

ERPD CHILE

INDICATORS

Emission Reductions Program Description

Country response to TAP

15th Carbon Fund Meeting, Washington, USA

ERPD

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TODOS
POR
CHILE

LIST OF INDICATORS

**73 of the 78 Indicators of the Methodological Framework have been met.
There are still 5 indicators to be met.**

- ☑ 6.1
- ☑ 7.1 & 7.2
- ☑ 8.1
- ☑ 36.1

Indicator 6.1

The following methodological steps are made publicly available:

The total information used in the Reference Level construction is publicly available in the ENCCRV website: <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/>

All the documents and papers cited in the Reference Level include the download links.

The ERPD it is also available in the FCPF website, including links for tools and annex:

<https://www.forestcarbonpartnership.org/sites/fcp/files/2016/Aug/ERPD%20Chile.%20Advanced%20Draft%2017072016%20%28FINAL%29%20%281%29.pdf>



Nivel de Referencia			
Documentos			
 Anexo Acta Taller NR (87 descargas)	01 Sep 2016	Descargar (pdf, 3.45 MB)	
 Anexo Datos Inventario Continuo (86 descargas)	01 Sep 2016	Descargar (xls, 96 KB)	
 Anexo Definiciones actividades REDD (158 descargas)	01 Sep 2016	Descargar (pdf, 894 KB)	
 Anexo Incertidumbre mapas de cambio (81 descargas)	01 Sep 2016	Descargar (xlsx, 128 KB)	
 Anexo Justificación SOC (111 descargas)	01 Sep 2016	Descargar (xlsx, 4.28 MB)	
 Anexo Manual Catastro 1995 (97 descargas)	01 Sep 2016	Descargar (pdf, 591 KB)	
 Anexo Plantaciones Forestales (166 descargas)	02 Sep 2016	Descargar (docx, 2.79 MB)	
 Anexo Selección de Factores de Emision (31 descargas)	21 Oct 2016	Descargar (pdf, 687 KB)	
 Herramienta Aumentos (97 descargas)	01 Sep 2016	Descargar (xlsx, 122.76 MB)	
 Herramienta Bosque Permanente (87 descargas)	01 Sep 2016	Descargar (xlsx, 76.61 MB)	
 Herramienta Deforestacion (131 descargas)	01 Sep 2016	Descargar (xlsx, 121.34 MB)	
 Herramienta Incendios (91 descargas)	01 Sep 2016	Descargar (xlsx, 142 KB)	
 Herramienta Incertidumbre (89 descargas)	01 Sep 2016	Descargar (xlsx, 201 KB)	
 Herramienta Sustitucion (112 descargas)	01 Sep 2016	Descargar (xlsx, 121.65 MB)	
 Mapas bosque permanente (104 descargas)	01 Sep 2016	Descargar (rar, 49.02 MB)	
 Mapas cambio uso (126 descargas)	02 Sep 2016	Descargar (rar, 1.61 GB)	
 Total FREL FRL (91 descargas)	02 Sep 2016	Descargar (xlsx, 102 KB)	

Indicator 6.1

The following methodological steps are made publicly available:

10. REFERENCES

Bahamóndez, C., Martín, M., Muller-Using, S., Rojas, Y., Vergara, G., 2009. Case Studies in Measuring and Assessing Forest Degradation: An Operational Approach to Forest Degradation. (Forest Resources Assessment Working Paper.). Forestry Department, Food and Agriculture Organization of the United Nations.

Bahamondez C and Thompson ID (2016) Determining forest degradation, ecosystem state and resilience using a standard stand stocking measurement diagram: theory into practice. *Forestry*: 0, 1-11.

Berger, A., Gschwantner, T., McRoberts, R.E. and Schadauer, K., 2014. Effects of measurement errors on individual tree stem volume estimates for the Austrian National Forest Inventory. *Forest Science*, 60(1), pp.14-24.

Cabaña, C. 2011. Reseña histórica de la aplicación del DL701, de 1974, sobre Fomento Forestal. CONAF.

Chander, G.; Markham, B.; Micijevic, E.; Teillet, P.; Helder, D. Improvement in absolute calibration accuracy of Landsat-5 TM with Landsat-7 ETM+ data. *Proc. SPIE 5882. Earth Observing Systems X*, 588209 (September 07 2005) doi:10.1117/12.620136

⁶⁵ Tool used to estimate uncertainty is available in the link: <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/59-Herramienta-Incertidumbre/file>

⁶⁶ Land use change maps confusion matrix are available in the link: <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/61-Anexo-Incertidumbre-mapas-de-cambio/file>

⁶⁷ Olofsson, P.; Foody G. M.; Herold M.; Stehman S. V.; Woodcock C. E.; Wulder M. A. 2014. Good practices for estimating area and assessing accuracy of land change. *Remote Sensing of Environment* 148, 42-57 pp.

