adopt procedures for dealing with data breaches and notification of breaches to the national supervisory authority or to the affected individuals, if applicable [art.33-34 GDPR]?

Reason: The data controller is responsible, for reasons of transparency and accountability, to establish communication and notification procedures of a data breach, depending on its scale. Please specify any technical measures (e.g. specific email address for requests, software or in-built secure system allowing data subjects to access their own personal data in a transparent way) and organisational measures (e.g. who will provide information to the data subjects) that will be put in place?

Input:

Question 26: If processing personal data, how will the collected data meet the requirements of data quality (accuracy, integrity, up-to-date) and data minimisation (adequacy, relevance and storage limitation)? How do you ensure that data will remain accurate when disclosing it to third parties? [art.5 GDPR]

Reason: The processed data should be relevant and accurate. SOCIO-BEE should only collect those types of personal data which are necessary to reach the goal of the processing; furthermore, the processed data must be accurate and kept up to date.

Input:

1.2.5 Identification of risks and mitigation measures

Question 27: Describe the sources of potential risk and the nature of the potential impact on individuals

Reason: Proper documentation of potential risks can help better understand and assess the impact on individuals and integrate proactive mitigation measures into the project plan.

Source:

The likelihood of harm: remote, possible or probable

The severity of harm: minimal, significant or severe

The overall risk: low, medium or high

Question 28: Identify envisaged measures to reduce or eliminate the risks depicted as medium or high in the previous question.

Reason: Proper documentation of the additional measures can help the data controller identify whether there is a need to seek the advice of the DPO or consult with the supervisory authority (accepted residual risk).

Risk (Illegitimate access to data; Unwanted change of data; Disappearance of data):

Options to reduce or eliminate risk:

Effect on risk: eliminated, reduced or accepted

Residual risk: low, medium or high

Measures: approved or not approved

Question 29: In line with the research ethics and the principles of fair and transparent data processing, should SOCIO BEE researchers consider to render the datasets available for future research, they should obtain the additional, explicit consent of the data subjects (and their legal guardians) to the secondary use of the data. Data subjects must be explicitly given the opportunity to opt out from such further processing. What measures will your organisation or company take to meet these conditions?

Input:

1.2.6 Processing of vulnerable groups

Question 30: Regarding the processing of personal data of children and elderly persons, according to GDPR, children are considered ‘vulnerable data subjects’ [Recital 38 GDPR] and therefore all actions concerning them should take the child’s best interests into primary account. This means that if you process children’s personal data, then you should think about the need to provide the specific protection required by Recital 38 from the outset and design your processing, products and systems with this mind. It is usually easier to incorporate child friendly design into a system or product as part of your initial design brief than to try and add it in later. Such specific protection should, in particular apply to the use of personal data of children for the purposes of marketing or creating personality or user profiles and the collection of personal data with regard to children when using services offered directly to a child.

If you would process personal data of children, do you have any specific measures in place that take the child’s best interest into primary account as stated above?

If you are considering profiling children for marketing purposes then you should take into account the following comments from the Article 29 Data Protection Working Party Guidelines on Automated Individual decision-making and Profiling for the purposes of Regulation 2016/679 that “Because children represent a more vulnerable group of society, organisations should, in general, refrain from profiling them for marketing purposes.”

Input:

Question 31: As with children, when processing personal data of elderly and disabled people, specific attention should also be paid to their protection. Considering the previous question, if you process personal data of elderly and disabled people, have you taken any specific measures? If so, which?

Input:

1.3 Privacy

1.3.1 Privacy requirements

Question 32: Do you think the technology might impact the privacy of individuals (such as victims of people living in the area of disaster)?

If yes, please go to the next question.

Input:

Question 33: What types of privacy of the individual does your technology potentially impact and how?

Input:

Question 34: Is the impact on the privacy of individuals adequate and necessary to achieve the purpose of SOCIO-BEE? Or are there less invasive solutions which can be used to achieve the same purpose effectively?

This relates to the necessity of the use of certain technologies.

Input:

Question 35: What measures are implemented to ensure a balance is struck between the potential intrusion of privacy resulting from the technology and the intended benefits from the technology?

Such potential intrusion could be limited by, for instance, the type of equipment used, the duration of such use and limiting where such equipment is used and who has access to the footage captured by the sensor or other technology used.

Input:

Question 36: In relation to limiting the potential intrusion of privacy, will the access to personal data be restricted? What are the rules of access?

Input:

Question 37: In relation to limiting potential intrusion of privacy, can the features of the technology be programmed on a case-by-case basis?

This relates to the proportionality in the use of technologies, i.e. the level of intervention should be restricted to what is really needed for a particular person in a particular situation.

Input:

Question 38: Is unused data deleted automatically? If so, when and how often does this occur?

