Chaire Economie du Climat
Université Paris-Dauphine
CDC Climat

WORKING PAPER
n° 2015-08 • Septembre 2015

KEYWORDS

REDD+ projets

Worlwide

Database

Knowledge Representation

Climate Change

Forests

ID-RECCO, A NEW COLLABORATIVE WORK TOOL TO IMPROVE KNOWLEDGE ON REDD+ PROJECTS:

sources, methodology and data.

Gabriela SIMONET and Coline SEYLLER

This paper describes the methodology and data used for the construction of a collaborative work tool focused on REDD+ projects and called ID-RECCO, which stands for 'International Database on REDD+ Projects linking Economic, Carbon and Communities data'. ID-RECCO links 110 variables informing on several aspects of REDD+ projects: carbon certification, sources of financing, socio-economic expected impacts, project proponents and general features of the project. As of October 2014, we have collected data on 410 projects, 57 countries and 362 project proponents.

This database is innovative in the sense it is the first time such a large amount of information is collected on REDD+ projects globally, in a format adequate for research purpose and analysis.

The database will be available online by the end of 2015 to serve the REDD+ community. It will be particularly useful for researchers who work on REDD+ issues, but it will also constitute a unique learning unit for project proponents and governments who are implementing REDD+ actions at different scales.

Chaire Economie du Climat
Palais Brongniart, 4ième étage
28 place de la bourse
75002 PARIS

Gabriela SIMONET is a phd student at the Climate Economics Chair and French Agricultural Research Centre for International Development.
Email: gabriela.simonet@chaireeconomieduclimat.org

Coline SEYLLER works at French Agricultural Research Centre for International Development

Acknowledgements

The ID-RECCO database benefited from the support of the Climate Economics Chair (CEC), the French Agricultural Research Centre for International Development (CIRAD) and the University of Michigan.

The authors are grateful for the contribution of Ana-Maria Sales (TIMC Grenoble), Fabrice Bénédet (CIRAD) and Wen Liang (University of Michigan) on the database and website design and creation, and of Brian Schaap (University of Michigan) and Danielle Haggard (University of Michigan) for their help on database filling. We also thank Arun Agrawal, Philippe Delacote, Christian de Perthuis, Driss Ezzine-de-Blas, Alain Karsenty, Pete Newton and Cristy Watkins for their contribution to the project.

1- Introduction

The REDD+ mechanism was introduced at the 11th Conference of Parties (COP) that took place in 2005, with the idea to pay developing countries for their effort to reduce CO_2 emissions from deforestation. The official meaning of REDD+, as defined by the United Nations Framework Convention on Climate Change (UNFCCC), is "Reducing Emissions from Deforestation and forest Degradation in developing countries, [including] the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries" (UNFCCC 2011, FCCC/CP/2010/7/Add.1).

REDD+ was initially designed to operate at national scale, notably to alleviate the problem of leakage (Santilli et al., 2003). However, numerous REDD+ projects have been implemented at local scale since the mid-2000s (Cerbu et al. 2010; Sills et al. 2014), supported by both public and private financings (Canby et al., 2014).

REDD+ projects constitute the main achievement so far in terms of integration of a carbon value in the forestry sector. As such, they could provide valuable insights and lessons for the global REDD+ mechanism. Moreover, even though national policies appear to be very different from REDD+ projects, the necessity to link both initiatives at some point implies a good understanding of current local projects.

However, as of early 2015, REDD+ projects cannot be easily studied as a whole because of the lack of global information on them. Indeed, data on REDD+ projects is currently scattered and provided in a heterogeneous format, in relation with the absence of official follow-up of the projects. This prevents from leading global analyses on REDD+ projects and comparing projects with each other, which would be useful to learn about success and failure factors notably.

To enhance knowledge and transparency on REDD+ projects, we have constructed a database which links 110 qualitative and quantitative data from various components of REDD+ projects: carbon certification, sources of financing, socio-economic expected impacts, project proponents and general features of the project.

This database is called ID-RECCO, which stands for "International Database on REDD+ projects linking Economic, Carbon and Communities data".

The added value of the ID-RECCO database is threefold: 1) Homogenization of the terms used by various sources to designate key concepts about REDD+ projects; 2) Centralization of fragmented information in a single database; 3) Organization of data in a format adapted to research purposes and analysis.

ID-RECCO is complementary to existing portals on REDD+ projects (eg. Forest Trend, 2014a; Global Canopy Programme, 2014) because none of them provides both a global view of REDD+ projects and detailed information about each of them, and none of them give access to data in a directly usable format. Data reliability regarding carbon credits transactions might be higher in the annual reports published by Ecosystem market place on the state of the voluntary carbon market (Peters-Stanley and Gonzalez, 2014), because the latter are based on extensive survey of REDD+ stakeholders.

However, the scope of ID-RECCO is broader than carbon credits transactions, with information on the design of the projects, socio-economic expected impacts, sources of financing, etc. Moreover, these reports only provide aggregated results and do not give the possibility to work on the original dataset.

ID-RECCO will be useful for researchers and project proponents, as well as decision-makers, as REDD+ projects can be seen as a testing ground for national REDD+ policies.

In section 2, we describe the methodology used to build this new database. Section 3 focuses on data quality and section 4 concludes. The detail of the database is provided in Appendix.

2- Methodology

The ID-RECCO tool has been built with the collaboration of the Climate Economics Chair (Paris-Dauphine University, France), CIRAD (Montpellier, France) and University of Michigan (United States).

Its construction involved four main steps: 1) The constitution of a set of concepts specific to REDD+ projects, which seek to both describe the project's components and objectives, and also to capture data concerning the economic structure, carbon-related data, and expected socio-economic impacts of the project; 2) The organization of these concepts into a conceptual database schema; 3) Populating the database with data extracted from the REDD+ literature; and 4) The creation of a website for the online dissemination of the data.

2.1. Analysis of information sources and selection of concepts

To identify and collect data about REDD+ projects, we first selected different sources of publicly available information. The data used to fill this database are mainly reported by project proponents and it is thus difficult to assess their credibility and validity. Over time, however, comments and review of the database by REDD+ experts will increase its robustness.

The websites of the main standards used in the voluntary carbon market have been a key source of information. Indeed, these standards require project proponents to publish several reports, whose information is generally complete and accurate. The Voluntary Carbon Standard (VCS, 2014) and Climate Community and Biodiversity Alliance (CCBA, 2014) have been particularly used as they certified respectively 78 and 102 forest carbon projects, mostly in developing countries. We also used the "Forest Carbon Portal", initiated by Forest Trends, which compiles data on more than 200 forest carbon projects, both in developed and developing countries. These data are provided directly by project proponents (mainly from the private sector) and are not audited by a third party as in the case of VCS and CCB validated projects, which raises the question of their objectivity and accuracy (Forest Trends, 2014a). Yet, voluntary reporting is the primary method by which much of the publicly accessible REDD+ information is compiled, so this information was used in spite of its potential bias. We also relied on other portals like "The REDD Desk", implemented by The Global Canopy Programme, which focuses on readiness activities (including pilot projects) in 28 countries (REDD desk, 2014). Several more formalized academic sources were also used, including the REDD+ database compiled by the Institute for Global Environmental Strategy (IGES) which examines in detail 34 REDD+ projects (IGES, 2014), and the global database created by the Center for International Forestry Research (CIFOR) which lists 338 REDD+ and other forest carbon projects (CIFOR, 2014).

A summary of the different sources of information identified is presented in Appendix I. In order to highlight the differences between sources in the quantity and quality of information regarding REDD+ projects, and in the way each source category can be most appropriately used, we have classified the sources of information into the six following (non-exclusive) categories:

1. Maps of projects: These maps (Forest Trend 2014a; Forest Trend 2014b; CIFOR 2014; Carbon Catalog 2014; REDD+ partnership 2014; VCS 2014; SCS 2014) usefully depict the location of REDD+ projects and tend to capture and include a large number of projects. However, the information available about each project is generally limited to a short project datasheet, or a list of links to other websites. This category of sources is useful to identify the projects, but does not provide much information about each project.

