

APPENDICES

Methodological gathering of and reporting on environmental data from banks

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A. Reference mapping

Figure 8 shows a screenshot of a part of the excel sheet that was used for the Multivocal Literature Research in order to write chapter 3 and 4.

Reference	Title	Author	Year	Main topic	Theme	Search Engine	Number of times cited	Snowballing	Keywords used	Type
1	The Importance of Sustainability Reports In Non-Financial Companies	Doktoralina, C. M., Anggraini, D., & Safira, S. M.	2018	Reporting	Importance and affects of sustainability on environment and society	Google scholar	17	-	"sustainability" AND "reporting" AND "importance"	Journal
2	Making sustainability work: Best practices in managing and measuring corporate social, environmental and economic impacts.	Epstein, M. J., Elkington, J., & Herman, B.	2018	Sustainability	Sustainability reporting	-	2148	Backward snowballing of reference 1	-	Book
3	How does corporate social responsibility contribute to firm financial performance? The mediating role of competitive advantage, reputation, and customer satisfaction.	Saeidi, S. P., Sofian, S., Saeidi, P., Saeidi, S. P., & Saeidi, S. A.	2015	Sustainability	Impact of sustainability reporting on business performance (reputation, customer satisfaction, finance)	-	1314	Backward snowballing of reference 1	-	Journal
4	Persistent acceleration in global sea-level rise since the 1960s.	Dangendorf, S., Hay, C., Calafat, F. M., Marcos, M., Pieuch, C. G., Berk, K., & Jensen, J.	2019	Sustainability	Sea-level rise	Google scholar	117	-	global sea-level rise	Article
5	Doubling of coastal flooding frequency within decades due to sea-level rise	Vitousek, S., Barnard, P. L., Fletcher, C. H., Frazer, N., Erikson, L., & Storlazzi, C. D.	2017	Sustainability	Impact sea-level rise	Google scholar	387	-	sea-level rise	Article
6	Environmental, social and governance (ESG) activity and firm performance: a review and consolidation	Huang, D. Z.	2021	ESG	Identification of ESG and the importance	Google scholar	23	-	"ESG" AND "environmental, social, and Governance"	Article
7	The business case for ESG	Boze, B., Krivitski, M., Larcker, D. F., Tayan, B., & Zlotnicka, E.	2019	ESG	Identification of ESG and the importance	Google scholar	5	-	"ESG" AND "environmental, social, and Governance"	Article
8	Five ways that ESG creates value	Koller, T., Nutall, R., & Henisz, W.	2019	ESG	Identification of ESG and the importance	Google scholar	37	-	"ESG" AND "environmental, social, and Governance"	Article
9	What environmental social responsibility practices do large companies manage for sustainable development?	Murillo-Avalos, C. L., Cubilla-Montilla, M., Celestino Sánchez, M. Á., & Vicente-Galindo, O. P.	2020	Sustainability	How can companies become more sustainable	Google scholar	5	-	-	Article
10	Environmental, social, and governance criteria: Why investors should care	Jagannathan, R., Ravikumar, A., & Sammon, M.	2018	ESG	Identification of ESG and the importance	Google scholar	10	-	"ESG" AND "environmental, social, and Governance"	Journal
11	Exploring social origins in the construction of ESG measures	Eccles, Robert G and Stroehle, Judith C	2018	ESG	Origins of ESG	Google scholar	65	-	"ESG" AND "environmental, social, and Governance" AND "origin"	Paper
12	Why and how investors use ESG information: Evidence from a global survey.	Amel-Zadeh, A., & Serafeim, G.	2018	ESG	Growth of interest in ESG	-	411	Backward snowballing of reference 11	-	Journal
13	The social origins of ESG: An analysis of Innovest and KLD	Eccles, Robert G and Lee, Linda-Eling and Stroehle, Judith C	2020	ESG	Origins of ESG	-	61	Forward snowballing reference 11	-	Journal

Fig. 8 Example of Multivocal Literature Research reference table

B. Process Deliverable Diagram research method

Figure 9 depicts the entire planned research approach in a Process Deliverable Diagram (PDD).

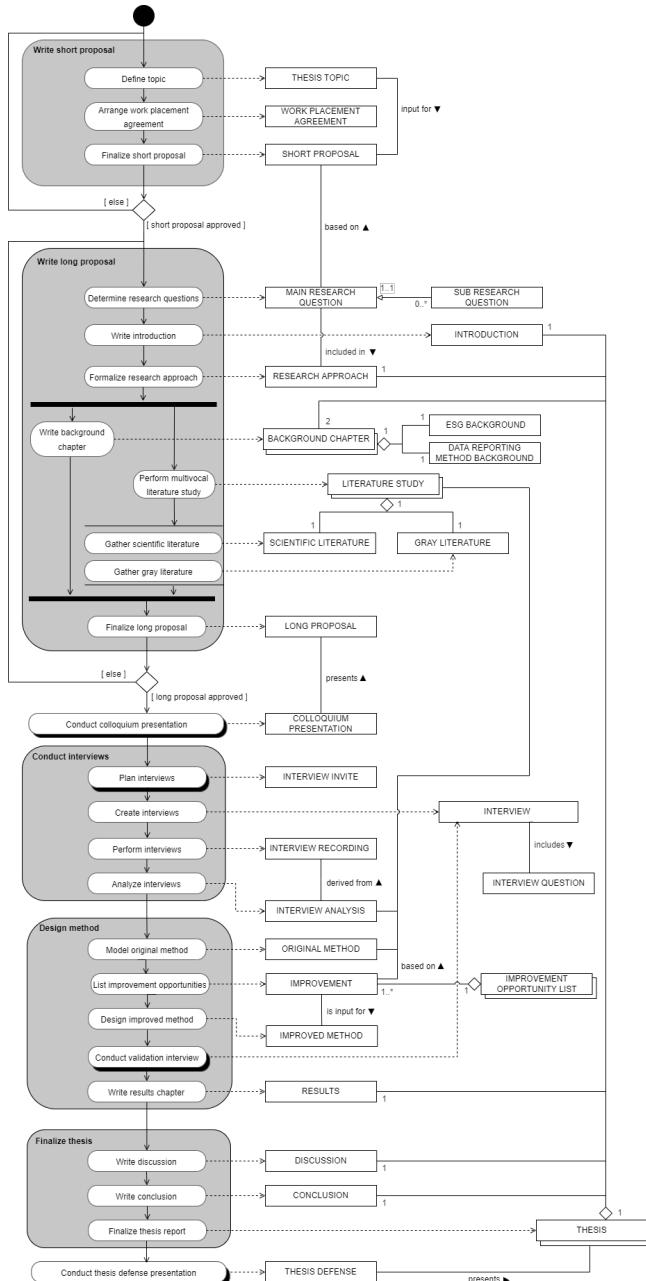


Fig. 9 Process Deliverable Diagram visualizing the planned research approach

C. Interview protocol

Below the interview protocols are represented. Two protocols have been set up, an interview protocol for the interview with banks and the interview protocol for the interviews with professors. With regard to the interviews with banks, many of the banks are interviewed twice. An interview to map the current method and a validation interview to validate the visualized method and discovered improvement opportunities. All stakeholders were sent an email explaining what the main subject of the research is, why the interviews had to be conducted, and what the main goals of these interviews were. First of all the interview invitations are stated down in section C.1. Then, section C.2 explains the different interview questions that are formulated.

C.1. Interview invitation

Interview invitation professors

Dear X,

My name is Sanne de Vries and I am in the final phase of the master Business Informatics at Utrecht University. For my master thesis I am doing research into how banks report on their environmental sustainability data in order to comply with the European ESG regulations. This research is done in collaboration with a big consultancy firm. The main goal is to map the current method in which environmental data is collected and subsequently reported on by banks and to discover improvement opportunities for this method. To get more information about how the data gathering and reporting is currently done by banks and how it could possibly be improved, I will conduct some interviews with banks. However, I would also like to emphasize the scientific importance of this research in my thesis by doing interviews with certain professors or lecturers. In these interviews I would particularly like to find out more about what exactly is meant by sustainability, being an environmentally sustainable business and how important this is, or the knowledge about the current ESG regulations.

On the internet I saw that you are familiar with the subject of sustainability. Would you be interested in an interview or do you know other professors or lecturers I could contact for an interview? The interview should not last longer than half an hour and would ideally take place between the 15th and 28th of February. If conducting the interview in February does not suit, early March is also possible.

Thank you in advance.

Kind regards,
Sanne de Vries

Interview invitation banks

Dear X,

My name is Sanne de Vries and I am in the final phase of the master Business Informatics at Utrecht University. For my master thesis I am doing research into how banks report on their environmental sustainability data in order to comply with the European ESG regulations. This research is done in collaboration with a big consultancy firm. The main goal of my thesis is to map the current method in which environmental data is collected and reported on by banks and to discover improvement opportunities for this method. To get more information on how the data gathering and reporting is currently done by banks and how it could possibly be improved, I would like to do two interviews with you. A first interview in March to obtain information about the current way of data gathering and reporting and a later interview in May to validate the visualized method and potential improvement points that have been discovered. Both interviews will last half an hour to an hour, can be done in Dutch or English and will probably be conducted through Microsoft Teams.

Could you help me with these interviews or do you know someone who knows more about the bank's sustainability data gathering and reporting process that would like to participate in the interviews? Preferably two interviews, but otherwise only an interview to discover the current method and improvement opportunities in March would already help a lot.

Thank you in advance.

Kind regards,
Sanne de Vries

C.2. Interview questions

Interview professors

Introduction - the interview starts with a short introduction on the topic of the research and the goal of the interview. The professor is asked for approval for recording the interview and the use of the obtained information within the research.

1. In what way are you involved in sustainability-related topics in your work as a professor or other work? (courses, committees, projects, voluntary work, papers)
2. According to you, how important is it for others to behave in a more sustainable way?
 - (a) In your opinion when does someone behave sustainable?
 - (b) Looking at a broader scope than individual people, how important is it for organizations, for example banks, to be aware of their environmental impact and to behave more sustainable?
3. Besides the fact that organizations should behave more sustainable, what is the use of actually sharing the sustainability performance to the outside world, for example by means of an environmental data report or an annual report?

