International Journal of Science Academic Research
Vol. 01, Issue 07, pp.440-444, October, 2020
Available online at http://www.scienceijsar.com

ISSN: 2582-6425

Research Article

THE LEXICON OF ENVIRONMENTAL ASSESSMENT, AN INSTRUMENT FOR RELIABILITY OF ENVIRONMENTAL AND SOCIAL MONITORING

[1,*]TSHITALA KALULA Patrice, [2]NDAYE KANKA Bernard, [3]KASENGEDIA MUTUMBE Pierre, [4]FATAKI BAZONGA Jeannot, [5]KAYEMBE SUNGULA Jean René, [6]BASOSILA LOLOFO Norbert

[1]Master's in environmental management, Head of works, Institut Supérieur de Techniques appliquées (ISTA) And Doctorant Université de Kinshasa (UNIKIN)
[2]Professor at Institut Supérieur de Techniques appliquées (ISTA) (Energie)
[3]Professor at Université de Kinshasa (UNIKIN) and Institut Supérieur de Techniques appliquées (ISTA) (Informatique)
[4]Professor at Institut Supérieur de Statistique (ISS) (Informatique)
[5]Professor at Université de Kinshasa (UNIKIN) (Chimie)
[6]Professor at Université de Kinshasa (UNIKIN) (Chimie)
[7]Professor at Université de Kinshasa (UNIKIN) (Environnement)

Received 15th August 2020; **Accepted** 18th September 2020; **Published online** 30th October 2020

Abstract

The environmental assessment is supported by several concepts which determine the instruments to be applied or the conduct to be followed according to the missions assigned to the stakeholders. In the projects, the various actors, even those in charge of environmental and social monitoring, have several gaps in their knowledge. This results in ineffectiveness in the implementation of environmental management for ongoing projects. Hence the author's idea of designing a lexicon of environmental and social assessment. This tool brings together all the useful terms and concepts, on the one hand during the development of safeguard instruments and, on the other hand, during environmental and social monitoring. This tool is the palliative to the shortcomings of those involved in environmental and social assessment. For more efficiency, the lexicon was digitized in a computer application having the capacity to facilitate the research of the concepts as well to know their use as for their meaning. Via this lexicon, definitions and explanations of concepts related to environmental and social assessment in general and environmental monitoring in particular, are accessible to all stakeholders.

Keywords: Digitization, Instrument, Report, Implementation, Environmental and Social management, Strategies, Reliability, Optimization, Environmental monitoring, Case study, Project, ESIA, ESMP, Menu, fields.

INTRODUCTION

The Environmental and Social Impact Assessment (ESIA) acts prospectively by highlighting, before the start of activities, the environmental and social impacts of a project, program or policy. The Environmental and Social Impact Study follows a methodological approach in more or less six stages which leads to the proposal of measures and useful recommendations for the protection of the environmental and socio-economic environments hosting planned activities. This is the Environmental and Social Management Plan (ESMP). An impact study aims to minimize the footprint of a project on its receiving environment in order to achieve the development objectives of the project to ensure its sustainable development. These objectives can only be achieved if there is good environmental and social monitoring, that is to say the optimal and reliable implementation of the ESMP prescriptions emanating from the Environmental and Social Impact Study.
However, the general observation on the ground in the Democratic Republic of Congo (DRC) remains bitter, especially as we observe on the various project sites (construction of roads, mines, factories, etc.), and their surroundings, several negative residual impacts. such as: air, soil and water pollution, disorderly piles of waste, noise, loss of biodiversity, the presence of un-filled hollows, etc. This shows that the environmental and social monitoring consisting of the implementation of all the recommendations included in the ESIA via its ESMP shows many weaknesses. It has been observed by the author that in general the persons in charge of environmental management and the stakeholders, including the technicians, do not have sufficient knowledge on the concepts of the environment. They grope and struggle to translate the environmental and social measures of the ESMP into action. What can be done to remedy this situation of lack of knowledge of the actors involved in carrying out the studies and their environmental monitoring in the field?