⁶⁸ More details at: <http://www.openforis.org/tools/collect-earth.html>

Indicator 6.1

The following methodological steps are made publicly available:

1. Forest Definition

- I. ER-PD Chile Chapter 8.2. Pág. 149-151
- II. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/53-Anexo-Definiciones-actividades-REDD/file>
- III. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/51-anexo-acta-taller-nr/file>

2. Definition of clases of forests

- I. ER-PD Chile Chapter 8.2. Pág. 149-151
- II. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/53-Anexo-Definiciones-actividades-REDD/file>

Indicator 6.1

The following methodological steps are made publicly available:

3. Choice of activity data, and pre-processing and processing methods

- I. ER-PD Chile Chapter 8.3 y 8.5 Pág. 151-171
- II. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/56-Herramienta-Deforestaci%C3%B3n/file>
- III. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/54-Herramienta-Aumentos/file>
- IV. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/55-Herramienta-Bosque-Permanente/file>
- V. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/60-Herramienta-Sustituci%C3%B3n/file>
- VI. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/57-Herramienta-Incendios/file>
- VII. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/67-Mapas-cambio-uso/file>
- VIII. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/64-Mapas-bosque-permanente/file>

Indicator 6.1

The following methodological steps are made publicly available:

4. Choice of emission factors and description of their development

- I. ER-PD Chile Chapter 8.3 Pág. 151-166
- II. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/78-anexo-seleccion-de-factores-de-emision/file>
- III. http://mapaforestal.infor.cl/phocadownload/Informe_Inventario_Continuo_2014.pdf

5. Estimation of emissions and removals, including accounting approach

- I. ER-PD Chile Chapter 8.5 Pág.166-179
- II. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/66-total-frel-frl/file>

6. Disaggregation of emissions by sources and removal by sinks

7. Estimation of accuracy, precision, and/or confidence level, as applicable

Indicator 6.1

The following methodological steps are made publicly available:

6. Disaggregation of emissions by sources and removal by sinks
7. Estimation of accuracy, precision, and/or confidence level, as applicable
8. Discussion of key uncertainties
 - I. ER-PD Chile Chapter 12 Pág.198-231
 - II. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/59-Herramienta-Incertidumbre/file>
 - III. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/61-Anexo-Incertidumbre-mapas-de-cambio/file>
9. Rationale for adjusting emissions (don't apply)
10. Methods and assumptions associated with adjusting emissions (don't apply)

Indicator 7.1

All assumptions and sources of uncertainty associated with activity data, emission factors and calculation methods that contribute to the uncertainty of the estimates of emissions and removals are identified.

Response to TAP specific comments regarding the stock chart (I)

An analysis which identified and evaluated the contribution to uncertainties from each set of information and data is available .

- ✔ The stock chart design for the Siempreverde Forest Type was applied in all the accounting area, where 11 Forest Types are included.
- ✔ Chile recognize that the use of specific stock chart for each Forest Type would improve the accuracy, precisión and uncertainties
- ✔ The uncertainty related to this point cannot be estimated while the stock charts for other Forest Types do not exists yet.
- ✔ The best available information was used, which is based in a scientific approach, validated methodologies at international levels, which are supported by scientific publications.

Indicator 7.1

Response to TAP specific comments regarding the stock chart (II)

- ✓ The similarity between the Siempreverde Forest Type and the Roble-Raulí-Coihue Forest Type was analyzed through two different statistical analyzes to determine the feasibility of using a single stock chart for the two Forest Types with a positive result (more than 50% of the forest area in the accounting area)
- ✓ Status of progress and improvement planning

1.- Currently, the Ministry of Agriculture is developing the work related to the design and validation of the stock charts for the Lenga Forest Type, through the Native Forest Law Research Fund (Ley 20.283), CONAF.

2.- During 2017 and 2018, based on a specific agreement between INFOR and CONAF, new stock charts will be generated including, financed through the GEF Project Integrated System of Monitoring of Forest Ecosystems SIMEF, supported by FAO

3.- For the lesser-distributed forest types, similarity analyzes will be performed with the aim of establishing which are the best fit stock charts

- ✓ **We defend to maintain the current methodology, considering the step-wise approach of the Reference Level, to include the improvements in the future and to update the Reference Level once the validated and published information is available.**
- ✓ **Chile proposes to include a 100% uncertainty value for activity data in permanent forests, different from the Evergreen and Roble-Raulí-Coihue Forest Types**

Indicator 7.1

Response to TAP regarding specific comments on selection of Regional EFs (I)

The uncertainty analysis has identified and evaluated the contribution of each source of information used. The analysis is available

- ✔ The effort and intense dedication of the TAP in the analysis of the point is appreciated.
- ✔ It is recognized that the selection can be debatable. Specific documents have been generated to justify it through statistical analysis and spatial distribution.
- ✔ The contribution of each source of information used has been identified and evaluated, as indicated by the FCPF MF.
- ✔ There is no Forest type EFs so it has not been possible to analyze the variation between these two options. However, as recommended by the TAP, an analysis was performed based on data from the Continuous Forest Inventory plots from the accounting area to generate Simulated EFs.
- ✔ The result of the analysis indicated that the selection of Regional EFs is conservative.
- ✔ The simulation character of the estimated EFs implies that they can not be used for the estimation of accuracy.

Indicator 7.1

Response to TAP regarding specific comments on selection of Regional EFs (II)

- ☑ A working group of experts involved in national communications related to Climate Change and Land Use Change and Forestry (INFOR / CONAF / MINAGRI) is being planned to compare the use of Regional EFs against Forest Type EFs.
- ☑ The results of the work group will be considered in order to update the Reference Level aiming to improve current FREL information.
- ☑ **Until the results of the working group are available, Chile proposes to include a number on uncertainty which is based on the difference between the Regional EFs and the Simulated EFs.**

Indicator 7.2

The sources of uncertainty identified in Indicator 7.1 are assessed for their relative contribution to the overall uncertainty of the emissions and removals.

The comments made in TAP's Assessment Report have got Chile's appreciation and our response to these comments is directly linked to our suggestions and assessments to indicator 7.1

- ✔ It is considered that the identified sources have been evaluated
- ✔ The exception is made for the sources of uncertainty where information to assess is not available.

Indicador 8.1

Systematic errors are minimized through the implementation of a consistent and comprehensive set of standard operating procedures, including a set of quality assessment and quality control processes that work within the local circumstances of the ER Program.

Chapter 12.1.3 (Page 215/216) describes the quality control procedures used in both primary information sources and aggregate compilation.

Among the attached documents are those corresponding to the description of protocols of the Cadastre, the Continuous Forest Inventory and the Inventory of Greenhouse Gases of Chile

- I. <http://www.enccrv-chile.cl/index.php/descargas/nivel-de-referencia/63-Anexo-Manual-Catastro-1995/file>
- II. http://mapaforestal.infor.cl/phocadownload/Informe_Inventario_Continuo_2014.pdf
- III. http://www.snichile.cl/sites/default/files/documentos/2014_iin_cl.pdf



These protocols are being continuously improved, keeping them up to date and consistent with new requirements, technologies and developments.

Indicator 36.1

The ER Program Entity demonstrates its authority to enter into an ERPA with the Carbon Fund prior to the start of ERPA negotiations...

1. There are several legal provisions that give mandate to CONAF (Decree Law No. 701 on Forest Development, Law No. 20,283 on Native Forest Recovery and Forestry Development; Decree No. 4,363, 1931, the Ministry of Land And Colonization, denominated "Law of Forests", among others.
2. Also, according to the legal nature of CONAF, article 3, letter h) of the CONAF Statutes may "Execute all kinds of acts and enter into all kinds of conventions or contracts aimed at achieving or related to its purposes, Natural or legal persons, national or foreign, whether public or private, even with its own partners. "



There is institutional capacity to conclude contracts with international entities on behalf of the State, in order to access financing for performance payments that require the transfer of carbon rights.

Indicator 36.1

While it is true that the Ministry of National Assets has the power to acquire and manage public goods, D.L. 1.939 establishes the possibility for CONAF to administer public land, as in fact, with the State Protected Areas System, whose administration has been delivered to CONAF, as detailed:

1. **Article 15.-** Forest reserves, National Parks and fiscal lands whose occupation and work in any way compromise the ecological balance, may only be used or granted in use to State agencies or legal entities governed by Title XXXIII of Book I of the Code Civil, for purposes of conservation and protection of the environment.
2. **Article 21.-** *The Ministry, with consultation or at the request of the Services and entities responsible for the care and protection of forests and the environment, the preservation of animal and plant species and in general, the defense of the ecological balance, may Declare Forest Reserves or National Parks to those fiscal lands that are necessary for these purposes. These lands will be under the care and tuition of the competent organisms.*



As per current Chilean's legal framework, Forest Law (D.S. 4,363) attributes the administration of public goods to CONAF.

Indicator 36.1

The ER Program Entity demonstrates its authority to enter into an ERPA with the Carbon Fund prior to the start of ERPA negotiations...

Finally, there is nothing which prevents public assets from being administered by CONAF. This includes assets which are destined to other Public Services or entities, as well as assets that are in use or Tax property, subject to Conventions entered into with CONAF on the basis of a Framework Agreement between The parties, with a view to complying with the Emission Reductions Program.



There is a legal and inter-institutional feasibility for Chile to generate an emission reductions program on both public and private lands.

Thank you

ERPD Chile



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