Problem description - emphasize the problem that many organizations and banks currently have. Namely the fact that many organizations do not know exactly which business aspects relate to the sustainability of the organization and therefore do not know what kind of data needs to be collected. In addition, there is currently no standard method that clearly explains how banks should report on this sustainability data.

4. Do you have any tips or ideas on how this problem could be resolved?
 - (a) What are factors that organizations could look at to behave more sustainable?

General closing

5. Do you want to add something that has not been discussed yet?

Thank the professor for participating in the interview and let the professor know that he/she can always get into contact for any comments or questions.

Interview banks - interview 1

Introduction - the interview starts with a brief introduction on the topic of the research and the goal of the interview. The bank employee is made aware of the fact that this interview is meant to discover the current method for the gathering of and reporting on environmental data and the potential improvement possibilities. Besides it is indicated that a second (validation) interview is wished for within two months. The interviewee is asked for approval for recording the interview and the use of the obtained information within the research. In addition the bank employee is made aware of the anonymization of personal data.

1. What is your role in the bank in general and in what way are you involved in the sustainability or environmental data reporting process of the bank?
2. According to you what is meant with an environmentally sustainable business?
 - (a) When is a business sustainable?
 - (b) Does the bank set certain sustainability goals on a regular basis?
 - What are those goals based on? (other companies, previous years, regulations)
 - Could you mention some of those goals or do you have a list with those goals that you could share with me?

Ask for more detailed information on the importance of environmental data reports and the process of environmental data gathering and reporting.

3. What are the main reasons and the importance of reporting environmental data for banks? (Climate, finance, reputation, obligations)
4. Would you say the bank currently has a clear or standard method for the gathering of and the reporting on environmental data?
5. The focus of this research is to discover the current method for reporting on ESG or environmental data. How is the environmental data gathering and reporting within the bank currently being done? Could you describe the process as detailed as possible?

- (a) According to you when does the reporting process start and when is it finished?
 - (b) How is it determined within the bank what factors are related to the sustainability of the bank and therefore which data must be collected?
 - (c) How is this data being collected and analyzed? Is this done manually or are certain tools and systems used to fully or partially automate the collection and analyses of data?
 - (d) How is the report written and where is the report made public? (site, annual report)
6. What is your opinion on the current way in which environmental data gathering and reporting is done?
- (a) What are the main challenges you face in the process of environmental data gathering and reporting?
 - (b) How do you think the process of reporting on environmental data can be improved or simplified?

General closing

7. Do you want to add something that has not been discussed yet?

Thank the bank employee for participating in the interview and let the interviewee know that he/she can always get into contact for any comments or questions.

Interview banks - interview 2

Introduction - the interview starts with a brief recap on the topic of the research and the goal of the interview. The bank employee is made aware of the fact that this interview is a follow-up to the previously completed interview in which the current method of gathering of and reporting on environmental data was explained. The interviewee is asked for approval for recording the interview and the use of the obtained information within the research. In addition the bank employee is made aware of the anonymization of personal data.

1. Based on our previous interview, I created the following model, a PDD, to visualize the bank's data gathering and reporting method
 - (a) Explain how to read a PDD
 - (b) Do you think that the method is visualized correctly or are there incorrect or missing steps?
2. based on the literature study and interviews with different banks I have discovered the following improvement possibilities, what is your opinion on these improvement possibilities?
 - (a) Do you think these improvement opportunities are realistic and can be implemented in the short or long term?
3. The literature study and the interviews did not reveal very concrete opportunities for improvement, which is why the opportunities for improvement are quite generic.
 - (a) What makes the method visualized for the bank a unique ESG method compared to other data gathering and reporting processes, such as financial reporting.

4. Are there any areas for improvement that have not been mentioned, but that you think would also be useful to improve the environmental data gathering and reporting process?

General closing

5. Do you want to add something that has not been discussed yet?

Thank the bank employee for participating in the interview and let the interviewee know that he/she can always get into contact for any comments or questions.

D. Banking methods for gathering of and reporting on environmental data

In this appendix the different Process Deliverable Diagrams (PDDs) for the interviewed banks are presented. A PDD provides a visualization of the environmental data gathering and reporting method of each bank. Section 2.6 explains the notation of PDDs. In addition, an activity and comparison table is provided for each of the PDDs, in which the activities and concepts of each of the PDDs are explained.

It is important to point out that in the first PDD for Bank X.1 all activities and concepts are explained. In following PDDs all activities and concepts that are different or new in relation to the PDD discussed earlier are colored red. The same applies to the activity and concept table, in those tables only the red colored activities and concepts are explained, since the other activities and concepts correspond to previously discussed PDDs and have therefore already been discussed in previous activity and concept tables.

D.1. Bank X.1

D.1.1. PDD

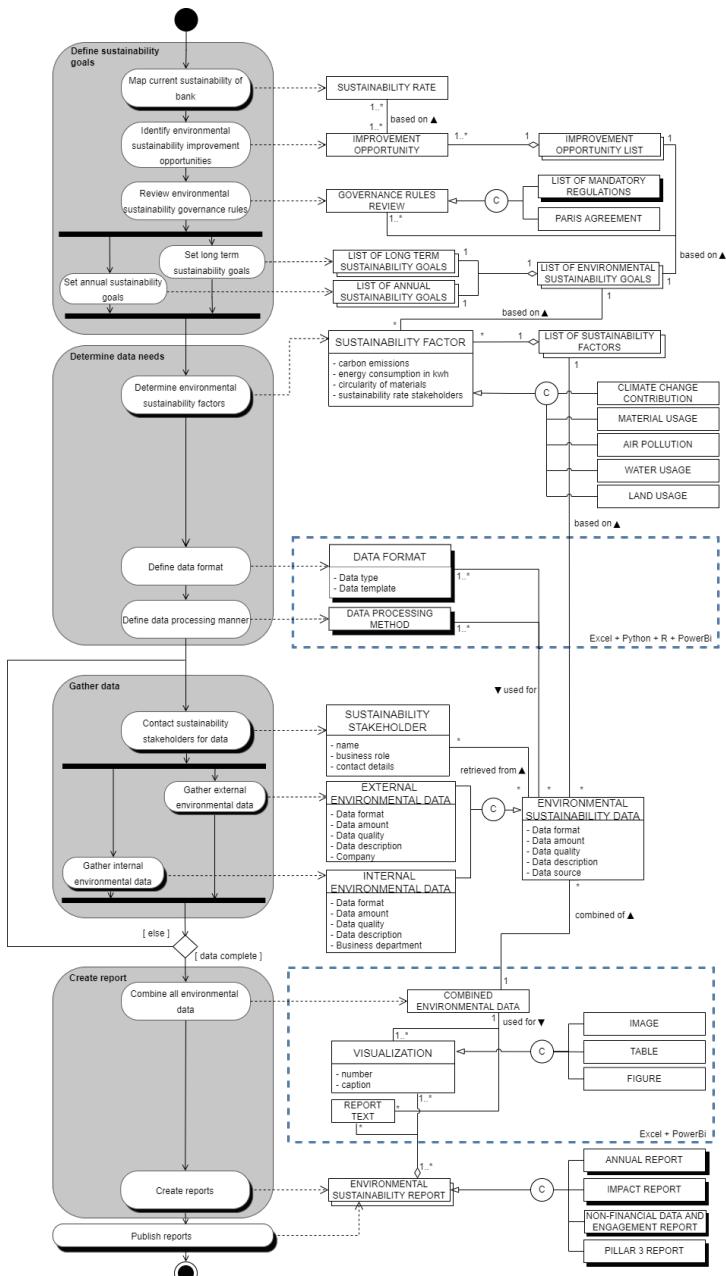


Fig. 10 PDD environmental data gathering and reporting method Bank X.1

D.1.2. Activity table

Table 13 Activity table for PDD Bank X.1

Activity	Sub-activity	Description
Define sustainability goals	Map current sustainability of bank	The bank's current sustainability is mapped out based on the SUSTAINABILITY RATES of the previous financial year.
	Identify environmental sustainability improvement opportunities	Based on the current sustainability figures and new technologies, the bank identifies different IMPROVEMENT OPPORTUNITIES on how the bank could become even more sustainable.
	Review sustainability governance rules	A GOVERNANCE RULES REVIEW is performed that indicates which sustainability rules the bank must comply with and see whether new rules have been added compared to the previous financial year.
	Set annual sustainability goals	Create a LIST OF ANNUAL SUSTAINABILITY GOALS that the bank wants to achieve in this fiscal year.
	Set long term sustainability goals	Create a LIST OF LONG TERM SUSTAINABILITY GOALS that have already been drawn up in previous years and long term goals that will be added to the list this year.
Determine data needs	Determine environmental sustainability factors	Based on the goals set, determine which SUSTAINABILITY FACTORS (internal and external) are important to gather information about in order to map out the bank's sustainability.
	Define data format	Define how the information about the determined business factors looks like. In short, which data must be collected and where and in what DATA FORMAT is this data available.
	Define data processing manner	After it is clear which data must be collected and what this data looks like, the DATA PROCESSING METHOD must be determined which explains how the data will be collected and processed.
Gather data	Contact sustainability stakeholders for data	After the methods, systems and tools that will be used for data collection and processing have been defined, the right SUSTAINABILITY PEOPLE are contacted to obtain the required data or to contact the right people for this.
	Gather internal environmental data	INTERNAL DATA on the sustainability of the bank itself is collected.
	Gather external environmental data	EXTERNAL DATA on the sustainability of external customers and stakeholders is collected.
Create report	Combine all environmental data	All internal and external environmental data is combined before the report can be compiled.
	Create reports	After all text and visualizations have been created, the TEXT and VISUALIZATIONS are merged into an ENVIRONMENTAL SUSTAINABILITY REPORT.
Publish reports	-	After an ENVIRONMENTAL SUSTAINABILITY REPORT has been drawn up, it gets published and is made public.