What to do to facilitate access, of those involved in the development and monitoring of environmental and social safeguard instruments, to the key concepts of environmental assessment with their meanings.

Which paradigm should be used to allow permanent consultation of the above-mentioned concepts, at any time and in any place (field mission)?

In response to these questions, the following answers agree:

- Produce the environmental and social assessment lexicon as a collection of common environmental assessment terms and concepts;
- Give each term and concept a meaning or an explanation;
- Place this lexicon in a computer application capable of facilitating the search for each desired concept.

Corresponding Author:** ***TSHITALA KALULA Patrice,
Master's in environmental management, Head of works Institut Supérieur de Techniques appliquées (ISTA) And Doctorant Université de Kinshasa (UNIKIN).

The goal of producing a database concerning environmental and social assessment, which we call the lexicon of environmental and social assessment, in order to ensure the best understanding of the concepts by the actors acting in this framework. This lexicon has been placed on a computer application for efficient use.

The specific objectives are:

- Select the concepts and terminologies used in all environmental and social studies, define them and juxtapose them in a table;
- Ensure capacity building by making the lexicon available to all service providers committed to the development of environmental and social safeguard instruments and environmental and social monitoring;
- Set up mechanisms allowing service providers to use the digitized lexicon in the computer application in order to easily search for all the concepts and common terms in environmental assessment;
- Optimize and make environmental and social monitoring more reliable through the effective use of the usual terms and concepts contained in the digitized lexicon;
- Develop the digital environmental and social assessment lexicon into a working tool both in the development of environmental safeguard instruments and in environmental and social monitoring.

The choice and interest of this research is to provide environmental service providers with a tool enabling them to understand and effectively use the key concepts in this field. This will make and optimize the environmental and social monitoring

This work consists of 3 parts:

- Introduction;
- Methodology ;
- Result, analysis and discussion;
- Conclusion.

MATERIALS AND METHODS

Equipment: For the present work, the working material consists of the usual terms and concepts in environmental and social assessment that the author has selected from all the studies carried out as well as other documents dealing with environmental and social assessment. This assembly constitutes the database constitutes the lexicon of the environmental assessment which has been digitized in the form of a computer application.

Methods: The present study has, to produce this lexicon and digitize it in a computer application, used two types of methods namely: on the one hand those recognized in environmental and social assessment and, on the other hand, computer methods. In the results, the two types of methods produced the result presented in point 3 of this study.

Methods used in environmental and social assessment

❖ The descriptive method

It, which makes it possible to make a description of the environment through field observation techniques with the interview, the organization of focus groups, the taking of photographic images and the use of the images as data collection instruments. satellites, was no longer used in the preparation of the ESIA. From the ESIAs used by the author, the usual terms and concepts in the development of studies and in environmental and social monitoring have been selected to constitute the lexicon, the subject of this study.

❖ The deductive method:

It is used in the development of environmental studies. From the cogitation with the data of the description of the environment (the different components) according to their interactions with the activities of the project makes it possible to deduce the potential impacts of the project (cause and effect relationship). The analysis and evaluation of these impacts aims to determine their specific importance on the basis of three criteria: duration, extent and intensity of the effects. The importance allows to define the definition of the measures and their performance indicators. Regarding the constitution of the database of concepts and common terms in environmental assessment, this method was used in the selection of certain words and the formulation of definitions.

❖ The bibliographic and webographic review:

It is the method par excellence which made it possible to constitute the lexicon, the subject of this study. It allowed the use of several written documents as well as those taken from the Internet. It is from the Internet that the materials used for the study were drawn from the certified studies placed on the websites of the World Bank, the Congolese State (ACE) and international organizations. These materials drawn from the Internet were used to provide the data processed in the production of the lexicon of environmental and social assessment, which is the result of this study. Some of these books used for this research can be found in the bibliography;

❖ Contact with expert resource persons in the field and public consultation,

This method made it possible to validate certain terms after collecting the opinions and considerations of expert resource persons in certain matters related to the environmental and social management of projects;

❖ Action research,

This method is a research approach linked to the paradigm of pragmatism which assumes that it is through action that one can generate scientific knowledge useful for understanding and changing the social reality of individuals and social systems. After having carried out more than a hundred ESIA, the author acquired knowledge which enabled him to select the usual terms and concepts in environmental and social assessment.