Regular deletion of data reduces the privacy risks as a result of malevolent action of others (e.g. that someone would be able to access and steal data).

Input:

Question 39: Is there a risk that the technology (either the system itself or technologies used for data gathering) will pick up activity from others than those testing or using the TeNDER system? If so, how is this addressed?

Input:

2 Artificial Intelligence Impact Assessment

2.1 Description and analysis of the type of product/service, including related data flows and data processing purposes

Question 1: What are the main features of the product/service?

Input:

Question 2: Identification of rights-holders: who are the target-users of the product/service?

Input:

Question 3: What types of data are collected (personal, non-personal, special categories)?

Input:

Question 4: What are the main purposes of data processing?

Input:

Question 5: Identification of the duty-bearers: which subjects are involved in data management and what is their role in data processing?

Input:

Question 6: Which objectives are pursued by using the AI system?

- What social, political or administrative goals are pursued by the use of the AI system?

Input:

2.2 Human rights context

2.2.1 Identifying potential Human Rights and impacts

Question 7: Fundamental right: Does the algorithm touch (or threaten to touch) a fundamental right? This question is to be explored together with VUB.

- Person-related fundamental rights (including a number of social and economic fundamental rights)
- Freedom-related fundamental rights
- Equality rights
- Procedural fundamental rights

See annex for additional information

Input:

Question 8: Is there any specific legislation applicable to the fundamental right in question that should be taken into account? This question is to be explored together with VUB.

See already D3.1 Report on Legal and Regulatory Requirements

Input:

2.2.1.1 Human dignity

Question 9: How, if at all, could this system prompt confusion or uncertainty in rights-holders about whether they are interacting with an AI system rather than a human being?

Input:

Question 10: How, if at all, could this system expose rightsholders to humiliation (i.e put them in a state of helplessness or insignificance; deprive them of a sense of individual identity)?

Input:

Question 11: How, if at all, could the system expose rightsholders to instrumentalization or objectification (treating them solely as exchangeable, as statistical aggregates, as means to ends, or as objects to be freely manipulated or steered)?

Input:

Question 12: In what other ways, if any, could the use of this system adversely impact the dignity of affected rights-holders?

Input:

2.2.1.2 Human Freedom and Autonomy

Question 13: How, if at all, could the system adversely affect or hinder the abilities of rights-holders to make free, independent, and well-informed decisions about their lives or about the system's outputs?

Input:

Question 14: How, if at all, could the deployment of the system result in the arbitrary deprivation of rights-holders' physical freedom or personal security, or the denial of their freedoms of expression, thought, conscience, or assembly?

Input:

Question 15: In what other ways, if any, could the use of this system adversely impact the freedom or autonomy of affected rights-holders?

Input:

2.2.2 Right to psychological and physical safety

Question 16: - Does the AI system have adequate data security and cybersecurity measures in place?

Input:

2.2.3 Non-discrimination

Does the AI system potentially negatively discriminate against people on the basis of any of the following grounds (non-exhaustively): sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation?

Question 17: Have you put in place processes to test and monitor for potential negative discrimination (bias) during the development, deployment and use phases of the AI system?

Input:

Question 18: Have you put in place processes to address and rectify for potential negative discrimination (bias) in the AI system?

Input:

2.2.4 Personal data protection and privacy

Question 19: Can the AI system be used for monitoring and surveillance purposes? If yes, is this monitoring continuous or can the user stop it?

Input:

Question 20: Have you put in place processes to assess in detail the need for a data protection impact assessment, including an assessment of the necessity and proportionality of the processing operations in relation to their purpose, with respect to the development, deployment and use phases of the AI system?

Input:

Question 21: Have you put in place measures envisaged to address the risks, including safeguards, security measures and mechanisms to ensure the protection of personal data with respect to the development, deployment and use phases of the AI system?

Input:

2.2.5 Protection of children

Does the AI system respect the rights of the child, for example with respect to child protection and taking the child's best interests into account?

Question 22: Have you put in place processes to address and rectify for potential harm to children by the AI system?

Input:

Question 23: Have you put in place processes to test and monitor for potential harm to children during the development, deployment and use phases of the AI system?

Input:

2.2.6 Freedom of expression and information

Question 24: Have you put in place processes to test and monitor for potential infringement on freedom of expression and information, and/or freedom of assembly and association, during the development, deployment and use phases of the AI system?

Input:

Question 25: Have you put in place processes to address and rectify for potential infringement on freedom of expression and information, and/or freedom of assembly and association, in the AI system?

Input:

Question 26: Is the AI system able to transmit content to the user?

Input:

Question 27: Which kind of relationships is the AI system able to create with the user?

Input:

Question 28: Does AI system share any value-oriented messages with the user? If yes, what kind of values are communicated? Are these values customisable by users (including parents) or on the basis of user interaction? If so, what range of alternative value sets is provided? Are these values the result of work by a design team characterised by diversity?