D.1.3. Concept table

Table 14 Concept table for PDD Bank X.1

Concept	Description
SUSTAINABILITY RATE	A sustainability rate gives an indication of the current sustainability situation and numbers of the bank.
IMPROVEMENT OPPORTUNITY	A improvement opportunity is discovered based on the current sustainability rate and new technologies that have been developed.
IMPROVEMENT OPPORTUNITY LIST	An improvement opportunity list lists all the improvement opportunities that have been defined.
GOVERNANCE RULES REVIEW	A governance rules review is a review of the list existing of various (mandatory) regulations and the paris agreement that a bank must comply with.

PARIS AGREEMENT	The Paris Agreement is part of the international climate treaty, which is an international treaty with rules to prevent global warming that a bank must comply with.
LIST OF LONG TERM SUSTAINABILITY GOALS	A list of long term sustainability goals includes goals that have to be met over a longer period than one fiscal year.
LIST OF ANNUAL SUSTAINABILITY GOALS	A list of annual sustainability goals includes goals that are set up by the bank to achieve in this current fiscal year.
LIST OF ENVIRONMENTAL SUSTAINABILITY GOALS	A list of environmental sustainability goals includes both the long term sustainability goals and the annual sustainability goals
SUSTAINABILITY FACTOR	A sustainability factor is a factor that deals with the sustainability of the bank and which the bank must collect data about in order to report on in the sustainability reports.
LIST OF SUSTAINABILITY FACTORS	A list of sustainability factors lists all the sustainability factors that have been defined.
CONTRIBUTION CLIMATE CHANGE	A main sustainability factor that has been defined by Bank X.1 is the climate change contribution of the bank.
MATERIALS USAGE	A main sustainability factor that has been defined by Bank X.1 is the materials usage of the bank.
AIR POLLUTION	A main sustainability factor that has been defined by Bank X.1 is the air pollution caused by the bank.
WATER USAGE	A main sustainability factor that has been defined by Bank X.1 is the water usage of the bank.
LAND USE	A main sustainability factor that has been defined by Bank X.1 is the land usage of the bank.
DATA FORMAT	A data format describes how the information about the determined business factors looks like (numbers, text, models, software).
DATA PROCESSING METHOD	A data gathering method indicates the way in which the sustainability factors data will be gathered and analyzed.
SUSTAINABILITY STAKEHOLDER	A sustainability person is an internal or external person who is responsible for gathering all the needed sustainability data.
INTERNAL ENVIRONMENTAL DATA	The internal environmental data includes all the environmental sustainability data the bank needs to receive about the sustainability performance of the bank itself.
EXTERNAL ENVIRONMENTAL DATA	The external sustainability data includes all the environmental sustainability data the bank needs to receive from external customers, investors, and other stakeholders.
COMBINED ENVIRONMENTAL DATA	The combined environmental data includes both the gathered internal environmental data and the external environmental data.
VISUALIZATION	A visualization is a representation of information in a visualizing way.
REPORT TEXT	The report text is information written in the English language to express certain information or explain visualizations more clearly.
IMAGE	An image is one type of visualizations used in sustainability reports.
TABLE	An table is one type of visualizations used in sustainability reports.
FIGURE	An figure is one type of visualizations used in sustainability reports.
ENVIRONMENTAL SUSTAINABILITY REPORT	A environmental sustainability report is a piece of text and visualization in which various environmental sustainability information is processed.
ANNUAL REPORT	An annual report is a report in which among other things environmental sustainability factors are discussed.
IMPACT REPORT	An impact report is a report in which the difference the bank made to protect the environment is explained.
NON-FINANCIAL DATA AND ENGAGEMENT REPORT	A non-financial data and engagement report is a report in which all the banks information which has not to do with money is explained.
PILLAR 3 REPORT	A pillar 3 report is a report in which the information which according to the Pillar 3 regulations must be reported on is written down.

D.2. Bank X.2

D.2.1. PDD

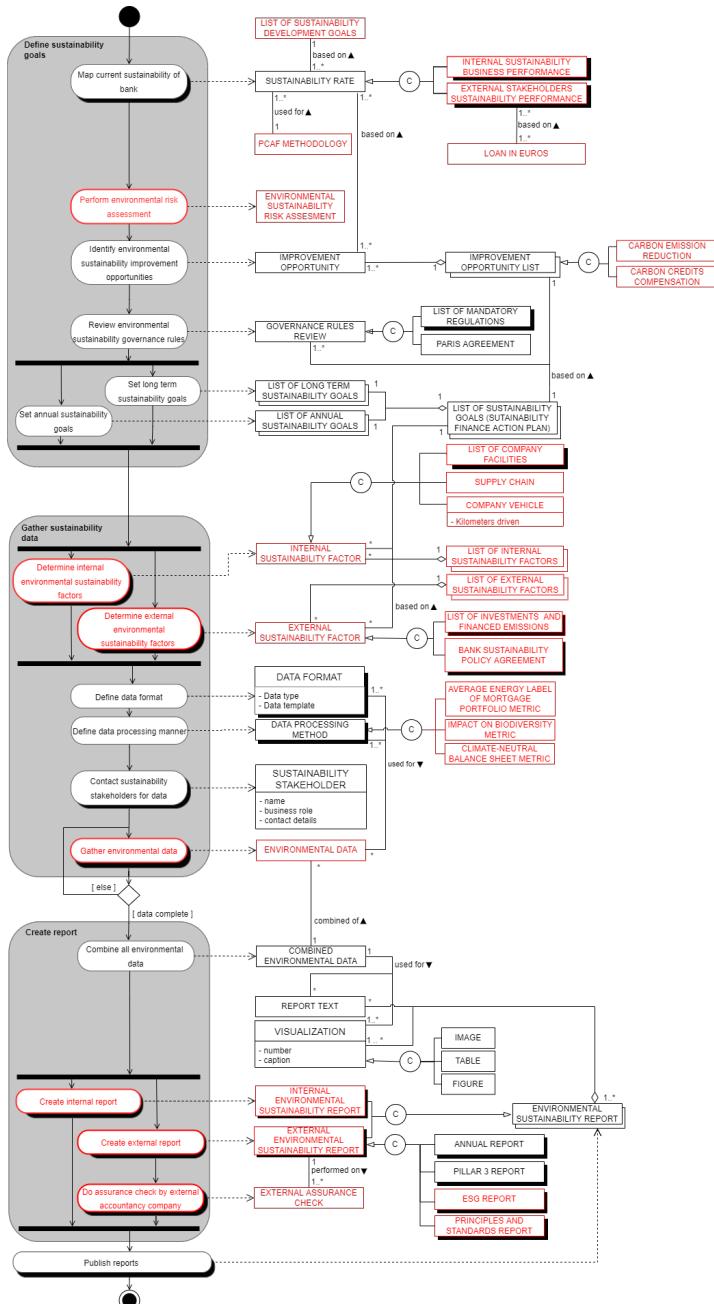


Fig. 11 PDD environmental data gathering and reporting method Bank X.2

D.2.2. Activity table

Table 15 Activity table for PDD Bank X.2

Activity	Sub activity	Description
Define sustainability goals	Perform environmental risk assessment	An ENVIRONMENTAL SUSTAINABILITY RISK ASSESSMENT is performed to indicate what the possible risks are for the bank if the bank does not behave in a sustainable manner.
Gather sustainability data	Determine internal sustainability factors	The bank determines what the most important INTERNAL SUSTAINABILITY FACTORS are at the bank itself. In short, which business aspects influence the sustainability of the bank and what kind of data must be collected about this.
	Determine external sustainability factors	The bank determines what the most important EXTERNAL SUSTAINABILITY FACTORS are for the external customers, investors, and other stakeholders about which information must be collected.
	Gather environmental data	Based on the determined INTERNAL and EXTERNAL SUSTAINABILITY FACTORS, the defined DATA FORMAT, and DATA GATHERING METHOD all needed ENVIRONMENTAL DATA will be gathered.
Create report	Create internal report	The bank checks on a quarterly basis, so four times a year, whether the bank is on track to achieve the LIST OF SUSTAINABILITY GOALS by drawing up an INTERNAL REPORT that is only visible to all bank employees.
	Create external report	At the end of each fiscal year, different EXTERNAL REPORTS are also created, which are published and are accessible to everyone.
	Do assurance check by external accountancy company	Before the EXTERNAL REPORTS are actually published, an EXTERNAL ASSURANCE CHECK is first performed by the external company KPMG to see whether the EXTERNAL REPORTS are correct and complete.

D.2.3. Concept table

Table 16 Concept table for PDD Bank X.2

Concept	Description
LIST OF SUSTAINABILITY DEVELOPMENT GOALS	A list of sustainability development goals is a list of seventeen goals introduced by the United Nations as a universal call to, among other things, protect the planet.
INTERNAL ENVIRONMENTAL BUSINESS PERFORMANCE	The internal environmental business performance shows the current sustainability performance of the bank itself.
EXTERNAL STAKEHOLDERS ENVIRONMENTAL PERFORMANCE	The external stakeholders environmental performance shows the sustainability performance of the banks its external clients, investors, and other stakeholders.
PCAF METHODOLOGY	The Partnership for Carbon Accounting Financials (PCAF) methodology is a collaboration between financial institutions for a harmonized approach to disclose on the greenhouse gas emissions associated with doing business (loans and investments).
LOAN IN EUROS	A given loan in euros that is given by the bank to external stakeholders indicates for how many of the external environmental sustainability rates the bank is indirectly responsible.
ENVIRONMENTAL SUSTAINABILITY RISK ASSESSMENT	A environmental sustainability risk assessment is an assessment that looks at the risks that the bank's unsustainable behavior could lead to.
CARBON EMISSION REDUCTION	A carbon emission reduction is one of the main ways to improve sustainability rates.
CARBON CREDITS COMPENSATION	A carbon credits compensation is a way to compensate for the emitted carbon emissions of the bank by, for example, having trees planted.