2. Certification reports: Several standards (VCS 2014; CCBA 2014; Plan Vivo 2014; CarbonFix 2014; CDM 2014) have emerged on the voluntary carbon market, certifying carbon and/or socio-environmental criteria. For the majority of projects which are certified, a project description report is available. These reports are very complete and provide high quality information but data extraction is time-consuming due to the size of the documents.

3. Projects datasheets: These datasheets (Forest Trend 2014a; IGES 2014; Global Canopy Programme, 2014; Eco2data 2014; Code REDD 2014; Carbon Catalog 2014; VCS 2014; Plan Vivo 2014; CarbonFix 2014; Calmel et al. 2011) provide a brief summary of the projects, and tend to be a relatively objective compilation of facts which are usually free of interpretation or spin, depending on the author of the datasheet and the process of data collection utilized.

4. Research: Some academic research programs have conducted global analyses of REDD+ projects (IGES 2014; CIFOR 2014; Lawlor et al. 2013; Chenost et al. 2010). These research sources generally present high quality information, but they encompass a minority of projects.

5. Press: Press articles sometimes reveal information that cannot be found anywhere else, notably about carbon credit transactions. A specialized press sector (Forest Trends 2014a; Global Canopy Programme 2014; REDD monitor 2014; Forest Carbon Asia 2013) has emerged which provides regular information about REDD+ developments all over the world, but the quality of information is variable.

6. Carbon registries: Carbon registries (APX, 2014; CDM, 2014; Markit, 2014) provide information on the transactions of REDD+ carbon credits. Markit and APX are the two main institutions providing a public registry of transactions occurring in the voluntary carbon market. However, transactions are not necessarily displayed publicly, so Markit and APX cover only a portion of the transactions that occur on the voluntary carbon market. The UNFCCC's CDM website is also a good source of information for CDM-related carbon transactions, which can occur either on the compliance or the voluntary market. Like Markit and APX, not all CDM transactions are available publicly. When a transaction is available, information is usually well detailed (date, amount of units, buyer, etc.).

We used these different sources of information to identify the concepts commonly used in the area of REDD+ projects, as well as their availability.

In total, we have selected 110 variables to build the ID-RECCO database, in accordance with data availability and with our objective to provide a detailed picture of REDD+ projects. The database also includes source fields which specify the sources from which the data came, in order to ensure the

transparency of data collection. The complete list of variables contained in ID-RECCO is provided in Appendix II.

2.2. Knowledge representation/structure of the database

The 110 concepts comprising the database are organized into eight main concepts:

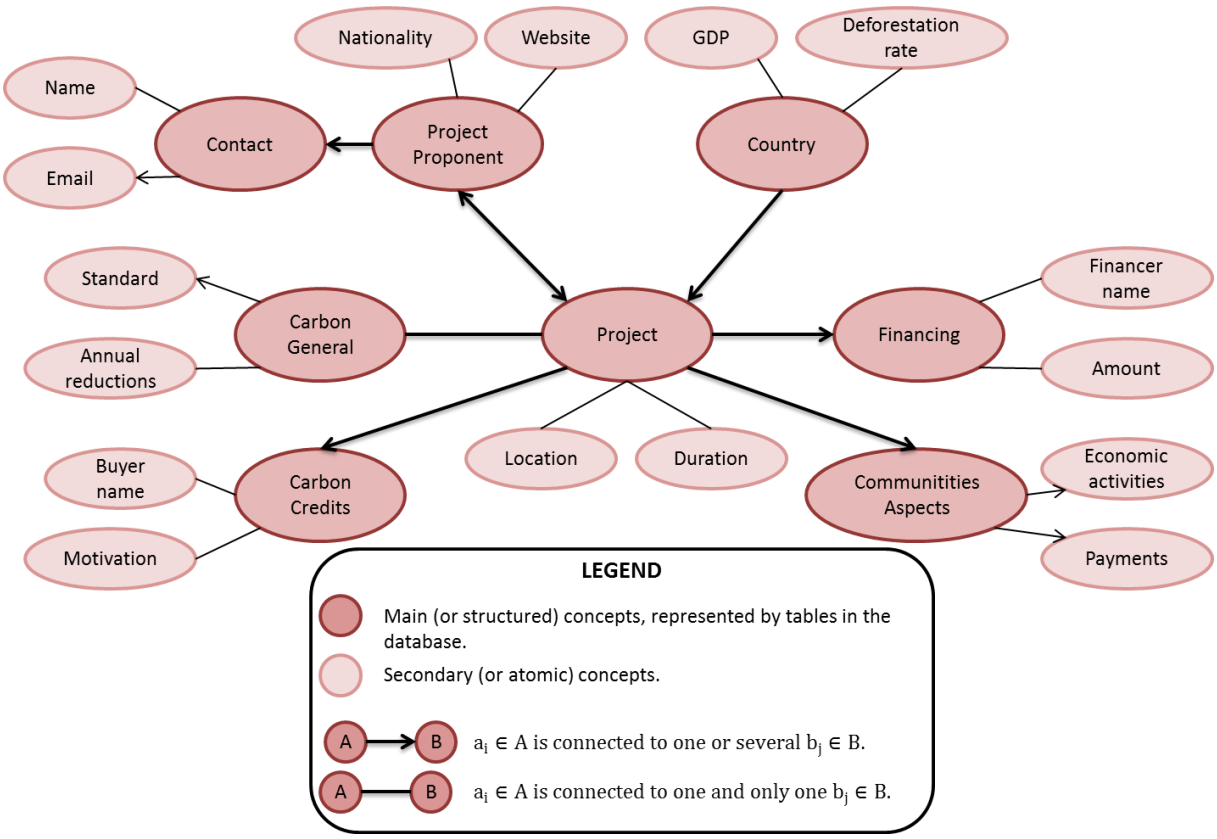
1. **Country:** range of indicators about the country hosting the project, some of them being specifically on national forests, other on demographic and economic aspects.
2. **Project Proponent:** information about the project proponent(s).
3. **Contact**: information about the contacts listed for each project proponent. This table will not be displayed for privacy reasons.
4. **Project:** general data about the project, including its geographic area and extent, the deforestation drivers affecting the project area, the objectives of the project, information on land tenure and community participation, etc.
5. **Carbon General:** general information about the carbon component of the project, mainly certification aspects (standard, carbon credits data, crediting period, etc.).
6. **Carbon Credits:** details of carbon credit transactions, including buyers' names and motivations, quantity of credits sold and date of the transaction.
7. **Financing:** data about the different sources of financing of the project.
8. **Communities Aspects**: indicators focusing on the expected socio-economic impacts of the project on communities living near the project, including direct payments, employment, economic activities, etc.

These eight main concepts are inter-related, evolving around the central concept 'project', which constitutes the core of the database. The simplified conceptual schema of ID-RECCO (Figure 1) shows how these eight main concepts are inter-related and provides, for each main concept, two examples of secondary concepts involved in their definition.

This schema was modelled using a knowledge-representation system called ISIS (for Information System Initial Specification[1]).

[1] This system was created by Ana-Maria Sales, from TIMC (Grenoble).

Figure 1: Simplified conceptual schema of the ID-RECCO database.



Source: authors, using ISIS software

The ISIS system proposes two notions to describe concepts: structured (decomposable) and atomic or terminal (not decomposable) concepts. A structured concept is defined by a set of atomic and/or structured concepts, and an atomic concept is connected to one and only one structured concept. Concepts are connected by different categories of associations, where an association is represented by two binary relationships (from A to B, and from B to A). In this example, Project and Carbon Credits are structured concepts while Buyer name and Motivation are atomic concepts.

2.3. Database design and filling

In the third step, we designed the relational database schema derived from the conceptual schema (Appendix III). Generally, it consists in transforming each structured concept into a table, and each atomic concept into a variable of a table. To fill up the database, we chose the Microsoft Office Access software, thanks to its clear graphic interface and the ability to create forms for easier data filling.

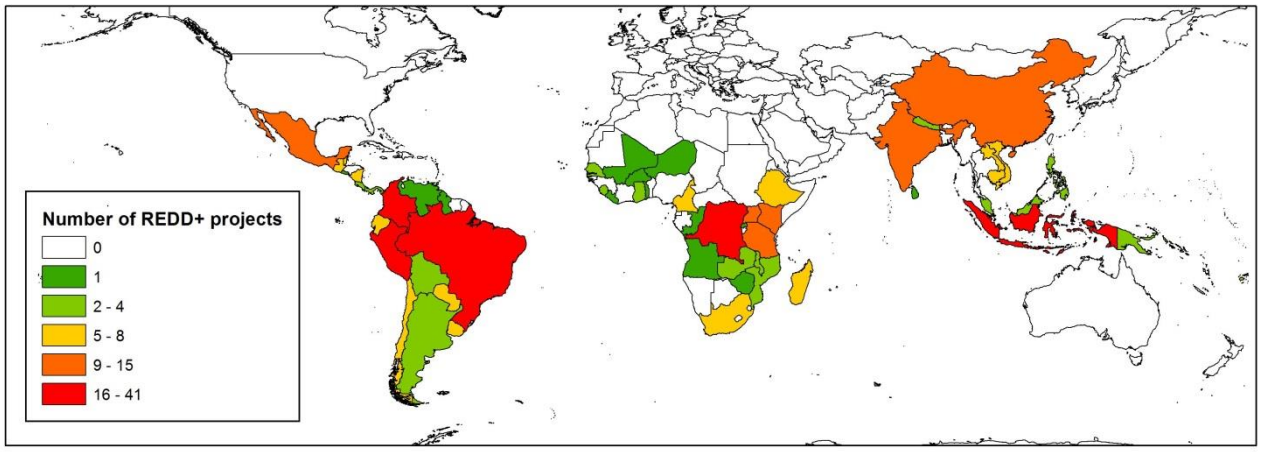
The initial design of an Access database is a set of tables, each table corresponding to a structured concept. In order to ease the filling of the database, we created a form for each structured concept (Appendix IV).

The selection of the REDD+ projects to be included in the ID-RECCO database was done in accordance with the definition of Simonet et al. (2014), which considers as 'REDD+ project' any project that meets all of the 4 following criteria:

1) Project located in forested, non-Annex I countries and thus potentially involved in the UNFCCC REDD+ mechanism;
2) Project implemented at the local or landscape, but not national, scale;
3) Project with the explicit aim of reducing emissions from deforestation and forest degradation, improving forest conservation or management, or enhancing forest carbon sequestration;
4) Project financed by REDD+ funds and/or carbon markets;
We distinguish between projects implemented in coordination with the national government (pilot or demonstration projects) and those which are not, but include both project types in our database.

As of October 2014, we have collected data on 410 projects, 57 countries and 362 project proponents. Figure 2 presents the distribution of these projects around the world.

Figure 2: Location of the REDD+ projects contained in ID-RECCO



For each project, we collected as much information as possible. In the case of absence of data, we used the code '9999' for a numeric variable (eg. 'Project area') and 'ND' for a text variable (eg. 'Project description'). This process allows assessing the availability of information for each variable, which is useful at the moment of selecting relevant variables for statistical analyses.

2.4 Database dissemination

Consistent with the aim to improve knowledge on REDD+ projects, the database will be disseminated through a dedicated website. Two dissemination formats will be used. First, the ID-RECCO website will display information about REDD+ projects in a user-friendly format, allowing to search projects by country and by key words. Second, download of each table of the database will be allowed after registration, in order to have a follow-up of users.

The possibility to download the database will be particularly useful for researchers, who will be able to lead directly global analyses on REDD+ projects. In addition, the website might be of interest for more types of users, notably project proponents and decision makers, to have a detailed picture of a particular project, or a follow-up of the situation of REDD+ projects in a country.

This website is a collaborative work tool, in the sense that users are invited to provide missing information on a project, suggest a new project or report an error. The collaborative nature of the ID-RECCO website will help improving the quality of information contained in the database, which is currently limited by the type of available data, as detailed in section 3.

The ID-RECCO website will be regularly updated to take into account the rapid evolution of REDD+ projects, and incorporate the recommendations and corrections received by the users willing to contribute. In particular, project proponents will be given the opportunity to participate in the process by checking data about their project(s) and by providing additional information.

3- Data quality and limitations of the database

Regarding data quality, two main limits should be taken into consideration when using the database: data reliability and data availability.

3.2 Limitation regarding data reliability

Uncertainties regarding 'fictitious/planned' projects

A large number of projects clearly lack of information, which led us to think that they were not implemented at all. Projects could either be fictitious (simply advertised online but not happening on the ground) or planned (prospecting future implementation, but with no achievements yet, due to lack of financing, lack of forest permit, etc). Deciding whether projects were fictitious/planned or not was a tough process; a lack of information does not necessarily mean that the project does not exist, and on the contrary, many data does not imply that the project is successfully implemented. We had to judge subjectively, project by project. As of October 2014, we recorded 58 fictitious or planned projects (14% of total projects). These projects are kept in the database because their situation may evolve or be clarified in the future. We generally tried to contact project proponents to have updated information, but we hardly received an answer.

We also classified as "abandoned" 16 projects that ended earlier than expected or never started. Those are also kept in the database because analyzing their structure could provide information about success and risk factors, useful for project proponents notably.

Projects belonging to these two categories should be treated in a different way during analyses. Future users should either remove them or use them cautiously because the lack of data or their inaccuracy could compromise the global results.

These projects have been excluded from the analyses presented in the whole section 3, leaving a total of 344 projects (a few projects belonging to both categories) selected for these analyses.

Lack of neutrality for certain types of information

One of the main limits of the ID-RECCO database is the difficulty to verify the information provided by online documents, leading to a potential lack of neutrality or objectivity.

The only way to verify the validity of the information found online would be to visit each project in the field, which would require considerable funding. Therefore, most of the information comes from project proponents' websites or certification reports, which are not necessarily neutral. Variables such as land tenure and community participation are a good example of this bias: usually, contested land tenure will not appear on the certification report as it could undermine a project's success, even though the literature mentions potential land disputes in the area. Community participation can also be biased; a project proponent can highlight good implication of communities but periodic

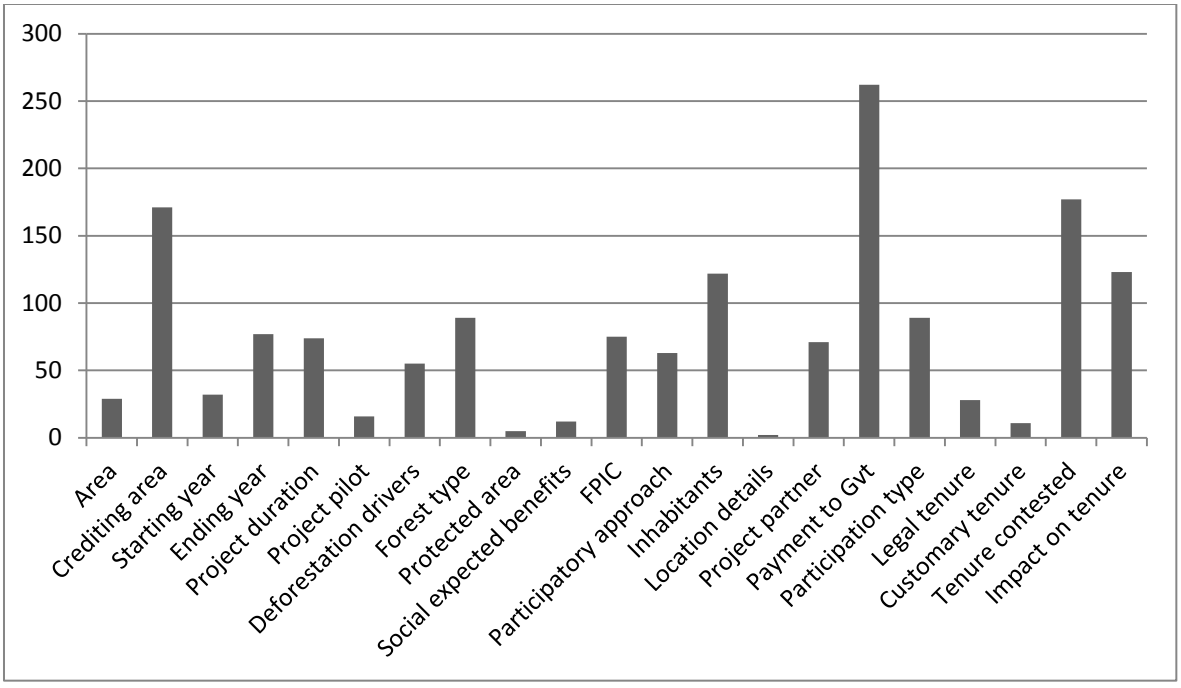
contestations from NGOs and indigenous groups indicate that the reality can be different. Future users will have to analyze the information on projects by keeping in mind that they only correspond to expected implementation and impacts that might be disconnected from the reality that will happen on the ground.

3.3 Limitation regarding data availability

Quantification of data availability

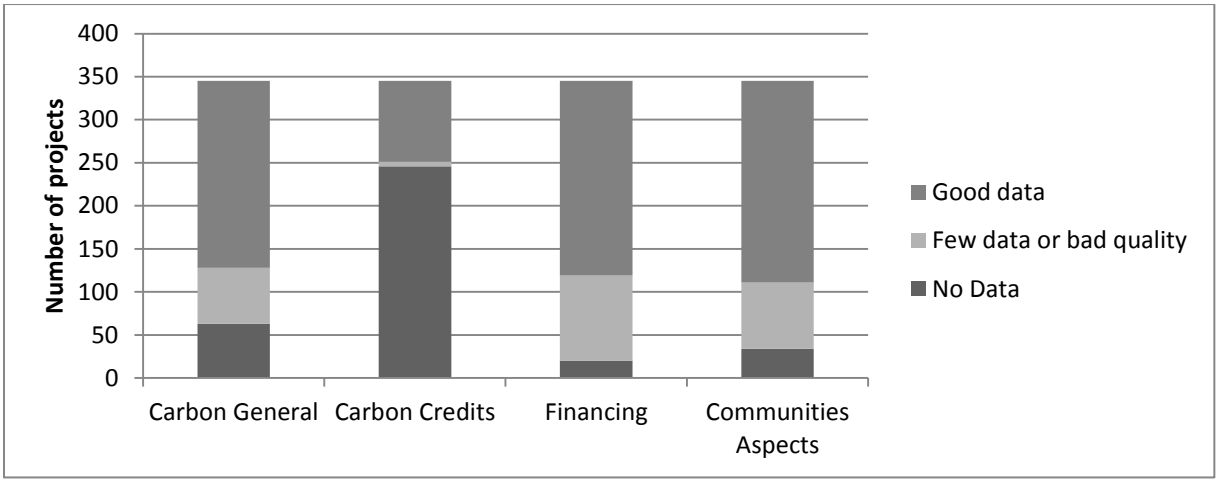
In order to assess which variables would be the most relevant for future statistical studies, we made an evaluation of the amount of data filled up in the database. We calculated, for each variable of the main table "Project", the number of projects where information was available (Figure 3). The results are uneven, but a few variables – notably payment to government and tenure contestation - would be difficult to take into account into a statistical analysis due to the scarcity of information.

Figure 3: Number of projects where data was <u>not</u> available, for key variables of the table 'Project' (Total=344, excluding planned/fictitious and abandoned projects)



We created variables that allow the enumerator to assess the overall data quality of the tables Carbon General, Carbon Credits, Financing and Communities Aspects, with three possible options: good data, few or bad quality data, no data. The table focused on carbon credits transactions present a poor level of information compared to the three other tables (figure 4), in relation with the lack of transparency of the transactions that occur in the voluntary carbon market.

Figure 4: Availability of data for each sub-form (Total=344, excluding planned/fictitious and abandoned projects)



A bias toward certified projects

As explained in section 1, information on certified projects is usually more accurate, because the certification reports are validated by a third party. However, 38% of ID-RECCO projects are not certified nor in the process of certification, and information had to be picked from different sources – generally, press or independent websites. There is thus a strong discrepancy in terms of data availability between certified (40% of projects are currently certified, and an additional 22% is in the process of certification) and non-certified projects. Future users will have to take into account a potential bias toward certified projects in their analyses, as these projects have more information available.

Limited data leading to conservative estimates

As seen in part 2.1, registries such as Markit, APX and CDM were very useful to compile data about carbon credit transactions. However, transactions on the voluntary market are not required to be displayed publicly. This means that only a portion of the transactions are recorded in these registries. CDM projects also faced a clear lack of data on compliance transactions. The CDM website does not provide any information on compliance buyers, and only a small part of voluntary buyers. The ID-RECCO can thus only provide a conservative estimate of the volume of carbon credits transacted.

The same problem appears with financing data: the database will record only the financing sources that are communicated by the project proponent or some public funds. Database users should also be aware they are using conservative estimates when analyzing data.

4- Conclusion

This paper presents a new database (ID-RECCO) on REDD+ projects, which brings together 410 REDD+ projects located in 57 countries. The database links 110 variables, based on publicly available information, encompassing data on carbon certification, sources of financing, socio-economic expected impacts, project proponents and general features of the project. While information on REDD+ projects is currently scattered, ID-RECCO represents the first attempt to centralize information on REDD+ projects in a homogeneous format, which will allow leading global analyses and comparisons between projects.

By proposing a knowledge representation of REDD+ projects, this work constitutes a first step toward a non-ambiguous definition of REDD+ concepts and of the relation between these concepts. The acceptation by the REDD+ community of our knowledge representation, or of any other representation, would allow a non-ambiguous communication among actors – governments, project proponents, donors – and would help build solid and fruitful exchanges. In the long term, and as already developed in medicine science, the aim would be to build an ontology, which is a set of indicators validated by the actors of the domain and documented for all REDD+ projects, to avoid any ambiguity among partners. Considering the current level of ambiguity surrounding the concept of REDD+ project (Simonet et al. 2014), the creation of this ontology would be particularly useful.

Beyond this role of resolving ambiguities in the area of REDD+ projects, this work provides information on REDD+ projects that will be useful to improve knowledge on the current state of REDD+ projects and might be of interest to different types of actors related to REDD+. The ID-RECCO database will be useful for researchers to lead global analysis on REDD+ projects and for practitioners to better understand the evolution of REDD+ projects and potentially build monitoring platforms on different aspects of these projects. Governments might also want to learn from local experiences before implementing their national REDD+ policies. Project proponents could learn on success or failure factors for their projects. REDD+ negotiators will have an updated overview of the level of advancement of REDD+ on the ground and of the variations between countries.

Considering the potential interest of ID-RECCO for the REDD+ community, the database will be made publicly accessible in 2015 through a dedicated website. By creating this collaborative work tool, we seek to participate in the improvement of knowledge on REDD+ projects. The dissemination of ID-RECCO will also help improving the quality of the information contained in the database, by allowing users to report errors or make suggestions. Currently, the main weaknesses of this database are the incompleteness of publicly available data and the near impossibility of cross-checking or validating the information provided by project proponents themselves. To improve data quality, we need to increase collaboration by sharing information and resources about REDD+ projects. This is one of the main objectives of the ID-RECCO work tool.

Appendix I: List of the sources of information about REDD+ projects

Type(s)	Name of the source and number of projects identified.	Link to Internet page.
1, 3, 5	Forest Carbon Portal, by Forest Trends: 244 forest carbon projects, of which 145 are in developing countries.	Forest Trends (2014a)
3, 4	REDD+ database, by the Institute for Global Environmental Strategy (IGES): 34 REDD+ projects.	IGES (2014)
3, 5	The REDD country database (Collaborative resource for REDD Readiness), by The Global Canopy Programme: REDD+ readiness activities, notably pilot projects, in 22 countries.	Global Canopy Programme (2014)
1, 4	Global database on REDD+ and other forest carbon projects, by the Center for International Forestry Research (CIFOR): 338 projects (including some readiness activities).	CIFOR (2014)
3	Eco2data (limited access): around 100 projects, mainly AR.	Eco2data (2014)
3	Code REDD: REDD projects.	Code REDD (2014)
1, 3	Carbon Catalogue: 131 forest carbon projects, 67 of which are in developing countries.	Carbon Catalogue (2014)
1, 3	Voluntary REDD+ Database, by the REDD+ Partnership: Readiness arrangements only, with a focus on financial flows.	REDD+ Partnership (2014)
1	REDD X- Tracking Forest Finance, by Forest Trends: limited to 12 REDD+ countries with a focus on financial flows.	Forest Trends (2014b)
1, 2, 3	Agriculture, Forestry, Land use projects, Verified Carbon Standard (VCS) database: 78 forestry projects, of which a few in developed countries.	VCS (2014)
2	The Climate, Community and Biodiversity Alliance (CCBA) database: 102 projects.	CCBA (2014)
2, 3	Plan Vivo database: 8 projects registered and 11 in the process of registration.	Plan Vivo (2014)
2, 3	CarbonFix database: 16 ARR projects, of which 5 are in developed countries.	CarbonFix (2014)
2, 6	UNFCCC CDM Registry: all registered and pipeline CDM projects, and a small record of carbon transactions.	CDM (2014)
1	SCS global services (and other verifiers)	SCS (2014)
4	"Community Participation and Benefits in REDD+: A Review of Initial Outcomes and Lessons", by Lawlor et al. 2013: 41 REDD+ projects.	Lawlor et al. (2013)
4	Bringing forest carbon to market, by Chenost et al. 2010.	Chenost et al. (2010)
3	« REDD+ à l'échelle projet - Guide d'évaluation et de développement », by ONF International: 5 case studies.	Calmel et al. (2011)
5	REDD monitor: news.	REDD monitor (2014)
5	Forest Carbon Asia : news.	Forest Carbon Asia (2013)
6	APX VCS Registry: data on carbon transactions, country by country.	APX (2014)
2, 6	Markit Environmental Registry: data on carbon transaction and –when available- link to project's certification report.	Markit (2014)

Appendix II: Detail of the tables

This Appendix provides, for each variable of the database, the concept name used in the database, the definition of this concept, as well as the list, interval of values and/or unit when appropriate. A question is provided for each variable, which was aimed at helping the enumerator better understand the variable and provide the correct information.

Table III-1: Details of the content of the Table "Project proponent"

	Concept	Definition and source	List, interval of values and unit
1	project_proponent_shortname	Accronym or short name.	
Question 1			
2	project_proponent_name	Complete name.	
Question 2	What is the complete name of the project proponent?		
3	website	Link to project proponent website.	
Question 3	If the project proponent has a website, please precise the link to access it.		
4	nationality	Nationaly of the project proponent	List of all countries worldwide
Question 4	Where is located the Seat of the project proponent?		
5	status	Legal status.	For-profit; NGO;public; research institute; other; ND
Question 5	What is the legal status of the project proponent?		
6	id_project_proponent	Unique and automatically generated.	

Note that an intermediary table called "**link_project_proponent**" was created to allow linking each project to one or more project proponents, and vice versa. This is a two-column table: one column with a drop-down list of the previously registered project' names, and another column with a drop-down list of registered project proponents.

Table III-2: Details of the content of the Table "Contact" (not displayed on ID-RECCO website for privacy reasons)

For each project proponent, we try to find as many contacts as possible. The priority is to find an email address, in order to contact them in further surveys. Sometimes, there is only a generic contact email. In this case, we do not specify the other variables.

	Concept
7	contact_name
8	gender
9	Position (for example : director, technical manager, etc.)

10	email
11	phone
12	fax
13	address
14	id_project_proponent

Table III-3: Details of the content of the Table "Project general"

	Concept	Definition and source	List, interval of values and unit
15	project_name	Name of the project.	
Question 15	What is the name of the project (as found in the certification report, if existing)?		
16	secondary_name	Other name of the project, when existing.	
Question 16	If you find the project under other names, please specify them.		
17	last_update	Date of the last update of this form.	../../….
Question 17	When were the last changes about his project made?		
18	to_be_continued	Tick the box if the work on this factsheet needs to be continued.	List : yes ; no
Question 18	Do we need to come back on this project to add information?		
19	fictitious_planned	The project seems fictitious or planned, meaning that we could not find data proving that the project is active.	List : yes ; no
Question 19	Tick this box if you can only find very limited information about the project, which leads you to suspect that the project is pending (did not start, or stopped).		
20	area	Total area of the project.	in ha. 9999 when no data.
Question 20	What is the total area of the project?		
21	crediting_area	Area eligible for carbon certification.	in ha. 9999 when no data.
Question 21	When the project is certified, what is the crediting area specified in the certification report?		
22	starting_year	Year of official start of the project.	9999 when no data.
Question 22	When did the project officially start?		
23	ending_year	Projected closure of the project.	9999 when no data.
Question 23	When is the project supposed to end?		
24	duration	Projected duration of the project.	in years 9999 when no data.
Question 24	How long will the project last?		
25	is_project_pilote	Is the project integrated in the national REDD+ strategy?	List : yes ; no ; ND

Question 25	Some projects are officially designated as « pilot project », meaning that they are integrated in the national REDD+ strategy. When it is the case, this feature is generally highlighted by the project proponent.		
26	project_description	Short summary of the project.	
Question 26	Provide a short description of the project, using summaries found in the certification report or other.		
27	project_objective1	What is the main objective of the project?	Climate; Development; Conservation; Timber production, Return on investment, Non timber production; ND
Question 27	Based on project description, what does the project proponent focus on? To help answering this question, project descriptions often contain a sentence like “the main objective…” or a list of objectives. Always complete variable 30 to justify your choice.		
28	project_objective2	What is the second main objective of the project?	Climate; Development; Conservation; Timber production, Return on investment, Non timber production; ND
Question 28	Based on project description, what is presented as the second main objective of the project?		
29	project_objective3	What is the third objective of the project?	Climate; Development; Conservation; Timber production, Return on investment, Non timber production ; ND
Question 29	Based on project description, what is presented as the third main objective of the project?		
30	main_objective_argumentation	Explanation about the selection of the objectives.	
Question 30	Justify the choice of main objective (variable 27).		
31	deforestation_driver	Main deforestation drivers on the project area.	local livelihoods; industrial agriculture or cattle ranching; slash and burn agriculture; mining; illegal logging; industrial wood exploitation; energy wood; charcoal production; fire; infrastructure; oil extraction; ND
Question 31	What are the main deforestation drivers in the project area? These are generally in project documents.		
32	project_type	Scope of activities in the project. A combination of activities is possible.	REDD; ARR; IFM; other
Question 32	What are the activities of the project? REDD=Reduction of Emissions from Deforestation and forest Degradation, ARR=Afforestation, Reforestation and Regeneration; IFM=Improved Forest Management. Readiness projects (capacity building, without carbon aspects) are not included in the database. Several activites can be selected.		

33	protected_area	Is the project located partly or completely on a protected area?	yes/no; ND
Question 33	Is some or all the project located on a protected area?		
34	pa_name	Name of the protected area(s)	Text field. Separate thenames using ";" 9999 when no data.
Question 34	What is(are) the name(s) of the protected area(s) on which all or part of the project is located?		
35	pa_size	Cumulated size of protected area within the project	In ha 9999 when no data.
Question 35	What is the cumulated size of protected area in this project?		
36	pa_proportion	Proportion of protected area in the project	% 9999 when no data.
Question 36	What is the share of protected area compared to the total area of the project?		
37	pa_category	Category of protected area accorrding to IUCN classification, using http://www.wdpa.org/	1a,1b,2,3,4,5,6 9999 when no data.
Question 37	What is the category of the main protected area of the project, according to IUCN classification?		
38	precision_ar_type	When the project type is ARR, what kind of ARR project is it?	Plantation; Agroforestry; Ecosystem restauration ; ND
Question 38	In the case ARR is one of the activities of the project, give precisions about this acitivity. When ARR is not one of the activities, let it blank.		
39	dominant_type	Dominant type in terms of area.	AR,REDD,IFM; ND
Question 39	If there is only one activity, this will be the dominant type. When a project is a mix a different activities, specify the dominant type. Generally, we find the following hierarchy: REDD>>ARR>>IFM but there could be exceptions.		
40	inhabitants_area	Number of people/villages/communti es in the project area that could be affected by the activities.	Text field so the unit can be specified : people, villages, communities, etc. 9999 when no data.
Question 40	Do we have an idea of the number of persons living in the area (who could possibly be affected by the project, but we do not ask for proofs) expressed in the unit provided.		
41	location_details	Details about the location of the project.	9999 when no data.
Question 41	In which region of the country is the project located?		
42	forest_type	Rough classification of forests.	Dry; Humid ;Dry and humid; Wetland;other; ND
Question 42	What type of forests does the project tackle?		
43	social_expected_benefits	Social benefits expected by the project proponent, as described in the project document.	

Question 43	Provide information about the expected social benefits, as described by the project proponent.		
44	participatory_approach	Does the project document mention the adoption of a participatory approach?	yes/no; ND
Question 44	Does the project document mention the adoption of a participatory approach?		
45	Participation category	What is the level of participation in this project?	List of choice, several choices possible: informed;consulted (generally Public Rural Appraisal);involved in decision-making; involved in management;ND
Question 45	What is the level of participation in this project?		
46	FPIC	Does the project document mention Free Prior and Informed Consent (FPIC)?	yes/no; ND
Question 46	Does the project document mention Free Prior and Informed Consent (FPIC)?		
47	project_partners	All partners of the project who are not project proponents.	
Question 47	Appart from the project proponent(s), who are the partners involved in the project?		
48	legal_tenure		List: "state" ; "private" ;"communities" ; ND
Question 48	Who is the legal owner of the land?		
49	customary_use		List: "state" ; "private" ;"communities" ; ND
Question 49	Are there customary rules in addition to legal ownership?		
50	contested		yes/no; ND
Question 50	Is land tenure contested?		
51	tenure_impact		List: yes legal; yes customary; Both; no;ND
Question 51	Will the project impact tenure?		
	id_project	id were manually incremented with the following rules: 100-299=Latin America ; 300-499=Africa ; 500-699=Asia	
52	id_country	Country hosting the project.	list of all countries of the Table "countries"

Table III-4: Details of the content of the Table "Carbon General"

	Concept	Definition and source	List, interval of values and unit
53	Carbon_general_ND		ND; few or bad quality data; good data
Question 53	What is the level of filling of this table?		
54	is_certificated	Degree of progress in the certification process.	Not certified; In process; Certified
Question 54	Is this project certified, being certified, or not in a process of certification?		
55	crediting_period	Period of time used to apply the carbon methodology.	Defined by a starting and an ending years, defined in the certification report. 9999 when no data.
Question 55	What is the crediting period chosen by the project proponent?		
56	annual_carbon_credits	Quantity of carbon credits that the project proponent expect to issue annually or, when no certification, quantity of projected emission reductions.	in tCO2 9999 when no data.
Question 56	How many carbon credits will the project issue annually? Or if it is not in a process of certification, what is the quantity of emission reductions scheduled?		
57	total_carbon_credits	Global projected carbon credits generation.	in tCO2 9999 when no data.
Question 57	How many carbon credits will the project issue glabally? Or if it is not in a process of certification, what is the quantity of emission reductions scheduled?		
58	carbon_property	Owner of carbon rights.	state;"project proponent";"communities";"not defined";"concession owner"
Question 58	Who is the legal owner of the carbon credits?		
59	carbon_validation_date	Date of publication of the validation report from the carbon standard.	
Question 59	When the project is certified, what is the date of publication of the validation report (available on the standard's website). When there are several standards, choose the oldest date of validation.		
60	standard	Standards certifying REDD+ projects.	VCS ; CCB ; ACR ; CCX ; CAR ; Social Carbon ; Plan vivo ; Brazil Mata Viva ; ISO-14064 ; CCX ; CDM ; CarbonFix ; Natural Forest Standard ; Internal ; None
Question 60	What are the carbon and/or co-benefit standards under which the project is		

	certified ?		
61	carbon_methodology	Methodology for the carbon standard.	VCS VM0003; VCS VM0004; VCS VM0006; VCS VM0007; VCS VM0009; VCS VM0010; VCS VM0011; VCS VM0012; VCS VM0015; VCS VM0017; AR-AM0001; AR-AMS0001; AR-ACM0001; AR-ACM0002; AR-AM0003; AR-AM0004; AR-AMS0004; AR-AM0005; AR-AMS0005; AR-AMS0006; AR-AM0010; AR-AMS0003; BMV RCDE001
Question 61	What was the methodology chosen for the carbon certification? (indicated at the beginning of the certification report)		
62	carbon_report	Project Design Document for the carbon standard or Validation report when already published.	Hyperlink to download the report.
Question 62	Provide the project description report or validation report associated to the carbon certification (all standards except CCBA and Social Carbon).		
63	cobenefit_report	Project description or validation report for the socio-environmental standard.	Hyperlink to download the report.
Question 63	If the project is certified by a socio-environmental standard (CCBA, CarbonFix, Social Carbon) indicate it here by providing the hyperlink to the project description or validation report.		
64	baseline_type	Type of baseline used to calculate emission reductions.	P1 Planned Commercial Deforestation; P2 Planned Non-Commercial Deforestation; Avoided Unplanned Deforestation and Degradation; Other
Question 64	What is the type of baseline used to calculate the emission reductions generated by the project?		
65	baseline_details		
Question 65	Provide details about the baseline construction.		

Table III-5: Details of the content of the Table "Carbon credits"

Note that in this table, there will be one line per transaction. One transaction is defined by a buyer, a quantity of carbon credits sold on a defined period of time.

	Concept	Definition and source	List, interval of values and unit
66	carbon_credit_ND		ND; few or bad quality data; good data
Question 66	What is the level of filling of this table?		
67	issuance_period	Period of contractualisation with this buyer.	Defined by a starting and an ending years. 9999-9999 when no data.
Question 67	What is the period of contractualisation of the carbon credits for this transaction?		
68	sold_quantity	Quantity of carbon credits sold during this transaction.	in tCO2 9999 when no data.
Question 68	How many carbon credits (or CO2 equivalent) were bought ?		
69	buyer_name	Name of the buyer of the carbon credits	
70	buyer_status	Legal status of the buyer.	Public; Private; Public and private
71	buyer_sector	Sector of the buyer.	Energy; Industry; Agriculture; Finance; Leisure and entertainment; Agrifood; Carbon; Services; Forest conservation; Other
72	buyer_nationality	Nationality of the buyer.	List of all countries worldwide
73	buyer_motivation	Motivation of the buyer.	Compliance-precompliance; Sponsorship; Corporate Social Responsability (CSR); Resale-investment; Other; ND
Question 73	What is the main motivation of the buyer?		
74	market	Market where the transaction occurs.	Voluntary; Compliance
Question 75	In which market were the credits sold? (mainly voluntary)		
75	credit_price	Purchase price of the credits.	In dollars
Question 76	At what price were the credits sold?		
77	id_carbon_credit		Automatically generated.

Table III-6: Details of the content of the Table "Financing"

Note that in this table, there will be one line per financing source.

	Concept	Definition and source	List, interval of values and unit
78	Financing_ND		ND; few or bad quality data; good data
Question 78	What is the level of filling of this table?		
79	organization_name	Name of the source of funding	9999 when no data.
Question 79	What is the name of the organization providing this source of financing? Write 9999 when no details		
80	funding_type	Type of funding.	Carbon prepayment; Carbon future; Carbon fund investments; Sale of timber; Sale of agricultural products; Sale of non-timber forest products; Personal/private equity investment; Private loan; Public source loan; Public source grant; Domestic government grant; Direct NGO or foundation funding; Other commodity investments; Firm sponsorship or other;ND
Question 80	What kind of funding is it? Choose ND if you do not know.		
81	funding_amount	Total amount of this funding.	in dollars
Question81	What was the total amount of this funding ?		
82	funding_period	Period of time in which this funding occurs.	Defined by a starting and an ending years. If it is a one-time funding, write for example 2008-2008. 9999 when no data.
82	id_financing		Automatically generated.

Table III-7: Details of the content of the Table "Communities aspects"

	Concept	Definition and source	List, interval of values and unit
83	Communities_ND		ND; few or bad quality data; good data
Question 83	What is the level of filling of this table?		
84	payment_list	List of payments to populations	direct payment;guaranteed purshase system;payment linked to practice; no payment
Question 84	What kinds of payments were made to populations? If there a payment, it can be linked to a particular practice (for example conserving forest, planting trees, or doing agroforestry) or direct payment (in this case payments look like social aid)		
85	payment_details	Details about this payment.	
Question 85	Provide more details about these payments (amount, type of conditionality, etc.)		
86	economic_activities_list	List of alternative activities that might enhance the local economic development.	Agriculture (activities linked to agricultural changes); Agroforestry; Microenterprise; Sustainable mining activities; Ecoturism; Economic interest groups; Sport hunt; Processing and commercialization; Micro-credits
Question 86	What kind of economic activities does the project develop? Note that you can add new variables to this list.		
87	economic_activities_details	Details about economic activities and jobs.	
Question 87	Provide more details economic activities and employment.		
88	employment	Jobs created through project activities	no data;"yes but no data";"0-20";"20-50";"50-100";"more than 100"
Question 88	How many job were created by this project?		
89	long_term_employment	Are some of these jobs long term employment?	yes/no
Question 89	Are some of these jobs long term employment?		
90	investment_indirect_list	List of development activities (not linked to economic activities)	Water; Health; Education; Roads/building; Supplies
Question 90	Did the project develop activities not linked to economic activities, and more considered as development activities?		
91	investment_indirect_details	Details about these activities.	
Question 91	Provide details when possible		

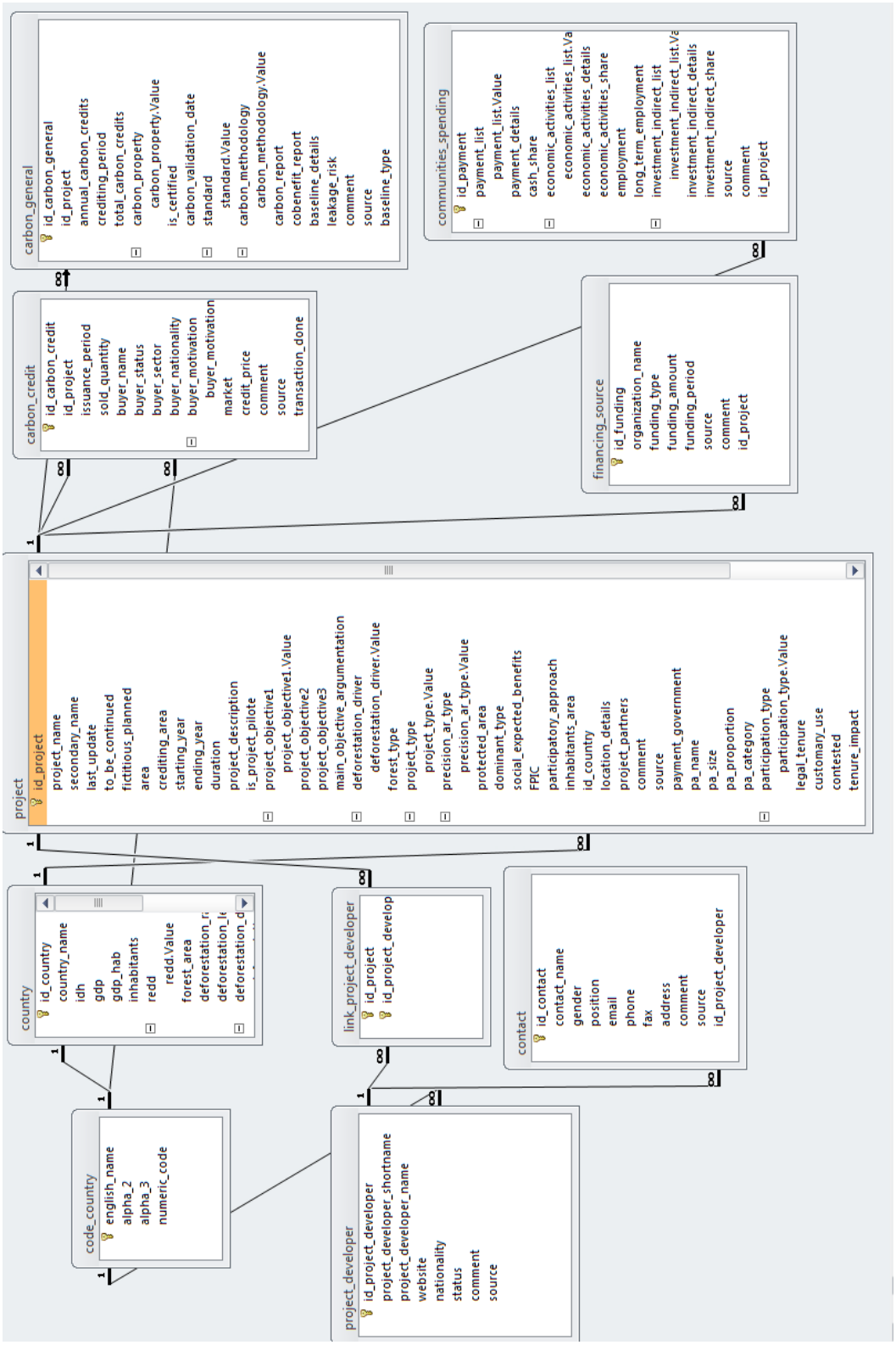
92	id_payment		Automatically generated.

Table III-8: Details of the content of the Table "Country"

	Concept	Definition and source	List, interval of values and unit
93	country_ name	Name of the country	
94	idh	Human Development Index. Value in 2011 found on http://hdrstats.undp.org/en/tables/	[0;1]
95	gdp	Gross Domestic Product. Value in 2012 found on https://www.cia.gov/library/publications/the-world-factbook/index.html	in billion USD.
96	gdp_hab	GDP per capita Value in 2012 found on https://www.cia.gov/library/publications/the-world-factbook/index.html	in USD.
97	inhabitants	Number of inhabitants in 2012.	in million.
98	government_ effectiveness	Government Effectiveness:Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Value in 2011 found on http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=worldwide-governance-indicators	[-2,5 ; 2,5]
99	corruption_ control	Control of Corruption: Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Value in 2011 found on http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=worldwide-governance-indicators	[-2,5 ; 2,5]

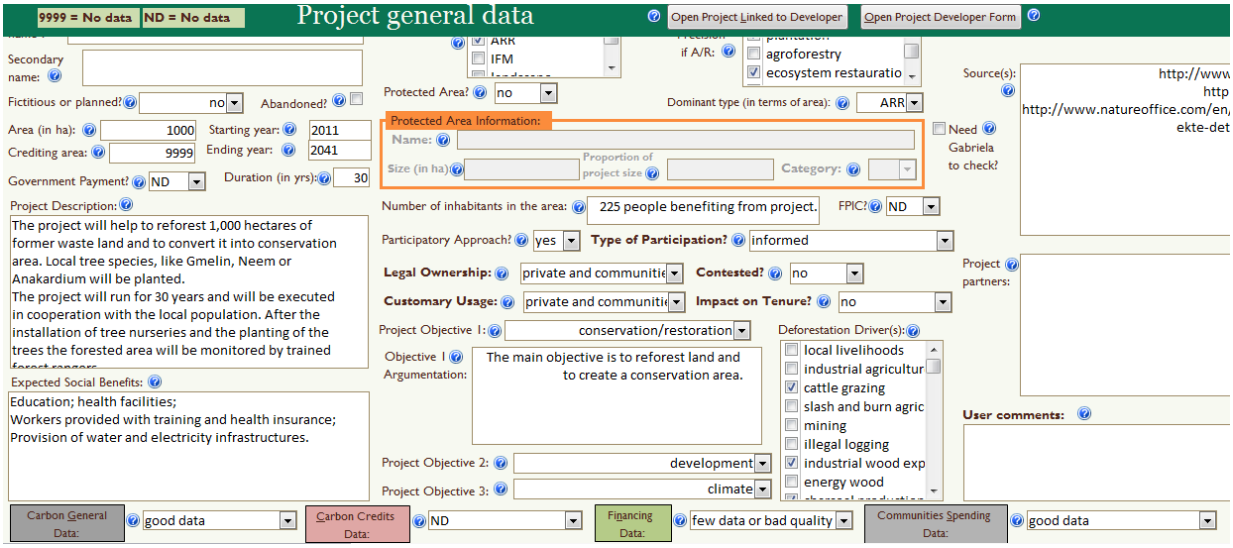
100	redd	Participation in the main REDD+ funds in 2013.	UNREDD; Forest Carbon Partnership Facility (FCPF); FCPF candidate; Congo Basin Forest Fund; Amazon Fund; Other; No.
101	forest_cover	National forest cover in 2010. http://data.worldbank.org/indicator	in 1000ha
102	deforestation_rate	National annual deforestation rate over the period 2005-2010 as found in FAO FRA 2010 (Table 3)	%
103	deforestation_level	National deforestation level over the period 2005-2010 as found in FAO FRA 2010 (Table 3).	1000 ha / year
104	deforestation_driver	Main deforestation drivers at national scale as identified in https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65505/6316-drivers-deforestation-report.pdf	local livelihoods ;industrial agriculture / livestock; plantation; mining; slash and burn agriculture; artisanal wood exploitation; industrial wood exploitation; illegal logging; fire; energy wood; charcoal production; urban development / infrastructure.
105	rpp	Readiness Preparation Proposal.	Hyperlink to download the report.
106	rpp_date	Date of publication of the RPP.	
107	GHG_Emissions	Emissions of greenhouse gases as reported by each non Appendix 1 country to UNFCCC.	in 1000tons of CO2 equivalent.
108	de_jure	Main de jure owner of land.	state; communities; private; not defined
109	de_facto	Main de facto owner of land.	state; communities; private; not defined
110	tenure_details	Details about tenure in this country.	List, interval of values and unit

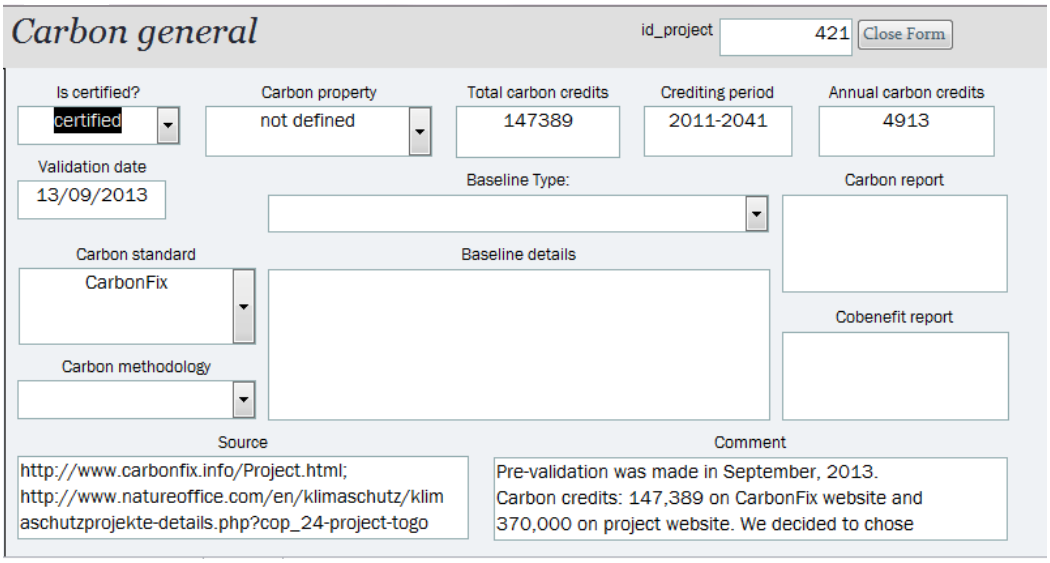
Appendix III: Relational database schema of ID-RECCO, with the detail of the structure and variables of the database



Source: authors, using Access software

Appendix IV: Screen capture of the main form of the database and of one sub-form





5- References

APX (2014), https://vcsregistry2.apx.com/myModule/rpt/myrpt.asp?r=206, last visit in October of 2014.

Calmel, M.; Martinet, A. & Grondard, N. (2011), 'REDD+ à l'échelle projet. Guide d'évaluation et de développement.', Technical report, ONFI.

Canby, K.; Silva-Chávez, G.; Breitfeller, J.; Lanser, C.; Norman, M. & Schaap, B. (2014), 'Tracking REDD+ Finance: 2009-2012 - Finance Flows in Seven REDD+ Countries', Technical report, Forest Trends.

Carbon Catalog (2014), http://www.carboncatalog.org/, last visit October of 2014.

CarbonFix (2014), http://www.goldstandard.org/luf last visit October of 2014 (acquired by Goldstandard).

CCBA (2014), http://www.climate-standards.org/category/projects/ last visit October of 2014.

CDM (2014), http://cdm.unfccc.int/Registry/index.html, last visit October of 2014.

Cerbu, G. A.; Swallow, B. M. & Thompson, D. Y. (2011), 'Locating REDD: A global survey and analysis of REDD readiness and demonstration activities', *Environmental Science & Policy* **14**(2), 168--180.

Chenost, C.; Gardette, Y.; Demenois, J.; Grondard, N.; Perrier, M. & Wemaere, M. (2010), *Bringing forest carbon projects to the market*, UNEP.

CIFOR (2014) http://www.forestclimatechange.org/redd-map/#, last visit October of 2014.

Code REDD (2014), http://www.coderedd.org/, last visit October of 2014.

Eco2data (2014), http://eco2data.com/services, last visit in October of 2014 (no more available as of June 2015).

Forest Carbon Asia (2013), http://www.forestcarbonasia.org/, last visit in January of 2014, but the website was not updates since December 2013

Forest Trends (2014a), http://www.forestcarbonportal.com/project/, Forest Trend, last visit in October of 2014.

Forest Trends (2014b), http://reddx.forest-trends.org/, Forest Trend, last visit in October 2014.

IGES (2014), http://redd-database.iges.or.jp/redd/ last visit in October of 2014.

Lawlor, K.; Madeira, E. M.; Blockhus, J. & Ganz, D. J. (2013), 'Community Participation and Benefits in REDD+: A Review of Initial Outcomes and Lessons', *Forests* **4**(2), 296--318.

Markit (2014), http://mer.markit.com/br-reg/public/index.jsp?entity=project&sort=project_name&dir=ASC&start=0&acronym=&limit=15&name=&standardId=, last visit in October of 2014.

Peters-Stanley, M. & Gonzalez, G. (2014), 'Sharing the Stage State of the Voluntary Carbon Markets 2014', *A Report by Forest Trends' Ecosystem Marketplace: Executive Summary, Washington DC* .

Plan Vivo (2014), http://www.planvivo.org/projects/registeredprojects/, last visit in October of 2014.

REDD desk (2014), Collaborative resource for REDD Readiness by the Global Canopy Programme (2014), http://www.theredddesk.org/countries last visit in October 2014.

REDD monitor (2014), http://www.redd-monitor.org/, last visit in October of 2014.

REDD+ partnership (2014), http://www.reddplusdatabase.org/#introduction, last visit in October of 2014.

Santilli, M.; Moutinho, P.; Schwartzman, S.; Nepstad, D.; Curran, L. & Nobre, C. (2003), 'Tropical Deforestation and the Kyoto Protocol: a new proposal', Paper presented at CoP-9, UNFCCC, Milan, December 2003.

SCS (2014), http://www.scsglobalservices.com/verified-carbon-offset-projects, last visit in October of 2014.

Sills, E. O.; Atmadja, S. S.; de Sassi, C.; Duchelle, A. E.; Kweka, D. L.; Resosudarmo, I. A. P. & Sunderlin, W. D. (2014), *REDD+ on the ground: A case book of subnational initiatives across the globe*, CIFOR.

Simonet, G.; Karsenty, A.; de Perthuis, C.; Newton, P. & Schaap, B. (2014), 'REDD+ projects in 2014: an overview based on a new database and typology', *Cahiers de la Chaire Economie du Climat* - Information and Debates Series n°32.

VCS (2014), http://www.vcsprojectdatabase.org/, last visit in October of 2014.

WORKING PAPER

n° 2015-08 • Septembre 2015

Climate Economics Chair
Paris-Dauphine University
CDC Climat

LAST ISSUES

Working Paper Publication Director: Philippe Delacote

La Chaire Economie du Climat est une initiative de CDC Climat et de l'Université Paris-Dauphine sous l'égide de la Fondation Institut Europlace de Finance

contact@chaireeconomieduclimat.org