❖ The comparative method,

This method made it possible to compare the terms and concepts selected in the framework of the lexicon in order to adjust their definitions to avoid certain confusions. The definitions and explanations of the concepts have been submitted for advice and consideration to persons with expertise in environmental assessment.

In terms of IT

❖ The Merise method

It was used to analyze our tool, the lexicon of environmental and social assessment, and as a programming language. It was

used web programming. The Merise method is only a method of designing, developing and carrying out IT projects. Its purpose is to design an information system. It is based on the separation of the data and the processing to be carried out into several conceptual and physical models. As for web programming, it makes it possible to make available to users the data on the web which requires the presence of a browser to allow access to it.

RESULTS, ANALYSIS AND DISCUSSION

The result is the environmental and social assessment lexicon digitized in a computer application, easy to use at any time and in any place by all those concerned or involved in the project. This lexicon is presented in the form of a directory in which the usual concepts in environmental assessment are juxtaposed with their definitions and explanations. The analysis and discussion of each concept selected were carried out as stipulated in the methodological part, involving resource persons with expertise in this matter, who work in public administration, the private sector and higher education. The lexicon can be improved on condition of proving the relevance of such an action.

Presentation of the lexicon in the computer application

The term or concept sought by a user must be entered in the "perform a search" field. After validation, the concept sought is automatically displayed with the definition and / or explanations allowing it to be discerned in the context of the environmental and social assessment. You can do multiple searches at will. Access to the digitized lexicon in the application does not require a password. However, to modify a data, the user must necessarily resort to the manager of the comprehension application. At the end of the search, click on the "close" icon.

Environmental assessment lexicon display figure

Figure 1. Lexicon Tool

In this figure 1, we have the interface of the lexicon tool. By way of illustration, we have:

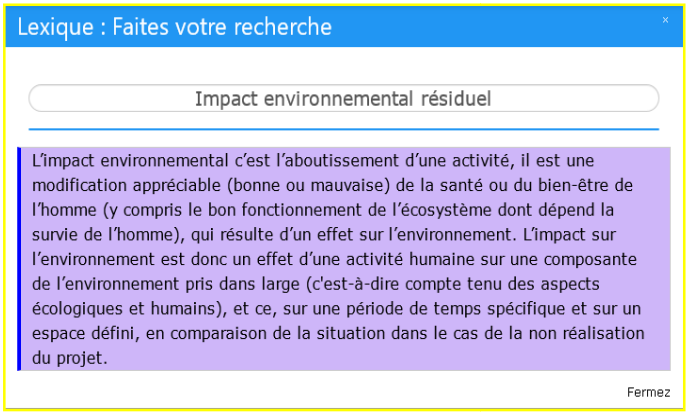

Figure 2. The Tool lexicon with a search word Residual environmental impact

Figure 2 shows the way in which the concepts are presented on the application or environmental and social monitoring tool. You just need to write a word and then press the Enter key. For the case of this figure, we have chosen "residual environmental impact".

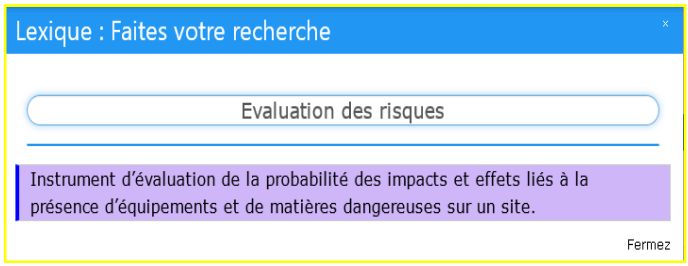

Figure 3. The Tool Lexicon with a search word "Risk assessment"

This figure 3, we wrote the concept Risk assessment and the software generated us its definition.

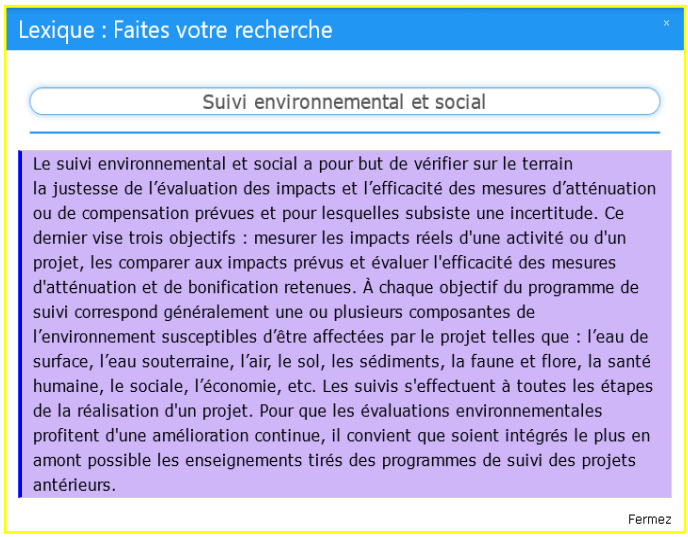

Figure 4. The Lexicon Tool with a search word "Environmental and social monitoring"

This figure 4, we wrote the concept Environmental and social monitoring and the software generated us its definition.

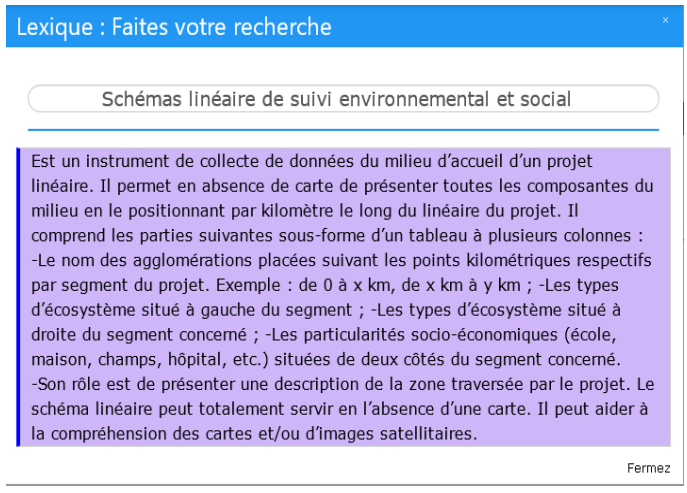

Figure 5. The Tool Lexicon with a search word "Linear diagram of environmental and social monitoring"

In figure 5, we show the definition of the word Linear diagram of environmental and social monitoring.

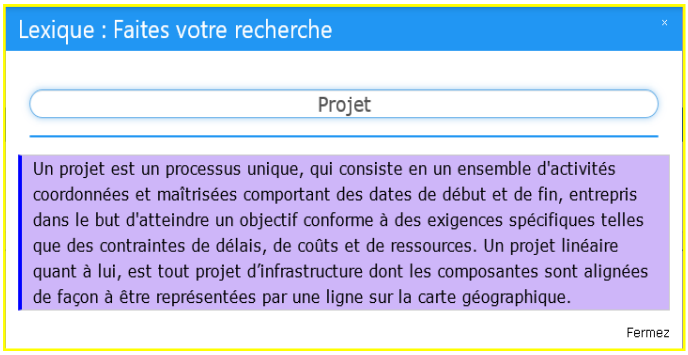

Figure 6. The Lexicon Tool with a search word "Project"

In Figure 6 we see the definition of the word Project.

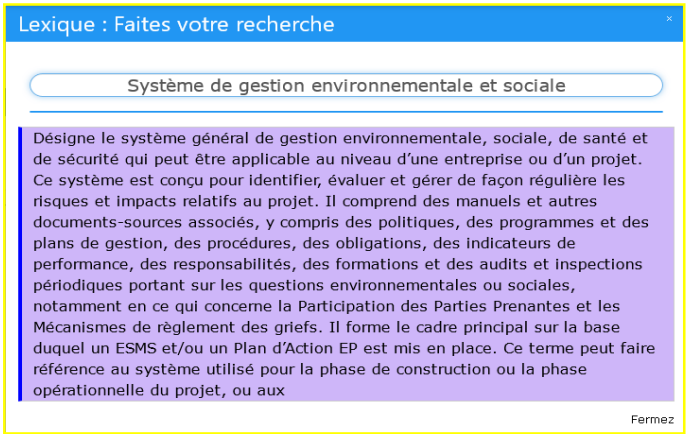

Figure 7. The Tool Lexicon with a search word "Environmental and social management system"

In Figure 7, gives us the definition of the word environmental and social management system.

Conclusion

Faced with the following observations:

- Insufficient knowledge of the actors involved in carrying out studies and their environmental monitoring in the field;
- The difficulty of easily accessing the key concepts of environmental assessment with their meanings, by people involved in the development and monitoring of environmental and social safeguard instruments;
- The lack of paradigm allowing the permanent consultation of the above-mentioned concepts, at any time and in any place by the providers in environmental and social assessment.

The present study has solved these questions by proposing a new instrument: "the lexicon of environmental and social assessment". This is a collection or a database condensing the usual terms and concepts in environmental assessment associated with definitions and meanings allowing their discernment. This lexicon has been digitized in the form of a computer application following a paradigm capable of facilitating the search for each desired concept. This logic also allows the permanent consultation of the concepts of this database at any time and in any place by the providers in environmental and social assessment. All in all, the database on environmental and social assessment, namely the lexicon of environmental and social assessment digitized in the form of a computer application, allows the correct discernment of the concepts included in the safeguard instruments used by service providers. in environmental and social monitoring. The lexicon is a tool for providers to discern and make effective use of key concepts during the environmental and social assessment of projects. This instrument, reinforced by its computerization, will effectively increase the reliability and optimize the environmental and social monitoring

REFERENCES

Allard L., and Barrière M. 2003. Environmental Assessment Methods for Lines and Posts, Hydro Quebec, Quebec, Canada.

André, P., Delisle, CE and Revéret. J., P. 2003. Environmental impact assessment. 2nd edition, Montreal, Presses Internationales Polytechnique, 559 p.

André, P., Enserink, B., Connor, D., and Croal P. 2006. Public participation: International principles for best practice. International Association for Impact Assessment, Special Publication, Series No. 4.

World Bank, Operational Manual Bank Procedures Environmental Assessment OP 4.01, 1999.

BeyokuLoku J., P. 2006. Energy Policy and Development of the Energy Sector in the DRC, National Energy Commission (CNE), Kinshasa, DRC.

Drink from Chazournes, Laurence, 1995. The implementation of International Law in the field of protection: issues and challenges. General review of public international law 1: 37-76. University of Geneva-Switzerland.

BUURSINK, (January 2006. Environmental and social assessment of the PUAACV: Vol. 1 Environmental and social assessment of component C, Opening up of isolated areas: Final report, Project coordination unit (UCOP), Ministry of Planning, Kinshasa.

WCED 1987. Our common future, trad. Fr. 1988, 1989 edition, Montreal, Fleuve editions.

HEBERT J., and BAGLO M. 2003. Environmental impact assessment, Institut de l'Energie et du Pétrole de la Francophonie. E7 Expertise Network for the Global Environment, Quebec, 102p.

Jean-Paul Ducrotoy, Ecological restoration of estuaries, Ed. TEC & DOC, 11, rue Lavoisier 75008 Paris-France

Kingdon, J. 2006. Guide to African mammals. Coll. The naturalist's guides, 272p.

Malaisse, F. 1997. Eating in clear African forests: ecological and nutritional approach. CTA, 384 p.

Michel R. 1996. Environmental assessment course, 1st year of Master in Environmental Management, Senghor University of Alexandria, Egypt, 250p.

MUNN, R., E. 1977. Environmental impact assessment: principles and methods. Second French edition (1975. Working group of the "Scientific Committee on Problems of the Environment" (SCOPE. Report No. 5, Toronto, Canada, 175 p.

MUNN, R., E. 1979. Environmental Impact Assessment: Principles and Procedures. Second Edition (1975). Scientific Committee on Problems of the Environment (SCOPE. Report n ° 5. John Wiley & Sons, Toronto, 190 p.

NAIMAN, R., J. 1996. "Water, society and landscape ecology", in Landscape Ecology, vol.

Nathalie Dumax, Anne Rozan, compensation measures: an indicator of environmental cost, Lavoisier | "Environmental legal review", 2011/5 special n ° pages 115 to 123 ISSN 0397-0299https://www.cairn.info/revue-revue-juridique-de-l-environnement-2011-5-page-115.htm

Benabidès, P. 2011. Environmental and social management plan, obligations and performance for sustainable development, Center universitaire de formation en environnement, Université de Sherbrooke Québec, Canada, April 2011.

National Environmental Action Plan (PNAE), 1997.
Reason, P., & Bradbury, H. 2001. Handbook of action research: participative inquiry and practice. London: Wise.
Reason, P., & Bradbury, H. 2008. Handbook of action research: participative inquiry and practice (2nd ed.. London: Wise.
REES W. 1989. "Defining Sustainable Development", Center for Human Settlements Research Bulletin, 1, pp. 1-7.
Robson, C., 2011. Real world research (3rd ed.. Oxford: Blackwell Publishing.
Roy M., & Prévost P. 2013. Action research: origins, characteristics and implications of its use in management sciences, Université de Sherbrooke.
Roy M., & Prévost P. 2013. Action research: origins, characteristics and implications of its use in management sciences, Université de Sherbrooke.
Rynes, S., Bartunek, J., & Daft, R. 2001. Across the great divide: knowledge creation and transfer between practitioners and academics. Academy of Management Journal, 44 (2), 340-355.
Tshitala P. 2008. Environmental and social monitoring of the rehabilitation of RN 5 / RN 35; periodic reports from August 2006 to May 2008, TECSULT International / EGTC Control Mission, Lubumbashi, Katanga, DRC.
Tshitala P., Makubikua P., and Mamie S. August 2007. Environmental and Social Management Plan for the rehabilitation works of the segment "PK 105 + 000 - PK 145 + 000" of the Lubumbashi-Kasomeno-Kasenga road on national roads n ° 5 and 35, TECSULT / GECT control mission and the EGMF company, Emergency Support and Improvement of Living Conditions Project (PUAACV), Project Coordination Unit (UCOP), Ministry of Planning, Lubumbashi, p. 56
Tshitala. P. 2020. Environmental and social impact study course, L2 Environment course, ISTA, Inédit.
Veuve, L., 1988. Environmental impact studies. Lecture notes for the 2nd Cycle in Environment, Lausanne, Switzerland.
Waaub JP (1996. Environmental and social components, 1st year of Master in Environmental Management, Senghor University of Alexandria, Egypt, 200p.
https://www.moged.ifdd.francophonie.org/index.php/fr/composantes/evaluation-environnementale/contexte page consulted on 01/09/2019, 10:02 am '
https://fr.wikipedia.org/wiki/Mise_au_point page consulted on 01/09/2019, 11:22 a.m. '
https://www.larousse.fr/dictionnaires/francais/instrument/43459?q=instrument#43381 page consulted on 01/09/2019, 11:33 a.m. '
https://www.larousse.fr/dictionnaires/francais/am%c3%a9lioration/2769?q=am%c3%a9lioration#2763 page consulted on 01/09/2019, 11:37 a.m. '
https://fr.wikipedia.org/wiki/ISO_10006 page consulted on 01/09/2019, 11:42 a.m. '
https://www.petite- entreprise.net/P-2449-136-G1-definition-de-strategie.html
https://fr.wikipedia.org/wiki/Paradigme page consulted on 01/09/2019, 11:48 a.m.
http://www.web-intention.com/post/quelle-est-la-difference-entre-un-logiciel-et-une-applications page consulted on 01/10/2019, 1:05 p.m. '
https://www.sifee.org/static/uploaded/Files/ressources/contenu-ecole/quebec/10_VISITE_TERRAIN/4_Directive.pdf page consulted on 01/10/2019, 4:00 p.m.
https://www.dictionary-environnement.com/milieu_recepteur_ID1759.html page consulted on 01/10/2019, 4:10 p.m. '
https://fr.wikipedia.org/wiki/Inducteur_environnemental#La_mesure page consulted on 01/10/2019, 4:20 p.m. '
https://fr.wikipedia.org/wiki/Inducteur_environnemental page consulted on 01/10/2019, 4:25 p.m. '
https://uneplive.unep.org/country/index/CM#,WH7bJn1wfAg page consulted on 01/10/2019, 4:32 p.m. '
https://aclevante.com/que-son-los-impactos-residuales page consulted on 01/10/2019, 4:40 p.m. '
https://www.petite- entreprise.net/P-3741-136-G1-les-risques-environnementaux.html page consulted on 03/03/2019, 09:05 am
https://www.yourarticlelibrary.com/essay/types-of-environmental-impacts-direct-indirect-cumulative-and-induced-impact/27454 page consulted on 03/03/2019, 9:15 a.m.
http://www.conservation-nature.fr/article4.php?id=15 page consulted on 03/05/2019, 09:22 a.m.
https://www.yourarticlelibrary.com/essay/types-of-environmental-impacts-direct-indirect-cumulative-and-induced-impact/27454 page consulted on 03/05/2019, 09:22 a.m.
https://www.cairn.info/revue-revue-juridique-de-l-environnement-2011-5-page-115.htm page consulted on 03/06/2019, 10:05 am
http://www.leganet.cd/Legislation/Droit%20economique/Code%20Forestier/rdc-loiforets.pdf page consulted on 03/06/2019, 10:11 a.m.
https://web.maths.unsw.edu.au/-lafaye/CCM/merise/concintro.htm page consulted on 04/25/2019, 5:41 p.m. '
http://documents.worldbank.org/curated/en/154141468251713880/pdf/E13060v40ESMP010Reservoir0700m30Final0.pdf page consulted on 03/06/2019, 10:23 a.m. '
http://www.leganet.cd/index.htm page consulted on 03/06/2019, 10:33 a.m. '
https://web.maths.unsw.edu.au/-lafaye/CCM/merise/concintro.htm page consulted on 03/06/2019, 11:33 a.m. '
https://documents.banquemondiale.org/fr/publication/documents-reports/documentdetail/982861515614427238/etude-d-impact-environnemental-et-social-des-travaux-de-rehabilitation-de-l-avenue-itela- of-the-city-of-mbandaka-in-the-province-of-equateur page consulted on 07/04/2020, 4:33 p.m. '
http://documents1.worldbank.org/curated/en/254781484887546440/pdf/SFG2874-EA-FRENCH-P159037-PUBLIC-Disclosed-1-17-2017.pdf page consulted on 07/04/2020, 4:48 p.m.
http://documents1.worldbank.org/curated/es/614021564640014634/pdf/Etude-dimpact-environmental-et-social-du-projet-de-construction-des-batiments-scolaires-de-quatre-ecoles-Ciblees- in-the-City-of-Mbandaka.pdf page consulted on 07/04/2020, 4:56 p.m.
http://documents1.worldbank.org/curated/en/712071468052453113/pdf/E47530V40FRENC00Box385441B00PUBLIC0.pdf page consulted on 07/04/2020, 8:00 p.m. '
http://documents1.worldbank.org/curated/en/989161468002131445/pdf/E15330vol1010french.pdf page consulted on 07/04/2020, 10 p.m. '
http://documents1.worldbank.org/curated/en/614021564640014634/text/Etude-dimpact-environmental-et-social-du-projet-de-construction-des-batiments-scolaires-de-quatre-ecoles-Ciblees- in-the-City-of-Mbandaka.txt page consulted on 07/06/2020, 10 h 00 '
http://documents1.worldbank.org/curated/es/254781484887546440/pdf/SFG2874-EA-FRENCH-P159037-PUBLIC-Disclosed-1-17-2017.pdf page consulted on 07/06/2020, 12 h 00 '

****