Input:

2.3 Controls in place

Question 29: What policies and procedures are in place to assess the potential impact on human rights, including stakeholder engagement?

Input:

Question 30: Has an impact assessment already been carried out, developed and implemented in relation to specific issues or some features of the product/service?

Input:

2.4 Stakeholder engagement

Question 31: Which could be the main groups or communities potentially affected by the service/product, including its development?

Input:

Question 32: What other stakeholders could be involved, in addition to affected community and groups, (e.g. civil society and international originations, experts, industry associations, journalists)?

Input:

Question 33: Are there any other duty-bearers to be involved, apart from the product/service developer (e.g. national authorities, governmental agencies)?

Input:

Question 34: Are there any other duty-bearers to be involved, apart from the product/service developer (e.g. national authorities, governmental agencies)?

Input:

Question 35: Has the developer conducted an assessment of its supply chain to identify whether the activities of suppliers/contractors involved in product/service development might contribute to adverse human rights impacts? Has the developer promoted human rights standards or audits to ensure respect for human rights among suppliers?

If yes, were business partners, including suppliers (e.g. subcontractors in AI systems and datasets) also involved in the assessment process?

Input:

Question 36: Do the product/service developers publicly communicate the potential impacts on human rights of the service/product?

Input:

Question 37: Does the developer provide training on human rights standards for relevant management and procurement staff?

Input:

2.5 Assessment List for Trustworthy Artificial Intelligence (ALTAI) for self-assessment

Together with the VUB, the partner will use an online tool developed by High-Level Expert Group on Artificial Intelligence¹³¹ set up by the European Commission to help assess whether the AI system that is being developed, deployed, procured or used, complies with the seven requirements of Trustworthy AI, as specified in our Ethics Guidelines for Trustworthy AI¹³².

The tool is available at: <https://altai.insight-centre.org/>

¹³¹ European Commission, 'High-level expert group on artificial intelligence', [Online], Available at: <https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai>

¹³² European Commission, 'Ethics guidelines for trustworthy AI', [Online], Available at: <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>

3 Gender Impact Assessment

3.1 Initial checklist for gender in research

3.1.1 Equal opportunities for women and men in research

Question 1: Is there a gender balance in the project consortium and team, at all levels and in decision-making positions?

Input:

Question 2: Do working conditions allow all members of staff to combine work and family life in a satisfactory manner?

Input:

Question 3: Are there mechanisms in place to manage and monitor gender equality aspects, e.g. workforce statistics, as required by FP7?

Input:

3.1.2 Gender in research content

3.1.2.1 Research ideas phase:

Question 4: If the research involves humans as research objects, has the relevance of gender to the research topic been analysed?

Input:

Question 5: Have you reviewed literature and other sources relating to gender differences in the research field?

Input:

3.1.2.2 Proposal phase:

Question 6: Does the methodology ensure that (possible) gender differences will be investigated: that sex/gender differentiated data will be collected and analysed throughout the research cycle and will be part of the final publication?

Input:

Question 7: Have possibly differentiated outcomes and impacts of the research on women and men been considered?

Input:

3.1.2.3 Research phase:

Question 8: Are questionnaires, surveys, focus groups, etc. designed to unravel potentially relevant sex and/or gender differences in your data?

Input:

Question 9: Are the groups involved in the project (e.g. samples, testing groups) gender-balanced? Is data analysed according to the sex variable? Are other relevant variables analysed with respect to sex?

Input:

3.1.2.4 Dissemination phase:

Question 10: Do analyses present statistics, tables, figures and descriptions that focus on the relevant gender differences that came up in the course of the project?

Input:

Question 11: Are institutions, departments and journals that focus on gender included among the target groups for dissemination, along with mainstream research magazines?

Input:

Question 12: Have you considered a specific publication or event on gender-related findings?

Input:

3.1.3 Citizen (scientists) involvement

Question 13: How will the consortium ensure that citizen scientists that will be involved in the deliberative processes represent both men's and women's interests?

Input:

Question 14: Will gender differences be explicitly addressed in the discussions and during possible workshops, conferences, ...?

Input:

Question 15: Will the consortium achieve a balanced representation of men and women among the participants and speakers in workshops, conferences, ...?

Input:

3.1.4 Multistakeholder involvement

Question 16: How will SOCIO-BEE verify that the mechanisms set up for dialogue and debate have not built-in gender biases?

Input:

Question 17: How will SOCIO-BEE seek and ensure the involvement of both men's and women's participation in the dialogues?

Input:

Question 18: Will there be criteria and indicators in place to monitor the respective stakeholders' participation in and contributions to the dialogue?

Input:

3.2 GIA steps

3.2.1 Definition of research project

Question 19: What social issue is being addressed by SOCIO-BEE?

