

An analysis of the Social Impact Assessment family of methods

Towards the development of a mission-driven SIA tool

Sebastiaan van Nijen

First supervisor: Dr. Sergio España
Second supervisor: Vijanti Ramautar

A thesis presented for the degree of
Master of Science



Universiteit Utrecht

Business Informatics
Utrecht University
The Netherlands
November 9, 2021

Abstract

Over the past decades, Social Impact Assessment (SIA), which measures the social consequences of an organisation's project, program, or policy has shifted from its traditional context in project development to a more recent variant of SIA, where it is employed in the third and fourth sector by mission-driven organisations, which we refer to as mission-driven SIA. As organisations are experiencing growing pressure to demonstrate their impact on societal issues and the demand for conducting SIA increased, many SIA methods and tools that enable these methods have been created. Within the domain of SIA, there is a lack of consensus and established standards and a lack of research on rationale on the subdivisions of Impact Measurement families. This research aims to increase the academic understanding of Social Impact Assessment by providing the groundwork for a standard language to specify SIA methods, where we extend the open-source tool openESEA, which currently supports the specification of Ethical, Social, and Environmental Accounting (ESEA) methods. For this, we propose a new classification system to analyse and compare SIA methods. By modelling and comparing existing SIA methods, we create a generic model that gives us an overview of the main features of SIA. With these features, which includes a Theory of Change, correction mechanisms and indicators, we extend the meta-model of openESEA and its accompanying DSL which can be used to specify SIA methods. Additionally, we conduct a market analysis on the Dutch government-commissioned SIA method the Impact Path and find that practitioners are generally positive about the method, but it requires more collaboration, development, and extension to become the SIA method the government aims it to become.

Keywords: Social Impact Assessment, Impact Measurement, Method engineering, Model-driven tool, Domain-Specific Language, Process-Deliverable Diagram, Impact Path

Acknowledgements

This thesis report presents the culmination of my Business Informatics Master program at Utrecht University. Over the past two years, I have learned a tremendous amount of new things from the professors during their courses and from my peers during collaboration on assignments.

First and foremost, I would like to thank and express my gratitude towards Dr. Sergio España. After finishing my bachelor thesis under his supervision, I instantly knew that I would also want to conduct my Master's thesis within his research line under his supervision. A significant part of my academic growth and the knowledge I have gained can be attributed to his guidance and support. Although unfortunately, we have not been able to meet in an offline setting during this thesis project, the enthusiasm, energy, and wisdom that he brought to our meetings inspired and motivated me to continue working, work rigorously and strive for high quality. I can definitely say it has been a pleasure to work with him over the past years and I hope this research line can offer many more valuable academic contributions.

Secondly, I would like to thank my second supervisor Vijanti Ramautar, who was always directly available to answer any questions and offered me valuable insights and support during our weekly meetings. Much of what we have done in our work is inspired by her earlier research on ESEA, which has been a tremendous help for me.

Next to that, I would like to thank Lars Lensink and Friso Liezenberg, two Information Science bachelor students with whom I have collaborated in this project and who have helped me out on many occasions in the past year. Overall, it was a pleasure to work in this research group and I am proud of the work that we have been able to deliver.

Lastly, I would like to thank all the impact researchers, managers, consultants, and practitioners who I have interviewed during this research. Their input has been very helpful for my general understanding of the domain of SIA and for the validation of my deliverables.

Contents

1	Introduction	12
1.1	Problem statement	12
1.2	Main goal	13
2	Research questions	15
3	Research method	15
3.1	Literature review	15
3.1.1	Literature search	15
3.1.2	Investigating the current state-of-the-art of SIA	18
3.1.3	Investigating the Impact Path	19
3.1.4	Identifying characteristics of Impact Measurement Methods	19
3.1.5	Finding SIA methods	20
3.2	Practice analysis	20
3.2.1	Classifying SIA methods	20
3.2.2	Method Comparison	21
3.2.2.1	Method selection	21
3.2.2.2	Method modelling	21
3.2.2.3	Development of super-method	21
3.2.2.4	Comparison of methods	22
3.2.3	Model validation	22
3.2.4	Impact Path investigation	23
3.3	Requirements elicitation	23
4	Literature review	24
4.1	Investigation of the domain of Social Impact Assessment	24
4.1.1	History and context of Social Impact Assessment	24
4.1.1.1	Ethical, Social, and Environmental Accounting (ESEA)	24
4.1.1.2	Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA)	24
4.1.1.3	Life Cycle Assessment (LCA)	25
4.1.1.4	Other forms of Impact Assessment	26
4.1.2	Defining Social Impact	26
4.1.2.1	Existing definitions of Social Impact	26
4.1.2.2	Impact Value Chain	27
4.1.2.3	Correction mechanisms	28
4.1.3	Motivations for using SIA	29
4.1.3.1	Development-driven SIA	29
4.1.3.2	Mission-driven SIA	30
4.2	Challenges in the domain of Social Impact Assessment	32
4.2.1	CH1. Lack of consensus and established standards	33
4.2.2	CH2. Lack of a system to classify SIA models	33
4.2.3	CH3. Lack of legislation	34
4.2.4	CH4. Time- and resource-consuming	34
4.2.5	CH5. Lack of experience of practitioners in social matters	34
4.2.6	CH6. Issues with data collection and analysis quality	35
4.2.7	CH7. Transnational issues (Issues due to cultural, national differences)	35
4.2.8	CH8. Inadequate public participation	35
4.2.9	CH9. Difficulties in measuring and reporting on impact	36
4.2.10	CH10. Responsibility and accountability	36
4.2.11	CH11. Research dependency	36
4.2.12	CH12. Greenwashing	37

4.3	Characteristics of IM/SIA methods	38
4.3.1	Purpose	38
4.3.1.1	Assessment purpose	38
4.3.1.2	Target audience for the report	38
4.3.2	Approach	39
4.3.2.1	Stages	39
4.3.2.2	Monetisation	39
4.3.2.3	Time frame	39
4.3.2.4	Data typology	39
4.3.3	Scope	39
4.3.3.1	Impact typology	39
4.3.3.2	Impact Value Chain	40
4.3.3.3	Unit of analysis	40
4.3.3.4	Prescribes topics	41
4.3.3.5	Industry sector	41
4.3.4	Defining Social Impact	41
4.3.4.1	Impact goal	41
4.3.4.2	Temporal scope	41
4.3.4.3	Intention	41
4.3.4.4	Level	42
4.3.4.5	Correction mechanisms	42
4.3.4.6	Impact score	42
4.4	The Impact Path	43
4.4.1	Classifying factors of organisational resistance	44
5	Classification of SIA methods	46
5.1	Method selection	46
5.2	Classifying existing SIA methods	46
5.2.1	Purpose	47
5.2.1.1	Assessment purpose	47
5.2.1.2	Target audience for report	48
5.2.2	Approach	49
5.2.2.1	Stages	49
5.2.2.2	Monetisation	49
5.2.2.3	Time frame	50
5.2.2.4	Data typology	50
5.2.3	Scope	51
5.2.3.1	Impact typology	51
5.2.3.2	Impact Value Chain	51
5.2.3.3	Unit of analysis	52
5.2.3.4	Prescribes topics	53
5.2.3.5	Industry sector	53
5.2.4	Defining social impact	53
5.2.4.1	Impact goal	53
5.2.4.2	Temporal scope	54
5.2.4.3	Intention	55
5.2.4.4	Level	56
5.2.4.5	Correction mechanisms	56
5.2.4.6	Impact score	57

6	Conducting a Method Comparison of SIA methods	59
6.1	Method selection	59
6.2	Method modelling	59
6.3	Development of super-method	60
6.4	Comparison of methods	60
6.4.1	Activity comparison	60
6.4.1.1	Stage 1: Planning for impact	61
6.4.1.2	Stage 2: Development and validation of Theory of Change	61
6.4.1.3	Stage 3: Define and perform measurement plan	61
6.4.1.4	Stage 4: Evaluate results and improve	62
6.4.2	Concept comparison	62
6.4.2.1	Stage 1: Planning for impact	64
6.4.2.2	Stage 2: Development and validation of Theory of Change	64
6.4.2.3	Stage 3: Define and perform measurement	64
6.4.2.4	Stage 4: Evaluate results and improve	64
6.5	Generic model	64
7	Extending openESEA to support SIA	68
7.1	OpenESEA	68
7.2	Requirements for SIA extension	68
7.3	Defining user stories	72
7.4	Extending the openESEA metamodel	74
7.4.1	OpenESEA v4	74
7.4.2	openESEA v5	74
7.4.2.1	Theory of Change	75
7.4.2.2	Indicators	75
7.4.2.3	Report and evaluation report	75
7.5	Extending the openESEA DSL	77
7.5.1	Xtext	77
7.5.2	OpenESEA v5 DSL	77
7.5.2.1	Theory of Change	78
7.5.2.2	Indicator	79
7.5.3	Validating the DSL	80
8	Investigating the Impact Path	82
8.1	Development of the Impact Path	82
8.1.1	Introduction of the Impact Path	82
8.1.2	Future outlook	83
8.2	The Impact Path in practice	83
8.2.1	Motivations and pain points	83
8.2.2	Experienced resistance factors	87
8.2.2.1	Method factors	88
8.2.2.2	Technological factors	89
8.2.2.3	Individual factors	89
8.2.2.4	Organisational factors	89
8.2.3	Benefits and advantages of the Impact Path	89
8.2.4	Downsides and disadvantages of the Impact Path	90
8.2.5	Recommended improvements for the Impact Path	90
9	Discussion	92

10 Conclusions and Future Research	94
10.1 Summary	94
10.2 Future research	95
A Literature review publications	103
B Publications found in literature review on resistance factors	104
C Overview of challenges within SIA	105
D All factors of resistance found in literature	106
E Tabular comparison for the factors of resistance	109
F Examples for the factors of resistance	111
G Characteristics and their selection criteria	112
H Visitor statistics Impact Path	114
I Impact Path Interview Protocol	115
I.1 Introduction for the interview	115
I.2 General questions	115
I.3 Part 1: Development of the Impact Path	116
I.4 Part 2: Experience and opinions on the Impact Path	116
I.5 Part 3: Discussion of Impact Path after PDD validation	117
I.5.1 Concise description of the Impact Path	118
J PDD Validation Interview Protocol	119
J.1 Introduction to the interview	119
J.2 General questions	119
J.3 PDD explanation	119
J.4 Process validation	120
J.5 Deliverable validation	121
J.6 Final questions	121
K Consent form	122
L All found SIA methods	123
M SIA Method classification	126
N Process Deliverable Diagrams of SIA methods	128
O Super-method activities & concepts	160
P Full SIA Method Comparison	168
Q Screenshots of openESEA tool	172
R OpenESEA v4 meta-model	176
S Full comparison of openESEA meta-model	177
T Epics and User Stories for SIA extension openESEA	179

U	Method specification using Xtext in Eclipse	180
V	OpenESEA v5 DSL	181
W	Full examples of method specifications using the DSL	190
W.1	Example of initial method instantiation using Excel	190
W.2	Example 1 - Superwomen ToC (TheoryOfChange.org)	192
W.3	Example 2 - Wheels-to-Meals (SROI)	197
W.4	Example 3 - Yumeko ToC (Impact Path)	204
W.5	Example 4 - Fruitmotor ToC (Fruitmotor)	209
X	Diagrams for all survey respondents on motivations and pain points	215
Y	Experienced resistance factors	217

List of Figures

1	Research Method PDD	16
2	NVivo Taxonomy for Literature Review	19
3	The key elements of the PDD technique [78]	21
4	A preliminary taxonomy of the different IMM families	26
5	Impact Value Chain (adapted from Clark et al., retrieved from Maas Liket	28
6	The five stages of the Impact Path [7]	43
7	Diagram of results for Assessment Purpose dimension	48
8	Diagram of results for Target Audience dimension	49
9	Diagram of results for Time Frame dimension	50
10	Diagram of results for Impact Value Chain dimension	51
11	Diagram of results for Unit of Analysis dimension	52
12	Diagram of results for Impact Goal dimension	54
13	Diagram of results for Temporal Scope dimension	55
14	Diagram of results for Intention dimension	55
15	Diagram of results for Level dimension	56
16	Diagram of results for Correction Mechanisms dimension	57
17	Diagram of results for Impact Score dimension	58
18	Activity comparison of activities included in the generic model	63
19	Concept comparison of concepts included in the generic model	66
20	Process-Deliverable Diagram of the Generic Model	67
21	Timeline of openESEA development	68
22	OpenESEA v5 meta-model	76
23	Application of SIA methods in practice among Impact Path users	84
24	Motivations of consultants, ranked from greater to lesser motivations	85
25	Motivations of practitioners, ranked from greater to lesser motivations	85
26	Pain points of consultants, ordered from most troubling to least troubling	86
27	Pain points of practitioners, ordered from most troubling to least troubling	87
28	Experienced resistance factors, ranked from most experienced to least experienced	88
29	Impact Path website visitor statistics	114
30	SIA Methods Found 1/3	123
31	SIA Methods Found 2/3	124
32	SIA Methods Found 3/3	125
33	Full characteristics analysis 1/2	126
34	Full characteristics analysis 2/2	127
35	PDD of the Impact Path - By Friso Liezenberg and Sebastiaan van Nijen	128
36	Activity Table of the Impact Path	129
37	Concept Table of the Impact Path	130
38	PDD of Social Impact Navigator - by Sebastiaan van Nijen	131
39	Activity Table of the Social Impact Navigator	132
40	Concept Table of the Social Impact Navigator	133
41	PDD of EVPA - by Sebastiaan van Nijen	134
42	Activity Table of EVPA	135
43	Concept Table of EVPA	136
44	PDD of SROI-SVI - by Sebastiaan van Nijen	137
45	Activity Table of SROI	138
46	Concept Table of SROI	139
47	PDD of Manage Your Impact Model (Avance) - by Sebastiaan van Nijen	140
48	Activity Table of MYIM	141
49	Concept Table of MYIM	142
50	PDD of IRIS+ - by Sebastiaan van Nijen	143

51	Activity Table of IRIS+	144
52	Concept Table of IRIS+	144
53	PDD of W+ Standard - by Sebastiaan van Nijen	145
54	Activity Table of W+ Standard	146
55	Concept Table of W+ Standard	147
56	PDD of BCtA Impact Lab - by Lars Lensink	148
57	Activity Table of BCtA	149
58	Concept Table of BCtA	150
59	PDD of Maximize Your Impact Guide - by Friso Liezenberg and Lars Lensink	151
60	Activity Table of MYIG	152
61	Concept Table of MYIG	153
62	PDD of Impact Wizard - by Friso Liezenberg and Lars Lensink	154
63	Activity Table of IWD	155
64	Concept Table of IWD	156
65	PDD of Impact Wijzer - by Friso Liezenberg	157
66	Activity Table of IWR	158
67	Concept Table of IWR	159
68	Super-method activities 1/5	160
69	Super-method activities 2/5	161
70	Super-method activities 3/5	162
71	Super-method activities 4/5	163
72	Super-method activities 5/5	164
73	Super-method concepts 1/3	165
74	Super-method concepts 2/3	166
75	Super-method concepts 3/3	167
76	SIA method activity comparison 1/5	168
77	SIA method activity comparison 2/5	168
78	SIA method activity comparison 3/5	169
79	SIA method activity comparison 4/5	169
80	SIA method activity comparison 5/5	170
81	SIA method concept comparison 1/2	170
82	SIA method concept comparison 2/2	171
83	Screenshot of the openESEA Dashboard	172
84	Screenshot of the overview of the organisations	172
85	Screenshot of the overview of an openESEA method specification	173
86	Screenshot of the wizard to create indicators	174
87	Screenshot of the wizard to create surveys	175
88	OpenESEA v4 meta-model	176
89	Tabular comparison of Impact Path concepts against openESEA concepts	177
90	Tabular comparison of Impact Path activities against openESEA activities	177
91	Tabular comparison of Generic Model concepts against openESEA concepts	178
92	Tabular comparison of Generic model activities against openESEA activities	178
93	All user stories for the SIA extension	179
94	Method specification using the DSL in Eclipse	180
95	Method instantiation using Excel for Superwomen case 1/2	190
96	Method instantiation using Excel for Superwomen case 2/2	191
97	Motivations of all practitioners, ranked from greater to lesser motivations	215
98	Motivations of all practitioners, ranked from greater to lesser motivations	215
99	Pain points of all practitioners, ranked from most troubling to least troubling	216
100	Pain points of all consultants, ranked from most troubling to least troubling	216

List of Tables

1	The research method phases and when the RQs are answered	17
2	Publications found per source	18
3	Validation matrix	23
4	Definitions of Social Impact and related terms	27
5	The identified challenge and type of focus	32
6	The frequency and ratio of challenge occurrence in publications per focus	33
7	Factors of resistance	45
8	Selected SIA methods for classification	46
9	The codification scheme for classifying SIA methods	47
10	Validation matrix for concepts	59
11	Validation matrix for activities	60
12	The concepts included in the MVP and their inclusion rationale	70
13	The activities included in the MVP and their inclusion rationale	71
14	The concepts excluded in the MVP and their exclusion rationale	72
15	The activities excluded in the MVP and their exclusion rationale	72
16	The user roles within openESEA	73
17	A sample of user stories for the Theory of Change (TOC) epic	74
18	Publications found in Literature Review for SIA	103
19	Publications found in literature review on resistance factors	104
20	The challenges and the sources in which they are mentioned	105
21	All factors of resistance found in literature	108
22	The identified factors and their relation to the literature factors	110
23	Examples of the identified factors of resistance	111
24	All identified characteristics for SIA methods	113
25	Experienced resistance factors of interviewees	217

List of DSL Listings

1	DSL fragment - IM Method	77
2	DSL fragment - Theory of Change	78
3	DSL fragment - ToC Element	78
4	DSL fragment - Indicator	80
5	Full textual grammar (DSL) of openESEA v5	181
6	Specification of Superwomen case using DSL	192
7	Specification of Wheels-to-Meals case using DSL	197
8	Specification of Yumeko case using DSL	204
9	Specification of Fruitmotor case using DSL	209

Acronyms

CSR	Corporate Social Responsibility
DSL	Domain Specific Language
EIA	Environmental Impact Assessment
ESEA	Ethical, Social, and Environmental Accounting
IA	Impact Assessment
IM	Impact Measurement
IMM	Impact Measurement Methods
IVC	Impact Value Chain
LCA	Life Cycle Assessment
LM	Logic Model
NGO	Non-Governmental Organisation
PDD	Process-Deliverable Diagram
SAA	Social Accounting and Audit
SE	Social Enterprise
SIA	Social Impact Assessment
TBL	Triple Bottom Line
TOC	Theory of Change

1 Introduction

1.1 Problem statement

Over the past decades, the assessment of sustainability for organisations is becoming increasingly important in the shift towards becoming more sustainable [68], where activities of an organisation further some social good, beyond the interest and legal obligations of the organisation. In becoming more sustainable, they have started to realise over the past decades, that it's important not only to assess their economic performance but they have to consider all the three dimensions of the Triple Bottom Line (TBL): economic, social, and environmental [3] [28]. This TBL concept is an integrated approach similar to Corporate Social Responsibility (CSR). Although the concept is widely used and accepted, there are still some who argue it's a zero-sum game [57], while others view it as an optimisation game of blended value, which states that all organisations create value across the three sustainability dimensions, and is, therefore, a blend of these elements [29]. The challenge for these organisations is to optimize the impacts on several dimensions, instead of maximizing their impact against a single dimension.

Ever since the introduction of the National Environmental Policy Act (NEPA) in 1969, environmental planning and decision making has been enabled and accelerated by Environmental Impact Assessment (EIA) [6]. Although the consideration of social impact existed long before NEPA [13], over the past decades, there has been an increase in the necessity to measure the social consequences of an organisation's project, program, or policy, by means of Social Impact Assessment (SIA). Especially organisations with social missions, such as a nonprofit or a Social Enterprise (SE), are experiencing a growing pressure to demonstrate their impacts on societal problems [26]. These organisations that engage in social entrepreneurship are new enterprises that have emerged from the third sector [38], where they had started to blur the boundaries between profit and not-for-profit organisational models. Using economic activity to pursue a social objective, these enterprises subsequently formed a new sector known as 'the fourth sector'. These activities are, however, not specific to organisations in the private sector, as governments are also undertaking actions to provide value for society [18]. Not only by activities, but also by legislation, as in some countries like Spain, Italy, and the UK, the social enterprise is recognized as a separate legal entity.

While the usage of Social Impact Assessment in the social sector has been increasing over the years, the academic literature in this sector is still underdeveloped on both theoretical and empirical grounds [72] [26]. Due to this low maturity of the research field, the field of Impact Measurement (IM) is lacking broad consensus on a well-defined definition and vocabulary. Over the years, there have been numerous attempts at defining Social Impact Assessment and Social Impact itself, where experts and practitioners often use different terms and descriptions, while actually referring to the same concept. An example of this is the usage of the term 'Social Impact', which also differs from 'Social Impact' [13] [54], to 'Social Return' [18], to 'Social Value' [27].

Although there seems to be some debate over the exact meanings of terms such as Social Impact and Social Impact Assessment and there is no generally agreed definition, there does seem to be an agreement about the concept itself, where Vanclay describes that the overall purpose of all impact assessment is to 'bring about a more sustainable world' [83]. In his paper on SIA in 1999, Vanclay defines this concept as follows:

“Social impact assessment is the process of analysing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of interventions (policies, plans, programs, projects and other social activities) and social change processes so as to create a more sustainable biophysical and human environment”.

Since then, a lot has happened in the field of SIA, where it has moved from its traditional context in project development, which we refer to as '**development-driven SIA**' to the more recent variant of SIA, where it is also employed in the third and fourth sector, mostly by mission-driven organisations, which we refer to as '**mission-driven SIA**'. Leaders in the social sectors and their funders have increasingly started to embrace impact measurement as a helpful tool to achieve their missions, where they shift from evaluating impact after implementing their interventions to using measuring during program design in order to obtain real-time feedback to improve their work [26].

The process of assessing and managing social impacts by means of Social Impact Assessment has several business benefits, such as a greater certainty for project investments and an increased chance of project success, an improved ability to identify issues early on, and an improved quality of life for employees and improved retention of skilled workers [31]. On the other hand, some practitioners suggest that while impact measurement 'seems to be a good tool to help funders see what bang they're getting for their buck', it has the risk of being counterproductive in the long run, both by drawing resources away from their actual operational work and by focusing too much on outcomes for which the causal links are unclear [37]. This might make it seem like an organisation is only interested in providing accountability to funders, than it reflects an interest in actually findings ways to improve their services and results. However, as SIA and its benefits became more widely recognized and the demand for more tangible accountability has increased, many Social Impact Assessment methods and tools that enable these methods have been created. In this research, we refer to these methods as 'mission-driven social impact assessment methods', which is a specific family of Impact Measurement Methods (IMM).

Unfortunately, as of yet, the field of Impact Measurement does not have a fully elaborated, generally agreed upon typology. Some attempts have been made, however, to distinguish the separate families of Impact Measurement. In his work, Becker describes a 'simple' typology, consisting of environmental impact assessment, social impact assessment, technology assessment, and economic impact assessment [9]. Dufour et al. differentiate between Social Accounting and Audit (SAA) and Social Impact Assessment [25]. Lastly, Ramautar and Sinaga differentiate between Ethical, Social, and Environmental Accounting (ESEA), SIA, and Life Cycle Assessment (LCA) [69] [78]. Despite these subdivisions of IM families, there is a lack of research on the rationale of these subdivisions, as researchers disagree on what the differences between these families are. Although many attempts have been made to identify these differences by defining distinct characteristics of Impact Measurement methods [18] [38] [57] [72] [78], it seems like most existing classification systems are not including all relevant characteristics. As such, a classification system that has consolidated all characteristics from the different types of methods does not yet exist.

Partly because of this lack of categorisation, many SIA methods and tools that enable these methods exist. There seems to be a lack of standardisation of the specification among these methods and their respective tools. Despite the abundance of methods, there are no generally agreed-upon methodologies for measuring impact [59] and practitioners often disagree about the best way to identify and measure impact [38]. Because of this lack of consensus, the 'what to measure' can be very different for every organisation. Often, because of the diversity of business' activities and operations, methods are created for a single, specialized purpose, and tools are developed merely to support a single method [57] [69]. Currently, the area of SIA does not have a universally used method or standard. This is in itself not a huge problem, as one method will always be more desirable based on a certain use case. This large diversity of methods does, however, make it difficult to develop a tool that supports social impact assessment regardless of the method used.

1.2 Main goal

The main goal for this paper is to provide an analysis and increase the academic understanding of Social Impact Assessment methods, the definition of Social Impact and how this should be assessed. This analysis should provide the groundwork for a standard language to specify SIA methods. The goal of this research is not to create a standardized, one-size-fits-all SIA method, as this is very unlikely to be possible, given all the different methods that are out there. Instead, we embrace the variability of all the existing methods and support this with the standard language. This is done by identifying the relevant characteristics of SIA methods and by investigating the way these methods prescribe to manage and measure impact. In itself, this should contribute towards the development of a standardized, model-based tool capable of supporting all kinds of Social Impact Assessment methods. This is done by extending the work on openESEA, an extendable tool that was created during another master thesis at Utrecht University [65]. openESEA uses its own Domain Specific Language (DSL). The DSL allows the creation of models of ESEA methods, which can then be interpreted by the web-based tool [77]. During this research, the way will be paved for the SIA extension. As a result of the analysis of SIA methods, we will be able to identify some of the user stories that

will be included in the product backlog of openESEA, which can then be picked up during one of the tool's development sprints. As a result, the tool will then be capable of interpreting SIA method specifications in the DSL.

Additionally, this research will be a step towards the definition of a typology for the families of methods within IM, which includes ESEA methods, Impact Assessment (IA) methods, and LCA methods.

Next to that, a particular focus is placed on the implementation consequences of the Dutch government-commissioned SIA method 'Het Impactpad' (The Impact Path). We are curious about the effects of the introduction of a new method that could be prescribed as legally binding and a new standard way of working in terms of performing impact assessment. This is relevant to our research, as we are investigating the current state-of-the-art in the domain of Social Impact Assessment, which could potentially be disrupted or affected by a regulated SIA method. The first component of this is to identify possible resistance factors users experience when using a new process/method. The second component of this is to collect experiences from organisations/practitioners who have used the Impact Path and to discuss the Impact Path with the organisations responsible for its development.

The main contributions of this paper are (1) an extended metamodel of the openESEA tool, capable of supporting SIA methods, (2) user stories for tool development that will allow this extension, (3) an overview of SIA methods and their characteristics, and (4) a market analysis of the Impact Path.

Ultimately, we hope that this research will contribute to an easier and more effective way of conducting Social Impact Assessment, so each organisation that is willing to measure their impact, can reap the benefits and create even more social value.

The rest of this paper is organised as follows. Section 2 describes the Research Questions. Section 3 describes the details of the Research Method. Section 4 contains the literature review that describes the current state-of-the-art of Social Impact Assessment and an investigation on organisational resistance. Section 5 describes the characteristics analysis. Section 6 reports on the method comparison of SIA methods. Section 7 will describe the openESEA extension. Lastly, section 8 will report on the findings of the Impact Path investigation.

2 Research questions

To analyse the current state-of-the-art in Social Impact Assessment, the following research questions have to be answered:

- (RQ1): What is the current state-of-the-art in the domain of Social Impact Assessment?
 - (RQ1.1) : What is the history of Social Impact Assessment and its related IM families?
 - (RQ1.2) : What are the motivations for using Social Impact Assessment?
 - (RQ1.3) : Which Social Impact Assessment methods exist?
- (RQ2): What are the current challenges in the domain of Social Impact Assessment?
- (RQ3): What characteristics can be identified to classify Social Impact Assessment methods?
- (RQ4): What are software requirements for the extension of openESEA to support Social Impact Assessment?
- (RQ5): What are the consequences of the implementation of the Dutch government-commissioned Social Impact Assessment method 'The Impact Path'?

3 Research method

This research will be part of an ongoing research line at Utrecht University (UU), with the eventual goal of developing a standard language to specify Impact Assessment methods. This contributes to the extension of openESEA, an extendable, open-source, model-based tool, which should then become capable of supporting Social Impact Assessment methods. This research will be done in collaboration with two Information Science students at the UU, Lars Lensink & Friso Liezenberg, who are also investigating Social Impact Assessment methods and tools for their bachelor theses (OZP) [55].

In order to visualise the research method for a clear overview, a Process-Deliverable Diagram (PDD) has been created. The PDD is shown in Figure 1. We will explain what a PDD is later in this chapter.

The problem statement indicates that the problem we are facing is a knowledge problem, thus we will not be using the design cycle by Wieringa [96], a design science methodology often used in the fields of information systems and software engineering research. The research method consists of three phases. The first phase is the literature review, the second phase consists of a practice analysis, and the third phase involves requirements elicitation. Table 1 below shows the phases and in which phase each research question is answered.

3.1 Literature review

To answer the first three research questions, a literature review was conducted. Seeing how many of the Social Impact Assessment methods are not academically investigated, a multi-vocal literature review was required, where 'grey literature' was used as a source of information, e.g. blog posts, videos, papers, and websites that are not part of a scientific journal or conference [82]. We still primarily aimed at using scientific evidences.

3.1.1 Literature search

First, we *T1 - define inclusion criteria for the literature study*. The following inclusion criteria were created:

- (C1): Must concern Social Impact Assessment or any synonym that represents the same concept, e.g. Social Impact Measurement or Impact Measurement
- (C2): Publications need to be in English or Dutch
- (C3): Publication lists some challenge or issue within Social Impact Assessment or Impact Assessment as a whole

Phase	ID	RQ1.1	RQ1.2	RQ1.3	RQ2	RQ3	RQ4	RQ5
Literature study	T1	✓	✓	✓	✓			
	T2	✓	✓	✓				
	T3				✓			
	T4							✓
	T5					✓		
Practice analysis	T6					✓	✓	
	T7					✓	✓	
	T8						✓	
	T9						✓	
	T10						✓	
	T11						✓	
	T12							✓
	T13							✓
Requirement elicitation	T14						✓	
	T15						✓	
	T16						✓	
	T17						✓	

Table 1: The research method phases and when the RQs are answered

(C4): Research must have been conducted after 2000. Even though Social Impact Assessment dates back to a few decades before this, the year 2000 was chosen as a criterion to ensure that relevant findings are discovered that still apply to the domain of SIA.

For the initial investigation, we look at criteria C1 and C2 and we do a simple search on Google Scholar using the following query:

Q1.
"Social Impact Assessment"

Then, to find more relevant papers, we expanded that search query to a unified search term as follows:

Q2.
("Social Impact Assessment" OR "Social Impact Measurement" OR "Impact Assessment")
AND
("State-of-the-art" OR Analysis OR Investigation)

By now we should already have quite some publications that will also list challenges within SIA but lastly, an additional search is done to find more publications that mention challenges within the domain of Social Impact Assessment. Inclusion criteria C3 and C4 were added for this additional search.

Q3.
("Social Impact Assessment" OR "Social Impact Measurement" OR "Impact Assessment")
AND
(Issues OR Challenges OR Problems)

To gather relevant publications, we performed the following steps:

1. Search on Google Scholar:
 - (a) Search using Q1, Q2, or Q3
 - (b) Investigate the found papers with the inclusion criteria described above in mind

- (c) Select relevant papers after reading title and abstract/conclusion if title was not self-explanatory
 - (d) Repeat with other queries
2. Additionally, some papers were selected that were deemed relevant, by scanning a shared reference management repository in Mendeley created by the two aforementioned students also investigating Social Impact Assessment
 3. Finally, during the elaborate reading of the papers, some papers were added by means of backwards-snowballing

The scanning of the shared repository in Mendeley was mostly useful to identify more publications that focus on mission-driven SIA, as those publications more often do not use the term 'Social Impact Assessment'. After following these steps, we found a total of 30 publications, all of which are shown in Table 18 in Appendix A. Table 2 shows the number of publications found per step as describes above.

Source	# of papers
Q1	8
Q2	7
Q3	3
Snowball	8
Recommendation	4

Table 2: Publications found per source

3.1.2 Investigating the current state-of-the-art of SIA

In the literature review, we perform four investigations:

1. an investigation on Social Impact Assessment, its context, motivations, and methods
2. an investigation on the current challenges within the domain of SIA
3. an investigation on the Impact Path
4. an investigation on Impact Measurement Method characteristics

The first investigation of the literature study will be to *T2 - investigate the current domain of Social Impact Assessment*. This activity will answer the first research question RQ1.

The second investigation of the literature study is to *T3 - investigate the current challenges in the domain of Social Impact Assessment*. This includes but is not limited to the challenges to define rigorous definitions of Impact Assessment, the limitations of the methods, the limitations and pain points of tools supporting SIA methods, and the limitations towards a standard definition of a Social Impact Assessment method. This activity will answer the second research question RQ2. For T2 and T3, we performed qualitative data analysis over the selected papers, supported with the tool NVivo 12. The taxonomy of the nodes used to code the papers was built incrementally and can be seen in Figure 2. Apart from the coding regarding important information on Social Impact Assessment, we also included nodes for Environmental Impact Assessment and Impact Assessment as a whole. For each found challenge, similar occurrences were codified, where some challenges would be either removed or consolidated based on discussions within the team. When all challenges were identified, they were cross-referenced with the pain-points identified by the two bachelor students, to ensure alignment in found challenges, as they had also investigated this themselves.

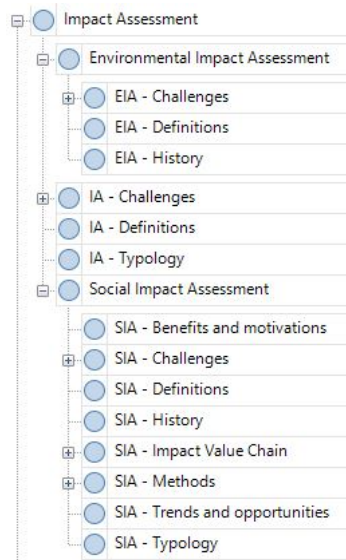


Figure 2: NVivo Taxonomy for Literature Review

3.1.3 Investigating the Impact Path

The third investigation of the literature study will be to *T4 - investigate The Impact Path*, a Dutch government-commissioned SIA method. This activity, in part, answers the fifth research question RQ5. Since there is probably next to nothing to find about this in academic literature, we will only provide some context here on The Impact Path, by discussing its origins and by explaining what the method entails, based on grey literature. To gain insights into the consequences of implementing the Impact Path, and what type of resistance an organisation could face when they have to or want to switch to another method, we investigate literature on how to define switching costs and organisational resistance. For the literature search on organisational resistance, we defined the following inclusion criteria:

- (C5): Must concern Organisational Resistance or User Resistance
 - (C6): Publications list some factors or classification scheme of organisational resistance/user resistance
- For the search on factors of resistance, we formed the following, quite simple, unified search term:

Q4.
 ("User Resistance" OR "Organisational Resistance" OR "Switching costs")

The search for publications was conducted with Google Scholar using Q4. Based on this search and by backwards-snowballing, we eventually found analysed 15 papers, of which 9 were found to include factors of resistance, which is shown in Table 19 in Appendix B. The result of this investigation gives us a coding scheme that can be used in NVIVO to classify the identified factors and issues that are potentially experienced when switching towards working with The Impact Path.

3.1.4 Identifying characteristics of Impact Measurement Methods

The fourth investigation concerns the characteristics of Impact Measurement Methods and was mostly performed by the two bachelor students. In order to *T5 - create a list of characteristics to classify SIA methods*, a search was done on existing classifications and characteristics of SIA specifically, but also on IMM in general. These characteristics were compiled in an overview to identify overlap and to combine similar characteristics from different sources. The remaining characteristics were then evaluated and filtered based on the following criteria. Characteristics to describe mission-driven SIA methods should be:

- **Fundamental:** The characteristic should say something about the nature of the method and how it fundamentally differs from other methods, rather than just being decision criteria for practitioners looking for a method to apply (e.g.: the different costs of applying methods does not necessarily say something about their fundamental differences, but whether a method can be used to assess social or environmental impacts does)
- **Unambiguous:** The characteristic should have a clear and unambiguous definition
- **Assessable from method documentation:** It should be possible to assess the methods on this characteristic from the method documentation and other readily available information
- **Unique:** The characteristics should not be a derivative or directly derivable from other characteristics, a combination, or a part of other characteristics.

The result of this approach is a non-exhaustive list of characteristics that are supplemented with additional characteristics if deemed relevant and they adhere to the above criteria. In the next phase of the Research Method, we can use these characteristics to classify existing SIA methods.

3.1.5 Finding SIA methods

Before being able to do a practice analysis and make use of all the gathered knowledge from the literature review phase, we have to find existing SIA methods. As we have not yet done the investigation on SIA methods, we selected methods based on our initial understanding of them, which was purely based on the knowledge and expertise that was shared by our supervisors. There were some criteria we made for the search of SIA methods, based on assumptions, namely that they (1) are targeted at a mission-driven organisation, such as a Non-Governmental Organisation (NGO) or a SE, and (2) that it includes a Theory of Change (TOC). These assumptions were used as guidelines, rather than hard criteria. By performing web searches on IMM and SIA, investigating academic and mostly grey literature, and by contacting and consulting established networks and organisations in the domain of impact measurement/management, such as Social Value International, Social Enterprise NL, Impact Management Project, Avance Impact etc., we were able to create a list of mission-driven SIA methods.

3.2 Practice analysis

The second phase follows up on the Literature Study, where we will be analysing SIA methods, conduct interviews to gather insights on The Impact Path and SIA practices, and conduct interviews to validate our findings and models. This phase can be related to the practice of Method Engineering, which is the "engineering discipline to design, construct and adapt methods, techniques and tools for the development of information systems" [11]. In our case, method engineering is used for the extension of the openESEA tool.

3.2.1 Classifying SIA methods

Using the characteristics identified in the literature review phase, we have a classification system that can be used to classify SIA methods. This classification system is an extension of the ESEA system proposed by Ramautar [69] and Sinaga [78]. Eventually, this system can be expanded to also include characteristics for defining EIA methods, LCA methods, and any other family of methods part of IMM that we have not yet identified. First, we will *T6 - classify SIA methods using the characteristics*. This is done by reading the documentation of our selected SIA methods and assess for each characteristic whether or not it applies to the method. The selection criteria for when to include a characteristic for a certain method can be found in Table 24 in Appendix G. After we have classified the methods using the characteristics, we can *T7 - analyse SIA methods based on the classification*, where we will be able to assess the differences and similarities of the identified SIA methods.

3.2.2 Method Comparison

In order to identify the main features and concepts of Social Impact Assessment method, we need to conduct a method comparison. This gives us insights into what features are needed for supporting SIA methods with the openESEA tool. This is done by following the Method Comparison approach, as described by van de Weerd et al. [90]. This approach consists of 4 steps.

3.2.2.1 Method selection First, we select a number of SIA methods that we will analyze and compare. This selection is based on discussions within the research group. Important for a method to be modelled is that it has sufficient information in its documentation in order to visualise the process and concepts of the method. Even in the case that we select an SIA method that we eventually do not classify to be an SIA method, the modelling would still have contributed to a better understanding of what SIA entails.

3.2.2.2 Method modelling To further analyse the SIA methods and get a better understanding of how SIA is performed, we will create meta-models of a selection of SIA methods. This is done by *T8 - creating Process Deliverable Diagrams of SIA methods*, as described by Van de Weerd and Brinkkemper [91]. A PDD is a meta-modelling technique that is based on UML activity diagrams and UML class diagrams. The meta-models created with the technique show the processes on the left-hand side and deliverables on the right-hand side. Figure 3 shows the key elements of the modelling technique. At times when the documentation of an SIA method does not clearly describe a certain activity, we have to make assumptions and modelling decisions. These assumptions and decisions that cast doubt are always discussed within the research group. The process and deliverables are explained in the accompanying activity and concept tables, in which all activities and concepts are described.

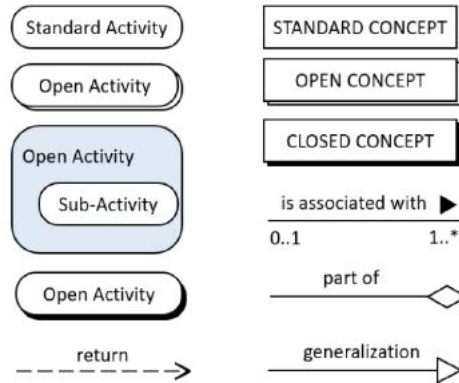


Figure 3: The key elements of the PDD technique [78]

3.2.2.3 Development of super-method After having modelled all the SIA methods, we will develop a super-method. A super-method is defined as the smallest common denominator of activities and concepts in the meta-models [78]. In other words, the super-method is a method that contains all activities and concepts that appear in at least one of the methods. To build the super-method, we start with one method, in our case the Impact Path, and include all activities and concepts in the super-method. Then, we incrementally build the super-method by comparing each activity and concept to other SIA methods, including an activity/concept if it is not yet present in the super-method. Since we use the Impact Path as the pivot to create the super-method, it might be that the activities and concepts are biased towards that SIA method. To prevent this, we eventually discussed each activity and concept of the super-method and decided on what would be the best name/description for this activity/concept.

3.2.2.4 Comparison of methods Because of the super-method that is created, we will be able to *T9 - perform a method comparison of the PDDs*. The result of this comparison would be a generic model for Social Impact Assessment and its activities and concepts. We will create two comparison tables: an activity table and a concept table. We will compare each SIA method to the super-method until each activity and concept in that SIA method is accounted for. We compare activities and concepts using the following notation, where 's' is an activity/concept of the super-method, and 'm' is an activity or concept of the SIA method that is being compared [78]:

- s '=' m: The activity/concept 's' is equivalent to the activity/concept 'm'
- s '<' m: The activity 's' does less than the activity 'm'
- s '>' m: The activity 's' does more than the activity 'm'
- s '><' m: A part of the activity 's' overlaps a part of the activity 'm', and other parts do not overlap
- s '-' m: The activity/concept 's' is not equal/present to the activity/concept 'm'
- String: The concept 's' is similar to concept 'm' but has different terminology

In order to explain equivalence in this comparison, we need to understand how activities or concepts can be compared. There are many components to a model, such as activities, concepts, relationships, cardinalities, role names etc. When we consider two activities or concepts to be equivalent, we ideally assess that they are equal in the four dimensions: purpose, process, data, and actor [78]. However, due to varying levels of detail in methods' documentation, it's very difficult to accurately compare each activity and concept to these four dimensions. The only dimension we can accurately check is the purpose dimension, thus we decide to only focus on this dimension. This means we consider two activities or concepts to be equal if they serve the same purpose. Once all PDDs have been compared with the super-method, we will create a generic model that includes the most common activities and concepts of SIA. These are selected by establishing an inclusion threshold. The activity part of the Generic Model PDD will be quite straightforward, but the relationships and cardinalities of the concept part will not be. We still modelled this concept diagram, based on the expertise of the modellers in our research group.

The way of working for this comparison is discussed in multiple weekly meetings and is extensively worked on by students in the research group.

3.2.3 Model validation

Our research group consists of 5 researchers. An assistant professor, a PhD candidate, one Master's student and two bachelors' students, each having more years of experience in modelling. Because of the close collaboration and the level of expertise, there is a high confidence level in the quality of the PDDs that are created. Nevertheless, there are still some modelling decisions that are made due to a lack of clarification in the documentation, or some aspects could have been misinterpreted. To improve the validity and quality of the PDDs, we *T10 - validate the SIA method PDDs with experts*. This validation is done by conducting interviews with experts or developers of the SIA methods. The goal of these interviews is to ensure that our interpretation of the documentation is correct and that we do not miss any essential activities or concepts. Next to that, we also *T11 - validate the generic model*. This validation is done with practitioners within the domain of SIA, who have ample experience with conducting SIA and have knowledge of multiple SIA methods. The goal of this interview is to gather knowledge on whether or not the generic model indeed includes generic activities and concepts that can indicate possible features for the openESEA extension. For the validation interviews, we have created a structured interview protocol, which can be found in Appendix J.

Eventually, after validation, we use validation matrices (Table 3), as described by Deneckere et al. [24]. For each validated method, we can indicate the number of PDD changes as a result of the validation interview. An activity or concept can be either removed, changed, or inserted. Rationale is given for each change. We include two validation matrices, one for the methods' activities changes, and one for the methods' concepts changes. The validation matrices give insight into the degree of quality of the pre-validated PDDs.

Method	Removed	<i>Motivation</i>	Changed	<i>Motivation</i>	Inserted	<i>Motivation</i>
Method 1						
Method 2						

Table 3: Validation matrix

3.2.4 Impact Path investigation

Next to this, to aid the investigation on the Impact Path (T_4), we will *T12 - conduct interviews with experts/practitioners on the Impact Path*. For these interviews, we reach out to multiple organisations with different relations to the Impact Path. We will first reach out to networks, such as Social Enterprise NL to help us find organisations that have applied the Impact Path. Then we will reach out to the developers of the Impact Path to get more knowledge on its development and future outlook, we will also reach out to social enterprises that have applied the Impact Path for their own impact measurement, and we will reach out to practitioners/consultants who assist organisations with their impact assessment and have done this with assistance of the Impact Path. For these interviews, we follow the Impact Path interview protocol, which can be found in Appendix I. As a result of the interviews, we can *T13 - Collect experiences, motivations and factors of resistance on the Impact Path*. This is done by transcribing the interviews in NVIVO and codifying the important findings, using the factors of resistance framework to codify the mentioned factors of resistance. This, combined with activity T4, will answer our fifth research question RQ5.

3.3 Requirements elicitation

The third and last phase of this research is the requirements elicitation phase, where input is used from the first two phases. After having done the literature research and validation, we can *T14 - identify SIA requirements for the openESEA extension*. We identify these features in two ways:

1. The generic model serves as input for the main activities and concepts of SIA
2. We will be able to check the existing openESEA meta-model with our SIA method meta-models and perform a tabular comparison. This comparison will reveal what components of SIA are already covered with the current meta-model and which concepts are still needed to support the SIA method.

Based on the identified necessary concepts, we will be able to *T15 - create user stories for the required features for openESEA extension*. We will subdivide these features into epics and user stories. Next to that, we will *T16 - extend the metamodel of openESEA* with the SIA concepts that were identified. This meta-model is formally depicted in a UML class diagram notation. Lastly, based on the meta-model extension, we will be *T17 - extending the textual grammar (DSL) of openESEA*. This DSL is constructed in the Xtext framework. In this framework, the textual grammar is defined and based on this, a parser, serialiser, and a smart editor are automatically generated for the DSL [34]. The DSL can then be run in an Eclipse instance, in which you are able to generate a method specification that can be used by openESEA. The Eclipse instance assists with the specification according to the rules defined in the DSL. We validate the meta-model and the DSL by creating method instantiations, based on real examples of organisations that have defined a Theory of Change and conducted SIA. These method instantiations are initially made in an excel sheet, following the classes defined in the meta-model and subsequently translated to a method specification using the DSL. These last activities will answer our fourth research question RQ4.

4 Literature review

In this section, we discuss our findings of the literature review. First, we discuss our findings on the investigation of the domain of Social Impact Assessment, its history, definitions, and motivations. Here, we also include a discussion on other families of methods that belong to Impact Measurement. Next to that, we discuss the SIA challenges that were found. Then, we will explain which characteristics were identified and what they entail. Lastly, we will give some context on the Impact Path and define a framework to classify factors of resistance.

4.1 Investigation of the domain of Social Impact Assessment

4.1.1 History and context of Social Impact Assessment

In his literature review on social impact measurement, Dufour [25] recognizes two historical trends, the first one he dubs “social accounting and audit” (SAA) and the second one “social impact assessment” (SIA). We regard these trends as being different ‘families’ of impact measurement methods. As the scope of the literature review by Dufour was limited to only social impact measurement methods, we recognize that to cover the whole range of methods (e.g. environmental), more families are needed. SAA methods often have a holistic approach to measuring performance, also regarding the environmental and (business) ethical, i.e. the Ethical, Social, and Environmental (ESE) aspects. Therefore we refer to this family of methods using the name ESEA, as proposed by Sinaga [78]. SIA methods, however, often focus solely on the social impacts of certain interventions. Next to social impacts, similar methods also exist to assess environmental impacts. Therefore, we define SIA and Environmental Impact Assessment (EIA) as being two distinct families of methods. Even more families can be identified, as can be seen in Figure 4, where we have also included Life Cycle Assessment (LCA) and two types of Social Impact Assessment.

4.1.1.1 Ethical, Social, and Environmental Accounting (ESEA) The term ‘social auditing’ was first used in the 1940s by Theodore J. Kreps, but only saw its first real experimentations by large companies in the 1970s. The trend dissipated in the 1980s but regained traction in the 1990s and currently carries considerable momentum because of institutionalization in organizations such as the Global Reporting Initiative (GRI) with an ever-growing network of users [25].

Some other commonly used names to refer to this family of methods, besides SAA and ESEA, are: ‘Corporate Social (Responsibility) Reporting’, ‘ESG Reporting’, ‘Integrated Reporting’, ‘Non-Financial Reporting’, and ‘Triple Bottom Line Accounting’. In this research, social and environmental accounting is defined as “the process of assessing and reporting on the social and environmental effects caused by an organisation’s economic actions to particular interest groups within society and to society itself” [76].

4.1.1.2 Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA)

The theoretical foundations of SIA can be found in the work of Donald T. Campbell in 1957, but the nascence of the practice itself is more often associated with the enactment of the National Environmental Policy Act (NEPA) of 1969 in the United States, which was the foundation of what would grow to be EIA [25]. The NEPA legislation was passed by US congress to a large degree because environmental and social costs to local communities were not part of the planning and decision-making process, leading to project failures and narrow cost-benefit analyses [16].

In the late 1970s through the 1980s, SIA developed as EIA was deemed to have a too strong emphasis on biophysical components, where the social aspect only played a marginal role [23]. According to Burdge and Vanclay [13] the term Social Impact Assessment was presumably first used in an Environmental Impact Statement (EIS) in 1973, which marks the birth of SIA as a discipline. This form of SIA is defined by Vanclay [84] and the International Association for Impact Assessment [88] as including “the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.”

SIA, born in a policy-making and legislative context, is primarily used to predict, assess and manage the impact of planned interventions. However, the role of SIA has shifted somewhat over the years. Traditionally, SIA was often experienced by project proponents as a regulatory obligation, or a hurdle to jump in order to obtain approval for a project [31]. Nowadays, SIA is more and more seen by proponents as a useful tool for managing the social impacts of their project, creating social benefits to the affected communities and thus earning a ‘social license to operate’ [88]. The practice of Social Impact Assessment is being practised internationally in a lot of fields, such as natural resource management, disaster preparation, international development cooperation, peacebuilding and conflict initiatives, conflict management, and in due diligence processes [23]. Doing SIA is less and less seen as a cost and increasingly regarded as an investment in risk management. Nevertheless, actually implementing the intervention remains the main objective behind performing the assessment.

During the 1990s the use of SIA also shifted to the third sector. Because of the nature of this sector, the motivation of performing SIA was significantly different. Now, the planned intervention, project or program was not the main objective, but having a real, measurable impact on their stakeholders was the main motivation behind conducting SIA. Outside of the third sector, the know-how, tools and models that were acquired by the third sector from 1990 onwards have also contributed to the rise of ‘new’ integrated organizations in which the boundaries between for-profit and nonprofit have faded. These organizations, social enterprises, have grown so fast that a fourth sector has arisen. Since the organizations operating in this sector are mainly concerned with fulfilling their social mission, the question arises how their impact on society should be assessed, to understand if and how they are achieving their objectives and contributing to the well-being of society [38]. Social enterprises are unique mechanisms to address poverty, inspire women, promote growth in marketplaces and create institutional changes. They differ from traditional enterprises by using both social and commercial logic to address social, economic, and environmental issues, prioritising innovation and social benefits [46].

The rise of this fourth sector contributes to the growing importance and relevance of measuring social, economic and environmental value and thus also for SIA. In recent years the notion of a holistic approach to impact measurement, following the principles of the triple bottom line by Elkington [28], as opposed to a solely social approach has become more present in both the ESEA and SIA families of methods, somewhat blurring the line between them [25]. However, differences still exist in the approach of both ESEA and SIA methods, but also within SIA we assume that distinct differences exist between SIA in its traditional context of project development and the more recent variant of SIA for the third and fourth sector, or mission-driven organizations. We propose to treat these two variants of SIA as separate families and to call them ‘**development-driven SIA**’ and ‘**mission-driven SIA**’ respectively. A good definition for development-driven SIA is given by Vanclay [84] and can be found earlier in this section: “The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.”

A definition for the methods in the mission-driven SIA family is given by the SIAA: “The SIA process allows organizations to identify, measure and gather evidence of the benefits they create for stakeholders in the environment and the local economy.”

4.1.1.3 Life Cycle Assessment (LCA) A fourth and latest family we identify that has not been discussed by Dufour [25] is the family of LCA methods, which are used to assess the environmental impact of specific products and services. The International Organization for Standardization [45] provides the following definition: “LCA addresses the environmental aspects and potential environmental impacts (...) throughout a product’s life cycle from raw material acquisition through production, use, end-of-life treatment, recycling and final disposal.”

The roots of LCA can be traced back to the 1960s and 1970’s when questions started to rise about the differences in the environmental impact of products. At the time the study of environmental impacts was mainly done in a comparative context. In the 1980s and 1990s, full-fledged life cycle impact assessment and life cycle costing models were introduced and in the first decade of the 21st-century concepts such as

Social-LCA and consequential LCA emerged. The recent developments in LCA have mainly been initiated to move from traditional environmental LCA to a more comprehensive Life Cycle Sustainability Analysis (LCSA) [39].

4.1.1.4 Other forms of Impact Assessment The taxonomy in Figure 4 includes four separate families of Impact Measurement. Although we are fairly confident about this preliminary taxonomy, it is definitely not an exhaustive taxonomy. Many other forms of Impact Assessment are mentioned over the years in current publications on the topic of Impact Assessment, such as technology assessment, economic and fiscal impact assessment, policy assessment [9], social and economic impact assessment (SEIA) [30], and Environmental, Social, and Health Impact Assessment (ESIA or ESHIA) [40]. There have even been attempts at combining some of the IM families, where researchers have attempted to consolidate principles of several families into a new family of Impact Measurement, such as Product Social Impact Assessment [35], or Social Life Cycle Assessment [81].

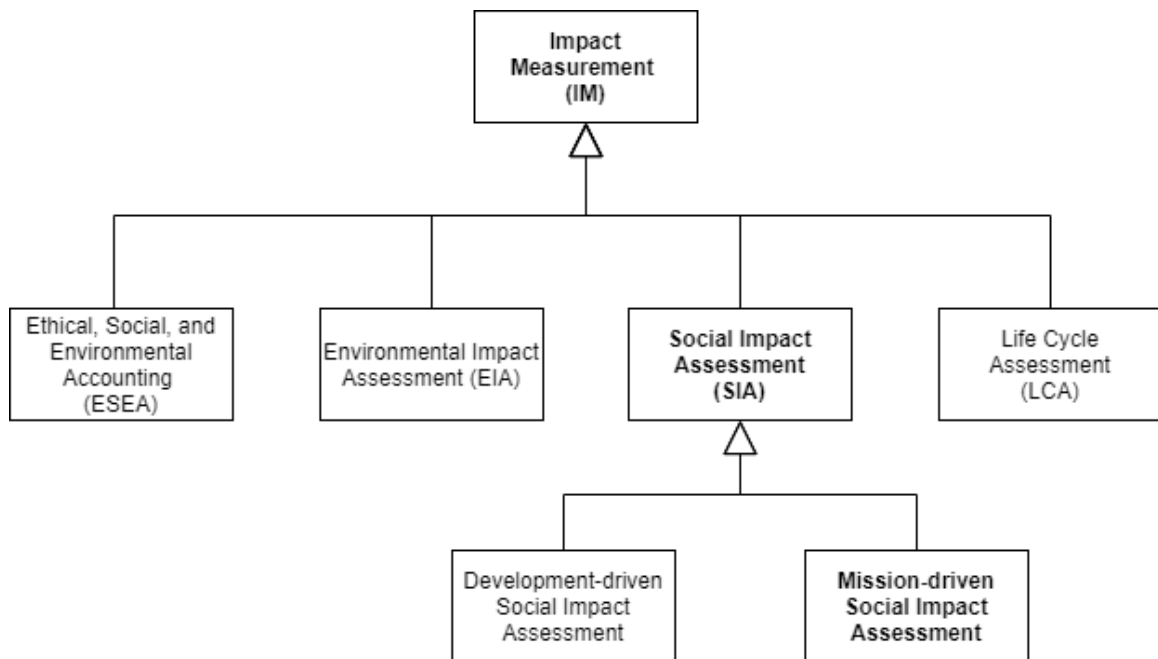


Figure 4: A preliminary taxonomy of the different IMM families

(adapted from Ramautar et al., 2021)

4.1.2 Defining Social Impact

4.1.2.1 Existing definitions of Social Impact Social Impact Assessment is more than just a technique, method, or tool. SIA is a field of research and practice, a body of scholars and practitioners, a discourse, and a community of practice that has existed for several decades [87]. Many researchers have stated definitions for SIA, but since there is a lack of consensus, every organization can claim to have an impact by using the term to their liking. At the moment, this is exactly what happens as organizations are often interested in the assessment of some elements of social impact (e.g. intended/unintended, positive/negative, short/long term), but not all of them. However, the large variety of methods makes it difficult for practitioners to select a method that contains the elements of social impact they want to assess. In that respect, it would be very helpful for organizations if a classification system would provide an overview of

the elements of social impact that are covered by a method [38]. Moreover, If this were to be covered by a classification system, it would also provide an indication of how ‘accurately’ social impact is measured by a method. However, at the moment, the problem is that there is no consensus in the literature on what social impact is and what elements it consists of. To get an impression of the variety of definitions, we have listed some of them in Table 4.

Source	Term	Definition
Clark [18]	Impact	The portion of the total outcome that happened as a result of the activity of the venture, above and beyond what would have happened anyway
OECD [67]	Impact	Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.
Wainwright [92]	Social Impact	Social impact includes intended/unintended effects, the negative/positive effects, and both long- and short-term consequences.
S.I. [6]	Social impacts	The consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society.
Emerson [27]	Social Value	Social value is created when resources, inputs, processes or policies are combined to generate improvements in the lives of individuals or society as a whole.

Table 4: Definitions of Social Impact and related terms

The main differences of these definitions are found in the inclusion of intended/unintended effects, outputs/outcomes, positive/negative effects and short/long term. Another aspect that the definitions differ on is whether social effects arising from changes in the not primarily social contexts (e.g. biophysical and economic contexts) classify as ‘social’ impact or whether the focus is solely on the impact resulting from changes within the social context (e.g. long-term employment at liveable wages for domestic violence survivors). Lastly, definitions seem to differ on the inclusion/exclusion of what is called ‘correction mechanisms’. These mechanisms are used in social sciences to compare to the experimental state in order to discern the dependent variable from all other factors that could be causing a change [18]. There are four correction mechanisms: Alternative attribution, deadweight, displacement and drop-off. These mechanisms are defined by the GECES as follows: Correcting for alternative attribution means to deduct from the measured results the effect achieved by the contribution and activity of others. Deadweight are outcomes that would have arisen anyway, regardless of the intervention. Displacement are the negative consequences that might arise from a well-intended intervention. Drop-off accounts for the tendency of the effects of an intervention to decrease over time [20].

Because we want to create a classification system and to reach a consensus within our research group towards the development of the tool, we need to agree on a definition. In this research social impact is defined as follows:

All the outcomes of some intervention - positive and negative, primary and secondary, intended and unintended, in the short and long term - corrected for the effects achieved by others (alternative attribution), for what would have happened anyway (deadweight), for negative consequences (displacement) and for effects declining over time (drop-off).

4.1.2.2 Impact Value Chain In our definition, the definition of Clark [18], and in the correction mechanisms, we find the notion of activities, outcomes, and impact. These elements are based on the so-called Impact Value Chain (IVC), which is used to differentiate outputs from outcomes and impacts. In the IVC, social impact represents the portion of the total outcome achieved due to an organisation’s activities,

above and beyond what would have happened anyway. The IVC consists of five elements, as displayed in Figure 5:

- **Input:** All resources, whether capital or human, invested in the activities of the organisation
- **Activity:** The concrete actions, tasks and work carried out by the organisation to create outputs and outcomes and achieve an organisation’s impact goals
- **Output:** The tangible products and services that result from an organisation’s activities
- **Outcome:** The changes, benefits, learnings or other effects (both long and short term, intended and unintended) that result from an organisation’s activities
- **Impact:** All the outcomes of some intervention corrected for what would have happened anyway

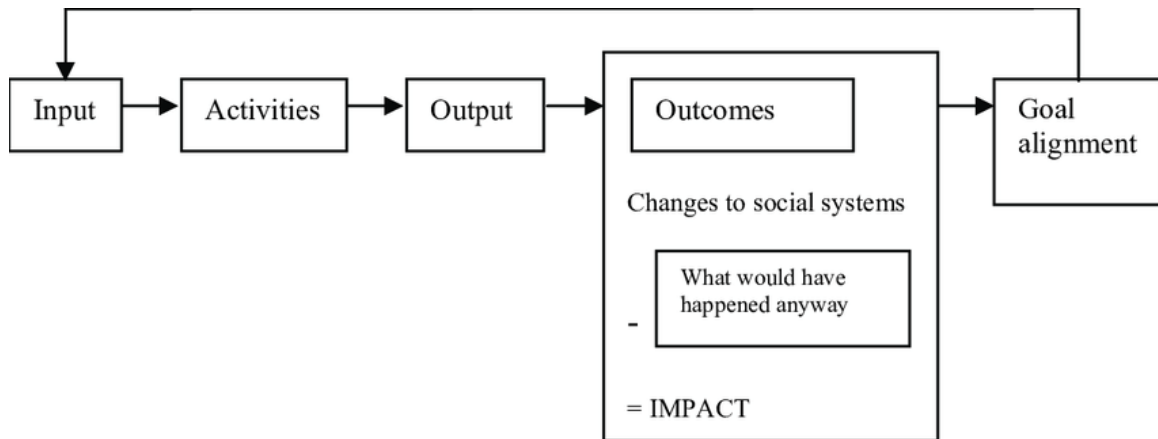


Figure 5: Impact Value Chain (adapted from Clark et al., retrieved from Maas Liket

The chain of elements of the IVC is based on a Logic Model (LM) framework, which has been widely used to better understand the relationship between the inputs and outcomes, and also reveal the mechanisms of change involved in moving from inputs to the desired results [38]. The advantage and attraction of Logic Models is that they provide a framework that enables organizations to embed evaluation and performance assessment into the program design and life cycle process of the program [97].

Another framework that serves the same purpose, and is often used in existing SIA methods, is the Theory of Change. The terms of Logic Model and Theory of Change are often used interchangeably [19]. One difference is that a ToC often includes assumptions underlying the causal links between inputs, activities, outputs, outcomes and impact whereas assumptions are not prescribed in a logic model or an impact value chain. Both frameworks, however, give the benefit of providing clarity to the complexity of change, they encourage stakeholder involvement and support communication [97] [7]. They can be developed in a bottom-up approach, starting at inputs, or a top-down approach, starting with your impact goals. The former is usually easier to do when you have been operating your business for some time, while the latter is usually useful for beginning entrepreneurs who want to know what activities they should be carrying out to realise their mission. Although the methods do not provide the statistical certainty of an experimental research approach, they offer a lot of help in mapping your social impacts by determining whether a logical connection exists between the problems addressed, the actions taken, and subsequent changes in key outcomes [18].

4.1.2.3 Correction mechanisms Based on our definition of social impact, in order to establish your impact, you need to assess whether or not your identified outcomes result from your activities, by correcting the outcomes with correction mechanisms. This is important, as it reduces the risk of over-claiming your impact and it gives your assessment more credibility. This correction is done using four

correction mechanisms: deadweight, displacement, attribution, and drop-off. As it is relevant for our research and the eventual extension of openESEA, it should be understood how these can be applied. We explain the correction mechanisms using the documentation and examples provided by the SROI network in their 'Guide to Social Return on Investment' [64]. Important to note is that within SROI, every impact value is given some financial value. Correction mechanisms are, however, applied before the financial values are given to indicators.

First off, there is deadweight, which is a measure of the amount of outcome that would have happened even if the activity had not taken place. Deadweight is calculated as a percentage. If for example, economic activity in the area has increased by 7% as the apparent result of a regeneration programme activity, but the national economy grew by 5% during that same time frame, it should be investigated how much growth was due to this national change. For the calculation of deadweight, comparison groups and benchmarks indicators are required, where you seek out information that is as close as possible to your population. It will, however, always be an estimate. As the deadweight increases, your contribution to the outcome declines, where at some point if the deadweight is very high, the outcome may no longer be material to your analysis.

Next, there's displacement, which is an assessment of how much of the outcome has displaced other outcomes. For example, the reduction of crime in one neighbourhood due to some intervention might increase the crime rate in other neighbourhoods, meaning the reduced crime was simply displaced. Displacement can also be calculated as a percentage. Often, you will have to introduce a new stakeholder to your analysis and estimate the percentage of your outcomes that are double-counted because there is some displacement.

Thirdly, we have attribution, which is an assessment of how much of the outcome was caused by the contribution of other organisations or people. It is calculated as a percentage, i.e. the proportion of the outcome that is attributable to your organisation. It is related to deadweight and it shows the part of deadweight for which you have better information. For example, a new cycling initiative notices a decrease in carbon emissions in the area. At the same time, an environmental awareness program began. For this, an estimation would have to be made of how much of the decrease is actually due to your contribution.

Lastly, we have drop-off, which is used to account for the decrease of an outcome over the years. For example, an initiative to improve the energy efficiency of residencies reports on great success in reducing energy bills. However, as time passes and more efficient systems are developed, this outcome will decrease over time. This drop-off then requires an estimation of a fixed percentage that can be deducted from the outcome each year.

In many cases, the calculation and estimation of the correction mechanisms is a difficult effort, where it will most likely not be possible to get completely accurate assessments. The most important part of the application of the correction mechanism is that SIA practitioners are aware that their outcomes are not always completely due to their activities. As often, an actual value can not be given, organisations just describe what should be taken into consideration when looking at the described outcomes and impact in their impact report.

4.1.3 Motivations for using SIA

Since there is a distinct difference between the goals and the role of impact in mission-driven and development-driven SIA, there are also different motivations related to both. Although we have mostly identified motivations for mission-driven SIA as that is the focus of this research, it is still important to describe some of the motivations for development-driven SIA.

4.1.3.1 Development-driven SIA There are multiple acknowledged benefits associated with SIA in the development-driven domain that can serve as a motivation to conduct it:

1. In general, SIA aims to strengthen democratic processes and improve decision-making for a project or plan [40]
2. It helps to understand how a proposed action will change the lives of persons in communities and regions [15], which helps to leave behind a positive legacy beyond the life of a project [31]

3. Conducting SIA helps you to involve the affected populations, by making them understand and participate in the proposed actions [16], which helps to build trust with the internal and external stakeholders [31]
4. It alerts planners, decision-makers and project proponents to changes in the primary and secondary zones of influence [15]
5. A SIA that is well-done provides both qualitative and quantitative indicators of social impact that can be understood by decision-makers and citizen [15]
6. SIA allows you to observe alternatives to a certain action, as well as mitigation measures and enhancements [15]
7. Conducting SIA grants greater certainty for project investments and an increased chance of project success, by an improved ability to identify issues early on and therefore reducing costs [31]
8. SIA helps you to avoid and reduce the risks and conflicts faced by industry and community [31]
9. It increases the competitive advantage because an improved social performance and reputation [31]
10. SIA improves the quality of life for employees and increases the retention of skilled workers [31]

4.1.3.2 Mission-driven SIA There is a wide range of motivations for using SIA in the mission-driven domain. The motivation for an organisation to conduct SIA is related to the impact goal that they want to achieve. The Impact Management Project is a forum for building global consensus on the measurement, management, and reporting of impacts on sustainability, which is relevant for enterprises and investors who want to manage their environmental, social, and governance risks, as well as for those who want to contribute to global goals. The IMP defines three levels of impact that can serve as a motivation for an organisation [43]:

1. **Act to avoid harm:** At a minimum, an organisation acts to avoid harm to stakeholders
2. **Benefit stakeholders:** On top of the acting to avoid harm, an organisation can also aim to benefit stakeholders
3. **Contribute to solutions:** Even on top of the previous goals, an organisation can also fully deploy their capabilities to contribute to solutions of pressing social (or environmental) problems.

In their documentation, some SIA methods prescribe that an organisation describes the motivation they have to conduct SIA, as this motivation can affect the target audience and the time frame of the assessment. For example, in their 'Guide to Measuring and Managing Impact', specifically targeted at impact investors that invest in Social Purpose Organisations (SPO), the European Venture Philanthropy Association (EVPA) provide an overview of the principal motivations an organisation can have for measuring impact [41]. Next to that, in her work on ESEA methods, Ramautar found several motivations for why organisations measure their impact. Since ESEA is a related family of Impact Measurement, we regard these motivations to also be applicable to SIA. The motivations provided by the EVPA, found by Ramautar and other motivations found in the literature to use Social Impact Assessment are:

1. Concerns of the public, such as suppliers, shareholders and the media about the way companies achieve their social impact goals can create pressure for performing SIA [5] [26] [59] [69]
2. Organisations might participate in SIA to become part of a space that is reserved for organisations that apply the method. The space could be a social market, a farmer's market, or sustainability products fair that requires applying an SIA method in order to participate [69].
3. Pressure through the value chain. If key export destinations or suppliers adopt a certain method, pressures through the value chain create incentives for applying this method [69].
4. The impact report is used for establishing or improving the public reputation of an organisation or project to attract clients, customers, members, donors and/or funders [5] [41] [59] [69].
5. The result might be used to attract more human capital, such as workers or volunteers [69].
6. Using SIA to (further) increase the impact of an organisation [26] [38] [69]

7. The results can be used to manage the organisation at the strategic level (i.e. mid to long term decision making) [41] [69].
8. Knowing the extent to which the organisation meets the social value persecuted [41] [69]
9. Formal measurements are expected because funding is received from foundations, governments, donors or other types of impact investors [5] [26] [41] [59] [69]
10. To obtain a certification or fulfil the requirement of a network of responsible organisations of which the organisation is (or wants to become) a member [69]
11. To comply with law or governmental obligation and regulations [5] [69]
12. To prioritise where to invest resources for greatest impact, in the case of an organisation that wants to invest in a Social Purpose Organisation [41].

4.2 Challenges in the domain of Social Impact Assessment

Using NVIVO, the literature was analysed and references to similar challenges were listed in their respective nodes. The following intertwined challenges were identified as a result of that analysis. In Table 20 in Appendix C, it is listed for each challenge in what sources they were identified. The challenges identified are closely related and occasionally overlap, as often, the found papers would cite each other on the mentioned challenges. Not all challenges are equally important for our research but important to cover to get a complete overview of the challenges of SIA and how they affect each other. For each paper that we found, it was easily identifiable whether or not the author is referring to development-driven or mission-driven SIA. Hence, in Table 5, based on the publications in which the challenges were identified, you will find for each challenge whether it is mostly focused on mission-driven SIA, development-driven SIA or it occurs in both. For further clarification on this focus, you find the frequency of occurrence and the ratio of occurrence for each focus per challenge in Table 6. From the frequency-ratio table, we can tell that CH1 - the lack of consensus and established standards - is the most important challenge in the domain of mission-driven SIA, followed up by CH2 - the lack of a system to classify SIA models, and CH9 - difficulties in measuring and reporting on impact. This is also in line with the problem statement that we have defined for this research. Interesting in the development-driven domain, where a lack of consensus (CH1) is also an experienced challenge, is the fact that the most frequently occurring challenges are CH8 - inadequate public participation and CH3 - a lack of legislation. Although there is no evidence to claim that CH7, CH8, CH11, and CH12 are also experienced challenges in mission-driven SIA, we can not rule out that this is not the case, mostly also due to the fact that we have found fewer papers on SIA that focus on the mission-driven domain.

ID	Challenge	Focus
CH1	Lack of consensus and established standards	Both
CH2	Lack of a system to classify SIA models	Mission-driven
CH3	Lack of legislation	Both
CH4	Time- and resource consuming	Both
CH5	Lack of experience of practitioners in social matters	Both
CH6	Issues with data collection and analysis quality	Both
CH7	Transnational issues	Development-driven
CH8	Inadequate public participation	Development-driven
CH9	Difficulties in measuring and reporting on impact	Both
CH10	Responsibility for consequences	Both
CH11	Research dependent	Development-driven
CH12	Greenwashing	Development-driven

Table 5: The identified challenge and type of focus

ID	Development-driven		Mission-driven	
	Frequency	Ratio	Frequency	Ratio
CH1	6	0,33	8	0,89
CH2	0	0	3	0,33
CH3	8	0,44	1	0,11
CH4	4	0,22	1	0,11
CH5	3	0,17	1	0,11
CH6	3	0,17	1	0,11
CH7	5	0,28	0	0
CH8	10	0,56	0	0
CH9	3	0,17	3	0,33
CH10	5	0,28	1	0,11
CH11	5	0,28	0	0
CH12	3	0,17	0	0

Table 6: The frequency and ratio of challenge occurrence in publications per focus

4.2.1 CH1. Lack of consensus and established standards

The most frequently reported challenge within the domain of Social Impact Assessment is the lack of consensus and established standards. For starters, for the definition and even the label of Social Impact Assessment, there is already minimal consensus [15]. In the domain of accounting, for example, there are established, generally accepted principles that support financial reporting. In comparison, this standard does not yet exist for SIA, even though best practices are emerging [18]. According to Zappala & Lyons, this is mostly because it is difficult to agree on a comprehensive definition of the concept of social impact and the related measurement models are not rigorous enough [97]. There have been attempts, however, at creating more consensus and establishing some standard definitions. The first attempt towards providing guidelines and principles for SIA was done by the US Inter-organisational Committee on Guidelines and Principles for Social Impact Assessment in 1994 [6], which was a milestone due to its representation of agreement on core procedures of SIA at that time [31]. Later on, in 2003 and again in 2015, Vanclay published the 'International principles for social impact assessment' and IAIA's guidance document respectively, representing two other codifications of the field of Social Impact Assessment [84] [88]. Despite this, later publications still claim that there is a lack of consensus on the definition and the best way to measure it [59], which, as a result, could cause confusion and may inhibit the ability to study it further [57]. Because different types of organisations have different activities and objectives, a plethora of SIA methods exist. Both Maas & Liket and Grieco et al. state that this diversity of business' activities and operations causes a heterogeneity that makes it very difficult to develop a single tool or method that captures the necessary features to support a business in its assessment [57]. Next to a lack of consensus in terms of definitions, Burdge also mentions that there is a lack of agreed-upon social indicators for which data can be continuously collected [16]. Despite the many efforts, and the importance of social impact to SIA, the standards for measuring social impact is still underdeveloped on theoretical as well as empirical grounds [72]. Lastly, as mentioned in the introduction, there is an absence of a categorisation system for existing SIA methods [57], which brings us to our second challenge.

4.2.2 CH2. Lack of a system to classify SIA models

Social Impact can be measured in all sorts of ways and organisations are usually interested in only a specific area. This, combined with the fact that different stakeholders are interested in different kinds of impacts, causes organisations to take existing SIA methods and tailor them to their own needs, which leads to an increase in different types of SIA methods [38]. This wide range of methods makes it hard for an organisation to select a single SIA method that would help them in their assessment. Where environmental accounting

methods have been embraced by both academic analysis and a lot of organisations, SIA methods have had barely any categorisation attempts, because of multiple possible reasons [57]:

- The difficulty of measuring and quantifying social impact
- The difficulty to add up the positive and negative impacts on the three dimensions of the Triple Bottom Line
- The difficulty to link activities and impact because of the complexity of attribution and causality questions

Attempts still have been made, however, such as in 2004, when Clark et al. categorised SIA methods into three types of methods: process methods, impact methods, and monetisation methods [18]. Another attempt to classify SIA methods was done by Maas & Liket in 2011. Later in 2015, Grieco et al. state that a system to classify the methods is still lacking, and thus they also attempt to create such a classification system. While the authors were able to create a classification matrix that helps managers in the non-profit and voluntary sector to select methods that meet an organisation's specific needs, their classification does not clarify which model would be best suited for organisations with a different sustainability focus [46].

4.2.3 CH3. Lack of legislation

In 2003, Burdge found that many countries have the basis for doing SIA within their legislation. However, not a lot of those also have the accompanying agency regulations and procedures to carry out an assessment [16]. Wilson, adds on to this, by stating that national legislation between countries is often inconsistent, and it frequently fails to provide sufficient guidance on the requirements of SIA [95]. In many jurisdictions around the world, a full SIA is not strictly required by legislation, which potentially inhibits the extent to which SIAs play a role in the evaluation of the impact of a project [23]. Much of the good SIA practice is usually being done within the corporate sector, on a voluntary basis [30]. Exceptions of this can be found in Queensland, Australia, where project developers are required to submit a Social Impact Management Plan (SIMP) as part of their project, and in South Africa, where Social and Labor Plans (SLP) are created specifically for mining projects [31]. Next to that, in the corporate world, SIA is required for a lot of international financial institutions, such as the International Finance Corporation [40]. In a study where Environmental and Social Impact Assessment (ESIA) is applied to a case of metro infrastructure planning in Amsterdam, Mottee states that even though ESIA is internationally recognised as an integrated process, SIA is not consistently enforced globally, nor is it required in any Dutch EIA legislation [61]. Next to that, rarely do national regulations require consultation for exploration activities, regardless of the evidence that this could diminish community tension and conflict [94].

4.2.4 CH4. Time- and resource-consuming

The determination of the size of an SIA has effects on the costs and effort it takes to conduct it. An instant SIA can require roughly 15 minutes up to 1 month and demands up to 1 person-year of effort [9]. For a medium-sized SIA study, this can increase to 1 to 3 person-years and for large-sized SIA studies, it usually takes more than 3 years to complete. Even though an SIA study requires a lot of time and resources, it is recognized that, often, there is a lack of adequate resources to conduct effective SIA practice, both in terms of human resources as well as time devoted to the SIA [10] [23]. As will be further explained in the challenge concerning inadequate public participation, the financial resources required for an SIA do not only affect the party who initiated the SIA, but it also inhibits local communities from becoming more involved in the process [66].

4.2.5 CH5. Lack of experience of practitioners in social matters

To conduct SIA, one has to understand its core concepts such as culture, community, justice, and power, as well as theoretical bases for participatory approaches. It is important to understand how these concepts influence each other, how they create and change social relationships, and shape the response of affected parties to certain interventions. Understanding these concepts and their effects is crucial for innovative,

positive development outcomes [31]. An experienced SIA practitioner understands and is familiar with data and how certain social evidence translates to social impacts [6]. Unfortunately, many challenges arise due to the lack of capabilities, education, and expertise among SIA practitioners [95]. This lack of knowledge not only concerns their knowledge of social concepts but also their ability to perform impact measurements, as they have either limited or no experience at all using SIA methods [59]. This lack of experience of practitioners, combined with the limited resources devoted to SIA, can significantly affect the standard, quality, and outcomes of SIAs [23].

4.2.6 CH6. Issues with data collection and analysis quality

Even if an SIA is conducted by the guidance of an experienced SIA practitioner, there are still issues with regards to the selection of indicators to take into account and the quality of the data that is collected [23], where often an assessment has to be made without having the relevant or even necessary data [6]. Partly, this problem exists because of a lack of agreed-upon social indicators [16], but it does have the consequence that the collection of data is often seen as an imprudent investment [59]. Many SIAs ultimately become community- or project-level assessments where baseline data is lacking, especially in developing countries or communities in remote areas. In a lot of cases, data sources become quickly outdated and are rarely coupled with locally sourced data [31], which could result in difficulties to predict future success or guide decision-making. Next to that, the analysis of the data sometimes lacks identification of the stakeholder distribution of impacts and benefits over space and time, where cumulative effects are disregarded.

4.2.7 CH7. Transnational issues (Issues due to cultural, national differences)

Next to issues concerning resources and the process of SIA itself, there are also issues due to differences in practices and expectations between countries. Gulakov, for instance, investigated challenges that were encountered when performing international SIA in Russia and found that there are significant differences between international SIA standards and national Russian standards, which caused a lack of understanding and introduced more complexity [40]. Next to this, whenever companies or governments are collaborating, they often fail to provide accurate or relevant information about its impacts due to language barriers, differences in speech register, and differences in perspectives and worldviews [95]. As mentioned in the previous challenge, there are also issues with regard to performing SIA in developing countries. It requires methods of research that are used in both the developed and the developing world. Concepts and terms that are used in the developed world, can not automatically be transferred and applied in developing countries. Even when SIA reports are publicly available, there's a chance that communities in developing countries have issues comprehending the content, due to a possible lower average literacy level [23]. Therefore, Becker addresses the need that governments and international organisations should identify and analyze the conflicting goals between countries, and thereby also improve the settings for conducting SIA in developing countries [9].

4.2.8 CH8. Inadequate public participation

One of SIAs goals is to defend the interests of people affected by projects and be ethical in the way that it engages with stakeholders, where no harm comes to people because of their participation and it is based on informed consent [86]. All stakeholders' opinions are valuable to the project, as at times, while local stakeholders might be receptive to a project or change, national-level opinion shapers might be more cautious [58]. When Vanclay created a set of International Principles in 2003 [84], he stated that SIA is meant to be a participatory process. Conducting SIA is meant to be an iterative process, where information from all stakeholders is collected and applied to project planning and decision-making [88]. In an ideal situation, to ensure that they fully comprehend the implications of a project, local communities take an active role in the process, in what is called community-controlled SIA, where they have some sort of control over the planning and outcomes of the SIA [89] [95]. Unfortunately, there are many issues and challenges when it comes to having adequate public participation for a given SIA project [10]. When focusing in the local context, according to Dendena, SIAs are not often cross-referenced, and coordination and collaboration between project developers is rare [23]. Public participation is often seen as a step to ensure the project

is legitimised, rather than a means to improve the quality of the project [31]. Usually, it's the worst-off members of society that are not involved, be it deliberately or inadvertently, while they often also lack the resources to defend their interests [87]. Even if their interests are formally recognized, they still face other practical barriers to participate, such as insufficient facilitation of communication and failures of governments to afford legitimacy to indigenous challenges [66]. Because of this, it is often stated that special attention and acknowledgement should be given to Indigenous people [88] [95].

4.2.9 CH9. Difficulties in measuring and reporting on impact

Regardless of what method is being used to conduct SIA, the steps in the process are usually clearly understood. There is, however, less agreement on how to identify and measure this impact [38]. Grieco et al. list multiple challenges related to the measuring of impact. They state there's lacking comparability of impact between sectors and organisations, it's difficult to identify qualitative and quantitative measures/indicators and it's hard to convert qualitative data related to the achievement of the social mission into quantitative metrics. Next to that, often, the cumulative effects or impacts are poorly considered or not even considered at all [10], both regarding a single SIA project, but mostly whenever multiple projects are taking place at the same time [95]. Usually, when utilizing a formal SIA method, the underlying assumption is that there's a 'causal chain' or 'logic model, which translates inputs and activities to outputs, outcomes, and impacts. In practice, practitioners with experience in implementing formal SIA methods often mention the fact that impacts are difficult to even accurately understand, let alone measure [59]. While the outputs are often relatively easy to measure, the outcomes and impacts are more difficult to isolate, measure, and identify as a result of a certain activity. This difficulty in quantifying impact also lies in the need to estimate hard-to-measure factors like 'deadweight', 'attribution', 'displacement', and 'drop-off' [20]. At times, when data is accurately obtained, it is fundamentally incomplete and could not capture the full complexity of the social impact. Even in the case that there's rich, experiential information on social impact, it can become difficult to translate this to stakeholders as something interpretable, without losing the richness, variance, and flexibility of the information.

4.2.10 CH10. Responsibility and accountability

A critical part of performing SIA is understanding and managing potential conflicts. At times, large-scale SIA projects contribute to destabilisation in conflict-ridden areas as a direct result of the sudden increase of revenue, economic opportunities, and localized impacts on the community [86]. SIA practitioners are often confronted with a moral obligation to identify and consider potential consequences and take responsibility for these consequences [9]. In some cases, however, organisations deny that certain impacts are their responsibility and they might not have any legal responsibility for it. Often, one of the most significant social impact is fear or anxiety created by a project [87]. These impacts should not be dismissed, but rather be effectively managed. Luckily, there has been a growing acceptance of the need to address public concerns and attitudes towards the risks and impacts of SIA [16]. There are many SIA methods available that assist in measuring social impact, like fear and anxiety, but unfortunately, the lack of conventions makes accountability to multiple stakeholders and multiple purposes challenging [59]. Wilson stresses the importance of making commitments made in an SIA transparent, so affected communities can hold companies or governments accountable if necessary [95].

4.2.11 CH11. Research dependency

As the field of SIA concerns social issues, which can often be quite complex, it's heavily dependent on oriented basic research. This dependency on research has its challenges, such as the transition of newly acquired knowledge to the SIA community and the necessity of the SIA community to monitor developments in the field of research [9]. Vanclay states that while much research has been undertaken in the social sciences, the theoretical developments are not always implemented in SIA practice [86]. He claims that there's a need for a greater understanding of concepts such as scale, power, justice, and sustainability to further develop the field of SIA. Aside from research on these sorts of concepts, Vanclay also claims that more ethical social research

is required to combat the concerns about research ethics, scientific integrity, and the security of personal data [89]. Lastly, related to the challenge of the identification of cumulative impacts in CH9, Burdge states that a lack of publication of good case studies limits the opportunity to track these cumulative findings [14].

4.2.12 CH12. Greenwashing

The last challenge refers to an issue that is prevalent mostly in the domain of measuring environmental impact, namely greenwashing, which described the activities of a company that attempts to communicate its operations or activities as being 'green', when they are not [53]. In the domain of SIA, which encompasses social issues, this is referred to as 'redwashing'. Vanclay states that too often, SIA projects are redwashing, severely distorting how projects happen, overstating benefits, and understating negative impacts. Relating back to Challenge CH8, there are cases where organisations or even countries are accused of Indigenous redwashing [60]. In an earlier paper, Vanclay also mentioned that the increasing will of local people to manage SIA in their communities reflects the desire of Indigenous people to ensure that SIA is not merely something to be ticked off to follow regulations and receive approval, but rather result in proper actions that minimize the negative impact and maximize opportunities [86].

4.3 Characteristics of IM/SIA methods

In the previous chapters, we explained the need for a classification system for SIA methods. There have been several studies that have attempted to create this classification system by identifying characteristics [18] [38] [57] [63] [72] [97]. Next to that, Ramautar [69] and Sinaga [78] have made efforts to create a classification for ESEA methods. On top of that, there have also been attempts from the practitioner’s community, such as The Foundation Center (TRASI) [36] and the New Economic Foundation (NEF) [62]. Between these classification attempts, there is quite some overlap, but no consensus for an all-encompassing classification that is inclusive for all the Impact Measurement families. Based on the criteria defined in the Research Method (Fundamental, unambiguous, assessable from documentation, and unique), the characteristics found in classification papers and the TRASI and NEF directions were combined and filtered. As a result of the application of the selection criteria, a list of 57 characteristics was identified, which can be found in Table 24 in Appendix G, but will be explained in this section. Each characteristic is grouped underneath a ‘dimension’. These dimensions are then grouped into categories. For example, ‘Social’ and ‘Environmental’ are two characteristics, that are grouped underneath the ‘Impact typology’ dimension, which in itself is grouped underneath the ‘Scope’ category. The identified categories are (1) purpose, (2) approach, (3) scope, and (4) defining social impact.

4.3.1 Purpose

4.3.1.1 Assessment purpose From the papers and projects used in this research, Clark et al. [18] were the first to define ‘purpose’ as a dimension of SIA methods. According to Clark et al., SIA methods can have one or multiple purposes for which the method could potentially be used, and to which it is best suited. More recently, the assessment purpose or ‘motivation’ was also acknowledged as a dimension by other papers [38] [57] [74] and in TRASI [36]. This resulted in the definition of 5 characteristics describing a method’s assessment purpose:

1. **Screening:** The method can be used to facilitate the evaluation of investment opportunities and their performance by verifying the achievement of specific goals or filtering for specific traits and qualities of organisations [18] [57].
2. **Management:** The method can be used to monitor operations, provide data to support ongoing management/operational decision-making and investor oversight, help identify business model modifications and market opportunities [18] [38] [57]
3. **Reporting:** The method can be used to report the performance and value created to (external) stakeholders [18] [57] [74].
4. **Evaluation:** The method can be used to perform retrospective or backwards-looking impact assessment, which is useful for academic purposes and organisational learning
5. **Certification:** The method can be used to acquire a rating/some external recognition based on certain desirable characteristics of the organisation determined by an external review with a systematic approach to publicizing the organisation’s rating.

4.3.1.2 Target audience for the report The target audience is defined as the intended audience for the results of the assessment or accounting [78]. However, the target audience as defined for ESEA did not have a taxonomy, which made this dimension less valuable for the classification system. After consultation with our research group we have defined the following taxonomy for the target audience:

1. **Internal:** The internal stakeholders (Within the organisation, project etc.)
2. **External:** The external stakeholders (Outside of the organisation, project, etc.), which are subdivided into the following groups:
 - (a) **Suppliers:** A person or organisation that provides something needed such as a product or service
 - (b) **General public:** The general public consists of (but is not limited to): customers, users, beneficiaries, (negatively) impacted people and communities, and NGOs

- (c) **Regulators:** A public authority or government agency responsible for exercising decision making and oversight over some area of human activity in a regulatory or supervisory capacity [88]
- (d) **Funders:** Funders, investors, lenders, and donors
- (e) **Peers:** Other organisations with similar activities, but outside of the direct value chain

4.3.2 Approach

4.3.2.1 Stages This dimension is derived from earlier research by Sinaga [78] on ESEA methods. Sinaga adopted the findings from earlier research by Rasche [71] in which three stages are defined that represent the ‘accounting-auditing-reporting’ framework of corporate accountability. A fourth stage was added to this dimension by Sinaga and she defines this dimension as the stages in the impact measurement process in which the method provides its users with guidance. The following four stages are defined:

1. **Accounting:** The method gives guidance on/tells you how to do(ing) self-assessment, meaning systematically recording, measuring, monitoring and evaluating the risks and opportunities through the use of indicators within sustainable areas
2. **Reporting:** The method gives guidance on/tells you how to document(ing) the results of the self-assessment/accounting in a report with specific reporting requirements determined in the method
3. **Auditing:** The method gives guidance on/tells you how to do(ing) an audit/assurance by an external or independent party to obtain attestation for the report or the organisation’s daily operations
4. **Certification:** The method gives guidance on/tells you how to obtain(ing) an official certificate, label, registration, rating, or recognition to the organisation as proof of a certain level of achievement

4.3.2.2 Monetisation Maas and Liket [57] and Clark et al. [18] have evaluated methods on their approach to measuring social impact. One of the identified approaches is monetisation. Monetisation monetises outcomes or impact by assigning a dollar value to them. An example of a method with a monetisation approach is Social Return on Investment (SROI).

4.3.2.3 Time frame Maas and Liket [57] have identified three different time frames for SIA methods:

1. **Prospective:** Assessment performed before the start of operation or intervention. It is an attempt to predict the expected impact and can support choosing between different options, the design of mitigation measures and modifications to the plans.
2. **Ongoing:** Assessment performed during an operation or intervention
3. **Retrospective:** Assessment performed after the completion of or backwards-looking on ongoing operations or interventions, for evaluation purposes

4.3.2.4 Data typology For a proper assessment of impact and to communicate the benefits of the intervention in an effective way, indicators are almost indispensable. Indicators can be used to show the benefits to stakeholders and the local economy. Research by Nicholls [63] and Grieco et al. [38] has shown that the data underlying these indicators is of qualitative and quantitative nature.

1. **Qualitative:** Qualitative data is required for the assessment
2. **Quantitative:** Quantitative data is required for the assessment

4.3.3 Scope

4.3.3.1 Impact typology Impact can refer to a variety of aspects and this partially depends on the method used for the assessment. That is why Rinaldo [74], NEF [62]), TRASI [36] and Grieco et al. [38] define impact typologies. According to Rinaldo and Grieco et al. impact typology refers to the different aspects of an organisation’s impact a method can focus on. Four characteristics for impact typology are defined:

1. **Ethical:** Issues relating to the (corporate) governance and behaviour of companies and other investee entities [44]
2. **Social:** The method requires assessing the impact on people, communities and society (changes in physical and mental health, quality of life, attitudes, behaviours, as well as cultural and political impacts) [62] [36]
3. **Environmental:** The method requires assessing the impact on the environment (natural resources and ecosystems) [74]
4. **Economic:** The method requires assessing financial impacts and impacts on the economy [74]

4.3.3.2 Impact Value Chain The impact value chain is a simplified model of how social impact is created. The key notion of the impact value chain is to differentiate outputs from outcomes and impact [18]. While outputs and outcomes are related to the provider of the product or service, impacts are associated with the user [57]. The impact value chain consists of 5 elements:

1. **Inputs:** The resources required to operate the venture or organisation [18] [57]
2. **Activities:** A venture’s or organisation’s primary activities [18] [72]
3. **Outputs:** Direct and tangible products from an organisation’s activities that management can directly measure. [18] [36] [57]
4. **Outcomes:** Specific changes in attitudes, behaviours, knowledge, skills, status, or level of functioning that occurs over time following the organisation’s activities [18] [36] [72]
5. **Impact:** The long-term difference between the outcome for a sample exposed to the organisation’s activities and the change that would have happened anyway [18] [36]

4.3.3.3 Unit of analysis The units of analysis are the entities and different levels of analysis the method is designed to address [78], or also the ‘moral unit of analysis’. This characteristic determines what the method can be used to assess the impact or performance of. We distinguish between the following 11 units:

1. **Organisation:** The method is used to assess the impact or performance of an entire organisation and its activities [78]. This can be any kind of organisation such as charities, NGOs, social enterprises, for-profit second sector enterprises, public organisations, etc.
2. **Project:** A proposed capital undertaking, typically involving the planning, design and implementation of specified activities [88]
3. **Policy:** A document prepared by an organisation that is a statement of principle, or an overarching statement of goals or procedural steps, about some matter of organisational significance [88]
4. **Program:** A coherent, organised agenda or schedule of commitments, proposals, instruments and/or activities that elaborate and implement policy, eventually comprising several projects [88]
5. **Product/service:** The method is used to assess the impact of a product/service [78]. This can be any physical or non-physical product or every kind of service.
6. **Plan:** A strategy to achieve identified objectives and/or an implementation agenda [88]
7. **Investment:** This can be an investment, an investment opportunity or an investment portfolio.
8. **Facility:** Factories/plants/facilities or other production sites and their local impacts [78]
9. **Value chain:** The whole chain of organisations and operations involved in sourcing, processing, manufacturing, distribution, and disposal [78]
10. **City:** The method is used to assess the performance of a city [78]
11. **Country:** The method is used to assess the performance of a country [78]

4.3.3.4 Prescribes topics Sinaga [78] recognizes that most of the ESEA methods cover the full range of Ethical, Social and Environmental disclosure topics. However, she also states that some methods only focus on particular topics to meet specific requirements. EIA and SIA methods, on the other hand, allow and even require the practitioner to select the relevant topics for their specific actions [88]. This characteristic is used to assess whether the IMM at hand prescribes to assess and disclose particular topics and if so, which topics those are.

4.3.3.5 Industry sector TRASI [36], Grieco et al. [38] and Rawhouser et al. [72] have distinguished between general, specific single sector and specific multisector applicability. They distinguish between SIA methods that can be applied to all sectors and methods that are designed for one or a few specific sectors. Sinaga [78] specifies single sector applicability even further to level 1 and level 2 industry sectors as defined in NACE [33]. In her research, she encountered no ESEA methods with multisector applicability, therefore, the decision was made to also use the NACE level 1 and level 2 industry sectors for specifying sector applicability of the methods.

4.3.4 Defining Social Impact

Based on the definition of social impact multiple requirements can be defined for SIA methods in order to ensure that the most complete image of an intervention's impact is created, without overstating the contribution of that intervention to the perceived changes or the duration of the effects. Such an image should ideally contain all the elements that are mentioned in the definition of social impact:

The positive and negative, intended and unintended, direct and indirect, short and long-term effects, which should be adjusted according to the four defined correction mechanisms; alternative attribution, deadweight, drop-off, and displacement.

If methods wish to correctly estimate, measure, quantify and report the impact realized by interventions, the 12 elements mentioned above could be considered as essential requirements for impact measurement methods. Therefore, all of these elements have been converted into characteristics. Instead of the division between positive and negative impacts, the impact classes of the IMP [43] were used: Act to avoid harm, Benefit stakeholders, Contribute to solutions. This resulted in 13 characteristics, grouped in five dimensions: The impact goal (A, B, C), temporal scope (short, long term), intention (intended, unintended), level (primary, secondary), and finally the correction mechanisms (alternative attribution, deadweight, drop-off, displacement).

4.3.4.1 Impact goal These have been described earlier in the SIA motivation section. The three impact goals (1) act to avoid harm, (2) benefit stakeholders, and (3) contribute to solutions. Since this characteristic is more or less a motivation of the organisation using SIA, instead of being a characteristic of an SIA method, we only assess whether or not the method assists the user in these impact goals.

4.3.4.2 Temporal scope Common Approach [22], the GECES [20], Maas and Liket [57], and Wainwright [92] argue that impact encapsulates both the short and long-term effects of some intervention or organisation. As such, short and long term are defined as characteristics of SIA methods. It is not defined what either the short term or the long term is in terms of days, weeks, months or years, but most methods do not specify this boundary either.

1. **Short-term:** Outcomes and impacts that occur in the short term are considered
2. **Long-term:** Outcomes and impacts that occur in the long term are considered

4.3.4.3 Intention Most of the definitions found in literature claim that impact is comprised of both intended and unintended effects [22] [67] [43] [92]. Therefore, we argue that it is relevant to consider whether methods prescribe to measure only the intended effects of the activities, or if the unintended effects should also be included.

1. **Intended:** The intended outcomes and impacts
2. **Unintended:** The unintended outcomes and impacts

4.3.4.4 Level The OECD [67] distinguishes between primary and secondary impact, while Vanclay et al. [88] refer to issues that concern people directly or indirectly. For this research, we decided to use the terms used by the OECD:

1. **Primary:** The effects that occur as a direct result of the activities/interventions/etc.
2. **Secondary:** The effects occur as a result of the primary effects

4.3.4.5 Correction mechanisms The GECES [20] and the EVPA [41] distinguish between and defines the following correction mechanisms to determine the effects of an intervention:

1. **Alternative attribution:** The extent to which the organisation is responsible for the outcome, as opposed to its being due to the intervention of others
2. **Deadweight:** The outcomes that would have arisen anyway, regardless of the intervention
3. **Displacement:** The negative consequences of the intended positive impact
4. **Drop-off:** The tendency of the effects of an intervention at a particular time to become less over time

4.3.4.6 Impact score Lastly, a 14th characteristic has been introduced in this category to find out exactly how many of the characteristics that define social impact are covered by each method. For each method, the number of characteristics it covers is counted and the sum provides a score for the ‘completeness’ of the method. This results in an impact score ranging from 0 to 13, with a score of 13 being a perfect score (i.e. the method prescribes to consider all of the different elements in the definition of social impact). All scores below 13 means that one or more of the characteristics that define social impact are disregarded. The lower the score, the more elements are missing in that method.

4.4 The Impact Path

In the Netherlands, social enterprises often have difficulties optimally reaching their goals due to a lack of recognition [73]. In an effort to resolve this lack of recognition, in 2021, the Dutch government is taking steps to support and stimulate social entrepreneurship, by announcing a new judicial status for Dutch organisations that have a social mission, called the 'maatschappelijke BV' (BvM). The goal of the introduction of this new legal type of organisation is to equal the playing field for social entrepreneurs, as compared to traditional organisations.

A few years earlier, in 2018, The Impact Path was developed, a web-based tool described as 'The entrepreneur's manual to impact measurement growth'. It was commissioned by the Dutch Ministries of Social Affairs and Employment, Economic Affairs and Policy, and Foreign Affairs and was developed by Avance, Social Enterprise NL, and Impact Centre Erasmus [7]. It was commissioned by the government in an effort to support social enterprises with measuring their impact. Therefore, their objective with 'The Impact Path' is to lower the thresholds for impact measurement and enable social entrepreneurs to improve the measurement process. With the widespread adoption of this method, they hope that entrepreneurs will follow the same processes and use the same indicators, therefore working toward standardisation through daily practice. Next to that, they believe that this will beneficially impact consensus, as social enterprises, entrepreneurs and stakeholders will increasingly speak the same language in relation to impact.

The initial focus of the Impact Path was on three key domains: (1) labour participation, (2) sustainable value chains, and (3) the circular economy. Especially that last one is one that has not yet been explored much in current social impact measurement practices. Over the years, they want to expand this scope by adding more domains, as they have done at the end of 2019 when they added another domain called (4) 'active and healthy ageing'. Aside from providing guidance on the impact measurement process by recommending helpful tools and using examples and use cases, they also provide an extensive selection of indicators for each domain as the first step towards standardisation. The Impact Path follows five stages, which they call 'The impact measurement growth path' and is displayed in Figure 6. The reason why it's called a 'growth path' is due to the fact that in Social Impact Assessment, organisations often are not mature enough or do not have the resources to fully complete each stage of the process. It's very likely that an organisation never reaches Stage 4 and is only able to monitor its outputs (stage 3). In the Impact Path, an organisation can position itself on a level and follow the activities described in that stage.

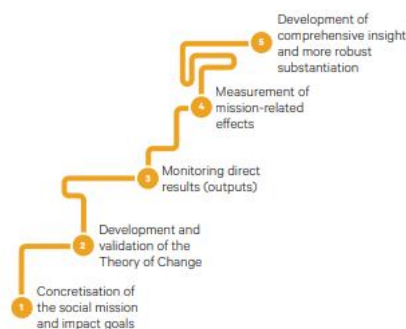


Figure 6: The five stages of the Impact Path [7]

Over the years, the Impact Path has gotten some traction among SIA practitioners and Social Enterprises. The interactive PDF which serves as the Impact Path tool, has around 2000 unique visitors each month, as seen in Figure 29 Appendix H. To which degree these unique visitors also apply the Impact Path is unclear. The traction it has gotten is likely due to the fact that the Impact Path is still undergoing development, where the goal is to expand with more domains, and that it's being promoted by the government, a research institute, a well-known impact management consulting firm, and at least two Dutch networks consisting of Social Enterprises, one who even prescribes the method as a means to receive certification.

4.4.1 Classifying factors of organisational resistance

User resistance to change has been identified as one of the most frequently occurring reasons that information system implementations and change programmes fail [17] [51]. As we are investigating the current state-of-the-art of Social Impact Assessment, the introduction of a new method that is being pushed by the government is likely to receive different reactions from within the SIA community. Some might welcome the new method with open arms, while others are more cynical as 'yet another method' has been developed. To study the attractiveness of using this new method and the consequences of its implementation, we conduct a market analysis with respect to the Impact Path. For this, we want to create a taxonomy of possible issues that organisations can run into when they start using a new method. The literature review we conducted on the topic of organisational resistance and user resistance consists of 15 papers, out of which 9 listed potential factors of resistance that users could experience due to change, and of which 6 are specifically aimed at factors of resistance within IT. After collecting all the factors from these publications, we gathered a total of 89 factors of resistance, which can be seen in Table 21 in Appendix D. In order to consolidate these factors into a comprehensive framework of resistance factors, we had to first define which categories of factors existed. Both Klaus & Blanton [52] and Singh et al. [79] categorized factors of organisational resistance and individual resistance. In their work, Klaus & Blanton developed a framework that explains why user resistance occurs during Enterprise System implementations. Next to the organisational and individual categories, they also included the 'system' and 'process' categories. We decided to use these categorisations as well but change them slightly to make it a better fit for our situation of the Impact Path. As a result, we ended up with the following five categories for our framework:

1. **Individual factors:** Individual, psychological, intrinsic factors that relate to the user who is experiencing the change
2. **Organisational factors:** Factors that also relate to individuals, but are caused due to factors that are enabled or created by other people within the organisation, or factors that are felt throughout the organisation
3. **Method factors:** Factors that are mostly related to the process of a method, e.g. the five stages of the Impact Path
4. **Technological factors:** Factors that are related to the technology that enable a method, e.g. the interactive PDF of the Impact Path
5. **External factors:** This category was not derived from literature, but was identified during one of the interviews on the Impact Path, where the COVID-19 pandemic was mentioned as an experienced resistance factor.

Since we had already used the categorisation used by Klaus & Blanton, we also used the factors that they listed underneath these categories. For each factor identified in literature, we checked whether or not that factor was already covered by a factor from Klaus & Blanton. For this, we performed a tabular comparison, which can be found in Table 22 in Appendix E. For each factor identified in literature, we assessed the following:

- If the factor is not covered at all by the factors in our framework, we would categorise this factor and introduce it as a new factor
- If the factor is completely covered by the factors in our framework, we codify that as a **1**
- If the factor is only partially covered by the factors in our framework, we would codify this factor as a **0.5**. This indicates that the factor would be covered by multiple factors within our framework.

Eventually, after the tabular comparison, we ended up with 19 intertwined factors of resistance, which can be seen in Table 7, along with their definition. Examples of when a factor of resistance is experienced can be found in Table 23 in Appendix F. The identified categories and factors are mostly focused on the negative effects of switching to another method and any user resistance that the new process meets.

Category	ID	Factor	Definition
Individual factors	I1	Uncertainty costs	The psychological uncertainty or perception of risk associated with the new alternative
	I2	Input consideration	The degree to which a user's opinion is considered
	I3	Loss of control/power	User loses control or loses the recognition as an expert
	I4	Self-efficacy	A perceived lack of capability
	I5	Cynicism	A general distrust of others' motives
Organisational factors	O1	Facilitating environment	The degree to which the organisational culture is conducive to the change
	O2	Communication	The degree to which there is sufficient communication within the organisation wrt the new process
	O3	Training	The degree to which there training is provided to meet the organisational needs
	O4	Direct costs	Costs that are immediately made upon moving to a new process
	O5	Sunk costs	Previously made commitments that become obsolete as a new process is implemented
	O6	Colleague opinion	The salient social norm individuals subscribe to in the work environment
	O7	Perceived value	The assessment of the relative costs and benefits of the change
Method factors	M1	Process complexity	The complexity of using the new process
	M2	Job change	The degree to which the job or original job skill requirements change
	M3	Workload	The amount of effort that the user is required to put in
	M4	Fitness	The degree to which the new process fits within the organisation
Technological factors	T1	Technical issues	Any issues related to the use of technology/tools supporting an SIA method
	T2	Tool complexity	The complexity of using a certain tool
<i>External factors</i>	<i>E1</i>	<i>External factor</i>	<i>Uncontrollable factors that affect/influence individuals, organisations, or technology</i>

Table 7: Factors of resistance

5 Classification of SIA methods

5.1 Method selection

With an abundance of existing SIA methods and limited knowledge on what differentiates these methods, it's difficult to determine which methods can be described as 'mission-driven SIA' methods. Using the characteristics that have been identified in the literature review, we will classify existing SIA methods by identifying what characteristics apply to them. For this, we have first compiled a list of SIA methods as described in Section 3.1.5. In total, the search yielded 42 existing methods, which can all be seen in Appendix L, which also includes some general information on the methods, such as the developer of the method and the year of release. From this list of methods, we have selected 23 methods that we would classify using the characteristics. These methods can be seen below in Table 8. We will be referring to each method using their abbreviations from this point on. Most of the identified methods come with a certain guide that assists a potential SIA practitioner with their impact assessment. Next to that, we also have some online tools in our list of selected methods (e.g. IWR and IWD). These are included as we assume that each tool has an implicit method, which can also be analysed like we can analyse a written guide.

Abbr.	Name of method
AIM	Actionable Impact Management
BCtA	The Business Call to Action Impact Lab
CF	Common Foundations
EVPA	European Venture Philanthropy Approach
HIN	Handboek Impactmeten Netwerk-organisaties
IP	Impact Path
IWD	Impact Wizard
IWR	Impactwijzer
IF	Infocus Framework
IRIS+	IRIS+
LFA	Logical Framework Approach
MYIG	Maximise Your Impact Guide
MYIM	MY-impact model
OM	Outcome Mapping
RBM	Results Based Management
SIC	Social Impact Canvas
SIN	Social Impact Navigator
SROI-Sinzer	Social Return on Investment by Sinzer
SROI-SVI	Social Return on Investment by the SROI Network (now: Social Value International)
SIF	Strategic Impact Framework
TC	The Compass
IMP	The Impact Management Project Guide to Classifying the Impact of an Investment
W+	W+

Table 8: Selected SIA methods for classification

5.2 Classifying existing SIA methods

Using the list of 57 characteristics that have been identified in the Literature Review, we assess the 23 methods that we have selected. For each characteristic, we have a definition, which is usually based on multiple different definitions of other classification attempts. These definitions are used to establish selection

criteria to determine whether or not the characteristics apply to a method. Depending on whether or not a characteristic applies to a method and whether or not evidence could be found in the method documentation to substantiate that claim, a numeric value was assigned to the cell corresponding to that method and characteristic. The meaning of the four particular values can be found in Table 9. For each selected SIA method, we use the codification scheme to classify the selected method. The full analysis can be found in Appendix M, where the characteristics are represented in the columns and the rows represent the SIA methods.

Code	Meaning
0	Evidence is found that the characteristic does not apply to this SIA method
1	No evidence could be found, but we consider the characteristic does not apply
2	No evidence could be found, but we consider that the characteristic does apply
3	Evidence is found that the characteristic does apply to this SIA method

Table 9: The codification scheme for classifying SIA methods

The information of all assessed methods together provides insight into the characteristics of SIA methods in general. The results will hopefully provide information about the shared characteristics and inter-method variation of mission-driven SIA methods. If there are characteristics shared by either all methods or, perhaps, by none, that will help answer the question of what a typical or generic SIA method would look like. Below, we will share and discuss the findings of this method analysis per dimension. In some of the cases, we have included diagrams depicting the results.

5.2.1 Purpose

5.2.1.1 Assessment purpose For which assessment purposes do the methods state they can be used? The majority of methods serve the purpose of management (21/23) and reporting (20/23). For 20 of the methods (87.0%), both these characteristics apply. About half of the analysed methods (52.2%) mention or imply that they can be used for screening by (potential) funders or some authority or regulator. Nine of the methods (39.1%) prescribe to evaluate completed activities and projects. Finally, only two of the analysed methods (8.7%), CF and W+, require, prescribe or are otherwise related to the process of certification. These results are shown in Figure 7.

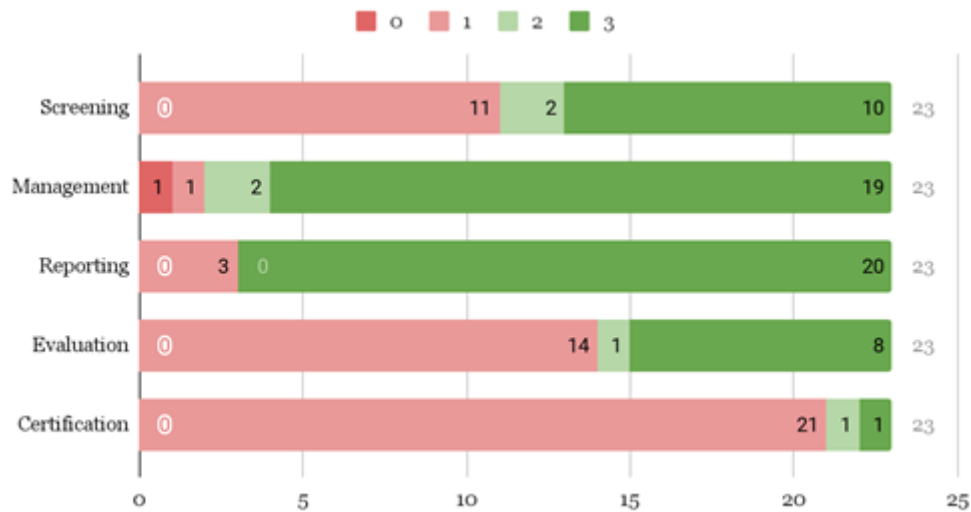


Figure 7: Diagram of results for Assessment Purpose dimension

That most methods have the management and reporting purpose means that these methods both prescribe to gather data and monitor operations to support operational and strategic decision-making as well as to report this data to external stakeholders in some kind of reporting format. The only methods where this is not the case are IMP, LFA, and SIC. For IMP and SIC, neither one of these characteristics applies to these methods. LFA only does not prescribe to produce a report. It does prescribe to monitor and measure the results, but as it does not prescribe how to do this, it also does not provide suggestions on what to do with this data afterwards. The methods with a screening purpose can be used by impact investors and funders to screen the projects and organizations they might want to invest in, which enables them to make investment decisions that yield the maximum social impact. The IWR is one of the nine methods with an evaluation purpose but is the only one prescribing this assessment purpose implicitly. Just like the other methods, IWR also stimulates its users to perform evaluation, but it is not specified whether ongoing or completed activities should be evaluated. The method seems to allude to the evaluation of ongoing activities, but this can easily be interpreted as instructions to use the method for evaluation of already completed activities.

5.2.1.2 Target audience for report Which stakeholder groups do the methods mention as the potential target audience for the report? Sixteen of the 20 methods (80%) that prescribe the reporting of impact also suggest a specific target audience for such a report. Additionally, TC and OM do not explicitly prescribe specific stakeholder groups to report to, but they do imply reporting to both internal and external stakeholders in their method documentation. Figure 8 shows that the sixteen methods that are explicit all suggest reporting to external stakeholders and all of them (except for CF) also suggest reporting to internal stakeholders. The specific external stakeholder group that is mentioned by all sixteen methods is what we define as the ‘general public’ and contains the customers, users, beneficiaries and impacted people. All methods except for HIN (93.8%) suggest reporting to funders, eleven of the methods (68.8%) suggest suppliers as target audience and the reporting to regulators and peers are both prescribed by six methods (37.5%).

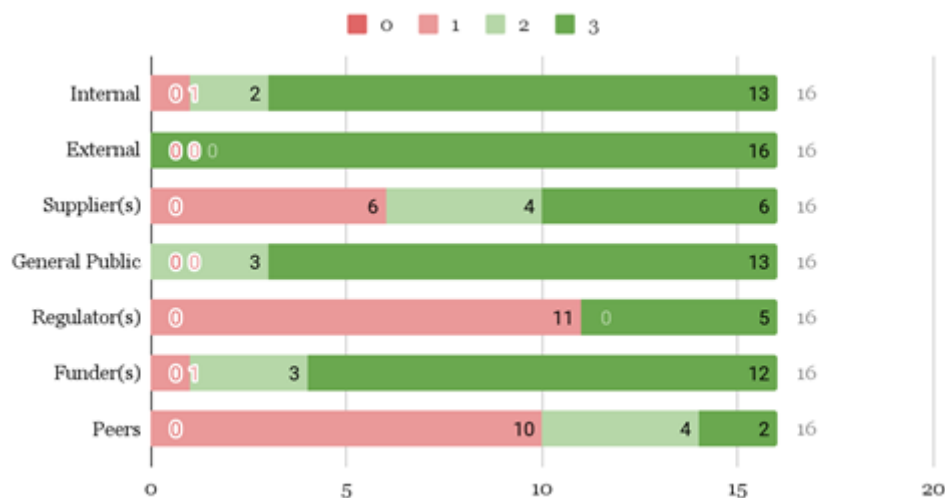


Figure 8: Diagram of results for Target Audience dimension

5.2.2 Approach

5.2.2.1 Stages At which stages of the impact measurement process do the methods provide guidance to their users? All methods, except for the IMP, LFA, and SIC, (87.0%) give guidance on how to perform self-assessment. Fifteen of the 23 methods (65.2%) provide guidance on how to document the results of the assessment in a report with specific reporting requirements determined by the method; all of these methods give explicit guidance in their documentation. The stages of auditing and certification are both only covered by two of the methods (8.7%).

The TC is the only method where explicit evidence could be found that the method is not meant to guide the user through the process of reporting impact results. For reporting guidelines, they refer the users to a specific reporting methodology called Integrated Reporting. The W+ method is the main outlier in this dimension of characteristics, being the only method providing guidance for both the stages of auditing and certification. IRIS+ is the only other method giving guidance on the process of having an audit performed. The CF is the only other method guiding the user in the process of obtaining certification

5.2.2.2 Monetisation Do the methods prescribe to quantify and monetize the measured impact? Quantifying the measured outcomes and impacts in monetary values is an approach that eight methods (34.8) explicitly prescribe to take. These methods are AIM, EVPA, HIN, IP, TC, SROI-Sinzer, SROI-SVI and W+.

Of the eight methods that explicitly prescribe monetization, six methods also have been identified to have a screening purpose. Methods that do not explicitly prescribe monetization are assumed to not be suited for this kind of activity, since monetizing impact data really is a step beyond regular measurement and reporting of impact data. The extra step requires sourcing reliable financial proxies to enable the conversion of indicator values to monetary values. Therefore, when this step is not explicitly covered by a method, it is reasonable to assume that practitioners will not be using said method if they wish to indeed express their impact in monetary values. The only method that is an exception to this rule is the CF. The CF describes itself as a “minimum standard for how to do impact measurement without prescribing a particular tool or approach”. It has distilled from a range of other impact measurement methods and tool five essential practices that, according to the compilers, describe how to do impact measurement. The method guides the user through these stages and elaborates on what essential activities have to be performed. However, the method does not always dictate precisely how certain activities should be performed. This is also the case

for the practice of “quantifying outcomes in monetary terms”. The method provides advice for practitioners who wish to perform this activity, but it does not tell them precisely how to do this, nor does it prescribe or advise this practise explicitly.

5.2.2.3 Time frame At what point in time do the methods prescribe to perform the assessment? Figure 9 shows that all methods prescribe to use an ongoing time frame for the assessment of the impact of interventions. Twenty-one of the methods do this explicitly, while LFA and SROI-SVI leave this implicit. Nineteen methods (82.6%) prescribe to assess the impact or performance of an intervention after it has taken place in order to allow for evaluation. Only eight, less than half of these nineteen methods (42.1%), however, are explicit in their prescription. Lastly, seven methods (30.4%) prescribe to assess the impact or performance of some intervention prior to it taking place (i.e. prescribe a prospective timeframe). These methods are EVPA, IMP, IRIS+, RBM, SROI-Sinzer, SROI-SVI, and W+ and they are all explicit in prescribing a prospective time frame.

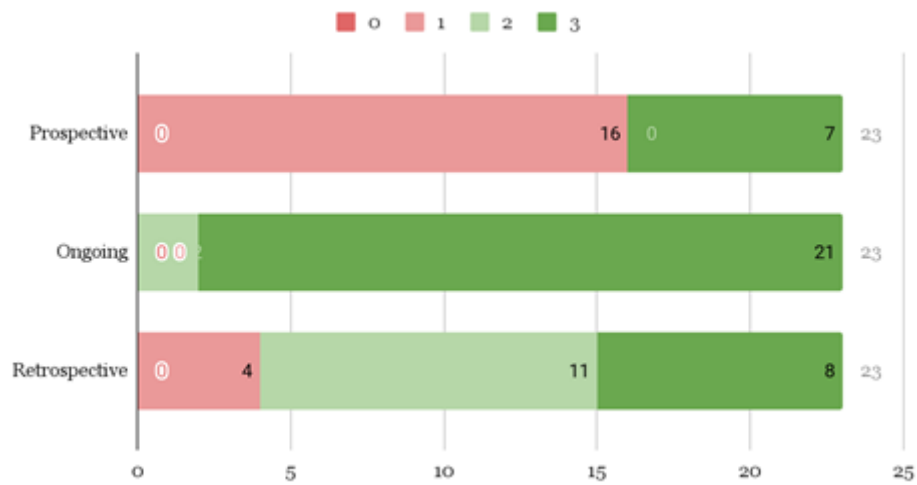


Figure 9: Diagram of results for Time Frame dimension

Regarding the only two methods that do not explicitly prescribe ongoing assessment of impacts. The SROI-SVI method is both explicit in suggesting prospective and retrospective timeframes but does not mention at all an ongoing time frame. There is, however, no reason to assume that a method that can be used to monitor indicators for evaluation purposes, can not be used to monitor the same data in an ongoing time frame. LFA is believed to implicitly prescribe to assess impact ongoingly because the method prescribes to define indicators that measure performance and allow for management of the project. The method itself pays no further attention to the management, but this statement implies that management is advised. Even though only seven methods have a prospective time frame, most of the other SIA methods also have some sort of a prospective character, meaning that they can be or prescribe to be used before the actual implementation of some intervention. However, these methods only assist the practitioner in planning for impact and, sometimes, already setting up some kind of monitoring system. Most of these methods do not actually prescribe to assess the impact prior to the implementation of the intervention. The eight methods that do prescribe prospective assessment also have been found to have a screening purpose and support the assessment of investments (unit of analysis).

5.2.2.4 Data typology Which types of data do the methods suggest to gather for the assessment? All the methods prescribe to gather or use quantitative data for the impact assessment, with IMP being

the only method that is not explicit about this. Twenty-two methods (95.7%) prescribe to also include qualitative data in the assessment, with the BCtA and, again, the IMP not prescribing this explicitly. The only method that does not prescribe to include qualitative data is the SIC, which explicitly prescribes that all the gathered data should be quantifiable.

5.2.3 Scope

5.2.3.1 Impact typology Which aspects of an organization’s or other entity’s impact or performance do the methods focus on? The methods unanimously prescribe to consider the social impacts during the assessment. The LFA leaves this implicit, while all other 22 methods state it explicitly. The second-most covered type of impact is environmental impact, which is prescribed to be assessed by 20 methods (87.0%). Fourteen of these prescribe this explicitly and six methods don’t prescribe to consider environmental impacts explicitly but do support the assessment of these kinds of impact implicitly. The only methods that are assumed not to be suitable for the assessment of environmental impacts are IF, IWD, and SIN, as they all focus specifically and solely on social impact. Ten methods (43.5%) prescribe to assess also the economic impacts of the intervention. Seven methods do this explicitly and AIM, LFA and IMP implicitly prescribe this. The SROI-Sinzer method is the only method explicit about disregarding economic impacts from the assessment. Only three methods (13.0%), BCtA, HIN, and the LFA implicitly, prescribe to consider the business ethical or governance issues or impacts of an intervention in the assessment.

5.2.3.2 Impact Value Chain Which types of data, or elements of the Impact Value Chain, do the methods prescribe to include in the analysis? Most methods - 18 of the 23 (78.3%) - prescribe to consider all of the elements of the IVC, as is shown in Figure 10. The five remaining methods miss between 1 to 3 elements of the IVC.

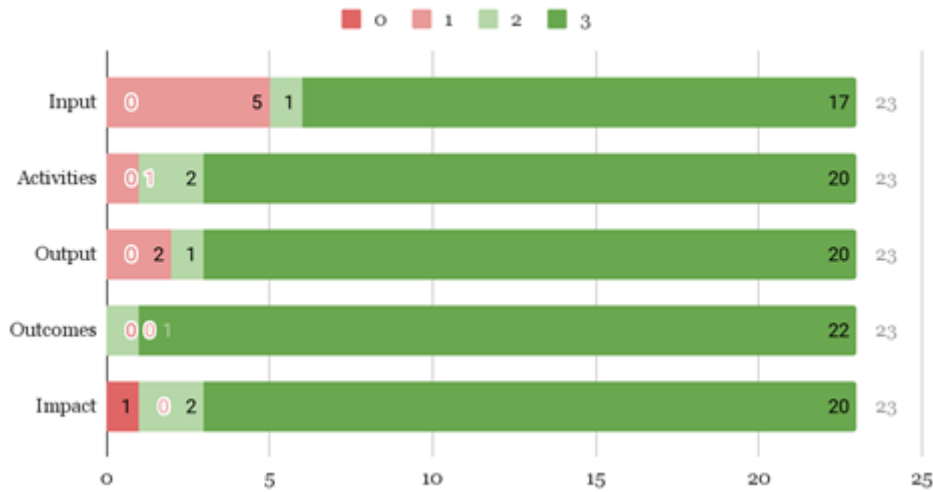


Figure 10: Diagram of results for Impact Value Chain dimension

The main differences lie in how many elements of the IVC the methods do not consider in the assessment. The methods, however, seem to make similar decisions about which elements to leave out of consideration. All five methods that do not cover the complete IVC disregard at least the inputs. The MYIG and IF only refrain from prescribing to consider the inputs and the SIC does not mention inputs and outputs. Besides not mentioning inputs, OM explicitly states it has a focus on outcomes instead of impact, thereby being the only method that explicitly excludes one of the elements of the IVC. The CF is the only method implying the

use of all of the IVC elements (i.e. CF is not explicit about the use of the IVC elements). The CF prescribes the use of a ToC, Logic Model or Outcome map, which implies the use of the IVC elements, but it does not actually guide the user through the process of drafting such a model nor does it mention the individual elements of such a model. Besides CF, AIM is the only other method that does not explicitly prescribe to consider impact but only implies it. SROI-Sinzer does not explicitly prescribe to consider the activities of the entity under assessment, but it does state that outputs are a quantitative summary of activities, which implies the necessity of considering activities in the assessment.

5.2.3.3 Unit of analysis What is the unit of moral analysis or the level of analysis the methods can address? All methods prescribe that they can be used to assess the impact of organizations and projects. Nine methods (39.1%) mention explicitly that they can be used to assess the impact or performance of an investment, investment opportunity or portfolio. Eight methods (34.8%) can be used to assess the impact of programs, of which SIN is the only method to not explicitly mention this. Four methods (17.4%) explicitly mention they can be used for the assessment of the impact of policies, these are RBM, SROI-Sinzer, SROI-SVI and TC. RBM, SROI-Sinzer and SROI-SVI (13.0%) also mention products and/or services as their units of analysis. RBM is the only method to mention the units of analysis plan, city, and country. Facilities and value chains are mentioned by none of the methods. These results are shown in Figure 11.

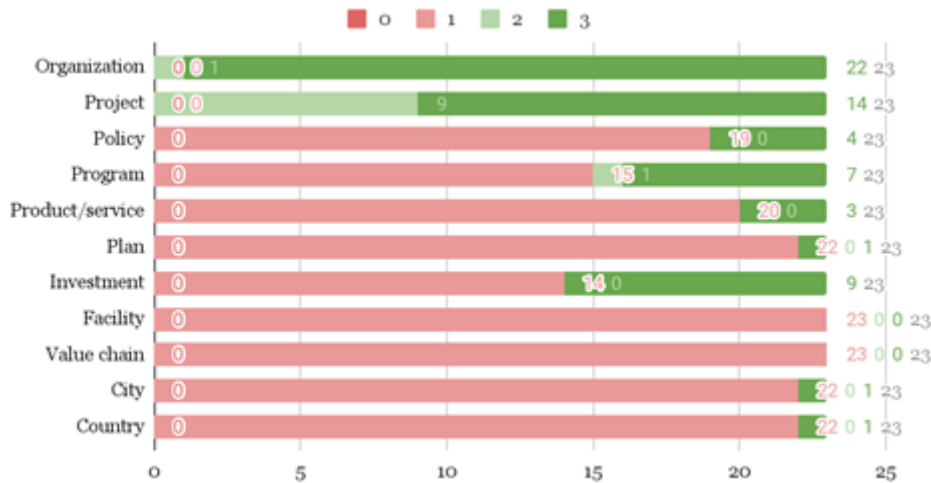


Figure 11: Diagram of results for Unit of Analysis dimension

The only method without explicit evidence for supporting the assessment of the impact of organizations is LFA. The method does mention projects explicitly as its main unit of analysis, but as projects are often exploited by organizations, this is seen as implicit evidence that the method can also be used by organizations wishing to assess their impact. The nine methods (BCtA, CF, HIN, IIF, IP, IRIS+, IWR, MYIG, and SIC) that do not explicitly prescribe to consider the impact of individual projects, are all explicit about assessing the impact of organizations. As organizations often deploy projects as a part of their activities and projects themselves are never self-contained, independent entities, the rationale has been that methods that state that they can be used to assess the impact of organizations, also should be suitable to consider the impact of single or multiple projects. The reason why SIN was considered to be useful for the assessment of impact of programs, even though programs are not directly mentioned as a unit of analysis, is that it states to “consider the lessons learned from other programs”, implying that the initiatives they mention as units of analysis can also refer to programs. Regarding the unit of analysis Investment, all of the methods that support this unit of analysis also have the purpose of screening. However, this does not go the other way

around. Only these 9 of the total of 12 methods (75.0%) with a screening purpose mention they can be used to measure or assess the impact or performance of investment opportunities or portfolios. The three methods that do not also mention investments are AIM, IP, and OM.

5.2.3.4 Prescribes topics Do the methods prescribe specific topics to be assessed? Only three methods (13.0%) were found to prescribe topics for the assessment. These methods are BCtA, IRIS+, and W+. Seventeen of the remaining twenty methods (85.0%) have some sort of evidence that the method is not intended for specific types of topics. Often, this evidence is that the method allows the user to define impact goals and does not impose restrictions on what these impact goals might be. Therefore, we consider these methods to grant the user freedom in choosing the topics to include in the assessment. BCtA, IRIS+, and W+ also allow their users to define their own impact goals, but only within a limited scope. The BCtA and IRIS+ ask their users to link the impact goals to one or more of the 17 Sustainable Development Goals (SDGs). The W+ is the only method that is very specific in prescribing six topics, or ‘domains’, all related to women empowerment.

5.2.3.5 Industry sector How generalizable is the application of the methods? Only one out of the 23 methods (4.3%) is developed for a specific industry sector. The IMP is the only method focused on a specific sector, which is the financial and insurance sector in which (investment) banks, funds and such operate. Other methods are often explicitly focused on NGOs or mission-driven organizations, but since these organizations can operate in any kind of sector, their sector is indicated as ‘generic’.

5.2.4 Defining social impact

5.2.4.1 Impact goal Which impact classes do the methods prescribe to consider? The results can be seen in Figure 12. Twenty methods - all but three (87.0%) - specifically prescribe to consider possible negative impacts. The three methods that do not are SIC, SIF and OM. Twenty-one methods (91.3%) prescribe to consider the impact on direct stakeholders, with AIM doing this implicitly and SIC and SIF being the only two methods not prescribing this. In total, 22 methods (95.7%) are targeted at organizations or interventions with the goal of contributing to solutions. Seventeen of these methods explicitly mention that their approach is based on the objective of achieving maximum positive social impact. The other five methods (AIM, CF, LFA, IF, and W+) only imply this. The HIN method is the only method that does not mention any objective or purpose of being mission-driven or striving for maximum positive impact.

The documentation on the SIF method is quite limited in the information it provides, thus it could very well be that the tool does provide the functionality to also assess the A and B impacts, but from the documentation, it seems such that the method mainly focuses on maximising the impact on the direct beneficiaries. The same becomes apparent from the documentation of the SIC method, which explicitly states that its target audience (‘purpose-led organizations and nonprofits’) exists to achieve social impact. OM explicitly states that it focuses on all people, groups and organizations with whom a development program works directly and on assessing the contributions made to the achievement of (positive) outcomes for development projects, programs and organizations, which inherently aim to contribute to solutions. AIM only mentions the importance of stakeholder consultation and communicating the impact to these stakeholders, but the method does not specifically prescribe to assess the impact they experience. However, when stakeholders are involved in the process, it can be expected that the impact they experience will be considered in the assessment. The five methods that are considered to have implicit evidence for the characteristic ‘contribute to solutions’ show this either by at least mentioning maximum social positive change or impact in any formulation or because of their focus on mission-driven parties specifically. The HIN focuses specifically on making sure to reduce the external costs in a way that respects the rights of stakeholders and on maximising value creation for their stakeholders.

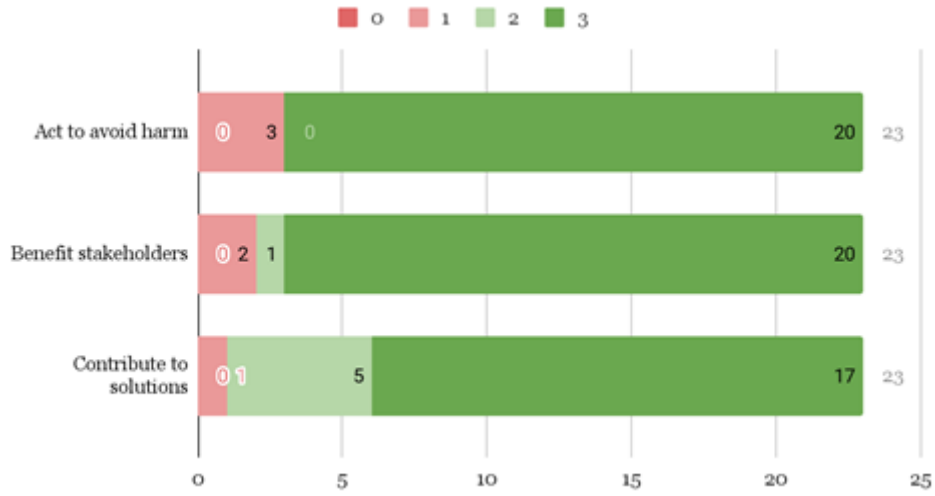


Figure 12: Diagram of results for Impact Goal dimension

5.2.4.2 Temporal scope At what moment in time relative to the intervention do the methods prescribe to assess the impact of this intervention? Figure 13 shows that all 23 methods either implicitly (6) or explicitly (17) prescribe to consider the short term impacts of an intervention and 21 methods (91.3%) prescribe to also consider the long term impacts.

When the methods are not explicit at all about the time frame with which to approach measuring impact or only the long term is mentioned specifically, we argue that the effects in the short-term should also be known because these are inseparably connected. This applies to all six methods (HIN, LFA, RBM, SIC, SIN, and W+) that implicitly prescribe to assess the short term impact. The two methods that do not suggest considering long-term impact are SIC and SIF. SIC prescribes to consider the immediate changes that are necessary if the end goal (impact) is to be realized. The method does not explicitly prescribe to take into account the long term effects of an intervention. As for SIF, the method is specifically focused on monitoring indicators in the current period, these could be monitored for longer periods of time, but no specific emphasis is on measuring the long term impacts.

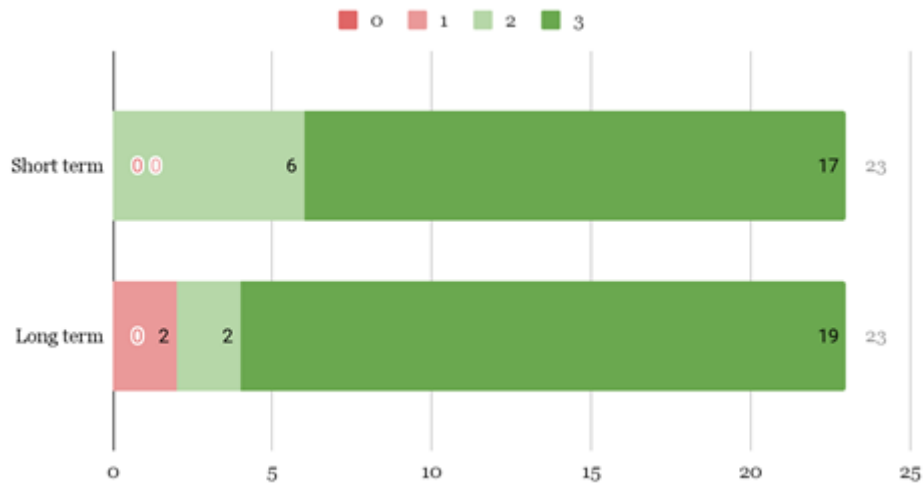


Figure 13: Diagram of results for Temporal Scope dimension

5.2.4.3 Intention Do the methods prescribe to assess both the intended and unintended impact? The results can be seen in Figure 14. Unanimously, all of the methods explicitly prescribe assessment of the intended outcomes and effects of the intervention. Twenty of the methods (87.0%) prescribe also to consider the unintended effects. The three methods that do not are BCtA, SIC and SIF.

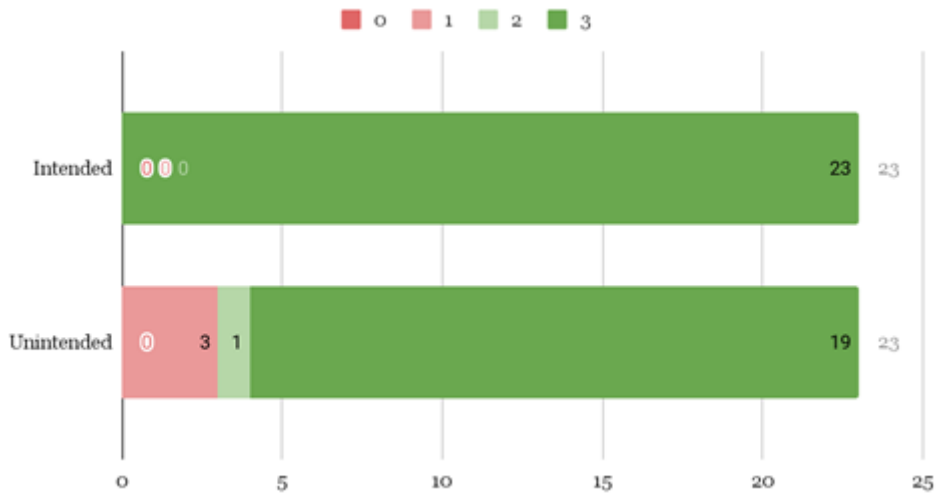


Figure 14: Diagram of results for Intention dimension

We assume that when these unintended effects are not explicitly mentioned in the documentation, the method will not likely be used to assess these kinds of impact. Assessing unintended impact requires looking beyond the organization's impact goals and ToC. It might also require the identification of additional indicators or consultation with 'other' stakeholders. This would likely require additional guidance by the method in order for practitioners to perform these steps correctly and thoroughly. Therefore, we argue it is

not probable that methods will be used to assess effects they do not explicitly prescribe. IRIS+ is the only method that implies considering unintended effects. Although IRIS+ does explicitly prescribe this, there are some predefined metrics that relate to unintentional effects. The rest of the methods are explicit in prescribing to consider the unintended effects.

5.2.4.4 Level To what level do the methods prescribe to assess the impact? All methods prescribe to consider the primary effects of the assessed intervention, as can be seen in Figure 15. Where 20 methods are explicit about this, only IMP and SIC leave this implicit. Only five methods (21.7%) prescribe also the assessment of unintended effects. The methods that do state the importance of secondary effects are IRIS+, LFA, MYIM, OM, and RBM.

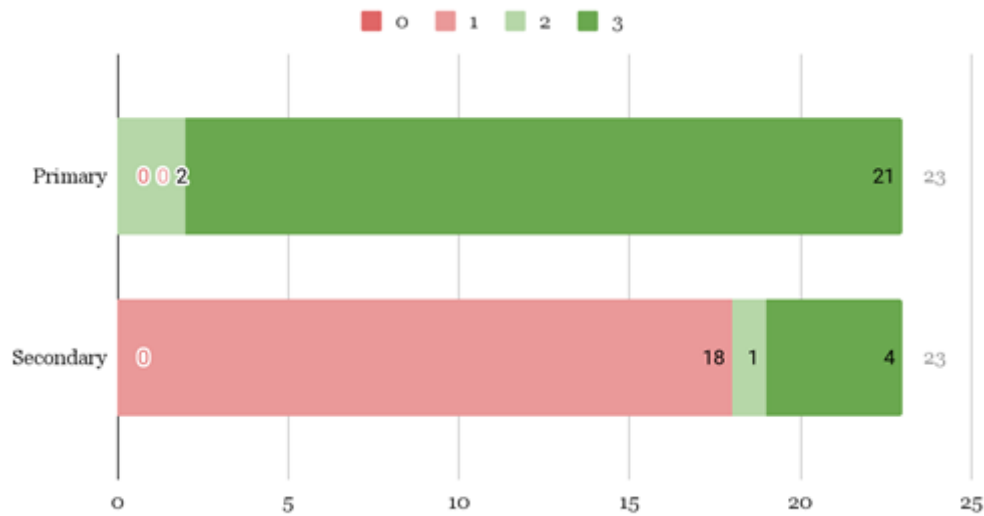


Figure 15: Diagram of results for Level dimension

Again, the fact that IMP and SIC are not explicit about prescribing the intended effects can most likely be explained by these methods not being focused on providing thorough guidance on actually measuring impact. SIC prescribes to “break down the intended impact into a number of main outcomes”, but never distinguishes between primary and secondary effects. With regards to the small number of methods that prescribe the assessment of unintended effects, similar argumentation is used as was provided for the dimensions Monetization (Section 4.1.2.2.2) and Intention (Section 4.1.2.4.3), we assume that when a method is not explicit in prescribing to consider the secondary impacts, the method will most likely not be used to do so. It is already very complicated to correctly determine an organization’s attribution to measured changes, but measuring secondary effects requires even to look beyond the own, direct stakeholders and also requires an even better understanding of the complex relationships between them, the intervention, and other contributors and contextual factors. Therefore, we take the premise that when secondary, or indirect effects are not explicitly covered by a method, the method is not designed to also consider these. IRIS+, once more, is the only exception that provides several predefined metrics that mention the importance of indirect effects. The method does not state the importance of considering these kinds of impacts anywhere in the tool explicitly.

5.2.4.5 Correction mechanisms Which correction mechanisms do the methods prescribe to consider and apply? The results for this dimension are visualized in Figure 16. Fifteen methods (65.2%) prescribe the application of at least one of the correction mechanisms. Of these methods, eleven methods

(47.8%) prescribe to correct the measured results for alternative attribution, where SIF is the only method that is not explicit about this. The deadweight, the drop-off and displacement corrections are all prescribed explicitly, but only by seven (30,4%), six and six (26.1%) methods respectively. There are only four methods (17.4%) that cover the whole range of correction mechanisms (IWR, SROI-Sinzer, SROI-SVI, and the EVPA). The IP method covers three of the mechanisms but excludes deadweight. BCtA and MYIG both cover two of the mechanisms. They both cover the deadweight correction and in addition, BCtA covers drop-off and MYIG covers alternative attribution. There are six methods (26.1%) that only cover one of the four correction mechanisms. Five of these (HIN, MYIM, RBM, SIF, and W+) prescribe to consider the alternative attribution to the measured changes. The CF prescribes only to consider the deadweight of the measured changes.

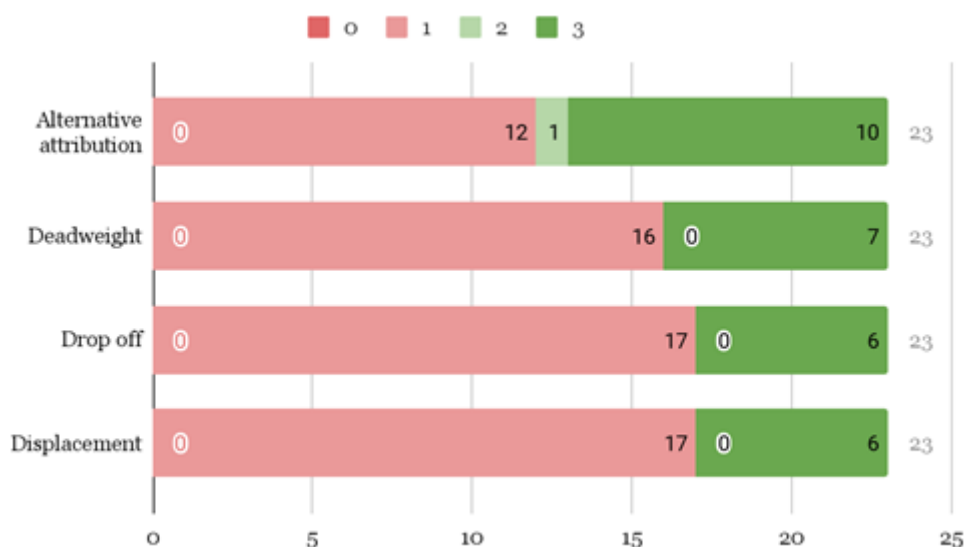


Figure 16: Diagram of results for Correction Mechanisms dimension

Except for the SIF, which implicitly prescribes considering alternative attribution, only methods with explicit evidence for the inclusion of any of these correction mechanisms are scored as methods where these characteristics apply. The rationale here has been similar to that of the dimensions Monetization, Intention and Level. Considering these correction mechanisms require specific considerations, calculations and sometimes also additional information gathering. Because of these reasons, it would be incredibly challenging to correctly apply these mechanisms, without proper guidance by the used method. We assume that when methods do not mention these mechanisms in their documentation, they were perhaps intentionally left out of the scope and method practitioners are not expected to consider them in their analysis.

The reason why SIF is an exception here is that there is very little documentation available on this method and the accompanying tool is not publicly accessible. It could not be figured out if the tool actually covers the functionality of considering alternative attribution, but the documentation at some point asks the following question: “Can all changes be attributed to us?” This question about the organization’s attribution to the changes implies that some way of considering alternative attribution is prescribed by the method.

5.2.4.6 Impact score To what extent do the methods prescribe to cover the characteristics that were defined to be essential elements of the definition of social impact? Earlier, we introduced the impact score to rate methods on how complete they are in assessing impact. The impact scores of all the 23 methods are distributed on a scale from 0 to 13 in Figure 17. An impact score of 0 means that none of the elements

of the definition of social impact is covered by a method, a score of 13 means that all of the elements are covered. As can be seen in the diagram, the majority of the methods score relatively high and check the majority of the requirements of the complete definition of impact. On average, methods cover 9 of the 13 elements. The low outliers are the methods SIC and SIF scoring only 4 and 5 points respectively. The highest scoring methods are the IP, scoring 11 points, and the IWR, EVPA and both the SROI methods all scoring 12 points. However, none of these methods score a perfect score by checking all 13 elements of the social impact definition. What we find, is that SIA methods might leave out some of the characteristics to keep the methods simple and easy to use for practitioners. Ideally, a method is complete and considers impact in its totality, but the trade-off between rigour and ease of use is necessary for the practitioners who often have limited resources and knowledge about the process. Since no method has a perfect score, we can claim that there is a gap between how impact should be measured according to scientific literature, and how it is actually measured in practice.

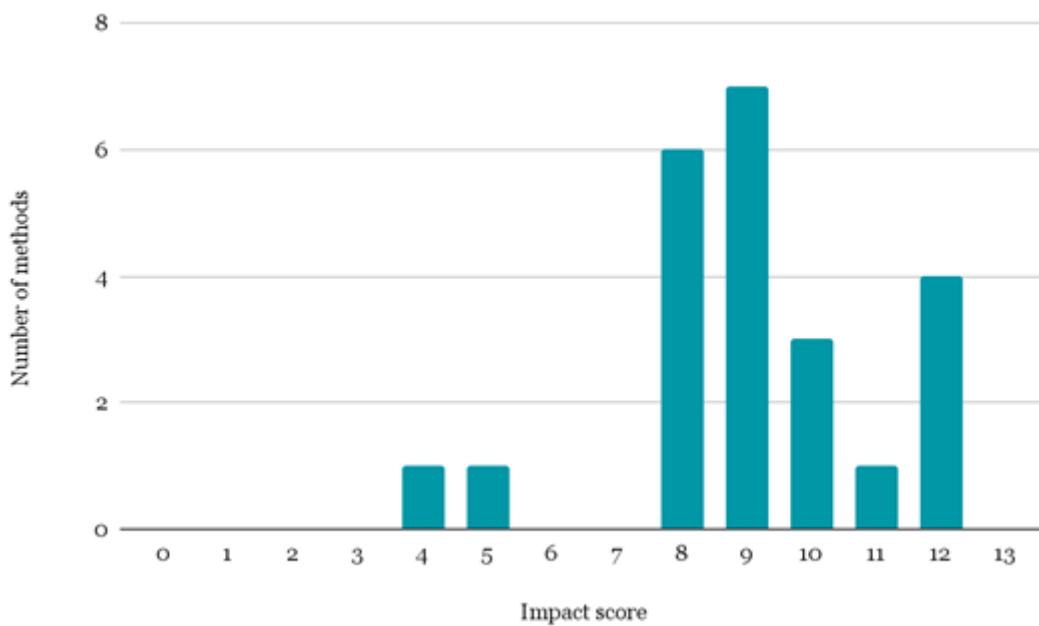


Figure 17: Diagram of results for Impact Score dimension

Out of the analysed 23 methods, we believe that 21 of them classify as an SIA method, while for IRIS+ and IMP, we are inclined not to classify them as such. IMP is a special case since it is only a guide on how to classify the possible impact asset class of a potential investment. The method does not actually guide a user in conducting impact assessment. Next to that, IRIS+, also after discussions with practitioners, should be regarded as a toolkit, an online database of indicators/metrics. Although IRIS+ is a very valuable asset for those who are conducting SIA, the online tool does not actually provide much guidance in the impact measurement process.

6 Conducting a Method Comparison of SIA methods

Before we can elicit requirements for the extension of openESEA to support SIA, we want to conduct a method comparison to identify some of the main features and concepts of Social Impact Assessment methods. This comparison will allow us to create a generic model that will give us insights into what is needed to support SIA methods with the openESEA tool. This chapter reports on the results of the method comparison, which is conducted as described in section 3.2.2.

6.1 Method selection

For the method comparison, we will have to thoroughly analyse existing SIA methods in order to understand the way the method is prescribed. For this, we first have to select a set of SIA methods that we will analyse and model. Out of the 42 SIA methods that are found, we used 23 for the classification with the identified characteristics. Out of these 23, we have selected 11 SIA methods for the method comparison. These methods are BCtA, EVPA, IP, IRIS+, IWD, IWR, MYIG, MYIM, SIN, W+, and SROI-SVI. The SIA methods of EVPA, IRIS+, IWD, IWR, SIN, and W+ methods were chosen because the first version was already modelled by students at Utrecht University for the Business Informatics Masters' course Responsible ICT. The other methods were selected in discussion with the research group.

6.2 Method modelling

After the selection of methods, we proceeded to create the Process-Deliverable Diagrams. The PDDs can be found in Appendix N, along with their activity and concept tables, which provide a description of each activity and concept that is found in the meta-models.

The PDDs have undergone several reviews within the research group. During weekly meetings, questions or issues were discussed and after a final version was created, it was reviewed by one of the supervisors. These reviews often led to improvements or a new version of the PDDs with a high confidence level of the syntactic and pragmatic quality of the PDD. Additionally, to improve the semantic and pragmatic quality of the models we have conducted 5 expert validation interviews. These interviews were conducted with consultants who are either co-creators of the method or have ample expertise in the application of the method. The PDDs of IWD, MYIG, SIN, and IP were validated with co-creators of the method. The PDD of the EVPA was validated with an expert who offers training on the usage of the method. For IP, EVPA, and SIN, the amount of changes due to validation are shown in Table 10 and 11. For each removal, change, and insertion of an activity or concept, rationale is given. For both the concepts and activities, there have been no removals. In terms of changes, we mostly changed the order of activities or the names of activities and concepts. The insertions mostly relate to activities for which a concept already existed, but we had not modelled the activity and vice versa. In general, we can claim that the initial models are already of high quality and reflect the process and deliverables that the documentation of the SIA methods is prescribing.

Method	Removed	Motivation	Changed	Motivation	Inserted	Motivation
IP	0	No removals	1	Internal report to 'Meeting Report'	1	Output report needed for new activity
EVPA	0	No removals	2	Created specialisation relationships, rearranged some lines	4	Concepts for specialisation relationships and 'Engagement plan'
SIN	0	No removals	0	Only rearranged some of the lines	0	No insertions

Table 10: Validation matrix for concepts

Method	Removed	Motivation	Changed	Motivation	Inserted	Motivation
IP	0	No removals	7	2 conditions, 2 activity name changes, 1 stage name change, 2 activity reordered	3	1 rule, 'analysis of the solutions', 'report on outputs'
EVPA	0	No removals	6	Added two rules, changed role name, and changed ordering	1	Develop Theory of Change'
SIN	0	No removals	7	Changes in ordering and one activity became a super-activity	2	Prepare measurement instruments' and 'Scaling success'

Table 11: Validation matrix for activities

6.3 Development of super-method

Before we get to compare the methods, we first develop a super-method, which is the smallest common denominator of activities and concepts in the meta-models. The super-method was created by listing all activities and concepts from one method and incrementally consolidating this with other methods. We started with listing the activities and concepts of the Impact Path and then went through the other meta-models where we check for each activity and concept if it is already included or not in the current super-method. The result of this consolidation effort can be found in Appendix O. For activities, we have four columns: An ID, where the activities that do not have an ID are not included in the generic model, an activity name, a description of that activity, and a column indicating from which SIA method the activity is derived from. For the concept part, we have three columns: The name of the concept, a description of the concept, and a column indicating from which SIA method the concept is derived. Since the super-method is a collection of activities and concepts that sometimes have no relation to each other, the super-method is depicted as a list and not as a meta-model.

6.4 Comparison of methods

After the super-method is completed, we conduct an activity comparison and a concept comparison, where we will see how often a certain activity or concept is included in our list of selected SIA methods. In this section, we discuss the results of this comparison with regard to the development of a generic model. The full activity and concept comparison can be seen in Appendix P.

In order to get the activities and concepts of the generic model, we have applied a threshold for the frequency of occurrence of an activity or concept. Only activities and concepts in the super-method that occur more than 3 times were included for the generic model. Choosing 1 as a threshold gives us the super-method, which is not a valid SIA method, as it will contain every single activity and concept. Choosing 2 as a threshold seemed too low, especially given some methods are related or inspired by the other, therefore, if we introduce a threshold of 2, it means that sometimes a very unique activity or concept can be included that is not generic. A threshold of 3 seemed to be a fair number to put it at and in the end, it produced a fairly valid and most importantly logical generic model. We investigated a total of 11 methods and the generic model did not change anymore after we had compared 7 methods. With the inclusion of the last 4 methods, nothing changed to the generic model in terms of included activities and concepts, thus we feel like we already reached data saturation with our current threshold and did not feel the need to increase it.

6.4.1 Activity comparison

Using the notation described in the research method (3.2.2.4), we first conducted the tabular comparison for activities, the result of which can be seen in Figure 18. The figure shows three main columns: ID, Activity of the super-method, the amount of times the activity of the supermethod is included, and a column for each SIA method. The ID column indicates the order and granularity of the activity, where level 1 (stages) is indicated in bold, level 2 (activities / super-activities) is indicated in italics, and level 3 (subactivities) is indicated in regular text. The 'activity of the super method column indicates the name of the activity, which has been discussed within the research group to see if it's the best fit for the described activity. The third column shows the number of times an activity is present in the other SIA methods and is the sum of all the cells in the corresponding row that have a value '>', '<' or '='.

As a result of the comparison and the application of our threshold of 3, we have subdivided our included activities into four stages. These are (1) Planning for impact, (2) Development and validation of Theory of Change, (3) Define and perform measurement, and (4) Evaluate results and improve. At the bottom of the full activity comparison in Appendix P you will find several other stages (in bold). These are all stages and activities that usually only occur in one method and thus are excluded from the generic model.

6.4.1.1 Stage 1: Planning for impact The most important activities in the first stage are to analyse the social problem your organisation is addressing through your activities (1.2) and to develop your impact goals (1.4). Next to that, there are three methods that explicitly mention that you should define a mission (1.1). Especially since we have a focus on mission-driven SIA, we thought it was important that this activity was included in the generic model. The main difference between methods is related to how the analysis of the social problem is approached. Some methods prescribe a very in-depth analysis by identifying the root causes and effects (1.2.1), using a problem tree (1.2.3), consulting with stakeholders (1.2.2) and investigating existing solutions to the social problem (1.2.4), while others, such as the EVPA only prescribe to identify the root causes of the problem. IRIS+, as only one, does not prescribe an analysis of the social problem at all, which makes it an odd one out in that respect. MYIG and SIN are unique in prescribing a solution tree to help define the impact goals (1.3). We decided to include the solution tree as an optional activity, although it was only prescribed in two SIA methods since a solution tree is easily created by turning the negative statements from a problem tree into positive statements [32] and the problem tree is also an optional activity. The activity to consult with stakeholders was added in stage 1 to indicate that it's important to involve your stakeholders from the start of the SIA process. BCtA and IRIS+ are the only two that prescribe to relate the impact goals to the Sustainable Development Goals as defined by the UN. At last, there are a number of activities that are not related to the main activities in this stage but are rather method-specific, such as activities described by EVPA for the social investor (e.g. describe motivations for the investment or set level of rigour of the impact analysis) or the submission of the Project Idea Note by W+ to promote your plans and apply for funding or activities related to setting up a SROI analysis.

6.4.1.2 Stage 2: Development and validation of Theory of Change In the second stage, methods usually prescribe the development of a Theory of Change. Except for BCtA and IRIS+, all methods stimulate the inclusion of stakeholders during the development of the ToC (2.1), although it is very likely that also these methods value the consideration of stakeholders. These stakeholders do not necessarily have to be the same as the stakeholders identified earlier during the analysis of the problem. Along with the importance of engaging with your stakeholders (2.2), most methods prescribe the development of a ToC (2.3). SIN, BCtA, and SROI refer to it as a logic model, impact value chain, and impact map respectively. Although these are not completely similar to a ToC, the starting point of describing a linear pathway to change is the same. IRIS+ is the only method that does not prescribe a ToC, and is again an odd one out. They only prescribe an IRIS+ metric that is named 'Theory of Change' and they do offer a checklist that can assist in the development of a ToC, but it is not explicitly mentioned that each user of the IRIS+ tool should consider creating a Theory of Change. Four methods prescribe validation of the ToC (2.4), which makes it an activity that highlights a difference between methods in this stage. If validation is performed, it should preferably be done with an impact expert, but stakeholders can also be used. It is clear from the method comparison that a Theory of Change is essential for conducting SIA.

6.4.1.3 Stage 3: Define and perform measurement plan This is the biggest stage in terms of activities and therefore also the stage in which the methods differ the most and the order is the hardest to determine. All methods, except for IRIS+ and SROI, prescribe to draft a measurement plan (3.1), but there are differences between methods on what should be included in the measurement plan. Six methods prescribe the selection of a target group (3.1.1) and 8 to set measurement priorities (3.1.2). Seven methods advise to define measuring responsibilities (3.1.4), to determine who will measure what and six methods recommend determining a time frame (3.1.3) and five to identify potential data source(s) (3.1.5). Subsequently, all methods prescribe the use of indicators to measure the effectiveness of the activities (3.2). On top of that, some methods recommend assigning target values to the indicators (3.3). After the indicators are defined,

the data for these indicators is collected through data collection methods (3.4). Determining which data collection method(s) to use is prescribed by eight methods, only EVPA, IRIS+ and SROI do not prescribe this. When the data collection methods are defined, the data is collected (3.5). Some methods explicitly prescribe to measure direct results (i.e. output) and long term effects as part of the data collection, whereas in other methods this is more implicit. However, whether implicit or explicit, the purpose of this activity is to collect data that is needed to achieve the goal(s) as defined in the measurement plan. After the data is collected, 10 methods prescribe data analysis (3.6), where usually they do not go into much detail as to what this entails. Only the Impact Wizard does not prescribe data analysis. Part of the data analysis is the application of correction mechanisms (3.6.3), but except for the Impactwijzer, EVPA, and SROI, no method prescribes the application of all the four correction mechanisms: alternative attribution, deadweight, drop-off and displacement. The final activity in this stage is prescribed by seven methods and entails a reflection of the assessment by drawing conclusions (3.7). EVPA, IRIS+, W+ and BCtA have not included a reflection for varying reasons. One last remarkable finding is that the IWD and BCtA identify an activity in which the purpose of the measurement is determined. According to the IWD, the measurement is for internal (learning) purposes, for external (reporting) purposes or both.

6.4.1.4 Stage 4: Evaluate results and improve During the final stage, most methods define two main activities. The first one concerns communicating the achieved results with the relevant stakeholders (4.1-4.2). During this activity the methods emphasize that it is important to consider who the target group of the report will be and what results they will be interested in; an investor or funder might be more interested in the social return on investment than a supplier. Prior to this activity, EVPA prescribes social investors to verify and assign value to the results. The second main activity in this stage relates to improving the current activities based on the results from Stage 3 (4.3-4.5). Most methods indicate that evaluating and improving is a continuous process and that, once the measurement process is set up, organizations should constantly base their decisions on the effectiveness of their activities (i.e. how do the activities affect the outputs and outcomes). This is why the IP prescribes to improve the robustness of the measurement, to improve the quality of the data and to make even better decisions. In this way, impact becomes an integral part of the business and can be maximized. The IWR is unique in how they emphasize integrating ‘impact-oriented working’ in the organization. They explicitly prescribe to review the existing organizational culture to prepare every organizational process for a way of working with impact at the centre of everything. There are also some specific activities that come from the W+ method concerning auditing and certification. Although auditing is to some extent prescribed by EVPA, the W+ method is certainly unique in facilitating certification. Lastly, there are some activities exclusive to SROI which concern the calculation of the SROI ratio. These activities are all excluded from the generic model.

6.4.2 Concept comparison

Again, using the notation described in the research method, we performed a tabular comparison of all the concepts, the result of which can be seen in Figure 19. The concepts are grouped according to the stages that have been found in the activity comparison. The tabular comparison shows two main columns: Concept name (concept of the super-method) and the number of times the concept is included in other SIA methods, and a column for each SIA method. The second column on the number of times a concept is present in other SIA methods is again the sum of all cells in the corresponding row that have either a ‘=’ or a String value (to indicate a different term for the same concept). In this tabular comparison, we do not make use of the ‘>’ and ‘<’ symbols, as this would be too complicated for concepts. Often in methods, the concepts/deliverables are not thoroughly explained or examples are not provided, thus making the comparison one based on assumptions. Because the concepts are usually a deliverable of some activity, it is noticeable that whenever an activity is included, the concept is also very likely to be included. Similarly, whenever an activity is excluded, the related deliverable is also very likely to be excluded. An exception would be the concept of the ‘Problem tree’, which only occurs in 2 SIA methods, while the activity is included. This is mostly due to the fact that a method such as the Impact Path recommends external tools for designing a problem tree and does not explicitly state that it’s a deliverable of the process.

II	Activity of the supermethod	#	IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BCTa	SROI
1	Planning for impact	11	=	=	>	>	>	>	=	>	>	>	>
1.1	Defining the mission of the organization	3	<	=	=	-	-	-	-	-	-	-	-
1.2	Analyze social problem or issue	8	=	=	>	=	>	=	=	<	-	-	-
1.2.1	Identify problem causes and effects	7	<	=	>	<	>	=	>	-	-	-	-
1.2.2	Consult with stakeholders	8	=	=	>	<	-	=	=	=	-	-	>
1.2.3	Create problem tree	4	<	-	-	<	-	=	=	-	-	-	-
1.2.4	Investigate solutions	4	=	=	-	<	-	-	=	-	-	-	-
1.3	Identify impact goal(s)	11	=	=	=	=	=	=	=	=	=	=	=
1.4	Create solution tree	2	-	-	-	-	-	=	=	-	-	-	-
2	Development and validation of the Theory of Change	10	=	=	=	=	>	=	=	=	-	>	<
2.1	Conduct stakeholder analysis	10	=	=	<	=	=	=	<	<	>	-	=
2.2	Engage stakeholders	9	=	=	<	=	=	<	<	<	-	-	=
2.3	Develop Theory of Change	10	=	=	=	=	=	=	=	=	-	>	=
2.3.1	Define resources	9	<	<	-	<	=	=	<	=	-	=	=
2.3.2	Define activities	10	<	<	<	<	=	<	<	=	-	=	=
2.3.3	Define expected outcomes	10	<	<	=	<	=	<	<	=	-	=	=
2.3.4	Define conditions	7	<	<	=	<	-	<	<	=	-	-	-
2.4	Validate Theory of Change	4	=	=	-	=	-	=	-	-	-	-	-
3	Define and perform measurement	10	=	=	>	=	>	>	=	>	>	-	>
3.1	Define impact measurement plan	9	=	=	=	<	>	>	<	<	-	>	-
3.1.1	Selecting impact and target groups	6	<	>	=	<	-	-	<	-	-	=	-
3.1.2	Establishing measurement priorities	8	<	=	=	<	-	=	=	-	-	=	<
3.1.3	Determine time frame	6	-	<	-	-	=	=	<	=	-	-	=
3.1.4	Set measuring responsibilities	7	<	<	=	<	=	-	<	<	-	-	-
3.1.5	Identify data sources	5	=	=	=	<	-	=	-	-	-	-	-
3.2	Define indicators	11	=	=	=	<	=	=	=	=	=	=	>
3.3	Assign target values to indicators	6	-	-	<	<	-	=	=	=	-	=	-
3.4	Define data collection methods	8	=	=	=	<	-	=	=	<	-	=	-
3.5	Collect data	11	=	=	=	=	=	=	=	=	=	=	=
3.6	Analyse data	10	=	<	-	=	=	=	<	=	=	=	=
3.6.1	Prepare and evaluate data	8	<	=	-	<	<	=	<	=	=	-	-
3.6.2	Calculate indicator values	10	<	=	-	<	=	=	<	=	=	<	=
3.6.3	Apply correction mechanisms	10	=	>	>	<	=	>	>	>	-	>	=
3.7	Draw conclusions	7	=	<	=	=	-	=	<	-	-	-	=
4	Evaluate results and improve	9	=	=	=	=	>	=	=	-	=	-	=
4.1	Create report	9	<	<	=	=	<	<	=	-	<	-	=
4.2	Share report with target audience	9	<	=	=	=	<	<	=	-	<	-	=
4.3	Evaluate outcomes and impact	7	<	-	=	=	=	=	=	=	-	-	-
4.4	Create improvement plan	9	<	=	<	=	=	=	<	-	=	-	=
4.5	Implement improvements	9	<	=	<	=	=	=	<	-	<	-	<

Figure 18: Activity comparison of activities included in the generic model

6.4.2.1 Stage 1: Planning for impact The concepts for the first phase are all logical deliverables based on the activities that are present for the first phase. In the first stage, we have quite some deliverables that only occur in one method and are thus excluded from the generic model. If we take a look at the included concepts, we will see that the problem tree and solution tree are included, even though the concepts only occur in two SIA methods. We manually included these concepts, as we had already decided to include the optional activities to create a problem and solution tree. In the full concept comparison, it can be seen that the Sustainable Development Goal concept occurs in three SIA methods, but is still excluded. This is because the concept is the deliverable of activities that do not have the same purpose, where IRIS+ uses the Sustainable Development Goals to help define your impact goals, and MYIM uses the Sustainable Development Goal as a way of reporting which SDGs can be linked to your achieved impact. Since we have no activity that concerns the SDGs, we decided to manually exclude it.

6.4.2.2 Stage 2: Development and validation of Theory of Change This phase contains all the concepts that are necessary for the Theory of Change. Apart from the identification of the inputs, activities, outputs, outcomes, and impact, there is also a need to identify the assumptions that describe the conditions needed to achieve the desired change and the contextual factors that could both positively or negatively affect your Theory of Change. Next to that, even though they barely reached the threshold, the generic model also includes the correction mechanism concepts, which are essential for the consideration of an organisation's 'real impact'.

6.4.2.3 Stage 3: Define and perform measurement The essential part of this stage is the measurement plan, which encapsulates all information required to conduct the measurement and relates to the indicators and data collection methods. The data concept represents the data that is being collected in order to establish some of the indicator values, such as an excel file.

6.4.2.4 Stage 4: Evaluate results and improve For the last stage, we only have 4 concepts. In the documentation of the existing SIA methods, the terms 'evaluation report' and 'improvement plan' were often used interchangeably. We decided to split them into two separate components as to indicate the distinct deliverables of the activities to evaluate the results (evaluation report) and identify possible improvements for future measurements/assessments (improvement plan).

6.5 Generic model

With the completed activity and concept comparison and the application of the threshold of 3, we were able to identify the 'generic' activities and concepts of SIA. As a result, we have created a generic model PDD, which is depicted in Figure 20. The modelling of the activity part was mostly straightforward, as we would draw the lines from activity to activity and discuss the order in which things should occur, keeping in mind the order that is being prescribed in the existing SIA methods. The concept part is more difficult, however, and its result is more subjective than the activity part. Since the method comparison approach does not allow the indication of relationships between concepts and their cardinalities, we have created these ourselves. The quality of the model is ensured by extensive discussions within the research group and amongst the two modellers of the meta-model.

The key components of Social Impact Assessment methods according to this generic model would be the stakeholders, the Theory of Change, and the indicators, with the Theory of Change being at the heart of the SIA process. In our activity and concept comparison, these were also the components that were most frequently seen in the SIA methods we have investigated. On top of the model on the process side, we have added a rule: 'Consulting/engaging with stakeholders (1.2.2, 2.2) is an activity that is relevant throughout all stages. This rule was added based on the validation interviews with experts, who often mentioned that involving stakeholders is something that happens throughout all stages. A way to model this would be to create a 'Involve stakeholders' activity that runs parallel with all the activities, but for readability purposes, we decided to add the rule instead to indicate this essential part of the SIA process. Similarly, the Theory

of Change is something that is often revised and changed throughout the SIA process and is a very time-consuming activity, which is not depicted in the PDD. Another thing that is not directly derivable from the PDD, but is very essential based on the validation interviews, is that SIA is ideally applied as an iterative process in which the organization or project constantly tries to maximise the impact of its activities through measurement and where changes are made, to the ToC or to activities, if the results are below par. The timeframe of these iterations vary a lot, and can range from just a few months to a couple of years. Lastly, we also added a rule regarding the correction mechanisms: 'Correction mechanisms are only applied to impact indicators'. As indicated in our earlier defined definition of social impact, the impact is the result of all outcomes corrected by the correction mechanisms. As such, it is important to constraint the correction mechanisms' relationship with indicators to only allow them to be applied to indicators related to the impact component of a Theory of Change.

In general, we notice that the generic model we have created has quite some resemblance with the Impact Path. The Impact Path, for which the PDD can be found in Figure 35, consists of 24 activities and 30 concepts. The generic model includes 21 activities (88%) and 28 concepts (93%) that are present in the Impact Path. The other way around, the generic model has a total of 36 activities and 35 concepts. The Impact Path covers 33 out of 36 activities (92%) and 30 out of 35 concepts (86%). Although this means we can not say that when you are following the generic model, you are also following the Impact Path and vice versa, it does give an indication that the Impact Path has most of the activities and concepts that we regard as being generic for SIA.

Concept Name		IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BcTA	SROI
Planning for impact												
ORGANISATION	6	=	=	=	=	-	-	=	-	-	-	=
STAKEHOLDER GROUP	10	=	=	=	=	=		=	=	=	=	=
TARGET GROUP	4	-	=	-	-	=	=	-	=	-	-	-
STAKEHOLDER	11	=	=	=	=	=	=	=	=	=	=	=
SOCIAL PROBLEM	8	=	=	=	=	=	=	=	-	-	=	-
PROBLEM TREE	3	-	-	-	-	-	=	=	-	-	-	-
IMPACT GOAL	11	=	=	=	=	=	=	=	=	=	=	=
NEED	3	=	-	-	=	-	=	-	-	-	-	-
SOLUTION TREE	2	-	-	-	-	-	=	=	-	-	-	-
SOLUTION	3	=	=	-	=	-	-	-	-	-	-	-
Development and validation of Theory of Change												
THEORY OF CHANGE	10	=	=	=	=	=	=	=	=	-	=	=
INPUT	8	=	=	-	=	=	=	-	=	-	=	=
ACTIVITY	10	=	=	=	=	=	=	=	=	-	=	=
OUTPUT	10	=	=	=	=	=	=	=	=	-	=	=
OUTCOME	11	=	=	=	=	=	=	=	=	=	=	=
IMPACT	10	=	=	=	=	=	=	=	=	-	=	=
ASSUMPTION	6	=	=	=	=	-	-	=	=	-	-	-
CONTEXTUAL FACTOR	3	=	=	-	-	-	-	-	-	-	=	-
ATTRIBUTION	5	=	-	-	=	=	-	=	-	-	-	=
DEADWEIGHT	5	-	-	-	=	=	-	=	-	-	=	=
DROP OFF	4	=	-	-	=	=	-	-	-	-	-	=
DISPLACEMENT	4	=	-	-	=	=	-	-	-	-	-	=
Measuring impact												
MEASUREMENT PLAN	9	=	=	=	=	=	=	=	=	-	=	-
INDICATOR	11	=	=	=	=	=	=	=	=	=	=	=
DIRECT INDICATOR	10	=	=	=	=	=	=	=	=	=	-	=
INDIRECT INDICATOR	10	=	=	=	=	=	=	=	=	=	-	=
DATA	10	=	=	=	=	=	=	=	=	=	-	=
INDICATOR VALUE	11	=	=	=	=	=	=	=	=	=	=	=
TARGET VALUE	5	-	-	-	=	-	=	=	=	-	=	-
DATA COLLECTION METHOD	10	=	=	=	=	-	=	=	=	=	=	=
CONCLUSION	6	=	=	=	-	-	=	=	=	-	-	-
Improving impact												
IMPACT REPORT	9	=	=	=	=	=	=	=	-	=	-	=
EVALUATION REPORT	7	=	-	=	-	=	=	=	=	-	-	=
IMPROVEMENT PLAN	8	=	=	=	=	-	=	=	-	=	-	=
IMPROVEMENT	4	=	=	-	-	-	=	-	-	=	-	-

Figure 19: Concept comparison of concepts included in the generic model

7 Extending openESEA to support SIA

In this chapter, we will report on the proposed extension of openESEA to support Social Impact Assessment methods. Before discussing the extension, we will first provide some more context on openESEA.

7.1 OpenESEA

OpenESEA is an extendable, model-driven, open-source, web-based tool, initially developed for academic purposes by Niels Bik in 2018 during his Masters' thesis. Along with the tool, a Domain Specific Language (DSL) is defined that allows the creation of method specifications, which can then be interpreted by openESEA. Since its creation in 2018, it has been in continuous development by multiple people. As of August 2021, version 3 has been developed, of which some screenshots can be found in Appendix Q. The tool currently supports features such as the definition of networks, organisations, users, and methods. For these methods, you are able to specify indicators, topics, and surveys. Together, these concepts form the method specification and it can be created in two ways, either by using the wizard that is available in the tool or by creating a method specification using the DSL and uploading this to the tool. Next to the development of version 3, version 4 has already been specified. The meta-model of the most recently proposed version 4 can be found in Appendix R. When the proposed extension of this research will be implemented in the future, it will mark version 5 of the openESEA tool. You can see the timeline of the versions of openESEA in Figure 21.

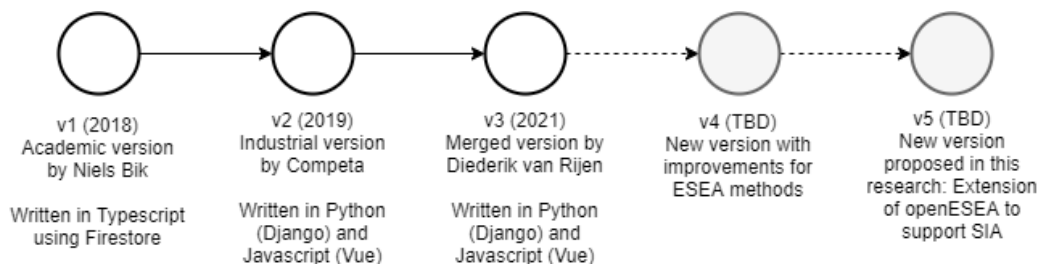


Figure 21: Timeline of openESEA development

The current name of openESEA already implies the Impact Measurement family of methods it supports: Ethical, Social, and Environmental Accounting methods. Since we will be extending this tool with another family of methods, the name of openESEA will most likely be changed in the near future to better reflect its purpose to support Impact Measurement methods.

7.2 Requirements for SIA extension

Before we can extend the openESEA meta-model to support SIA and define the relevant user stories for this implementation, we have to identify what is needed for the extension. The input for these requirements are the meta-models that we have created for existing SIA methods and more importantly, the generic model that we have created. As is known, the generic model does not provide the one-size-fits-all solution for conducting SIA, but it has given us insights into what the main activities and concepts are within SIA. We will be able to identify requirements by comparing the current openESEA meta-model with the meta-models of the generic model and existing SIA methods. Those activities and concepts that are not yet supported in the current openESEA version will have to be translated to user stories. Of course, we can not include every single activity and concept from each SIA method, but we can definitely support the basics of Social Impact Assessment. As such, we decided to conduct a tabular comparison for concepts and activities for both the generic model, as it represents the main features of SIA, and for the Impact Path, because of its relevance to this research. The full comparison to identify the gaps between the generic model/the Impact Path and the current openESEA meta-model can be found in Appendix S. Each table consists of 5 columns:

- Name: The name of the activity/concept of the Impact Path / generic model
- Currently supported: Whether or not the current openESEA meta-model supports the activity/concept
 - 0 = Not supported
 - 0.5 = Partially supported
 - 1 = Fully supported
- Comment: A comment to provide additional information when required
- MVP (Minimum Viable Product): Whether or not the activity/concept is required for the MVP of openESEA v5
 - 0 = Not included in MVP
 - 1 = Included in MVP
- Rationale: Rationale as to why the activity/concept should be included/excluded
- A column for each activity/concept of the current openESEA meta-model

As a result of the comparison and after multiple discussions within the research group, we ended up with 32 concepts in the MVP for the SIA extension, of which 22 are new concepts, i.e. for 22 concepts we will create a new concept for the extension of the meta-model. The included concepts along with their inclusion rationale, are shown in Table 12. Out of the 32 concepts, 31 are derived from the generic model and one additional one is added from the Impact Path that was not in the generic model, the output report. Since openESEA already supports the definition of organisations and indicators, we do not need to include new concepts for this. Similarly, for the Social Problem, we found that it is very similar to the concept 'Topic' that is already in openESEA. All that is required is that we are able to indicate that a certain topic is a social problem in the context of conducting SIA. The most important new additions are the Theory of Change, the correction mechanisms, the data collection methods, and the evaluation report and improvement plan. Although openESEA already includes an activity for reporting, there is not a 'Report' concept, as it is very likely that reports will not be stored in a database, but will be generated when needed/requested. Currently, openESEA does not yet support the creation of reports, so we will add a new 'Report' concept for the sake of eliciting all the necessary requirements for SIA.

Next to the addition of new concepts, we also have 28 new activities out of the total of 32 activities that are included in the MVP. The included activities along with the inclusion rationale, are shown in Table 13. Again, most requirements were already identified after the generic model comparison, with 2 out of 32 activities coming from the Impact Path. These two activities are 'Monitor direct results' and 'Report on outputs' and are related to the aforementioned concept 'Output report'. Most of the included activities are included because they are the activity of some included concept. In the list of included activities, you find some activities such as 'Consult with stakeholders' that are included as a 'manual activity'. These activities can not be supported by the tool and will happen outside of the tool. We included these kinds of activities to ensure that the meta-model of openESEA shows the essential activities of SIA, even if it does not include new functionality for the tool.

In total, we excluded 6 concepts and 10 activities. The excluded concepts and activities along with the exclusion rationale are shown in Table 14 and 15. The excluded concepts are excluded mostly as the tool will not be able to assist in the creation of those tools, such as a data analysis method, or solution, or because there are external tools available to support the creation of the concept (problem tree/solution tree). Activities are mostly excluded when the concept is excluded (Create problem tree), or whenever an activity is implicit as it will be done outside of the tool (Prepare data) or is already included within the tool (Calculate indicator values).

Concept	Inclusion rationale	New
ORGANISATION	Include the possibility to identify a mission.	
STAKEHOLDER GROUP	Already included, so no changes needed.	
TARGET GROUP	Need to be able to indicate which stakeholder group is a target group.	X
STAKEHOLDER	Already included, so no changes needed.	
SOCIAL PROBLEM	A Social Problem can be a child of a Topic, which is already included. So we only need to be able to define that a 'Topic' is a Social Problem.	
IMPACT GOAL	Impact goals are essential for SIA.	X
NEED	The needs of stakeholders with regards to the problem is essential for the understanding of what is required in your ToC.	X
THEORY OF CHANGE	Essential for SIA,	X
INPUT	Component of ToC.	X
ACTIVITY	Component of ToC.	X
OUTPUT	Component of ToC.	X
OUTCOME	Component of ToC.	X
IMPACT	Component of ToC.	X
ASSUMPTION	Assumptions are merely a text field describing the conditions that are needed to achieve the desired impact.	X
CONTEXTUAL FACTOR	A text field explaining the external factors that can affect your approach.	X
ATTRIBUTION	Important to establish real impact.	X
DEADWEIGHT	Important to establish real impact.	X
DROP OFF	Important to establish real impact.	X
DISPLACEMENT	Important to establish real impact.	X
MEASUREMENT PLAN	A measurement plan itself is a collection of components regarding the measurement. A concept is not needed as the tool will not actually create a measurement plan record, but rather help the user to construct its measurement plan.	
INDICATOR	Already included, so no changes needed.	
DIRECT INDICATOR	Already included, so no changes needed.	
INDIRECT INDICATOR	Already included, so no changes needed.	
INDICATOR VALUE	Already included as Question Response, so no changes needed.	
TARGET VALUE	Should become part of an indicator	
DATA COLLECTION METHOD	These need to be defined for the direct indicators, and are part of the measurement plan.	X
CONCLUSION	These are simple text fields that are related to the Evaluation Report, they are reflections on the results of the measurement.	X
IMPACT REPORT	This is already included, but the concept does not exist yet.	X
EVALUATION REPORT	In SIA, it's important to reflect on your results, so you can identify improvements for future measurements.	X
IMPROVEMENT PLAN	These are a part of an Evaluation Report.	X
IMPROVEMENT	These are a part of an Improvement Plan.	X
OUTPUT REPORT	Add concept for this in metamodel, essential for users that only measure their outputs.	X

Table 12: The concepts included in the MVP and their inclusion rationale

Activity	Inclusion rationale	New
Analyze social problem or issue	The definition of a Social Problem is essential for SIA. This activity is required and it's reflected in the 'Topic' concept.	X
Identify problem causes and effects	Add activity to ensure that problem causes and effects are written down, related to the Social problem.	X
Consult with stakeholders	This is a manual activity and will be added as a disclaimer to the user of the tool. It is not an activity that the tool will support.	X
Investigate solutions	The concept is excluded, but this is a manual activity and can be added as a disclaimer to the user of the tool. It's essential to thoroughly understand the social problem in SIA, so this is important to include.	X
Identify impact goals	This is a new concept, the activity is important to include. (Impact Goal)	X
Conduct stakeholder analysis	This is already included, so no changes needed.	
Engage stakeholders	This is a manual activity and will be added as a disclaimer to the user of the tool. It is not an activity that the tool will support.	X
Develop Theory of Change	Essential for SIA and a new concept. (Theory of Change)	X
Define resources	Component of ToC. (Input)	X
Define activities	Component of ToC. (Activities)	X
Define expected outcomes	Component of ToC. (Outcomes)	X
Define conditions	Component of ToC. (Assumption)	X
Validate Theory of Change	This is a manual activity and will be added as a disclaimer to the user of the tool. It is not an activity that the tool will support.	X
Define impact measurement plan	This is essential to include, as it represents the specification of a plan of measurement, which helps the user in conducting SIA.	X
Selecting impact and target groups	Component of an Impact Measurement plan and a new concept. (Target group)	X
Establishing measurement priorities	Component of an Impact Measurement plan and a new attribute (Priority on Outcome).	X
Determine time frame	Component of the Impact Measurement plan, results in a description of when the measurement will take place.	X
Set measuring responsibilities	Component of an Impact Measurement plan, result is a description of measurement responsibilities.	X
Identify data sources	Component of an Impact Measurement plan, result is a description data sources.	X
Define indicators	This is already included, so no changes needed.	
Assign target values to indicators	An indicator can get a target value.	X
Define data collection methods	Part of the measurement plan and needed for the new concept (Data collection method)	X
Collect data	For surveys, the data is automatically collected and saved. For other data collection methods, this will be a manual activity.	X
Apply correction mechanisms	Activity which applies the four correction mechanism concepts. (Deadweight, drop-off, attribution, displacement)	X
Draw conclusions	This is a new concept, the activity is important to include. (Conclusion)	X
Create report	This is already included, so no changes needed.	
Share report with target audience	This is already included, so no changes needed.	
Evaluate outcomes and impact	This is a new concept, the activity is important to include. (Evaluation report)	X
Create improvement plan	This is a new concept, the activity is important to include. (Improvement plan)	X
Implement improvements	This is a new concept, the activity is important to include. (Improvement)	X
Monitor direct results (outputs)	Essential for the Impact Path and it's related to a new concept. (Output)	X
Report on outputs	Essential for the Impact Path and it's related to a new concept. (Output report)	X

Table 13: The activities included in the MVP and their inclusion rationale

Concept	Exclusion rationale
PROBLEM TREE	There are external tools for this as well, there's no need to create functionality for this.
SOLUTION TREE	This can be created from the problem tree, so once the problem tree can be added, this is a simple addition.
SOLUTION	This is not something the tool can assist, as it's just a description of solutions that already exist. This would only be helpful for context.
DATA	Storing the data where indicator values are collected will not be necessary.
DATA ANALYSIS METHOD	This is something that's being done outside of the tool.
MEETING REPORT	This is just a report based on a meeting where there is reflection on the results, not something the tool would produce.

Table 14: The concepts excluded in the MVP and their exclusion rationale

Activity	Exclusion rationale
Elaborate Theory of Change	This is already included in the 'Develop Theory of Change' activity
Select data analysis method	The concept (Data analysis method) for this activity is excluded.
Analyse data	The collect data activity concerns the automatic or manual input of data based on your indicators, so this is an implicit activity done outside of the tool. The calculation is an implicit activity done by the tool.
Reflect on results	The concept (Meeting report) for this activity is excluded.
Improve robustness of measurement	Already included, it's another, more refined iteration of the measurement.
Defining the mission of the organization	This activity is implicit and already handled by adding an attribute to the 'Organisation' concept
Create problem tree	Concept is excluded (Problem tree).
Create solution tree	Concept is excluded (Solution tree).
Prepare and evaluate data	The collect data activity concerns the automatic or manual input of data based on your indicators, so this is an implicit activity done outside of the tool.
Calculate indicator values	This activity is implicit, as the direct indicators get their value from the 'Collect data' activity and the indirect indicators are calculated on demand by the tool based on the direct indicators.

Table 15: The activities excluded in the MVP and their exclusion rationale

7.3 Defining user stories

The next step towards the openESEA SIA extension is to define user stories based on the identified concepts and activities. The user stories describe the essential elements of the requirements, by explaining who can execute the action, what is expected and, optionally, why it is important. For the definition of user stories, we use the well-known template popularized by Cohn [21]:

As a <type of user >, I want <goal >, [so that <some reason >].

The first part of the user story describes the type of user. Within openESEA, we have 7 user roles as can be seen in Table 16. Originally, these user roles referred to ESEA method engineers and ESEA accountants, but these have been altered to Impact Measurement method engineers and IM accountants/practitioners. Since we will be introducing the SIA process in openESEA and the user stories are related to the SIA activities and its deliverables, all user stories will refer to the 'IM accountant/practitioner' user role. An SIA practitioner generally wants to be able to perform every activity in the SIA process.

To create the user stories, we first have to categorise the new concepts and activities in the form of epics, so we can have a collection of user stories underneath each epic. In total, we have created 7 epics: Organisation, Social problem, Theory of Change, Measurement plan, Operations, Report, and Evaluation Report, of which only the Organisation and Report epics refer to epics of earlier defined versions of openESEA requirements. For each new concept and activity, we create user stories that would describe the new requirements for the openESEA tool and assign them to one of the 7 epics. As a result, we ended up with a total of 45 user stories. The full list of User Stories can be seen in Appendix T. The list of user stories are represented in 7 columns:

- **ID:** The ID of the User Story which includes a reference to the epic of the user story, e.g. US-TOC-1

ID	Name	Description	Includes
RA	Root administrator	The user who manages the installation of the software. Can do virtually everything in the backend: manage networks, organisations, engineer methods, etc.	ME
ME	Method engineer	The user who specifies an Impact Measurement method	
NA	Network administrator	The user who manages a network. Can manage a network, create organisations within that network, create aggregated benchmark reports, export data of the whole network, etc.	ME
OA	Organisation administrator	Can engineer methods, manage their organisation, etc.	ME
IM	IM accountant/practitioner	Can execute Impact Measurement (IM) methods, create Theory of Changes, activate and send surveys, validate data and edit it if necessary, close surveys, produce reports and send them to stakeholders, produce reports/infographics and send them to stakeholders, export data, etc.	
SR	Survey respondent	Can respond to surveys that are sent to them, enter requested data, download received reports.	
AU	Auditor	Can review (but not edit) data to check the accuracy and materiality, sign electronically to attest the result. (Not to be implemented yet, but in later sprints)	

Table 16: The user roles within openESEA

is the first user story of the epic Theory of Change (US-TOC-0).

- **Description:** This column describes the goal of the user story, following the aforementioned template.
- **Explanation:** This column gives an elaborate explanation of the requirements of the user story, which is essential for the developer that will implement this story.
- **Type:** Whether the row is an epic or a user story.
- **Activity:** The related activity of the extended openESEA meta-model for the user story
- **Concept:** The related concept of the extended openESEA meta-model for the user story
- **Role:** The user role of the user story

The user stories describe different type of requirements. We explain the different types by providing some examples in Table 17, where four user stories of the Theory of Change epic are shown in Cohn’s template. First, we have user stories that describe a new piece of functionality, such as US-TOC-1, which describes that the tool should have a way to create and visualise the relationships between the elements of a Theory of Change. These user stories typically include the string **to be able to**. Secondly, we have user stories that describe a manual activity in SIA, such as US-TOC-10, which describes that the tool should provide a disclaimer or information message that the user has to engage their stakeholders and involve them in the development of a Theory of Change. These user stories are there to assist the user in their SIA process and typically include the string **to be informed that**. Thirdly, we have user stories that describe a soft constraint, such as US-TOC-12, which describes that the tool should provide a warning message to the user whenever they skip a certain level of ToC elements, e.g. when they connect an input to an output, thus skipping the activity element of a ToC. These user stories are there to warn the user that they might be making a mistake and typically include the string **to be warned when**. Warnings do not prohibit the user from performing a certain action in the tool. Lastly, we have user stories that describe a hard constraint, such as US-TOC-14, which describes that the tool should provide an error message whenever a ToC element has no relationship with other ToC elements, thus meaning it is unconnected. These user stories are there to prevent the user from making mistakes and typically include the string **to receive an error when**. Errors prohibit the user from performing a certain action in the tool.

These user stories, combined with the openESEA meta-model will provide the necessary information for a developer to extend the openESEA tool to support SIA.

ID	User story
US-TOC-1	As an IM accountant/practitioner, I want to be able to develop a Theory of Change
US-TOC-10	As an IM accountant/practitioner, I want to be informed that I need to engage my stakeholders
US-TOC-12	As an IM accountant/practitioner, I want to be warned when I skip a level of Theory of Change elements when linking the elements
US-TOC-14	As an IM accountant/practitioner, I want to receive an error whenever a ToC element is not linked to other ToC elements

Table 17: A sample of user stories for the Theory of Change (TOC) epic

7.4 Extending the openESEA metamodel

Using the identified requirements for the SIA extension of openESEA, we can create a fifth version of the openESEA meta-model, using v4 as our starting point. This meta-model depicts the data structures for the openESEA tool. In this section, we explain the openESEA meta-model and provide rationale for its extension.

7.4.1 OpenESEA v4

Up to version 4 of the openESEA tool, the primary focus is on ESEA, where organisations assess and report on their ethical, social, and environmental performance. Although the latest developed version of openESEA is version 3, the meta-model of version 4 already provides some improvements for ESEA, which can be seen in Figure 88 in Appendix R. The concepts, relationships, and attributes that are coloured purple are the improvements proposed in v4. At the core of the fourth version of the openESEA meta-model is the 'ESEA method', which is the specification of how ESEA should be performed. This concept is related and includes the specification of surveys, stakeholder groups, certification levels, topic, indicators, questions, but also guidelines on e.g. the reporting format or on whether the results of an accounting have to be published. The state of the application of an ESEA method at any given time is the ESEA account. Usually, organisations apply ESEA methods with a certain frequency and during a certain period, which is defined as the 'Campaign'. In ESEA methods, topics are presented in subsections, which group text fragments that explain or elaborate on the topic and group the questions of a survey. The questions are provided to elicit information from a specified stakeholder group and are bundled in a survey. Whenever a survey is filled out by a stakeholder, a survey response is collected, which groups the questions responses. These question responses are the data inputs for the indicators that are defined within the method. Indicators can be either direct, meaning a single data point, or indirect, meaning it's a calculated value based on a formula. The question responses only relate to the direct indicators. The values of indirect indicators are automatically calculated when needed based on the formula, which usually contains a reference to the values of direct indicators or other indirect indicators. Direct indicators are related to 'Validation rules', which define a logical condition over the values of one or more direct indicators to check whether the data in a survey response is correct.

7.4.2 openESEA v5

For SIA, not every concept that is present in v4 will be relevant. However, as SIA and ESEA are related families and some of the core concepts, such as indicators, stakeholder groups, and topics (social problem) are already in v4, we can extend it quite easily using the ESEA method concept as a way to link the new SIA concepts. The extended meta-model of openESEA v5 is presented in Figure 22. In the meta-model, different colours have been used for several reasons:

- **Purple:** This colour indicates the changes made in v4, as compared to v3.
- **Green:** This colour indicates the new SIA concepts, relationships, and attributes we have introduced for v5, as compared to v4.

- **Grey:** This colour indicates which concepts are represented by the DSL and can be specified both in the tool and in the DSL, which will be explained more thoroughly in the section on the DSL.
- **White:** This colour indicates the concepts that are instantiated in the openESEA tool. Usually, it represents something that can only be created once surveys have been answered and indicator values are known.

In total, we have added 29 new concepts, 5 new attributes, and we have changed the names of two concepts, IM project (ESEA account in v4) and IM method (ESEA method in v4), in order to reflect that the openESEA tool is no longer focused on just ESEA method specifications. The new elements in the openESEA metamodel for the SIA extension show different relationships than the concept part of the PDDs we have created for existing SIA methods. Next to that, there are some new concepts that are not specified as included concepts in the MVP in Table 12. This is mostly due to the fact that we have modelled the openESEA meta-model with the development of the tool in mind, instead of trying to paint a picture of how a method is prescribed. There are a few core concepts in the new meta-model that require further elaboration, which we will describe next.

7.4.2.1 Theory of Change The Theory of Change is the core concept for the SIA extension and is introduced in the meta-model by linking it to the IM method. This concept along with its related concepts are all grey and thus are represented by the DSL. The Theory of Change is always related to one or multiple impact goals, that are defined for some organisation with a mission. The Theory of Change consists out of ToC elements - input, activity, output, outcome, and impact - that are related to each other. We created a specialisation relationship for the ToC elements to open up the possibilities for relating elements without having to draw each relationship. Next to that, the reflexive relationship on the ToC element makes it easier to define methods in the DSL, as fewer relationships have to be managed. ToC elements can relate to elements that are of the same type, e.g. an outcome to an outcome, and they can be related to another type that is not of the usual element type, e.g. you could link inputs to outputs immediately. This also means that it is allowed to skip an entire ToC element type, e.g. when you do not include any outputs. The only exception we make is that an input should not have an impact as a parent/target element. The Theory of Change and its elements can both have multiple assumptions and contextual factors.

7.4.2.2 Indicators The indicator concept was already available in v4, but some changes had to be made to support SIA. Indicators are linked to the Theory of Change by the ToC elements. Usually, a ToC element can have several indicators. Next to that, to define the data collection method of the direct indicators, we linked the data collection method concept to the IM method, where they can first be defined and subsequently linked to each direct indicator. Usually, indicators are linked to some topic. In the context of SIA, a topic can also be a social problem, which is indicated by the boolean attribute: `isSocialProblem`. This is added so it's ensured that the tool is aware that a topic is a social problem, which can later be used for e.g. creating reports. Lastly, to support the correction mechanisms, we related a concept for drop-off, attribution, deadweight, and displacement to indicators. For each correction mechanism, a description can be given related to an indicator as to what the deadweight, drop-off, attribution or displacements entail. Within the openESEA tool, the correction mechanisms can have several values over the years and a rationale as to why that value was chosen for the correction mechanism. Next to that, we have decided to include the concept of 'Monetisation' and relate it to the indicator concept. As a result, we have created a specialisation relationship 'Operation value', and we call the correction mechanisms and monetisation concept 'Operations'. Monetisation describes the financial value that can be used to monetise an indicator value, usually by using a financial proxy. We decided to include it based on examples we have found and since it's a useful and cost-effective new addition. An important constraint we added is that correction mechanisms can only be applied to impact indicators, i.e. indicators that are related to an impact ToC element. Monetisation, however, can be applied to every type of indicator, as it can also be useful to calculate the financial value of salaries that might relate to an input indicator.

7.4.2.3 Report and evaluation report Lastly, we have added the concepts for the reports (output report and impact report) and the evaluation report, which contains the improvement plan and conclusions.

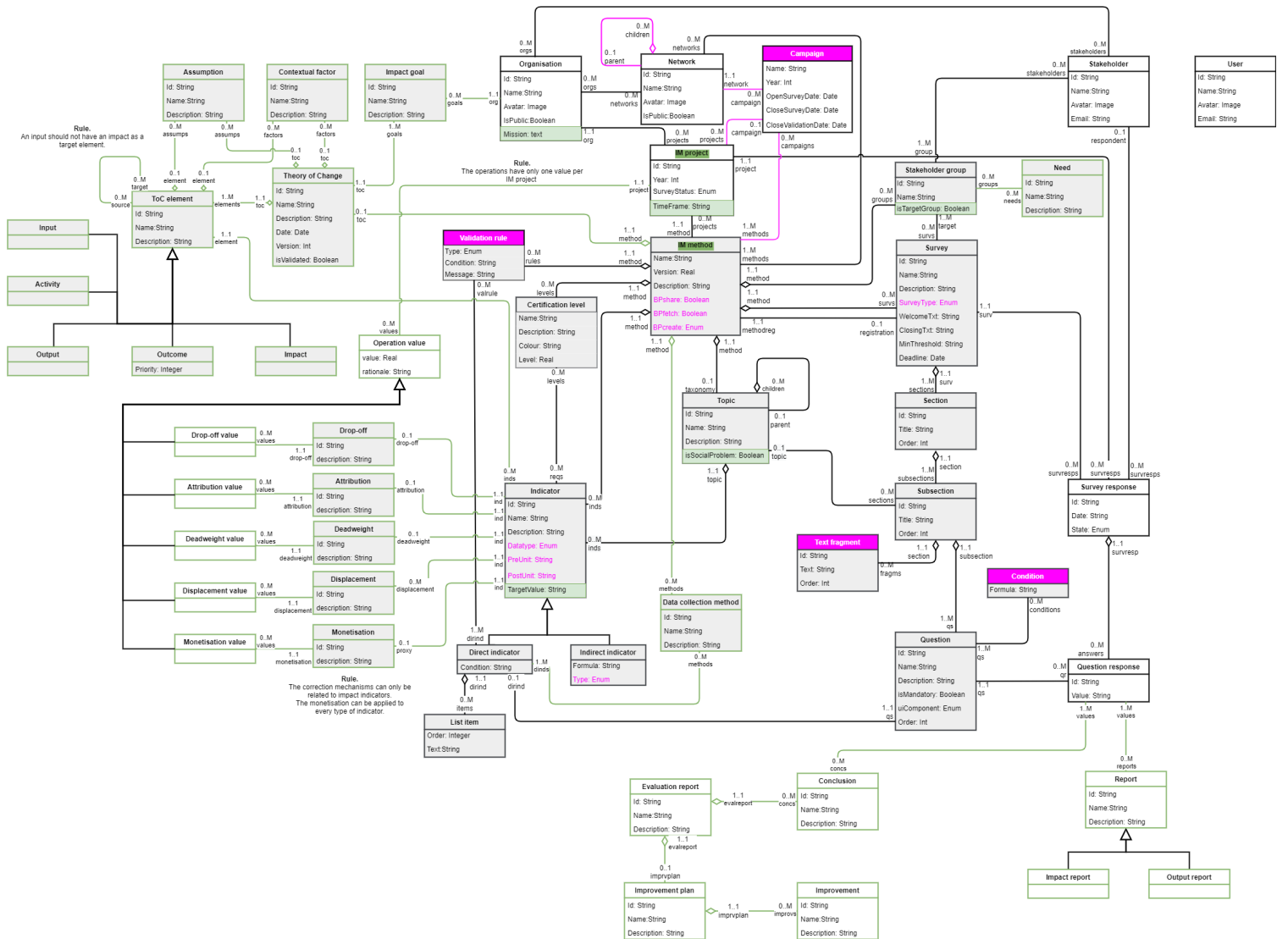


Figure 22: OpenESEA v5 meta-model

As of the currently developed version 3, there is no functionality yet for the generation of reports and it is not yet known what it should contain. In principle, the report should contain anything that a user wants to show to their internal or external stakeholders, which could be anything that is present in the meta-model. For now, we have related both the reports and the conclusions to the 'Question response' concept, but this is prone to be changed once the reporting functionality for openESEA will be worked on during a future project.

7.5 Extending the openESEA DSL

7.5.1 Xtext

Within openESEA, the method specifications can be defined by the DSL, which is defined in Xtext, a framework for the development of programming languages and domain-specific languages. The framework offers a full infrastructure, which includes a parser, linker, typechecker, compiler, and a fully-featured customisable Eclipse-based IDE. The specification of a method is performed in an Eclipse instance, offering the DSL and providing validation and content assist, of which an example can be seen in the screenshot in Appendix U. Once the method specification has been created, it can be uploaded and interpreted by the openESEA tool.

7.5.2 OpenESEA v5 DSL

The DSL is designed based on the grey meta-model concepts, their attributes, and the relationships between the concepts. In the DSL, the meta-model concepts are defined in chronological order, making sure that each concept is created in the correct order, e.g. first we define the data collection methods, and then we define the indicators. The chronological specification is supported by the content assist. The full DSL specification for openESEA v5 can be found in Appendix V. For each grey concept in the openESEA meta-model, we create a class in the DSL specification. The number of instances of classes is restricted based on Extended Backus-Naur Form-like (EBNF) expressions. These expressions allow the definition of a cardinality:

- No operator - Exactly one
- ? operator - Zero or one
- * operator - Zero or more
- + operator - One or more

For example, at the start of each method specification using the DSL, we need to define our IM Method exactly as defined in the syntax depicted in Listing 1. First, we define the ID, name, version, whether it's a public method, and a description. Subsequently, we can chronologically create either zero or one list of stakeholder groups, topics, a Theory of Change, data collection methods etc. In the case that there are constraints for the tool, we define these in comments within the DSL. These constraints are also taken along in the description of the user stories in the previous chapter. To support the SIA extension, the only changes we made here were the addition of the Theory of Change, data collection methods, and a new name for the class of 'ESEA_method' to 'IM_method'.

```
1 // ESEA_method
2 IM_method:
3   'im_method_id:' name=ID
4   'Name:' STRING
5   'Version:' DOUBLE
6   'isPublic:' BOOLEAN
7   'Description:' STRING
8   (list_of_stakeholder_groups+=List_of_stakeholder_groups)?
9   (list_of_topics+=List_of_topics)?
10  (theory_of_change=Theory_of_change)?
11  (list_of_data_collection_methods+=List_of_data_collection_methods)?
12  (list_of_indicators+=List_of_indicators)?
13  (list_of_surveys+=List_of_surveys)?
14  (list_of_certification_levels+=List_of_certification_levels)?
```

```

15 (list_of_validation_rules+=List_of_validation_rules)?
16 (registration_survey=Survey)?
17 //Constraint: The registration survey should be single respondent
18 ;

```

Listing 1: DSL fragment - IM Method

7.5.2.1 Theory of Change In Listing 2, the textual grammar of the Theory of Change is specified. The ToC is defined as part of the IM method and it requires the definition of an ID, name, description, data, version, and whether or not it has been validated with stakeholders. Then, as part of the Theory of Change, you define your impact goals, potential assumptions and contextual factors and, most importantly, your ToC elements. The ToC elements represent a list of one or more elements, as defined in the ToC element syntax, which is displayed in Listing 3.

```

1 Theory_of_change:
2   'toc_id:' name=ID
3   'Name:' STRING
4   'Description:' STRING
5   'Date:' STRING
6   'Version:' DOUBLE
7   'isValidated:' BOOLEAN
8   list_of_goals+=List_of_impact_goals
9   (list_of_assumptions+=List_of_assumptions)?
10  (list_of_contextual_factors+=List_of_contextual_factors)?
11  list_of_elements+=List_of_elements
12 ;
13
14 List_of_elements:
15   'Elements:'
16   (element+=Element)+
17 ;
18
19 List_of_parent_elements:
20   'Parent_elements:'
21   (parent_element+=[Element])+
22 ;

```

Listing 2: DSL fragment - Theory of Change

To define a Theory of Change element, we define an ID, a name, and a description. Then, we indicate which type of element the ToC element is. Depending on the selected type, you may have additional attributes, such as the Priority attribute on outcomes. In order to relate the ToC elements, we define a list of parent elements for each element. This list of parent elements are, however, not new elements, but they are merely a reference to already existing elements, as defined in the syntax of lines 19-21 in Listing 2. Since the DSL is asking for a list of parent/target elements, the Theory of Change has to be specified in a top-down approach fashion. After the listing of the parent elements, we specify potential assumptions and contextual factors related to the element.

```

1 Element:
2   'element_id:' name=ID
3   'Name:' STRING
4   'Description:' STRING
5   'Element_type:' element_type=Element_type
6   (list_of_parent_elements=List_of_parent_elements)?
7   // Constraint: An input can not have an impact as a parent element
8   // Constraint: A user should be warned whenever a level of the ToC is skipped, e.g.
   from Input to Output skips Activities
9   (list_of_assumption=List_of_assumptions)?
10  (list_of_contextual_factors=List_of_contextual_factors)?

```

```

11 ;
12
13 Element_type:
14     input=Input | activity=Activity | output=Output | outcome=Outcome | impact=Impact
15 ;
16
17 Input:
18     input='Input'
19 ;
20
21 Activity:
22     activity='Activity'
23 ;
24
25 Output:
26     output='Output'
27 ;
28
29 Outcome:
30     outcome='Outcome'
31     ('Priority:' INT)?
32 ;
33
34 Impact:
35     impact='Impact'
36 ;

```

Listing 3: DSL fragment - ToC Element

7.5.2.2 Indicator Lastly, we made quite some changes to the DSL grammar of the Indicator class, as displayed in Listing 4. Indicators, which are linked to topics in ESEA and linked to social problems in SIA, have an ID, name, and description. For the context of SIA, we can link Indicators to ToC elements. This link will indicate whether or not an indicator is an impact indicator for example, so the tool will know that it should take along any correction mechanism that is described for this indicator. Indicators always have a type, either direct or indirect, and a datatype, e.g. integer, boolean, or double. For direct indicators, we can add a condition and a list of related data collection methods that have already been defined before the definition of the indicators. For indirect indicators, we can indicate what formula is needed to calculate the indicator value. This formula uses direct indicators, operators, and numbers. Operators can be defined as arithmetic, statistical, and functional. Firstly, there are operators used to multiply, divide, count, and subtract the values of direct indicators. Secondly, there are statistical operators that can be used to e.g. calculate the mean of one single value based on all questions responses obtained from a survey. Lastly, there are functional operators used for requirement specifications of certification levels, e.g. if and then statement specifying that a certain condition has to be met in order to obtain a certain certification level. After the indication of the indicator type and the datatype, there's the option to assign a target value to the indicator and to describe what operations are applicable to this indicator. For deadweight, attribution, drop-off, and monetisation, there is one value possible. For displacements, however, there can be multiple.

An example of how these operations (correction mechanisms and monetisation) are applied to the indicators, can be seen in Listing 7 in Appendix W (lines 298-310). For impact indicator IND14 - Impact of residents becoming more social - we have two correction mechanisms, deadweight (DW1) and displacement (DP1). Since this indicator is indirect, it has a formula, which in this case only contains the value of IND8. Because it is an impact indicator, we have to take along the operations that are relevant for this indicator. Given that the deadweight and displacement values are represented as percentages and thus have a value between 0.0 and 1.0, the value of this impact indicator can then be calculated as:

$$IND14 = IND8 * (1 - DW1) * (1 - DP1) \quad (1)$$


```

1 Indicator:
2   'Indicator_id:' name=ID
3   'Name:' STRING
4   'Description:' STRING
5   ('PreUnit:' STRING)?
6   ('PostUnit:' STRING)?
7   ('Topic:' linkTopic=[Topic])?
8   ('Element:' linkElement=[Element|FQN])?
9   'Indicator_type:' indicator_type=Indicator_type
10  'DataType:' datatype=Datatype
11  // Constraint: only direct indicators can have datatype list
12  ('TargetValue:' STRING)?
13  ('Deadweight:' deadweight=Deadweight)?
14  ('Attribution:' attribution=Attribution)?
15  ('Drop_off:' drop_off=Drop_off)?
16  (list_of_displacements=List_of_displacements)?
17  // Constraint: The correction mechanisms (deadweight, attribution, drop_off,
18  displacement) can only be applied to impact indicators
19  ('Monetisation:' monetisation=Monetisation)?
20  // Constraint: If an indicator has a formula (indirect indicator), this is applied
21  before the monetisation.
22 ;
23 Indicator_type:
24   direct=Direct | indirect=Indirect
25 ;
26 Direct:
27   direct='Direct'
28   ('Condition:' expression=Expression)?
29   // Constraint: We should be able to reference answer options
30   (list_of_related_data_collection_methods=List_of_related_data_collection_methods)?
31 ;
32
33 Data_collection_method:
34   'data_collection_method_id:' name=ID
35   'Name:' STRING
36   'Description:' STRING
37 ;
38
39 Indirect:
40   indirect='Indirect'
41   'Formula:' (formula=Formula)
42   ('Type:' indicatorClassification=INDICATORCLASSIFICATION)?
43 ;

```

Listing 4: DSL fragment - Indicator

7.5.3 Validating the DSL

In order to validate our meta-model and whether the DSL also correctly represents the meta-model, we have made method specifications of real-world examples. Before validating using the DSL, we created method instantiations using Excel, where each concept in the meta-model represents a table, with the attributes and foreign keys as columns, and records/instances as rows. An example of this Excel method instantiation can be found in Figure 95 and 96 in Appendix W. Once these instantiations were completed and the necessary changes to the meta-model to support the examples were done, we also created method specifications using the DSL. In total, we have used four examples from four different sources:

1. The Project Superwomen case [1], which serves as an example for how a ToC should be created

according to theoryofchange.org. The method specification for this can be found in Listing 6 in Appendix W.

2. The Wheels-to-Meals example [64], which is a worked out example of how to use SROI, by Social Value UK. This one was important for us to validate operations in our meta-model and DSL. The method specification for this can be found in Listing 7 in Appendix W.
3. The Yumeko example [7], which serves as an example in the documentation of the Impact Path, and displays what a ToC should contain. The method specification for this can be found in Listing 8 in Appendix W.
4. The Fruitmotor example [8]. De Fruitmotor is a Social Enterprise in the Netherlands that have created a Theory of Change to support their impact measurements. The method specification for this can be found in Listing 9 in Appendix W.

Whenever we noticed in an example that something was missing in the meta-model, we made a change and made sure that change was reflected in the DSL as well. As a result of the validation using the examples, we have made the following changes to the openESEA v5 meta-model and thus the DSL:

- Created a relationship from assumptions and contextual factors to ToC elements, instead of only relating them to the ToC.
- Create the specialisation for ToC elements and operation value, mostly for readability of the meta-model. The ToC element specialisation also opened up more possibilities for relating elements without having to draw each relationship. This way, it was also easier to define methods in the DSL because we have to manage fewer relationships.
- Gathered the insight that not every ToC element type is needed and it does not necessarily have to follow the logical chain of Input-Activity-Output-Outcome-Impact. There's even a possibility that an Impact has an Input as a target element. This supports the argument for the reflexive relationship on ToC element.
- A ToC element can also be linked to a ToC element of the same type. The only ones without evidence of this are input and activities, but we believe these should also be possible or at least we see no reason to constrain these.
- In the case where ToC elements were considered from the perspective of stakeholders, we do not have to define the related stakeholder group for each ToC element. Instead, we create multiple inputs per stakeholder, e.g. An input element for the time of a volunteer and an input element for the time of an elder person, instead of creating one element 'Time' and relating it to stakeholder groups.
- We created a relationship between IM method and data collection method to allow the definition of data collection methods before defining the indicators. This way, in the method specifications, you can create data collection methods first and then refer to them when creating a direct indicator.
- We included the monetisation operation, as it is cheap to include and it is very useful in SIA to give monetised values to your results
- Created a rule that the correction mechanisms can only be applied to impact indicators. Monetisation could also be applied to other indicators, e.g. the monetised value of the time of a volunteer.
- Gathered the insight that if an indicator has a formula, then we first apply this formula, then the correction mechanism values, and lastly the monetisation value.

8 Investigating the Impact Path

In the literature review section, we already introduced the Impact Path with the help of the documentation we were able to find online. In this section, we will dive deeper into the Impact Path, where we will shed some light on its history and future direction, its process and deliverables, and its benefits and disadvantages. This section reports on the findings from the interviews that have been conducted regarding the Impact Path and some of the findings from a survey that was sent out by the Bachelor students in our research group. In total, we have conducted 10 interviews regarding the Impact Path. Two interviews have been with people who are involved with the development of the Impact Path, one person from an impact consultancy firm who was and is the project lead on the development of the Impact Path, and one person who is employed at the Dutch Ministry of Economic Affairs who is involved with coordinating the future direction of the Impact Path. Next to that, we have conducted 8 interviews with people who have experience with utilising the Impact Path, of which four are consultants who are familiar with the Impact Path and four are employees/owners of Social Enterprises who have used the Impact Path to measure their impact.

8.1 Development of the Impact Path

8.1.1 Introduction of the Impact Path

The Impact Path is not the first attempt within the domain of SIA to create a tool that would lower the threshold for SEs to measure their impact without external assistance. In 2015, the Impact Wizard was created with that exact same purpose, which was developed in collaboration with the same impact consultancy firm as the firm that led the development of the Impact Path. Unfortunately, according to a consultant, we spoke with who also worked on the Impact Wizard, this tool did not manage to reach its goal, as only about 15% of its users were able to independently use the tool for impact measurement. Interestingly though, the Impact Wizard, a tool that is aimed at social enterprises like the Impact Path, is not mentioned once in the Impact Path, not as an inspiration for the Impact Path or as a featured tool, while it does mention e.g. the Impact Management Project, which is primarily aimed at impact investors. Currently, it is unclear how exactly the Impact Wizard and the Impact Path are related.

As we already mentioned earlier in the literature review section on the Impact Path, the Dutch government got involved in the discussion on how to support and stimulate social entrepreneurship. This includes the announcement of a new judicial status for Dutch organisations with social missions, the 'maatschappelijke BV' (BVM), as well as the introduction of the Impact Path in 2018. Discussions by the government with experts in the domain of social impact assessment on assisting social enterprises started in 2015 already, but it was not until 2017 that the development of the Impact Path began, which took about half a year of research and development to create. It was found that the Dutch social enterprises, which are usually quite small in size, feel a lot of pressure from their investors to demonstrate their social impact. These organisations often already have trouble keeping their head above water with just their daily activities and do not have the resources to also measure their impact. As such, something was needed to support these social enterprises in their impact measurement in an accessible way with a low threshold, without hurting traditional enterprises. A question that has often arisen is whether or not social enterprises should receive more benefits from the new BVM judicial status, such as tax benefits, more promotion, or positive discrimination. With the creation of a consortium consisting of a social impact consultancy firm, a research institute, and a network of social enterprises, the government funded the development of the Impact Path, which would serve as a guide for accessible impact measurement. The idea of the Impact Path was to create an interactive tool that would guide the user through the process. Instead, due to budgetary reasons, an intermediate solution was to create the interactive PDF. Although promotion of the new method was minimal, the Impact Path was still getting quite some attention and is even being prescribed as a method to obtain certification for the 'Code Sociale Ondernemingen'. During the development of the Impact Path, the decision was made to split the impact measurement in separate domains, as for each domain, the way of measuring would be different. This resulted in the first version of the Impact Path in 2018 with 3 domains: labour participation, sustainable value chains, and the circular economy. In 2019, they expanded the Impact Path with another domain: active and healthy ageing.

8.1.2 Future outlook

Over the past years, since the introduction of the Impact Path, the Dutch government has advocated for more initiatives to support social enterprises and more development on the Impact Path, as can be seen in government letters from 2018 [12], 2019 [47], and 2020 [48]. Currently, the owner of the Impact Path is the ministry of Economic Affairs and Climate Policy together with the Ministry of Social Affairs and Employment. As of March 2021, a new initiative started with the goal to reduce obstacles and stimulate social entrepreneurship, called the 'City Deal'. The City Deal aims to improve the 'impact ecosystem' and currently has about 80 participants consisting of ministries, municipalities, provinces, universities, consultancy firms, and social enterprises. Part of this City Deal is the extension of the Impact Path to create Impact Path 2.0. Research on possible improvements for the Impact Path has already started, but it is not yet clear what these improvements will be. The one thing that is known, is that the goal is to expand on and introduce new domains for the Impact Path to ensure that it is compatible with more social enterprises who desire to measure their impact.

8.2 The Impact Path in practice

In the 8 interviews that have been conducted with practitioners and consultants, we have discussed their impressions and experience with the Impact Path. This section will report on the experienced resistance factors, the advantages, disadvantages, and identified possible improvements for the Impact Path. In most cases, the practitioners learned of the Impact Path due to them following an impact training or because they wanted to become certified. In general, we found that practitioners often only use the Impact Path once and subsequently either develop their own method or just alter some things annually based on the measuring instruments they used in their first iteration of the impact assessment. In some cases, the organisation would hire someone who would act as an impact manager, who would then have the responsibility to continuously measure the organisation's impact. Important to note is that We started the interviews with an assumption that turned out to be false. Initially, we thought that practitioners would transition to using the Impact Path from some other method, while in reality, it is often that an organisation has never actually used a method and started using the Impact Path as their first method.

Before going into the results of these interviews, we provide some information on the users of the Impact Path based on a survey that was sent out to analyse SIA in practice.

8.2.1 Motivations and pain points

As part of the research of the two bachelor students in our research group, they have created an online survey, which had the goal to retrieve data on the applied SIA methods in practice, the motivations to conduct SIA, and the experienced pain points. These motivations and pain points are not structured in the same way as the motivations and challenges in this paper, but they have been consolidated into the challenges in Section 4.2. The survey asks respondents what SIA method(s) they are using or have used, of which the Impact Path is one choice. In total, the survey yielded 57 responses, of which 38 (66.7%) are practitioners and 19 (33.3%) are consultants. The results of the full data set in terms of the motivations and pain points for all consultants and practitioners can be seen in Appendix X. In this chapter, we will use a subset of that data, which only includes those who have used the Impact Path. Out of the total 57 responses, there were 20 respondents who have used the Impact Path (35.1%), which is the second most used SIA method among all respondents, second to the most used method, which is the use of a respondent's own, in-house method (47.4%). Of the 19 consultants, 12 have used the Impact Path (63.2%), while only 8 out of 38 practitioners (21.1%) have used it. This makes sense, as consultants are usually more aware of all the methods that are available to them.

Apart from the use of the Impact Path and the use of an 'own method', the respondents also reported to have applied other SIA methods, as can be seen in Figure 23. As can be expected, it is mostly consultants that have also applied a lot of other methods. Out of the 8 Impact Path users, there was only one who has not used either their own method or another method, thus meaning the Impact Path was used for their first impact measurement. When asked about any changes made to existing methods, both practitioners

and consultants indicated that they make changes to methods. All the consultants, in fact, have adapted methods in one or multiple projects. When asked for rationale, they mainly indicate that methods are always tailored to the context of the organisation, because there is no one-size-fits-all method.

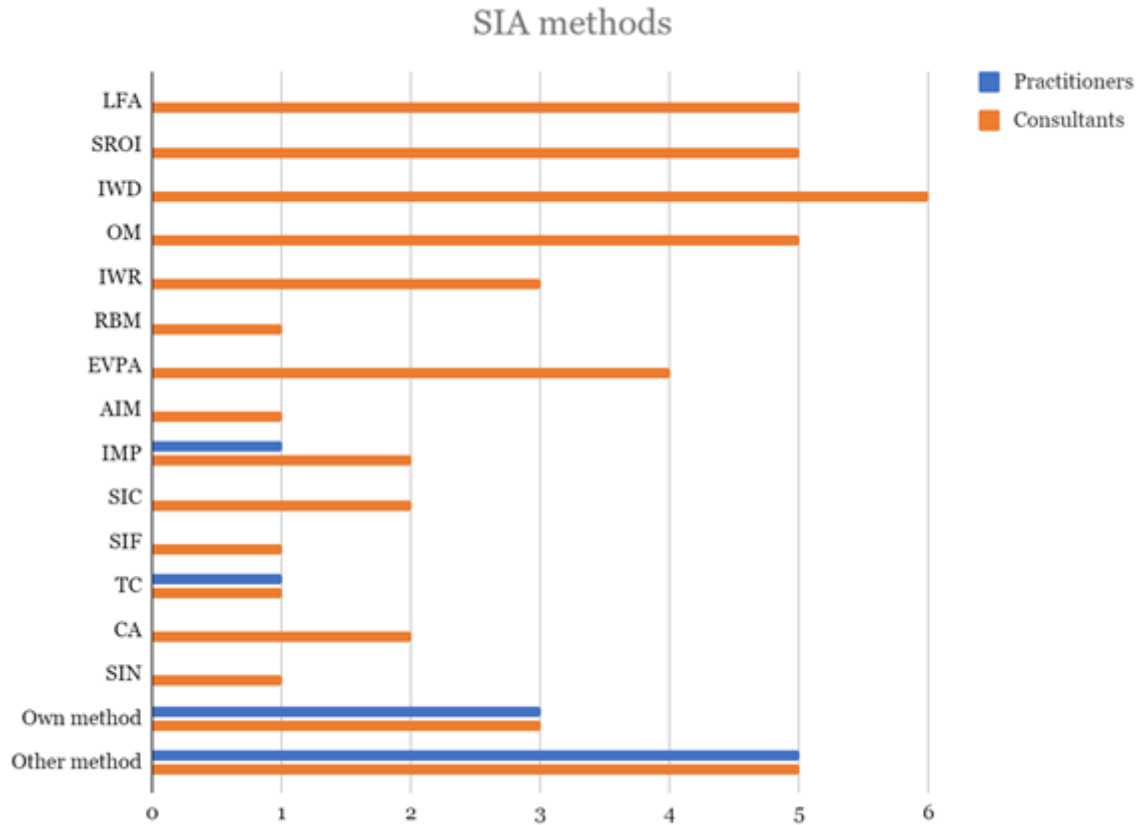


Figure 23: Application of SIA methods in practice among Impact Path users

In the survey, respondents were asked to rate the motivations that drive organisations to apply SIA methods. Practitioners were asked to fill in the motivations on behalf of the organisation they work for, whereas consultants were asked to fill in the motivations based on their experience with clients who apply SIA methods. The motivations of practitioners and consultants are shown in Figure 24 and Figure 25.

Among Impact Path users, the practitioners indicate that their main motivation for conducting SIA was to meet social values. That means they are interested in knowing the extent to which they achieve their mission and long-term impact goals. Their next main motivation seems to be to improve the organisation and identify areas in which they can improve or increase their impact, which is actually indicated to be the main motivation for consultants. For both consultants and practitioners, there seems to be a clear distinction between the 5 most mentioned motivations (Improve organisation, meeting social values, strategic management, marketing, certification/network) and the 5 least mentioned motivations (Public pressure, comply with law, value chain pressure, attract human capital, reserved space). The exception here is that 'accounting for funding' seems to be a lot more important according to consultants than for practitioners. In general, it seems like for both consultants and practitioners, the most important motivations are to improve

their organisation and thereby maximising the impact they are making.

To assess the similarity of the motivations between practitioners and consultants and between the Impact Path users and all survey respondents, we calculate the Kendall Tau correlation coefficient (τ), which measures the correspondence between two rankings [49]¹. The null hypothesis for these tests is that there is no association between the two rankings. Between the Impact Path practitioners and Impact Path consultants, there seems to be a strong positive correlation, $\tau = 0.75$, $p < 0.05$. Similarly, there is a strong correlation between all practitioners and the Impact Path practitioners, $\tau = 0.85$, $p < 0.05$, and between all consultants and the Impact Path consultants, $\tau = 0.85$, $p < 0.05$. All in all, both between the IP practitioners and IP consultants, as well as between the IP practitioners/consultants and all respondents, there does not seem to be a significant difference in terms of their motivations.



Figure 24: Motivations of consultants, ranked from greater to lesser motivations



Figure 25: Motivations of practitioners, ranked from greater to lesser motivations

Practitioners and consultants were also asked to indicate to what extent they are troubled by possible pain points. The scale to indicate this extent varies from not experienced at all to extremely troubling, indicating it is something that they are struggling with when applying SIA. The results on the pain points are shown in Figure 26 and Figure 27.

¹<https://docs.scipy.org/doc/scipy/reference/generated/scipy.stats.kendalltau.html>

Based on the results, it seems like consultants and practitioners agree on the fact that the most difficult part of applying SIA is the measuring of impact. Both accounting for time lag, where it is difficult to measure impact because it does not occur instantly and the application of correction mechanisms are important for the practitioners and consultants. Especially the application of correction mechanisms seems to be a troubling pain point according to consultants, possibly because they are more aware of these correction mechanisms than practitioners are. Interestingly, consultants seem to experience 'Defining indicators' as a more troubling pain point than practitioners, perhaps due to the consultants' expertise on how difficult it is to have well-defined indicators that can effectively measure your impact.

Similar to the motivations, we calculate the Kendall Tau correlation coefficient to assess the similarity of pain points between the IP practitioners, IP consultants, and all survey respondents. Between the Impact Path practitioners and Impact Path consultants, there seems to be a weak positive correlation, $\tau = 0.33$, $p > 0.05$, indicating that there is a difference between the experienced pain points for practitioners and consultants. Between all practitioners and the Impact Path practitioners, there seems to be a strong positive correlation, $\tau = 0.85$, $p < 0.05$, as well as between all consultants and the Impact Path consultants, $\tau = 0.82$, $p < 0.05$. All in all, there seems to be a difference in terms of experienced pain points for Impact Path practitioners and consultants, but due to the small sample size and the proximity of the scoring of the experienced pain points, we can not confidently claim that there is a significant difference between the two groups. Between the IP practitioners/consultants and all respondents, we can say however, that there does not seem to be a significant difference in terms of experienced pain points.



Figure 26: Pain points of consultants, ordered from most troubling to least troubling



Figure 27: Pain points of practitioners, ordered from most troubling to least troubling

8.2.2 Experienced resistance factors

During the Impact Path interviews, we have asked interviewees about their experienced resistance when using the Impact Path. For practitioners, this means the resistance that they or their organisation experienced when using the Impact Path and for consultants, this means the resistance that they had when applying the Impact Path at one of their customers. In order to classify the experienced resistance factors, we used the framework of user resistance which we defined earlier in Table 7. During the interviews, we first asked interviewees about their impression of the Impact Path and whether or not they faced any resistance. If they explicitly mentioned any resistance factors, we would write these down. Then, we would show the interviewee our list of potential resistance factors and asked for each of them whether or not they have experienced any of those factors. In the end, we would also ask them which of the experienced factors, they would deem to be the most important factors of resistance when using the Impact Path. An overview of which resistance factors were experienced for each interviewee can be found in Table 25 in Appendix Y. Since we not only record whether or not the factor was experienced, but also whether or not it was mentioned explicitly, without knowledge of our list of potential resistance factors, and whether the factor is deemed to be an important one, we have come up with the following codification scheme:

- **0:** Resistance factor not experienced/recognised
- **1:** Resistance factor experienced
- **2:** Resistance factor experienced and is proactively mentioned
- **3:** Resistance factor experienced and is emphasised to be one of the most important resistance factors
- **4:** Resistance factor experienced and is proactively mentioned and emphasised to be one of the most important resistance factors

In Figure 28, a diagram is shown ranking the most experienced resistance factors to the least experienced resistance factors. We will explain some of the most experienced resistance factors by categories.



Figure 28: Experienced resistance factors, ranked from most experienced to least experienced

8.2.2.1 Method factors By far, the most recognised resistance factors are method factors. Firstly, the highest-ranked resistance factor concerns the complexity of the process of conducting SIA (M1), which does not necessarily have something to do with the method that is being used, although a method should be able to alleviate some of the pressure that a user feels when they are starting with their impact measurement. The resistance is often due to the fact that a user does not know where to begin. All practitioners explicitly mentioned the complexity of SIA as a resistance factor, something in which they thought the Impact Path did not alleviate many of their concerns. On this resistance factor, consultants emphasise that often users think the process is very complex and difficult to perform, while it does not have to be if the first impact measurement is also assisted with some guidance. Important for the Impact Path would be to make the process less complex by effectively guiding users in the process and taking away concerns about the perceived difficulty of conducting SIA.

Next, the workload (M3) is the second most experienced resistance factor. Again, this factor is mostly related to the process of conducting SIA and it has been stressed by consultants that this will always be the case. Conducting SIA costs time, money, and energy, which can only be somewhat alleviated by standardisation, learning, and integrating impact measurement in an organisation’s day-to-day practice. Often, organisations see measuring impact as a net loss, as they have to invest resources in doing it. Important for the Impact Path is to clearly stress the benefits of conducting SIA and that it eventually helps the users with increasing their impact.

Then, a resistance factor that is about as important as the workload, is the fitness (M4) of the tool. Interviewees have reported that although the tool does a very good job at describing the four domains it is focusing on, it is still only four domains as of yet. Even in the domains that are available, there is still a lot of work to be done for a user when their intended/observed effects are not present in the Impact Path. Important for the Impact Path is to keep expanding the existing domains and introduce new domains as well, which is something that is fortunately already being worked on.

Lastly, the resistance factor of job change (M2) has not been experienced often. Only two interviewees recognised this resistance factor and they mentioned that is very much related to the resistance because of the workload. The resistance in terms of job change concerns the fact that SIA practitioners need to learn some new skills, which costs more time and might be intimidating, such as when a practitioner has to interview their stakeholders to collect data on their effects.

8.2.2.2 Technological factors The third most recognised resistance factor is the tool complexity (T2), a technological factor which in the case of the Impact Path concerns the interactive PDF. In general, both practitioners and consultants think the PDF is not user-friendly, as they struggle to find support in the document itself and are overwhelmed by the abundance of information. Although the information is presented in an ordered way of stages, users can not easily find their way to the information they need to conduct SIA, due to a lack of interaction in the tool. Important for the Impact Path is to make sure the information is presented in a digestible way and that the information shown is altered to the needs of the user.

The only other technological factor concerns technical issues (T1), which is the only resistance factor that is not recognised or experienced, mostly as it concerns bugs or dysfunctional tooling, which is not the case for the Impact Path.

8.2.2.3 Individual factors The individual factors are not recognised as often as the method and technological factors. It is only really the resistance factors of uncertainty costs (I1) and self-efficacy (I4) that are experienced more than once. Especially the uncertainty costs have been described to be an important one, where practitioners often are not certain about the time it will take to learn a new process or way of working and experience resistance when they have to do perform additional tasks on top of their usual daily activities. Sometimes, practitioners are uncertain about whether or not their impact can actually be measured or quantified. Consultants stress that uncertainty is inherent to the fact that organisations often measure their impact for the first time and have not yet accumulated much knowledge on the topic. Next to that, sometimes the impact assessment will indicate that an organisation does not actually create the impact they are claiming to make or to a lesser extent than they thought, which causes resistance to the entire impact measurement process as it might obstruct them in obtaining certain funding.

Related to uncertainty costs is the resistance due to self-efficacy, where practitioners feel like they are not qualified to conduct research for their impact measurement, while in reality, they often would be able to do it with guidance. Practitioners felt that the Impact Path did not take away these concerns and they still required assistance from external parties. Luckily, receiving assistance from consultants, either throughout the entire impact assessment process or by micro-consultancy, did alleviate most of this uncertainty for most practitioners.

8.2.2.4 Organisational factors For the organisational resistance factors, there are three factors there are mentioned more than once, namely training (O3), perceived value (O7), and facilitating environment (O1), where practitioners sometimes felt that their organisation did not offer the space and time to effectively measure their impact. A lack of training was mentioned as a resistance factor, which of course relates to the individual uncertainty costs and self-efficacy. A resistance factor that is related to training but was not experienced often is the direct costs. Only one practitioner actually experienced resistance due to direct costs because they had to hire an external consultancy firm to help them with their initial impact measurement. Possibly, this is due to the fact that organisations are aware of the potential benefits of conducting SIA and thus accept the costs they will have to make. It was, however, stated that the perceived value of conducting SIA did cause resistance, where a practitioner or organisation is not convinced the benefits of conducting SIA outweigh the downsides. Important for the Impact Path here is to stress the benefits of conducting SIA to take away some of these concerns.

8.2.3 Benefits and advantages of the Impact Path

In our discussions with the practitioners and consultants, we asked them what benefits and advantages they saw in the use of the Impact Path. By far, the most recognised benefit of the Impact Path is the fact that it offers a lot of help for social enterprises that operate in one of the four domains. For each domain, possible effects and indicators are elaborated upon with the help of examples. Next to that, the Impact Path offers a roadmap for impact measurement, which can offer support for those who are inexperienced with conducting SIA. Especially the growth path of the Impact Path is recognised as a valuable addition. The fact that an organisation can indicate on what level of the impact measurement process they are can give them a lot of

insights on what they have to do and what is needed for them to improve. In the case an organisation does not have the resources to reach stage 4 of measuring your outcomes, they can position themselves in stage 3 and only measure their outputs. In general, the interviewees recognise that the Impact Path offers an introduction for impact measurement and they believe it is a valuable contribution to the SIA community.

8.2.4 Downsides and disadvantages of the Impact Path

As already explained in the section on resistance factors, there are also quite some downsides and disadvantageous aspects to the Impact Path. Overall, every interviewee agreed that the current form of the tool, an interactive PDF, is not very effective and does not provide the interaction that is desired when conducting SIA. The Impact Path would be more useful if it was linked to an actual web-based tool that provides more guidance for a user.

The interviewees claim that the Impact Path is not very user-friendly, as it is a large document of almost 200 pages that, although is interactive, is not very easy to navigate through. The abundance of information can be intimidating for those who want to measure their impact for the first time. The goal of the Impact Path is to lower the threshold for impact measurement, but as it currently is, practitioners often still have to hire an external organisation to guide them in this process.

Next to that, although the elaborate domains in the Impact Path are a valuable asset, it is still only 4 domains. In the case an organisation does not operate in that domain or can not find the effects they want to measure, there is still a lot of work required. One practitioner mentioned that the recommended indicators do not focus enough on secondary effects.

Another downside that was mentioned, which might contradict the benefit that was mentioned earlier about the elaborate examples, is that the references to external tools might distract a user from following the Impact Path. It seems unclear how some of those external tools and examples actually aid the practitioners when they follow the steps described in the Impact Path.

8.2.5 Recommended improvements for the Impact Path

In general, the interviewees were positive about the introduction of the Impact Path and they welcome the attention social enterprises are receiving, also from the government, who according to the consultants, still have much to learn. Most practitioners definitely viewed the Impact Path as a helpful tool for their first impact measurement, given that the organisation operates in one of the four domains. If the Impact Path would become more user-friendly and is continuously improved in terms of the domains, it could definitely become more widely used.

Some consultants, however, who were not involved with the development of the Impact Path, feel like more collaboration would benefit the Impact Path and they would very much like to be involved with future conversations on how to improve it. Currently, there are quite some other tools out there that serve the same purpose as the Impact Path, such as the Impact Wizard or the Impact Track. A recommendation would be to realise collaboration with more interested parties and maybe even extend the collaboration to a European level.

Apart from improving the Impact Path by introducing more domains, interviewees also stressed the importance to emphasise the growth path. The Impact path already supports indicating on which level you are measuring your impact, but the tool does not tailor the information shown based on this. If you would be able to first indicate on which level you position yourself, in which domain you operate, and what effects you want to measure, the tool would be able to only show the information that fits the profile of the practitioner, thus making it less intimidating than when the user is overwhelmed with all possible information.

Next to that, some practitioners have mentioned the potential benefit of webinars or open demo sessions for people who want to start measuring their impact. For those who have already once applied the Impact Path, perhaps refresher courses could be beneficial to jog their memory for their next impact assessment. Whether these are live sessions or pre-recorded, knowledge clips with instructions on how to perform certain tasks of the Impact Path could provide much assistance for users of the Impact Path.

Additionally, promoting the benefits of conducting SIA using the Impact Path to motivate entrepreneurs to measure their impact would take away some concerns on the perceived value and the intimidating workload

that comes with measuring your impact.

All in all, from the interviews it is clear that the interactive PDF is not the way forward for the Impact Path. The method should be supported with an actual interactive tool, that tailors the shown information based on the practitioner's needs and is able to perhaps even automatically generate reports that can be shown to stakeholders, based on the impact measurement results. In any case, coaching and consultancy will still be required, but with the improvements recommended above, the Impact Path should definitely be able to provide more guidance to those who want to successfully measure their impact independently.

9 Discussion

We are aware of some limitations that might affect the validity of our research. First off, this research started off with the assumption that mission-driven SIA is the only type of SIA, and that a Theory of Change is an essential component of SIA, which turned out to be true, but it might have affected our search for existing SIA methods.

The framework of resistance factor was created with the bias that organisations would have used another method before using the Impact Path and resisting the change to start using a new method. In reality, an organisation often did not measure their impact at all and started using the IP for the first time. Especially the examples we have used during the interviews were created with this bias, which might have affected the interviewees' responses. Next to that, the interviews that we conducted were mostly with Dutch/Belgian consultants/practitioners in the domain of SIA. The insights we gathered from these interviews might not be generalisable to SIA outside of the Netherlands.

The list of challenges, motivations and the framework of characteristics that were identified are potentially not exhaustive. It could be that there are some essential characteristics for SIA that we have not included in our classification system. Also, for the challenges that we have identified, we have indicated what the focus is based on whether the publication the challenge is mentioned in regards SIA to be development-driven or mission-driven. Although we have indicated for some that the challenge is focused on mission-driven or development-driven SIA, it is likely that the challenge is relevant for both of the SIA subfamilies.

For the classification of SIA methods, the methods have been analysed individually by three members of our research group. For this classification, not every value for a characteristic has been checked by the team and therefore it can not be ruled out that another member of our research group would come to a different conclusion. Ideally, we would all classify every method and then discuss our rationale for doing so and come to a consensus, but due to time limitations, this was not feasible. We have tried to prevent this as much as possible by having strict selection criteria and writing down our rationale for every decision.

Similarly, some of the PDDs were made individually and therefore are subjective to the interpretation of the modeller. Next to that, we were only able to validate five SIA methods, as we were not able to contact experts of the other SIA methods we have modelled. This could have the consequence that we missed or misinterpreted some steps in the documentation of the methods, which subsequently could affect the result of our method comparison, the generic model. The validation also was very heavily focused on the activities, as it is more difficult to validate the concepts and the relationships and cardinalities between them. We do, however, believe that with the weekly discussions we have had that we were able to minimise this risk of errors. Also, based on the validations that we have done, we usually did not have to change much to our models. The changes we made were mostly about the order or naming of the activities and concepts. Because of this, we feel confident about the initial quality of our models.

Concerning the generic model, we chose the threshold of 3. In section 6.4 we have already given a rationale for this threshold. We are aware, however, that for full generalisability, this threshold should perhaps be higher. A trade-off had to be made between a threshold of 1, which is the super-method, and a threshold that is as high as the number of methods we compared. Again, we made a decision here based on discussions within the research group. Ideally, we would create a generic model for every threshold value and validate these with different SIA experts to see which would be the best fit, but due to time limitations, this was not feasible. Unfortunately, after much back-and-forth, we were not able to schedule any interviews with SIA experts to discuss and validate the generic model that we created based on our threshold of 3.

We have done the comparison based on the purpose of the activities and concepts. In an ideal situation, we would also do this according to the other three dimensions: data, actor, and process, but this was not feasible as we did not have sufficient information for each method. Lastly, the concept part of the generic model PDD was not based on any documentation, but rather the expertise of the modellers within the research group.

Concerning the openESEA extension, we have made a proposal as to what is needed to support SIA. Some additions are obvious to us, such as the Theory of Change and the correction mechanisms. However, since we only compared openESEA to the generic model and the Impact Path, it is likely that not every method specification can be supported. We decided that including everything for all methods was not feasible

and we wanted to at least support the basics of conducting SIA. An opportunity for future research is to further extend the openESEA meta-model with new concepts, for which the concepts that were excluded from the MVP are good candidates. Lastly, the user stories on the SIA requirements are valid from the perspective of experts. When development for openESEA v5 starts, potential issues or hidden flaws that have been overlooked can lead to future changes and improvements.

10 Conclusions and Future Research

10.1 Summary

In this research, we have analysed the Mission-driven Social Impact Assessment family of methods in order to extend the openESEA tool to support SIA method specifications. In this work, we have contributed to the SIA domain with: a literature study on the history, challenges, and motivations of SIA, a definition of social impact, an overview of SIA methods and their characteristics using a new classification system, an extended meta-model of the openESEA tool capable of supporting SIA methods, user stories for tool development that allow this extension, and lastly, a market analysis of the Dutch government-commissioned SIA method the Impact Path. For each research question, we will briefly summarise our findings.

RQ1.1): *What is the history of Social Impact Assessment and its related IM families?* Whereas Social Impact Assessment was initially part of the practice of Environmental Impact Assessment in the 1970s, it started to become increasingly important to assess the social impacts of some projects on the affected communities, thus developing the discipline of SIA. Over the decades it has grown from its traditional use where it was used as a regulatory obligation to obtain project approval towards a method that organisations use to manage and measure their social impact and create benefits for affected communities. In our research, we identify two types of Social Impact Assessment, development-driven, which is used to manage the social impact of project development, and mission-driven, which is used to demonstrate the social impacts for organisations with a social mission.

Besides EIA and both families of SIA, we have identified two other related Impact Measurement families of methods, namely Ethical, Social, and Environmental Accounting (ESEA), and Life Cycle Assessment (LCA). ESEA methods are used to report on the non-financial effects and performance of an organization's economic actions. LCA methods seek to assess and report the environmental - and increasingly also the social - impacts of a product or service that occur throughout its entire life cycle.

RQ1.2): *What are the motivations for using Social Impact Assessment?* There is a wide range of motivations for conducting SIA, both in the development-driven domain, as well as the mission-driven SIA. For mission-driven SIA, motivations are mostly to assess the social value compliance, identify areas of improvement, and perform strategic management, but organisations also conduct SIA due to pressure within the value chain and to account for funding or for marketing. Within development-driven SIA, the motivations are more emphasised on avoiding and reducing risks and conflicts and understanding how a certain project will affect communities.

RQ1.3): *Which Social Impact Assessment methods exist?* There is an abundance of existing SIA methods. In our research, we have found a collection of 42 methods that meet the selection criteria for mission-driven SIA methods. For 23 of these methods, we have done an analysis by classifying them using the characteristics and for 11 methods, we have created Process-Deliverable Diagrams (PDDs).

Out of the 23 methods that were analysed, we discovered that 11 out of the 57 characteristics are similar for these methods. For each method, we can state that they at least prescribe to assess the short term, intended and primary social impact of organisations and projects in an ongoing time frame by at least considering the outcomes. These methods are also similar in prescribing to report the results of the assessment to at least the external stakeholders, and more specifically, the general public.

For two of the 23 methods, IRIS+ and IMP, we do not regard them as SIA methods. Although both methods/tools can be of assistance for those conducting SIA, they do not actually offer guidance in impact measurement.

RQ2): *What are the current challenges in the domain of Social Impact Assessment?* After an extensive literature study, we have found 12 challenges, of which 4 are only mentioned in publications that regard SIA to be development-driven, 1 which is only mentioned in mission-driven SIA publications, and 7 challenges that are identified for both the disciplines. The challenges that seem to be the most important for mission-driven SIA are the lack of consensus and established standards, the lack of a system to classify SIA methods, and the difficulty of measuring and reporting on impact. For development-driven, it seems like a lack of legislation and inadequate public participation are the most frequently mentioned challenges.

RQ3): *What characteristics can be identified to classify Social Impact Assessment methods?* Based on a literature review and a selection procedure, a set of 17 dimensions containing 57 characteristics

have been identified. The 17 dimensions are grouped into four categories. The **purpose** category describes the *purpose* and *target audience* of the SIA method. The **approach** category describes the *stages* of the SIA method, whether it supports *monetisation* of results, and describes the *time frame* and *data typology* of an SIA method. The third category **scope** covers the *impact typology*, which elements of the *Impact Value Chain* are considered, the method's *unit of analysis*, whether the method *prescribes topics*, and the *industry sector* of the SIA method. The last category **definition of impact** covers the *impact goal*, the *temporal scope*, *intention*, *level*, and the *correction mechanisms* of the SIA method. Additionally, we have added the 'Impact score' dimension, which indicates how many of the characteristics are applicable to an SIA method.

RQ4): What are software requirements for the extension of openESEA to support Social Impact Assessment? Based on the PDDs that have been created of the selected SIA methods, we have done a method comparison, where we performed a tabular comparison of concepts and activities. The result of this comparison was a generic model, which contains the main activities and concepts of mission-driven SIA. Based on this model and the Impact Path, we have compared what concepts and activities are missing in openESEA to support SIA. As a result of this comparison, we proposed 32 concepts in the MVP for the SIA extension, of which 22 are new concepts. Next to that, we included 32 activities in the MVP, of which 28 are new. Based on these new additions, we have defined 45 user stories, grouped underneath 7 epics: Organisation, Social problem, Theory of Change, Measurement plan, Operations, Report, and Evaluation Report.

With the future expansion of the openESEA tool in mind, we extended the openESEA meta-model to propose a fifth version of the open-source tool. Based on the additions of the meta-model, we extended the DSL of openESEA and validated both the meta-model and the DSL using four real-world examples and specifying these using the DSL.

RQ5): What are the consequences of the implementation of the Dutch government-commissioned Social Impact Assessment method 'The Impact Path'? We have conducted 10 interviews to collect more information and experiences on the Impact Path. 2 interviews were with people involved in the development of the Impact Path and 8 interviews were conducted with consultants and practitioners who have experience with the Impact Path. In general, practitioners experience the most resistance due to factors related to the process of conducting SIA, where they struggle with the process complexity and the workload of SIA. Furthermore, in terms of technological resistance factors, the Impact Path's interactive PDF is not regarded as a user-friendly tool, as practitioners are often overwhelmed by the abundance of information.

Both the practitioners and consultants were positive about the introduction of the Impact Path. They believe it is good that the government is giving this attention to the field of SIA, but there are still many improvements necessary to make the Impact Path the tool it is aiming to become. Improvements include more collaboration of interested parties, a more interactive tool that tailors the information shown based on a practitioner's needs, and an expansion of the number of domains that the Impact Path offers assistance in.

10.2 Future research

As the field of Social Impact Assessment is constantly evolving, there are many opportunities for future research.

The future directions of our work mainly involve the implementation of the proposed user stories for openESEA v5, which allows openESEA to support SIA method specifications.

In order to increase the rigour of this research, more work can be done by increasing the quantities of the analyses we have conducted. First off, more SIA methods can be investigated, both by classifying more SIA methods, as well as by modelling more SIA methods. The classification of more SIA methods will further substantiate the claims made on what defines SIA methods. The PDDs that are created of SIA methods can be used to extend the method comparison for the generic model. Of course, in doing so, the current threshold would have to be reevaluated and possibly increased.

Next to that, we were only able to validate 4 PDDs with experts and although we are confident on the level of quality of the models we have created, more validation would ensure that we have not missed any essential components of SIA.

For the openESEA extension, we only compared the concepts and activities of the Impact Path and the generic model to the openESEA tool. For future research, more SIA methods could be compared to the meta-model of openESEA v5. This could lead to potential new requirements for the openESEA tool.

In this research, we defined a preliminary taxonomy of the families of Impact Measurement methods. This taxonomy consists of only four families of methods, while there are various other potential impact measurement families out there. More research is needed to potentially expand and substantiate the expansion of the taxonomy of IM families.

Lastly, based on conversations we had with some practitioners, future research could be to extend the analysis on the classification of SIA methods to create an overview of SIA methods that allows Social Enterprises to select an existing SIA method based on their needs, e.g. if an organisation is looking for a method that assists them in impact investing, if an organisation is operating in a certain domain, or if the organisation would like to monetise all their indicator values.

All in all, it is important that the University of Utrecht and this research line maintains relationships with the Impact Measurement community, such as by cooperating in the currently ongoing City Deal initiative, which the University of Utrecht is already involved in. Since this field is rapidly developing and dependent on research, it is important to keep sharing knowledge and assist where necessary to stimulate social and responsible entrepreneurship.

References

- [1] ActKnowledge & The Aspen Institute Roundtable on Community Change (2003). Guided example: Project Superwomen. Retrieved from: https://www.theoryofchange.org/pdf/Superwomen_Example.pdf
- [2] Adèr, M. J. (2020). The state of the art and practice in improvement planning for ethics, social and environmental topics (Master's thesis).
- [3] Alhaddi, H. (2015). Triple bottom line and sustainability: A literature review. *Business and Management Studies*, 1(2), 6-10.
- [4] Ali, M., Zhou, L., Miller, L., & Ieromonachou, P. (2016). User resistance in IT: A literature review. *International Journal of Information Management*, 36(1), 35-43.
- [5] Arvidson, M., & Lyon, F. (2014). Social Impact Measurement and Non-profit Organisations: Compliance, Resistance, and Promotion. *Voluntas*. <https://doi.org/10.1007/s11266-013-9373-6>
- [6] Assessment, S. I. (1995). Guidelines and principles for social impact assessment. *Environmental Impact Assessment Review*, 15(1), 11-43.
- [7] Avance, Impact Centre Erasmus, & Social Enterprise NL (2020). The Impact Path. Retrieved from: https://impactpad.nl/wp-content/uploads/Het_Impactpad_EN_2020.pdf
- [8] Avance, & de Fruitmotor (2020). De verandertheorie van de fruitmotor. Retrieved from: <https://cdn1.defruitmotor.nl/uploads/Editor/verandertheorie-van-de-fruitmotor-juni-2020.pdf>
- [9] Becker, H. A. (2001). Social impact assessment. *European Journal of Operational Research*, 128(2), 311-321.
- [10] Bond, A., & Pope, J. (2012). The state of the art of impact assessment in 2012.
- [11] Brinkkemper, S. (1996). Method engineering: engineering of information systems development methods and tools. *Information and software technology*, 38(4), 275-280.
- [12] Bruins, E.E.W. (2018, September 24). Initiatiefnota van het lid Bruins over ondernemen met een maatschappelijke missie [Letter of government]. Retrieved from: <https://www.tweedekamer.nl/kamerstukken/detail?id=2018Z16612&did=2018D45533>
- [13] Burdge, R. J., & Vanclay, F. (1996). Social impact assessment: a contribution to the state of the art series. *Impact Assessment*, 14(1), 59-86.
- [14] Burdge, R. J. (2002). Why is social impact assessment the orphan of the assessment process?. *Impact Assessment and Project Appraisal*, 20(1), 3-9.
- [15] Burdge, R. J. (2003). The practice of social impact assessment background. *Impact Assessment and Project Appraisal*, 21(2), 84-88.
- [16] Burdge, R. J. (2003). Benefiting from the practice of social impact assessment. *Impact Assessment and Project Appraisal*, 21(3), 225-229.
- [17] Canning, J., & Found, P. A. (2015). The effect of resistance in organizational change programmes: A study of a lean transformation. *International Journal of Quality and Service Sciences*.
- [18] Clark, C., & Rosenzweig, W. (2004). double bottom line project report. University of California, Berkeley.
- [19] Clark, H., & Anderson, A. A. (2004, November). Theories of change and logic models: Telling them apart. In *American Evaluation Association Conference*. Atlanta: GA.
- [20] Clifford, J. (2014). Proposed Approaches to Social Impact Measurement in European Commission legislation and in practice relating to EuSEFs and the EaSI. Retrieved from: <https://op.europa.eu/en/publication-detail/-/publication/0c0b5d38-4ac8-43d1-a7af-32f7b6fcf1cc>
- [21] Cohn, M. (2004). *User stories applied: For agile software development*. Addison-Wesley Professional.
- [22] Common Approach. (n.d.). What do we mean by impact and what do we mean by impact measurement? Retrieved June 9, 2021, from <https://www.commonapproach.org/what-is-impact-measurement/>

- [23] Dendena, B., & Corsi, S. (2015). The Environmental and Social Impact Assessment: a further step towards an integrated assessment process. *Journal of cleaner production*, 108, 965-977.
- [24] Deneckère, R., Hug, C., Onderstal, J., & Brinkkemper, S. (2015, May). Method Association Approach: Situational construction and evaluation of an implementation method for software products. In 2015 IEEE 9th international conference on research challenges in information science (RCIS) (pp. 274-285). IEEE.
- [25] Dufour, B. (2015). State of the art in social impact measurement: methods for work integration social enterprises measuring their impact in a public context. *Emes*, 1-24.
- [26] Ebrahim, A., & Rangan, V. K. (2014). What impact? A framework for measuring the scale and scope of social performance. *California management review*, 56(3), 118-141.
- [27] Emerson J, Wachowicz J & Chun S 2000, Social return on investment: Exploring aspects of value creation in the non-profit sector, The Roberts Foundation, San Francisco.
- [28] Elkington, J. (1997). The triple bottom line. *Environmental management: Readings and cases*, 2.
- [29] Elkington J., Emerson J. & Beloe S. (2006). 'The value palette: a tool for a full spectrum strategy', *California Management Review*, vol. 48, no.2, pp. 6-28.
- [30] Esteves, A. M., & Barclay, M. A. (2011). Enhancing the benefits of local content: integrating social and economic impact assessment into procurement strategies. *Impact Assessment and Project Appraisal*, 29(3), 205-215.
- [31] Esteves, A. M., Franks, D., & Vanclay, F. (2012). Social impact assessment: the state of the art. *Impact Assessment and Project Appraisal*, 30(1), 34-42.
- [32] Estonian Social Enterprise Network (ESEN), Koç University Social Impact Forum, Mikado Sustainable Development Consulting, & Social Value UK. (2017). Maximiser Your Impact - A Guide for Social Entrepreneurs. Social Value UK. <https://socialvalueuk.org/wp-content/uploads/2017/10/MaximiseYourImpact.24.10.17.pdf>
- [33] Eurostat. (2008). NACE Rev. 2: Statistical classification of economic activities in the European Community. <https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>
- [34] M. Eysholdt and H. Behrens, "Xtext - Implement your Language Faster than the Quick and Dirty way," in OOPSLA '10 Proceedings of the ACM international conference companion on Object oriented programming systems languages and applications companion. New York city: ACM, 2010, pp. 307-309.
- [35] Fontes, J., Tarne, P., Traverso, M., & Bernstein, P. (2018). Product social impact assessment. *The International Journal of Life Cycle Assessment*, 23(3), 547-555.
- [36] Foundation Center. (n.d.). Tools and Resources for Assessing Social Impact (TRASI). Retrieved from: <https://web.archive.org/web/20170711045558/http://trasi.foundationcenter.org>
- [37] Glasrud, B. (2001). The muddle of outcome measurement. *Nonprofit World*, 19(6), 35-37.
- [38] Grieco, C., Michelini, L., & Iasevoli, G. (2015). Measuring value creation in social enterprises: A cluster analysis of social impact assessment models. *Nonprofit and voluntary sector quarterly*, 44(6), 1173-1193.
- [39] Guinée, J. B., Heijungs, R., Huppes, G., Zamagni, A., Masoni, P., Buonamici, R., Ekvall, T., & Rydberg, T. (2011). Life Cycle Assessment: Past, Present, and Future. *Environmental Science and Technology*, 45(1), 90-96. <https://doi.org/10.1021/es101316v>
- [40] Gulakov, I., Vanclay, F., Ignatev, A., & Arts, J. (2020). Challenges in meeting international standards in undertaking social impact assessment in Russia. *Environmental Impact Assessment Review*, 83, 106410.
- [41] Hehenberger, L., Harling, A., & Scholten, P. (2015). A practical guide to measuring and managing impact. Retrieved from: <https://evpa.eu.com/uploads/publications/IM-Guide-English.pdf>
- [42] Hirschheim, R., & Newman, M. (1988). Information systems and user resistance: theory and practice. *The Computer Journal*, 31(5), 398-408.

- [43] Impact Management Project (IMP). (2018). A Guide to Classifying the Impact of an Investment. Retrieved from: <https://impactmanagementproject.com/wp-content/uploads/A-Guide-to-Classifying-the-Impact-of-an-Investment-3>
- [44] International Monetary Fund (IMF). (2019). Global Financial Stability Report: Lower for Longer, Chapter 6: Sustainable Finance: Looking Farther.
- [45] International Organization for Standardization (ISO). (2006). 14040: Environmental management—life cycle assessment—Principles and framework. International Organization for Standardization, 20.
- [46] Kah, S., & Akenroye, T. (2020). Evaluation of social impact measurement tools and techniques: a systematic review of the literature. *Social Enterprise Journal*.
- [47] Keijzer, M.C.G (2019, May 17). Passende regels en ruimte voor sociale ondernemingen [Letter of government]. Retrieved from <https://www.rijksoverheid.nl/documenten/kamerstukken/2019/05/17/kamerbrief-over-passende-regels-en-ruimte-voor-sociale-ondernemingen>
- [48] Keijzer, M.C.G (2020, July 10). Kabinetsinzet Sociaal Ondernemen [Letter of government]. Retrieved from <https://www.rijksoverheid.nl/documenten/kamerstukken/2020/07/10/kamerbrief-over-kabinetsinzet-sociaal-ondernemen>
- [49] Kendall, M. G. (1945). The treatment of ties in ranking problems. *Biometrika*, 33(3), 239-251.
- [50] Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. *MIS quarterly*, 567-582.
- [51] Kim, H. W. (2010). The effects of switching costs on user resistance to enterprise systems implementation. *IEEE Transactions on Engineering Management*, 58(3), 471-482.
- [52] Klaus, T., & Blanton, J. E. (2010). User resistance determinants and the psychological contract in enterprise system implementations. *European Journal of Information Systems*, 19(6), 625-636.
- [53] Lakatos, Z. (2013). Corporate social performance in emerging markets: Sustainable leadership in an interdependent world. Gower Publishing, Ltd..
- [54] Latané, B. (1981). The psychology of social impact. *American psychologist*, 36(4), 343.
- [55] Lensink, L., & Liezenberg, F. (2021). The State of the Art of Mission-Driven Social Impact Assessment (Bachelor's thesis).
- [56] Lin, T. C., Huang, S. L., & Chiang, S. C. (2018). User resistance to the implementation of information systems: A psychological contract breach perspective. *Journal of the Association for Information Systems*, 19(4), 2.
- [57] Maas, K., & Liket, K. (2011). Social impact measurement: Classification of methods. In *Environmental management accounting and supply chain management* (pp. 171-202). Springer, Dordrecht.
- [58] Mabon, L., Kita, J., & Xue, Z. (2017). Challenges for social impact assessment in coastal regions: a case study of the Tomakomai CCS demonstration project. *Marine Policy*, 83, 243-251.
- [59] Molecke, G., & Pinkse, J. (2017). Accountability for social impact: A bricolage perspective on impact measurement in social enterprises. *Journal of Business Venturing*, 32(5), 550-568.
- [60] Millington, R., Giles, A. R., Hayhurst, L. M., van Luijk, N., & McSweeney, M. (2019). 'Calling out' corporate redwashing: the extractives industry, corporate social responsibility and sport for development in indigenous communities in Canada. *Sport in Society*, 22(12), 2122-2140.
- [61] Mottee, L. K., Arts, J., Vanclay, F., Miller, F., & Howitt, R. (2020). Metro infrastructure planning in Amsterdam: how are social issues managed in the absence of environmental and social impact assessment?. *Impact Assessment and Project Appraisal*, 38(4), 320-335.
- [62] New Economics Foundation (NEF). (2009). Tools For You: Approaches to Proving and Improving for Charities, Voluntary Organisations and Social Enterprise. Retrieved from: https://neweconomics.org/uploads/files/ee604b9c7787bf1b80_aym6ivqnu.pdf

- [63] Nicholls, A. (2005). Measuring Impact in Social Entrepreneurship: New Accountabilities to Stakeholders and Investors? ERSC Research Seminar, Local Government Research Unit. Retrieved from: <http://www.mendeley.com/research/measuring-impact-in-social-entrepreneurship-new-accountabilities-to-stakeholders-and-investors/>
- [64] Nicholls, J., Neitzert, E., & Goodspeed, T. (2012). A guide to Social Return on Investment. Retrieved from: <https://socialvalueuk.org/wp-content/uploads/2016/03/The%20Guide%20to%20Social%20Return%20on%20Investment%202015.pdf>
- [65] Nils Bik. Developing a model-driven socio-environmental auditing tool, July 2018 (Master's thesis).
- [66] O'Faircheallaigh, C. (2009). Effectiveness in social impact assessment: Aboriginal peoples and resource development in Australia. *Impact Assessment and Project Appraisal*, 27(2), 95-110.
- [67] Organisation for Economic Co-operation and Development (OECD). (2002). Glossary of Key Terms in Evaluation and Results Based Management. In *Evaluation and Aid Effectiveness*.
- [68] Pope, J., Annandale, D., & Morrison-Saunders, A. (2004). Conceptualising sustainability assessment. *Environmental impact assessment review*, 24(6), 595-616.
- [69] Ramautar, V. D. (2019). The state of the art and practice on social and environmental accounting methods and tools (Master's thesis).
- [70] Ramautar, V., España, S., Liezenberg, F., Lensink, L. J., & Van Nijen, S. (2021). The State of the Art in Social Impact Assessment. Unpublished Article.
- [71] Rasche, A. (2009). Toward a model to compare and analyze accountability standards - The case of the un global compact. *Corporate Social Responsibility and Environmental Management*, 16(4). <https://doi.org/10.1002/csr.202>
- [72] Rawhouser, H., Cummings, M., & Newbert, S. L. (2019). Social impact measurement: Current approaches and future directions for social entrepreneurship research. *Entrepreneurship Theory and Practice*, 43(1), 82-115.
- [73] Rijksoverheid (2021). Consultatie maatschappelijke BV (BVM) volgende stap in erkenning sociale ondernemers. Retrieved from: <https://www.rijksoverheid.nl/actueel/nieuws/2021/03/05/consultatie-maatschappelijke-bv-bvm-volgende-stap-in-erkenning-sociale-ondernemers>
- [74] Rinaldo, H. (2010). Getting Started in Social Impact Measurement - A guide to choosing how to measure social impact. Retrieved from: https://www.socialauditnetwork.org.uk/files/8113/4996/6882/Getting_started_in_social_impact_measurement_-_270212.pdf
- [75] Samuelson, W., & Zeckhauser, R. (1988). Status quo bias in decision making. *Journal of risk and uncertainty*, 1(1), 7-59.
- [76] Sergio España Cubillo & Sjaak Brinkkemper. Responsible software: A research agenda to help enterprises become more sustainable. *Proceedings of ICT for Sustainability 2016*, 46:141-150, 2016.
- [77] Sergio España, Nils Bik, & Sietse Overbeek. Model-driven engineering support for social and environmental accounting. 2019.
- [78] Sinaga, Y. A. (2020). Applying Variability modelling to Understand and Specify the Diversity of Ethical, Social, and Environmental Accounting Methods. Utrecht University.
- [79] Singh, K., Saeed, M., & Bertsch, A. (2012). Key factors influencing employee response toward change: a test in the telecom industry in India. *Journal of management Policy and Practice*, 13(3), 66-81.
- [80] Smollan, R. K. (2011). The multi-dimensional nature of resistance to change. *Journal of Management and Organization*, 17(6), 828.
- [81] Traverso, M., Bell, L., Saling, P., & Fontes, J. (2018). Towards social life cycle assessment: a quantitative product social impact assessment. *The International Journal of Life Cycle Assessment*, 23(3), 597-606.

- [82] Vahid Garousi, Michael Felderer, & Mika V. Mäntylä. 2016. The need for multivocal literature reviews in software engineering: complementing systematic literature reviews with grey literature. In Proceedings of the 20th International Conference on Evaluation and Assessment in Software Engineering (EASE '16). Association for Computing Machinery, New York, NY, USA, Article 26, 1–6. DOI:<https://doi.org/10.1145/2915970.2916008>
- [83] Vanclay, F. (1999). Social impact assessment. *Handbook of environmental impact assessment*, 1, 301-326.
- [84] Vanclay, F. (2003). International principles for social impact assessment. *Impact assessment and project appraisal*, 21(1), 5-12.
- [85] Vanclay, F. (2006). Principles for social impact assessment: A critical comparison between the international and US documents. *Environmental Impact Assessment Review*, 26(1), 3-14.
- [86] Vanclay, F., & Esteves, A. M. (2011). Current issues and trends in social impact assessment. In *New directions in social impact assessment*. Edward Elgar Publishing.
- [87] Vanclay, F. (2012). The potential application of social impact assessment in integrated coastal zone management. *Ocean & coastal management*, 68, 149-156.
- [88] Vanclay, F., Esteves, A. M., Aucamp, I., & Franks, D. M. (2015). *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects*.
- [89] Vanclay, F. (2020). Reflections on Social Impact Assessment in the 21st century. *Impact Assessment and Project Appraisal*, 38(2), 126-131.
- [90] van de Weerd, I., de Weerd, S., & Brinkkemper, S. (2007, September). Developing a reference method for game production by method comparison. In *Working Conference on Method Engineering* (pp. 313-327). Springer, Boston, MA.
- [91] van de Weerd, I., & Brinkkemper, S. (2009). Meta-modelling for situational analysis and design methods. In *Handbook of research on modern systems analysis and design technologies and applications* (pp. 35-54). IGI Global.
- [92] Wainwright, S. (2002). *Measuring Impact: A Guide to Resources*. Retrieved from: <https://lemosandcrane.co.uk/resources/NCVO - Measuring impact.pdf>
- [93] Welsh, E. (2002, May). Dealing with data: Using NVivo in the qualitative data analysis process. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* (Vol. 3, No. 2).
- [94] Wilson, E. (2016). What is the social licence to operate? Local perceptions of oil and gas projects in Russia's Komi Republic and Sakhalin Island. *The Extractive Industries and Society*, 3(1), 73-81.
- [95] Wilson, Emma. (2017). What is Social Impact Assessment?.
- [96] Wieringa, R. J. (2014). *Design science methodology for information systems and software engineering*. Springer.
- [97] Zappalà, G., & Lyons, M. (2009). Recent approaches to measuring social impact in the Third sector: An overview.

A Literature review publications

Ref	Title	Source	Focus
[9]	Social impact assessment	Q1	D
[10]	The state of the art of impact assessment in 2012	Q2	D
[14]	Why is social impact assessment the orphan of the assessment process?	S [23]	D
[15]	The practice of social impact assessment — background	Q1	D
[16]	Benefiting from the practice of social impact assessment	Q2	D
[18]	Double Bottom Line Project Report: Assessing Social Impact In Double Bottom Line Ventures	S [38]	M
[23]	The Environmental and Social Impact Assessment (ESIA): a further step towards an integrated assessment process	S [89]	D
[26]	What Impact? A framework for measuring the scale and scope of social performance	S [59]	M
[30]	Enhancing the benefits of local content: integrating social and economic impact assessment into procurement strategies	S [23]	D
[31]	Social impact assessment: the state of the art	Q1	D
[66]	Effectiveness in Social Impact Assessment: Aboriginal peoples and resource development in Australia	Q1	D
[38]	Measuring Value Creation in Social Enterprises: A Cluster Analysis of Social Impact Assessment Models	Q2	M
[40]	Challenges in meeting international standards in undertaking social impact assessment in Russia	Q3	D
[46]	Evaluation of social impact measurement tools and techniques: a systematic review of the literature review	R	M
[57]	Social Impact Measurement: classification of methods	Q2	M
[58]	Challenges for social impact assessment in coastal regions: a case study of the Tomakomai CCS Demonstration Project	Q3	D
[59]	Accountability for social impact: A bricolage perspective on impact measurement in social enterprises	R	M
[61]	Metro infrastructure planning in Amsterdam: how are social issues managed in the absence of environmental and social impact assessment?	Q3	D
[69]	The state of the art and practice on social and environmental accounting methods and tools	R	M
[72]	Social Impact Measurement: Current Approaches and Future Directions for Social Entrepreneurship Research	S [46]	M
[6]	Guidelines and Principles for Social Impact Assessment	Q1	D
[84]	International Principles for Social Impact Assessment	Q1	D
[85]	Principles for social impact assessment: A critical comparison between the international and US documents	Q2	D
[86]	Current issues and trends in social impact assessment	Q2	D
[87]	The potential application of social impact assessment in integrated coastal zone management	Q1	D
[88]	Social Impact Assessment	Q1	D
[89]	Reflections on Social Impact Assessment in the 21st century	Q2	D
[94]	What is the social license to operate? Local perceptions of oil and gas projects in Russia's Komi Republic and Sakhalin Island	S [94]	D
[95]	What is Social Impact Assessment?	R	D
[97]	Recent approaches to measuring social impact in the Third sector	S [38]	M

Table 18: Publications found in Literature Review for SIA

R = Recommended, S = Backwards Snowballing, D = Development-driven, M = Mission-driven

B Publications found in literature review on resistance factors

Ref	Title	Factors
[4]	User Resistance in IT: A literature review	X
[42]	Information Systems and User Resistance: Theory and Practice	X
[50]	Investigating User Resistance to Information Systems implementation: a status quo bias perspective	X
[51]	The Effects of Switching Costs on User Resistance to Enterprise Systems Implementation	X
[52]	User resistance determinants and the psychological contract in enterprise system implementations	X
[56]	User Resistance to the Implementation of Information Systems: A Psychological Contract Breach Perspective	X
[75]	Status Quo Bias in Decision Making	X
[79]	Key factors influencing employee response towards change: a test in the telecom industry in India	X
[80]	The multi-dimensional nature of resistance to change	X
	Power, politics and MIS implementation	
	Voice in business to business relationships: cost-of-exit and demographic antecedents	
	On the relationship between perceived service quality, service loyalty, and switching costs	
	Measuring switching costs in IT outsourcing service	
	Consumer Switching Costs: A Typology, Antecedents, and Consequences	
	Information Technology and Switching Costs	

Table 19: Publications found in literature review on resistance factors

C Overview of challenges within SIA

Source	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12
[9]				X			X			X	X	
[10]				X				X	X			
[14]	X		X					X	X		X	
[15]	X											
[16]	X		X			X	X			X		
[18]	X											
[23]			X	X	X	X		X			X	
[26]	X								X			
[30]			X									
[31]	X				X	X						X
[66]	X			X				X				
[38]	X	X							X			
[40]			X				X					
[46]		X										
[57]	X	X										
[58]							X	X				
[59]	X				X	X			X	X		
[61]			X									
[69]	X											
[72]	X											
[86]								X		X	X	X
[87]								X		X		
[88]								X				
[89]								X			X	X
[94]			X									
[95]	X		X		X		X	X	X	X		
[97]	X		X	X								

Table 20: The challenges and the sources in which they are mentioned

D All factors of resistance found in literature

Ref	Category	ID	Factor
[75]	Rational decision making	F1	Sunk Costs
		F2	Social Norms
		F3	Control
	Cognitive misperceptions	F4	Loss Aversion
		F5	Net benefits
	Psychological commitment	F6	Transition Costs
		F7	Uncertainty costs
F8		Effort to learn new systems	
[51]		F9	Uncertainty about new tasks
		F10	Perceived value
[50]		F11	Switching benefits
		F12	Switching costs
		F13	Colleague opinion
		F14	Self-efficacy for change
		F15	Organisational support
		F16	Inability of the company to look into future with clarity
[4]	Distorted perception	F17	Denial or refusal to accept any information that is not expected or desired
		F18	Perpetuation of ideas, the tendency to go on with present thoughts although the situation has changed
		F19	Direct cost of change
	Low motivation for change	F20	Changes which bring success to the project but may bring losses to others
		F21	Past failures
		F22	Different interest level among employees and management
		F23	Fast and complex environmental changes
	Lack of creative response	F24	Reactive mind set or tendency to believe that obstacles are inevitable
		F25	Inadequate strategic vision or lack of clear commitment of top management to change
		F26	Negative relationship between implementation and change and organisational values
	Political and cultural deadlock	F27	Departmental politics
		F28	Strong disagreement among group members
		F29	Deep rooted values and emotional loyalty
		F30	Leadership inaction, due to fear or uncertainty
Other sources	F31	Embedded routines	
	F32	Collective action problems	
	F33	Lack of necessary capabilities to implement change	
	F34	Cynicism	
	F35	Culture	
[79]	Organisational resistance	F36	Functional Orientation
		F37	Power & Conflict
		F38	Group norms
	Group level resistance	F39	Group thinking
		F40	Uncertainty
		Individual resistance	

Table 21 continued from previous page

Ref	Category	ID	Factor
		F41	Insecurity
		F42	Habit
		F43	Selective Perception
[80]	Active	F44	Being critical
		F45	Finding fault
		F46	Appealing to fear
	Passive	F47	Not following through
		F48	Withholding information
		F49	Procrastination
[42]		F50	Innate conservatism
		F51	Lack of felt need
		F52	Uncertainty
		F53	Lack of involvement in the change
		F54	Redistribution of resources
		F55	Organisational invalidity
		F56	Lack of management support
		F57	Poor technical quality
		F58	Personal characteristics of the designer
		F59	Unproper training
[56]	Technical	F61	The lack of realization of requirements, low system reliability, and low quality of information
		F62	Incompatibility
	Personal	F63	Individual characteristics
		F64	Self efficacy
	Political	F65	Job insecurity
		F66	Loss of power/status
		F67	Uncertainty
	Loss aversion	F68	Perceived inequity
		F69	Inertia
	Social	F70	Status quo bias
		F71	Social influence
	Implementers' response	F72	Implementers' inaction
		F73	Acknowledgement
		F74	Noncongruent rectification
	User adaptation	F75	The expected consequences of an IT event are appraised as a threat
F76		Users feel that they have limited control over the situation	
F77		Circumstances are perceived as too demanding and overwhelming	
[52]	Individual issues	F78	Uncertainty
		F79	Input
		F80	Control/Power
		F81	Self-efficacy
	System issues	F82	Technical problems
		F83	Complexity
	Organisational issues	F84	Facilitating environment
		F85	Communication
		F86	Training

Table 21 continued from previous page

Ref	Category	ID	Factor
	Process issues	F87	Job skills change
		F88	Workload
		F89	Lack of fit

Table 21: All factors of resistance found in literature

E Tabular comparison for the factors of resistance

Factor	I1	I2	I3	I4	I5	O1	O2	O3	O4	O5	O6	O7	M1	M2	M3	M4	T1	T2
F1										1								
F2											1							
F3			1															
F4			0.5							0.5								
F5												1						
F6								0.5	0.5									
F7	1																	
F8															1			
F9	1																	
F10												1						
F11												1						
F12	0.5							0.5	0.5	0.5								
F13												1						
F14				1														
F15		0.5				0.5	0.5	0.5										
F16						1												
F17					1													
F18														1				
F19									1									
F20			1															
F21	0.5			0.5	0.5													
F22						0.5					0.5							
F23						1												
F24	0.5			0.5	0.5													
F25						1												
F26						1												
F27						0.5					0.5							
F28											1							
F29											1							
F30	0.5					0.5												
F31	1																	
F32						1												
F33						1												
F34					1													
F35											0.5				0.5			
F36						1												
F37			1															
F38											1							
F39											1							
F40	1																	
F41	1																	
F42	1																	
F43								1										
F44					1						1							
F45					1													
F46	1																	
F47						1												

Table 22 continued from previous page

Factor	I1	I2	I3	I4	I5	O1	O2	O3	O4	O5	O6	O7	M1	M2	M3	M4	T1	T2
F48							1											
F49	0.5	0.5	0.5	0.5	0.5													
F50	1																	
F51												1						
F52	1																	
F53						0.5	0.5											
F54	0.5													0.5				
F55																1		
F56						1												
F57																	1	
F58																	1	
F59								1										
F60								1										
F61													0.5					0.5
F62																1		
F63	0.5			0.5														
F64				1														
F65	0.5													0.5				
F66			1															
F67	1																	
F68			0.5			0.5												
F69						1												
F70	0.5											0.5		0.5				
F71											1							
F72						1												
F73											1							
F74											0.5	0.5						
F75												1						
F76			1															
F77															1			
F78	1																	
F79		1																
F80			1															
F81				1														
F82																	1	
F83													0.5					0.5
F84						1												
F85							1											
F86								1										
F87														1				
F88															1			
F89																1		

Table 22: The identified factors and their relation to the literature factors

F Examples for the factors of resistance

ID	Factor	Example(s)
I1	Uncertainty costs	Lack of clarity, uncertain about new tasks, uncertainty costs, loss of habits
I2	Input consideration	Thoughts of the users is not sought out or listened to
I3	Loss of control/power	A leveled playing field, no longer the expert in the process
I4	Self-efficacy	Lack of confidence, lack of skills or abilities
I5	Cynicism	Not believing in a new way of working, always considering the worst option possible
O1	Facilitating environment	Bureaucracy that is too slow to change, lack of commitment from top management to change
O2	Communication	Lack of communication from upper management, withholding information or not explaining benefits of switching
O3	Training	Lack of training, incompetent trainers, timing of training, costs of training
O4	Direct costs	Licenses or technology necessary for the implementation of the new process
O5	Sunk costs	Previous training or tools that only support the old process
O6	Colleague opinion	Opinion on new system is affected by negative thoughts or cynicism of colleagues
O7	Perceived value	Benefits are not recognized, greater costs than benefits
M1	Process complexity	New activities difficult to perform or new concepts difficult to grasp
M2	Job change	New skills need to be learned, other tasks need to be performed than the user is hired for
M3	Workload	Extra work to be done as compared to what they are used to/trained for
M4	Fitness	New processes not working as planned, Incompatibility issues
T1	Technical issues	Tool is not working as intended, too many bugs
T2	Tool complexity	Tool is not user friendly, there's no clear overview
E1	External factor	Pandemic

Table 23: Examples of the identified factors of resistance

G Characteristics and their selection criteria

Category	Dimension	Characteristics	When to select
Purpose	Assessment purpose	Screening	The method mentions (explicitly) that the method can be used to assess the (possible) impact of investment opportunities to guide investment decisions OR to assess the (possible) impact of (development) projects to guide permit/regulatory decisions
		Management	The method prescribes to monitor operations, gather data on an ongoing basis for internal/strategic/managerial/operational purposes.
		Reporting	The method prescribes to produce a report on the assessment
		Evaluation	The method prescribes to evaluate the performance/impact of completed activities/interventions.
		Certification	The method is developed by a specific certification organisation, OR The method is required by a specific certification organisation, OR The method prescribes to obtain certain formal external recognition
	Target audience for the report	Internal	The method prescribes to report impact to internal stakeholders
		External	The method prescribes to report impact to external stakeholders
		Supplier(s)	The method prescribes to report impact to a supplier/suppliers
		General public	The method prescribes to report impact to (members of) the general public
		Regulators	The method prescribes to report impact to the relevant local/national/global regulator
		Funder(s)	The method prescribes to report impact to funder(s)
		Peers	The method prescribes to report impact to peers
	Approach	Stages	Accounting
Reporting			The method gives guidance on/instructs how to document(ing) the results of the self-assessment/accounting in a report with specific reporting requirements determined in the method
Auditing			The method gives guidance on/instructs how to do(ing) an audit/assurance by an external or independent party to obtain attestation for the report or the organisation's daily operations
Certification			The method gives guidance on/instructs how to obtain(ing) an official certificate, label, registration, rating, or recognition to the organisation as proof of a certain level of achievement
Monetisation			The method prescribes to quantify and monetize the measured impact.
Reporting			Simply write down the name(s) that is/are used by the method to refer to the document/medium displaying the impact data.
Time frame		Prospective	The method prescribes to assess/measure the impact/performance prior to the activities/intervention/impact taking place
		Ongoing	The method prescribes to assess/measure the impact/performance during the activities/intervention/impact taking place
		Retrospective	The method prescribes to assess/measure the impact/performance after the activities/intervention/impact have/has taken place
Data typology		Qualitative	The method prescribes the gathering and/or usage of qualitative data
		Quantitative	The method prescribes the gathering and/or usage of quantitative data
Scope	Impact typology	Environmental	The method prescribes to consider/measure/report impacts on the environment, or if no specific focus is prescribed, the method allows/supports considering/measuring/reporting impacts on the environment
		Economic	The method prescribes to consider/measure/report economic impacts
		Social	The method prescribes to consider/measure/report social impacts, if no specific focus is prescribed, the method allows/supports considering/measuring/reporting social impact
		Ethical/ Governance	The method prescribes considering the business ethics/governance/managerial issues or impacts within an organisation.
	Impact Value Chain	Inputs	The method prescribes to consider/measure/report inputs
		Activities	The method prescribes to consider/measure/report the activities
		Outputs	The method prescribes to consider/measure/report outputs
		Outcomes	The method prescribes to consider/measure/report outcomes

Table 24 continued from previous page

Category	Dimension	Characteristics	When to select
	Unit of Analysis	Impact	The method prescribes to consider/measure/report impact
		Organisation	The method mentions it can be used to measure/assess the impact/performance of organisations and their activities
		Project	The method mentions it can be used to measure/assess the impact/performance of projects
		Policy	The method mentions it can be used to measure/assess the impact/performance of policies
		Program	The method mentions it can be used to measure/assess the impact/performance of programs
		Product/service	The method mentions it can be used to measure/assess the impact of products and/or services
		Plan	The method mentions it can be used to measure/assess the impact/performance of plans
		Investment	The method mentions it can be used to measure/assess the impact/performance of investment(s/ opportunities/ portfolios)
		Facility	The method mentions it can be used to measure/assess the (local) impact of factories/plants/facilities and/or other production sites
		Value chain	The method mentions it can be used to measure/assess the impact/performance of a whole value chain
		City	The method mentions it can be used to measure/assess the performance of a city
	Country	The method mentions it can be used to measure/assess the performance of a country	
		Prescribes topics	
	Sector	General sector applicability/ Generic	The method has been developed for applicability in any sector
		NACE Sectors	The method has been developed for measuring/assessing impact only in one or more specific sector(s)
Defining (social) impact	Impact goal	Act to avoid harm	The method prescribes to specifically consider possible negative impacts.
		Benefit stakeholders	The method prescribes to consider/assess the impact(s) specifically on the organisation's/project's/etc direct stakeholders.
		Contribute to solutions	The method explicitly mentions that its approach is based on an objective of achieving maximum positive social impact.
	Length of time frame	Short term	The method prescribes to specifically consider short term outcomes and impact
		Long term	The method prescribes to specifically consider long term outcomes and impact
	Intention	Intended	The method prescribes to assess the intended outcomes
		Unintended	The method prescribes to assess the unintended outcomes
	Level	Primary	The method prescribes to assess the primary effects from the intervention/ activities
		Secondary	The method prescribes to assess the secondary effects from the intervention/ activities
	Correction mechanisms	Alternative attribution	The method mentions to calculate/correct for the alternative attribution counterfactual/correction mechanism
		Deadweight	The method mentions to calculate/correct for the deadweight counterfactual/correction mechanism
		Drop-off	The method mentions to calculate/correct for the drop-off counterfactual/correction mechanism
		Displacement	The method mentions to calculate/correct for the displacement counterfactual/correction mechanism
	Impact score	Impact score	Does the method actually prescribe/allow to consider/measure/report REAL impact according to definition we distilled from literature. This should be an automated decision, based on whether the method prescribes measuring intended and unintended, positive and negative (A+B+C impact classes), primary and secondary outcomes on the short and long term timescale, corrected for deadweight, drop-off, attribution and displacement.

Table 24: All identified characteristics for SIA methods

H Visitor statistics Impact Path

Month	Total Visitors	Visitors per Day	Unique Visitors	Unique Ratio	Pages
June 2018	881	29.4	644	73%	7,316
July 2018	1,508	48.6	827	55%	6,866
August 2018	871	28.1	370	42%	4,022
September 2018	1,099	36.6	589	54%	4,345
October 2018	1,204	38.8	743	62%	6,572
November 2018	1,435	47.8	1,021	71%	9,570
December 2018	1,612	52.0	1,043	65%	10,542
January 2019	2,113	68.2	1,567	74%	11,124
February 2019	1,525	54.5	1,136	74%	19,902
March 2019	2,548	82.2	2,004	79%	17,524
April 2019	3,547	118.2	2,320	65%	16,115
May 2019	2,166	69.9	1,586	73%	11,132
June 2019	1,430	47.7	1,030	72%	8,171
July 2019	1,665	53.7	1,296	78%	6,875
August 2019	1,430	46.1	1,098	77%	6,269
September 2019	1,617	53.9	1,305	81%	6,264
October 2019	3,211	103.6	2,134	66%	11,224
November 2019	3,947	131.6	2,348	59%	14,193
December 2019	2,776	89.5	1,741	63%	9,620
January 2020	2,679	86.4	1,677	63%	9,684
February 2020	2,059	71.0	1,557	76%	9,186
March 2020	2,901	93.6	1,817	63%	9,396
April 2020	2,855	95.2	1,839	64%	13,051
May 2020	3,290	106.1	2,071	63%	14,702
June 2020	2,399	80.0	1,680	70%	24,999
July 2020	2,651	85.5	1,821	69%	13,454
August 2020	3,221	103.9	2,030	63%	17,061
September 2020	4,445	148.2	2,423	55%	21,514
October 2020	4,326	139.5	2,526	58%	24,928
November 2020	3,781	126.0	2,231	59%	17,983
December 2020	4,532	146.2	2,622	58%	20,066
January 2021	5,247	169.3	3,127	60%	21,063
February 2021	3,089	110.3	1,924	62%	12,943
March 2021	3,767	121.5	2,333	62%	15,006
April 2021	3,276	109.2	2,158	66%	13,745
May 2021	259	83.5	236	91%	958
	91,362		58,874		447,385

Figure 29: Impact Path website visitor statistics

I Impact Path Interview Protocol

There are two types of interviews that relate to the Impact Path, with three separate parts. The main interviews are conducted with interviewees that are familiar with the Impact Path and are willing to answer questions on their experience and opinions of the method, these main interviews relate to part 1 and 2. Next to that, we also discuss the Impact Path, if time allows it, during a PDD validation interview. This involves people that were not interviewed for the Impact Path particularly, but that may or may not have any knowledge on the Impact Path. These additional interviews relate to all three parts.

First, we ask permission to record the meeting.

(Q1): Is it okay if we record our meeting?

- Yes: Start the recording
- No: Take notes during the meeting

Note that the recording has started.

I.1 Introduction for the interview

My thesis focuses on ‘Social Impact Assessment’ as part of a research line that focuses on Impact Measurement. The eventual goal of this research line is to develop a model-driven tool, capable of supporting Social Impact Assessment, regardless of the method used. My contribution to this research line is to analyse the domain of SIA and create an understanding of this family of methods. As part of my research, I am doing a market analysis for the Impact Path to assess the attractiveness of using/transitioning to the new government-commissioned SIA method. I want to create an understanding of the Impact Path and its adoption process for the future, and the effects the introduction of this new method has on the current state-of-the-art in Social Impact Assessment in the Netherlands/Belgium.

(Q2): Do you have any questions before we get started?

- Yes: Answer questions
- No: Proceed to **Q3**

I.2 General questions

(Q3): What is the name of your job function and what does it entail?

- (a) How long have you been working within the domain of Social Impact Assessment/Measurement?
- (b) What method/tool do you usually use for conducting Social Impact Assessment/Measurement?

(Q4): What is your relationship to the Impact Path and how did you get to know about this method/tool?

- **Part 1:** The interviewee knows about the Impact Path and has contributed or is contributing to its development. Continue to **Q5**.
- **Part 2:** The interviewee knows about the Impact Path, but was not involved in its development. Continue to **Q10**.

I.3 Part 1: Development of the Impact Path

For this scenario, we have the opportunity to ask some additional questions concerning the development of the Impact Path. The purpose of this part is to receive more information regarding the development and background of the Impact Path. After the answering of these questions, we continue with the questions that will be asked to all interviewees.

(Q5): What was your role in the development of the Impact Path?

(Q6): How was the Impact Path developed?

- (a) What was the goal of the development of the Impact Path?
- (b) How did it evolve over the years? (Sketch a timeline)
- (c) What are the latest developments of the Impact Path?
- (d) Where do you see the Impact Path go in the future, what is the next version?

(Q7): Who is responsible for further development of the Impact Path?

(Q8): What incentives, if any, are given to organisations to switch to the Impact Path?

(Q9): Is the government doing anything to push for the adoption of the Impact Path?

I.4 Part 2: Experience and opinions on the Impact Path

The following questions are always asked to the interviewee, regardless of whether or not the interviewee was involved in the development of the Impact Path. The purpose of this part is to gather experiences and opinions on the Impact Path. For this part, we also consult a list of organisational resistance factors, identified from the literature. During the conversation, when a resistance factor is mentioned, this is noted down as 'proactively mentioned'. After discussion on the organisational resistance, the other factors in the list are also mentioned and it is asked whether or not they have experienced this factor. Lastly, we ask which three factors of all the experienced factors they consider to be the most important or most impactful.

(Q10): Do you have any experience with implementing/using the Impact Path or experience with helping another organisation in applying the Impact Path?

- Yes: Proceed with the sub-questions
- No: Go to **Q11**

(a) What method/tool did you use before the Impact Path?

(b) How was the transition to using the Impact Path?

(c) Did you experience any drawbacks or resistance?

- i. Did you experience any individual resistance factors?
- ii. Did you experience any organisational resistance factors?
- iii. Did you experience any difficulties with the method factors?
- iv. Did you experience any issues with the technology factors?

After answering these questions, we go through the list of identified factors and ask for each factor whether or not they have experienced these.

- v. What did you do to alleviate this experienced resistance factors?

- vi. What else can be done to alleviate the experienced resistance factors?
- (d) Which factors do you consider to be the most impactful or the most important to consider?
- (e) What are the benefits you experienced?
- (f) Are you currently still using the Impact Path and why?

(Q11): Do you know any organisations that are currently implementing the Impact Path?

- (a) What is the name of this organisation?
- (b) Do you know anything about their adoption process, or how they experienced the transition to using the Impact Path?
 - Yes: Go to **Q10**'s sub-questions
 - No: Continue to **Q12**

(Q12): What is your impression/opinion of the Impact Path?

- (a) What benefits/advantages do you see in the Impact Path and its adoption?
- (b) What drawbacks/disadvantages do you see in the Impact Path and its adoption?
- (c) What improvements do you believe are necessary for the Impact Path?

(Q13): What do you think the adoption of the Impact Path in the future will be like?

- (a) Do you think a lot of organisations will want to use the Impact Path?

(Q14): What would you think if the government would regulate the usage of the Impact Path?

(Q15): Is there any other SIA method that you believe resembles the Impact Path?

I.5 Part 3: Discussion of Impact Path after PDD validation

The interview conducted was to validate a PDD as described in the PDD Validation Interview Protocol in Appendix J. In case there is time left, some questions will be asked about the Impact Path.

(Q1): Have you heard of the Impact Path?

- Yes: Move to **Q10**
- No: Give a concise description of the Impact Path and ask the following questions

(Q2): What is your opinion on the government commissioning an SIA method?

(Q3): What would you think if the government would regulate the usage of this method within the market of Social Impact Measurement?

(Q4): Would you consider using/transition to using the Impact Path and why/why not?

(Q5): Have you ever transitioned from using one method to using another method?

- (a) What drawbacks did you experience by transitioning?
- (b) Was there any resistance within the organisation to this change?
- (c) What benefits did you encounter after using this new method?

I.5.1 Concise description of the Impact Path

The Impact Path is a web-based tool developed in 2018 as ‘The entrepreneur’s manual to impact measurement growth’. It was commissioned by the Dutch government in an effort to support social enterprises with measuring their impact, with the goal to lower the threshold for impact measurement and working towards standardisation in terms of process and consensus on definitions. Aside from providing guidance on the impact measurement process by recommending helpful tools and using examples and use cases, they also provide a selection of indicators for each domain as a first step towards standardisation. Their process consists of five steps:

1. Defining the social mission and impact goals
2. Development and validation of a Theory of Change
3. Monitoring direct results (output)
4. Measurement of mission-related effects
5. Development of comprehensive insights

The initial focus of the Impact Path was on three key domains: labour participation, sustainable value chains, and the circular economy. Later, they added ‘Active and healthy ageing’.

J PDD Validation Interview Protocol

First of all, thank you for making time for this interview. Before we get started we have to ask for your permission to record this meeting.

(Q1): Is it okay if we record our meeting?

- Yes: Start the recording
- No: Take notes during the meeting

Note that the recording has started.

J.1 Introduction to the interview

This interview is part of our thesis which focuses on what we call ‘social impact assessment.’ As part of our thesis we have modelled several social impact assessment methods. We have created so-called meta-models that provide a slightly abstract overview of the approach of these methods. These models are based on method documentation or, if no documentation is available, we have used the online or offline tools that have been developed to support practitioners of the method to distill the approach of the method. Through these models we try to get a better understanding of how social impact assessment is performed. The goal of this interview is to ensure that the model reflects the process as intended by the developers and/or interpreted by consultants and practitioners. This is mainly done by comparing your impressions of the method to our model. With impressions we mean the underlying intentions of the method and how it should be executed.

(Q2): Do you have any questions before we get started?

- Yes: Answer questions
- No: Proceed to **Q3**

J.2 General questions

(Q3): What is the name of your job function and what does it entail?

(Q4): How does your job relate to the usage of the [method/tool]?

- (a) What is your relationship to the [method/tool] and how did you get to know about this [method/tool]?
- (b) Since how long are you familiar with the [method/tool]?

J.3 PDD explanation

Before we jump into the validation it is relevant to provide you with a bit of context on how we modelled the [method] and how to interpret it. We have built a so-called process-deliverable diagram of the [method]. This diagram consists of two parts, a process part and a deliverable part. We will explain in short what it entails. The process part of the model describes the activities of the [method], the relations among them, the order in which they should be performed and which actors are responsible for the completion of these activities. Show an example of the process part of stage 1 of the [method]. The deliverable part of the model is related to the process part of the [method]. A deliverable is nothing more than an output resulting from an activity. Show an example of a deliverable resulting from an activity in stage 1 of the [method].

J.4 Process validation

Very well. We can start the validation process now. We will first go through the process part of the model.

First, we show the process part of the PDD and read out the names of the stages

(Q5): Do you recognize all the stages of the method that we define in the model?

- Yes: Go to the next sub-question
- No: Which stages are you not familiar with?

(Q6): Are there perhaps any parts of the impact measurement process that you as a [consultant prescribe to your clients/practitioners to apply] that are not mentioned in the method documentation or covered in the tool?

- Yes: Which stages would you define on top of the ones that we mention in our model?
- No: Go to **Q7**

Within the stages we have identified activities. The goal of this question is to determine if the activities in the PDD correspond with the activities defined by the [tool/documentation]. This is done by showing the activity in the [tool/documentation] and comparing it with the activity in the PDD. We repeat the following questions for each stage in the process part.

(Q7): Does the activity in the PDD reflect the corresponding activity in the [documentation/tool]?

- Yes: Go the next activity
- No: What is different and how to change this?

We repeat Q7 until all activities in this stage are discussed

(Q8): Are there any activities missing in this stage that should be there according to [company/developer name/interviewee]?

- Yes: Which activity is missing and how do you describe the activity?
- No: Go to Q9

(Q9): Are the activities in this stage in the order that corresponds with the [tool/documentation]?

- Yes: Go to Q10
- No: Which activity does not correspond and why?

We repeat these processes until all activities are discussed.

(Q10): Do you have any other comments on this stage of the [method]?

- Yes: Discuss comments
- No: Continue to Deliverable Validation

J.5 Deliverable validation

Now that we have validated the process part, let's take a look at the deliverables resulting from the activities. Just as a reminder, deliverables are data and documents that result from activities. We will go over the deliverables stage by stage. For each phase, we discuss the deliverables of the activities. The following questions will be asked for each activity of each phase.

(Q11): Does the deliverable from [activity] correspond with the [documentation/tool]?

- Yes: Go to the next deliverable
- No: Why not and what should be changed?

(Q12): Are there any critical deliverables missing in this stage?

- Yes: Which deliverable is missing and why?
- No: Continue.

J.6 Final questions

In case there is time left, questions are asked regarding the Impact Path, as described in Part 3 of the Impact Path Interview Protocol in [Appendix I](#).

K Consent form

For our research on Social Impact Assessment, we are part of a research line that focuses on Impact Measurement. The goal of our research is to create understanding on the current state-of-the-art of Social Impact Assessment and work towards the development of a model-driven tool capable of supporting Social Impact Assessment. To gain more insights into the current state-of-the-art, we have asked you to participate in an interview about [**SIA method**]. The interview is conducted by Sebastiaan van Nijen, who is doing research for his Business Informatics Masters at Utrecht University under the supervision of dr. Sergio Espana and Vijanti Ramautar.

The interview will take approximately 1 hour and will be recorded. Before the start of the actual interview, we shall ask for consent before starting the recording. In the case the interviewee wishes not to be recorded, the interviewer (Sebastiaan) will take notes. The recording will only be used within this research in order to transcribe and analyse the interview.

If you have any questions or wishes after the interview, you can contact Sebastiaan van Nijen (s.a.vannijen@students.uu.nl). In any case, we will be happy to share the eventual results of our research with you.

For the interviewee:

I have read this informed consent and I agree to participate,

Name:

Date:

Signature:

L All found SIA methods

The figures below show the SIA methods that have been identified and provide the following information per method: The ID of the method (i.e. the abbreviation as used in this research), the method name, the developer name, the year of release and the most recent version, tool support of the method, whether it was used for the characteristics analysis and PDD analysis, the source or website and how the method was found.

ID	Method name	Developer name	Release Year	Latest version	Tool support	Characteristics analysis	PDD	Sources	Derived from
AIM	Actionable Impact Management (AIM)	SoPact, Asia Pacific Social Impact Centre (University of Melbourne)	2017	2018	Yes: Impact Cloud		1 0	https://drive.google.com/drive/folders/1so33tnZEK6whztgo0BXZd26MZVvXXmo	Internet
BCIA	Business Call to Action (BCTA): Impact Lab	UNDP, but is a "multilateral alliance among donor governments"	2018	2018	Yes: Eponymous tool		1 1	https://impactlab.businesscalltoaction.org/	Internet
CF	Common Approach	Societ Enterprise Measurement Task Force & government of Ontario	2019	2019	Common Foundations to Impact Measurement: Self-Assessment Tool		1 0	https://www.commonapproach.org/wp-content/uploads/2021/05/2021-01-18-Common-Foundations-1.pdf	Internet
CONTA	Contribution analysis	Intrac	2001	2017	No		0 0	https://www.intrac.org/wp-content/uploads/2017/01/Contribution-analysis.pdf	Survey
HIN	Handboek impact meten Netwerkorganisaties	Impact institute	2020	2020	No		1 0	https://www.impactinstitute.com/handboek-impactmeten-netwerkorganisaties/ https://www.impactinstitute.com/framework-for-impact-statements/	Internet
IMP	Impact Management Project - A Guide to Classifying the Impact of an Investment	The Impact Management Project, currently hosted by Bridges Insights, part of Bridges Fund Management: https://www.bridgesfundmanagement.com/bridges-insights/	2018	2019	No		1 0	https://impactmanagementproject.com/impact-management/how-enterprises-manage-impact/	Internet
IRIS+	Impact Reporting and Investment Standards	Global Impact Investing Network	2008	2021 (Continuous updates in terms of themes/metrics)	Yes: Web based guidance tool (online)		1 1	https://iris.thegin.org/metrics/	Literature: G (2015)
IWD	Impact Wizard	Sociale InnovatieFabriek and Verenigde Verenigingen	2016	2019	Yes: Eponymous tool		1 1	https://impactwizard.eu	Internet
IMPTR	Impacttrack	Impact Track	2020		Yes		0 0	https://impacttrack.org/en/	Survey
IWR	Impactwijzer	Partos & Goede Doelen Nederland in collaboration with Sinzer	2019	2019	Yes: Project assessment sheet tool (online)		1 1	https://www.impactwijzer.nl/strategie-introductie	Internet
IF	InFocus impact framework	InFocus	2016	2016	Yes: E-learning lab		1 0	https://www.google.com/url?client=internal-element_cse&cx=016364595556873131513:lg-p43v3lam&q=https://www.undp.org/content/dam/ukraine/docs/DG/specinnov/7%2520Steps%2520to%2520Effective%2520Impact%2520Measurement_v3_13.12.16%2520(1).pdf&sa=U&ved=2abUKEwjIdT33pTvAhUuqOKHSHOCouOfIAAegQJBAB&usq=ADvVawoeiob2HSIGIb6sTobbd3PY	Internet

Figure 30: SIA Methods Found 1/3

ID	Method name	Developer name	Release	Latest version	Tool support	Characteristics	PDD	Sources	Derived from
INSPIMP	Inspiring Impact	Inspiring Impact	2012	-	No		0	https://www.inspiringimpact.org/what-is-impact-practice/	Internet
IAM	Integrated Profit & Loss Assessment Methodology (IAM)	Impact Insitute (Powered by True Price)	2020	2020	No		0	https://www.impactinstitute.com/ipl-assessment-methodology/	Internet
LDA	Lean Data Approach/Framework	Acumen & 60_decibels (created by Acumen)	2019	-	No		0	https://60decibels.com/approach	Internet
LFA	Logical Framework Approach (LogFrame)	for USAID by a consultancy	1969	-	No		1	https://www.afdb.org/fileadmin/uploads/afdb/Documents/Evaluation-Reports-Shared-With-OPEV_/00158077-EN-WB-LOGICALFRAMEWORK-HANDBOOK.PDF https://web.archive.org/web/20110409170601/http://pdf.usaid.gov/pdf_docs/PNAB1452.pdf http://www.evropa.gov.rs/Evropa/ShowDocument.aspx?Type=Home&id=525	Internet
MYIM	Maximise Your Impact Model	Avance	2018	2018	No		1	https://www.avance-impact.nl/en/visie/my-impact-model/	Internet
MYIG	Maximise Your Impact: A guide for Social Entrepreneurs	Estonian Social Enterprise Network, Koc University Social Impact Forum, Milkado Sustainable Development Consulting and Social Value UK	2017	2017	No		1	https://socialvalueint.org/wp-content/uploads/2018/05/MaximiseYourImpact_24.10.17.pdf	Internet
MSC	Most significant change	Rick Davies and Jess Dart	2005	2017	No		0	https://www.clearhorizonacademy.com/wp-content/uploads/2020/05/MS-C-user-guide-2005.pdf	Survey
OUTCH	Outcome harvesting	Ricardo Wilson-Grau & Heather Britt	2012	-	No		0	https://www.betterevaluation.org/en/resource/overview/OutcomeHarvesting	Survey
OM	Outcome Mapping	International Development Research Centre / Outcome Mapping Learning Centre	1999	2021 (continuously updated by practitioners)	No		1	https://www.outcomemapping.ca/outcome-mapping-practitioner-guide	Internet
PIA	Participatory impact assessment	Feinstein International center	2009	2014	No		0	https://fic.tufts.edu/publication-item/participatory-impact-assessment-a-design-guide/	Survey/ literature: Maas & Liket (2011); Grieco et al. (015)
QCA	Qualitative comparative analysis	Intrac	1984	2017	No		0	https://www.intrac.org/wpcms/wp-content/uploads/2017/01/Qualitative-comparative-analysis.pdf	Survey
BERF	Rainbow Framework	Better Evaluation	2014	-	No		0	https://www.betterevaluation.org/en/resource/tool/be_planning_tool	Internet
RBM	Results Based Management (RBM)	United Nations Development Group	late 1990s	2011	No		1	https://web.archive.org/web/20160821235450/https://undg.org/home/guidance-policies/country-programming-principles/results-based-management-rbm/	Internet
SAMTC	Sametrica	Sametrica	2012	-	Yes: Eponymous tool		0	https://sametri.ca	Internet
SOHP	Social handprint	MAEX	2019	-	No		0	https://drive.google.com/file/d/1kgDvuAqFbZEMvH5mKhBUda_crZacLj/view	Survey
SIA-IAIA	Social Impact Assessment (SIA)	Frank Vanclay for the International Association for Impact Assessment (IAIA)	2003	2003	NA		1	https://drive.google.com/drive/folders/1ixqXlgKNEKU01Faywt7SwsfyCE4NuJe	Literature: Maas & Liket (2011); Vanclay et al., (2015)
SIC	Social Impact Canvas	Social Enterprise Institute	2018	2018	No		1	https://drive.google.com/drive/folders/1Zps_-w3gxSOauSQ8gL0ra67HhA0XHx9v	Internet
SIN	Social Impact Navigator	PHINEO	2013	2016	No		1	http://www.social-impact-navigator.org/planning-impact/make-it-happen/	Internet

Figure 31: SIA Methods Found 2/3

ID	Method name	Developer name	Release	Latest version	Tool support	Characteristics	PDD	Sources	Derived from
SIMT	Social Impactmeting Mede	Hanzehogeschool	2021		Yes		0	https://tim.servates.net https://www.hanze.nl/nld/onderzoek/kenniscentra/centrum-ondernemerschap/social-impact-beloond	Survey
SROI-SVI	Social Return on Investment (SROI)	The SROI Network (now: Social Value International)	2009	2012	No		1	0 https://drive.google.com/drive/folders/1fo80zlpVTgXJRLXM58ZEJS8_ZaIRpJZg	Literature: Rinaldo (2010)
SROI-Sinzer	Social Return on Investment (SROI) Framework	Sinzer	2016	2016	Yes: Sinzer tool		1	0 https://drive.google.com/drive/folders/1MGHjIDmOjXBRYGMBvih7iyO7jHdXohdQ https://vimeo.com/208831038	Internet
SVE	Social value engine	Rose Regeneration and East Riding of Yorkshire Council	2017	-	Yes: Impactasaurus		0	0 https://www.socialvalueengine.com	Internet
SIF	Strategic Impact Framework (SIF)	Sinzer	2015	2017?	Yes: Sinzer tool		1	0 https://vimeo.com/170016473 https://web.archive.org/web/20200805125401/https://sinzer.zendesk.com/hc/en-us/categories/200890069-Strategic-Impact-Framework-SIF-	Internet
TC	The Compass	Centre for Social Impact	2018	2018	No		1	0 https://www.csi.edu.au/media/uploads/CSI_The_Compass.pdf	Internet
IP	The Impact Path	Avance, Social Enterprise NL, and Impact Centre Erasmus	2018	2019	No		1	1 https://impactpad.nl/	Internet
IPH	The Institute for Positive Health	SE Lab	2019	-	No		0	0 https://www.iph.nl/evaluatiewijzer/impact-methode/ https://www.iph.nl/assets/uploads/2021/02/Rapportage-Impact-meten-workshop-FG.pdf	Survey
EVPA	The Venture Philanthropy approach	European Venture Philanthropy association	2013	2015	No		1	1 https://evpa.eu.com/knowledge-centre/publications/measuring-and-managing-impact-a-practical-guide	Survey Internet
ToC1	Theory of Change	The Bridgespan Group, Inc.	-	-	No		0	0 https://www.bridgespan.org/bridgespan/images/articles/intended-impact-theory-of-change/intended-impact-theory-of-change-templates_1.pdf	Survey/ literature: Clark et al., 2004
ToC2	Theory of Change	Carol Weiss	1972	-	No		0	0 http://65.182.2.242/docum/crid/Febrero2005/pdf/eng/doc345/doc345-contenido.pdf https://www.value-balancing.com/en/downloads.html	Survey/ literature: Clark et al., 2004
VBA	Value Balancing Alliance (VBA) Impact Statement Methodology	Value Balancing Alliance (VBA)	2020	2021	No		0	0	Internet
W+	W+ Standard	WOCAN (Women Organizing for Change in Agriculture and Natural Resource Management)	2014	2017	No		1	1 https://www.wplus.org/	Internet

Figure 32: SIA Methods Found 3/3

M SIA Method classification

ID	Screening				Management Reporting				Evaluation				Certification				Is a large audience mentioned at all?				Objective				Approach				Certification				Prospective				Retrospective				Quant.				Ethical				Social				Environmental				Economic				Inputs				Activities				Outputs				Outcomes				Impact				Organisation				Project				Policy			
	Purpose				Target Audience for the report				Role of Impact				Stages				Monetization				Time frame				Data typology				Impact typology				Impact Value Chain				Unit of Analysis																																																							
	Assessment purpose	Internal	External	Suppliers(s)	General Public	Regulator(s)	Funder(s)	Peers	Objective	Missions	Accounting	Reporting	Auditing	Certification	Prospective	Ongoing	Retrospective	Qual.	Quant.	Ethical	Social	Environmental	Economic	Inputs	Activities	Outputs	Outcomes	Impact	Organisation	Project	Policy																																																													
AIM	3	3	3	3	1	1	3	3	3	3	3	3	3	1	3	0	3	3	1	1	3	1	3	3	3	3	3	1	3	3	2	2	3	3	3	3	2	3	3	1																																																				
BCIA	1	3	3	1	1	0	3	3	3	1	1	1	1	0	1	3	2	2	3	3	3	2	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	1																																																				
CF	1	2	3	1	2	1	1	3	2	3	1	2	1	3	0	3	3	1	3	2	1	3	2	3	3	1	3	2	1	2	2	2	2	2	2	3	2	1																																																						
EVPA	3	3	3	1	1	1	3	3	1	2	1	3	2	3	1	3	3	1	1	3	3	3	3	3	3	1	3	3	3	1	3	3	3	3	3	3	3	3	3	1																																																				
HIM	1	3	3	1	1	1	2	3	1	3	3	1	1	1	3	3	3	1	1	3	1	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	1																																																					
IF	1	3	3	1	1	1	3	3	2	3	1	2	1	3	3	3	1	1	1	0	1	3	2	3	3	1	3	1	1	1	3	3	3	3	3	3	3	2	1																																																					
IMP	3	0	1	1	1	0	3	3	1	1	1	1	1	1	1	3	3	1	2	2	1	3	3	2	1	1	1	3	3	3	3	3	3	3	3	3	3	3	1																																																					
IP	2	3	3	1	1	1	3	3	3	3	1	2	1	3	2	3	3	1	1	3	1	3	2	3	3	1	3	3	3	1	3	3	3	3	3	3	3	2	1																																																					
IRIS+	3	3	3	3	1	1	3	3	1	3	1	3	2	3	0	3	3	3	1	1	1	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	2	1																																																					
IWD	1	3	3	1	1	1	3	3	2	2	1	3	1	3	0	3	3	1	1	0	1	3	2	3	3	1	3	1	1	3	3	3	3	3	3	3	3	3	1																																																					
IWR	1	3	3	2	1	1	3	3	3	3	1	3	1	3	0	3	3	1	1	0	1	3	2	3	3	1	3	2	1	3	3	3	3	3	3	3	2	1																																																						
LFA	1	2	1	1	1	0	2	3	1	1	1	1	1	2	3	1	1	1	1	0	1	2	1	3	3	2	2	2	2	3	3	3	3	3	2	3	1																																																							
MYIG	1	3	3	1	1	1	3	3	3	3	1	3	1	3	0	3	3	1	1	0	1	3	2	3	3	1	3	2	1	1	3	3	3	3	3	3	2	1																																																						
MYIM	2	3	3	1	1	1	3	3	3	3	1	3	3	3	0	3	3	1	1	1	1	3	2	3	3	1	3	3	3	3	3	3	3	3	3	3	3	1																																																						
OM	3	3	3	3	1	0	3	1	3	1	1	1	1	0	1	3	3	3	3	1	3	3	1	1	3	3	1	1	3	3	3	0	3	3	1																																																									
RBM	3	3	3	3	1	1	2	3	1	2	3	3	1	3	1	3	3	1	1	1	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3																																																						
SIA-IAIA	1	3	3	1	1	1	3	3	1	3	3	1	1	1	3	3	3	1	1	1	3	3	1	3	3	1	3	3	3	1	3	3	3	1	2	3	1	3	1																																																					
SIC	1	1	1	1	1	0	3	1	1	1	1	1	1	1	1	1	3	1	1	1	3	1	1	3	1	3	3	1	1	3	1	3	3	3	3	2	1																																																							
SIF	3	3	3	1	1	0	2	2	3	1	3	1	1	1	0	1	3	1	3	3	1	3	3	1	3	3	1	3	3	3	3	3	3	3	3	3	3	1																																																						
SIN	1	3	3	3	1	1	3	3	1	3	1	3	3	3	1	1	3	2	3	3	1	3	2	3	3	1	3	1	1	3	3	3	3	3	3	3	3	1																																																						
SROI-Sinzer	3	3	3	3	1	1	3	3	1	3	3	3	1	3	3	3	3	3	3	1	3	3	3	3	3	1	3	3	0	3	2	3	3	3	3	3	3	3																																																						
SROI-SVI	3	3	3	3	1	1	3	3	3	3	3	3	2	3	3	3	3	1	1	3	3	2	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3																																																						
TC	1	3	3	1	1	0	2	2	NA	NA	NA	NA	NA	3	2	3	0	1	1	3	1	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3																																																						
W+	3	3	3	3	3	1	3	3	2	3	1	3	1	3	3	2	3	3	3	3	1	3	2	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	1																																																					

Figure 33: Full characteristics analysis 1/2

ID	Prog	Prct/Spec Plan	Investment Facility	VC	City	Country	Prescribes topics?	Summary of topic taxonomy	Industry Sector (NACE, link)	Definition of impact															
										Act to avoid/harm		Benefit stakeholders		Contribute to solutions		Long	Intended	Unintended	Primary	Secondary	Alternative attribution			Impact score	
										Impact goal	Temporal scope	Intention	Level	Drop-off	Displacement										
AIM	3	1	1	1	1	1	1	o NA	Generic	3	2	2	3	3	3	3	3	1	1	1	1	1	8		
BCLA	1	1	1	1	1	1	1	3	SDGs	Generic	3	3	3	3	3	3	1	3	1	1	3	3	1	9	
CF	1	1	1	1	1	1	1	o NA	Generic	3	3	2	3	3	3	3	3	1	1	3	1	1	9		
EVPA	1	1	1	3	1	1	1	o NA	Generic	3	3	3	3	3	3	3	1	3	3	3	3	3	12		
HIM	1	1	1	1	1	1	1	o NA	Generic	3	3	1	2	2	3	3	3	1	3	1	1	1	8		
IF	1	1	1	1	1	1	1	o NA	Generic	3	3	2	3	3	3	3	3	1	1	1	1	1	8		
IMP	1	1	1	3	1	1	1	o NA	Financial And Insurance Activities	3	3	3	3	3	3	3	2	1	1	1	1	1	8		
IP	1	1	1	1	1	1	1	o NA	Generic	3	3	3	3	3	3	3	3	1	3	1	3	3	11		
IRIS+	1	1	1	3	1	1	1	3	17 SDG Goals	Generic	3	3	3	3	3	3	2	3	2	1	1	1	1	9	
IWD	1	1	1	1	1	1	1	1	NA	Generic	3	3	3	3	3	3	3	1	1	1	1	3	9		
IWR	1	1	1	1	1	1	1	o NA	Generic	3	3	3	3	3	3	3	3	1	3	3	3	3	12		
LFA	3	1	1	1	1	1	1	o NA	Generic	3	3	2	2	3	3	3	3	3	1	1	1	1	9		
MYIG	1	1	1	1	1	1	1	o NA	Generic	3	3	3	3	2	3	3	3	1	3	3	1	1	10		
MYIM	1	1	1	3	1	1	1	o	Generic	3	3	3	3	3	3	2	3	3	3	1	1	1	10		
OM	3	1	1	1	1	1	1	1	NA	Generic	1	3	3	3	3	3	3	3	3	1	1	1	1	8	
RBM	3	3	3	3	1	1	3	3	o NA	Generic	3	3	3	2	3	3	3	3	3	3	1	1	1	10	
SIA-IAIA	1	1	1	1	3	1	1	1	o NA	Generic	3	3	1	3	3	3	3	3	3	1	1	1	1	8	
SIC	1	1	1	1	1	1	1	1	1	NA	Generic	1	1	3	2	1	3	1	2	1	1	1	1	4	
SIF	1	1	1	3	1	1	1	1	o NA	Generic	1	1	3	3	1	3	1	3	1	2	1	1	1	5	
SIN	2	1	1	1	1	1	1	1	1	Generic	3	3	3	2	3	3	3	3	1	1	1	1	1	8	
SROI-Sinzer	3	3	1	3	1	1	1	1	1	NA	Generic	3	3	3	3	3	3	3	3	1	3	3	3	12	
SROI-SVI	3	3	1	3	1	1	1	1	o NA	Generic	3	3	3	3	3	3	3	3	1	3	3	3	3	12	
TC	3	1	1	1	1	1	1	1	o NA	Generic	3	3	3	3	3	3	3	3	1	1	1	1	1	8	
W*	1	1	1	3	1	1	1	1	3	Six domains: Income and assets, Time, Education and Knowledge, Leadership, Food Security, Health	Generic	3	3	2	2	3	3	3	3	1	3	1	1	1	9

Figure 34: Full characteristics analysis 2/2

N Process Deliverable Diagrams of SIA methods

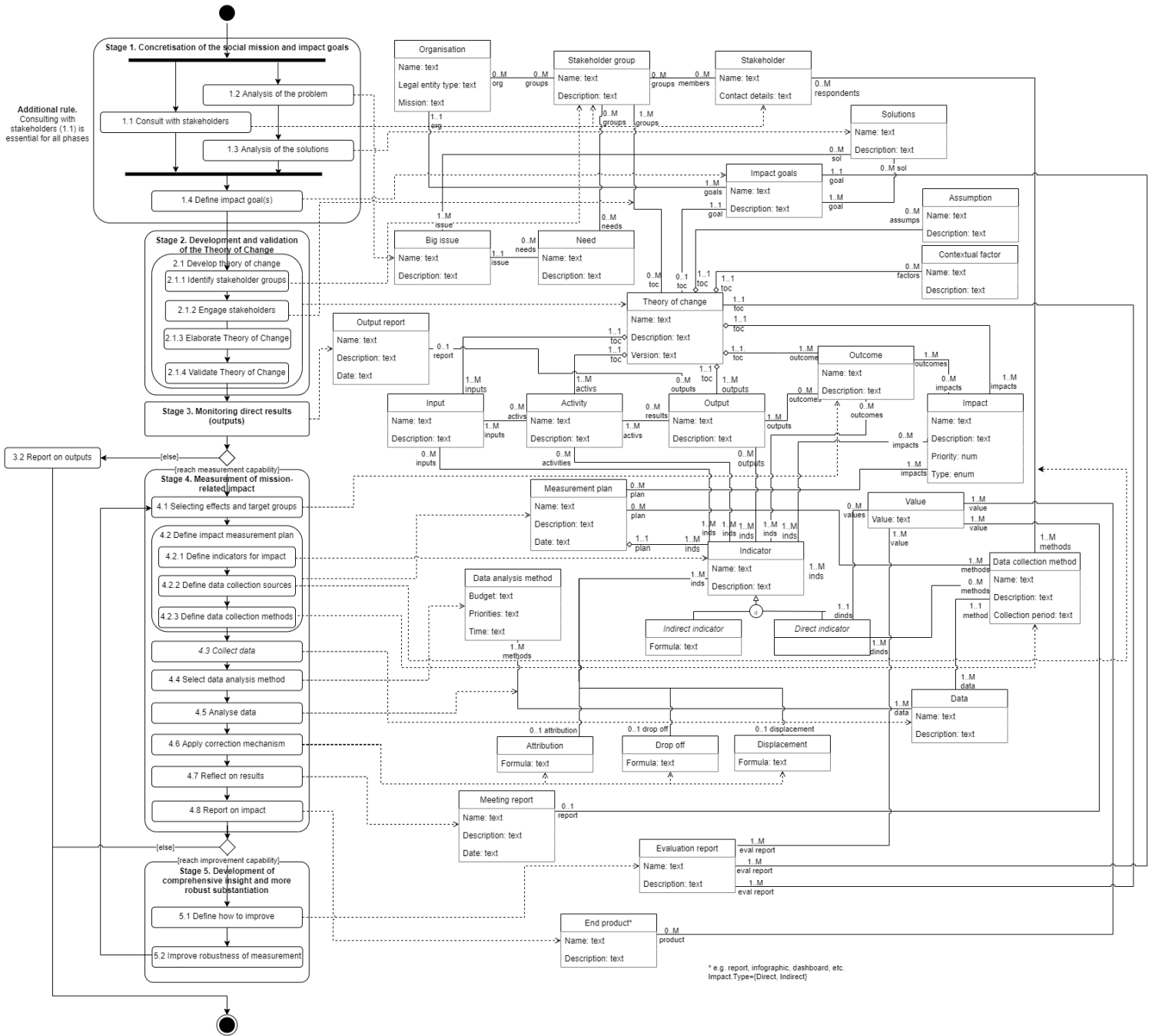


Figure 35: PDD of the Impact Path - By Friso Liezenberg and Sebastiaan van Nijen

Task	Module	Name	Description
1	1.1	Consult with stakeholders	Involve stakeholders and other experts who are familiar with the problem in the analysis to design a relevant solution
1	1.2	Analysis of the problem	Identify the problem related to the mission of the organization. The problem analysis includes the size of the problem and the relevancy.
1	1.3	Analysis of the solutions	Investigating existing solutions for the same problem applied by other organizations.
1	1.4	Define impact goals	Define the impact goal pursued by the organization, related to the mission, derived from the analysis of the problem.
2	2.1	Develop Theory of Change	The Theory of Change is developed by means of activities 2.1.1 - 2.1.4
2	2.1.1	Identify stakeholder groups	Identify the most important stakeholder(s), those which are affected the most by the organization activities.
2	2.1.2	Engage stakeholders	Involve the stakeholder(s) identified in 2.1 in the development of the Theory of Change, either by interviewing them or bringing stakeholders during evaluation sessions
2	2.1.3	Elaborate Theory of Change	Elaborate the ToC based on the findings from 2.1.2 and determine the necessary inputs, activities, outputs, outcomes and impact. Also explain the assumptions (i.e. the links between the levels) and any relevant contextfactors
2	2.1.4	Validate Theory of Change	Validate the ToC by discussing it with experts, the central question is whether is it likely that the organization can achieve its impact goal with the proposed activities
3	3.1	Monitor direct results (outputs)	Keep track of the concrete, measureable results of your activities.
3	3.2	Report on outputs	In the case an organisation never reaches stage 4 and will only be monitoring their outputs, they can report on these outputs.
4	4.1	Selecting effects and target groups	Select the stakeholder group from the ToC and the (expected) effects on them by prioritizing based on the relevance to the goal/mission of the organization
4	4.2	Define impact measurement plan	Describe what effects will be measured based on the priorities from activity 4.1. 'How' the effects will be measured is explained by activities 4.2.1, 4.2.2, and 4.2.3
4	4.2.1	Define indicators for impact	Define qualitative or quantitative indicators with which the effects will be measured
4	4.2.2	Define data collection source(s)	Define the groups or individuals from which relevant data will be collected
4	4.2.3	Define data collection methods	Select or define data gathering method(s) with which the relevant data is collected
4	4.3	Collect the data	Collect the data by using the methods defined in activity 4.2.3 from the sources identified in 4.2.2
4	4.4	Select data analysis method	Define whether the data is analysed by an external party or if it will be done by an expert within the organization
4	4.5	Analyse data	Analyse the data and determine the indicator values, also explain how much of the effects occurred and for who.
4	4.6	Apply correction mechanisms	Adjust the effectiveness of the activities by accounting for attribution, displacement and drop-off
4	4.7	Reflect on results	Reflect on the measurement by evaluating the results, are they good or bad, how can certain effects be optimized and what will the next measurement focus on
4	4.8	Report on impact	Communicate the results of the impact measurement to external stakeholders for whom the results are relevant/important. This produces a report of the measurement, be it the measurement of Stage 4 or Stage 5.
5	5.1	Define how to improve	Regularly reflect on the (intermediate) results of the impact measurement and compare those results with the impact goals from activity 1.3. Based on this reflection corrections/improvements can be made if necessary
5	5.2	Improve robustness of measurement	Collect additional data to gain even more insights in the (long-term) effects arising from the activities. This means you do your measurement from Stage 4 again, but with more robustness.

Figure 36: Activity Table of the Impact Path

Name	Description
Organisation	The entity that adopts the SIA method. The entity is often an organisation, but can also be a project
Stakeholder group	Group of individuals who can affect or who are affected by the organizations activities
Stakeholder	Individual, independent or as part of, the stakeholder group
Impact goal	The goal the organization pursues through its activities, often related to the mission
Big issue	The social problem that the organization addresses through its activities
Solution	Existing solution(s) to the big issue
Need	The problems experienced by stakeholders as a consequence of the social problem. These problems result in one or more needs of stakeholder groups
Theory of Change	The organization approach to the impact goal, explaining how its activities will result in outcomes and impact
Inputs	The resources required to perform the activities in a proper way
Activity	The activities the organization will undertake to pursue the impact goal
Output	The direct results of the organization activities
Outcome	The changes, benefits, learnings or other effects (both long and short term) that result from the organisation's activities
Impact	Direct effects following from the outputs, and indirect effects following from direct effects in the long term. Indirect effects are often the related to the impact goal
Assumption	The assumption(s) that explain the links between activities, outputs, outcomes and impact. Ideally they are backed up with evidence
Contextual factor	External factors that might influence, positive or negative, the changes caused by the organization
Output report	A report that is based on the monitoring of results.
Measurement plan	The measurement plan contains a description of the priorities of the measurement, what will be measured (+ indicators) and how
Indicator	A qualitative or quantitative information measure that makes the effects insightful and measurable
Direct indicator	Indicators that can be derived directly from the data
Indirect indicator	Indicators that need to be calculated by means of a formula
Value	The value resulting from the indicator(s)
Data analysis method	The method used for analysing the data, based on the budget and time available
Data collection method	The method(s) used to collect the data from the stakeholders
Data	Qualitative or quantitative data collected from stakeholders by means of data gathering method(s)
Attribution	An indicator that is used to determine what impact can be attributed to the activities of the organization
Displacement	An indicator that tracks the negative effects experienced by others as a consequence of the activities
Drop off	An indicator that tracks if and how much the effect of the outcomes diminishes over time
Meeting report	A report that reflects on the results of the measurement
Improvement plan	A report in which the results of the measurement are periodically compared to the impact goals, to keep track of the performance and make changes where necessary. Includes an outline of possible improvements.
End product	A report that is shared with (external) stakeholders indicating the impact created by the organization over a certain period of time

Figure 37: Concept Table of the Impact Path

Social Impact Navigator
 Author: Sebastiaan van Nijen
 Version: v3
 Validated with Phingo

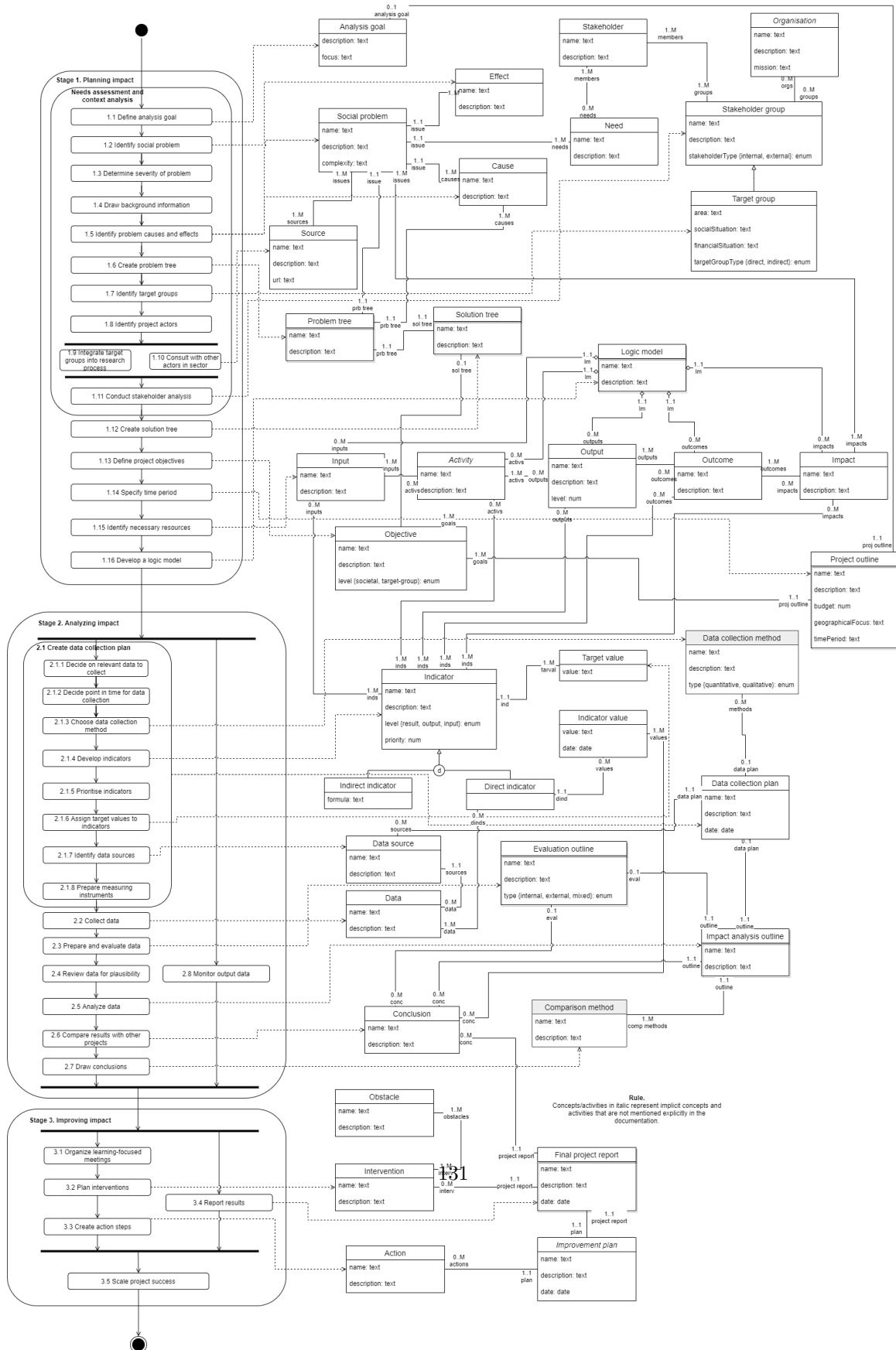


Figure 38: PDD of Social Impact Navigator - by Sebastiaan van Nijen

Task	Module	Name	Description
1	1.1	Define analysis goal	The ANALYSIS GOAL of the needs assessment and context analysis
1	1.2	Identify social problem	Providing a description of the problem the organisation is tackling with their activities
1	1.3	Determine severity of problem	Determine what the size and effect of the problem is
1	1.4	Draw background information	Use background information throughout the entire process of planning your impact
1	1.5	Identify problem causes and effects	Identification of the (root) CAUSE(S) and EFFECT(S) of the SOCIAL PROBLEM which is being analysed
1	1.6	Create problem tree	Create a PROBLEM TREE to identify the root causes of the problem
1	1.7	Identify target groups	Identification of the stakeholder group that you are focusing on with your activities
1	1.8	Identify project actors	Identify the actors within the project that is done for the impact measurement process
1	1.9	Integrate target groups into research process	The identified target groups should be taken along for input during the impact planning phase
1	1.10	Consult with other actors in sector	Consult with actors that are also active in the sector you want to make an impact in, for more background knowledge
1	1.11	Conduct stakeholder analysis	The process of identifying, understanding and prioritizing the stakeholders for the Theory of Change.
1	1.12	Create solution tree	A TREE that describes HOW to reach the impact goals
1	1.13	Define project objectives	The objectives that you want to achieve with your project
1	1.14	Specify time period	Specify the time period over which you want to measure the impact
1	1.15	Identify necessary resources	Identify the resources needed to perform your activities
1	1.16	Develop a logic model	Determine the activities needed to achieve the impact goals. Explain HOW and WHY these activities lead to effects.
2	2.1	Create data collection plan	A description of the PRIORITIES for the measurement, WHAT will be measured WHEN and HOW it will be measured, by WHO.
2	2.1.1	Decide on relevant data to collect	Identify what data is most relevant to collect
2	2.1.2	Decide point in time for data collection	Decide when the data will be collected
2	2.1.3	Choose data collection method	Choose how the data will be collected
2	2.1.4	Develop indicators	To measure effects it is necessary to define one or more indicators per effects. Indicators state what is perceived when an effect occurs.
2	2.1.5	Prioritise indicators	The process of prioritising the identified indicators
2	2.1.6	Assign target values to indicators	Values that can be compared against whenever the indicators values have been calculated
2	2.1.7	Identify data sources	Define the source from which the data for the indicators is gathered
2	2.1.8	Prepare measuring instruments	Preparing the instruments needed to measure your data, such as surveys.
2	2.2	Collect data	When the INDICATORS are decided on, the ORGANIZATION has to gather documentation which states information about the INDICATORS.
2	2.3	Prepare and evaluate data	Systemisation and consolidation of the collected data
2	2.4	Review data for plausability	Review the data to assess the plausability that the data indicates the effects you had by your activities
2	2.5	Analyze data	When sufficient data has been collected, the scores on the selected indicators can be calculated to determine how much of the effect has actually occurred and for whom .
2	2.6	Compare results with other projects	Interpretation of the data and embedding it in a context using qualitative statements, for learning purposes.
2	2.7	Draw conclusions	When the results of the impact measurement are available, they need to be reflected on
2	2.8	Monitor output data	Keep up concrete, countable results of your activities.
3	3.1	Organize learning-focused meetings	Hold regular meetings to discuss the results and provide concrete opportunities for learning
3	3.2	Plan interventions	Plan interventions for improvements of the process
3	3.3	Create action steps	Based on the conclusion(s), identify areas for improvement and set 'new' goals for the coming period. Regularly reflect on strategic choices and the ToC to determine the effectiveness of the approach.
3	3.4	Report results	Creating and sharing an external report that describes the achievements of the organization. Take into account who will be the receivers of the report and adjust the design and content accordingly.
3	3.5	Scale project success	Implement the successful project to other sectors and projects

Figure 39: Activity Table of the Social Impact Navigator

Name	Description
ANALYSIS GOAL	The goal of the needs and context analysis
ORGANISATION	The entity that adopts SIA method. The entity could be a government, company, NGO, university, foundation, and community
STAKEHOLDER GROUP	Group of individuals who can affect or who are affected by the ORGANISATION's ACTIVITIES.
TARGET GROUP	The group of individuals that you want to target in your ACTIVITIES
STAKEHOLDER	Individual in STAKEHOLDER GROUP
NEED	STAKEHOLDERS perception of the problem and the urgency associated with it.
SOCIAL PROBLEM	The social problem that the ORGANISATION addresses through its ACTIVITIES
EFFECT	Effects with regards to the SOCIAL PROBLEM
CAUSE	Causes with regards to the SOCIAL PROBLEM
SOURCE	The source of the background information that you have used to define the SOCIAL PROBLEM
PROBLEM TREE	A tool helpful in analysing the CAUSES and the EFFECTS of a problem
SOLUTION TREE	A mechanism for developing impact-oriented objectives. Created by converting the negative statements of a PROBLEM TREE into positive statements.
INPUT	All resources, whether capital or human, invested in the ACTIVITIES of the ORGANISATION.
ACTIVITY	The concrete actions, tasks and work carried out by the ORGANISATION to create its OUTPUTS and OUTCOMES and achieve its IMPACT GOALS.
OUTPUT	The tangible products and services that result from the ORGANISATION's ACTIVITIES
OUTCOME	The changes, benefits, learnings or other effects (both long and short term) that result from the ORGANISATION's ACTIVITIES
IMPACT	All the OUTCOMES of some INTERVENTION- positive and negative, intended and unintended, direct and indirect, in the short and long term - corrected for what would have happened anyway.
LOGIC MODEL	How does the ORGANISATION want to achieve the OBJECTIVES/IMPACT GOAL. A THEORY OF CHANGE represents an ORGANISATION'S approach to creating change and will include a range of STAKEHOLDERS.
OBJECTIVE	The long term objectives that the ORGANISATION is pursuing through its ACTIVITIES
PROJECT OUTLINE	The outline of the project that is being undertaken to achieve a certain social IMPACT
INDICATOR	A qualitative or quantitative information/measure/metric about results or OUTCOMES associated with the ORGANISATION performance to measure its performance or IMPACT on specific CRITERIA.
DIRECT INDICATOR	An INDICATOR that can be calculated directly from the collected DATA.
INDIRECT INDICATOR	An INDICATOR that requires input from other INDICATORS before it can be calculated.
INDICATOR VALUE	The value resulting from an INDICATOR
TARGET VALUE	The value that is being aimed at for an INDICATOR
DATA COLLECTION METHOD	Plan on how the DATA is collected determined by the goal of the measurement and the collection possibilities.
DATA COLLECTION PLAN	A description of the prioritized effects, which INDICATORS will be used and how the DATA is collected.
DATA SOURCE	The source of the data, which is usually a stakeholder
DATA	Qualitative or quantitative data collected from STAKEHOLDERS by means of DATA COLLECTION METHOD(s)
EVALUATION OUTLINE	A report in which the results of the measurement are periodically compared to the IMPACT GOALS, to keep track of the performance and make changes where necessary
IMPACT ANALYSIS OUTLINE	Outline on the progress and results of the impact analysis
CONCLUSION	A judgment or decision reached by reasoning on the identified DATA and IMPACT
COMPARISON METHOD	The technique or method used to compare your results with the results of similar projects
OBSTACLE	Impediments interfering with the advancement or implementation of an INTERVENTION/ACTIVITY
INTERVENTION	An ACTIVITY, service or product to achieve the IMPACT GOAL.
FINAL PROJECT REPORT	External report to communicate about the impact performance
IMPROVEMENT PLAN	A plan containing planned IMPROVEMENTS, when and by whom they will be implemented
ACTION	ACTIVITIES or INTERVENTIONS identified to further improve the current or potential future PROJECTS, based on the lessons learned from the impact measurement process

Figure 40: Concept Table of the Social Impact Navigator

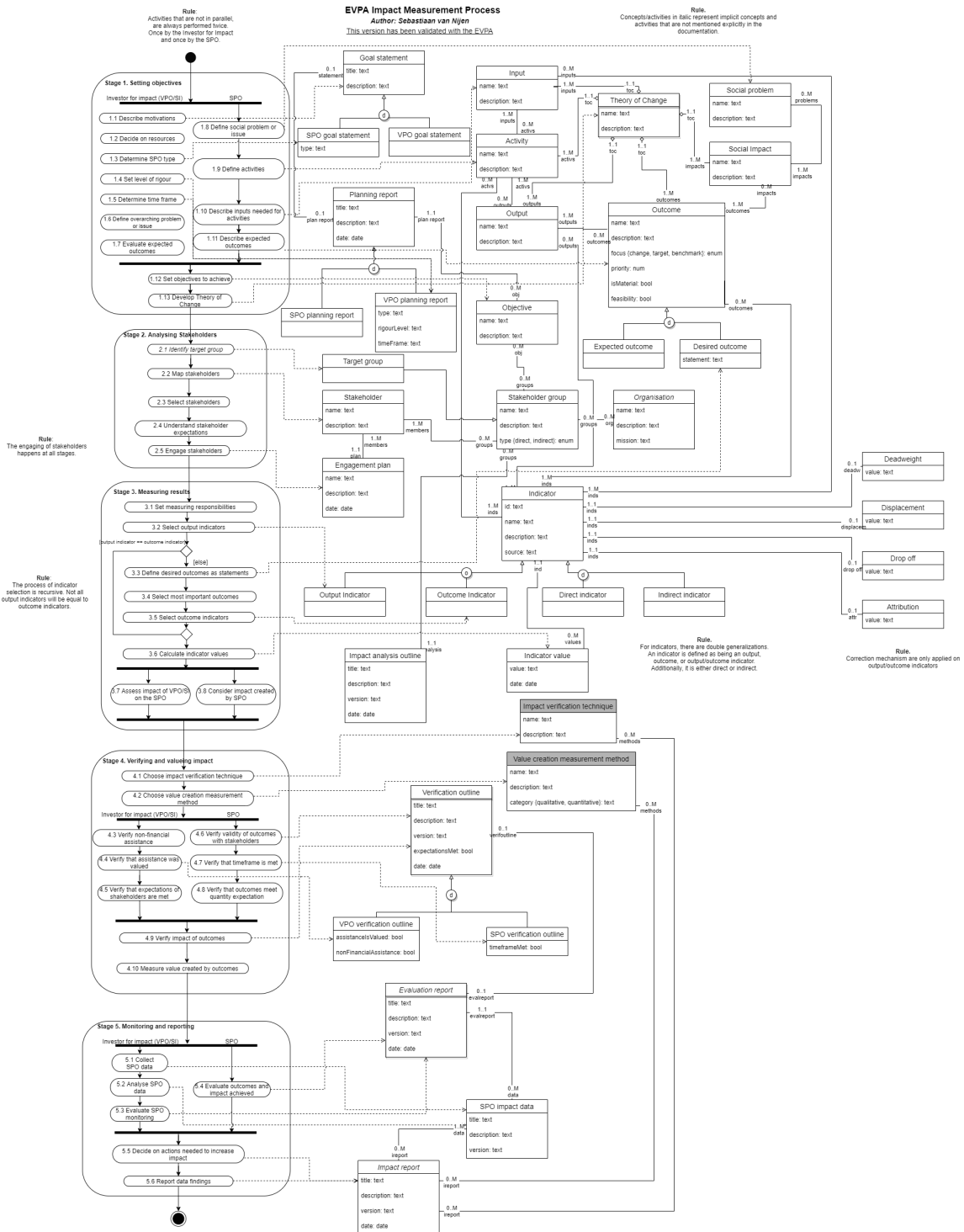


Figure 41: PDD of EVPA - by Sebastiaan van Nijen

Task	Module	Name	Description
1	1.1	Describe motivations	Describing the motivation for investing in a Social Enterprise
1	1.2	Decide on resources	Resources to be considered include financial, human, technological and time, that are required for the VPO/Sl investment
1	1.3	Determine SPO type	The maturity i.e. the stage of development of the SPO.
1	1.4	Set level of rigour	The level of rigour of your impact analysis
1	1.5	Determine time frame	The time period over which you measure impact
1	1.6	Define overarching problem or issue	The VPO/Sl describing the social problem they want to address with their investment
1	1.7	Evaluate expected outcomes	The VPO/Sl should evaluate the expected outcome of its investment in the SPO, i.e. the expected outcome of the SPO and how the VPO/Sl expects to contribute to achieving that outcome
1	1.8	Define social problem or issue	Description of the problem the organization is tackling: What is the PROBLEM according to STAKEHOLDERS? What is the SIZE of the problem? What are alternative SOLUTIONS to the same problem?
1	1.9	Define activities	A description of exactly what the SPO is doing to try to effect a change. It should include a set of specific steps, strategies or actions arranged in a logical sequence demonstrating how each activity relates to another.
1	1.10	Describe inputs needed for activities	This should include the time, talent, technology, equipment, information and other assets available to conduct the activities, as well as the VPO/Sl's contribution to helping the SPO to solve the issue
1	1.11	Describe expected outcomes	This should include what the SPO must achieve to be considered successful and will form the basis of the milestones against which the SPO will be measured. It is also important to consider the unintended consequences of the SPO's activities.
1	1.12	Set objectives to achieve	The long term objectives that are to be achieved for both the VPO/Sl and the SPO
1	1.13	Develop Theory of Change	Determine the activities needed to achieve the impact goals. Explain HOW and WHY these activities lead to effects, and what the underlying assumptions and conditions are.
2	2.1	Identify target group	The identification of the most important groups to be considered for your activities
2	2.2	Map stakeholders	Creating a mapping of all the stakeholders that are affected with your activities or investment
2	2.3	Select stakeholders	A selection of the most important stakeholders, both for the VPO/Sl and the SPO
2	2.4	Understand stakeholders	The process of understanding the needs and wishes of the selected stakeholders
2	2.5	Engage stakeholders	Involving the stakeholders in the entire process of Impact Measurement, both for the VPO/Sl and the SPO
3	3.1	Set measuring responsibilities	Describe who will be measuring what at which point in time, both for the VPO/Sl and SPO
3	3.2	Select output indicators	Definition of specific and measurable actions or conditions that assess progress or regression against specific operational activities, both for the VPO/Sl and SPO
3	3.3	Define desired outcomes as statements	Define outcomes as change statements, target statements, or benchmark statements
3	3.4	Select most important outcomes	Selecting the most important outcomes of assist in the selection of outcome indicators
3	3.5	Select outcome indicators	Definition of specific and measurable actions or conditions that demonstrate progress towards or away from specified outcomes, both for the VPO/Sl and SPO
3	3.6	Calculate indicator values	The calculation of the values of the defined indicators, both for the VPO/Sl and SPO
3	3.7	Assess impact of VPO/Sl on the SPO	The contribution the VPO/Sl has made by investing in an SPO
3	3.8	Consider impact created by SPO	The consideration of DEADWEIGHT, ATTRIBUTION, DROP OFF, and DISPLACEMENT when determining the impact made
4	4.1	Choose impact verification technique	Selecting the technique used to verify whether the outcomes make sense for the stakeholders
4	4.2	Choose value creation measurement method	Selecting the method used to verify whether the outcome was of value to the stakeholders
4	4.3	Verify non-financial assistance	The VPO/Sl must verify (or at least record) the non-financial assistance provided to their investees
4	4.4	Verify that assistance was valued	Confirmation with the SPO that the investment was of value
4	4.5	Verify that expectations of stakeholders are met	Verify whether the expectations of the stakeholders are met
4	4.6	Verify validity of outcomes with stakeholders	Verifying whether the outcomes make sense for the stakeholders
4	4.7	Verify that timeframe is met	Verification that the timeframe that was initially set for measuring impact was met
4	4.8	Verify that outcomes meet quantity expectation	Verifying whether the outcomes have met the quantity expectation for the stakeholders
4	4.9	Verify impact of outcomes	Describe and evaluate progress and results; derive conclusions and recommendations
4	4.10	Measure value created by outcomes	Measure the value that was created for the stakeholders by the identified outcomes
5	5.1	Collect SPO data	When the INDICATORS are decided on, the ORGANIZATION has to gather documentation which states information about the INDICATORS.
5	5.2	Analyse SPO data	When sufficient data has been collected, the scores on the selected indicators can be calculated to determine how much of the effect has actually occurred and for whom .
5	5.3	Evaluate SPO monitoring	The evaluation of the VPO/Sl on their monitoring of the operations of the SPO
5	5.4	Evaluate outcomes and impact achieved	Describe and evaluate progress and results; derive conclusions and recommendations
5	5.5	Decide on actions needed to increase impact	Based on the conclusion(s), identify areas for improvement and set 'new' goals for the coming period. Regularly reflect on strategic choices and the ToC to determine the effectiveness of the approach.
5	5.6	Report data findings	Creating and sharing an external report that describes the achievements of the organization. Take into account who will be the receivers of the report and adjust the design and content accordingly, both for the VPO/Sl and the SPO.

Figure 42: Activity Table of EVPA

Name	Description
GOAL STATEMENT	A document describing the goals and motivation of an ORGANISATION
SPO GOAL STATEMENT	The document describing the SPO's goals and motivation
VPO GOAL STATEMENT	The document describing the VPO/SI's goals and motivations for investing in impact
PLANNING REPORT	A report that provides the outline on the planning phase of the Impact Measurement Process
SPO PLANNING REPORT	A report that provides the outline on the planning phase of the Impact Measurement Process for the SPO
VPO PLANNING REPORT	A report that provides the outline on the planning phase of the Impact Measurement Process for the VPO/SI
INPUT	All resources, whether capital or human, invested in the ACTIVITIES of the ORGANISATION
ACTIVITY	The concrete actions, tasks and work carried out by the ORGANISATION to create its OUTPUTS and OUTCOMES and achieve its IMPACT GOALS
OUTPUT	The tangible products and services that result from the ORGANISATION's ACTIVITIES
OUTCOME	The changes, benefits, learnings or other effects (both long and short term) that result from the ORGANISATION's ACTIVITIES.
EXPECTED OUTCOME	The OUTCOMES that were expected to achieve
DESIRED OUTCOME	The OUTCOMES that were desired to achieve
SOCIAL IMPACT	All the OUTCOMES of some INTERVENTION- positive and negative, intended and unintended, direct and indirect, in the short and long term - corrected for deadweight, drop off, displacement, and attribution.
THEORY OF CHANGE	How does the ORGANISATION want to achieve the OBJECTIVES/IMPACT GOAL. A THEORY OF CHANGE represents an ORGANISATIONS approach to creating change and will include a range of STAKEHOLDERS.
SOCIAL PROBLEM	The social problem that the VPO/SI addresses through its investment and the SPO through its activities
OBJECTIVE	The objectives the VPO/SI and SPO pursue through their activities
STAKEHOLDER GROUP	Group of individuals who can affect or who are affected by the ORGANISATION's ACTIVITIES.
TARGET GROUP	The group of individuals that you want to target in your ACTIVITIES
STAKEHOLDER	Individual in STAKEHOLDER GROUP
ORGANISATION	The entity that adopts SiA method. The entity could be a government, company, NGO, university, foundation, and community
ENGAGEMENT PLAN	Plan regarding the engagement of STAKEHOLDERS
INDICATOR	A qualitative or quantitative information/measure/metric about results or OUTCOMES associated with the ORGANISATION performance to measure its performance or IMPACT on specific CRITERIA.
OUTPUT INDICATOR	Specific and measurable actions or conditions that assess progress or regression against specific operational ACTIVITIES
OUTCOME INDICATOR	Specific and measureable actions or conditions that demonstrate progress towards or away from specified OUTCOMES
DIRECT INDICATOR	An INDICATOR that can be calculated directly from the collected DATA.
INDIRECT INDICATOR	An INDICATOR that requires input from other INDICATORS before it can be calculated.
ATTRIBUTION	The part of the effect that is caused by the ORGANISATIONS ACTIVITIES
DEADWEIGHT	The part of the effect that would have happened anyway
DROP OFF	The diminution of effects over time
DISPLACEMENT	Possible (unintended) negative consequences experienced by others as a result of the ORGANISATIONS ACTIVITIES.
INDICATOR VALUE	The value resulting from an INDICATOR
IMPACT ANALYSIS OUTLINE	A description of the prioritized effects, which INDICATORS will be used and how the DATA is collected.
IMPACT VERIFIICATION TECHNIQUE	The qualitative and quantitative methods or techniques used to verify the results of the impact measurement process
VALUE CREATION MEASUREMENT	The qualitative and quantitative methods used to measure the value created
VERIFICATION OUTLINE	A report in which the results of all verification activities are consolidated
VPO VERIFICATION OUTLINE	A report in which the results of all VPO verification activities are consolidated
SPO VERIFICATION OUTLINE	A report in which the results of all SPO verification activities are consolidated
EVALUATION REPORT	A report in which the results of the measurement are periodically compared to the IMPACT GOALS, to keep track of the performance and make changes where necessary
SPO IMPACT DATA	Qualitative or quantitative data collected from STAKEHOLDERS by means of DATA COLLECTION METHOD(s)
IMPACT REPORT	External report to communicate about the impact performance

Figure 43: Concept Table of EVPA

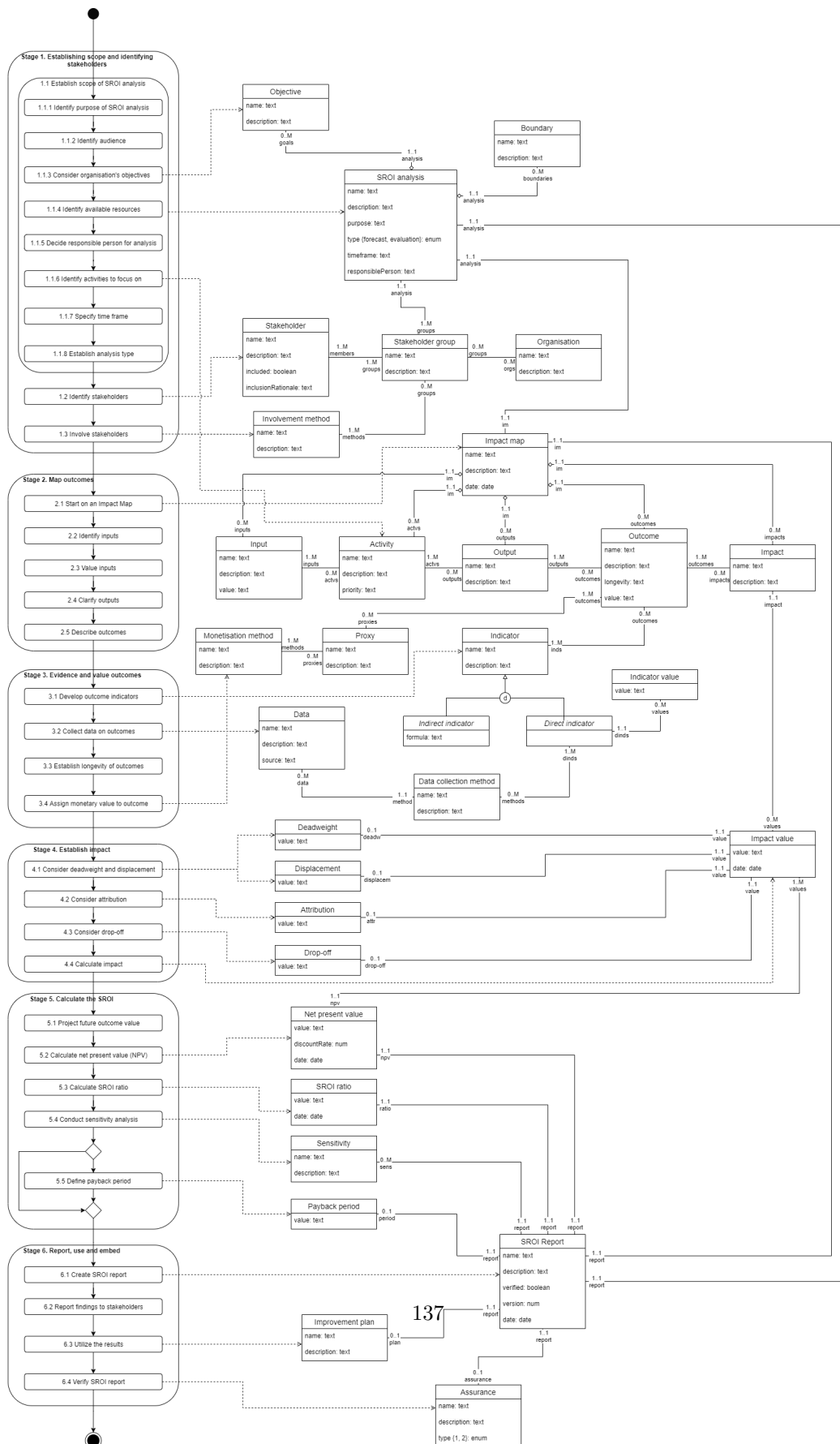


Figure 44: PDD of SROI-SVI - by Sebastiaan van Nijen

Module	Task	Name	Description
1	1.1	Establish scope of SROI analysis	You will need to be clear about why you are conducting the analysis and what resources are available, and define the priorities for measurement.
1	1.1.1	Identify purpose of SROI analysis	What is the purpose of this SROI analysis? Why do you want to begin this process now? Are there specific motivations driving the work, such as strategic planning or funding requirements?
1	1.1.2	Identify audience	Who is this analysis for? This should cover an initial assessment of how you will communicate with your audiences.
1	1.1.3	Consider organisation's objectives	It is important that you have a clear understanding of what your organisation does, what it hopes to achieve by its activities and the scale of the issue it is seeking to address
1	1.1.4	Identify available resources	What resources, such as staff time or money, will be required? Are these available?
1	1.1.5	Decide responsible person for analysis	Can you undertake the SROI analysis internally, or will you need to bring in external help?
1	1.1.6	Identify activities to focus on	Will you be analysing all the activities of your organisation, or just specific ones? You might want to separate the activities related to a particular source of funding, or those that are a priority for you. Clearly describe what you intend to measure.
1	1.1.7	Specify time frame	The period of time over which the intervention will be or has been delivered
1	1.1.8	Establish analysis type	Whether the analysis is a forecast or an evaluation
1	1.2	Identify stakeholders	Decide which stakeholders should be included
1	1.3	Involve stakeholders	As well as helping you find out what really matters to your stakeholders, involving them can help you to understand more about strengths and weaknesses of the activities you are analysing and may provide useful information that can help your organisation improve.
2	2.1	Start on an Impact Map	Build an Impact Map informed by our engagement with stakeholders. This details how the activities you are analysing use certain resources (inputs) to deliver activities (measured as outputs) which result in outcomes for stakeholders.
2	2.2	Identify inputs	You need to identify what stakeholders are contributing in order to make the activity possible – these are their inputs.
2	2.3	Value inputs	When filling out your Impact Map you may have identified non-monetised inputs; these are inputs other than the financial investment, like volunteer time. If the activity would not go ahead to the same extent without these inputs, then you will want to put a value on them. This will ensure that you are transparent about the full cost of delivering your service
2	2.4	Clarify outputs	You can work through your list of stakeholders, describing the outputs from the activity.
2	2.5	Describe outcomes	Describing the outcomes that follow from the outputs from your activities.
3	3.1	Develop outcome indicators	Clarify one or more indicators for each of the outcomes on your Impact Map. You will need indicators that can tell you both whether the outcome has occurred, and by how much.
3	3.2	Collect data on outcomes	You will now need to collect data on your indicators. This may be available from existing sources (internal or external) or you may need to collect new data.
3	3.3	Establish longevity of outcomes	You will need an estimate of the duration of each of your outcomes
3	3.4	Assign monetary value to outcome	The purpose of valuation is to reveal the value of outcomes and show how important they are relative to the value of other outcomes. As well as revealing missing value it will help determine how significant an outcome is.
4	4.1	Consider deadweight and displacement	Deadweight is a measure of the amount of outcome that would have happened even if the activity had not taken place. It is calculated as a percentage. Displacement is another component of impact and is an assessment of how much of the outcome displaced other outcomes.
4	4.2	Consider attribution	Attribution is an assessment of how much of the outcome was caused by the contribution of other organisations or people. Attribution is calculated as a percentage (i.e. the proportion of the outcome that is attributable to your organisation). It shows the part of deadweight for which you have better information and where you can attribute outcome to other people or organisations.
4	4.3	Consider drop-off	In future years, the amount of outcome is likely to be less or, if the same, will be more likely to be influenced by other factors, so attribution to your organisation is lower. Drop-off is used to account for this and is only calculated for outcomes that last more than one year.
4	4.4	Calculate impact	Your Impact Map should now have percentages filled in for deadweight, attribution, drop-off and (if applicable) displacement. You can calculate your impact for each outcome.
5	5.1	Project future outcome value	The first step in calculating your SROI ratio is to project the value of all the outcomes achieved into the future, taking drop-off into consideration.
5	5.2	Calculate net present value (NPV)	Calculate the net present value (NPV) by adding up the costs and benefits paid or received in different time periods.
5	5.3	Calculate SROI ratio	The calculation of the SROI ratio or the Net SROI ratio, which is done by dividing the discounted value of benefits by the value of the investment or by dividing the NPV by the value of the investment, respectively
5	5.4	Conduct sensitivity analysis	After calculating the ratio, it is important to assess the extent to which your results would change if you changed some of the assumptions you made in the previous stages. The aim of such an analysis is to test which assumptions have the greatest effect on your model.
5	5.5	Define payback period	The 'payback period' describes how long it would take for an investment to be paid off.
6	6.1	Create SROI report	Prepare your SROI report. Include findings, analysis, and recommendations as to what the organisation can learn from the information generated through the entire SROI process.
6	6.2	Report findings to stakeholders	The report should be shared with internal & external stakeholders, depending on who has to be informed of the results and process.
6	6.3	Utilize the results	To be useful, the SROI analysis needs to result in change. Such change might be in how those that invest in your activities understand and support your work, or how those that commission your services describe, specify and manage the contract with you
6	6.4	Verify SROI report	Assurance is the process by which the information in your report is verified. The principle requires that there should be appropriate independent assurance of your report's claims.

Figure 45: Activity Table of SROI

Name	Description
STAKEHOLDER	People, ORGANISATIONS or entities that experience change, whether positive or negative, as a result of the ACTIVITY that is being analysed.
STAKEHOLDER GROUP	Group of individuals who can affect or who are affected by the ORGANISATION's ACTIVITIES.
ORGANISATION	The entity that adopts SIA method. The entity could be a government, company, NGO, university, foundation, and community
INVOLVEMENT METHOD	The method used to involve the STAKEHOLDERS
OBJECTIVE	The objectives of the SROI ANALYSIS
BOUNDARY	Boundaries of the SROI ANALYSIS
IMPACT MAP	A table that captures how an ACTIVITY makes a difference: that is, how it uses its INPUTS to provide ACTIVITY that then lead to particular OUTCOMES for different STAKEHOLDERS.
INPUT	The contributions made by each STAKEHOLDER that are necessary for the ACTIVITY to happen.
ACTIVITY	The concrete actions, tasks and work carried out by the ORGANISATION to create its OUTPUTS and OUTCOMES and achieve its OBJECTIVES
OUTPUT	The tangible products and services that result from the ORGANISATION's ACTIVITIES
OUTCOME	The changes resulting from an ACTIVITY. The main types of change from the perspective of STAKEHOLDER are unintended (unexpected) and intended (expected), positive and negative change.
IMPACT	The difference between the OUTCOME for participants, taking into account what would have happened anyway, the contribution of others and the length of time the outcomes last.
IMPACT VALUE	The calculated value of the IMPACT based on the OUTCOMES, corrected by deadweight, displacement, attribution, and drop-off.
INDICATOR	A qualitative or quantitative information/measure/metric about results or OUTCOMES associated with the ORGANISATION performance to measure its performance or IMPACT on specific criteria.
INDICATOR VALUE	The value resulting from an INDICATOR
DIRECT INDICATOR	An INDICATOR that can be calculated directly from the collected DATA.
INDIRECT INDICATOR	An INDICATOR that requires input from other INDICATORS before it can be calculated.
DATA	Qualitative or quantitative data collected from STAKEHOLDERS by means of DATA COLLECTION METHOD(s)
DATA COLLECTION METHOD	Plan on how the DATA is collected determined by the goal of the measurement and the collection possibilities.
SROI ANALYSIS	A clarification on the what, how, who and why for why you are conducting a SROI ANALYSIS.
PROXY	An approximation of value where an exact measure is impossible to obtain.
MONETISATION METHOD	The method used to give value to things that are harder to value and are routinely left out of traditional economic appraisal
DEADWEIGHT	A measure of the amount of OUTCOME that would have happened even if the activity had not taken place.
DISPLACEMENT	An assessment of how much of the OUTCOME has displaced other outcomes.
ATTRIBUTION	An assessment of how much of the OUTCOME was caused by the contribution of other organisations or people.
DROP-OFF	The deterioration of an OUTCOME over time.
NET PRESENT VALUE	The value in today's currency of money that is expected in the future minus the investment required to generate the ACTIVITY
SROI RATIO	Total present value of the impact divided by total investment.
SENSITIVITY	Sensitivities of an SROI model to changes in different variables
PAYBACK PERIOD	Time in months or years for the value of the impact to exceed the investment.
IMPROVEMENT PLAN	A plan for using the findings and embedding the SROI process within your organisation.
SROI REPORT	The SROI report should include qualitative, quantitative and financial aspects to provide the user with the important information on the social value being created in the course of an activity. It tells the story of change and explains the decisions you made in the course of your analysis.
ASSURANCE	An outline on the process of verifying the information in your report. The two levels are either focused on principles or focused on both principles and data.

Figure 46: Concept Table of SROI

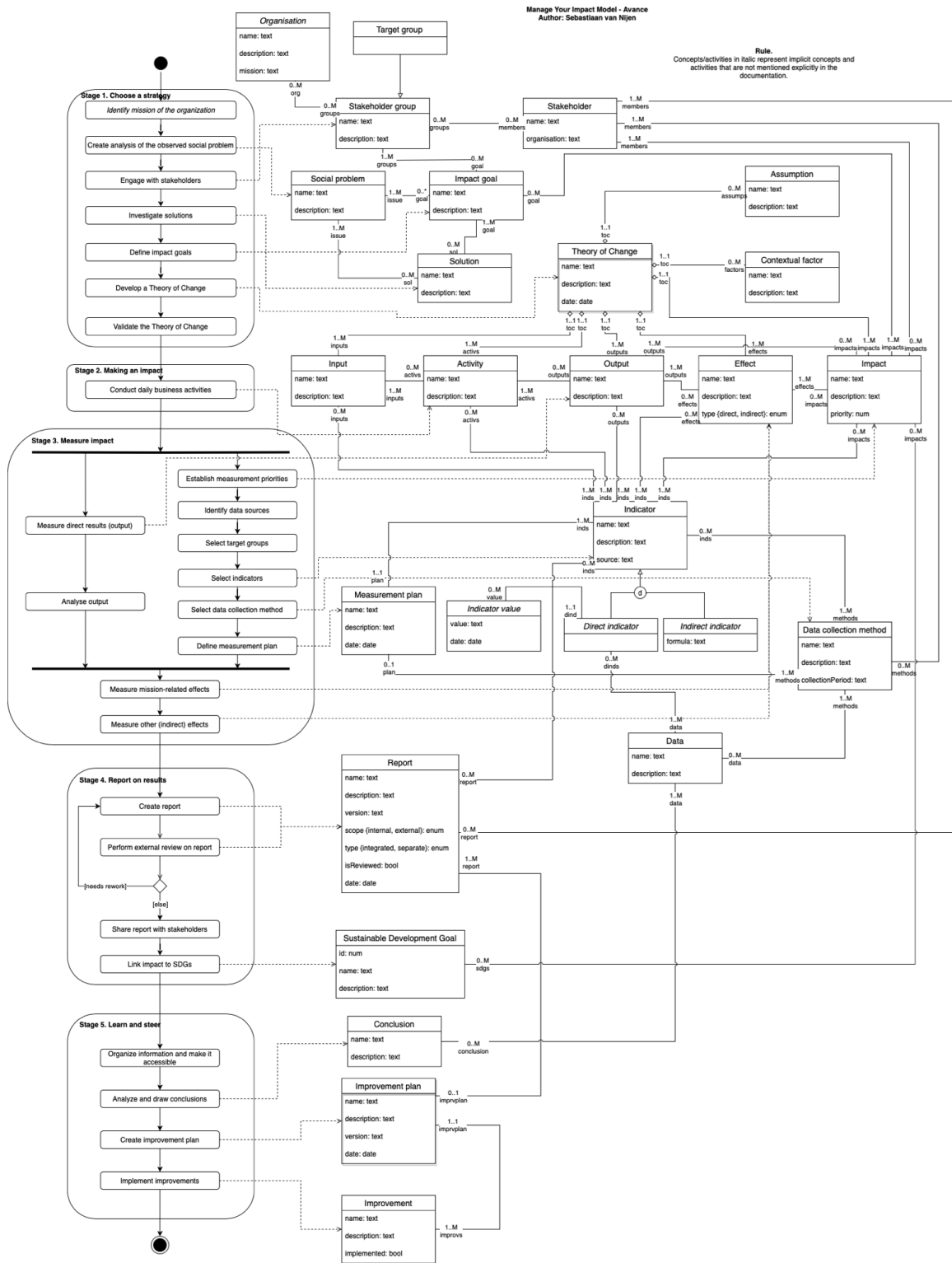


Figure 47: PDD of Manage Your Impact Model (Avance) - by Sebastiaan van Nijen

Task	Module	Name	Description
1	1.1	Identify mission of the organisation	A MISSION that clearly states which objective is pursued by organization/project (Impact Path).
1	1.2	Create analysis of the observed social problem	Description of the problem the organization is tackling: What is the PROBLEM according to STAKEHOLDERS? What is the SIZE of the problem? What are alternative SOLUTIONS to the same problem?
1	1.3	Engage with stakeholders	The process of involving STAKEHOLDERS to help define the SOCIAL PROBLEM and in support of developing the THEORY OF CHANGE
1	1.4	Investigate solutions	Possible, already existing, SOLUTION(S) to the problem(s) identified by the organization
1	1.5	Define impact goals	Defining the long term IMPACT GOALS of the organization
1	1.6	Develop a Theory of Change	Determine the activities needed to achieve the impact goals. Explain HOW and WHY these activities lead to effects, and what the underlying assumptions and conditions are.
1	1.7	Validate the Theory of Change	Determine the probability that the ACTIVITIES lead to the desired EFFECTS.
2	2.1	Conduct daily business activities	Making an impact is done by conducting your daily business activities of selling goods/services to create as much impact as you can for your stakeholders
3	3.1	Measure direct results (output)	Measure and monitor the direct results of your ACTIVITIES.
3	3.2	Analyse output	Performing analysis to gather insights on the collected OUTPUT data
3	3.3	Establish measurement priorities	Providing a description of the priorities for measurement, what will be measured first
3	3.4	Identify data sources	Define the source from which the DATA for the INDICATORS is gathered
3	3.5	Select target groups	Select the most important STAKEHOLDER GROUP and the expected EFFECTS for them, based on the THEORY OF CHANGE
3	3.6	Select indicators	To measure effects it is necessary to define one or more indicators per effects. Indicators state what is perceived when an effect occurs
3	3.7	Select data collection method	Select or develop data collection methods that serve as input for the indicators
3	3.8	Define measurement plan	A description of the PRIORITIES for the measurement, WHAT will be measured WHEN and HOW it will be measured, by WHO
3	3.9	Measure mission-related effects	Measuring of the main effects of the activities you have performed, starting with the effects on the impact target group of your mission.
3	3.10	Measure other (indirect) effects	Measure the effects that are not directly the result of your activities, but arise from them.
4	4.1	Create report	An external report that describes the achievements of the organization. Take into account who will be the receivers of the report and adjust the design and content accordingly.
4	4.2	Perform external review on report	Allow the report to be reviewed by an external actor to receive feedback and improve
4	4.3	Share report with stakeholders	Share the (impact) report with the relevant stakeholders.
4	4.4	Link impact to SDGs	When you refer to the SDGs in your measurements, you meet requirements for investment reports and you increase the chance of being supported by investors and impact funds.
5	5.1	Organise information and make it accessible	Make the information accessible to the relevant stakeholders by organising and consolidating the information
5	5.2	Analyze and draw conclusions	Describe and evaluate progress and results; derive conclusions and recommendations
5	5.3	Create improvement plan	Based on the conclusion(s), identify areas for improvement and set 'new' goals for the coming period. Regularly reflect on strategic choices and the ToC to determine the effectiveness of the approach.
5	5.4	Implement improvements	Implement improvements resulting from the improvement plan.

Figure 48: Activity Table of MYIM

Name	Description
ORGANISATION	The entity that adopts SIA method. The entity could be a government, company, NGO, university, foundation, and community
STAKEHOLDER GROUP	Group of individuals who can affect or who are affected by the ORGANISATION's ACTIVITIES.
TARGET GROUP	The group of individuals that you want to target in your ACTIVITIES
STAKEHOLDER	Individual in STAKEHOLDER GROUP
SOCIAL PROBLEM	The social problem that the ORGANISATION adresses through its ACTIVITIES
IMPACT GOAL	The long term goal that the ORGANISATION is pursuing through its ACTIVITIES
SOLUTION	Already existing possible solutions to the identified SOCIAL PROBLEM
THEORY OF CHANGE	How does the ORGANISATION want to achieve the OBJECTIVES/IMPACT GOAL. A THEORY OF CHANGE represents an ORGANISATIONS approach to creating change and will include a range of STAKEHOLDERS .
ASSUMPTION	Description of the conditions that are needed to achieve the desired change
CONTEXTUAL FACTOR	External factors that can affect your approach, positively or negatively
INPUT	All resources, whether capital or human, invested in the ACTIVITIES of the ORGANISATION
ACTIVITY	The concrete actions, tasks and work carried out by the ORGANISATION to create its OUTPUTS and OUTCOMES and achieve its IMPACT GOALS
OUTPUT	The tangible products and services that result from the ORGANISATION's ACTIVITIES
EFFECT	The changes, benefits, learnings or other effects (both long and short term) that result from the ORGANISATION's ACTIVITIES
IMPACT	All the OUTCOMES of some ACTIVITY- positive and negative, intended and unintended, direct and indirect, in the short and long term - corrected for what would have happened anyway.
INDICATOR	A qualitative or quantitative information/measure/metric about results or OUTCOMES associated with the ORGANISATION performance to measure its performance or IMPACT on specific CRITERIA.
DIRECT INDICATOR	An INDICATOR that can be calculated directly from the collected DATA.
INDIRECT INDICATOR	An INDICATOR that requires input from other INDICATORS before it can be calculated.
INDICATOR VALUE	The value resulting from an INDICATOR
MEASUREMENT PLAN	A description of the prioritized effects, which INDICATORS will be used and how the DATA is collected
DATA COLLECTION METHOD	Plan on how the DATA is collected determined by the goal of the measurement and the collection possibilities
DATA	Qualitative or quantitative data collected from stakeholders by means of data gathering method(s)
REPORT	A report that is shared with (external) stakeholders indicating the impact created by the organization over a certain period of time
SUSTAINABLE DEVELOPMENT	United Nations' globally recognized to-do list for the world's most urgent development challenges.
CONCLUSION	A judgment or decision reached by reasoning on the identified DATA and IMPACT
IMPROVEMENT PLAN	A plan containing planned IMPROVEMENTS, when and by whom they will be implemented
IMPROVEMENT	ACTIVITIES or INTERVENTIONS identified to further improve the current or potential future PROJECTS, based on the lessons learned from the impact measurement process

Figure 49: Concept Table of MYIM

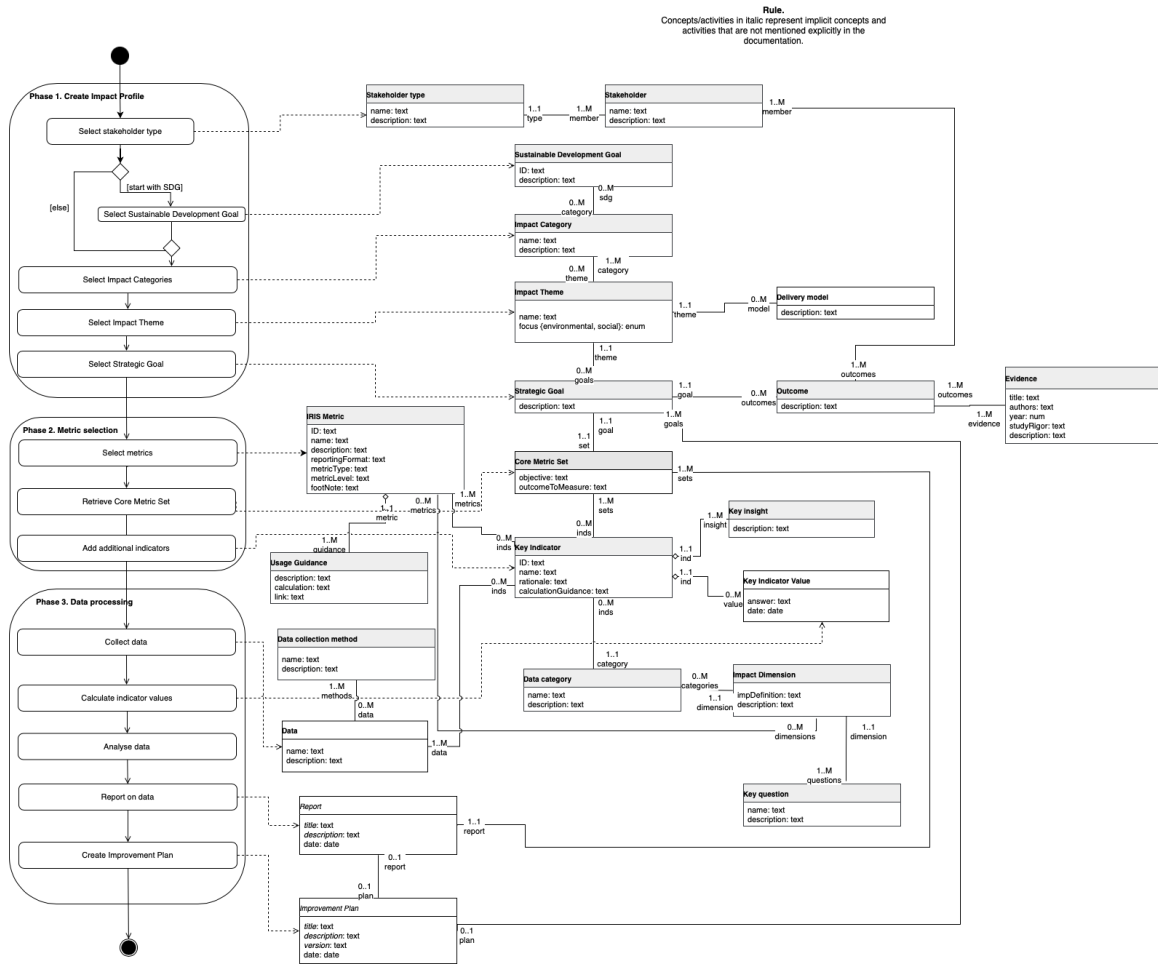


Figure 50: PDD of IRIS+ - by Sebastiaan van Nijen

Task	Module	Name	Description
1	1.1	Select stakeholder type	Selection of the type or group of stakeholders that will be affected by your goals
1	1.2	Select Sustainable Development Goal	Select one or more SDG TARGETS to which the intervention/activities will contribute
1	1.3	Select Impact Categories	Selection of IRIS+ categories of impact that relate to SDG's
1	1.4	Select Impact Theme	Selection of IRIS+ themes of impact that relate to categories
1	1.5	Select Strategic Goal	Selection of a Strategic Goal related to the Impact Theme
2	2.1	Select metrics	Selection of IRIS+ metrics that you want to include in your core metric set
2	2.2	Retrieve Core Metric Set	Retrieval of the Core Metric Set from the IRIS+ tool, based on the selected SDGs, Impact Theme, Impact Categories, and goals
2	2.3	Add additional indicators	The selection and addition of additional indicators that were not yet included in your Core Metric Set
3	3.1	Collect data	When the INDICATORS are decided on, the ORGANIZATION has to gather documentation which states information about the INDICATORS.
3	3.2	Calculate indicator values	The calculation of the values of the defined indicators
3	3.3	Analyse data	When sufficient data has been collected, the scores on the selected indicators can be calculated to determine how much of the effect has actually occurred and for whom
3	3.4	Report on data	Creation and sharing of an external report that describes the achievements of the organization. Take into account who will be the receivers of the report and adjust the design and content accordingly.
3	3.5	Create Improvement Plan	Creation of an Improvement Plan based on the analysis of data and feedback that has been received from the reporting of data, so you can continuously improve for future measurements.

Figure 51: Activity Table of IRIS+

Name	Description
STAKEHOLDER TYPE	The type or group of STAKEHOLDERS that will be affected by your GOALS
STAKEHOLDER	Individual in STAKEHOLDER TYPE
SUSTAINABLE DEVELOPMENT GOAL	United Nations' globally recognized to-do list for the world's most urgent development challenges.
IMPACT CATEGORY	Specific categories in the IRIS+ system that are related to the SUSTAINABLE DEVELOPMENT GOALS and are aligned with industry classes standardized by the ISIC.
IMPACT THEME	Impact themes classify the types of STRATEGIC GOALS or approaches investors or enterprises may employ to achieve the primary social or environmental effect they intend to deliver.
STRATEGIC GOAL	The goals related to the Impact Theme
DELIVERY MODEL	The commercial or project-based means by which IMPACT can be delivered to people and places
CORE METRIC SET	Shortlists of key impact performance INDICATORS, built on standard IRIS METRICS and backed by EVIDENCE and best practice
OUTCOME	The changes, benefits, learnings or other effects (both long and short term) that result from an organisation's activities
EVIDENCE	Supporting academic and field research for the OUTCOMES of a STRATEGIC GOAL
IRIS METRIC	Numerical measures used in calculations or qualitative values to account for social, environmental and financial performance of an investment.
USAGE GUIDANCE	Instructions on how to interpret and use the IRIS METRICS
KEY INDICATOR	A qualitative or quantitative information/measure/metric about results or OUTCOMES associated with the organisation performance to measure its performance or impact on specific criteria.
KEY INSIGHT	The insights derived from each INDICATOR
KEY INDICATOR VALUE	The value resulting from an INDICATOR
DATA CATEGORY	The categories that apply to each IMPACT DIMENSION of the Five Dimensions of Impact of the Impact Management Project
IMPACT DIMENSION	One part of the five dimensions of impact by the Impact Management Project
KEY QUESTION	Questions to be asked that align with the five IMPACT DIMENSIONS
DATA COLLECTION METHOD	Plan on how the DATA is collected determined by the goal of the measurement and the collection possibilities.
DATA	Qualitative or quantitative data collected from STAKEHOLDERS by means of DATA COLLECTION METHOD(s)
REPORT	External report to communicate about the impact performance
IMPROVEMENT PLAN	A plan containing planned improvements, when and by whom they will be implemented

Figure 52: Concept Table of IRIS+

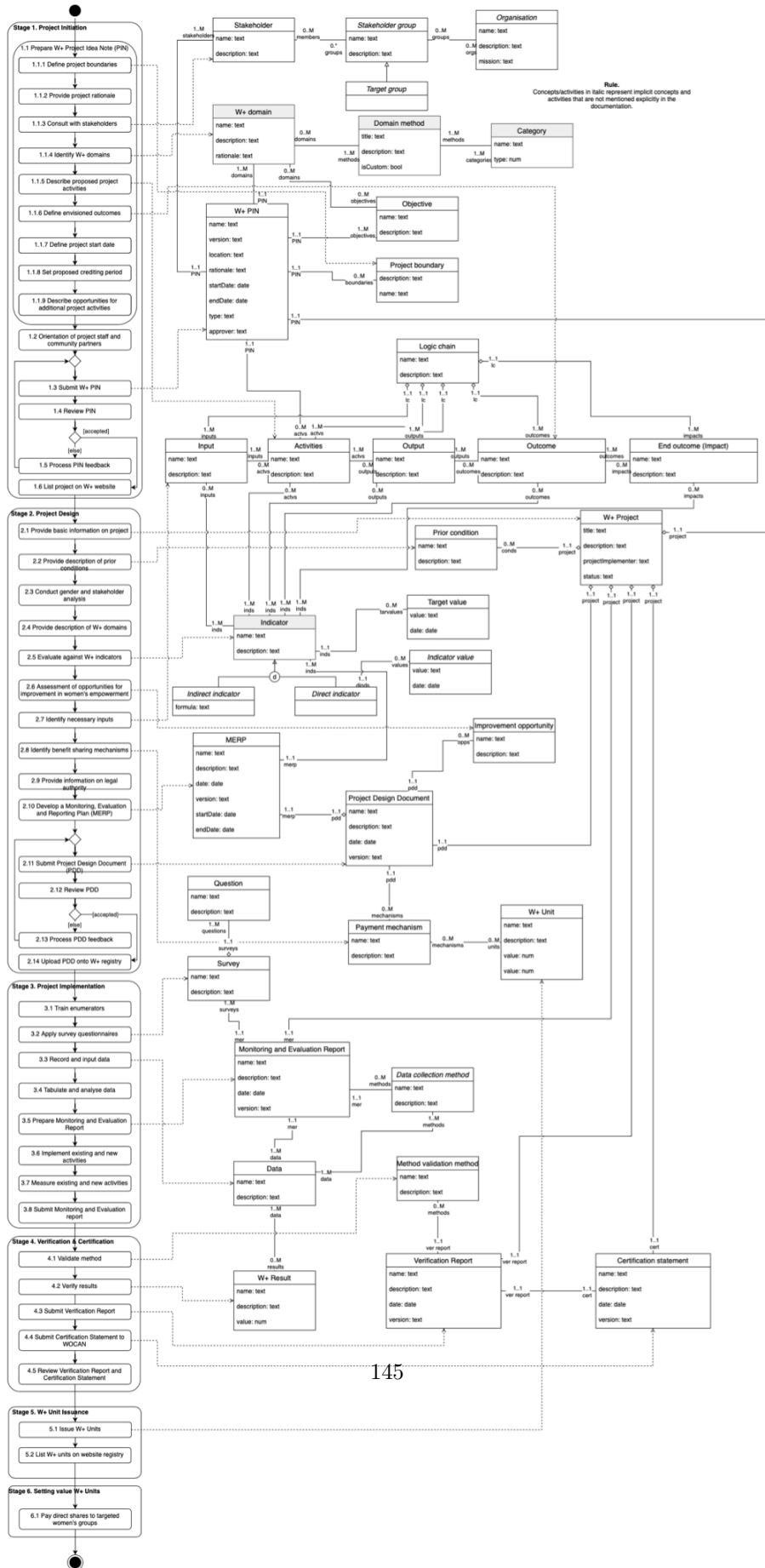


Figure 53: PDD of W+ Standard - by Sebastiaan van Nijen

1	1.1	Prepare W+ Project Idea Note (PIN)	The preparation of the pre-feasibility assessment document, which includes the proposal of the W+ project
1	1.1.1	Define project boundaries	Project Implementers should include the project's boundaries
1	1.1.2	Provide project rationale	Project Implementers should include the project's rationale
1	1.1.3	Consult with stakeholders	A preliminary investigation and consultation with your TARGET GROUP(S) and other STAKEHOLDER(S) to help the process of defining your SOCIAL PROBLEM.
1	1.1.4	Identify W+ domains	Describing which of the six W+ domains are relevant to your project
1	1.1.5	Describe proposed project activities	Provide a description of the project activities that will be beneficial to your target group
1	1.1.6	Define envisioned outcomes	Defining the outcomes that you desire to achieve
1	1.1.7	Define project start date	Define the start date of the W+ project
1	1.1.8	Set proposed crediting period	The duration during which the W+ project activities will be implemented and measureable benefits will be created.
1	1.1.9	Describe opportunities for additional project activities	A description of the opportunities there are to include additional project activities in the W+ project
1	1.2	Orientation of project staff and community partners	Orient the project staff and community partners to W+ application and processes
1	1.3	Submit W+ PIN	Submission of the PIN by a Project Implementer
1	1.4	Review PIN	Review of the W+ coordinator for completeness check
1	1.5	Process PIN feedback	Processing the feedback of the W+ coordinator check by the Project Implementer
1	1.6	List project on W+ website	The listing of the project on the W+ website with an issued unique identification number
2	2.1	Provide basic information on project	The provision of basic information of the project during the Project Design phase.
2	2.2	Provide description of prior conditions	Provision of description of conditions prior to application of the W+
2	2.3	Conduct gender and stakeholder analysis	A stakeholder analysis, where an emphasis is placed on the gender of the stakeholders
2	2.4	Provide description of W+ domains	Provision of description of the W+ domains to be applied, including the rationale for selection and expected outcomes.
2	2.5	Evaluate against W+ indicators	Initial evaluation of the underlying project against the W+ Standard's 'Do No Harm Indicators'.
2	2.6	Assessment of opportunities for improvement in women's empowerment	Assessment of opportunities for improvement in women's empowerment within the scope of the project in one or more W+ domains
2	2.7	Identify necessary inputs	Calculation of budget and other inputs needed for women's empowerment activities
2	2.8	Identify benefit sharing mechanisms	Identification of a potential benefit sharing mechanism for the direct payments to women's groups within the project scope
2	2.9	Provide information on legal authority	Provision of information on the Project Implementer's legal authority to implement the W+ Project
2	2.10	Develop a Monitoring, Evaluation and Reporting Plan (MERP)	The development of a Monitoring, Evaluation, and Reporting Plan
2	2.11	Submit Project Design Document (PDD)	Submission of the completed and signed PDD to the W+ Coordinator and the corresponding document review fee.
2	2.12	Review PDD	Review of the W+ Coordinator for completeness.
2	2.13	Process PDD feedback	The processing of the feedback given by the W+ coordinator of the PDD, done by the Project Implementer
2	2.14	Upload PDD onto W+ registry	Uploading the PDD onto the W+ registry with an issued unique identification number
3	3.1	Train enumerators	Training of enumerators, using women from the community as much as possible
3	3.2	Apply survey questionnaires	Applying survey instruments for data collection
3	3.3	Record and input data	Data needs to be recorded and inputted
3	3.4	Tabulate and analyse data	Data also has to be tabulated and analysed
3	3.5	Prepare Monitoring and Evaluation Report	The preparation of the Monitoring and Evaluation report to support validation and verification
3	3.6	Implement existing and new activities	Implement the activities that have been described and new activities that were identified as opportunities
3	3.7	Measure existing and new activities	The measurement of the proposed activities using the identified indicators
3	3.8	Submit Monitoring and Evaluation report	Submission of the Monitoring and Evaluation report to the W+ standard coordinator and the selected accredited W+ auditor
4	4.1	Validate method	Independent validation of the method
4	4.2	Verify results	Verification of the result by an accredited W+ auditor selected by the Project Implementer
4	4.3	Submit Verification Report	The submission of the verification report to the W+ Coordinator
4	4.4	Submit Certification Statement to WOCAN	Submission of the Certification Statement by an accredited verifier to WOCAN and the project developer.
4	4.5	Review Verification Report and Certification Statement	Review of the Verification Report and Certification Statement by WOCAN.
5	5.1	Issue W+ Units	Issuance of the created W+ Units to WOCAN
5	5.2	List W+ units on website registry	Listing of the W+ units on the WOCAN website registry
6	6.1	Pay direct shares to targeted women's groups	Payment of the direct shares to beneficiaries, in most cases the targeted women's groups

Figure 54: Activity Table of W+ Standard

Name	Description
Stakeholder	Individual in STAKEHOLDER GROUP
Stakeholder group	Group of individuals who can affect or who are affected by the ORGANISATION's ACTIVITIES.
Target group	The group of individuals that you want to target in your ACTIVITIES
Organisation	The entity that adopts SIA method. The entity could be a government, company, NGO, university, foundation, and community
W+ Domain	Time, Education & Knowledge, Income & Assets, Leadership, Food Security, and Health.
Domain method	The method used for the application of the W+ DOMAINS
Category	The category of the DOMAIN METHOD
W+ PIN	A W+ Project Implementer or implementer must submit an initial Project Idea Note which contains information about the intended W+ Standard application to a project
Objective	The objective of the proposed W+ PROJECT
Project boundary	The boundaries of the W+ PROJECT
Logic chain	The logical links between INPUTS, ACTIVITIES, OUTPUTS, OUTCOMES and IMPACTS
Input	All resources, whether capital or human, invested in the ACTIVITIES of the ORGANISATION
Activities	The concrete actions, tasks and work carried out by the ORGANISATION to create its OUTPUTS and OUTCOMES and achieve its IMPACT GOALS
Output	The tangible products and services that result from the ORGANISATION's ACTIVITIES
Outcomes	The changes, benefits, learnings or other effects (both long and short term) that result from the ORGANISATION's ACTIVITIES
End outcome (Impact)	All the OUTCOMES of some INTERVENTION- positive and negative, intended and unintended, direct and indirect, in the short and long term - corrected for what would have happened anyway.
Prior condition	The conditions prior to the application of the W+ PROJECT
W+ Project	The project that intends to improve the lives of women in developing economies
Indicator	The SMART indicators that will measure the intended changes to be achieved through the project
Direct indicator	An INDICATOR that can be calculated directly from the collected DATA.
Indirect indicator	An INDICATOR that requires input from other INDICATORS before it can be calculated.
Target value	The value that is being aimed at for an INDICATOR
Indicator value	The value resulting from an INDICATOR
MERP	An element of the Project Design Document describing the Project Implementer's plan for project data and information collection that will result in sufficient information to verify the project's outcomes
Project Design Document	The PDD describes in detail the planning of a W+ project or the application of the W+ Standard to another type of project, and how the Project Implementer plans to meet the requirements of the W+ Standard.
Improvement Opportunity	Additional opportunities that can improve the lives of the women targeted in the proposed W+ PROJECT
Survey	A measurement instrument/DATA COLLECTION METHOD used to gather DATA from STAKEHOLDERS
Question	The questions of a SURVEY
Monitoring and Evaluation Report	The Monitoring and Evaluation Report is compiled for each W+ PROJECT and is provided to project verifiers and WOCAN when a Project Implementer is seeking verification and certification.
Payment mechanism	The mechanism used to share the direct payments to women's group associated with the project area or project activity
W+ Unit	Monetized units of women's empowerment improvements generated from W+ projects specific to the W+ Standard domain measures, such as W+ Time, W+ Health, etc
Data collection method	The method through which DATA is collected
Data	Qualitative or quantitative data collected from STAKEHOLDERS by means of DATA COLLECTION METHOD(s)
W+ Result	The results based on the identified DATA and IMPACT
Method validation method	The method used to validate the DOMAIN METHODS used in the W+ PROJECT
Verification report	A verifier creates and issues findings and issues a verification decision based on its findings, which is documented in a verification report and/or statement
Certification statement	Issued by an accredited verifier, retained by a project implementer. Follows from an accepted VERIFICATION REPORT. The certification statement is the basis for the issuance of W+ UNITS or W+ labeled units.

Figure 55: Concept Table of W+ Standard

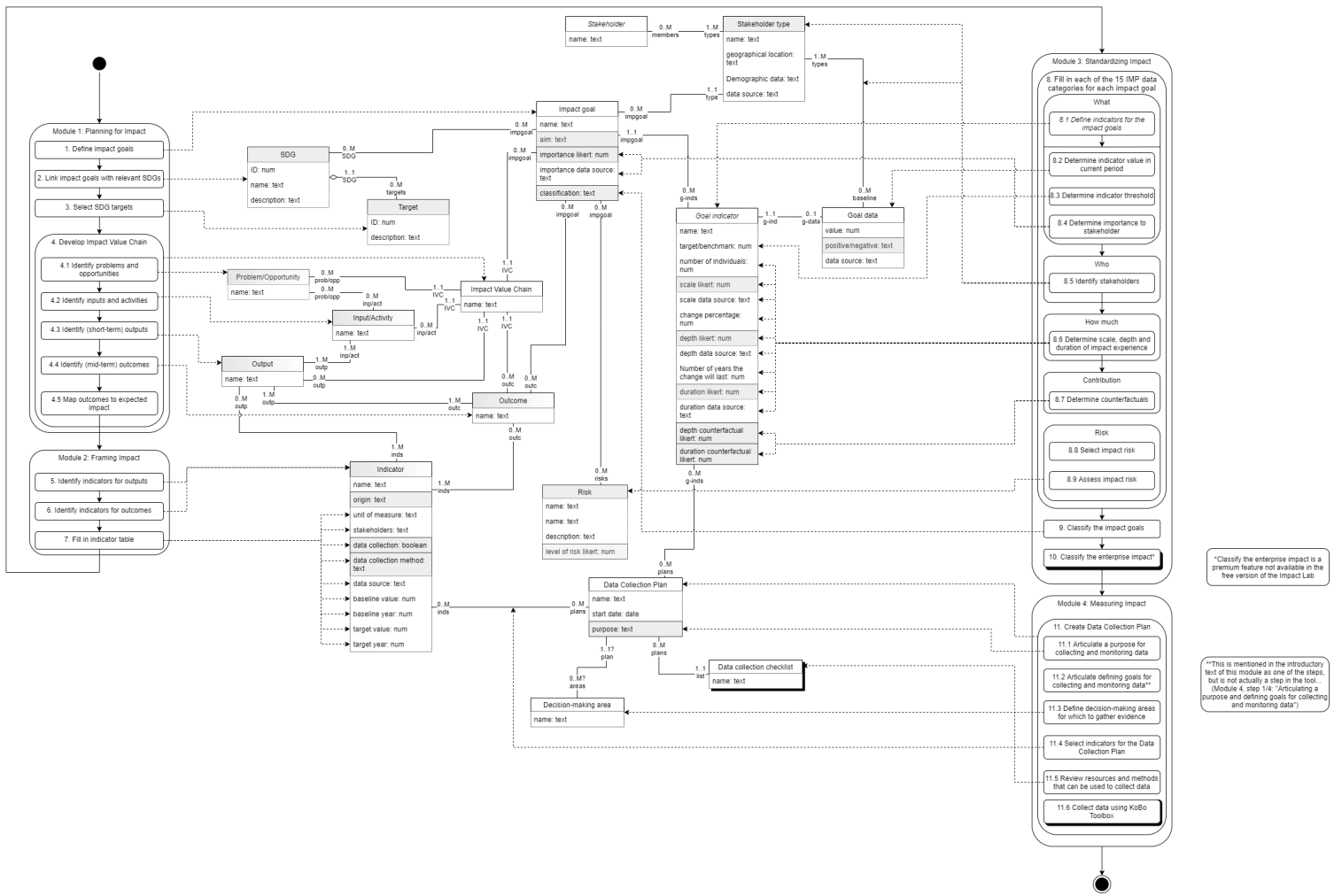


Figure 56: PDD of BCtA Impact Lab - by Lars Lensink

Module	Task	Name	Description
1	1.	Define impact goals	Define the long-term impact goals of the organization/project that consider positive impact and the ones that aim at reducing negative impacts.
1	2.	Link impact goals with relevant SDGs	Select the SDG(s) the defined impact goal relates to.
1	3.	Select SDG targets	For each of the defined SDGs, select the relevant subtarget(s) as defined by the UN.
1	4.	Develop Impact Value Chain	Develop an Impact Value Chain by completing the substeps 4.1-4.5.
1	4.1	Identify problems and opportunities	Identify the problems and opportunities that are limiting or driving the impact goals. Select from given options or add your own.
1	4.2	Identify inputs and activities	For each of the defined problems and opportunities, identify the inputs and activities of the organization/project that specifically address them. Select from given options or add your own.
1	4.3	Identify (short-term) outputs	For each of the defined inputs and activities, identify what specific changes (short-term outputs) are expected to be realized. Select from given options or add your own.
1	4.4	Identify (mid-term) outcomes	For each of the defined outputs, identify what specific mid-term outcomes are expected. Select from given options or add your own.
1	4.5	Map outcomes to expected impact	For each of the defined outcomes, select the the impact goal they are expected to be contributing to.
2	5.	Identify indicators for outputs	Identify indicators that help measure the output. Select from the database of globally accepted indicators or add your own.
2	6.	Identify indicators for outcomes	Identify indicators that help measure the outcome. Select from the database of globally accepted indicators or add your own.
2	7.	Fill in indicator table	Where possible add more details on the selected indicators.
3	8.	Fill in each of the 15 IMP data categories for each impact goal	Where possible, per impact goal, provide data according to the 5 dimensions of impact and the 15 data categories of the IMP.
3	8.1	Define indicators for the impact goals	Determine one single or multiple indicator(s) for each impact goal. Not explicit in tool.
3	8.2	Determine indicator value in current period	Determine the value of impact goal indicator as experienced by the stakeholder in the current period, whether this is positive or negative and the source of the data used.
3	8.3	Determine indicator threshold	Determine the value of the impact goal indicator that the stakeholder considers to be a positive result. The indicator threshold can be a nationally or internationally-agreed standard.
3	8.4	Determine importance to stakeholder	Determine the stakeholder's view of whether the outcome they experience is important and the source of this data.
3	8.5	Identify stakeholders	Identify and select the type of stakeholder experiencing the outcome, identify their geographical location, demographic data, the level of outcome being experienced prior to engagement with the organization/project (baseline) and the source of this data.
3	8.6	Determine scale, depth, and duration of impact experience	Determine respectively the number of individuals experiencing the outcome, the degree of change they experience (= baseline - value in current period), the time period for which the outcome will be experienced and the sources of this data.
3	8.7	Determine counterfactuals	Determine if both the estimated degree of change that would happen anyway and the estimated time period that the outcome would last for anyway are likely worse or likely better than what the stakeholders experience due to the organization's/project's intervention.
3	8.8	Select impact risk	Select the type(s) of risk that may undermine the delivery of the expected impact.
3	8.9	Assess impact risk	Assess the level of the risk for the risks selected in 8.8 by combining the likelihood of the risk occurring and the severity of the consequences for the stakeholders if it does.
3	9.	Classify the impact goals	Classify each impact goal according to the IMP impact classes (A/B/C).
3	10.	Classify the enterprise impact	Classify the impact of the entire company/project according to the IMP impact classes (A/B/C).
4	11.	Create Data Collection Plan	Create and name a Data Collection Plan to help track a selected set of indicators that meet specific impact management goals.
4	11.1	Articulate a purpose for collecting and monitoring data	Select one of the purposes for the Data Collection Plan from the given list.
4	11.2	Articulate defining goals for collecting and monitoring data	<i>This step is mentioned in the introduction but is not (explicitly) a part of the tool.</i>
4	11.3	Define decision-making areas for which to gather evidence	Add decision making areas to your data collection plan.
4	11.4	Select indicators for the Data Collection Plan	Select the output, outcome and goal indicators for which to gather new or additional data.
4	11.5	Review resources and methods that can be used to collect data	Use the provided checklist to assess the organization/project's readiness and capacity for data collection and to find the most appropriate approach.
4	11.6	Collect data using KoBo Toolbox	The tool suggests the use of the external KoBo Toolbox to start collecting data.

Figure 57: Activity Table of BCtA

Name	Description
Impact goal	The long-term impact goals of an organization/project that both consider positive impact and aim at reducing negative impacts. The aim (whether the goal is to achieve positive impact or to mitigate harm) and classification (IMP: A/B/C) are attributes whose possible values are predefined by the tool. The impact goal's importance to stakeholders can be indicated using a likert scale which results in a numeric value ranging from 0-4, with 0 meaning 'not important' and 4 meaning 'important'.
SDG	These are the UN Sustainable Development Goals, so obviously these are predefined and they can't be altered or edited by the user/practitioner of the method. These are shown in the tool and for each impact goal 0 or more SDGs can be selected.
Target	Each SDG is divided into multiple specific targets and just as the SDGs themselves, these are also predefined. Each SDG has about 5 to 19 specific targets and each impact goal can be assigned 0 or more of these SDG targets.
Impact Value Chain	Described as "a visual map of how the inclusive business goals, strategy and operations contribute to your business and the [...] SDGs." It consists of Problems, Opportunities, Inputs, Activities, Outputs, Outcomes, Impact and the selected SDGs+targets.
Problem/Opportunity	The problems and opportunities that are limiting or driving the impact goals. There are some predefined options to select, but additional ones can be added.
Input/Activity	The inputs and activities of the organization/project that specifically address the identified problems and opportunities. For each problem/opportunity 0 or more inputs/activities can be defined and an activity/input can be assigned to 0 or more problems/opportunities. There are some predefined options to select, but additional ones can be added.
Output	The specific changes, or short-term outputs that are expected to result from the identified inputs and activities. For each input/activity 0 or more outputs can be defined and an output can be assigned to 0 or more inputs/activities. There are some predefined options to select, but additional ones can be added.
Outcome	The mid-term outcomes that are expected to result from the identified outputs. For each output 0 or more outcomes can be defined and an outcomes can be assigned to 0 or more outputs. The outcomes can contribute to the achieving of 0 or more impact goals and 0 or more outcomes can contribute to the same impact goal. There are some predefined options to select, but additional ones can be added.
Indicator	Indicators that help measure the defined outputs and outcomes. Each indicator contains information about its unit of measure, stakeholders, a data source and baseline and target data. The origin of the indicator, whether or not data is collected and the data collection method are all attributes predefined by the tool. 0 or more indicators will be measured as part of 0 or more Data Collection Plans. Each indicator can measure 0 or more outputs and outcomes and each output/outcome can be measured by 1 or more indicator(s). There are some predefined options to select, but additional ones can be added.
Goal indicator	The goal indicator is not explicitly mentioned in the tool, but in Module 3 the tool asks for values describing the level of impact experienced by the stakeholder for each of the impact goals. This implies that (an) indicator(s) should be developed to quantify this impact. Each indicator has a target/benchmark value which can be a notionally or internationally agreed standard. The organization's/project's contribution to achieving the impact goal is indicated using a likert scale to define the depth and duration counterfactual. The numeric value of these attributes can range from 0-4 with 0 meaning 'likely worse' and 4 meaning 'likely better', which means that, respectively, the estimated degree of change that would occur anyway and the estimated period that the effect would last for anyway are either likely worse or likely better (or somewhere in between) than what is measured.
Goal data	Each goal indicator can have 0 or 1 value, depending on whether the data is already gather or not. This value has a data source and can be either positive or negative. The relationship between goal data and stakeholder type depicts the baseline value each stakeholde type can have for a certain goal indicator.
Stakeholder type	A specific type/group of stakeholders. An extensive list to choose from is provided by the tool.
Stakeholder	A stakeholder type/group always consists of individual stakeholders. However, this deliverable is not explicitly mentioned by the tool. A stakeholder can belong to 1 or more of the stakeholder types and these consist of 0 or more members.
Risk	The delivery of each impact goal can be undermined by a risk. The type of risk can be selected from a list of 9 options and the level of risk can be indicated using a likert scale which results in a numeric value ranging from 0-4, with 0 meaning 'low' and 4 meaning 'high'. Each impact goal can have 0 or more risks and one risk can be relevant to 0 or more impact goals.
Data Collection Plan	A plan to help track a selected set of indicators. Each DCP has a name, a start date, one of the predefined purposes, 0 or more decision-making areas and can contain 0 or more indicators and/or goal indicators for which data needs to be collected (as long as there is at least one indicator in the plan). Indicators can be included in 0 or more plans.
Decision-making area	A DMA is part of 1(?) DCP and a DCP can contain 0 or more DMAs.
Data collection checklist	A predefined checklist with a given amount of multiple choice questions to assess the organization's/project's readiness and capacity for data collection. The concept is closed because of all the different questions and answer options it contains, which aren't relevant to understand the method. The checklist itself is static and non-interactive, so no question logic is in place and no consequence is given to which answers are selected. There is only 1 checklist which is present in each DCP that is created and only when a DCP is created.

Figure 58: Concept Table of BCtA

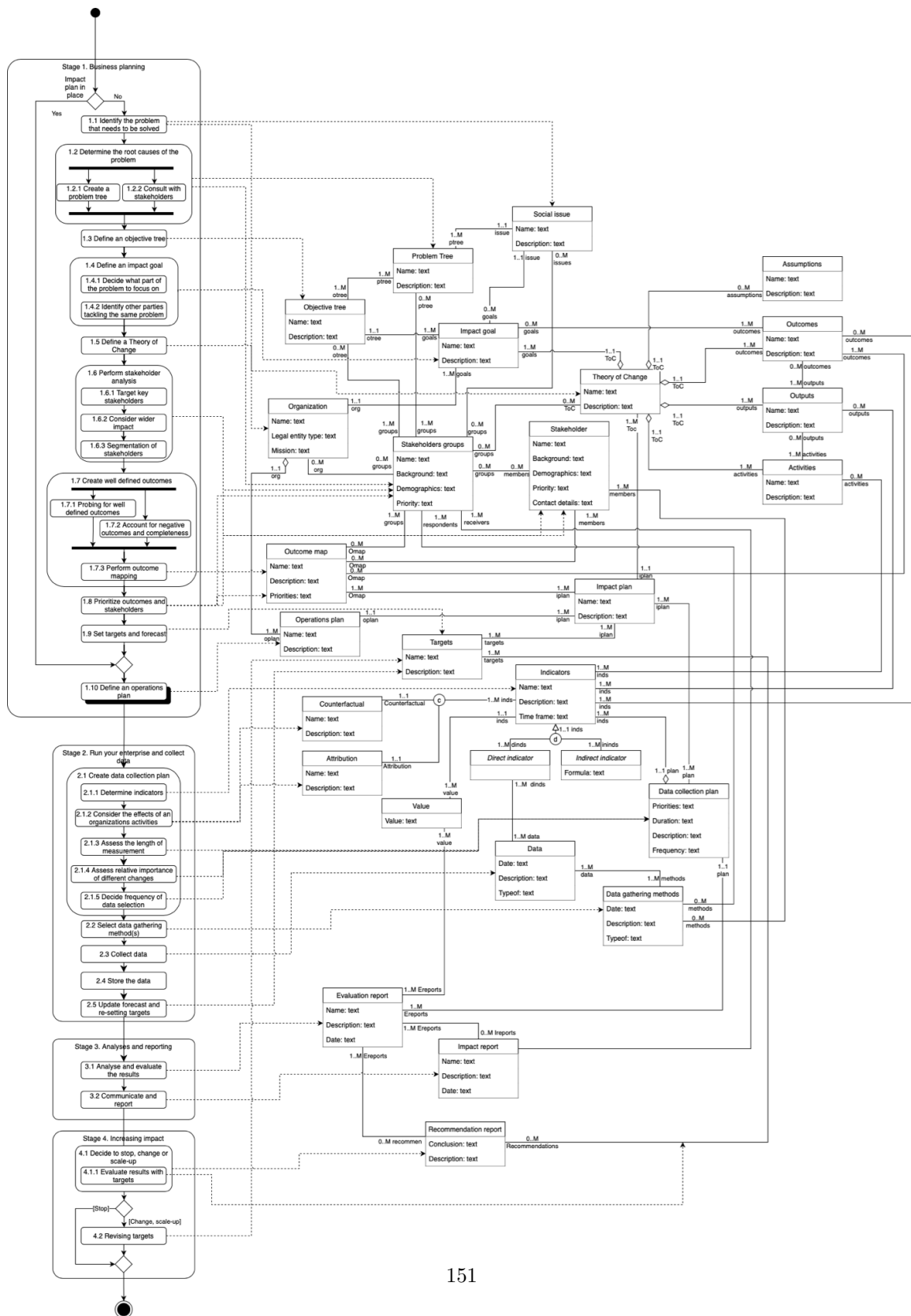


Figure 59: PDD of Maximize Your Impact Guide - by Friso Liezenberg and Lars Lensink

Module	Task	Name	Description
1	1.1	Identify the problem that needs to be solved	Discuss the problem that the organization intends to solve
	1.2	Determine the root causes of the problem	Determine the root causes of the problem by completing sub activities 1.2.1 and 1.2.2
	1.2.1	Create a problem tree	Create a problem tree to understand the root causes of the problem and identify problems that can be solved by the organization
	1.2.2	Consult with stakeholders	Increase the accuracy and relevancy of the problem tree by involving principal stakeholders in the process
	1.3	Define an objective tree	Create an objective tree to design the solution of the organization to the (social) problem
	1.4	Define an impact goal	Based on activities 1.1-1.3 define the goal that the organization will pursue to maximize its impact
	1.4.1	Decide what part of the problem to focus on	Select the part of the problem that the organization will solve through its activities.
	1.4.2	Identify other parties tackling the same problem	Identify existing solutions to the (social) problem and evaluate them
	1.5	Define a Theory of Change	Define how the organization will approach the problem and 'how' its activities will lead to the impact goal. Work backwards from the impact goal towards the outcomes, outputs and activities and explain how they relate to one another. Involve stakeholders in the the process to increase the quality
	1.6	Perform stakeholder analysis	Identify the stakeholders of the organization by completing sub activities 1.6.1 - 1.6.3
	1.6.1	Target key stakeholders	Identify the stakeholders that have to most power, but also identify stakeholders for which the activities will have the most impact
	1.6.2	Consider wider impact	Identify 'other' stakeholders that might be affected, positive or negative, by the organization activities
	1.6.3	Segmentation of stakeholders	Group the stakeholders identified in 1.6.1 and 1.6.2 based on shared characteristics and how the experience things
	1.7	Create well defined outcomes	Identify the outcomes that happened (or might happen) as a result of the activities, whatever the goal or intended outcomes of the activities by completing sub activities 1.7.1, 1.7.2 and 1.7.3
	1.7.1	Probing for well defined outcomes	Identify the outcomes that the stakeholders have (or will) experience(d)
	1.7.2	Account for negative outcomes and completeness	Identify the (potential) negative outcomes that the stakeholders will (have) experience(d) as a result of the activities
	1.7.3	Perform outcome mapping	Map the outcomes identified in 1.7.1 and 1.7.2 against the stakeholders in an outcome map
	1.8	Select outcomes and stakeholders	Select the outcomes and stakeholders that matter the most to the organization and on which data will be collected
	1.9	Set targets and forecast	Determine (long-term) targets and forecast for the outcomes selected in 1.8
	1.10	Develop operations plan	Design a plan on how to run the daily operations without losing sight of the impact goal
2	2.1	Create a data collection plan	Define a plan on what data is required, the duration of the measurement, from whom it will be collected, the baseline values and the necessary indicators
	2.1.1	Determine indicators	Define indicators that will show how much change has occurred
	2.1.2	Consider the effects of an organizations activities	Consider the attribution and counterfactual effects of the activities
	2.1.3	Assess the length of the measurement	Determine for 'how long' data should be collected, depending on the outcomes
	2.1.4	Assess the relative importance of different changes	During the data collection stakeholders should indicate which outcome(s) is (are) the most important to them
	2.1.5	Decide frequency of data collection	Determine how often data should be collected during the period defined in 2.1.3
	2.2	Select data gathering method(s)	Select data gathering method(s) that will be used to collect the data from the stakeholders
	2.3	Collect data	Select data gathering method(s) that will be used to collect the data from the stakeholders
	2.4	Store data	Store the data from 2.3 in a 'secure' location for future analysis, comparison and re-use
	2.5	Update forecast and re-setting targets	Set targets for the period over which data will be collected
3	3.1	Analyse and evaluate the results	Analyse the data to determine the 'change' that has resulted from the activities. Also consider the counterfactual and attribution to determine the 'real' change that was created. Evaluate the effectiveness of the measurement: are the indicators capturing the change accurately, are the right gathering method(s) used?
	3.2	Communicate and report	Communicate the results from 3.1 to the relevant (external) stakeholder(s)
4	4.1	Decide to stop, change or scale-up	Compare the results of the analysis to the 'expected' outcomes and determine the effectiveness of the actions. If the negative outcomes exceed the positive outcomes, it might be wise to stop the actions. On the other hand, it can also be decided that changes to the activities (for stakeholders) are necessary, or the activities are scaled to further increase the impact
	4.1.1	Review annual targets	Compare the results to the the targets defined in 1.9 and 2.5
	4.2	Revising targets	If the organization decides to change or scale-up (4.2), targets should be revised

Figure 60: Activity Table of MYIG

Name	Description
Social issue	The social problem to which the organization hopes to contribute, in a positive way, with its activities
Problem tree	The root causes of the social issue are tracked down by means of a problem tree
Objective tree	The problem tree has laid out the underlying causes of the social issue. These causes are used to define an objective tree
Impact goal	The 'cause' of the social issue the organization will improve through its activities
Theory of Change	The organization approach to the impact goal, explaining how its activities will result in outcomes and impact
Assumptions	The assumptions that explain the links between activities, outputs, outcomes and impact. Ideally they are backed up with evidence
Outcomes	The mid term consequences that will happen as a result of the activities and outputs and will contribute towards to impact goal
Outputs	The direct results of the organization activities
Activities	The activities the organization will undertake to pursue the impact goal
Organization	The entity that adopts the SIA method. The entity is often an organization, but can also be a project
Stakeholder groups	Group of individuals who can affect or who are affected by the organizations activities
Stakeholder	Individual, independent or as part of, the stakeholder group
Outcome map	Outcomes identified in the ToC are specified and mapped against stakeholders
Impact plan	Plan of action on how the organization will pursue its impact goal, based on the Theory of Change and the outcome map
Operations plan	Plan that ensures the organization does not lose sight of its objectives, while trying to maximize the effectiveness of the daily operations
Targets	The targets that the organization aims to achieve with its activities and also help determine the effectiveness of activities and other long-term decisions
Indicators	A qualitative or quantitative information measure that makes the effects insightful and measurable
Counterfactual	An indicator that is used to determine what would have happened without the actions of the organization, used to better assess the effects of the activities
Attribution	An indicator that is used to determine what impact can be attributed to the activities of the organization
Direct indicators	Indicators that can be derived directly from the data
Indirect indicators	Indicators that need to be calculated by means of a formula
Value	The value resulting from the indicator(s)
Data collection plan	A strategic plan that lays out which data is collected, from which stakeholder group, for how long and how often the data is collected
Data	Qualitative or quantitative data collected from stakeholders by means of data gathering method(s)
Data gathering method(s)	The method(s) used to collect the data from the stakeholders
Evaluation report	A report that contains the analyzed data and is used to evaluate the effectiveness of the activities. Can be used for internal communication and improvement(s)
Impact report	A report that is shared with (external) stakeholders indicating the impact created by the organization over a certain period of time
Recommendation report	Based on the evaluation report, a decision has to be made on how to proceed with the activities, if improvement(s) are necessary they should be explained and determined here

Module	Task Name	Description
1	1.1 Provide mission of organization or project	Define the the mission/vision of the organization/project
1	1.2 Identify organization goal(s)	Identify three long-term goals of the organization
1	1.3 Identify stakeholders	Identify the most important stakeholders for the organization
1	1.4 Identify intervention(s)	Identify the intervention per stakeholder and per objective to achieve the (long-term) goal(s)
1	1.5 Select intervention	Select an intervention resulting from task 1.4
2	2.1 Identify (social) issues	Define the social problem that is tackled by the intervention
2	2.2 Select stakeholders and end users for the intervention	Identify stakeholders/end users that should be involved in the development of the intervention
2	2.3 Name intervention	Give a name to the intervention
2	2.4 Define activities and outputs	Identify the activities and resulting outputs that will cause change
2	2.5 Define outcomes	Identify the changes in the short, medium and long-term resulting from the activities
2	2.6 Define conditions	Define the conditions that should be met for the outcomes to occur
3	3.1 Define the goal of the impact evaluation	Define the goal of the impact evaluation
3	3.2 Define stakeholders and end users of the evaluation	Identify the stakeholders that should be informed on the results of the impact evaluation
3	3.3 Define evaluation question(s)	Define the evaluation question(s) that is/are researched
3	3.4 Personalize evaluation questions	Change the evaluation questions from task 3.3 to the scope of the end users from task 3.2
3	3.5 Select effects and/or conditions for measurement	Select the effect(s) and/or conditions that are measured
3	3.6 Define indicators for selected effects and/or conditions	Define indicators for the effects and/or conditions from task 3.5
3	3.7 Define data collections source(s)	Identify the source(s) from which data will be gathered (e.g. stakeholders, institutions, NGOs)
3	3.8 Select data gathering method(s)	Select data gathering method(s) with which the necessary data is gathered
3	3.9 Define planning and responsibilities	Describe who will measure what and when
4	4.1 Select data gathering method(s)	
4	4.2 Collect data	Collect the data
4	4.3 Draw conclusion(s)	Answer the three questions to form an initial opinion on the effects of the intervention
5	5.1.1 Determine investment(s)	Determine how much effort (inputs) was required for the activities
5	5.1.2 Compare investment and impact	Compare the inputs from task 5.1.1 to the (expected) impact
5	5.1.3 Assess negative effects of intervention	Evaluate the negative effects of the intervention
5	5.1.4 Make improvements	Make improvements the ToC based on 5.1.1, 5.1.2 and 5.1.3
5	5.2.1 Define the end users of the report	Identify the end users to whom you will communicate the results
5	5.2.2 Define the goal of report	Define what you want to achieve by communicating the results
5	5.2.3 Define 'how' will be reported	Determine the content of the report
5	5.3 Monitor impact	Based on the data collection and analysis the most important output and outcome indicators are selected (KPIs). Subsequently targets are set for these indicators and they are monitored.

Figure 63: Activity Table of IWD

Name	Description
Organization	The entity that adopts the SIA method. The entity is often an organization, but can also be a project
Goals	The long-term goals that the organization/project is pursuing, often related to the mission
Stakeholders groups	Group of individuals who can affect or who are affected by the organizations/projects activities
Stakeholders	Individual, independent or as part of, the stakeholder group
Interventions	The interventions the organization/project is doing, for the stakeholder, to achieve its goals
Theory of Change	The organization approach to the impact goal, explaining how its activities will result in outcomes and impact
Activities	What activities the organization/project will undertake to create change
Outputs	The direct results of the organization activities
Outcomes	The short, medium and long-term outcomes resulting from the activities
Short term outcomes	The changes that are visible within 12 months
Mid term outcomes	The changes that are visible between 12 to 24 months
Long term outcomes	The changes that are visible after 24 months (referred to as impact)
Issues	The (social) problems that are experienced by stakeholders and that will be tackled by the intervention
Conditions	The conditions under which the intervention causes short, mid and long-term change
Evaluation goal	The goal of the evaluation process, either for internal purposes (e.g. learning) or to communicate the impact
Evaluation questions	The question(s) that are answered by the evaluation, related to the effectiveness of the intervention
Selected effects	The effect(s)/conditions that will be measured, based on the earlier defined evaluation goal and evaluation questions
Indicators	A qualitative or quantitative information measure that makes the effects insightful and measurable
Direct indicators	Indicators that can be derived directly from the data
Indirect indicators	Indicators that need to be calculated by means of a formula
Target group	The group(s)/institution(s) from which the data is gathered
Value	The value resulting from the indicator(s)
Data gathering method(s)	The method(s) used to collect the data from the stakeholders
Planning	Overview of who will collect the data, when and which data gathering method is used for each indicator
Data	Qualitative or quantitative data collected from stakeholders by means of data gathering method(s)
Internal report	A report that reflects on the results of the measurement
Impact report	A report that is shared with (external) stakeholders indicating the impact created by the organization over a certain period of time
Performance report	A report in which the results of the measurement are compared to effort that was needed to achieve these results. It also contains any negative effects that arose as a result of the intervention. Based on the findings in this report improvements are made where necessary
Inputs	The resources required for each activity
Selected outputs & outcomes	The outputs and outcomes resulting from the internal report which are deemed most relevant, and are therefore monitored more frequently

Figure 64: Concept Table of IWD

Task	Module	Name	Description
	1 1.1	Analyse the problem	Define the social problem the organization is trying to solve and for who it is being solved
	1 1.2	Evaluate different approaches	Evaluate existing solutions to the problem that the organization is trying to solve and try to determine the effectiveness of these solutions
	1 1.3	Analyse stakeholders	Analyse the stakeholders who are relevant for the organization and identify the underlying causes of the problems they experience
	1 1.4	Determine impact goals	Determine the long-term impact goals of the organization based on the findings from activities 1.1-1.3
	1 1.5	Develop a Theory of Change	Define 'how' and 'why' the activities of the organization will lead to change. Also explain the assumptions that underly the links between inputs, activities, outputs, outcomes and impact
	1 1.5.1	Engage with stakeholders	Involve the stakeholders, not only the target group, but also others in the development of the ToC
	1 1.5.2	Validate ToC	Validate the ToC with experts, especially focus on the assumptions. Validation is mostly done by interviews.
	1 1.6	Develop a plan for monitoring	Define a plan for monitoring, this plan is the operationalization of the ToC. It should define the indicators that will be used to measure change and how the data for these indicators is collected. A timeline should be defined to show which activities will occur in the short, medium and long term and for who these activities will occur. At last, outcomes should be prioritized based on their relevance to the organization.
	2 2.1	Define a data plan	Identify 'missing' data that is relevant to determine the effectiveness of the organizations activities and that can help the organization maximize its impact. This also includes defining from whom to collect the data.
	2 2.2	Collect the data	Collect the data. Distinguish between qualitative and quantitative data and choose data collection methods accordingly.
	2 2.3	Analyse the data	Define 'key' questions that will be answered with the data analysis. Clean the data from any missing values or errors. Account for attribution, deadweight, drop off and displacement. Define what 'success' is by settings targets.
	3 3.1	Use data for decision making	Use the data for the execution of the program/activities, policy changes and strategic decisions.
	3 3.2	Reporting	Communicate the results to external stakeholders, both the positive and negative results. Take into account 'who' the stakeholder group is and what they are interested in.
	3 3.3	Use a dashboard as overview of the data	Use data to monitor the performance of indicators. The dashboard can serve as input for operational and strategic decision making.
	4 4.1	Detect existing culture	Identify the existing culture in the organization. What are the norms and values? Are there any worn in patterns?
	4 4.2	Create involvement and supporting base	What are (potential) bottlenecks identified from 4.1? Identify ambitions and shared interests to work in a more impact-oriented way. Define what would be required to achieve that.
	4 4.3	Embedding in organization	Use monitoring and evaluation data during meetings and base decisions on this data. Appoint impact ambassadors and define short term success factors.
	4 4.4	Anchor impact oriented culture	Anchor the impact-oriented culture in all levels and systems of the organization. The levels include employees, organizations, systems and stakeholders.

Figure 66: Activity Table of IWR

Name	Description
Organisation	The entity that adopts the SIA method. The entity is often an organization, but can also be a project
Stakeholder group	Group of individuals who can affect or who are affected by the organizations activities
Stakeholder	Individual, independent or as part of, the stakeholder group
Impact goal(s)	The goal the organization pursues through its activities, often related to the mission
Social problem	The social problem that the organization addresses through its activities
Solution	Existing solutions to the social problem
Need	The problems experienced by stakeholders as a consequence of the social problem. These problems result in one or more needs of stakeholder groups
Theory of Change	The organization approach to the impact goal, explaining how its activities will result in outcomes and impact
Inputs	The resources required to perform the activities in a proper way
Activities	The activities the organization will undertake to pursue the impact goal
Outputs	The direct results of the organization activities
Impact	Direct effects following from the outputs, and indirect effects following from direct effects in the long term. Indirect effects are often the related to the impact goal
Assumption	The assumption(s) that explain the links between activities, outputs, outcomes and impact. Ideally they are backed up with evidence
Monitoring plan	The measurement plan contains a description of the priorities of the measurement, what will be measured (+ indicators) and how
Data plan	A plan that describes what data is needed for the indicators to measure the effectiveness of the activities
Data collection method	The method(s) used to collect the data from the stakeholders
Data	Qualitative or quantitative data collected from stakeholders by means of data gathering method(s)
Indicators	A qualitative or quantitative information measure that makes the effects insightful and measurable
Direct indicators	Indicators that can be derived directly from the data
Indirect indicators	Indicators that need to be calculated by means of a formula
Value	The value resulting from the indicator(s)
Data analysis plan	A plan that describes what 'key' questions will be answered based on set targets. In this plan the correction mechanisms are also considered.
Attribution	An indicator that is used to determine what impact can be attributed to the activities of the organization
Displacement	An indicator that tracks the negative effects experienced by others as a consequence of the activities
Drop off	An indicator that tracks if and how much the effect of the outcomes diminishes over time
Deadweight	The effect(s) that would have happened anyway, even without the activity.
Internal report	A report that is used for internal decision making on operational and strategic level.
Impact report	A report that is shared with (external) stakeholders indicating the impact created by the organization over a certain period of time
Dashboard	Dashboard that enables monitoring and evaluation of indicators. This enables considering the effects of activities in decision making and thus supports embedding impact thinking in the organization culture.

Figure 67: Concept Table of IWR

O Super-method activities & concepts

Activity of the supermethod	Description	Activity derived from which PDD
1 Planning for impact		Social Impact Navigator
1.1 <i>Defining the mission of the organization</i>	A MISSION that clearly states which objective is pursued by organization/project (Impact Path).	Impact Wizard
1.2 <i>Analyze social problem or issue</i>	Description of the problem the organization is tackling: What is the PROBLEM according to STAKEHOLDERS? What is the SIZE of the problem? What are alternative SOLUTIONS to the same problem? (Impact path)	EVPA
1.2.1 Identify problem causes and effects	Identification of the (root) CAUSE(S) and EFFECT(S) of the SOCIAL PROBLEM which is being analysed	Social Impact Navigator
1.2.2 Consult with stakeholders	A preliminary investigation and consultation with your TARGET GROUP(S) and other STAKEHOLDER(S) to help the process of defining your SOCIAL PROBLEM.	W+
1.2.3 Create problem tree	Create a PROBLEM TREE to identify the root causes of the problem	Social Impact Navigator
1.2.4 Investigate solutions	Possible, already existing, SOLUTION(S) to the problem(s) identified by the organization (Impact path).	Avance
1.3 <i>Identify impact goal(s)</i>	The long term IMPACT GOALS of the organization (ImpactWizard).	Impact Wizard
1.4 Create solution tree	A TREE that describes HOW to reach the impact goals	Social Impact Navigator
Identify problems and opportunities	Identify problems or opportunities that might hinder the achievement of the impact goal(s)	BCTA Impact lab
Define analysis goal	The ANALYSIS GOAL of the needs assessment and context analysis	Social Impact Navigator
Set proposed crediting period	The duration during which the W+ project activities will be implemented and measureable benefits will be created.	W+
Describe motivations	The motivation for investing in a Social Enterprise	EVPA
Select Sustainable Development Goal	Select one or more SDG TARGETS to which the intervention/activities will contribute	BCTA Impact lab
Select Impact Categories	IRIS+ categories of impact that relate to SDG's	IRIS+
Select Impact Theme	IRIS+ themes of impact that relate to categories	IRIS+
Define interventions	The INTERVENTION(S) that the ORGANIZATION is doing to achieve the long term organizational goals	Impact Wizard
Select intervention(s)	The INTERVENTION that is considered during the impact measurement	Impact Wizard
Determine SPO type	The maturity i.e. the stage of development of the SPO.	EVPA
Set level of rigour	The LEVEL OF RIGOUR of your impact analysis	EVPA
Identify purpose of SROI analysis	What is the purpose of this SROI analysis? Why do you want to begin this process now? Are there specific SROI	SROI
Decide responsible person for analysis	Can you undertake the SROI analysis internally, or will you need to bring in external help?	SROI
Establish analysis type	Whether the analysis is a forecast or an evaluation	SROI
Submit W+ Project Idea Note	Submission of the PIN by a Project Implementer	W+
Review Project Idea Note	Review of the W+ coordinator for completeness check	W+
Process Project Idea Note feedback	Processing the feedback of the W+ coordinator check by the Project Implementer	W+
List project on W+ website	The listing of the project on the W+ website with an issued unique identification number	W+

Figure 68: Super-method activities 1/5

Activity of the supermethod	Description	Activity derived from which PDD
Development and validation of the Theory of Change		Impact Path
2.1 <i>Conduct stakeholder analysis</i>	The process of identifying, understanding and prioritizing the stakeholders for the Theory of Change.	Social Impact Navigator
2.2 <i>Engage stakeholders</i>	Involve stakeholders in the development of a Theory of Change (Impact path).	Impact Path
2.3 <i>Develop Theory of Change</i>	Determine the activities needed to achieve the impact goals. Explain HOW and WHY these activities lead to effects, and what the underlying assumptions and conditions are (Impact Wijzer).	Impact Path
2.3.1 Define resources	Resources to be considered include financial, human, technological and time. The more resources available, the higher your expectations can be as to what you can achieve from impact measurement and the greater the rigour and complexity that can be applied in the process (EVPA).	EVPA
2.3.2 Define activities	A description of exactly what the SPO is doing to try to effect a change. It should include a set of specific steps, strategies or actions arranged in a logical sequence demonstrating how each activity relates to another.	EVPA
2.3.3 Define expected outcomes	This should include what the SPO must achieve to be considered successful and will form the basis of the milestones against which the SPO will be measured. It is also important to consider the unintended consequences of the SPO's activities.	EVPA
2.3.4 Define conditions	Conditions that have to be met in order for the effect(s) to occur (ImpactWizard)	Impact Wizard
2.4 <i>Validate Theory of Change</i>	Determine the probability that the activities lead to the desired effects (Impact path).	Impact Path
Value inputs	When filling out your Impact Map you may have identified non-monetised inputs; these are inputs other	SROI
Conduct gender and stakeholder analysis	A stakeholder analysis, where an emphasis is placed on the gender of the stakeholders	W+ Standard
Provide basic information on project	The provision of basic information of the project during the Project Design phase.	W+ Standard
Provide description of W+ domains	Provision of description of the W+ domains to be applied, including the rationale for selection and expected outcomes.	W+ Standard
Evaluate against W+ indicators	Initial evaluation of the underlying project against the W+ Standard's 'Do No Harm Indicators'.	W+ Standard
Assess opportunities for improvement's in women's empowerment	Assessment of opportunities for improvement in women's empowerment within the scope of the project in one or more W+ domains	W+ Standard
Identify benefit sharing mechanism	Identification of a potential benefit sharing mechanism for the direct payments to women's groups within the project scope	W+ Standard
Provide information on legal authority	Provision of information on the Project Implementer's legal authority to implement the W+ Project	W+ Standard
Submit Project Design Document	Submission of the completed and signed PDD to the W+ Coordinator and the corresponding document review fee.	W+ Standard
Review Project Design Document	Review of the W+ Coordinator for completeness.	W+ Standard
Process Project Design Document feedback	The processing of the feedback given by the W+ coordinator of the PDD, done by the Project Implementer	W+ Standard
Upload Project Design Document onto W+ registry	Uploading the PDD onto the W+ registry with an issued unique identification number	W+ Standard

Figure 69: Super-method activities 2/5

II	Activity of the supermethod	Description	Activity derived from which PDD
3	Define and perform measurement		
3.1	<i>Define impact measurement plan</i>	A description of the PRIORITIES for the measurement, WHAT will be measured WHEN and HOW it will be measured, by WHO (Impact path).	Impact Path
3.1.1	Selecting impact and target groups	Select the most important STAKEHOLDER GROUP and the expected EFFECTS for them, based on the THEORY OF CHANGE(Impact path).	Impact Path
3.1.2	Establishing measurement priorities	Effects need to be prioritized, because they cannot be measured at the same time (Impact path).	Impact Path
3.1.3	Determine time frame	The time period over which you measure impact (EVPA).	EVPA
3.1.4	Set measuring responsibilities	Describe who will be measuring what at which point in time	EVPA
3.1.5	Identify data sources	Define the source from which the data for the indicators is gathered	Social Impact Navigator
	Conduct daily business activities	Making an impact is done by conducting your daily business activities of selling goods/services to create as much impact as you can for your stakeholders	Avance
	Select impact risk	Select the type(s) of risk that may undermine the delivery of the expected impact.	BCTA
	Assess impact risk	Assess the level of the risk for the risks selected in 8.8 by combining the likelihood of the risk occurring and the severity of the consequences for the stakeholders if it does.	BCTA
3.2	<i>Define indicators</i>	To measure effects it is necessary to define one or more indicators per effects. Indicators state what is perceived when an effect occurs (Impact path).	Impact Path
	Prioritise indicators	The process of prioritising the identified indicators	Social Impact Navigator
	Retrieve Core Metric Set	Retrieval of the Core Metric Set from the IRIS+ tool, based on the selected SDGs, Impact Theme, Impact Categories, and goals	IRIS+
	Train enumerators	Training of enumerators, using women from the community as much as possible	W+ Standard
	Apply survey questionnaire	Applying survey instruments for data collection	W+ Standard
	Prepare Monitoring and Evaluation Report	The preparation of the Monitoring and Evaluation report to support validation and verification	W+ Standard
	Submit Monitoring and Evaluation Report	Submission of the Monitoring and Evaluation report to the W+ standard coordinator and the selected accredited W+ auditor	W+ Standard
	Select output indicators	Definition of specific and measurable actions or conditions that assess progress or regression against specific operational activities	EVPA
	Select outcome indicators	Definition of specific and measurable actions or conditions that demonstrate progress towards or away from specified outcomes	EVPA
	Fill in indicator table	Where possible add more details on the selected indicators.	BCTA
3.3	<i>Assign target values to indicators</i>	Values that can be compared against whenever the indicators values have been calculated	EVPA
3.4	<i>Define data collection methods</i>	Select or develop data collection methods that serve as input for the indicators (Impact path).	Impact Path
3.5	<i>Collect data</i>	When the INDICATORS are decided on, the ORGANIZATION has to gather documentation which states information about the INDICATORS. [vijanti]	Impact Wizard
	Measure direct results (output)	Measure and monitor the direct results of your activities (Impact path)	Avance
	Measure other (indirect) effects	Measure the effects that are not directly the result of your activities, but arise from them.	Avance
	Measure mission-related effects	Measuring of the main effects of the activities you have performed, starting with the effects on the impact target group of your mission.	Avance
	Establish longevity of outcomes	You will need an estimate of the duration of each of your outcomes	SROI
	Select data analysis method	Selection of the method(s) used for conducting data analysis after the data has been collected	Impact Path
3.6	<i>Analyse data</i>	When sufficient data has been collected, the scores on the selected indicators can be calculated to determine how much of the effect has actually occurred and for whom (Impact path).	Impact Path
3.6.1	Prepare and evaluate data	Systemisation and consolidation of the collected data	Social Impact Navigator
3.6.2	Calculate indicator values	The calculation of the values of the defined indicators	EVPA

Figure 70: Super-method activities 3/5

Activity of the supermethod	Description	Activity derived from which PDD
3.6.2 Calculate indicator values	The calculation of the values of the defined indicators	EVPA
3.6.3 Apply correction mechanisms	The consideration of DEADWEIGHT, ATTRIBUTION, DROP OFF, and DISPLACEMENT when determining the impact made	Impact Path
Consider impact of VPO/SI on the SPO	The contribution the VPO/SI has made by investing in an SPO	EVPA
3.7 Draw conclusions	When the results of the impact measurement are available, they need to be reflected on (Impact path).	Impact Wizard
Assign monetary value to outcome	The purpose of valuation is to reveal the value of outcomes and show how important they are relative to the value	SROI
Prepare measuring instruments	Preparing the instruments needed to measure your data, such as surveys.	Social Impact Navigator
Define desired outcomes as statements	Define outcomes as change statements, target statements, or benchmark statements	EVPA
Monitoring direct results (Outputs)	Keep up concrete, countable results of your activities (Impact path).	Impact Path
Compare results with other projects	Interpretation of the data and embedding it in a context using qualitative statements, for learning purposes.	Social Impact Navigator
Define goal of the impact evaluation	What is the goal of the impact evaluation. Will the results be used for internal purposes (e.g. organizational learning) or for communication purposes.	Impact Wizard
Classify impact goals	Classify each impact goal according to the IMP impact classes (A/B/C).	BCTA
Classify the enterprise impact	Classify the impact of the entire company/project according to the IMP impact classes (A/B/C).	BCTA
4 Evaluate results and improve	Compare the results of the impact measurement with the initial impact goals. A periodic reflection is necessary to make necessary adjustments on time. In this way, measuring and increasing impact will become an integral part that drives the organization (Impact path).	Impact Wizard
4.1 Create report	An external report that describes the achievements of the organization (Impactwijzer). Take into account who will be the receivers of the report and adjust the design and content accordingly (Impact path).	Impact Path
4.2 Share report with target audience	Share the (impact) report with the relevant stakeholders.	Avance
4.3 Evaluate outcomes and impact	Describe and evaluate progress and results; derive conclusions and recommendations	EVPA
4.4 Create improvement plan	Based on the conclusion(s), identify areas for improvement and set 'new' goals for the coming period (Avance). Regularly reflect on strategic choices and the ToC to determine the effectiveness of the approach (Impact path).	Avance
4.5 Implement improvements	Implement improvements resulting from the improvement plan.	Avance
Verify SROI Report	Assurance is the process by which the information in your report is verified. The principle requires that there	SROI
Link impact to SDGs	When you refer to the SDGs in your measurements, you meet requirements for investment reports and you increase the chance of being supported by investors and impact funds.	Avance
Organize learning-focused meetings	Hold regular meetings to discuss the results and provide concrete opportunities for learning	Social Impact Navigator
Evaluate SPO monitoring	The evaluation of the VPO/SI on their monitoring of the operations of the SPO	EVPA
Improve robustness of measurement	Substantiating impact studied previously more robustly with additional measurements	Impact Path
Link your impact to Sustainable Development Goals	When you refer to the SDGs with your measurements, you therefore meet the requirements for investment reports and you increase the chance of being supported by these parties.	Avance

Figure 71: Super-method activities 4/5

Activity of the supermethod	Description	Activity derived from which PDD
Calculate Social Return on Investment		SROI
Project future outcome value	The first step in calculating your SROI ratio is to project the value of all the outcomes achieved into the future.	SROI
Calculate net present value (NPV)	Calculate the net present value (NPV) by adding up the costs and benefits paid or received in different time periods.	SROI
Calculate SROI ratio	The calculation of the SROI ratio or the Net SROI ratio, which is done by dividing the discounted value of benefits by the discounted value of costs.	SROI
Conduct sensitivity analysis	After calculating the ratio, it is important to assess the extent to which your results would change if you change the assumptions.	SROI
Define payback period	The 'payback period' describes how long it would take for an investment to be paid off.	SROI
Verification of impact		EVPA
Select impact verification technique	Selecting the technique used to verify whether the outcomes make sense for the stakeholders.	EVPA
Select value creation measurement method	Selecting the method used to verify whether the outcome was of value to the stakeholders.	EVPA
Verify that assistance of VPO was valued by SPO	Confirmation with the SPO that the investment was of value.	EVPA
Verify validity of outcomes with stakeholders	Verifying whether the outcomes make sense for the stakeholders.	EVPA
Verify non-financial assistance	The VPO/SI must verify (or at least record) the non-financial assistance provided to their investees.	EVPA
Verify that outcomes meet quantity expectation	Verifying whether the outcomes have met the quantity expectation for the stakeholders.	EVPA
Verify that that timeframe is met	Verification that the timeframe that was initially set for measuring impact was met.	EVPA
Submit Verification Report	The submission of the verification report to the W+ Coordinator.	W+ Standard
Develop an impact organization oriented culture		Impact Wijzer
Detect existing culture	Track down the existing culture in the organization. What norms and values are there. What are the worn in patterns. (Impactwijzer)	Impact Wijzer
Create involvement and supporting base	What are the bottlenecks identified from the existing culture. Which shared ambitions and interest are there to promote impact-oriented working (Impactwijzer).	Impact Wijzer
Embedding in organization	Integrate impact oriented working in the organization to further stimulate employees (Impactwijzer).	Impact Wijzer
Anchor impact oriented culture	Impact oriented working should be integrated in all processes and systems of the organization. This includes employees, the organization, systems and stakeholders (Impactwijzer).	Impact Wijzer
W+ Certification		W+ Standard
Submit Certification Statement to WOCAN	Submission of the Certification Statement by an accredited verifier to WOCAN and the project developer.	W+ Standard
Review Verification Report and Certification Statement	Review of the Verification Report and Certification Statement by WOCAN.	W+ Standard
W+ Unit Issuance		W+ Standard
Issue W+ Units	Issuance of the created W+ Units to WOCAN	W+ Standard
List W+ units on website registry	Listing of the W+ units on the WOCAN website registry	W+ Standard
Pay direct shares to targeted women's groups	Payment of the direct shares to beneficiaries, in most cases the targeted women's groups	W+ Standard

Figure 72: Super-method activities 5/5

Concept Name	Description	Concept derived from PDD
Planning for impact		
ORGANISATION	The entity that adopts SIA method. The entity could be a government, company, NGO, university, foundation, and community	Impact Path
STAKEHOLDER GROUP	Group of individuals who can affect or who are affected by the ORGANISATION's ACTIVITIES.	Impact Path
TARGET GROUP	The group of individuals that you want to target in your ACTIVITIES	Social Impact Navigator
STAKEHOLDER	Individual in STAKEHOLDER GROUP	Impact Path
ENGAGEMENT PLAN	Plan regarding the engagement of STAKEHOLDERS	EVPA
SUSTAINABLE DEVELOPMENT GOAL	United Nations' globally recognized to-do list for the world's most urgent development challenges.	IRIS+
IMPACT CATEGORY	Specific categories in the IRIS+ system that are related to the SUSTAINABLE DEVELOPMENT GOALS and are aligned with industry classes standardized by the ISIC.	IRIS+
IMPACT THEME	Impact themes classify the types of STRATEGIC GOALS or approaches investors or enterprises may employ to achieve the primary social or environmental effect they intend to deliver.	IRIS+
DELIVERY MODEL	The commercial or project-based means by which IMPACT can be delivered to people and places	IRIS+
SOCIAL PROBLEM	The social problem that the ORGANISATION addresses through its ACTIVITIES	Impact Wijzer
CAUSE	Causes with regards to the SOCIAL PROBLEM	Social Impact Navigator
EFFECT	Effects with regards to the SOCIAL PROBLEM	Social Impact Navigator
PROBLEM TREE	A tool helpful in analysing the CAUSES and the EFFECTS of a problem	Social Impact Navigator
IMPACT GOAL	The long term goal that the ORGANISATION is pursuing through its ACTIVITIES	Impact Path
OBJECTIVE	A statement on the IMPACT GOALS of the investor to be achieved in the project	EVPA
PLANNING REPORT	A report that provides the outline on the planning phase of the Impact Measurement Process	EVPA
ANALYSIS GOAL	The goal of the needs and context analysis	Social Impact Navigator
NEED	STAKEHOLDERS perception of the problem and the urgency associated with it.	Impact Path
PROJECT OUTLINE	The outline of the project that is being undertaken to achieve a certain social IMPACT	Social Impact Navigator
SOLUTION TREE	A mechanism for developing impact-oriented objectives. Created by converting the negative statements of a PROBLEM TREE into positive statements.	Social Impact Navigator
SOLUTION	Already existing possible solutions to the identified SOCIAL PROBLEM	Avance
TARGET	Target value of the SUSTAINABLE DEVELOPMENT GOAL	BCTA
IMPACT PLAN	Business plan on how to achieve the GOALS of the social enterprise. This includes the THEORY OF CHANGE, the OUTCOME MAP, the problem analysis and stakeholder mapping.	Maximize your Impact
OPERATIONS PLAN	Plan that ensures the ORGANISATION does not lose sight of its IMPACT GOALS, while trying to maximize the effectiveness of the daily operations	Maximize your Impact
OUTCOME MAP	OUTCOMES identified in the THEORY OF CHANGE are specified and mapped against STAKEHOLDERS	Maximize your Impact
SOURCE	The source of the background information that you have used to define the SOCIAL PROBLEM	Social Impact Navigator
SROI ANALYSIS	A clarification on the what, how, who and why for why you are conducting a SROI ANALYSIS.	SROI
BOUNDARY	Boundaries of the SROI ANALYSIS	SROI

Figure 73: Super-method concepts 1/3

Concept Name	Description	Concept derived from PDD
Development and validation of Theory of Change		
INTERVENTION	An ACTIVITY, service or product to achieve the IMPACT GOAL (Impact Wizard).	Social Impact Navigator
THEORY OF CHANGE	How does the ORGANISATION want to achieve the OBJECTIVES/IMPACT GOAL. A THEORY OF CHANGE represents an ORGANISATIONS approach to creating change and will include a range of STAKEHOLDERS (Maximize your impact).	Impact Path
INPUT	All resources, whether capital or human, invested in the ACTIVITIES of the ORGANISATION (EVPA).	Impact Path
ACTIVITY	The concrete actions, tasks and work carried out by the ORGANISATION to create its OUTPUTS and OUTCOMES and achieve its IMPACT GOALS (EVPA).	Impact Path
OUTPUT	The tangible products and services that result from the ORGANISATION's ACTIVITIES (EVPA).	Impact Path
OUTCOME	The changes, benefits, learnings or other effects (both long and short term) that result from the ORGANISATION's ACTIVITIES (EVPA)	Impact Wijzer
EVIDENCE	Supporting academic and field research for the OUTCOMES of a STRATEGIC GOAL	IRIS+
EXPECTED OUTCOME	The OUTCOMES that were expected to achieve	EVPA
DESIRED OUTCOME	The OUTCOMES that were desired to achieve	EVPA
IMPACT	All the OUTCOMES of some INTERVENTION- positive and negative, intended and unintended, direct and indirect, in the short and long term - corrected for what would have happened anyway.	Impact Path
ASSUMPTION	Description of the conditions that are needed to achieve the desired change (Impact path).	Impact Path
CONTEXTUAL FACTOR	External factors that can affect your approach, positively or negatively (Impact path).	Impact Path
ATTRIBUTION	The part of the effect that is caused by the ORGANISATIONS ACTIVITIES (Impact path)	Impact Wijzer
DEADWEIGHT	The part of the effect that would have happened anyway (Maximize your impact)	Impact Wijzer
DROP OFF	The diminution of effects over time (Impact path)	Impact Wijzer
DISPLACEMENT	Possible (unintended) negative consequences experienced by others as a result of the ORGANISATIONS ACTIVITIES (Impact path).	Impact Wijzer
OUTPUT REPORT	A report that is based on the monitoring of results.	Impact Path
Measuring impact		
MEASUREMENT PLAN	A description of the prioritized effects, which INDICATORS will be used and how the DATA is collected (Impact path).	Impact Path
CORE METRIC SET	Shortlists of key impact performance INDICATORS, built on standard IRIS METRICS and backed by EVIDENCE and best practice	IRIS+
IRIS METRIC	Numerical measures used in calculations or qualitative values to account for social, environmental and financial performance of an investment.	IRIS+
USAGE GUIDANCE	Instructions on how to interpret and use the IRIS METRICS	IRIS+
KEY INSIGHT	The insights derived from each INDICATOR	IRIS+
INDICATOR	A qualitative or quantitative information/measure/metric about results or OUTCOMES associated with the ORGANISATION performance to measure its performance or IMPACT on specific CRITERIA. \cite{iso26}	Impact Path
DIRECT INDICATOR	An INDICATOR that can be calculated directly from the collected DATA.	Impact Path
INDIRECT INDICATOR	An INDICATOR that requires input from other INDICATORS before it can be calculated.	Impact Path
OUTPUT INDICATOR	Specific and measurable actions or conditions that assess progress or regression against specific operational ACTIVITIES	EVPA
OUTCOME INDICATOR	Specific and measurable actions or conditions that demonstrate progress towards or away from specified OUTCOMES	EVPA

Figure 74: Super-method concepts 2/3

Concept Name	Description	Concept derived from PDD
OUTCOME INDICATOR	Specific and measurable actions or conditions that demonstrate progress towards or away from specified OUTCOMES	EVPA
IMPACT DIMENSION	One part of the five dimensions of impact by the Impact Management Project	IRIS+
KEY QUESTION	Questions to be asked that align with the five IMPACT DIMENSIONS	IRIS+
DATA CATEGORY	The categories that apply to each IMPACT DIMENSION of the Five Dimensions of Impact of the Impact Management Project	IRIS+
DATA	Qualitative or quantitative data collected from STAKEHOLDERS by means of DATA COLLECTION METHOD(s)	Impact Path
INDICATOR VALUE	The value resulting from an INDICATOR	Impact Path
TARGET VALUE	The value that is being aimed at for an INDICATOR	Social Impact Navigator
DATA ANALYSIS METHOD	How to use the obtained insights to improve the ORGANISATION'S ACTIVITIES and thus increase the IMPACT of the ORGANISATION (Impactwijzer).	Impact Path
DATA COLLECTION METHOD	Plan on how the DATA is collected determined by the goal of the measurement and the collection possibilities (Impact Wijzer).	Impact Path
CONCLUSION	A judgment or decision reached by reasoning on the identified DATA and IMPACT	Social Impact Navigator
Improving impact		
IMPACT REPORT	External report to communicate about the impact performance (Impact Wijzer)	Avance
VERIFICATION REPORT	A report in which the results of all verification activities are consolidated	EVPA
IMPACT VERIFICATION TECHNIQUE	The qualitative and quantitative methods or techniques used to verify the results of the impact measurement process	EVPA
VALUE CREATION MEASUREMENT METHOD	The qualitative and quantitative methods used to measure the value created	EVPA
EVALUATION REPORT	A report in which the results of the measurement are periodically compared to the IMPACT GOALS, to keep track of the performance and make changes where necessary	EVPA
COMPARISON METHOD	The technique or method used to compare your results with the results of similar projects	Social Impact Navigator
IMPROVEMENT PLAN	A plan containing planned IMPROVEMENTS, when and by whom they will be implemented	Social Impact Navigator
IMPROVEMENT	ACTIVITIES or INTERVENTIONS identified to further improve the current or potential future PROJECTS, based on the lessons learned from the impact measurement process	Social Impact Navigator
DASHBOARD	Dashboard that enables monitoring and evaluation of INDICATORS. This enables considering the effects of ACTIVITIES in decision making and thus supports embedding impact thinking in the ORGANISATION culture.	Impact Wijzer
Other		
PROXY	An approximation of value where an exact measure is impossible to obtain.	SROI
MONETISATION METHOD	The method used to give value to things that are harder to value and are routinely left out of traditional economic appraisal	SROI
NET PRESENT VALUE	The value in today's currency of money that is expected in the future minus the investment required to generate the ACTIVITY	SROI
SROI RATIO	Total present value of the impact divided by total investment.	SROI
SENSITIVITY	Sensitivities of an SROI model to changes in different variables	SROI
PAYBACK PERIOD	Time in months or years for the value of the impact to exceed the investment.	SROI
OBSTACLE	Impediments interfering with the advancement or implementation of an INTERVENTION/ACTIVITY	Social Impact Navigator
CERTIFICATION STATEMENT	A final, formal opinion attesting to a project's OUTCOMES	W+
SURVEY	A measurement instrument/DATA COLLECTION METHOD used to gather DATA from STAKEHOLDERS	W+
W+ UNIT	A quantified improvement in a woman's life, as measured by the W+ Standard	W+
PAYMENT MECHANISM	The mechanism used to share the direct payments to women's group associated with the project area or project activity	W+

Figure 75: Super-method concepts 3/3

P Full SIA Method Comparison

II	Activity of the supermethod	#	IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BCIA	SROI
1	Planning for impact	11	=	[Choose a strategy]	[Determine context & focus]	>	[Setting objectives]	[Planning impact]	[Business planning]	>	>	>	>
1.1	Defining the mission of the organization	3	<	[Identify mission of organization]	=	-	-	-	-	-	-	-	-
1.2	Analyze social problem or issue	8	=	=	>	=	>	=	=	<	-	-	-
1.2.1	Identify problem causes and effects	7	<	[Analysis of observed problem]	[Identify (social) issues]	<	[Evaluate different approaches]	>	=	[Determine root causes of the problem]	-	-	-
1.2.2	Consult with stakeholders	8	[Consult with stakeholders]	[Engage with stakeholders]	[Identify important stakeholders]	<	[Analyze stakeholders]	-	[Integrate target groups into research process]	[Consult with stakeholders]	-	-	[Identify audience]
1.2.3	Create problem tree	4	<	-	-	<	[Evaluate different approaches]	-	=	-	-	-	-
1.2.4	Investigate solutions	4	[Analysis of the solutions]	=	-	<	[Evaluate different approaches]	-	[Identify other parties tackling the same problem]	-	-	-	-
1.3	Identify impact goal(s)	11	[Define impact goals]	[Define impact goals]	[Identify organisational goals]	[Determine impact goals]	[Set objectives to achieve]	[Define project objectives]	[Define an impact goal]	[Define envisioned outcome]	=	=	[Consider organisation's objectives]
1.4	Create solution tree	2	-	-	-	-	-	=	[Define an objective tree]	-	-	-	-
	Identify problems and opportunities	1	-	-	-	-	-	-	-	-	-	-	-
	Define analysis goal	1	-	-	-	-	-	-	-	-	-	-	-
	Set proposed crediting period	1	-	-	-	-	-	-	-	-	-	-	-
	Describe motivations	1	-	-	-	-	-	-	-	-	-	-	-
	Select Sustainable Development Goal	2	-	-	-	-	-	-	-	-	>	[Link impact goal with SDG]	-
	Select Impact Categories	1	-	-	-	-	-	-	-	-	=	[Select SDC targets]	-
	Select Impact Theme	1	-	-	-	-	-	-	-	-	=	-	-
	Define interventions	2	-	-	=	-	-	=	-	-	-	-	-
	Select intervention(s)	2	-	-	=	-	-	=	-	-	-	-	-
	Determine SPO type	1	-	-	-	-	-	-	-	-	-	-	-
	Set level of rigour	1	-	-	-	-	-	-	-	-	-	-	-
	Identify purpose of SROI analysis	1	-	-	-	-	-	-	-	-	-	-	=
	Decide responsible person for analysis	1	-	-	-	-	-	-	-	-	-	-	=
	Establish analysis type	1	-	-	-	-	-	-	-	-	-	-	=
	Submit W+ Project Idea Note	1	-	-	-	-	-	-	-	=	-	-	=
	Review Project Idea Note	1	-	-	-	-	-	-	-	=	-	-	=
	Process Project Idea Note feedback	1	-	-	-	-	-	-	-	=	-	-	=
	List project on W+ website	1	-	-	-	-	-	-	-	=	-	-	=

Figure 76: SIA method activity comparison 1/5

II	Activity of the supermethod	#	IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BCIA	SROI
2	Development and validation of the Theory of Change	10	=	=	=	=	>	=	=	=	-	>	<
2.1	Conduct stakeholder analysis	10	=	=	[Select and define stakeholders for the intervention]	[Analyze stakeholders]	[Map (select/understand stakeholders)]	=	[Target key stakeholders]	[Consider wider impact]	[Segmentation of stakeholders]	>	=
2.2	Engage stakeholders	9	=	=	[Select and define stakeholders for the intervention]	=	=	[Conduct stakeholder analysis]	[Define theory of change]	[Conduct gender and stakeholder analysis]	-	-	=
2.3	Develop Theory of Change	10	=	=	=	=	=	[Develop a logic model]	=	=	-	[Impact value chain]	[Start on Impact Map]
2.3.1	Define resources	9	[Develop theory of change]	[Develop theory of change]	-	[Develop theory of change]	=	=	[Define theory of change]	[Identify necessary inputs]	-	=	=
2.3.2	Define activities	10	[Develop theory of change]	[Develop theory of change]	[Define activities and outputs]	[Develop theory of change]	=	[Develop a logic model]	[Define theory of change]	-	=	=	[Identify activities to focus on]
2.3.3	Define expected outcomes	10	[Develop theory of change]	[Develop theory of change]	[Define outcomes]	[Develop theory of change]	=	[Develop a logic model]	[Define theory of change]	=	-	=	=
2.3.4	Define conditions	7	[Develop theory of change]	[Develop theory of change]	=	[Develop theory of change]	-	[Develop a logic model]	[Define theory of change]	[Describe prior conditions]	-	-	-
2.4	Validate Theory of Change	4	=	=	=	=	=	[Plausibility check]	-	-	-	-	-
	Value inputs	1	-	-	-	-	-	-	-	-	-	-	-
	Conduct gender and stakeholder analysis	8	>	[Engage stakeholders]	[Identify stakeholders]	[Analyze stakeholders]	>	>	-	=	-	-	[Identify stakeholders]
	Provide basic information on project	1	-	-	-	-	-	-	-	=	-	-	-
	Provide description of W+ domains	1	-	-	-	-	-	-	-	=	-	-	-
	Evaluate against W+ indicators	1	-	-	-	-	-	-	-	=	-	-	-
	Assess opportunities for improvement's in women's empowerment	1	-	-	-	-	-	-	-	=	-	-	-
	Identify benefit sharing mechanism	1	-	-	-	-	-	-	-	=	-	-	-
	Provide information on legal authority	1	-	-	-	-	-	-	-	=	-	-	-
	Submit Project Design Document	1	-	-	-	-	-	-	-	=	-	-	-
	Review Project Design Document	1	-	-	-	-	-	-	-	=	-	-	-
	Process Project Design Document feedback	1	-	-	-	-	-	-	-	=	-	-	-
	Upload Project Design Document onto W+ registry	1	-	-	-	-	-	-	-	=	-	-	-

Figure 77: SIA method activity comparison 2/5

II	Activity of the supermethod	#	IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BCIA	SROI
3	Define and perform measurement	10	=	=	>	=	>	>	=	>	>	>	>
3.1	Define impact measurement plan	9	=	=	[Define evaluation questions] [Personalize evaluation questions] [Select effects and/or conditions for measurement] [Define data collection source(s)]	<	[Develop a monitoring plan]	>	[Create data collection plan]	[Monitoring, Evaluation, and Reporting plan]	-	>	-
3.1.1	Selecting impact and target groups	6	[Selecting effect and target groups]	[Select target group]	[Define stakeholders and end users of the evaluation]	[Define a data plan]	[Develop a monitoring plan]	-	[Account for negative outcomes and complements] [Perform outcome mapping] [Prioritize outcome and stakeholders]	-	-	[Identify stakeholders]	-
3.1.2	Establishing measurement priorities	8	[Selecting effect and target groups]	=	[Define the goal of the impact evaluation] [Select effects and/or conditions for measurement]	<	[Develop a monitoring plan]	-	[Assess the importance of different changes]	-	-	[Determine importance to stakeholders]	[Establish scope of SROI analysis]
3.1.3	Determine time frame	6	-	[Define measurement plan]	-	-	-	=	[Assess relative importance of different changes] [Decide frequency of data collection]	=	-	-	=
3.1.4	Set measuring responsibilities	7	[Define impact measurement plan]	[Define measurement plan]	[Define planning]	[Develop a monitoring plan]	=	-	[Create data collection plan]	[Monitoring, Evaluation, and Reporting plan]	-	-	-
3.1.5	Identify data sources	5	=	=	=	[Define a data plan]	-	=	-	-	-	-	-
	Conduct daily business activities	1	-	=	-	-	-	-	-	-	-	-	-
	Select impact risk	1	-	-	-	-	-	-	-	-	-	=	-
	Assess impact risk	1	-	-	-	-	-	-	-	-	-	=	-
3.2	Define indicators	11	=	[Select indicators]	[Define indicator(s) for the selected effects and/or conditions]	<	[Develop a monitoring plan]	=	=	=	=	[Select indicators for the Data Collection Plan]	[Develop outcome indicators]
	Prioritize indicators	1	-	-	-	-	-	-	-	-	-	-	-
	Retrieve Core Metrics Set	1	-	-	-	-	-	-	-	-	-	-	-
	Train enumerators	1	-	-	-	-	-	-	-	-	-	-	-
	Apply survey questionnaire	1	-	-	-	-	-	-	-	-	-	-	-
	Prepare Monitoring and Evaluation Report	1	-	-	-	-	-	-	-	-	-	-	-
	Submit Monitoring and Evaluation Report	1	-	-	-	-	-	-	-	-	-	-	-
	Select output indicators	4	[Define indicators for impact]	-	-	-	=	=	-	-	-	=	-
	Select outcome indicators	5	[Define indicators for impact]	-	-	-	=	=	-	-	-	=	=
	Fill in indicator table	1	-	-	-	-	-	-	-	-	-	=	=
3.3	Assign target values to indicators	6	-	-	[Monitor impact]	[Analyse the data]	-	=	[Set targets and forecast]	=	-	[Determine indicator threshold]	-

Figure 78: SIA method activity comparison 3/5

II	Activity of the supermethod	#	IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BCIA	SROI
3.4	Define data collection methods	8	=	[Select data collection method]	[Select data gathering method(s)]	<	[Develop a monitoring plan]	-	[Select data gathering method(s)]	[Monitoring and Evaluation Report]	-	[Review resources and methods that can be used to collect data]	-
3.5	Collect data	11	=	[Measure direct results] [Measure mission-related effects] [Measure other (indirect) effects]	=	=	=	=	=	=	=	[Collect data using KoBo toolbox]	=
	Measure direct results (output)	7	=	=	-	-	-	-	-	-	-	-	[Clarify outputs]
	Measure other (indirect) effects	4	=	=	-	-	-	-	-	-	-	-	-
	Train enumerators	1	-	-	-	-	-	-	-	-	-	-	-
	Establish longevity of outcomes	1	-	-	-	-	-	-	-	-	-	-	-
	Select data analysis method	1	=	-	-	-	-	-	-	-	-	-	-
3.6	Analyse data	10	=	[Analyse and draw conclusions]	-	=	=	=	[Analyse and evaluate results]	=	=	[Determine scale, depth, and duration of impact experience] [Determine indicator value in current period]	=
3.6.1	Prepare and evaluate data	8	[Analyse data]	=	-	[Analyse the data]	[Analyse SPO data]	=	[Analyse and evaluate results]	=	=	-	-
3.6.2	Calculate indicator values	10	[Analyse data]	=	-	[Analyse the data]	=	=	[Analyse and evaluate results]	=	=	[Determine scale, depth, and duration of impact experience]	=
3.6.3	Apply correction mechanisms	10	=	>	[Assess negative effects of intervention]	<	[Analyse the data]	[Consider impact created by SPO] [Verify impact of outcomes]	>	[Compare results with other projects]	[Consider the effects of an organizations activities]	>	[Determine counterfactuals]
	Consider impact of VPO/SI on the SPO	1	-	-	-	-	-	-	-	-	-	-	-
3.7	Draw conclusions	7	[Reflect on results]	[Analyse and draw conclusions]	[Draw conclusions]	[Use data for decision making]	-	-	[Analyse and evaluate results]	-	-	-	[Calculate impact]
	Assign monetary value to outcome	1	-	-	-	-	-	-	-	-	-	-	-
	Prepare measuring instruments	1	-	-	-	-	-	-	-	-	-	-	-
	Define desired outcomes as statements	1	-	-	-	-	=	-	-	-	-	-	-
	Monitoring direct results (Outputs)	5	=	=	-	-	[Output indicators]	=	-	[Develop a Monitoring, Evaluation, and Reporting plan]	-	-	-
	Compare results with other projects	1	-	-	-	-	-	-	-	-	-	-	-
	Define goal of the impact evaluation	2	-	-	=	-	-	-	-	-	-	-	[Articulate a purpose for collecting and monitoring data]
	Classify impact goals	1	-	-	-	-	-	-	-	-	-	-	-
	Classify the enterprise impact	1	-	-	-	-	-	-	-	-	-	-	-
4	Evaluate results and improve	9	=	=	=	=	>	=	=	=	=	=	=
4.1	Create report	9	[Report on impact] [Report on outputs]	[Create report] [Perform external review]	[Define the end users of the report] [Define the goal of the report] [Define how will be reported]	[Reporting]	[Report data findings]	[Report results]	=	-	[Report on data]	-	=
4.2	Share report with target audience	9	[Report on impact] [Report on outputs]	=	=	[Reporting]	[Report data findings]	[Report results]	=	-	[Report on data]	-	=

Figure 79: SIA method activity comparison 4/5

ID	Activity of the supermethod	#	IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BCIA	SROI
4.3	Evaluate outcomes and impact	7	[Define how to improve]	-	[Monitor impact]	[Use a dashboard as overview of the data]	=	[Collect, evaluate, analyze data] [Draw conclusions]	[Evaluate results with targets]	=	-	-	-
4.4	Create improvement plan	9	[Define how to improve]	=	[Determine investments] [Compare investments and impact] [Assess negative effects of interventions] [Make improvements]	[Use data for decision making]	[Decide on actions needed to increase impact]	[Create action steps] [Plan interventions] [Scale project success]	[Decide to stop, change or scale-up]	-	=	-	[Utilize the results]
4.5	Implement improvements	9	[Define how to improve]	=	[Determine investments] [Compare investments and impact] [Assess negative effects of interventions] [Make improvements]	[Use data for decision making]	[Decide on actions needed to increase impact]	=	[Decide to stop, change or scale-up] [Revise targets]	-	[Create Improvement Plan]	-	[Utilize the results]
	Verify SROI Report	1	-	-	-	-	-	-	-	-	-	-	-
	Link impact to SDGs	1	-	-	-	-	-	-	-	-	-	-	-
	Organize learning-focused meetings	1	-	-	-	-	-	-	-	-	-	-	-
	Evaluate SPO monitoring	1	-	-	-	-	-	-	-	-	-	-	-
	Improve robustness of measurement	1	-	-	-	-	-	-	-	-	-	-	-
	Link your impact to Sustainable Development Goals	1	-	-	-	-	-	-	-	-	-	-	-
	Calculate Social Return on Investment	1	-	-	-	-	-	-	-	-	-	-	-
	Project future outcome value	1	-	-	-	-	-	-	-	-	-	-	-
	Calculate net present value (NPV)	1	-	-	-	-	-	-	-	-	-	-	-
	Calculate SROI ratio	1	-	-	-	-	-	-	-	-	-	-	-
	Conduct sensitivity analysis	1	-	-	-	-	-	-	-	-	-	-	-
	Define payback period	1	-	-	-	-	-	-	-	-	-	-	-
	Verification of impact	1	-	-	-	-	-	-	-	-	-	-	-
	Select impact verification technique	1	-	-	-	-	-	-	-	-	-	-	-
	Select value creation measurement method	2	-	-	-	-	-	-	-	[Validate method]	-	-	-
	Verify that assistance of VPO was valued by SPO	1	-	-	-	-	-	-	-	-	-	-	-
	Verify validity of outcomes with stakeholders	1	-	-	-	-	-	-	-	-	-	-	-
	Verify non-financial assistance	1	-	-	-	-	-	-	-	-	-	-	-
	Verify that outcomes meet quantity expectation	1	-	-	-	-	-	-	-	-	-	-	-
	Verify that that timeframe is met	1	-	-	-	-	-	-	-	-	-	-	-
	Submit Verification Report	1	-	-	-	-	-	-	-	-	-	-	-
	Develop an Impact organization oriented culture	1	-	-	-	-	-	-	-	-	-	-	-
	Detect existing culture	1	-	-	-	-	-	-	-	-	-	-	-
	Create involvement and supporting base	1	-	-	-	-	-	-	-	-	-	-	-
	Embedding in organization	2	[Define how to improve]	-	-	-	-	-	-	-	-	-	-
	Anchor impact oriented culture	2	[Define how to improve]	-	-	-	-	-	-	-	-	-	-
	W+ Certification	1	-	-	-	-	-	-	-	-	-	-	-
	Submit Certification Statement to WOCAN	1	-	-	-	-	-	-	-	-	-	-	-
	Review Verification Report and Certification Statement	1	-	-	-	-	-	-	-	-	-	-	-
	W+ Unit issuance	1	-	-	-	-	-	-	-	-	-	-	-
	Issue W+ Units	1	-	-	-	-	-	-	-	-	-	-	-
	List W+ units on website registry	1	-	-	-	-	-	-	-	-	-	-	-
	Pay direct shares to targeted women's groups	1	-	-	-	-	-	-	-	-	-	-	-

Figure 80: SIA method activity comparison 5/5

Concept Name	# included	IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BCIA	SROI
Planning for impact												
ORGANISATION	6	=	=	=	=	-	-	=	-	-	-	=
STAKEHOLDER GROUP	10	=	=	=	=	=	=	=	=	STAKEHOLDER TYPE	STAKEHOLDER TYPE	=
TARGET GROUP	4	-	=	-	-	-	=	-	-	-	-	-
STAKEHOLDER	11	=	=	=	=	=	=	=	=	=	=	=
ENGAGEMENT PLAN	2	-	=	-	-	-	-	-	-	-	-	INVOLVEMENT METHOD
SUSTAINABLE DEVELOPMENT GOAL	3	-	-	-	-	-	-	-	-	-	-	-
IMPACT CATEGORY	1	-	-	-	-	-	-	-	-	-	-	-
IMPACT THEME	1	-	-	-	-	-	-	-	-	-	-	-
DELIVERY MODEL	1	-	-	-	-	-	-	-	-	-	-	-
SOCIAL PROBLEM	8	BIG ISSUE	=	ISSUES	=	=	=	=	-	-	PROBLEM/OPPORTUNITY	-
CAUSE	1	-	-	-	-	-	=	-	-	-	-	-
EFFECT	1	-	-	-	-	-	=	-	-	-	-	-
PROBLEM TREE	2	-	-	-	-	-	-	PROBLEM TREE	-	-	-	-
IMPACT GOAL	11	=	=	GOALS	=	GOAL STATEMENT	OBJECTIVE	=	OBJECTIVE	STRATEGIC GOAL	=	OBJECTIVE
OBJECTIVE	1	-	-	-	-	-	-	-	-	-	-	-
PLANNING REPORT	1	-	-	-	-	=	-	-	-	-	-	-
ANALYSIS GOAL	1	-	-	-	-	-	=	-	-	-	-	-
NEED	3	=	-	-	=	-	-	-	-	-	-	-
PROJECT OUTLINE	2	-	-	-	-	-	-	-	W+ PROJECT	-	-	-
SOLUTION TREE	2	-	-	-	-	-	SOLUTION TREE	OBJECTIVE TREE	-	-	-	-
SOLUTION	3	=	=	-	=	-	-	-	-	-	-	-
TARGET	1	-	-	-	-	-	-	-	-	-	=	-
IMPACT PLAN	1	-	-	-	-	-	-	=	-	-	-	-
OPERATIONS PLAN	1	-	-	-	-	-	-	=	-	-	-	-
OUTCOME MAP	1	-	-	-	-	-	-	-	-	-	-	-
SOURCE	1	-	-	-	-	-	=	-	-	-	-	-
SROI ANALYSIS	1	-	-	-	-	-	-	-	-	-	-	-
BOUNDARY	1	-	-	-	-	-	-	-	-	-	-	=
Development and validation of Theory of Change												
INTERVENTION	2	-	-	=	-	-	=	-	-	-	-	-
THEORY OF CHANGE	10	=	=	=	=	=	LOGIC MODEL	=	LOGIC CHAIN	-	IMPACT VALUE CHAIN	IMPACT MAP
INPUT	8	=	=	-	=	=	=	-	-	-	INPUT/ACTIVITY	INPUT/ACTIVITY
ACTIVITY	10	=	=	=	=	=	=	=	=	-	INPUT/ACTIVITY	=
OUTPUT	10	=	=	=	=	=	=	=	=	-	-	=
OUTCOME	11	=	EFFECT	=	=	=	=	=	=	=	=	=
EVIDENCE	1	-	-	-	-	-	-	-	-	-	-	-
EXPECTED OUTCOME	1	-	-	-	-	-	-	-	-	-	-	-
DESIRED OUTCOME	1	-	-	-	-	-	-	-	-	-	-	-
IMPACT	10	=	=	LONG TERM OUTCOMES	=	SOCIAL IMPACT	=	IMPACT GOAL	END OUTCOME	-	IMPACT GOAL	=
ASSUMPTION	6	=	-	CONDITIONS	=	-	-	=	PRIOR CONDITION	-	-	-
CONTEXTUAL FACTOR	3	=	-	-	-	-	-	-	-	-	RISK	-
ATTRIBUTION	5	=	-	-	=	-	-	-	-	-	-	=

Figure 81: SIA method concept comparison 1/2

Concept Name	# included	IP	MYIM	IWD	IWR	EVPA	SIN	MYIG	W+	IRIS+	BCIA	SROI
DEADWEIGHT	5	-	-	-	=	=	-	COUNTERFACTUAL	-	-	=	=
DROP OFF	4	=	-	-	=	=	-	-	-	-	-	=
DISPLACEMENT	4	=	-	-	=	=	-	-	-	-	-	=
OUTPUT REPORT	1	=	-	-	-	-	-	-	-	-	-	-
Measuring impact												
MEASUREMENT PLAN	9	=	=	PLANNING EVALUATION GOAL EVALUATION QUESTIONS	MONITORING PLAN DATA PLAN	IMPACT ANALYSIS OUTLINE	DATA COLLECTION PLAN IMPACT ANALYSIS OUTLINE	DATA COLLECTION PLAN	MONITORING PLAN	-	DATA COLLECTION PLAN DECISION-MAKING AREA	-
CORE METRIC SET	1	-	-	-	-	-	-	-	-	=	-	-
IRIS METRIC	1	-	-	-	-	-	-	-	-	=	-	-
USAGE GUIDANCE	1	-	-	-	-	-	-	-	-	=	-	-
KEY INSIGHT	1	-	-	-	-	-	-	-	-	=	-	-
INDICATOR	11	=	=	=	=	=	=	=	=	=	=	=
DIRECT INDICATOR	10	=	=	=	=	=	=	=	=	=	=	=
INDIRECT INDICATOR	10	=	=	=	=	=	=	=	=	=	=	=
OUTPUT INDICATOR	1	-	-	-	-	-	-	-	-	-	-	-
OUTCOME INDICATOR	1	-	-	-	-	-	-	-	-	-	-	-
IMPACT DIMENSION	1	-	-	-	-	-	-	-	-	=	-	-
KEY QUESTION	1	-	-	-	-	-	-	-	-	=	-	-
DATA CATEGORY	1	-	-	-	-	-	-	-	-	=	-	-
DATA	10	=	=	=	=	SPO IMPACT DATA	=	=	=	=	=	=
INDICATOR VALUE	11	=	=	=	=	=	=	=	=	=	GOAL DATA	=
TARGET VALUE	5	-	-	-	DATA ANALYSIS PLAN	-	=	=	=	-	=	-
DATA ANALYSIS METHOD	2	=	-	-	DATA ANALYSIS PLAN	-	-	-	-	-	-	-
DATA COLLECTION METHOD	10	=	=	DATA GATHERING METHOD	=	-	=	DATA COLLECTION METHODS	=	=	DATA COLLECTION CHECKLIST	=
CONCLUSION	6	MEETING REPORT	=	INTERNAL REPORT	-	-	=	EVALUATION REPORT	W- RESULT	-	-	-
Improving impact												
IMPACT REPORT	9	END PRODUCT	=	IMPACT REPORT	IMPACT REPORT	IMPACT REPORT	FINAL PROJECT REPORT	IMPACT REPORT	-	=	-	SROI REPORT
VERIFICATION REPORT	2	-	-	-	-	VERIFICATION OUTLINE	-	-	-	-	-	-
IMPACT VERIFICATION TECHNIQUE	2	-	-	-	-	=	-	-	METHOD VALIDATION METHOD	-	-	-
VALUE CREATION MEASUREMENT METHOD	1	-	-	-	-	-	-	-	-	-	-	-
EVALUATION REPORT	7	=	=	PERFORMANCE REPORT	=	=	EVALUATION OUTLINE	=	=	=	=	ASSURANCE
COMPARISON METHOD	1	-	-	-	-	-	-	-	-	-	-	-
IMPROVEMENT PLAN	8	EVALUATION REPORT	=	PERFORMANCE REPORT	INTERNAL REPORT	-	=	RECOMMENDATION REPORT	-	=	-	=
IMPROVEMENT DASHBOARD	4	EVALUATION REPORT	=	-	-	-	ACTION	-	-	=	-	-
DASHBOARD	1	-	-	-	=	-	-	-	-	-	-	-
Other												
PROXY	1	-	-	-	-	-	-	-	-	-	-	=
MONETISATION METHOD	1	-	-	-	-	-	-	-	-	-	-	=
NET PRESENT VALUE	1	-	-	-	-	-	-	-	-	-	-	=
SROI RATIO	1	-	-	-	-	-	-	-	-	-	-	=
SENSITIVITY	1	-	-	-	-	-	-	-	-	-	-	=

Figure 82: SIA method concept comparison 2/2

Q Screenshots of openESEA tool

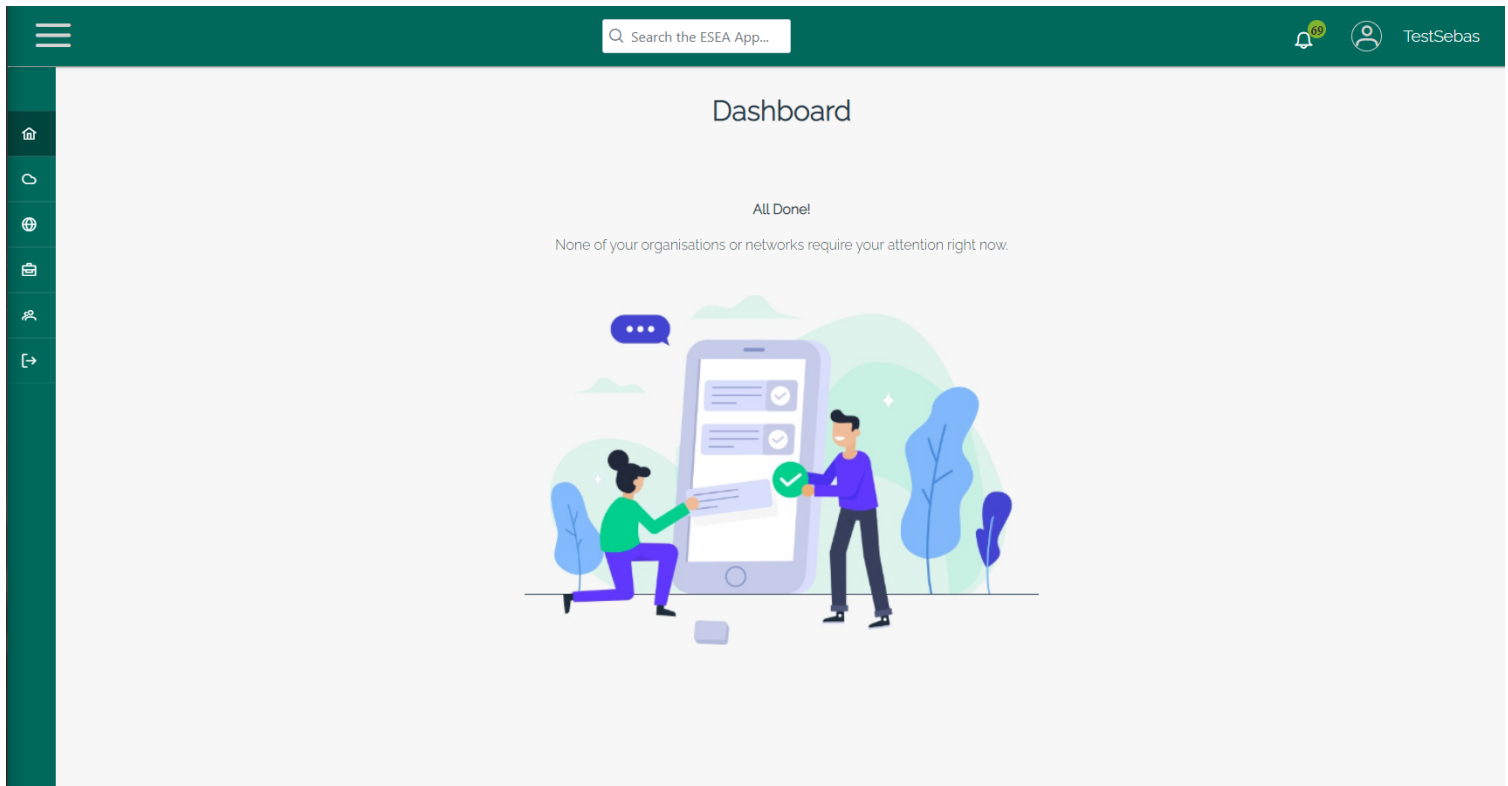


Figure 83: Screenshot of the openESEA Dashboard

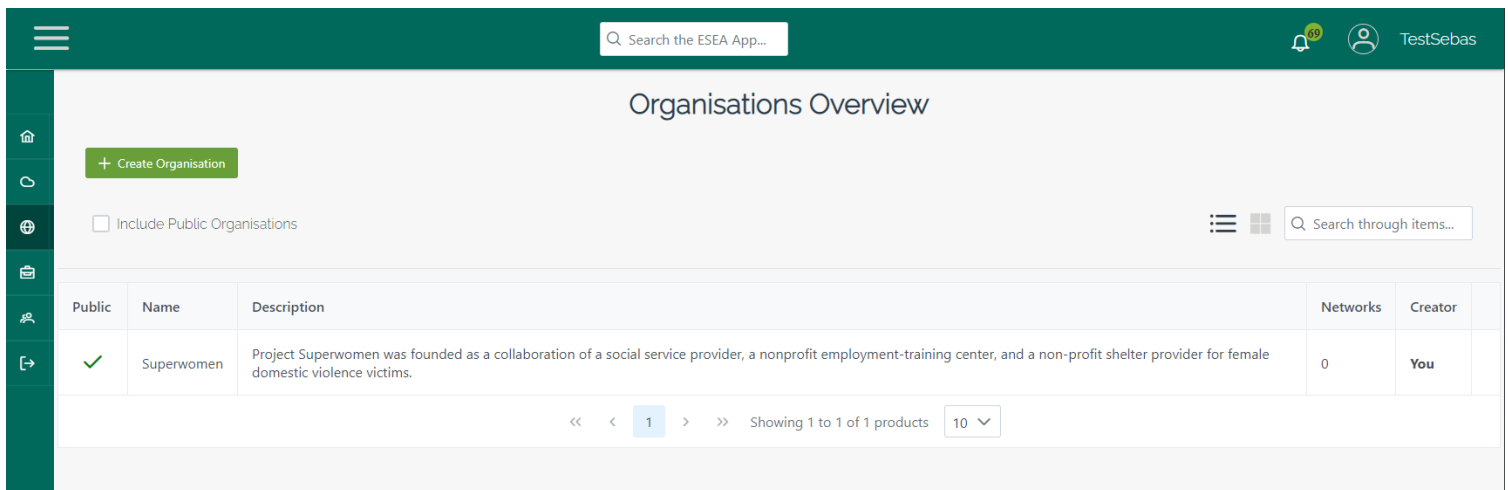


Figure 84: Screenshot of the overview of the organisations

The screenshot shows the user interface for an openESEA method specification. At the top, there is a search bar and a user profile for 'TestSebas'. The main title is 'Superwomen ToC'. Below the title, it indicates 'Public', 'Version: 1', 'Surveys: 1', and 'Created by: TestSebas'. There are tabs for 'Surveys' and 'Topics', and a 'Download as PDF' button. The 'Survey for Superwomen ToC' section lists the following details:

- Name:** Survey for Superwomen ToC
- Description:**
- Stakeholdergroup:** anyone
- Required Responserate:** 10000%
- Response Type:** single
- Anonymous:**
- Welcome Message:** Hi there.

Below this, there are sections for 'Sections', 'Indicators', and 'Questions'. The 'Questions' section displays a question: 'How many participants have graduated the program?'. The question details are as follows:

- Description:** --
- Instruction:** --
- UI Component:** "field"
- Indicator:**

Under the indicator, there is a table with the following entries:

Name:	"Program graduation"
Description:	"How many participants have graduated the program?"

Figure 85: Screenshot of the overview of an openESEA method specification

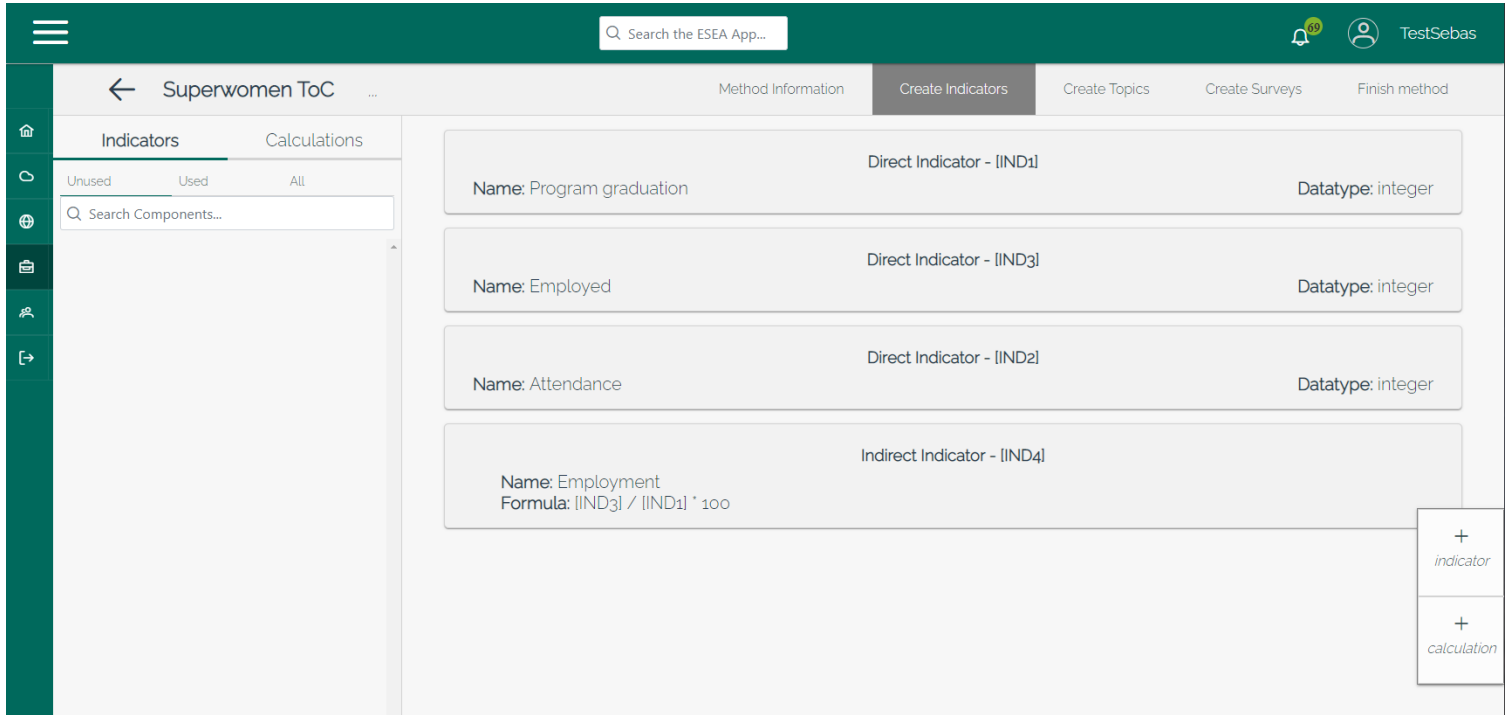


Figure 86: Screenshot of the wizard to create indicators

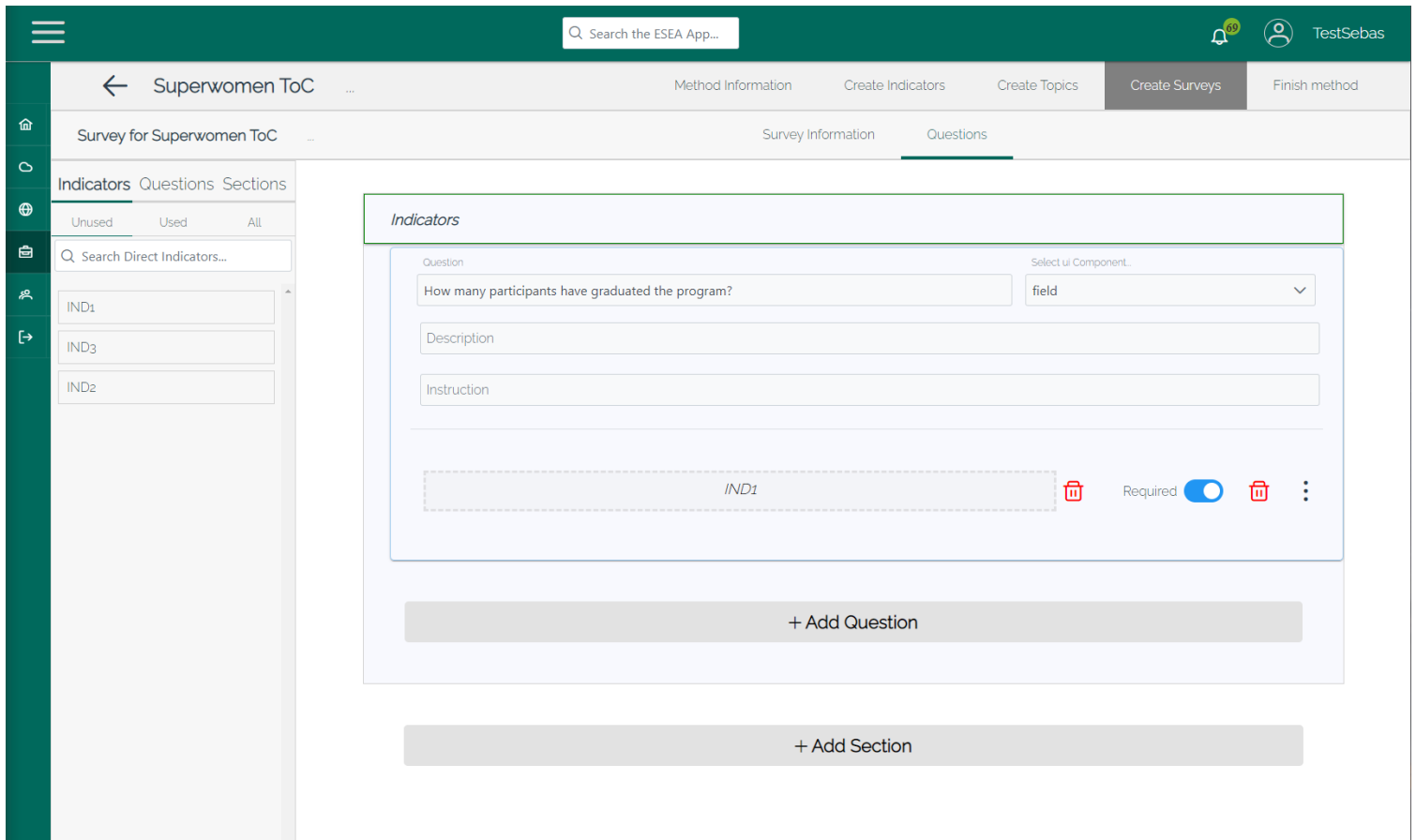


Figure 87: Screenshot of the wizard to create surveys

S Full comparison of openESEA meta-model

Concept of Impact Path	Current by support	Comment	Rationale	openESEA CONCEPTS																			
				ESMA METHOD	ESMA ACCOUNT	ORGANISATION	NETWORK	STAKEHOLDER	STAKEHOLDER GROUP	SURVEY	TOPIC	TEXT FRAGMENT	SECTION	INDICATOR	DIRECT INDICATOR	INDIRECT INDICATOR	VALIDATION RULE	QUESTION	SURVEY RESPONSE	QUESTION RESPONSE	CERTIFICATION LEVEL	BEST PRACTICE	CAMPUS
ORGANISATION	0.5	Missing the definition of a mission.	1) Include the possibility to identify a mission. 1) Already included, so no changes needed.			0.5																	
STAKEHOLDER GROUP	1		1) Already included, so no changes needed.																				
STAKEHOLDER	1		1) Already included, so no changes needed.				1																
IMPACT GOAL	0	Impact goals are essential for SA.	1) Impact goals are essential for SA.																				
SOCIAL PROBLEM	0.5	Topics can have multiple social problems and vice versa.	1) A Social Problem can be a kind of a Topic, which is already included. So we only need to be able to define that a Topic is a Social Problem. This is not something the tool can assist, as it's just a description of existing tool already exist. This result only be helpful for context.								0.5												
SOLUTION	0	The needs of stakeholders with regards to the problem is essential for the understanding of what is required in a plan.	1) This is not something the tool can assist, as it's just a description of existing tool already exist. This result only be helpful for context.																				
NEED	0	The needs of stakeholders with regards to the problem is essential for the understanding of what is required in a plan.	1) This is not something the tool can assist, as it's just a description of existing tool already exist. This result only be helpful for context.																				
THEORY OF CHANGE	0	Essential for SA.	1) Essential for SA.																				
INPUT	0	Component of TIC.	1) Component of TIC.																				
ACTIVITY	0	Component of TIC.	1) Component of TIC.																				
OUTPUT	0	Component of TIC.	1) Component of TIC.																				
OUTCOME	0	Component of TIC.	1) Component of TIC.																				
IMPACT	0	Component of TIC.	1) Component of TIC.																				
ASSUMPTION	0	Assumptions are merely a text field describing the conditions that are needed to achieve the desired impact.	1) Assumptions are merely a text field describing the conditions that are needed to achieve the desired impact.																				
CONTEXTUAL FACTOR	0	A text field explaining the external factors that can affect your approach.	1) A text field explaining the external factors that can affect your approach.																				
OUTPUT REPORT	1	This is a collection of the values of output indicators.	1) Add concept for this in metadata, essential for users that only measure their outputs. A measurement plan itself is a collection of components regarding the measurement. A concept is not needed by the tool but it actually creates a measurement plan report, but other help the user to connect to measurement plan.										1		1								
MEASUREMENT PLAN	0.5	Campaign dates not fully function as a measurement plan, but measurement plan is the collection of all measuring concepts.	1) A measurement plan itself is a collection of components regarding the measurement. A concept is not needed by the tool but it actually creates a measurement plan report, but other help the user to connect to measurement plan.																				0.5
INDICATOR	1		1) Already included, so no changes needed.										1										
DIRECT INDICATOR	1		1) Already included, so no changes needed.											1									
INDIRECT INDICATOR	0	The question response represents a direct indicator value.	1) Already included, so no changes needed.												1								
INDICATOR VALUE	0		1) Already included, so no changes needed.																				
DATA ANALYSIS METHOD	0		0) This is something that being done outside of the tool. 1) There needs to be defined for the direct indicators, and are part of the measurement plan.																				
DATA COLLECTION METHOD	0	Only surveys are supported.	1) Only surveys are supported. 0) Storing the data where indicator values are collected will not be necessary.																				
DATA	0		1) Storing the data where indicator values are collected will not be necessary.																				
ATTRIBUTION	0		1) Important to establish real impact.																				
DISPLACEMENT	0		1) Important to establish real impact.																				
DROP OFF	0		1) Important to establish real impact.																				
MEETING REPORT	0		0) This is just a report based on a meeting where there is reflection on the results, not something the tool assist produce. 1) In SA, its important to reflect on your results, so you can identify improvements for future measurements.																				
EVALUATION REPORT	0		1) This is already included, but the concept does not exist yet.																				
END PRODUCT	0.5	There is a report activity, but not a report concept, as we do not really store a database entry for each report. It is created dynamically.	1) This is already included, but the concept does not exist yet.																				

Figure 89: Tabular comparison of Impact Path concepts against openESEA concepts

Activity of Impact Path	Support	Comment	Rationale	openESEA ACTIVITIES																			
				Create measure	Add numbers	Create method name	Define size of topics	Define data/indicators	Define indirect indicators	Link indicators to topics	Define survey name and description	Assign stakeholder group	Define question	Link questions to indirect indicators	Connect method to measure	All users to stakeholder group	Create account	Select frequency	Select not stakeholder survey	Answer optional survey	Save data	Create infographic	Create report
Consult with stakeholders	0	Not an activity the tool can help with.	1) Not an activity the tool can help with. The addition of a Social Problem is essential for SA. The same is required and it's included in the 1) Topic concept.																				
Analysis of the problem	0.5	None can have multiple social problems and vice versa.	1) The concept is included, but this is a manual activity and can be added as a disclaimer to the user of the tool. It's essential to thoroughly understand the social problem in SA, so this is 1) important.																				
Analysis of the solutions	0		1) This is a new concept, the activity is important to include (Theory of Change).																				
Define impact goals	0		1) This is already included, so no changes needed.																				
Develop Theory of Change	0		1) This is already included, so no changes needed.																				
Identify stakeholder groups	1		1) This is already included, so no changes needed.																				
Engage stakeholders	0.5		1) This is a manual activity and will be added as a disclaimer to the user of the tool. It's not an activity that the tool will support.																				
Elaborate Theory of Change	0		1) This is already included in the Develop Theory of Change activity.																				
Validate Theory of Change	0		1) This is a manual activity and will be added as a disclaimer to the user of the tool. It's not an activity that the tool will support.																				
Monitor direct results (outputs)	0.5	Data can be collected, but the concept of outputs is not well included.	1) Essential for the Impact Path and it's related to a new concept (Output). Essential for the Impact Path and it's related to a new concept (Output report).																				
Report on outputs	1	Reporting exists, but not yet specifically for outputs.	1) Essential for the Impact Path and it's related to a new concept (Output report).																				
Selecting effects and target groups	0.5	Need to also select the outcomes for the stakeholders, prioritized based on relevance to the goals.	1) Component of an Impact Measurement plan and a new concept (Target group). This is essential to ensure, as it represents the specification of a plan of measurement, which makes the use in conducting SA.																				
Define impact measurement plan	0		1) This is already included, so no changes needed.																				
Define indicators for impact	1		1) This is already included, so no changes needed.																				
Define data collection source(s)	0.5	Only this activity means that the users in stakeholder group will be the one with the collecting data here.	1) Component of an Impact Measurement plan, result is a description of data sources.																				
Define data collection methods	0	Only surveys are survey.	1) Part of the measurement plan and needed for the 1) new concept (Data collection method).																				
Collect the data	0.5	The collection of data of surveys is included, but not for other data collection methods (e.g. interviews/focus group/discussion studies).	1) For surveys, the data is automatically collected and stored. For other data collection methods, the 1) will be a manual activity.																				
Select data analysis method	0	External or internal analysis.	0) The concept (Data analysis method) for this activity is excluded. The correct data activity concerns the automatic or manual flow of data based on your questions, as it is a manual activity that is based on the tool. The calculation is an implicit activity done by the tool.																				
Analys data	0	Data that is entered into the tool is by default already processed and calculated. Indicator results are already calculated by the tool based on the collected data.	1) Activity which applies the four correction mechanisms concepts (Distorsion, offset, attribution, displacement). 0) The calculation (Meaning report) for this activity is 0) excluded.																				
Apply correction mechanisms	0		1) This is already included, so no changes needed.																				
Reflect on results	0		1) This is already included, so no changes needed.																				
Report on impact	1		1) This is already included, so no changes needed.																				
Define how to improve	0		1) This is a new concept, the activity is important to include (improvement plan). 0) Already included, its another name related to the measurement.																				
Improve robustness of measurement	1	Perform measurement again, already possible when the previous activities are possible.	1) This is already included, its another name related to the measurement.																				

Figure 90: Tabular comparison of Impact Path activities against openESEA activities

Concept of Generic Model	Support level	Comment	M	Rationale	EMM METHOD	EMM ACCOUNT	ORGANIZATION	NETWORK	STAKEHOLDER	STAKEHOLDER GROUP	SURVEY	TOPIC	TEXT FRAGMENT	SECTION	INDICATOR	DIRECT INDICATOR	INDIRECT INDICATOR	VALIDATION RULE	QUESTION	SURVEY RESPONSE	QUESTION RESPONSE	CERTIFICATION LEVEL	BEST PRACTICE	CAMPAIGN
ORGANISATION	0.5	Missing the definition of a mission.	1	1. Includes the possibility to identify a mission. 2. Already included, so no changes needed.		0.5																		
STAKEHOLDER GROUP	1	No generalisation exists for a stakeholder group to be a target group.	1	1. Needs to be able to include which stakeholder group is a target group. 2. Already included, so no changes needed.						1														
TARGET GROUP	0.5	Needs can have multiple social problems and vice versa.	1	1. A Social Problem can be a child of a topic which is already included. So we have the entire box for this as well, there's no need to create functionality for this. 2. This can be created from the problem tree, so once the problem tree is set, this is not something the box can assist as it's just a description of existence that.						0.5														
STAKEHOLDER	1		1	1. Already included, so no changes needed.					1															
SOCIAL PROBLEM	0.5		1	1. A Social Problem can be a child of a topic which is already included. So we have the entire box for this as well, there's no need to create functionality for this.							0.5													
PROBLEM TREE	0		0	0																				
IMPACT GOAL	0		1	1. Impact goals are essential for BIA.																				
NEED	0		1	1. The needs of stakeholders with regards to the problem is essential for the problem.																				
SOLUTION TREE	0		0	0																				
SOLUTION	0		0	0																				
THEORY OF CHANGE	0		1	1. Essential for BIA.																				
INPUT	0		1	1. Component of TFC.																				
ACTIVITY	0		1	1. Component of TFC.																				
OUTPUT	0		1	1. Component of TFC.																				
OUTCOME	0		1	1. Component of TFC.																				
IMPACT	0		1	1. Component of TFC.																				
ASSUMPTION	0		1	1. Assumptions are things a best fact depending on conditions that are needed to achieve the desired impact.																				
CONTEXTUAL FACTOR	0		1	1. A best fact capturing the external factors that can affect their operations.																				
ATTRIBUTION	0		1	1. Important to establish real impact.																				
DEADWEIGHT	0		1	1. Important to establish real impact.																				
DROFF	0		1	1. Important to establish real impact.																				
DISPLACEMENT	0		1	1. Important to establish real impact.																				
MEASUREMENT PLAN	0.5	Campaign does not fully function as a direct indicator value.	1	1. A measurement plan that is a collection of already included, so no changes needed. 2. Already included, so no changes needed.																			0.5	
INDICATOR	1		1	1. Already included, so no changes needed.											1									
DIRECT INDICATOR	1		1	1. Already included, so no changes needed.											1									
INDIRECT INDICATOR	1		1	1. Already included, so no changes needed.												1								
DATA	0		1	1. Storing the data where indicator values are collected will not be necessary.																				
INDICATOR VALUE	1	This question response represents a direct indicator value.	1	1. Already included as Question Response, so no changes needed.																				
TARGET VALUE	1		1	1. Should become part of an indicator.																				
DATA COLLECTION METHOD	0	Only surveys are supported.	1	1. These need to be defined for the direct indicators, and any part of the measurement plan. 2. These are simple best facts that are needed for the Evaluation Report. The box will not be used for this as well, there's no need to create functionality for this.																				
CONCLUSION	0		1	1. This is already included, but the concept does not exist yet.																				
IMPACT REPORT	0.5	There is a report activity, but not a report concept, so we do not really have a campaign when we work.	1	1. This is already included, but the concept does not exist yet.																				
EVALUATION REPORT	0		1	1. This is already included, but the concept does not exist yet.																				
IMPROVEMENT PLAN	0		1	1. These are a part of an Evaluation Report.																				
IMPROVEMENT	0		1	1. These are a part of an Improvement Plan.																				

Figure 91: Tabular comparison of Generic Model concepts against openESEA concepts

Activity of Generic Model	Support level	Comment	M	Rationale	Create mission	Add missions	Create mission name	Define tree of topics	Define direct indicators	Define indirect indicators	Link indicators to topics	Define survey name and description	Assign stakeholder group	Define question	Link questions to direct indicators	Custom methods to network	Add survey to stakeholder group	Create account	Select (main) topic	Send out stakeholder survey	Answer general survey	Save data	Create infographic	Create report
Defining the mission of the organization	0.5	Organizations can be added, but a mission can't be defined.	1	1. This activity is impact and already handled by using an attribute to the Organization concept.		0.5																		
Analyze social problem or issue	0.5	Topics can have multiple social problems and vice versa.	1	1. The definition of Social Problem is essential for BIA. This activity is needed and its reflection in the box is already included, but the concept does not exist yet. 2. This is a manual activity and will be added as a manual activity in the box. It's not an indicator for this use of the box. It's not an indicator for this use of the box. It's not an indicator for this use of the box.				0.5																
Consult with stakeholders	0		0	0																				
Create problem tree	0		0	0																				
Investigate solutions	0		0	0																				
Identify impact goals	0		1	1. This is already included, but the concept does not exist yet.																				
Create solution tree	0		0	0																				
Conduct stakeholder analysis	1	Not an analysis, but stakeholders are being identified by adding them to the model.	1	1. This is already included, so no changes needed.									0.5											
Engage stakeholders	0.5		1	1. This is a manual activity and will be added as a manual activity in the box. It's not an indicator for BIA and a new concept (Theory of Change).																	0.5		0.5	
Develop Theory of Change	0		1	1. Essential for BIA and a new concept (Theory of Change).																				
Define resources	0		1	1. Component of TFC (Input).																				
Define activities	0		1	1. Component of TFC (Activities).																				
Define expected outcomes	0		1	1. Component of TFC (Outcomes).																				
Validate Theory of Change	0		1	1. Component of TFC (Assumptions).																				
Define impact measurement plan	0		1	1. This is a manual activity and will be added as a manual activity in the box. It's not an indicator for BIA and a new concept (Theory of Change).																				
Selecting impact and target groups	0.5	Need to also select the subtopics for the stakeholders, probably based on relevance to the	1	1. Component of an Impact Measurement plan and a new concept (Target group).									0.5											
Establishing measurement priorities	0		1	1. Component of an Impact Measurement plan and a new concept (Priority on Outcomes).																				
Determine time frame	0		1	1. Component of the Impact Measurement plan, results in a description of when the measurement will take place.																				
Set measuring responsibilities	0		1	1. Component of an Impact Measurement plan, results in a description of measurement responsibilities.																				
Identify data sources	0.5	Only if this activity means that the users in stakeholder group will be the one who collecting	1	1. Component of an Impact Measurement plan, results in a description of data sources.													0.5							
Define indicators	1		1	1. This is already included, so no changes needed.				1	1															
Assign target values to indicators	0		1	1. An indicator can get a target value.																				
Define data collection methods	0	Only includes a survey	1	1. Part of the measurement plan and needed for the box concept (Data collection method).																				
Collect data	0.5	The collection of data of surveys is included, but not from group data collection methods (e.g. surveys)	1	1. For surveys, the data is automatically collected and saved. For other data collection methods, the data is manually collected and saved.																				
Analyse data	0	Data that is entered into the box is by default already processed and analyzed.	1	1. The collected data activity concerns the automatic or manual input of data based on your indicators, so this activity is impact, so the direct indicators get their value from the collected data activity and the																				
Calculate indicator values	0.5	Indicator values are already calculated by the box based on the collected data.	1	1. Activity which applies the four connection mechanism concepts (Cause-effect, group, etc.).																				
Apply correction mechanisms	0		1	1. This is a new concept, the activity is important to include. (Correction)																				
Draw conclusions	0		1	1. This is already included, so no changes needed.																				
Create report	1		1	1. This is already included, so no changes needed.																				
Share report with target audience	1		1	1. This is already included, so no changes needed.																				
Evaluate outcomes and impact	0		1	1. This is a new concept, the activity is important to include. (Evaluation report)																				
Create improvement plan	0		1	1. This is a new concept, the activity is important to include. (Improvement plan)																				
Implement improvements	0		1	1. This is a new concept, the activity is important to include. (Improvement)																				

Figure 92: Tabular comparison of Generic model activities against openESEA activities

T Epics and User Stories for SIA extension openESEA

ID	Description	Explanation	Type	Activity	Concept	Role
US-O-0	Organisation	The organisation is the entity that is adopting the Epic				
US-O-13	to be able to identify the mission of my organisation	The tool should allow the specification of a mission User story			Organisation	IM
US-O-14	to be able to identify the target groups of my impact assessment	The tool should allow to indicate which stakeholder User story		Selecting impact and target groups	Target group	IM
US-O-15	to be able to specify the needs of the stakeholder groups	The tool should allow the description of the need User story			Need	IM
US-O-16	to be able to identify the impact goals of my organisation	The tool should allow the specification of impact User story		Identify impact goals	Impact goal	IM
US-O-17	to be informed that I should consult with my stakeholders	The tool should provide a disclaimer or information User story		Consult with stakeholders		IM
US-SP-0	Social problem	A social problem can be associated to multiple Epic				
US-SP-1	to be able to define the social problem	The tool should allow the specification of the social User story		Analyze social problem or issue	Social problem	IM
US-SP-2	to be able to identify the social problem's causes and effects	The tool should allow the description of the problem User story		Identify problem causes and effects		IM
US-SP-3	to be informed that I should investigate existing solutions	The tool should provide a disclaimer or information User story		Investigate solutions		IM
US-TOC-0	Theory of Change	The Theory of Change describes how an organization				
US-TOC-1	to be able to develop a Theory of Change	The tool should have a way to create and visualize User story		Develop Theory of Change	Theory of Change	IM
US-TOC-2	to be able to describe the inputs needed to carry out my activities	The tool should have a way to insert the resource User story		Define resources	Input	IM
US-TOC-3	to be able to describe the activities I will conduct to achieve impact	The tool should have a way to insert the activities User story		Define activities	Activity	IM
US-TOC-4	to be able to record the outputs of my activities	The tool should have a way to insert the outputs User story		Monitor direct results (outputs)	Output	IM
US-TOC-5	to be able to record the outcomes that result from my outputs	The tool should have a way to insert the outcome User story		Define expected outcomes	Outcome	IM
US-TOC-6	to be able to record the impact that result from my outcomes	The tool should have a way to describe the impact User story			Impact	IM
US-TOC-7	to be able to describe the assumptions that are needed to achieve the desired impact	The tool should provide a disclaimer or information User story		Define conditions	Assumption	IM
US-TOC-8	to be able to describe the external factors that affect my approach	The tool should have a way to describe the external User story			Contextual factor	IM
US-TOC-9	to be informed about the necessity to validate my Theory of Change	The tool should provide a disclaimer or information User story		Validate Theory of Change		IM
US-TOC-10	to be informed that I need to engage my stakeholders	The tool should provide a disclaimer or information User story			Theory of Change	IM
US-TOC-11	to be warned when I miss any of the five Theory of Change elements	The tool should provide a warning message when User story			Theory of Change	IM
US-TOC-12	to be warned when I skip a level of Theory of Change elements when linking the elements	The tool should provide a warning message when User story			Theory of Change	IM
US-TOC-13	to receive an error when I try to link inputs to impacts	The tool should provide an error message when User story			Theory of Change	IM
US-TOC-14	to receive an error whenever a ToC element is not linked to other ToC elements	The tool should provide an error message when User story			Theory of Change	IM
US-TOC-15	to be able to get a validation overview once I finish my Theory of Change	The tool should have a 'Check Theory of Change User story			Theory of Change	IM
US-MP-0	Measurement plan	The measurement plan is a collection of all the impact				
US-MP-1	to be informed that I should create a measurement plan	The tool should provide a disclaimer or information User story		Define impact measurement plan	Measurement plan	IM
US-MP-2	to be able to define indicators for each element of the Theory of Change	The tool should allow the specification of direct User story		Define indicators	Indicator	IM
US-MP-3	to be able to assign a target value to an indicator	The tool should allow the specification of a target User story		Assign target values to indicators	Target value	IM
US-MP-4	to be able to specify the data collection method used to collect data on my direct indicators	The tool should have a way to describe the data User story		Define data collection methods	Data collection method	IM
US-MP-5	to be able to specify the data sources used to collect data	The tool should allow the specification of data sources User story		Identify data sources		IM
US-MP-6	to be able to specify the measurement responsibilities	The tool should allow the description of the measurement User story		Set measuring responsibilities		IM
US-MP-7	to be able to prioritize the identified outcomes	The tool should allow to assign a priority value to User story		Establishing measurement priorities		IM
US-MP-8	to be able to specify the time frame in which the measurement will take place	The tool should allow the specification of the time User story		Determine time frame		IM
US-MP-9	to be able to input my collected data	The tool should allow the input of data for the direct User story		Collect data	Indicator value	IM
US-CM-0	Operations	The operations consist of the four correction mechanisms				
US-CM-1	to be able to apply correction mechanisms to determine my impact	The tool should apply the correction mechanism User story		Apply correction mechanisms		IM
US-CM-2	to be able to assess and correct my outcomes based on attribution	Attribution is an assessment of how much of the User story			Attribution	IM
US-CM-3	to be able to assess and correct my outcomes based on deadweight	Deadweight is a measure of the amount of outcome User story			Deadweight	IM
US-CM-4	to be able to assess and correct my outcomes based on displacement	Displacement is another component of impact a User story			Displacement	IM
US-CM-5	to be able to assess and correct my outcomes based on drop-off	In future years, the amount of outcome is likely to User story			Drop-off	IM
US-CM-6	to receive an error when I try to apply correction mechanisms to non-impact indicators	The tool should provide an error message when User story		Apply correction mechanisms		IM
US-CM-7	to be able to apply monetisation to give a monetised value to my indicators	The tool should allow the description of financial User story			Monetisation	IM
US-R-0	Report	A report contains the results of the impact assessment				
US-R-10	to be able to create a report based on my outputs	An output report is based on the monitoring of the User story		Report on outputs	Output report	IM
US-R-11	to be able to create a report based on my outcomes and impact	An impact report can be shared with the relevant User story		Create report	Impact report	IM
US-ER-0	Evaluation Report	The evaluation report is a report in which the results				
US-ER-1	to be able to create an evaluation report	The tool should allow the creation of an evaluation User story		Evaluate outcomes and impact	Evaluation report	IM
US-ER-2	to be able to describe the conclusions that result from the reflection on my measurement	The tool should have a way to describe the conclusion User story		Draw conclusions	Conclusion	IM
US-ER-3	to be able to create an improvement plan	An improvement plan contains improvements, a User story		Create improvement plan	Improvement plan	IM
US-ER-4	to be able to identify improvements	The tool should have a way to describe improvements User story		Implement improvements	Improvement	IM

Figure 93: All user stories for the SIA extension

V OpenESEA v5 DSL

```
1 grammar org.example.domainmodel.Domainmodel with
2     org.eclipse.xtext.common.Terminals
3
4 generate domainmodel "http://www.example.org/domainmodel/Domainmodel"
5
6 IM_method:
7     'im_method_id:' name=ID
8     'Name:' STRING
9     'Version:' DOUBLE
10    'isPublic:' BOOLEAN
11    'Description:' STRING
12    (list_of_stakeholder_groups+=List_of_stakeholder_groups)?
13    (list_of_topics+=List_of_topics)?
14    (theory_of_change=Theory_of_change)?
15    (list_of_data_collection_methods+=List_of_data_collection_methods)?
16    (list_of_indicators+=List_of_indicators)?
17    (list_of_surveys+=List_of_surveys)?
18    (list_of_certification_levels+=List_of_certification_levels)?
19    (list_of_validation_rules+=List_of_validation_rules)?
20    (registration_survey=Survey)?
21    //Constraint: The registration survey should be single respondent
22 ;
23
24 List_of_topics:
25     // Constraint: 1 and only 1 root topic
26     'Topics:'
27     (topic+=Topic)+
28 ;
29
30 List_of_indicators:
31     'Indicators:'
32     (indicator+=Indicator)+
33 ;
34
35 List_of_surveys:
36     'Surveys:'
37     (survey+=Survey)+
38 ;
39
40 List_of_validation_rules:
41     'Validation_rules:'
42     (validationRule+=ValidationRule)+
43 ;
44
45 List_of_stakeholder_groups:
46     'Stakeholder_groups:'
47     (stakeholder_group+=Stakeholder_group)+
48 ;
49
50 List_of_needs:
51     'Needs:'
52     (need+=Need)+
53 ;
54
55 List_of_assumptions:
56     'Assumptions:'
57     (assumption+=Assumption)+
58 ;
```

```

59
60 List_of_contextual_factors:
61   'Contextual_factors:'
62   (contextual_factor+=Contextual_factor)+
63 ;
64
65 List_of_impact_goals:
66   'Impact_goals:'
67   (impact_goal+=Impact_goal)+
68 ;
69
70 List_of_elements:
71   'Elements:'
72   (element+=Element)+
73 ;
74
75 List_of_parent_elements:
76   'Parent_elements:'
77   (parent_element+=[Element])+
78 ;
79
80 List_of_data_collection_methods:
81   'Data_collection_methods:'
82   (data_collection_method+=Data_collection_method)+
83 ;
84
85 List_of_related_data_collection_methods:
86   'Data_collection_methods:'
87   (data_collection_method+=[Data_collection_method])+
88 ;
89
90 List_of_displacements:
91   'Displacements:'
92   (displacement+=Displacement)+
93 ;
94
95 Theory_of_change:
96   'toc_id:' name=ID
97   'Name:' STRING
98   'Description:' STRING
99   'Date:' STRING
100  'Version:' DOUBLE
101  'isValidated:' BOOLEAN
102  list_of_goals+=List_of_impact_goals
103  (list_of_assumptions+=List_of_assumptions)?
104  (list_of_contextual_factors+=List_of_contextual_factors)?
105  list_of_elements+=List_of_elements
106 ;
107
108 Contextual_factor:
109   'contextual_factor_id:' name=ID
110   'Name:' STRING
111   'Description:' STRING
112 ;
113
114 Assumption:
115   'assumption_id:' name=ID
116   'Name:' STRING
117   'Description:' STRING
118 ;

```

```

119
120 Impact_goal:
121   'impact_goal_id:' name=ID
122   'Name:' STRING
123   'Description:' STRING
124 ;
125
126 Element:
127   'element_id:' name=ID
128   'Name:' STRING
129   'Description:' STRING
130   'Element_type:' element_type=Element_type
131   (list_of_parent_elements=List_of_parent_elements)?
132   // Constraint: An input can not have an impact as a parent element
133   // Constraint: A user should be warned whenever a level of the ToC is skipped, e.g.
134   // from Input to Output skips Activities
135   (list_of_assumption=List_of_assumptions)?
136   (list_of_contextual_factors=List_of_contextual_factors)?
137 ;
138 Element_type:
139   input=Input | activity=Activity | output=Output | outcome=Outcome | impact=Impact
140 ;
141
142 Input:
143   input='Input'
144 ;
145
146 Activity:
147   activity='Activity'
148 ;
149
150 Output:
151   output='Output'
152 ;
153
154 Outcome:
155   outcome='Outcome'
156   ('Priority:' INT)?
157 ;
158
159 Impact:
160   impact='Impact'
161 ;
162
163 Stakeholder_group:
164   'stakeholder_group_id:' name=ID
165   'Name:' STRING
166   'isTargetGroup:' BOOLEAN
167   (list_of_needs=List_of_needs)?
168 ;
169
170 Need:
171   'need_id:' name=ID
172   'Name:' STRING
173   'Description:' STRING
174 ;
175
176 Topic:
177   'topic_id:' name=ID

```



```

178 'Name:' STRING
179 'Description:' STRING
180 'isSocialProblem:' BOOLEAN
181 ('Parent_topic:' linkParentTopic=[Topic])?
182 // Constraint: avoid cycles
183 ;
184
185 Indicator:
186 'Indicator_id:' name=ID
187 'Name:' STRING
188 'Description:' STRING
189 ('PreUnit:' STRING)?
190 ('PostUnit:' STRING)?
191 ('Topic:' linkTopic=[Topic])?
192 ('Element:' linkElement=[Element|FQN])?
193 'Indicator_type:' indicator_type=Indicator_type
194 'DataType:' datatype=Datatype
195 // Constraint: only direct indicators can have datatype list
196 ('TargetValue:' STRING)?
197 ('Deadweight:' deadweight=Deadweight)?
198 ('Attribution:' attribution=Attribution)?
199 ('Drop_off:' drop_off=Drop_off)?
200 (list_of_displacements=List_of_displacements)?
201 // Constraint: The correction mechanisms (deadweight, attribution, drop_off,
202 displacement) can only be applied to impact indicators
203 ('Monetisation:' monetisation=Monetisation)?
204 // Constraint: If an indicator has a formula (indirect indicator), this is applied
205 before the monetisation.
206 ;
207
208 Drop_off:
209 'Drop_off_id:' name=ID
210 'Description:' STRING
211 ;
212
213 Attribution:
214 'Attribution_id:' name=ID
215 'Description:' STRING
216 ;
217
218 Deadweight:
219 'Deadweight_id:' name=ID
220 'Description:' STRING
221 ;
222
223 Displacement:
224 'Displacement_id:' name=ID
225 'Description:' STRING
226 ;
227
228 Monetisation:
229 'Monetisation_id:' name=ID
230 'Description:' STRING
231 ;
232
233 Datatype:
234 text='text' | integer='integer' | double='double' | date='date' | boolean='boolean'
235 | singleChoice=SingleChoice | multipleChoice=MultipleChoice
236 ;

```

```

235 MultipleChoice:
236   'multipleChoice'
237   'Answer_options:'
238   (answer_option+=Answer_option)+
239 ;
240
241 SingleChoice:
242   'singleChoice'
243   'Answer_options:'
244   (answer_option+=Answer_option)+
245 ;
246
247 Answer_option:
248   'Order:' INT
249   'Text:' STRING
250 ;
251
252 Indicator_type:
253   direct=Direct | indirect=Indirect
254 ;
255
256 Direct:
257   direct='Direct'
258   ('Condition:' expression=Expression)?
259   // Constraint: We should be able to reference answer options
260   (list_of_related_data_collection_methods=List_of_related_data_collection_methods)?
261 ;
262
263 Data_collection_method:
264   'data_collection_method_id:' name=ID
265   'Name:' STRING
266   'Description:' STRING
267 ;
268
269 Indirect:
270   indirect='Indirect'
271   'Formula:' (formula=Formula)
272   ('Type:' indicatorClassification=INDICATORCLASSIFICATION)?
273 ;
274
275 Formula:
276   statement=Statement
277 ;
278
279 UnaryNumeric:
280   unary_numeric_function=UNARY_NUMERIC_FUNCTION
281   '(' expression=Expression ')'
282 ;
283
284 BinaryNumeric:
285   binary_numeric_function=BINARY_NUMERIC_FUNCTION
286   '(' expression1=Expression ',' (INT | STRING) ')'
287 ;
288
289 Statistical:
290   statistical_function=STATISTICAL_FUNCTION
291   '(' '['referenceIndicator=[Indicator]']' ')'
292   //constraint: only direct indicators should be used
293 ;
294

```

```

295 Statement:
296   expression=Expression | if_statement=If_statement
297 ;
298
299 If_statement:
300   'IF' expression=Expression 'THEN' thenStatement=Statement (=>'ELSE' elseStatement=
      Statement)?
301 ;
302
303 Expression:
304   simpleExpressionl=Simple_expression ( '=' | '<>' | '<' | '<=' | '>' | '>=' )
      simpleExpressionr=Simple_expression)?
305 ;
306
307 Simple_expression:
308   term1=Term ((( '+' | '-' ) | 'OR' ) termr=Term)*
309 ;
310
311 Term:
312   factor1=Factor ((( '*' | '/' ) | 'AND' ) factorrr=Factor)*
313 ;
314
315 Factor:
316   base1=Base ( '^' baseer=Base )?
317 ;
318
319 Base:
320   ( '(' expression=Expression ')' | '[' referenceIndicator=[Indicator] ']' | statistic
      =Statistical | unarynumeric=UnaryNumeric | binarynumeric=BinaryNumeric | BOOLEAN
      | STRING | INT | DOUBLE )
321 ;
322 // We should add a constraint so that statistical functions cannot be used in
      conditions of validation rules
323 // In formulas indicators should not reference themselves
324
325
326 Survey:
327   // The optional attributes are only optional for v3
328   'survey_id:' name=ID
329   'Name:' STRING
330   'Description:' STRING
331   'SurveyType:' surveytype+=SURVEYTYPE
332   ('WelcomeTxt:' STRING)?
333   ('ClosingTxt:' STRING)?
334   'MinThreshold:' DOUBLE
335   ('Anonymous:' BOOLEAN)?
336   (list_of_sections+=List_of_sections)
337 ;
338
339 List_of_sections:
340   'Sections:'
341   (section+=Section)+
342 ;
343
344 Section:
345   'section_id:' name=ID
346   'Title:' STRING
347   'Order:' INT
348   (list_of_questions+=List_of_questions)
349 ;

```

```

350
351 List_of_questions:
352   'Questions:'
353   (question+=Question)+
354 ;
355
356 Question:
357   'question_id:' name=ID
358   'Name:' STRING
359   'Description:' STRING
360   'isMandatory:' BOOLEAN
361   'UIComponent:' uicomponent+=UICOMPONENT
362   'Order:' INT
363   'Indicator:' linkIndicator=[Indicator]?
364   // Constraint: questions can only be linked to direct indicators
365   'Instruction:' STRING
366 ;
367
368 List_of_certification_levels:
369   'Certification_levels:'
370   (certification_level+=Certification_level)*
371 ;
372
373 Certification_level:
374   'certification_id:' name=ID
375   'Name:' STRING
376   'Description:' STRING
377   'Level:' DOUBLE
378   'Colour:' STRING
379   list_of_requirements=List_of_requirements
380 ;
381
382 List_of_requirements:
383   'Requirements:'
384   '['referenceRequirement+=[Indicator]'](',') '['referenceRequirement+=[Indicator]']')
385   *
386 ;
387
388 ValidationRule:
389   'Type:' ruletype=RULETYPE
390   'Condition:' expression=Expression
391   'Message:' STRING
392 ;
393 //So far, the validation rules should only be triggered when the user validates the
394 data or submits the survey response. It should only be possible to submit when
395 there are no errors. And when there are warnings someone should confirm that they
396 want to submit the data with the warnings
397
398 enum INDICATORCLASSIFICATION: performance='performance' | score='scoring';
399 enum RULETYPE: warning='warning' | error='error' ;
400 enum UNARY_NUMERIC_FUNCTION: absolute='abs' | int='int' ; //abs explanation: https://
support.google.com/docs/answer/3093459 , int explanation: https://support.google.
com/docs/answer/3093490
401 enum BINARY_NUMERIC_FUNCTION: roundup='roundUp' | rounddown='roundDown' | round='
round' | countif='countIf' ; // Round up explanation: https://support.google.com/
docs/answer/3093443 , round down: https://support.google.com/docs/answer/3093442
, round: https://support.google.com/docs/answer/3093440, countIf: https://support
.google.com/docs/answer/3093480?hl=en-GB
402 enum UICOMPONENT: field='field' | line='line' | textBox='textBox' | checkBox='
checkBox' | dropDown='dropDown' | radioButton='radioButton';

```

```

399 enum STATISTICAL_FUNCTION: minimum='min' | maximum='max' | sum='sum' | mean='avg' |
    mode='mode' | median='median';
400 enum SURVEYTYPE: multi='multi' | single='single' ;
401 //enum PREUNIT: euro=' ' | dollar='$';
402 //enum POSTUNIT: percentage='%' | point='points';
403 terminal BOOLEAN : ('true'|'false');
404 terminal DOUBLE: INT '.' INT;
405
406 // Used for dot-walking in cross-references (Fully-qualified name)
407 FQN: ID ( "." ID)*;

```

Listing 5: Full textual grammar (DSL) of openESEA v5

W Full examples of method specifications using the DSL

W.1 Example of initial method instantiation using Excel

Element <Impact> (Long-term outcome)					
ID	Name	Description	toc		
IMP1	Long-Term Employment at Livable Wage for Domestic Violence Survivors		TOC1		
Element <Outcome>					
ID	Name	Description	Parent elements	Priority	toc
OUT1	Survivors attain coping skills		IMP1	-	TOC1
OUT2	Survivors have marketable skills in non-traditional jobs		IMP1	-	TOC1
OUT3	Survivors know and have appropriate workplace behavior		IMP1	-	TOC1
OUT4	Survivors know how to get help and deal with their issues		OUT1	-	TOC1
OUT5	Women serve internships		OUT2, OUT3	-	TOC1
OUT6	Survivors attend peer-to-peer counseling		OUT4	-	TOC1
OUT7	Counseling and practical support for crises		OUT4	-	TOC1
OUT8	Women attend training about expectations in the workplace		OUT5	-	TOC1
OUT9	Women attend training classes in non-traditional skills		OUT5	-	TOC1
OUT10	Employers are educated as to how to use interns		OUT5	-	TOC1
OUT11	Women enroll in program		OUT6, OUT7, OUT8	-	TOC1
OUT12	Women attain regular child care		OUT11	-	TOC1
OUT13	Women are ready to commit and attend program		OUT11	-	TOC1
OUT14	Women hear about the program		OUT12, OUT13	-	TOC1
Element <Activity>					
ID	Name	Description	outcomes/parent el	toc	
ACT1	Outreach campaign	Clearly, without an outrea	OUT14	TOC1	
ACT2	Screening		OUT11	TOC1	
ACT3	Set up counseling sessions		OUT6	TOC1	
ACT4	Lead group sessions		OUT6	TOC1	
ACT5	Help provide for short-term crises		OUT7	TOC1	
ACT6	1-1 counseling		OUT7	TOC1	
ACT7	Develop curricular for skills		OUT8	TOC1	
ACT8	Conduct classes		OUT8, OUT9	TOC1	
ACT9	Curricula and experiential learning situations developed		OUT9	TOC1	
ACT10	Identify potential employers		OUT10	TOC1	
ACT11	Create employer database		OUT10	TOC1	
ACT12	Match women to internships		OUT5	TOC1	
ACT13	Help women secure permanent jobs		IMP1	TOC1	
Element <Input>					
ID	Name	Description	Parent elements	toc	
INP1	Social service agency		OUT14	TOC1	

Figure 95: Method instantiation using Excel for Superwomen case 1/2

TOC							
ID	Name	Description	Date	Version	isValidated		
TOC1	Supervomen ToC	Project Supervo	August 2021	v1	FALSE		
Impact goal							
ID	Name	Description	toc				
IG1	Help female abuse survivors to create long-term livable wage employment opportunities	Project Supervo	TOC1				
Assumption							
ID	Name	Description	toc	element			
AS1	Training helps	Non-traditional jo	TOC1	-			
AS2	More is required than just job training	Women who hav	TOC1	-			
AS3	Jobs available	There are jobs a	-	IMP1			
AS4	Livable wages	Jobs in non-trad	-	IMP1			
AS5	Emotional readiness	Women who hav	-	OUT1			
AS6	Capabilities	Women can lear	-	OUT2			
AS7	Screening	The program cal	-	OUT11			
Indicators							
ID	Name	Description	Indicator type	Datatype	TargetValue	element	Formula
IND1	Employment	What percentag	Indirect	Real	-	IMP1	IND5 / IND3 * 100
IND2	Skill in electrical, plumbing carpentry or building maintenance	What percentag	Indirect	Real	-	OUT2	IND6 / IND4 * 100
IND3	Program graduation	How many partic	Direct	Real	-	OUT2	-
IND4	Attendance	How many progr	Direct	Real	-	OUT9	-
IND5	Employed	How many have	Direct	Real	-	IMP1	-
IND6	Skills	How many have	Direct	Real	-	OUT2	-

Figure 96: Method instantiation using Excel for Superwomen case 2/2

W.2 Example 1 - Superwomen ToC (TheoryOfChange.org)

```
1 im_method_id:Superwomen
2 Name:"Superwomen Method specification"
3 Version:1.1
4 isPublic:false
5 Description:"Method specification for the superwomen case"
6
7 toc_id:TOC1
8 Name:"Superwomen ToC"
9 Description:"Project Superwomen was founded as a collaboration of a social service
10 provider, a nonprofit employment-training center, and a non-profit shelter
11 provider for female domestic violence victims. The groups goal was to help women
12 obtain a type of employment that would keep them out of poverty, off public
13 assistance while providing stability and upward mobility."
14 Date:"August 2021"
15 Version:1.0
16 isValidated:false
17
18 Impact_goals:
19   impact_goal_id:IG1
20   Name:"Help female abuse survivors to create long-term livable wage employment
21   opportunities"
22   Description:"Project Superwomen is a real program that started as a collaboration
23   between a social service provider, a non-profit employment training center and a
24   domestic violence shelter to help female abuse survivors to create long-term,
25   livable wage employment opportunities for women who had been victims of domestic
26   violence"
27
28 Assumptions:
29   assumption_id:AS1
30   Name:"Training helps"
31   Description:"Non-traditional jobs, such as electrical, plumbing, carpentry,
32   building management provide better wages and more opportunities for upward
33   mobility and are more likely to have unions. Therefore, job stability and good
34   wages are more likely if women are trained in these areas."
35
36   assumption_id:AS2
37   Name:"More is required than just job training"
38   Description:"Women who have been through domestic abuse need more than job
39   training to move to economic stability. They need to develop coping skills,
40   workplace behaviors, and have child care available. They also need to be able to
   manage crises in their lives and such events as court appearances and dealing
   with the foster care system. If these aspects of their lives are not taken into
   account, any job training will not likely lead to permanent employment."
41
42 Elements:
43   element_id:IMP1
44   Name:"Long-Term Employment at Livable Wage for Domestic Violence Survivors"
45   Description:""
46   Element_type:Impact
47   Assumptions:
48     assumption_id:AS3
49     Name:"Jobs available"
50     Description:"There are jobs available in non-traditional skills for women"
51
52     assumption_id:AS4
53     Name:"Livable wages"
54     Description:"Jobs in non-traditional areas of work for women, such as
55     electrical, plumbing, carpentry and building management are more likely to pay
```

livable wages and are more likely to be unionized and provide job security. Some of these jobs also provide a ladder of upward mobility, from apprenticeship to master, giving entry-level employees a career future."

41
42 element_id:OUT1
43 Name:"Survivors attain coping skills"
44 Description:""
45 Element_type:Outcome
46 Parent_elements:IMP1
47 Assumptions:
48 assumption_id:AS5
49 Name:"Emotional readiness"
50 Description:"Women who have been abused need more than just skills, they need to be emotionally ready for work as well."
51
52 element_id:OUT2
53 Name:"Survivors have marketable skills in non-traditional jobs"
54 Description:""
55 Element_type:Outcome
56 Parent_elements:IMP1
57 Assumptions:
58 assumption_id:AS6
59 Name:"Capabilities"
60 Description:"Women can learn non-traditional skills and compete in the marketplace."
61
62 element_id:OUT3
63 Name:"Survivors know and have appropriate workplace behavior"
64 Description:""
65 Element_type:Outcome
66 Parent_elements:IMP1
67
68 element_id:OUT4
69 Name:"Survivors know how to get help and deal with their issues"
70 Description:""
71 Element_type:Outcome
72 Parent_elements:OUT1
73
74 element_id:OUT5
75 Name:"Women serve internships"
76 Description:""
77 Element_type:Outcome
78 Parent_elements:OUT2 OUT3
79
80 element_id:OUT6
81 Name:"Survivors attend peer-to-peer counseling"
82 Description:""
83 Element_type:Outcome
84 Parent_elements:OUT4
85
86 element_id:OUT7
87 Name:"Counseling and practical support for crises"
88 Description:""
89 Element_type:Outcome
90 Parent_elements:OUT4
91
92 element_id:OUT8
93 Name:"Women attend training about expectations in the workplace"
94 Description:""
95 Element_type:Outcome

```

96 Parent_elements:OUT5
97
98 element_id:OUT9
99 Name:"Women attend training classes in non-traditional skills"
100 Description:""
101 Element_type:Outcome
102 Parent_elements:OUT5
103
104 element_id:OUT10
105 Name:"Employers are educated as to how to use interns"
106 Description:""
107 Element_type:Outcome
108 Parent_elements:OUT5
109
110 element_id:OUT11
111 Name:"Women enroll in program"
112 Description:""
113 Element_type:Outcome
114 Parent_elements:OUT6 OUT7 OUT8 OUT9 OUT10
115 Assumptions:
116     assumption_id:AS7
117     Name:"Screening"
118     Description:"The program cannot help all women and so entry into the program
must include screening so that women who have sufficient literacy and math skills
to take the training, and lives stable enough to attend classes are admitted.
The program does not have the resources to handle providing basic skills or major
social services"
119
120 element_id:OUT12
121 Name:"Women attain regular child care"
122 Description:""
123 Element_type:Outcome
124 Parent_elements:OUT11
125
126 element_id:OUT13
127 Name:"Women are ready to commit and attend program"
128 Description:""
129 Element_type:Outcome
130 Parent_elements:OUT11
131
132 element_id:OUT14
133 Name:"Women hear about the program"
134 Description:""
135 Element_type:Outcome
136 Parent_elements:OUT12 OUT13
137
138 element_id:ACT1
139 Name:"Outreach campaign"
140 Description:""
141 Element_type:Activity
142 Parent_elements:OUT14
143
144 element_id:ACT2
145 Name:"Screening"
146 Description:""
147 Element_type:Activity
148 Parent_elements:OUT11
149
150 element_id:ACT3
151 Name:"Set up counseling sessions"

```

```

152 Description:""
153 Element_type:Activity
154 Parent_elements:OUT6
155
156 element_id:ACT4
157 Name:"Lead group sessions"
158 Description:""
159 Element_type:Activity
160 Parent_elements:OUT6
161
162 element_id:ACT5
163 Name:"Help provide for short-term crises"
164 Description:""
165 Element_type:Activity
166 Parent_elements:OUT7
167
168 element_id:ACT6
169 Name:"1-1 counseling"
170 Description:""
171 Element_type:Activity
172 Parent_elements:OUT7
173
174 element_id:ACT7
175 Name:"Develop curricular for skills"
176 Description:""
177 Element_type:Activity
178 Parent_elements:OUT8
179
180 element_id:ACT8
181 Name:"Conduct classes"
182 Description:""
183 Element_type:Activity
184 Parent_elements:OUT8 OUT9
185
186 element_id:ACT9
187 Name:"Curricula and experiential learning situations developed"
188 Description:""
189 Element_type:Activity
190 Parent_elements:OUT9
191
192 element_id:ACT10
193 Name:"Identify potential employers"
194 Description:""
195 Element_type:Activity
196 Parent_elements:OUT10
197
198 element_id:ACT11
199 Name:"Create employer database"
200 Description:""
201 Element_type:Activity
202 Parent_elements:OUT10
203
204 element_id:ACT12
205 Name:"Match women to internships"
206 Description:""
207 Element_type:Activity
208 Parent_elements:OUT5
209
210 element_id:ACT13
211 Name:"Help women secure permanent jobs"

```

```

212 Description:""
213 Element_type:Activity
214 Parent_elements:IMP1
215
216 element_id:INP1
217 Name:"Social service agency"
218 Description:""
219 Element_type:Input
220 Parent_elements:OUT14
221
222 element_id:INP2
223 Name:"Training program"
224 Description:""
225 Element_type:Input
226 Parent_elements:OUT14
227
228 element_id:INP3
229 Name:"Non-profit shelter providers"
230 Description:""
231 Element_type:Input
232 Parent_elements:OUT14
233
234 Indicators:
235 Indicator_id:IND1
236 Name:"Employment"
237 Description:"What percentage of the program graduates have become employed and have
    remained in that job for at least 6 months and earn at least $12 per hour?"
238 Element:TOC1.IMP1
239 Indicator_type:Indirect
240 Formula:[IND5] / [IND3] * 100
241 DataType:double
242
243 Indicator_id:IND2
244 Name:"Skill in electrical, plumbing, carpentry, or building maintenance"
245 Description:"What percentage of the program participants have have successfully
    completed the internship and have developed the skills?"
246 Element:TOC1.OUT2
247 Indicator_type:Indirect
248 Formula:[IND6] / [IND4] * 100
249 DataType:double
250
251 Indicator_id:IND3
252 Name:"Program graduation"
253 Description:"How many participants have graduated the program?"
254 Element:TOC1.OUT2
255 Indicator_type:Direct
256 DataType:double
257
258 Indicator_id:IND4
259 Name:"Attendance"
260 Description:"How many program participants have attended and missed no more than
    three classes of the program?"
261 Element:TOC1.OUT9
262 Indicator_type:Direct
263 DataType:double
264
265 Indicator_id:IND5
266 Name:"Employed"
267 Description:"How many have become employed?"
268 Element:TOC1.IMP1

```

```

269 Indicator_type:Direct
270 DataType:double
271
272 Indicator_id:IND6
273 Name:"Skills"
274 Description:"How many have developed skills?"
275 Element:TOC1.OUT2
276 Indicator_type:Direct
277 DataType:double

```

Listing 6: Specification of Superwomen case using DSL

W.3 Example 2 - Wheels-to-Meals (SROI)

```

1 im_method_id:W2M
2 Name:"Wheels-to-Meals method specification"
3 Version:1.1
4 isPublic:false
5 Description:"Method specification for SROI's Wheels-to-Meals Case"
6
7 toc_id:TOC1
8 Name:"Wheels-to-Meals ToC"
9 Description:""
10 Date:"August 2021"
11 Version:1.1
12 isValidated:false
13
14 Impact_goals:
15   impact_goal_id:IG1
16   Name:"Providing meals, contact, and social opportunities"
17   Description:"Provide luncheon club for 30 elderly local residents with additional
18     health and social benefits by bringing residents to meals"
19
20 Elements:
21   element_id:IP1
22   Name:"Impact of residents becoming more fit"
23   Description:""
24   Element_type:Impact
25
26   element_id:IP2
27   Name:"Impact of residents becoming healthier"
28   Description:""
29   Element_type:Impact
30
31   element_id:IP3
32   Name:"Impact of residents becoming more social"
33   Description:""
34   Element_type:Impact
35
36   element_id:IP4
37   Name:"Impact of residents being well-fed"
38   Description:""
39   Element_type:Impact
40
41   element_id:IP5
42   Name:"Impact of material outcomes"
43   Description:""
44   Element_type:Impact
45   element_id:IP6

```

```

46 Name:"Impact of healthier volunteers"
47 Description:""
48 Element_type:Impact
49
50 element_id:IP7
51 Name:"Impact of reduction of neighbourly care"
52 Description:""
53 Element_type:Impact
54
55 element_id:OC1
56 Name:"Residents are fitter"
57 Description:"The mild/therapeutic group exercise sessions made residents fitter,
58 they had fewer falls and ended up in the hospital less"
59 Element_type:Outcome
60 Parent_elements:IP1
61
62 element_id:OC2
63 Name:"Residents are healthier"
64 Description:"The nurse led group sessions helped residents manage their health
65 and symptoms better and they were healthier"
66 Element_type:Outcome
67 Parent_elements:IP2
68
69 element_id:OC3
70 Name:"Residents are more social"
71 Description:"Residents made new friends and spent more time with others through
72 the group activities"
73 Element_type:Outcome
74 Parent_elements:IP3
75
76 element_id:OC4
77 Name:"Residents are well-fed"
78 Description:"Residents had nutritious meals with 3 (out-of) 5-a-day and they were
79 healthier"
80 Element_type:Outcome
81 Parent_elements:IP4
82
83 element_id:OC5
84 Name:"Material outcomes"
85 Description:""
86 Element_type:Outcome
87 Parent_elements:IP5
88
89 element_id:OC6
90 Name:"Healthier volunteers"
91 Description:""
92 Element_type:Outcome
93 Parent_elements:IP6
94
95 element_id:OC7
96 Name:"Reduction in neighbourly care"
97 Description:"Reduction in neighbourly care/shopping and break-down of informal
98 community networks"
99 Element_type:Outcome
100 Parent_elements:IP7

```

```

101 Parent_elements:OC1 OC2 OC3 OC4 OC5 OC6 OC7
102
103 element_id:OP2
104 Name:"Transport"
105 Description:""
106 Element_type:Output
107 Parent_elements:OC1 OC2 OC3 OC4 OC5 OC6 OC7
108
109 element_id:OP3
110 Name:"Hot meals"
111 Description:""
112 Element_type:Output
113 Parent_elements:OC1 OC2 OC3 OC4 OC5 OC6 OC7
114
115 element_id:AC1
116 Name:"Luncheon club"
117 Description:"30 places for eligible elderly and/or disabled local residents 5
118 days a week, 50 weeks of the year"
119 Element_type:Activity
120 Parent_elements: OP1 OP2 OP3
121
122 element_id:IN1
123 Name:"Time of elderly / disabled residents"
124 Description:""
125 Element_type:Input
126 Parent_elements:AC1
127
128 element_id:IN2
129 Name:"Time of Wheels-to-Meals volunteers"
130 Description:""
131 Element_type:Input
132 Parent_elements:AC1
133
134 element_id:IN3
135 Name:"Time of neighbours of elderly people"
136 Description:""
137 Element_type:Input
138 Parent_elements:AC1
139
140 element_id:IN4
141 Name:"Meals on wheels contract"
142 Description:""
143 Element_type:Input
144 Parent_elements:AC1
145
146 Data_collection_methods:
147 data_collection_method_id:DC1
148 Name:"One-off research"
149 Description:""
150
151 data_collection_method_id:DC2
152 Name:"Questionnaire"
153 Description:""
154
155 data_collection_method_id:DC3
156 Name:"Interviews"
157 Description:""
158
159 data_collection_method_id:DC4

```



```

160 Name:"Volunteer annual assessment"
161 Description:""
162
163 data_collection_method_id:DC5
164 Name:"One-off survey"
165 Description:""
166
167 Indicators:
168   Indicator_id:IND1
169   Name:"Value of time of elderly/disabled residents"
170   Description:""
171   Element: TOC1.IN1
172   Indicator_type:Direct
173   DataType:double
174
175   Indicator_id:IND2
176   Name:"Value of time wheels-to-meals volunteers"
177   Description:""
178   Element: TOC1.IN2
179   Indicator_type:Indirect
180   Formula:[IND18] * [IND19] * 3 * 5 * 50
181   DataType:double
182   Monetisation:
183     Monetisation_id:MO3
184     Description:"Financial proxy of min wage of volunteers"
185
186   Indicator_id:IND3
187   Name:"Value of meals on wheels contract"
188   Description:""
189   Element: TOC1.IN4
190   Indicator_type:Direct
191   DataType:double
192
193   Indicator_id:IND4
194   Name:"Amount of people transported"
195   Description:""
196   Element: TOC1.OP2
197   Indicator_type:Direct
198   DataType:integer
199
200   Indicator_id:IND5
201   Name:"Hot meals provided annually"
202   Description:""
203   Element: TOC1.OP3
204   Indicator_type:Direct
205   DataType:integer
206
207   Indicator_id:IND6
208   Name:"Fewer amount of falls and associated hospital admissions"
209   Description:""
210   Element: TOC1.OC1
211   Indicator_type:Indirect
212   Formula:[IND20] - [IND21]
213   DataType:integer
214   Drop_off:
215     Drop_off_id:D01
216     Description:"For each passing year, residents become inherently less fit and
217       without the intervention, this does drop-off significantly each year."
218
219   Indicator_id:IND7

```

```

219 Name:"Fewer visits to the doctor annually"
220 Description:""
221 Element: TOC1.OC2
222 Indicator_type:Indirect
223 Formula:[IND22] - [IND23]
224 DataType:integer
225 Attribution:
226     Attribution_id:AB1
227     Description:"There's another project ongoing that helps residents managing their
228     health"
229
230 Indicator_id:IND8
231 Name:"Amount of new group activities joined during the year"
232 Description:""
233 Element: TOC1.OC3
234 Indicator_type:Direct
235 Data_collection_methods:DC2
236 DataType:integer
237 Deadweight:
238     Deadweight_id:DW1
239     Description:"Some group activities would have also been done without the
240     intervention of W2M"
241 Displacements:
242     Displacement_id:DP1
243     Description:"Neighbours become less social as they have are less involved with
244     the elderly residents"
245
246 Indicator_id:IND9
247 Name:"Amount of elderly people participating having nutritious meals"
248 Description:""
249 Element: TOC1.OC4
250 Indicator_type:Direct
251 Data_collection_methods:DC2
252 DataType:integer
253 Deadweight:
254     Deadweight_id:DW2
255     Description:"The residents would have already had good meals, even without this
256     activity"
257
258 Indicator_id:IND10
259 Name:"Volunteers with reported increase of physical activity"
260 Description:""
261 Element: TOC1.OC6
262 Indicator_type:Direct
263 Data_collection_methods:DC4
264 DataType:integer
265
266 Indicator_id:IND11
267 Name:"Fewer instances of neighbours shopping for residents"
268 Description:""
269 Element: TOC1.OC7
270 Indicator_type:Indirect
271 Formula:[IND24] - [IND25]
272 DataType:integer
273
274 Indicator_id:IND12
275 Name:"Impact of residents becoming fitter"
276 Description:""
277 Element: TOC1.IP1
278 Indicator_type:Indirect

```

```

275 Formula:[IND6]
276 DataType:double
277 Drop_off:
278   Drop_off_id:D01
279   Description:"For each passing year, residents become inherently less fit and
without the intervention, this does drop-off significantly each year."
280 Monetisation:
281   Monetisation_id:M01
282   Description:"Financial proxy of IND6"
283
284 Indicator_id:IND13
285 Name:"Impact of residents becoming healthier"
286 Description:""
287 Element: TOC1.IP2
288 Indicator_type:Indirect
289 Formula:[IND7]
290 DataType:double
291 Attribution:
292   Attribution_id:AB1
293   Description:"There's another project ongoing that helps residents managing their
health"
294 Monetisation:
295   Monetisation_id:M02
296   Description:"Financial proxy of IND7"
297
298 Indicator_id:IND14
299 Name:"Impact of residents becoming more social"
300 Description:""
301 Element: TOC1.IP3
302 Indicator_type:Indirect
303 Formula:[IND8]
304 DataType:double
305 Deadweight:
306   Deadweight_id:DW1
307   Description:"Some group activities would have also been done without the
intervention of W2M"
308 Displacements:
309   Displacement_id:DP1
310   Description:"Neighbours become less social as they have are less involved with
the elderly residents"
311
312 Indicator_id:IND15
313 Name:"Impact of residents being well-fed"
314 Description:""
315 Element: TOC1.IP4
316 Indicator_type:Indirect
317 Formula:[IND9]
318 DataType:double
319 Deadweight:
320   Deadweight_id:DW2
321   Description:"The residents would have already had good meals, even without this
activity"
322
323 Indicator_id:IND16
324 Name:"Impact of reduction of neighbourly care"
325 Description:""
326 Element: TOC1.IP7
327 Indicator_type:Indirect
328 Formula:[IND11]
329 DataType:double

```

```

330
331 Indicator_id:IND17
332 Name:"Impact of healthier volunteers"
333 Description:""
334 Element: TOC1.IP6
335 Indicator_type:Indirect
336 Formula:[IND10]
337 DataType:double
338 Deadweight:
339   Deadweight_id:DW3
340   Description:"Some volunteers would already have intrinsic motivation to increase
341   their physical activity regardless of the intervention"
342
343 Indicator_id:IND18
344 Name:"Average amount of time required per volunteer"
345 Description:""
346 Element: TOC1.IN2
347 Indicator_type:Direct
348 DataType:double
349
350 Indicator_id:IND19
351 Name:"Amount of volunteers"
352 Description:""
353 Element: TOC1.IN2
354 Indicator_type:Direct
355 DataType:double
356
357 Indicator_id:IND20
358 Name:"Current amount of falls"
359 Description:""
360 Element: TOC1.OC1
361 Indicator_type:Direct
362 Data_collection_methods:DC1
363 DataType:double
364
365 Indicator_id:IND21
366 Name:"Previous amount of falls"
367 Description:""
368 Element: TOC1.OC1
369 Indicator_type:Direct
370 Data_collection_methods:DC1
371 DataType:double
372
373 Indicator_id:IND22
374 Name:"Current amount of visits"
375 Description:""
376 Element: TOC1.OC2
377 Indicator_type:Direct
378 Data_collection_methods:DC2 DC3
379 DataType:double
380
381 Indicator_id:IND23
382 Name:"Previous amount of visits"
383 Description:""
384 Element: TOC1.OC2
385 Indicator_type:Direct
386 Data_collection_methods:DC2 DC3
387 DataType:double
388 Indicator_id:IND24

```

```

389 Name:"Current amount of shopping instances"
390 Description:""
391 Element: TOC1.0C7
392 Indicator_type:Direct
393 Data_collection_methods:DC5
394 DataType:double
395
396 Indicator_id:IND25
397 Name:"Previous amount of shopping instances"
398 Description:""
399 Element: TOC1.0C7
400 Indicator_type:Direct
401 Data_collection_methods:DC5
402 DataType:double

```

Listing 7: Specification of Wheels-to-Meals case using DSL

W.4 Example 3 - Yumeko ToC (Impact Path)

```

1 im_method_id:Yumeko
2 Name:"Yumeko method specification"
3 Version:1.1
4 isPublic:false
5 Description:"Method specification for Yumeko's ToC"
6
7 Topics:
8   topic_id:T1
9   Name:"Safer working environment"
10  Description:""
11  isSocialProblem:true
12
13  topic_id:T2
14  Name:"A living wage"
15  Description:""
16  isSocialProblem:true
17
18  topic_id:T3
19  Name:"Awareness of issues of the SE"
20  Description:""
21  isSocialProblem:false
22
23  topic_id:T4
24  Name:"Other companies followed example of SE"
25  Description:""
26  isSocialProblem:false
27
28 toc_id:TOC1
29 Name:"Yumeko ToC"
30 Description:"Yumeko was founded to tackle the production chain in the sleep sector
31   and to offer consumers a fair and responsible alternative to bed and bathroom
32   products."
33 Date:"August 2021"
34 Version:1.0
35 isValidated:false
36
37 Impact_goals:
38   impact_goal_id:IG1
39   Name:"Ensure production burdens the environment as little as possible;"
40   Description:""

```

```

40     impact_goal_id:IG2
41     Name:"Create fair terms of employment in the production chain"
42     Description:""
43
44 Elements:
45     element_id:IP1
46     Name:"Production chain worker welfare"
47     Description:"Increase the welfare of workers in the Yumeko production chain"
48     Element_type:Impact
49
50     element_id:IP2
51     Name:"Production chain animal welfare"
52     Description:"Increase in animal welfare in production chains"
53     Element_type:Impact
54
55     element_id:IP3
56     Name:"Sustainable living environments"
57     Description:"Cleaner, safer and more sustainable living environment at production
58     sites"
59     Element_type:Impact
60
61     element_id:IP4
62     Name:"Sustainable product demand"
63     Description:"Demand for sustainable sleep products increases at the expense of
64     non-sustainable alternatives"
65     Element_type:Impact
66
67     element_id:IP5
68     Name:"Sustainable business"
69     Description:"More sustainable business practices in the sleep products sector"
70     Element_type:Impact
71
72     element_id:OC1
73     Name:"Better working conditions"
74     Description:"Partners in compliance with FairChain/quality mark standards,
75     resulting in workers in the Yumeko production chain having better working
76     conditions and fairer wages"
77     Element_type:Outcome
78     Parent_elements:IP1
79
80     element_id:OC2
81     Name:"Animals treated more humanely"
82     Description:"Partners in compliance with FairChain/quality mark standards,
83     resulting in animals in the Yumeko production chain being treated more humanely"
84     Element_type:Outcome
85     Parent_elements:IP2
86
87     element_id:OC3
88     Name:"Reduction of chemical and water consumption"
89     Description:"Partners in compliance with FairChain/quality mark standards,
90     resulting in a reduction in the use of chemical and water consumption at
91     production sites"
92     Element_type:Outcome
93     Parent_elements:IP3
94
95     element_id:OC4
96     Name:"Consumers purchase more sustainable products"
97     Description:"More consumers purchase sustainable sleep products and are aware of
98     the problems in the sector"
99     Element_type:Outcome

```

```

92 Parent_elements:IP4
93
94 element_id:OC5
95 Name:"Peers willing to improve"
96 Description:"Peers in the sleep products sector show willingness to correct and
97 improve malpractices"
98 Element_type:Outcome
99 Parent_elements:IP5
100
101 element_id:OP1
102 Name:"FairChain standards endorsed"
103 Description:"Partners endorse FairChain standards or have been given the
104 opportunity to join a quality mark scheme (such as Fairtrade, GOTS and Downpass)"
105 Element_type:Output
106 Parent_elements:OC1 OC2 OC3
107
108 element_id:OP2
109 Name:"Consumer awareness"
110 Description:"More consumers are aware of Yumeko and its mission and are aware of
111 the problems and sustainable alternatives"
112 Element_type:Output
113 Parent_elements:OC4
114
115 element_id:OP3
116 Name:"Peer awareness"
117 Description:"Peers in the sleep products sector are aware of the problems and are
118 inspired by possible solutions"
119 Element_type:Output
120 Parent_elements:OC5
121
122 element_id:AC1
123 Name:"Sustainable partners"
124 Description:"Yumeko chooses sustainable partners with FairChain production chains
125 , with which long-term partnerships are concluded. Yumeko supports them in
126 complying with quality mark and other standards and inspections regarding fair
127 labour, animal welfare and environmentally friendly production"
128 Element_type:Activity
129 Parent_elements:OP1
130
131 element_id:AC2
132 Name:"Sustainable products"
133 Description:"Yumeko sells sustainable products and communicates and creates
134 publicity on the malpractices in the sector, transparency in the chain and its
135 mission."
136 Element_type:Activity
137 Parent_elements:OP2 OP3
138
139 element_id:IN1
140 Name:"Workers"
141 Description:""
142 Element_type:Input
143 Parent_elements:AC1
144
145 element_id:IN2
146 Name:"Animals for wool and down"
147 Description:""
148 Element_type:Input
149 Parent_elements:AC1
150
151 element_id:IN3

```

```

143     Name:"Natural environment of production sites"
144     Description:""
145     Element_type:Input
146     Parent_elements:AC1
147
148     element_id:IN4
149     Name:"Consumers"
150     Description:""
151     Element_type:Input
152     Parent_elements:AC2
153
154     element_id:IN5
155     Name:"Peers in the sleep products sector"
156     Description:""
157     Element_type:Input
158     Parent_elements:AC2
159
160 Indicators:
161     Indicator_id:IND1
162     Name:"Accidents"
163     Description:"# of accidents per year"
164     Topic:T1
165     Element:TOC1.OC1
166     Indicator_type:Direct
167     DataType:integer
168
169     Indicator_id:IND2
170     Name:"Illness"
171     Description:"# of work-related absences due to illness, per employee per year"
172     Topic:T1
173     Element:TOC1.OC1
174     Indicator_type:Direct
175     DataType:integer
176
177     Indicator_id:IND3
178     Name:"Illness and disability scheme"
179     Description:"# of sites that have an illness or occupational disability scheme in
180     place that meets an international standard, such as ILO guidelines"
181     Topic:T1
182     Element:TOC1.OP2
183     Indicator_type:Direct
184     DataType:integer
185
186     Indicator_id:IND4
187     Name:"Living wage"
188     Description:"Difference between wage received and the required living wage"
189     Topic:T2
190     Element:TOC1.OC1
191     Indicator_type:Indirect
192     Formula:[IND8] - [IND9]
193     DataType:integer
194
195     Indicator_id:IND5
196     Name:"Knowledge of mission"
197     Description:"% of customers/consumers that has knowledge of your company's mission"
198     Topic:T3
199     Element:TOC1.OC4
200     Indicator_type:Indirect
201     Formula:[IND11] - [IND10] * 100
202     DataType:integer

```



```

202
203 Indicator_id:IND6
204 Name:"Knowledge of supply chain issues"
205 Description:"% of customers/consumers that has knowledge of the specific issues in
    the chain."
206 Topic:T3
207 Element:TOC1.OC4
208 Indicator_type:Indirect
209 Formula:[IND12] - [IND10] * 100
210 DataType:integer
211
212 Indicator_id:IND7
213 Name:"Peer following example"
214 Description:"# of companies that adopted the approach of your company"
215 Topic:T4
216 Element:TOC1.OC5
217 Indicator_type:Direct
218 DataType:integer
219
220 Indicator_id:IND8
221 Name:"Wage"
222 Description:"The amount of wage earned"
223 Topic:T2
224 Element:TOC1.OC1
225 Indicator_type:Direct
226 DataType:integer
227
228 Indicator_id:IND9
229 Name:"Required wage"
230 Description:"The minimal living wage"
231 Topic:T2
232 Element:TOC1.OC1
233 Indicator_type:Direct
234 DataType:integer
235
236 Indicator_id:IND10
237 Name:"Consumers"
238 Description:"Total amount of consumers"
239 Topic:T3
240 Element:TOC1.OC4
241 Indicator_type:Direct
242 DataType:integer
243
244 Indicator_id:IND11
245 Name:"Consumers with knowledge on mission"
246 Description:"Total amount of consumers with knowledge on mission"
247 Topic:T3
248 Element:TOC1.OC4
249 Indicator_type:Direct
250 DataType:integer
251
252 Indicator_id:IND12
253 Name:"Consumers with knowledge of supply chain issues"
254 Description:"Total amount of consumers with knowledge of supply chain issues"
255 Topic:T3
256 Element:TOC1.OC4
257 Indicator_type:Direct
258 DataType:integer

```

Listing 8: Specification of Yumeko case using DSL

W.5 Example 4 - Fruitmotor ToC (Fruitmotor)

```
1 im_method_id:Fruitmotor
2 Name:"Fruitmotor method specification"
3 Version:1.1
4 isPublic:false
5 Description:"Method specification for Fruitmotor's ToC"
6
7 Topics:
8   topic_id:T1
9   Name:"Loss of insect life"
10  Description:"80% van al onze groenten en fruit is afhankelijk van insecten voor hun
11    bestuiving. Wilde bijen vormen van die bestuivers een belangrijke groep. Als er
12    geen wilde bijen meer zouden zijn, zouden er geen aardbeien, pompoenen, appels en
13    peren meer zijn. Wij mensen op aarde zijn heel hard op weg om de wilde bijen te
14    laten uitsterven! En niet alleen bijen, maar insecten in zijn algemeenheid. Dat
15    is gevaarlijk, want insecten vormen een belangrijke basis in het ecosysteem."
16  isSocialProblem:true
17
18  topic_id:T2
19  Name:"Food waste"
20  Description:"Daarnaast is voedselverspilling een groot probleem. Met alle voedsel
21    dat verspild wordt, gooien we ook de ingrediënten weg, de arbeid, energie en
22    alles wat bij voedselproductie en -opslag komt kijken, was voor niets. In
23    Nederland wordt 30% van alle voedsel verspild in de hele keten!"
24  isSocialProblem:true
25
26  topic_id:T3
27  Name:"Biodiversity"
28  Description:""
29  isSocialProblem:false
30
31  topic_id:T4
32  Name:"Growers"
33  Description:""
34  isSocialProblem:false
35
36 toc_id:TOC1
37 Name:"Fruitmotor ToC"
38 Description:"We maken samen met anderen onze omgeving mooier en dragen bij aan een
39    bloeiende Betuwe met een rijkdom aan natuur en landschap waarin we voedsel
40    waarderen."
41 Date:"August 2021"
42 Version:1.0
43 isValidated:false
44
45 Impact_goals:
46   impact_goal_id:IG1
47   Name:"Enrich insect life"
48   Description:""
49
50   impact_goal_id:IG2
51   Name:"Reduce food waste"
52   Description:""
53
54 Contextual_factors:
55   contextual_factor_id:CF1
56   Name:"Bees"
57   Description:"Actions of other growers affect the bees"
58
```

```

49 contextual_factor_id:CF2
50 Name:"Flower beds"
51 Description:"The weather can impact the maintainability of the flower beds"
52
53 contextual_factor_id:CF3
54 Name:"Knowledge and awareness growers"
55 Description: "Common knowledge on the area of sustianability. Other channels make
56 our knowledge either more or less relevant."
57
58 Elements:
59 element_id:IP1
60 Name:"Creating a diverse and economically sustainable landscape"
61 Description:""
62 Element_type:Impact
63 Parent_elements:IP2
64
65 element_id:IP2
66 Name:"More tourism"
67 Description:""
68 Element_type:Impact
69 Parent_elements:IP3
70
71 element_id:IP3
72 Name:"More economic success in the area"
73 Description:""
74 Element_type:Impact
75 Parent_elements:IP1
76
77 element_id:IP4
78 Name:"More biodiversity"
79 Description:""
80 Element_type:Impact
81 Parent_elements:IP1
82 Assumptions:
83 assumption_id:AS4
84 Name:"More species of bees will lead to more diversity, aside from the bees"
85 Description:""
86
87 element_id:IP5
88 Name:"More income for grower"
89 Description:""
90 Element_type:Impact
91 Parent_elements:IP1
92
93 element_id:IP6
94 Name:"More growers working with FM"
95 Description:""
96 Element_type:Impact
97 Parent_elements:IP1
98
99 element_id:IP7
100 Name:"More good apple participating growers"
101 Description:""
102 Element_type:Impact
103 Parent_elements:IP5
104
105 element_id:IP8
106 Name:"Improved pollination in areas"
107 Description:""
108 Element_type:Impact

```

```

108 Parent_elements:IP7
109 Assumptions:
110   assumption_id:AS3
111   Name:"More bees leads to better pollination"
112   Description:""
113
114   element_id:IP9
115   Name:"Grower becomes ambassador for FM"
116   Description:""
117   Element_type:Impact
118   Parent_elements:IP6
119
120   element_id:OC1
121   Name:"Application of knowledge on sustainable entrepreneurship"
122   Description:""
123   Element_type:Outcome
124   Parent_elements:IP4
125
126   element_id:OC2
127   Name:"Land of grower improves"
128   Description:""
129   Element_type:Outcome
130   Parent_elements:IP2
131
132   element_id:OC3
133   Name:"More diversity among bees"
134   Description:""
135   Element_type:Outcome
136   Parent_elements:IP4 IP8
137
138   element_id:OC4
139   Name:"Grower feels connected to FM's mission"
140   Description:""
141   Element_type:Outcome
142   Parent_elements:IP9
143
144   element_id:OC5
145   Name:"Grower has increasing pleasure in his work"
146   Description:""
147   Element_type:Outcome
148   Parent_elements:IP9
149
150   element_id:OC6
151   Name:"Increased will of grower to take measures"
152   Description:""
153   Element_type:Outcome
154   Parent_elements:OC1
155
156   element_id:OC7
157   Name:"More income"
158   Description:""
159   Element_type:Outcome
160   Parent_elements:IP3 OC6
161
162   element_id:OC8
163   Name:"More flowers on grower's land."
164   Description:""
165   Element_type:Outcome
166   Parent_elements:OC2 OC3 OC5
167   Assumptions:

```

```

168     assumption_id:AS2
169     Name:"Growers maintain their flower beds"
170     Description:""
171
172     element_id:OC9
173     Name:"Grower feels acknowledged."
174     Description:""
175     Element_type:Outcome
176     Parent_elements:OC4 OC5
177
178     element_id:OP1
179     Name:"Increased knowledge en skills on SE"
180     Description:""
181     Element_type:Output
182     Parent_elements:OC6
183     Assumptions:
184         assumption_id:AS1
185         Name:"Education leads to more knowledge on effect on biodiversity"
186         Description:""
187
188     element_id:OP2
189     Name:"Apples sold"
190     Description:""
191     Element_type:Output
192     Parent_elements:OC7
193
194     element_id:OP3
195     Name:"More income for participating growers"
196     Description:""
197     Element_type:Output
198     Parent_elements:OC7
199
200     element_id:OP4
201     Name:"Flowerbeds realised"
202     Description:""
203     Element_type:Output
204     Parent_elements:OC8
205
206     element_id:OP5
207     Name:"Growers are mentioned on events and offline and online media"
208     Description:""
209     Element_type:Output
210     Parent_elements:OC9
211
212     element_id:OP6
213     Name:"Networking events organised"
214     Description:""
215     Element_type:Output
216     Parent_elements:OP1
217
218     element_id:OP7
219     Name:"Guidance received by experts of FM"
220     Description:""
221     Element_type:Output
222     Parent_elements:OP1
223
224     element_id:AC1
225     Name:"Educate growers on sustainable entrepreneurship"
226     Description:""
227     Element_type:Activity

```

```

228 Parent_elements:OP6 OP7
229
230 element_id:AC2
231 Name:"Buy left-over fruit from growers"
232 Description:""
233 Element_type:Activity
234 Parent_elements:OP2 OP3
235
236 element_id:AC3
237 Name:"Facilitate growers' installing flower beds"
238 Description:""
239 Element_type:Activity
240 Parent_elements:OP4
241
242 element_id:AC4
243 Name:"Promote activities of Fruitmotor's growers"
244 Description:""
245 Element_type:Activity
246 Parent_elements:OP5
247
248 element_id:IN1
249 Name:"Growers (members of Fruitmotor)"
250 Description:""
251 Element_type:Input
252 Parent_elements:AC1 AC2 AC3 AC4
253
254 Indicators:
255 Indicator_id:IND1
256 Name:"Amount of apples sold"
257 Description:"# of apples sold"
258 Topic:T4
259 Element:TOC1.OP2
260 Indicator_type:Direct
261 DataType:integer
262
263 Indicator_id:IND2
264 Name:"Income improvement of growers"
265 Description:"The improvement for income of FM's farmers"
266 Topic:T4
267 Element:TOC1.OP3
268 Indicator_type:Indirect
269 Formula:[IND6] - [IND7]
270 DataType:integer
271
272 Indicator_id:IND3
273 Name:"Flowerbeds created"
274 Description:"Amount of squared meters flower beds installed"
275 Topic:T3
276 Element:TOC1.OP4
277 Indicator_type:Direct
278 DataType:integer
279
280 Indicator_id:IND4
281 Name:"Bee species "
282 Description:"Difference of amount of bee species"
283 Topic:T3
284 Element:TOC1.OC3
285 Indicator_type:Indirect
286 Formula:[IND8] - [IND9]
287 DataType:integer

```

```

288
289 Indicator_id:IND5
290 Name:"Amount of network events organised in network"
291 Description:"# of network events organised"
292 Topic:T4
293 Element:TOC1.OP6
294 Indicator_type:Direct
295 DataType:integer
296
297 Indicator_id:IND6
298 Name:"New income"
299 Description:"The amount of income after the growers became part of FM"
300 Topic:T4
301 Element:TOC1.OP3
302 Indicator_type:Direct
303 DataType:integer
304
305 Indicator_id:IND7
306 Name:"Usual income"
307 Description:"The amount of income before the growers became part of FM"
308 Topic:T4
309 Element:TOC1.OP3
310 Indicator_type:Direct
311 DataType:integer
312
313 Indicator_id:IND8
314 Name:"Bees now"
315 Description:"The amount of bee species there are now"
316 Topic:T3
317 Element:TOC1.OC3
318 Indicator_type:Direct
319 DataType:integer
320
321 Indicator_id:IND9
322 Name:"Bees before"
323 Description:"The amount of bee species there were before"
324 Topic:T3
325 Element:TOC1.OC3
326 Indicator_type:Direct
327 DataType:integer

```

Listing 9: Specification of Fruitmotor case using DSL

X Diagrams for all survey respondents on motivations and pain points



Figure 97: Motivations of all practitioners, ranked from greater to lesser motivations



Figure 98: Motivations of all practitioners, ranked from greater to lesser motivations



Figure 99: Pain points of all practitioners, ranked from most troubling to least troubling

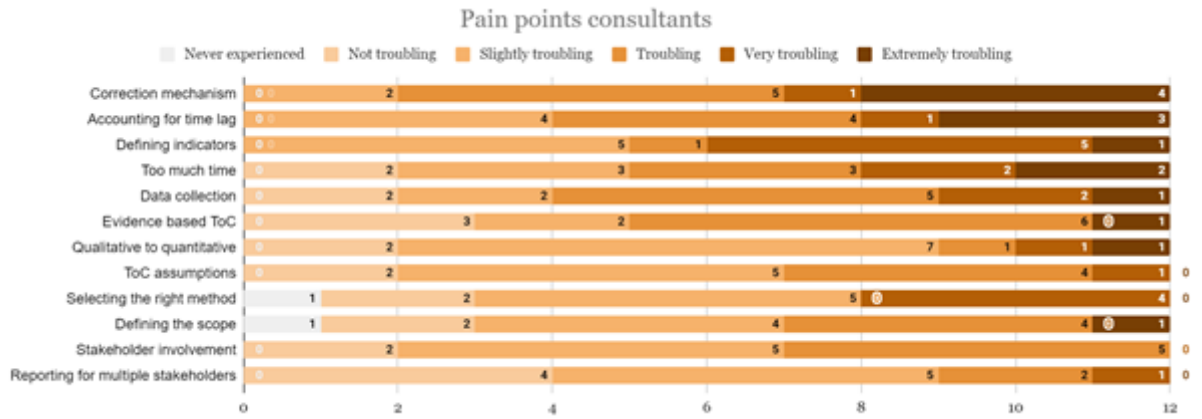


Figure 100: Pain points of all consultants, ranked from most troubling to least troubling

Y Experienced resistance factors

Codification scheme:

- **0:** Resistance factor not experienced/recognised
- **1:** Resistance factor experienced
- **2:** Resistance factor experienced and proactively mentioned
- **3:** Resistance factor experienced and emphasised to be one of the most important resistance factors
- **4:** Resistance factor experienced and proactively mentioned and emphasised to be one of the most important resistance factors

Resistance factors		Practitioners				Consultants			
ID	Factor	P1	P2	P3	P4	C1	C2	C3	C4
I1	Uncertainty costs	2	0	1	1	0	3	0	0
I2	Input consideration	0	0	0	1	0	0	0	0
I3	Loss of control/power	0	0	0	0	0	2	0	0
I4	Self-efficacy	2	0	1	0	0	1	0	0
I5	Cynicism	0	0	0	0	2	0	0	0
O1	Facilitating environment	0	0	0	1	0	1	0	0
O2	Communication	0	0	0	1	0	0	0	0
O3	Training	1	0	0	0	0	3	0	0
O4	Direct costs	0	0	0	3	0	0	0	0
O5	Sunk costs	0	0	0	0	0	1	0	0
O6	Colleague opinion	0	0	0	0	0	1	0	0
O7	Perceived value	0	0	1	0	0	2	0	0
M1	Process complexity	2	2	4	2	1	1	4	2
M2	Job change	1	0	0	0	0	1	0	0
M3	Workload	2	0	4	4	0	4	0	2
M4	Fitness	1	2	0	1	2	2	4	2
T1	Technical issues	0	0	0	0	0	0	0	0
T2	Tool complexity	2	0	0	4	2	2	4	2
E1	External factors	0	0	0	0	0	2	0	0

Table 25: Experienced resistance factors of interviewees