INTERNAL SUSTAINABILITY FACTOR	An internal sustainability factor is a factor that deals with the sustainability of the bank itself and which the bank must collect data about in order to report on in the sustainability reports.
LIST OF COMPANY FACILITIES	A list of company facilities is one of the main internal sustainability factors of Bank X.2, which lists the environmental sustainability factors of the bank buildings and everything related to them.
SUPPLY CHAIN	A supply chain is one of the main internal sustainability factors of Bank X.2, which shows the environmental sustainability factors related to the banks supply chain.
COMPANY VEHICLES	A company vehicle is one of the main internal sustainability factors of Bank X.2, which indicates the environmental sustainability factors, such as the driven kilometers, per business vehicle.
LIST OF INTERNAL SUSTAINABILITY FACTORS	A list of internal sustainability factors lists all the internal sustainability factors that have been defined.
EXTERNAL SUSTAINABILITY FACTOR	An external sustainability factor is a factor that deals with the sustainability of the bank its external stakeholders and which the bank must collect data about in order to write complete and correct sustainability reports.
LIST OF EXTERNAL SUSTAINABILITY FACTORS	A list of external sustainability factors lists all the external sustainability factors that have been defined.
LIST OF INVESTMENTS AND FINANCED EMISSIONS	A list of investments and financed emissions is one of the main external sustainability factor which includes the investments and emissions of the external stakeholders which are financed by the bank.
BANK SUSTAINABILITY POLICY AGREEMENT	A bank sustainability policy agreement is some sort of checklist set up by the Bank X.2 itself which external stakeholders should comply with.
AVERAGE ENERGY LABEL OF MORTGAGE PORTFOLIO METRIC	The average energy label of mortgage portfolio metric is one of the data processing methods to calculate the sustainability of the mortgages granted.
IMPACT ON BIODIVERSITY METRIC	The impact on biodiversity metric is one of the data processing methods to calculate the banks impact on nature.
CLIMATE-NEUTRAL BALANCE SHEET METRIC	The climate-neutral balance sheet metric is one of the data processing methods to define the greenhouse gas emissions of the bank and the way in which the banks compensates for those emissions.
ENVIRONMENTAL DATA	The environmental data is all data relating to environmental sustainability that must be collected by the bank.
INTERNAL ENVIRONMENTAL SUSTAINABILITY REPORT	An internal environmental sustainability report is a report that is only distributed between the internal bank employees about the sustainability situation of the bank.
EXTERNAL ENVIRONMENTAL SUSTAINABILITY REPORT	An external environmental sustainability report is a report which contains the information about the sustainability situation of the bank and is published and accessible for everyone.
ESG REPORT	A ESG report is a report in which the bank reports on data that the bank must report on according to the various ESG regulations.
PRINCIPLES AND STANDARDS REPORT	A principles and standards report is a report which includes information on principles for responsible banking, the sustainable development goals, and non-financial information.
EXTERNAL ASSURANCE CHECK	An external assurance check is a check performed by the external company KPMG to make sure that the information in the reports that will be published are correct and complete.

D.3. Bank X.3

D.3.1. PDD

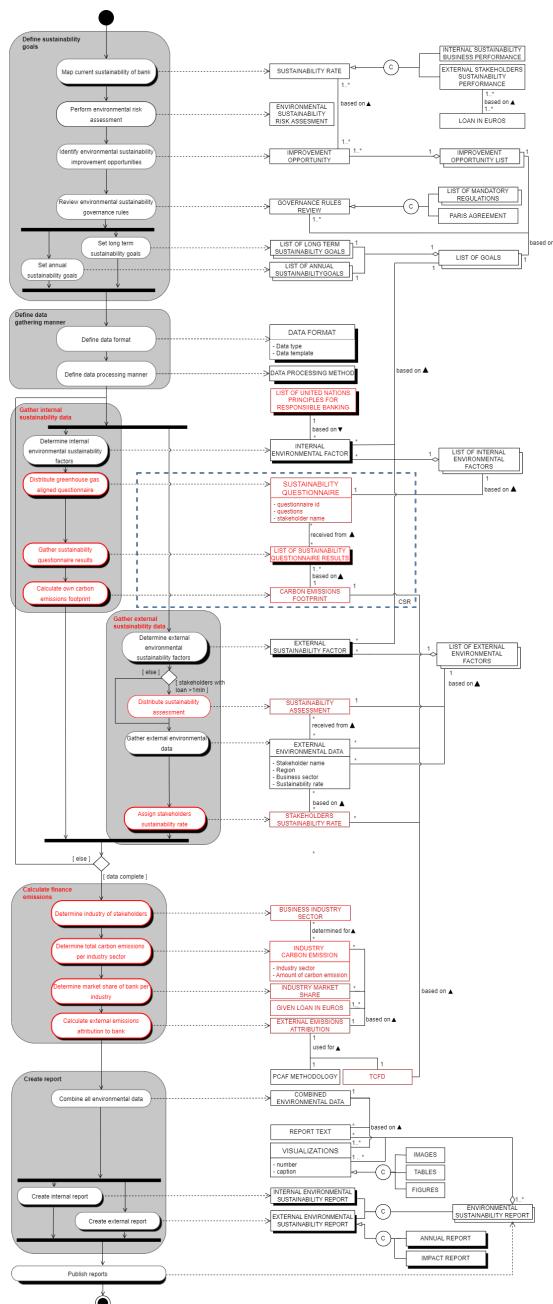


Fig. 12 Environmental data gathering and reporting method Bank X.3

D.3.2. Activity table

Table 17 Activity table for PDD Bank X.3

Activity	Sub activity	Description
Gather internal sustainability data	Create green-house gas aligned questionnaire	In order to collect the INTERNAL DATA of all Dutch bank offices easily and in a standard format, a SUSTAINABILITY QUESTIONNAIRE is created.
	Gather questionnaire results	After some time, the SUSTAINABILITY QUESTIONNAIRE RESULTS are collected and merged.
	Calculate own carbon emissions footprint	based on the SUSTAINABILITY QUESTIONNAIRE RESULTS, the CARBON EMISSIONS FOOTPRINT of the bank itself is calculated. In short, how many greenhouse gas emissions does the bank emit during its own operations.
Gather external sustainability data	Distribute sustainability assessment	All stakeholders and customers who request a loan of more than one million are asked to do a SUSTAINABILITY ASSESSMENT in order for the bank to get a better and more detailed overview of the sustainability figures of the external stakeholder.
	Assign stakeholders sustainability rate	based on the SUSTAINABILITY ASSESSMENT RESULTS, all stakeholders are assigned a STAKEHOLDERS SUSTAINABILITY RATE which indicates the sustainability of the external stakeholders.
Calculate finance emissions	Determine industry of stakeholders	It is determined for each of the external stakeholders in which BUSINESS INDUSTRY SECTOR they are active. Certain industry sectors are more or less sustainable than other industry sectors.
	Determine total carbon emissions per industry sector	After all BUSINESS INDUSTRY SECTORS in which external stakeholders are active have been determined, the total INDUSTRY CARBON EMISSIONS for each BUSINESS INDUSTRY SECTOR are determined.
	Determine market share of bank per industry	Based on the number of stakeholders in each BUSINESS INDUSTRY SECTOR and the loan given to these stakeholders the bank determines its own INDUSTRY MARKET SHARE in each BUSINESS INDUSTRY SECTOR.
	Calculate external emissions attribution to bank	Based on the INDUSTRY MARKET SHARE of the bank and the total INDUSTRY CARBON EMISSIONS, it is calculated for how much of the INDUSTRY CARBON EMISSIONS the bank is indirectly responsible.

D.3.3. Concept table

Table 18 Concept table for PDD Bank X.3

Concept	Description
LIST OF UNITED NATIONS PRINCIPLES FOR RESPONSIBLE BANKING	The list of united nations principles for responsible banking is a framework for banks to ensure banks behave in accordance with the Sustainable Development Goals and the Paris Climate Agreement.
SUSTAINABILITY QUESTIONNAIRE	A sustainability questionnaire is a questionnaire that is sent to all bank buildings in the Netherlands to map the overall sustainability data of the bank in the Netherlands.
LIST OF SUSTAINABILITY QUESTIONNAIRE RESULTS	A list of sustainability questionnaire results lists the output of the sustainability questionnaire that was sent to all bank buildings within the Netherlands.
CARBON EMISSIONS FOOTPRINT	A carbon emissions footprint is calculated for the bank in the Netherlands based on the sustainability questionnaire results.
SUSTAINABILITY ASSESSMENT	A sustainability assessment is done by all external customers and stakeholders of the bank who received a loan of more than one million to get a detailed overview of the sustainability figures of the external customers and stakeholders.
STAKEHOLDERS SUSTAINABILITY RATE	A stakeholders sustainability rate is calculated for all external clients and stakeholders based on the sustainability assessment results.
BUSINESS INDUSTRY SECTOR	A business industry sector is defined for every external customer and stakeholder.
INDUSTRY CARBON EMISSIONS	The industry carbon emissions looks at the carbon emissions of each business industry sector.
INDUSTRY MARKET SHARE	The industry market share is calculated on the basis of the number of external customers and stakeholders of the bank in each sector and the amount of the loan provided to them.
EXTERNAL EMISSIONS ATTRIBUTION	The external emissions attribution are the carbon emissions of external customers and stakeholders that can be indirectly linked to the bank.
TCFD	The Task Force on Climate-Related Financial Disclosures framework has been established to help organizations to report on climate-related risks and opportunities.

D.4. Bank X.4

D.4.1. PDD

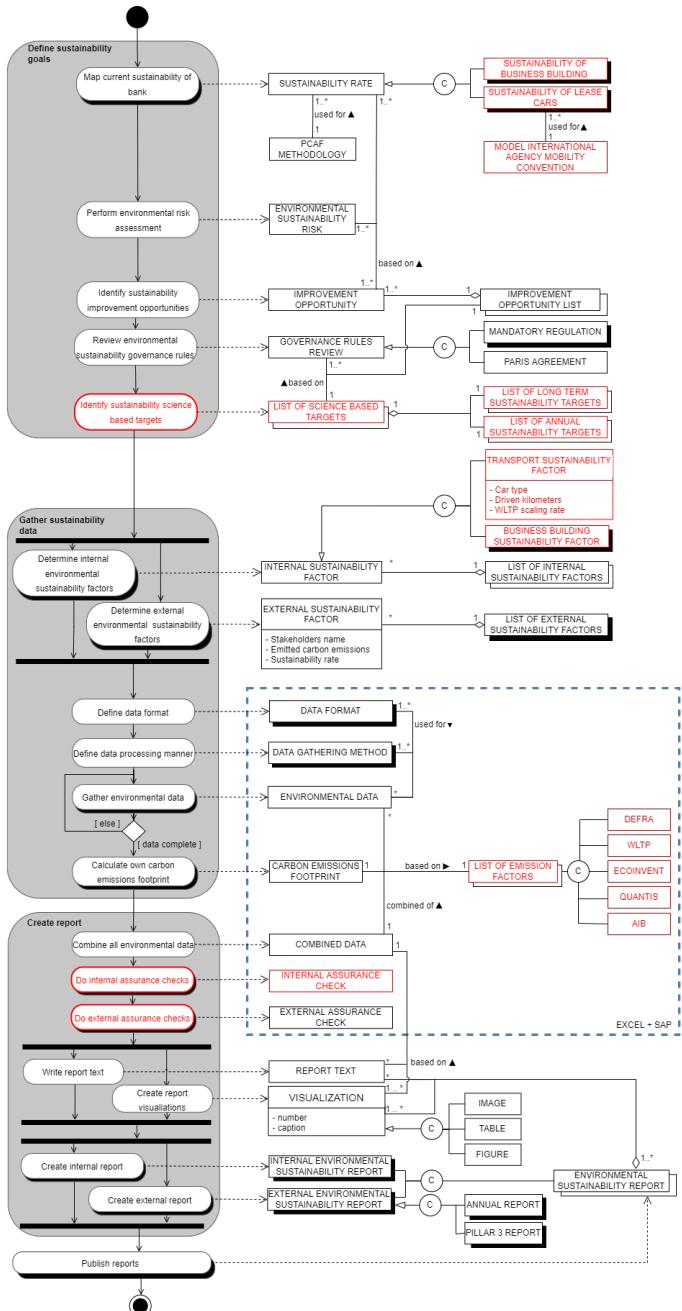


Fig. 13 Environmental data gathering and reporting method Bank X.4

D.4.2. Activity table

Table 19 Activity table for PDD Bank X.4

Activity	Sub activity	Description
Define sustainability goals	Identify sustainability science based targets	Create a LIST OF SCIENCE BASED TARGETS which includes the LIST OF LONG TERM TARGETS that have already been drawn up in previous years or are new targets that are added to the list this year and the LIST OF ANNUAL TARGETS that lists the targets that the bank wants to achieve in this fiscal year.
Create report	Do internal assurance checks	Before actually working with the collected data, an INTERNAL ASSURANCE CHECK is performed on the correctness and completeness of the data.
	Do external assurance checks	When the data 'passed' the INTERNAL ASSURANCE CHECK, an EXTERNAL ASSURANCE CHECK is performed by KPMG on the correctness and completeness of the data.

D.4.3. Concept table

Table 20 Concept table for PDD Bank X.4

Concept	Description
SUSTAINABILITY OF BUSINESS BUILDINGS	The sustainability of business buildings is one of the main things the sustainability rate is based on which includes all aspects of the banks building and everything related to them.
SUSTAINABILITY OF LEASE CARS	The sustainability of lease cars is one of the main things the sustainability rate is based on which includes information on the lease cars used and leased out by the bank.
MODEL INTERNATIONAL MOBILITY CONVENTION	The model international mobility convention is a framework used by the bank regarding mobility by the use of lease cars and the possible environmental sustainability aspects of those cars.
LIST OF SCIENCE BASED TARGETS	A list of science based targets includes both the long term sustainability targets and the annual sustainability targets.
LIST OF LONG TERM SUSTAINABILITY TARGETS	A list of long term sustainability targets includes targets that have to be met over a longer period than one fiscal year.
LIST OF ANNUAL SUSTAINABILITY TARGETS	A list of annual sustainability targets includes targets that are set up by the bank to achieve in this current fiscal year.
TRANSPORT SUSTAINABILITY FACTOR	A transport sustainability factor is one of the main internal sustainability factors that includes information on the environmental sustainability aspects of the banks leasecars, such as the car type, driven kilometers, or the WLTP scaling rate.
BUSINESS BUILDING SUSTAINABILITY FACTOR	The business building sustainability factor is one of the main internal sustainability factors that includes information on all aspects of the banks building and everything related to them.
LIST OF EMISSION FACTORS	The list of emission factors includes a number of emission factors that are necessary to calculate the carbon emission footprint of the bank.
DEFRA	A DEFRA emission factor includes guidelines for the conversions calculations from business activities such as energy usage, water consumption, and transport activities to greenhouse gas emissions.
WLTP	A Worldwide Harmonised Light Vehicle Test Procedure (WLTP) emission factor includes a consumption test to provide insight into the energy consumption of electric cars.
ECOINVENT	A ecoinvent emission factor includes a database of environmental assessments of products and activities.
QUANTIS	A quantis emission factor includes a greenhouse gas protocol with questions on which the organizations scope 3 carbon emission footprint could be calculated.

AIB	An Association of Issuing Bodies (AIB) emission factor includes a calculation methodology for the calculation of carbon emissions of certain products and activities.
INTERNAL ASSURANCE CHECK	An internal assurance check is a check performed by the employees of the bank itself to make sure that the data in the reports that will be published is correct and complete.

D.5. Bank X.5

D.5.1 PDD

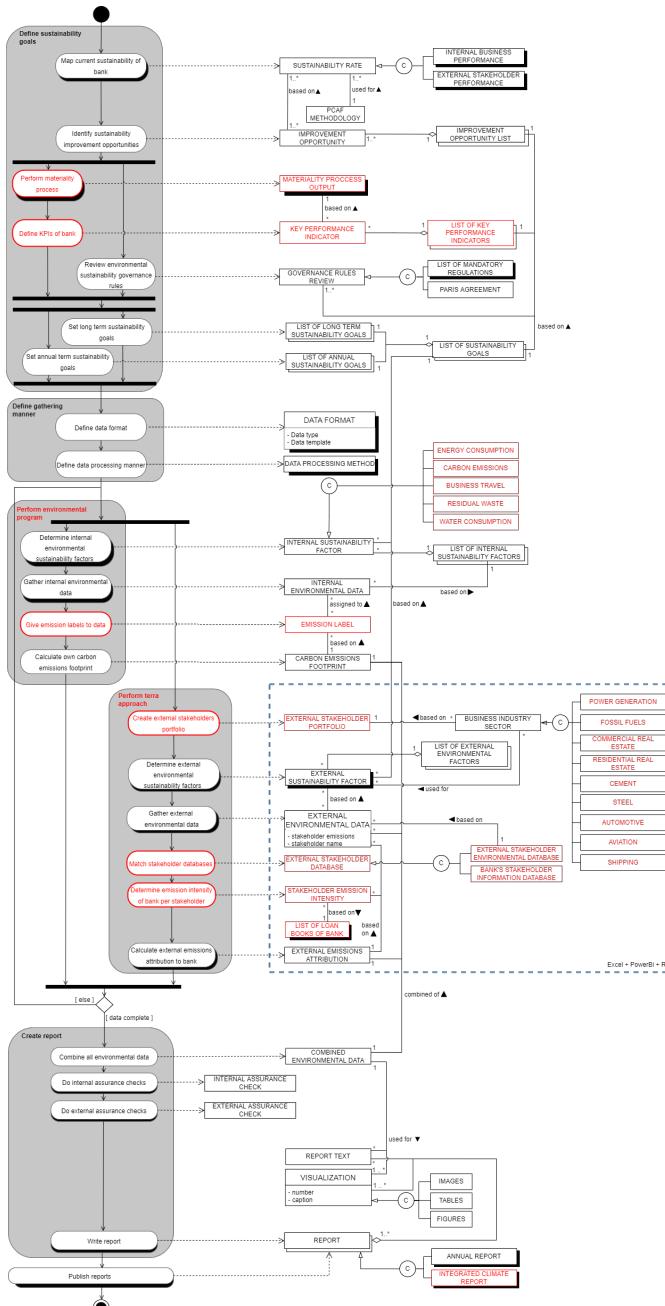


Fig. 14 Environmental data gathering and reporting method Bank X.5

D.5.2. Activity table

Table 21 Activity table for PDD Bank X.5

Activity	Sub activity	Description
Define current sustainability situation	Perform materiality process	The MATERIALITY PROCESS is a process in which internal and external stakeholders and shareholders are asked about which environmental sustainable indicators they consider important for the bank.
	Define KPI's of bank	Based on the MATERIALITY PROCESS, certain KEY PERFORMANCE INDICATORS (KPIs) are defined that are important for a good performance of the bank.
Perform environmental program	Give emission labels to data	EMISSIONS LABELS are assigned to all INTERNAL DATA collected on the bank's own business operations, which provide an indication of the sustainability of certain INTERNAL SUSTAINABILITY FACTORS.
Perform terra approach	Create external stakeholders portfolio	Determine which customers Bank X.5 has and of which stakeholders the bank wants a detailed sustainability overview. Which customers fall into one of the nine most carbon intensive industry sectors that are determined by the bank.
	Match stakeholder databases	Two databases are linked, the database of the external data about the climate performance indicators that has been received and the database with customer information that Bank X.5 already has.
	Determine emission intensity of bank per stakeholder	For each of the external stakeholders, the height of the loan that the bank has provided to the stakeholder is identified to define the STAKEHOLDER EMISSIONS INTENSITY which is used to later calculate the EXTERNAL EMISSIONS ATTRIBUTION.

D.5.3. Concept table Bank X.5

Table 22 Concept table for PDD Bank X.5

Concept	Description
MATERIALITY PROCESS OUTPUT	A materiality process output includes the results of the materiality process in which internal and external stakeholders and shareholders are asked about which environmental sustainable indicators they consider important for the bank.
KEY PERFORMANCE INDICATOR	A key performance indicator (KPI) is an indicator which is according to internal and external stakeholders important for the bank to be aware of and possibly report on.
LIST OF KEY PERFORMANCE INDICATORS	A list of key performance indicators lists all the key performance indicators that have been defined.
ENERGY CONSUMPTION	The energy consumption includes information on the total energy usage of the bank in a specific fiscal year.
CARBON EMISSIONS	The carbon emissions of the bank entails information on all carbon emissions emitted by the bank in a specific fiscal year.
BUSINESS TRAVEL	The business travel of the bank could include information on banks' means of transport, such as the use of cars and planes.
RESIDUAL WASTE	The residual waste of the bank deals with what the bank does with its waste, such as sorting or recycling waste.
WATER CONSUMPTION	The water consumption of the bank looks at the total amount of water the bank uses in a given financial year.
EMISSION LABEL	An emission label is a label which is given to data to indicate the environmental sustainability of gathered data.
EXTERNAL STAKEHOLDER PORTFOLIO	A external stakeholder portfolio is a detailed overview of all the external stakeholders the bank has and the business industry sector each stakeholder belongs to.
POWER GENERATION	The power generation business industry sector is the sector in which all stakeholders whose main business has to do with power generation fall in.

FOSSIL FUELS	The fossil fuels business industry sector is the sector in which all stakeholders whose main business has to do with fossil fuels fall in.
COMMERCIAL REAL ESTATE	The commercial real estate business industry sector is the sector in which all stakeholders whose main business has to do with commercial real estate fall in.
RESIDENTIAL REAL ESTATE	The residential real estate business industry sector is the sector in which all stakeholders whose main business has to do with residential real estate fall in.
CEMENT	The cement business industry sector is the sector in which all stakeholders whose main business has to do with the making or usage of the material cement fall in.
STEEL	The steel business industry sector is the sector in which all stakeholders whose main business has to do with the making or usage of the material steel fall in.
AUTOMOTIVE	The automotive business industry sector is the sector in which all stakeholders whose main business has to do with the creation or usage of motor vehicles fall in.
AVIATION	The aviation business industry sector is the sector in which all stakeholders whose main business has to do with the creation or usage of air crafts fall in.
SHIPPING	The shipping business industry sector is the sector in which all stakeholders whose main business has to do with the creation or usage of ships fall in.
EXTERNAL STAKEHOLDER DATABASE	An external stakeholder database is a database which includes all external stakeholder information the bank already has and the environmental sustainability information the bank has gathered on external stakeholders.
EXTERNAL STAKEHOLDER ENVIRONMENTAL DATABASE	An external stakeholder environmental database includes all the environmental sustainability data received from the external stakeholders.
BANK'S STAKEHOLDER INFORMATION DATABASE	A bank's stakeholder information database includes all the information the bank itself knows about all external stakeholders, both financial and non-financial data.
STAKEHOLDER EMISSION INTENSITY	The stakeholder emission intensity includes the carbon emissions of external stakeholders that can be indirectly linked to the bank.
LIST OF LOAN BOOKS OF BANK	A list of loan books of bank gives an overview of the height of the loans that the bank has given to certain external clients and stakeholders.
INTEGRATED CLIMATE REPORT	An integrated climate report outlines how the banks financing impacts climate change and what the banks does to perform in an environmental sustainable way.

E. Super-method

E.1. PDD

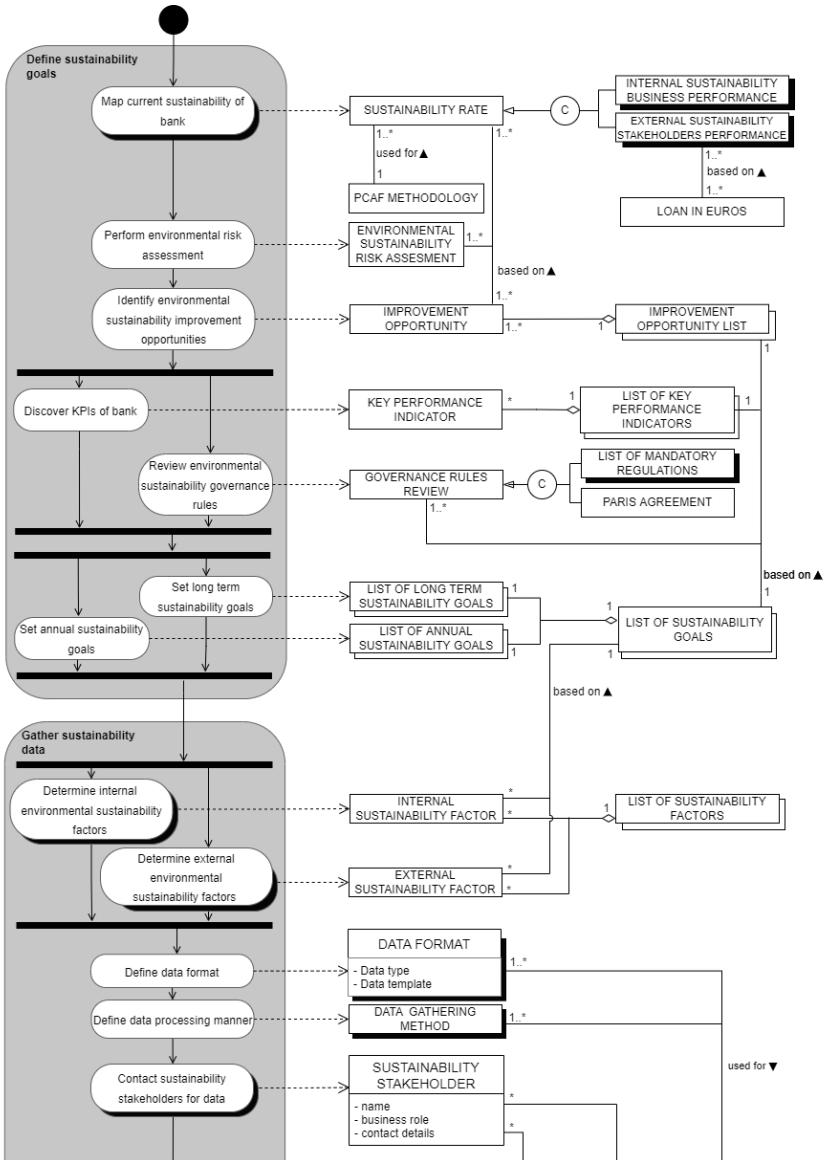


Fig. 15 Super-method PDD part 1

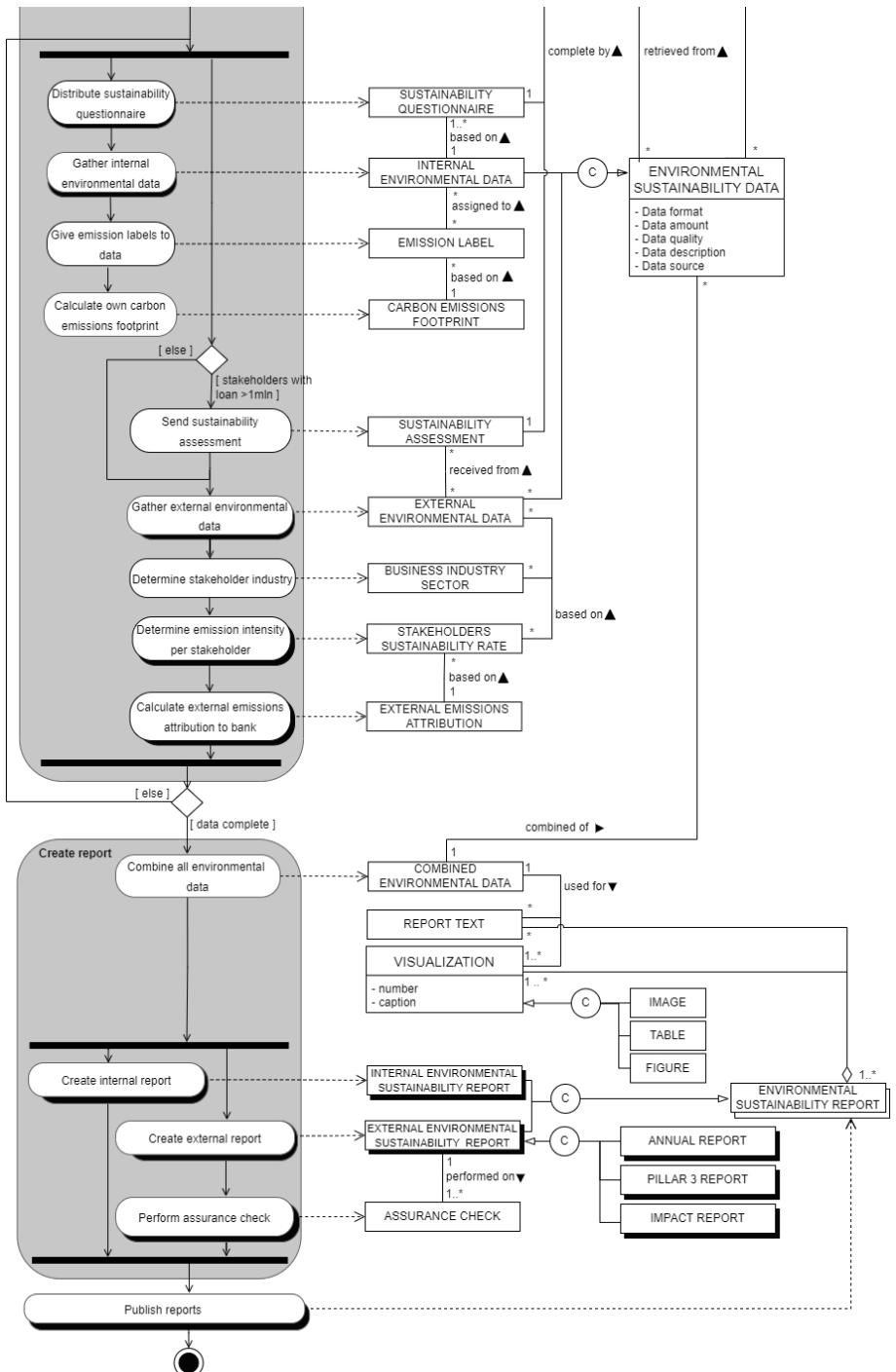


Fig. 16 Super-method PDD part 2

E.2. Activity table super-method

Table 23 Activity table for super-method

Sub-activity super- method	Total	Bank X.1	Bank X.2	Bank X.3	Bank X.4	ING
Map current sustainability of bank	5	=	=	=	=	=
Perform environmental risk assessment	3		=	=	=	
Identify environmental sustainability improvement opportunities	5	=	=	=	=	=
Discover KPIs of bank	1					=
Review environmental sustainability governance rules	5	=	=	=	=	=
Set annual sustainability goals	5	=	=	=	=	<
Set long term sustainability goals	5	=	=	=	=	<
Determine internal environmental sustainability factors	5	<	=	=	=	=
Determine external environmental sustainability factors	5	<	=	=	=	=
Define data format	5	=	=	=	=	=
Define data processing manner	5	=	=	=	=	=
Contact sustainability stakeholders for data	2	=	=			
Distribute sustainability questionnaire	1			=		
Gather internal environmental data	5	=	<	>	<	>
Give emission labels to data	1					=
Calculate own carbon emissions footprint	2			=		=
Gather external environmental data	5	=	<	>	<	>
Distribute external sustainability assessment	1			=		
Gather assessment results	1			=		
Determine stakeholders per industry	2			>		=
Determine emission intensity per stakeholder	2			=		=
Calculate external emissions attribution to bank	2			=		=
Combine all environmental data	5	=	=	=	=	=
Create internal report	5	<	=	=	=	<
Create external report	5	<	=	=	=	<
Perform assurance check	3		=	>	>	

E.3. Concept table super-method

Table 24 Concept table for super-method

Concept	Total	Bank X.1	Bank X.2	Bank X.3	Bank X.4	ING
SUSTAINABILITY RATE	5	=	=	=	=	=
PCAF METHODOLOGY	4		=	=	=	=
INTERNAL SUSTAINABILITY BUSINESS PERFORMANCE	4		=	=	SUSTAINA OF BUSI-NESS BUILD-ING	
EXTERNAL SUSTAINABILITY BUSINESS PERFORMANCE	4		=	=	SUSTAINA OF LEASE CARS	
LOAN IN EUROS	2		=	=		
ENVIRONMENTAL SUSTAINABILITY RISK ASSESSMENT	3		=	=	=	
IMPROVEMENT OPPORTUNITY	5	=	=	=	=	=
IMPROVEMENT OPPORTUNITY LIST	5	=	>	=	=	=
KEY PERFORMANCE INDICATOR	2				=	>
LIST OF KEY PERFORMANCE INDICATORS	2				=	=
GOVERNANCE RULES REVIEW	5	=	=	=	=	=
LIST OF MANDATORY REGULATIONS	5	=	=	=	=	=
PARIS AGREEMENT	5	=	=	=		
LIST OF LONG TERM SUSTAINABILITY GOALS	5	=	=	=	LIST OF LONG TERM SUS-TAINABILITY TAR-GETS	=
LIST OF ANNUAL SUSTAINABILITY GOALS	5	=	=	=	LIST OF ANNUAL SUS-TAINABILITY TAR-GETS	=
LIST OF ENVIRONMENTAL SUSTAINABILITY GOALS	5	=	=	=	LIST OF SCIENCE BASED TAR-GETS	=
INTERNAL SUSTAINABILITY FACTOR	5	<	>	=	>	=
EXTERNAL SUSTAINABILITY FACTOR	5	<	>	=	=	=
LIST OF SUSTAINABILITY FACTORS	5	=	>	>	>	>
DATA FORMAT	5	=	=	=	=	=
DATA GATHERING METHOD	5	=	>	=	=	=

SUSTAINABILITY STAKEHOLDER	2	=	=			
SUSTAINABILITY QUESTIONNAIRE	1			=		
INTERNAL ENVIRONMENTAL DATA	4	=	<	<		=
ENVIRONMENTAL SUSTAINABILITY DATA	4	=	<		=	=
EMISSION LABEL	1					=
CARBON EMISSIONS FOOTPRINT	3			=	>	=
SUSTAINABILITY ASSESSMENT	1			=		
EXTERNAL ENVIRONMENTAL DATA	3	=		=		=
BUSINESS INDUSTRY SECTOR	2			=		>
STAKEHOLDERS SUSTAINABILITY RATE	2			>		><
EXTERNAL EMISSIONS ATTRIBUTION	2			=		=
COMBINED ENVIRONMENTAL DATA	5	=	=	=	=	=
REPORT TEXT	5	=	=	=	=	=
VISUALIZATION	5	=	=	=	=	=
IMAGE	5	=	=	=	=	=
TABLE	5	=	=	=	=	=
FIGURE	5	=	=	=	=	=
INTERNAL ENVIRONMENTAL SUSTAINABILITY REPORT	3		=	=	=	
EXTERNAL ENVIRONMENTAL SUSTAINABILITY REPORT	3		=	=	=	
ENVIRONMENTAL SUSTAINABILITY REPORT	5	=	=	=	=	=
ANNUAL REPORT	5	=	=	=	=	=
PILLAR 3 REPORT	3	=	=		=	
IMPACT REPORT	2	=		=		
ASSURANCE CHECK	3		EXTERNA ASSUR- ANCE CHECK		>	>

F. Generic method

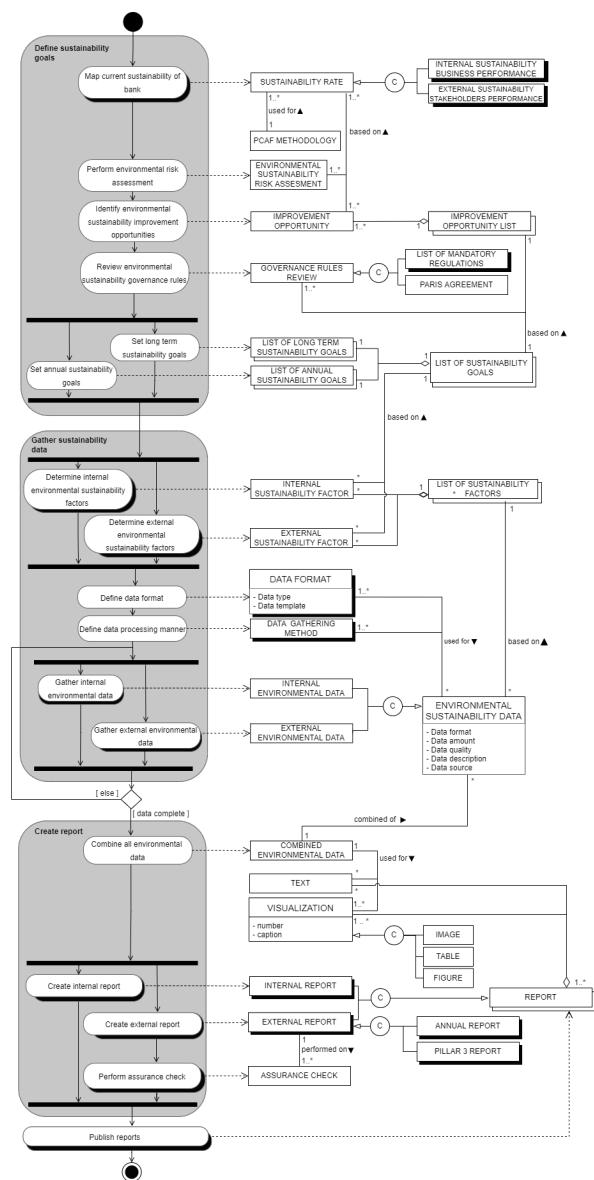


Fig. 17 Generic method PDD

G. Improvement opportunities mentioned in literature and interviews

Table 26 in this appendix shows how the possible improvement options for the current environmental data gathering and reporting method presented in chapter 7 have been found.

Table 26 Improvement opportunities for environmental data gathering and reporting methods of bank obtained from literature and interviews

Improvement opportunity	Mentioned by	Description
Standardize regulations	Literature	“A majority of respondents to our survey, 67 percent, said there should be only one standard, and an additional 21 percent said there should be fewer than exist now” (Bernow et al., 2019).
	Literature	“To this date, there is no globally accepted definition of CSR or sustainability reporting” (Dilling, 2010).
	Professor interviews	“Make sustainability reporting mandatory and draw up one general file which clearly states what must be reported on and how this must be done”
	Bank X.1	“Too many regulations and standards exist, a base is needed”
Standardize data gathering and reporting method	LeasPlan	“It is hard to comply with all the different regulations that are out there”
	Literature	“These services use different methods to estimate missing information, so there are discrepancies among data sets” (Bernow et al., 2019).
	Literature	“With so many reporting frameworks and guidelines to choose from, and so many potential stakeholder interests to address, companies rarely make sustainability disclosures that can be compared as neatly as their financial disclosures can” (Bernow et al., 2019).
	Literature	“Years of effort by standard-setting groups have produced nearly a dozen major reporting frameworks and standards, which businesses have discretion to apply as they see fit” (Bernow et al., 2019).
	Literature	“Given the proliferation of reporting frameworks and standards, companies have had to decide for themselves which ones to apply. These frameworks and standards allow businesses considerable freedom to choose their sustainability disclosures” (Bernow et al., 2019).
	Literature	“Similarly, there is neither a single globally accepted definition of sustainability reporting nor a commonly accepted format that sustainability reporting should follow” (Dilling, 2010).
	Literature	“There is so far a plurality of different reporting practices developed and therefore a broad consensus is reached that the current practice of sustainability disclosure is inefficient and sometimes ineffective due to a lack of commonly accepted standards and the inability to compare the information reported or provide assurance” (Beerbaum, 2021).
	Bank X.1	“Make the data gathering process less time consuming and more user friendly”
Bank X.1	Bank X.1	“Difficult to merge data that is of a different template, a standard template to gather internal and external data would be nice”
	Bank X.3	“Collect the finance emissions at the customer level without burdening customers with long questionnaires. Not all companies are obligated to keep track of their carbon emissions footprint, but the bank does need the data”

	Bank X.3	"Not all banks are the same, so it is difficult to have a common ground. Standardization is desirable, but there needs to be space do things slightly different based on the organization its business operations"
Tools and automation	Bank X.5 Literature	"Different banks use different methodologies" "Many companies do not have the systems in place to collect quality data for [sustainability] reporting" (Bernow et al., 2019).
	Bank X.1	"Use of AI for more automation"
	Bank X.5	"The IT systems in the bank could be improved"
	Bank X.5	"More automation would be nice, however more automation might mean that the process becomes more difficult to change. Twisting and changing opportunities are nice to have till the point that there is a long term starting point with no new of changing regulations"
	Bank X.4	"A lot of data gathering and reporting is done manually, which could be improved"
Involvement intermediate people	Professor interviews	"Involve more external people, such as clients and investors, in the process of determining which environmental aspects are important to report on as a company"
	Bank X.1	"People with a lot of different specializations are needed for the gathering of and reporting on environmental sustainability data"
	Bank X.4	"More insight into suppliers and more data sharing within the industry is wished for"
	Bank X.5	"The scopes of clients and stakeholders that the bank reports on should be more clear"
Data quality	Literature	"Corporations do not provide systematic data on one-third of the sustainability factors [that we consider] material" (Bernow et al., 2019).
	Literature	"Concretely, the results reveal that 56.12% of environmental indicators are not disclosed by large companies" (Murillo-Avalos et al., 2021).
	Literature	"In its factsheet on ESG disclosures, EBA acknowledged the potential difficulty in obtaining accurate data, due to which banks can use proxies, estimates, and ranges where reliable data is not yet available" (Beerbaum, 2021).
	Literature	"The growing data volumes from diverse sources cause data inconsistencies that need to be identified and addressed before decisions are made based on incorrect data" (Abraham et al., 2019).
	Bank X.1	"Gathered data should be correct and complete, tools are needed for good data gathering and analysis"
	Bank X.4	"The required data is often not available and often of low quality"
	Bank X.4	"There is a lot of inconsistency in the data, a clear overview for which data is needed would be good"
	Bank X.5 Bank X.5	"Data is often incomplete" "Better overview of data points is wished for, meaning an overview of what data is needed and an explanation on how to get the data"

H. Opinion of banks on improvement opportunities

A second interview was held with all banks in which the results of this research were discussed. The findings of these validation interviews can be found in chapter 8. Table 26 in this appendix shows the opinions of each of the banks on the identified improvement opportunities.

Table 26 Opinion of bank employees on improvement opportunities obtained from validation interviews.

Bank	Comment
Standardization regulations	
Bank X.1	"Bank X.1 sometimes has problems getting a good picture of all regulations and when do you know whether you have a good picture of all regulations?"
Bank X.1	"There are many regulations, and more to come."
Bank X.1	"Would be more useful and helpful if there is a clear overview of regulations, or if the regulations could at least be found somewhere in one place."
Bank X.2	"Standardization is easier, but banks must have a degree of flexibility so that reports can be customized based on the bank's own profile."
Bank X.2	"By fully standardizing everything you can lose context and context is often what shapes the bank."
Bank X.4	"Standardization is already happening (CSRD, EFRAG EBA), but it is a process that takes a long time."
Bank X.4	"Standardization helps to make better comparisons between different companies, but there will always be a degree of inherent flexibility."
Bank X.4	"Financial data is easier to find and trace than environmental data. Interpretations, estimates, different methods, assumptions, or proxies will always be needed in the process of gathering environmental data and subsequently to report on this data."
Bank X.5	"There are already a lot of harmonization programs where reporting expectations are consolidated within one framework."
Bank X.5	"As for the regulations, the EU taxonomy is really an outstanding standalone regulation, but the outline of regulations like the CSRD, NFRD, or Pillar 3 are all based on the TCFD of the UN and have therefore multiple similarities."
Standardization method	
Bank X.1	"The topics on which banks report differs. Some banks are more transparent than others, but as a result the sustainability figures are sometimes more negative."
Bank X.1	"If a standard method is introduced, comparisons between banks can be done much better, because the banks can now determine a large part of what they report on themselves."
Bank X.1	"A standard method will certainly help, but only in combination with standardization of the regulations. In order to make a good comparison, the way in which and about what the bank reports must be the same."
Bank X.3	"Standardization is already happening (ESAP, PCAF, NVB), but it is a process that takes years."
Bank X.2	"A lot of information can be found about what should be reported on, but little information is available on how this should actually be done."
Bank X.2	"Collecting sustainability information for reporting is often done within the finance/accounting environment and those who have experience with financial data collection, often the method for environmental data gathering and reporting is derived from financial methods within banks and therefore have similarities."
Bank X.2	"More cooperation and standardization is certainly needed, but every bank is different, so some form of flexibility must remain."
Bank X.4	"PCAF methodology is already working on method standardization, but PCAF still has many freedoms that banks can fill in themselves, for this reason banks can still not be compared properly."
Bank X.4	"For PCAF the results of scope 1 and scope 2 are used, but the way in which scope 1 and scope 2 are calculated can differ per bank."
Bank X.4	"Within factors you need to report on according to the PCAF methodology there are sub-factors and those sub-factors also have sub-factors that may not be standardized. Not sure if the underlying sub-factors will ever be fully standardized."
Bank X.4	"More standardization is necessary, because otherwise comparisons between different banks cannot be made, ideally you want to be able to make a clear and good comparison."

Tools and automation	
Bank X.1	"Within Bank X.1 it is still a lot of sending emails and keeping track of excel sheets."
Bank X.1	"A fixed template in which everyone fills in their own data and the bank receiving the data in a fixed template could be a nice next step for Bank X.1."
Bank X.2	"Currently, data is supplied in many different ways."
Bank X.2	"More automation would certainly be desirable, but completely excluding human input is not desirable."
Bank X.4	"Bank is already working on automation, all data is now being integrated into SAP."
Bank X.4	"Scope 1 and scope 2 have already been processed in SAP, in order to fully integrate scope 3 in SAP, the entire data governance of the bank must first be in order."
Bank X.4	"Bank is engaged in a digital transformation in which they want to centralize all data in SAP, so that everyone can obtain the necessary data from the same source."
Bank X.5	"Bank X.5 is already doing something with automation, among other things, the tool Greenomy is used."
Involvement intermediate people	
Bank X.1	"Within the bank the data does not go past too many people. Bank X.1 does have several teams that are specialized in collecting certain data, but those teams deliver the data directly to the sustainability team."
Bank X.1	"Not in favor of passing the data within the bank to even more people, but externally you are simply dependent on your suppliers and you often need several people to collect the desired data (NS for train journeys, lease companies for cars, booking companies for flights, IT companies for data)."
Bank X.3	"BIG4 companies are all working on sustainability and banks work with these companies a lot."
Bank X.3	"Bank X.3 obtains external expertise from consultancy companies, but also companies such as the World Wildlife Fund (WWF)."
Bank X.2	"As a bank, you have to make a trade-off between using external knowledge and building internal knowledge."
Bank X.2	"You never want to become dependent on external people."
Bank X.2	"Sustainability reporting is a process that repeats itself every year, so it is better to start building internal knowledge now instead of paying for and depending on external knowledge for years."
Bank X.4	"You should not involve more people than necessary, but you should have people who perform and understand the process."
Bank X.4	"Involve the right people within the organization (finance, sustainability and risk department), and you must ensure that these people have sufficient time and knowledge to be able to perform all tasks."
Bank X.4	"Less often that too many people get involved in the process. Rather people are aware of the fact that sustainability reporting needs to happen and want it to happen, but do not want to spend too much time on it."
Bank X.5	"It is not about the number of people, but about who is involved in the process."
Bank X.5	"All banks have to train their own people to think differently on what to report on and what value the report has."
Bank X.5	"External consultants probably do not know much more than the banking employee, they also read the regulations."
Data quality	
Bank X.1	"There are sometimes nice plans about what data is needed, but obtaining that data is more difficult."
Bank X.2	"Data quality and data availability are perhaps two separate things. They influence each other, but are separate from each other."
Bank X.2	"Many of the environmental data, such as CO2 impact, are always estimates, which means that the reliability and quality of the data may be low."
Bank X.4	"External stakeholders cannot always provide the data that banks need."
Bank X.4	"The ECB requires banks to collect data from their customers such as what the customer's scope 1, 2, and 3 emissions are or what the customer's exposure to physical risks is, but for this the bank has to go through its entire customer base and collect the data somewhere externally."
Bank X.4	"ECB and EBA make sustainability reporting a priority for banks, but ignore how the rest of the ecosystem is doing and make it the bank's problem to solve it."
Bank X.4	"Pressure from the ECB and EBA is good because more needs to be done, but the pressure should come from the EU more centrally and apply rules more equally to different organizations so that when a bank goes to a customer, the customer has the necessary data available."