Input:

Question 20: Why is this research project being considered for this particular situation?

Input:

Question 21: Is the intervention that SOCIO-BEE includes, intended to contribute to gender equality?

Input:

Question 22: How is SOCIO-BEE intended to contribute to gender equality?

Input:

Question 23: What are the existing gender equality objectives in the research fields within SOCIO-BEE?

Input:

3.2.2 Checking for gender relevance

Question 24: Will SOCIO-BEE directly impact its target groups? Does it affect people's access to resources in a way (funding, jobs, ...)?

Input:

Question 25: Will SOCIO-BEE indirectly impact its target groups? Does it affect the means of provision of certain resources or services (access to resources via services, institutions, structures, ...)?

Input:

3.2.3 Gender-sensitive analysis

Question 26: What are the expectations and needs of the target groups?

Input:

Question 27: Are these expectations different from women and men?

Input:

Question 28: Is SOCIO-BEE addressing the needs of both women and men, taking into account their different interests, roles and positions?

Input:

Question 29: How can the contribution to the needs of women and men be strengthened?

Input:

Question 30: In what ways could existing inequalities between women and men in terms of access to resources (e.g. work, money, power, health, well-being, security, knowledge, education, mobility, time, ...) be changed by SOCIO-BEE?

Input:

Question 31: In what way could the exercise of fundamental rights (civil, social and political rights) on the basis of sex or because of roles attributed to women and men (gender roles) be changed by SOCIO-BEE?

Input:

4 Human Rights Impact Assessment

4.1 Principles

4.1.1 Participation

Question 31: How does SOCIO-BEE ensure that rights holders (people whose rights are affected) have an influence on and participate in the development of these activities? How do rights holders feel that their opinions are listened to, even if a contrary decision is made?

Input:

Question 32: Is there a policy for participation in these activities? How is that policy employed across all activities? What mechanism do you have for determining how participation will be considered in each piece of work?

Input:

Question 33: Does SOCIO-BEE take into account representation: 1) Geographically 2) Across all protected characteristics 3) From seldom heard groups?

Input:

Question 34: How does SOCIO-BEE seek to overcome barriers to participation for these groups?

Input:

Question 35: How does SOCIO-BEE ensure information is presented in a format which rights holders are able to understand? For example, Easy Read, Plain English, BSL or other formats may be required.

Input:

Question 36: How does SOCIO-BEE involve the relevant duty bearers (people and organisations with human rights obligations) in each activity?

Input:

4.1.2 Accountability

Question 37: Can SOCIO-BEE identify duty bearers (people and organisations with human rights obligations) in each activity?

Input:

Question 38: How does SOCIO-BEE use/create mechanisms to hold those duty bearers to account?

Input:

Question 39: How does SOCIO-BEE identify the most important capacity gaps in duty bearers to meet their obligations?

Input:

Question 40: How does SOCIO-BEE monitor and evaluate the impact on human rights outcomes over time

Input:

4.1.3 Non-discrimination and equality

Question 41: How does SOCIO-BEE identify the impact of activities on protected characteristics (age, disability, gender reassignment, race, religion or belief, sex, sexual orientation, marriage and civil partnership, and pregnancy and maternity), and other marginalized groups?

Input:

Question 42: How are their needs taken into account, both in participation (see above) and in ensuring their issues are reflected throughout the work?

Input:

Question 43: How does SOCIO-BEE address issues of universal accessibility (making things accessible for all groups of people) and reasonable accommodation (making adjustments so that things are accessible to a particular individual)?

Input:

Question 44: How does SOCIO-BEE check and ensure the accessibility of SOCIO-BEE's own materials for groups with particular needs

Input:

4.1.4 Empowerment

Question 45: How does implementation of activities contribute towards building the capacity of rights holders (people whose rights are affected) to claim their rights (e.g. ability to access information, organise, advocate policy change and get access to justice etc?)

Input:

Question 46: How do people know about how they can participate in SOCIO-BEE's work? How available is this information?

Input:

Question 47: How does SOCIO-BEE empower people to know and claim their rights? What information would be provided to rights holders about their human rights?

Input:

Question 48: How does SOCIO-BEE identify the most important capacity gaps in each activity that constrain rights holders from claiming their rights?

Input:

4.1.5 Legality

Question 49: What human rights are affected by SOCIO-BEE's activity?

Input:

Question 50: How does SOCIO-BEE ensure that furthering these rights is the aim of the activity?

Input:

Question 51: How does SOCIO-BEE use relevant human rights standards and recommendations of regional and international human rights mechanisms to inform each activity?

Input:

Question 52: How is implementation tied to those priorities?

Input:

Question 53: How does SOCIO-BEE's work address the full range of civil, political, economic, social, and cultural rights?

Input: