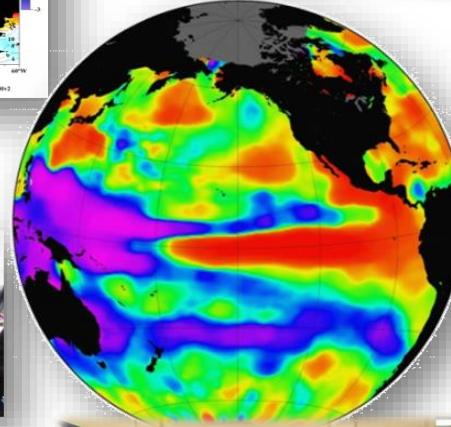
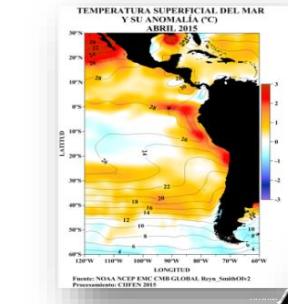


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Potential contributions of CIIFEN to CliMWaR-LAC and Water security project in Western-South America

Rodney Martínez
r.martinez@ciifen.org



CIIHEN

Acknowledgements

To UNESCO-PHI and Flanders Government
for the kind invitation to this meeting.



CIIHEN



CIIHEN is a non-profit international organization established on **January 10th 2003** as the result of several resolutions adopted by the **United Nations** since **1998**. Its International Board is composed by the Governments of **Ecuador** and **Spain**, the **UN International Office for Disaster Reduction (UNISDR)** and the **World Meteorological Organization (WMO)** as observer.

MISSION

To implement actions to consolidate the science-policy interface and improve climate services to contribute on risk management and adaptation



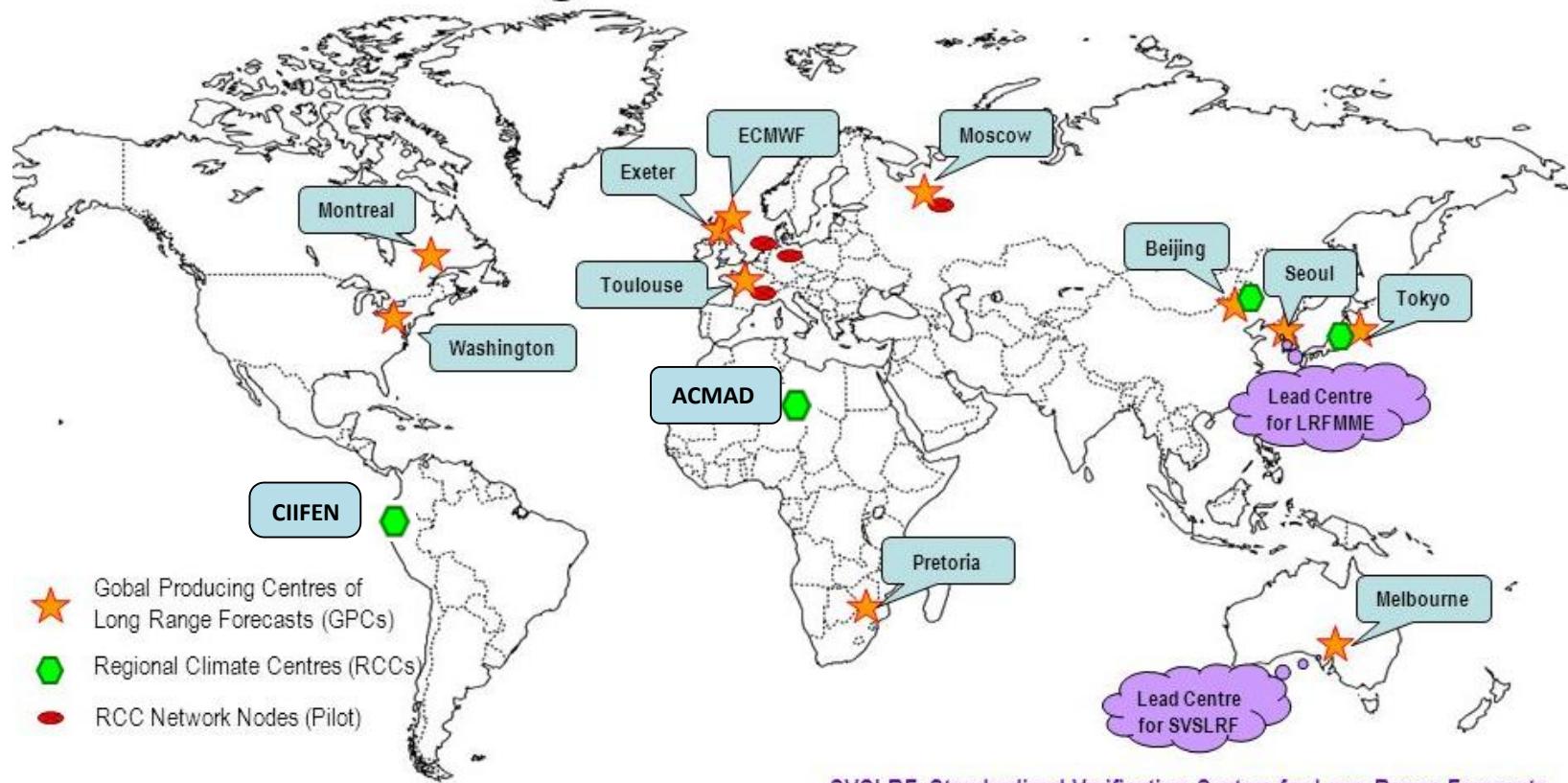


WMO Regional Climate Center for Western South America (RCC-WSA)





Global/Regional Network of WMO Designated Climate Centers



SVSLRF: Standardized Verification System for Long Range Forecasts
LRFMME: Long Range Forecast Multi-Model Ensemble

CIIFEN was officially designated as WMO Regional climate Center in June 2015



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World Meteorological Organization
Weather • Climate • Water



WMO Regional Climate Center for Western South America (RCC-WSA)

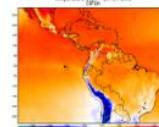


América

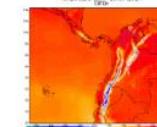
Tropical

Resolución de 30 x 30 Km

Temperatura Superficial (2 metros)



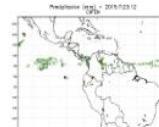
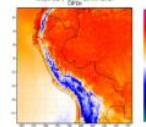
Precipitación



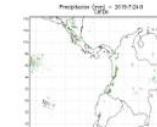
Venezuela-Colombia-

Ecuador

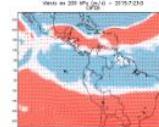
Resolución de 10 x 10 Km



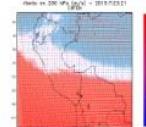
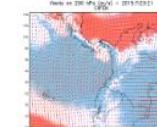
Humedad Relativa



Viento Zonal y Meridional 200 hPa

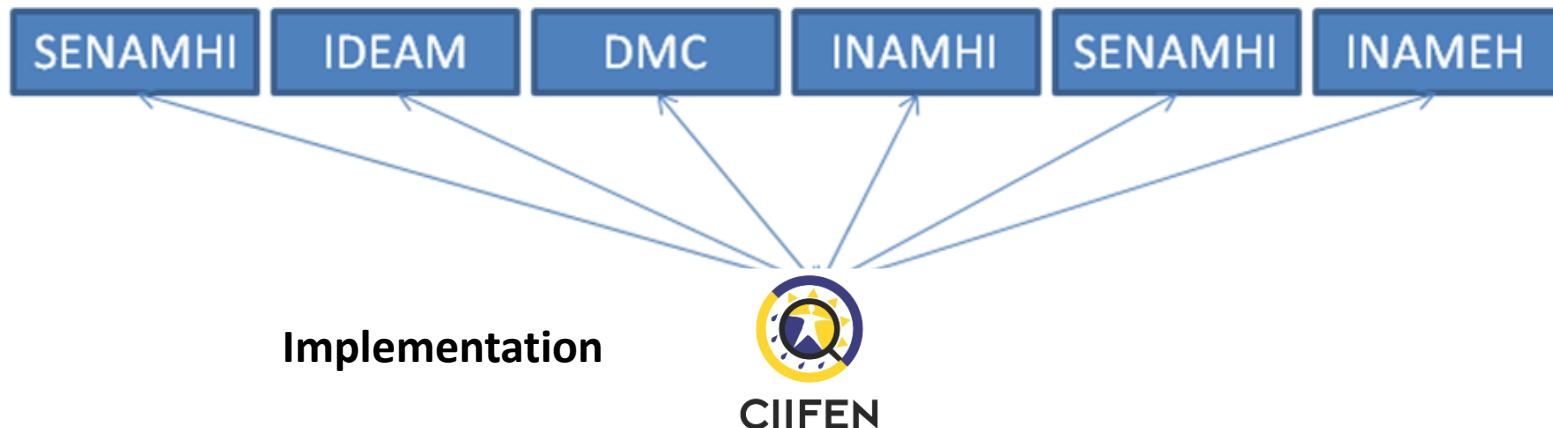


Viento Superficial



Governance

Steering Committee





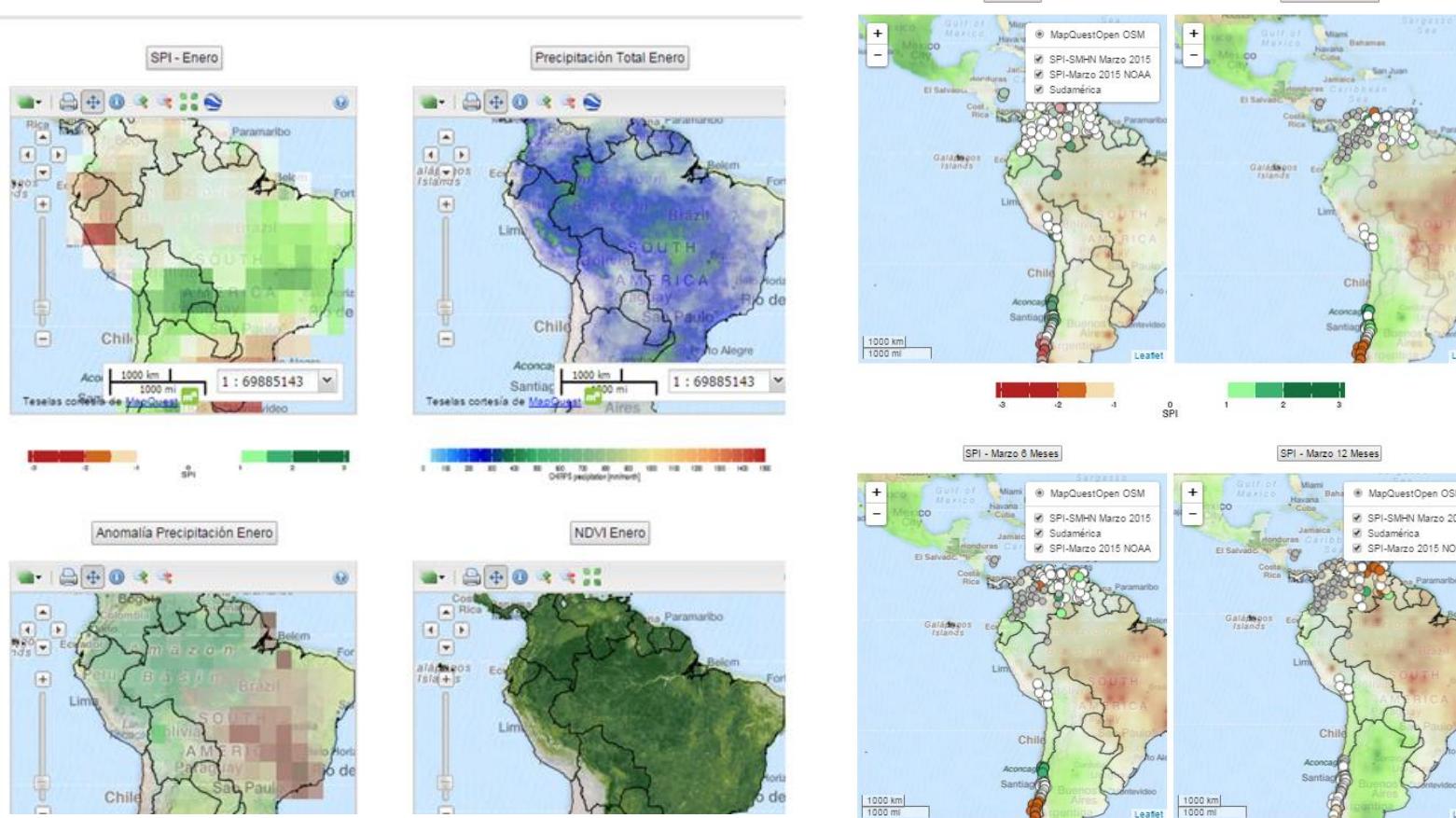
CIIFEN

Centro Regional del Clima para
el Oeste de Sudamérica

Inicio Pronósticos a Largo Plazo Monitoreo del Clima Servicio de Datos Operacionales Entrenamiento en el uso de Productos y Servicios del CRC Investigación y Desarrollo

Diagnóstico Climático > Avisos e Información del Clima Análisis del clima > Escenarios Climáticos Monitoreo de Sequías >

DROUGHT INFORMATION SYSTEM FOR WSA





CIIFE

LACAD system. Daily data repository and assesment developed by KNMI

The screenshot shows the LACAD system homepage. At the top, there's a navigation bar with links for Home, FAQ, Partners, Policy of extremes, Project info, Site alias (set to JCIIFEN), and Global Climate Explorer. Below the navigation is a banner with the LACAD logo and the text "Latin American Climate Assessment & Dataset". The main content area has a "Home" section with a welcome message about the dataset and its purpose. It also features a "What's new?" section with a small image of a book titled "El Niño: The Southern Oscillation" and the text "The database is updated until: Mar 31, 2015, January 2012 - Website online.". Another section, "Participants and data", includes a map of South America and text about the number of participants, countries, and stations. The bottom of the page contains contact information for the project team, including the CIIFE logo and staff names like Rodney Martinez, Juan José Nieto, Andrea Freire, Else van den Besselaar, Albert Klein Tank, and Gerard van der Schrier.

1222 stations from 9 countries.

Repository of meteorological variables provided by NHMSs

<http://lacad.ciifen.org/>



The main strategic objectives of the RCC-WSA are:

- 1) Strengthening capacities for climate data management
- 2) Capacity building for seasonal prediction.
- 3) Strengthening of climate services to priority sectors.
- 4) Positioning and visibility.
- 5) Resource mobilization and technical cooperation.



Regional activities of CIIFEN





CIIFEN

The Western South America Climate Outlook Forum

- 15 RCOFs to date.
- Standardized methodology.
- Monthly seasonal forecast which is discussed and disseminated virtually.
- Operational since 2005.

Main users:

- The agricultural producers.
- The government risk management agencies.
- The water resource management officials and,
- The public health organizations.



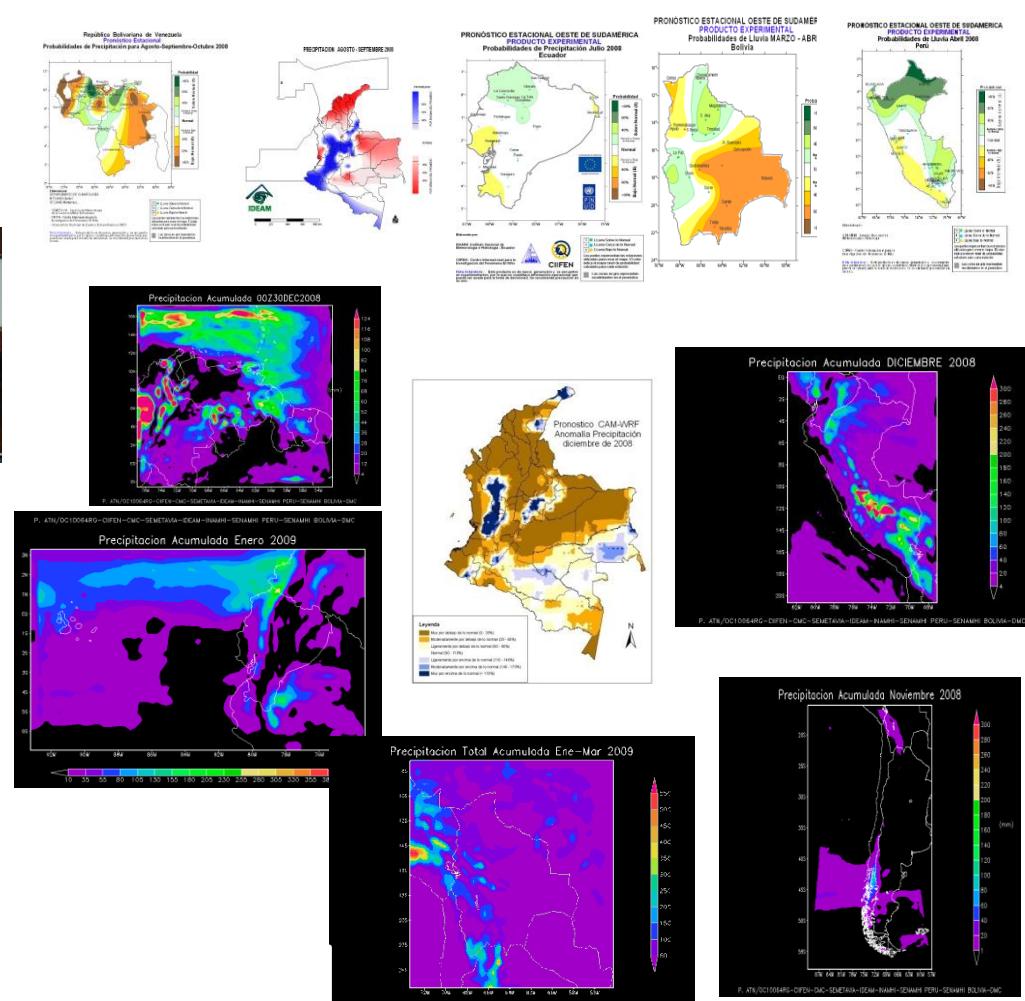


CIIFEN

Regional Training Workshops



Implementation of Statistical and Dynamic Models for Climate Prediction at NMHSs in WCSA





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Climate applications regional activities in South America 1/2



CLIPS workshop for applications on agriculture sector
Guayaquil, Ecuador, December 2003



CLIPS workshop for applications on the health sector
Guayaquil, Ecuador, November 2004

Main outcomes:

- Assessment of operational capabilities and gaps.
- Better understanding of sector specific needs.
- Agreement of road maps and regional coordination actions.
- Improved interaction with relevant contacts in agriculture and health at national and regional level.



CIIFEN

Climate applications regional activities in South America 2/2



Training workshop for CLIPS focal points from RA III,
Lima, Peru, August, 2005

Main outcomes:

- Intensive training on CPT and identification of potential regional trainers in Spanish.
- Intensive training on Rclimdex.
- Initial agreement in WSA countries to adopt CPT for the RCOF to replace Exever.
- Initial discussions on regional projects to strengthen climate applications for agriculture.



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Guayaquil, Ecuador October, 2008

'Ibero American Workshop in Seasonal Prediction'.

19 countries , 52 participants,

from 17 NMHS.

2 TIPE workshops, the next one was held in 2009



Taller Iberoamericano de Predicción Estacional



"La ciencia de los modelos al servicio del desarrollo"



22-23 Octubre 2008
Guayaquil - Ecuador



CLIPS Training workshop on operational climate prediction for Ibero-American experts
Cuernavaca, Mexico, April 2011



- Intensive training on seasonal prediction.
- Exchange of lessons learnt among Central and South America RCOFs
- Coordination for mutual support and horizontal cooperation.
- Action Plan to develop the Guide of Good practices on seasonal prediction for Latin America.



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Workshop on Climate Data Homogenization and Regionalization

Antigua-Guatemala, October 15th -19th 2012



Supported by:



Main outcomes:

- To adopt a Regional Work Plan aimed to perform a guided homogenization and regionalization of climate data stations in Central America, Colombia, Venezuela, Republica Dominicana, Cuba and Mexico.
- To obtain an homogenized grid for the region
- To develop a reviewed publication.



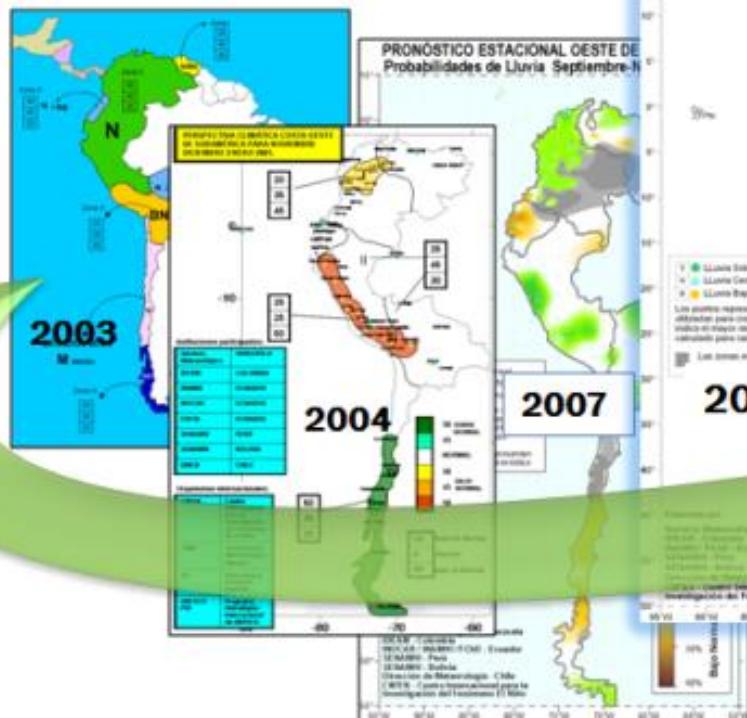
Improving seasonal prediction



IDEAM
INAMHI

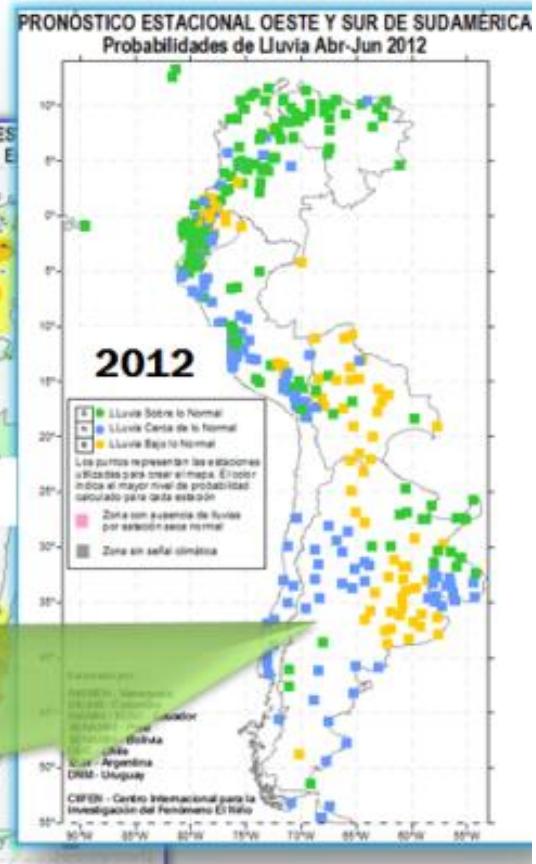


INAMEH
CIIFEN



PRONÓSTICO ESTACIONAL OESTE DE SUDAMÉRICA
Probabilidades de Lluvia Ago-Oct 2008

PRONÓSTICO ESTACIONAL OESTE Y SUR DE SUDAMÉRICA
Probabilidades de Lluvia Abr-Jun 2012

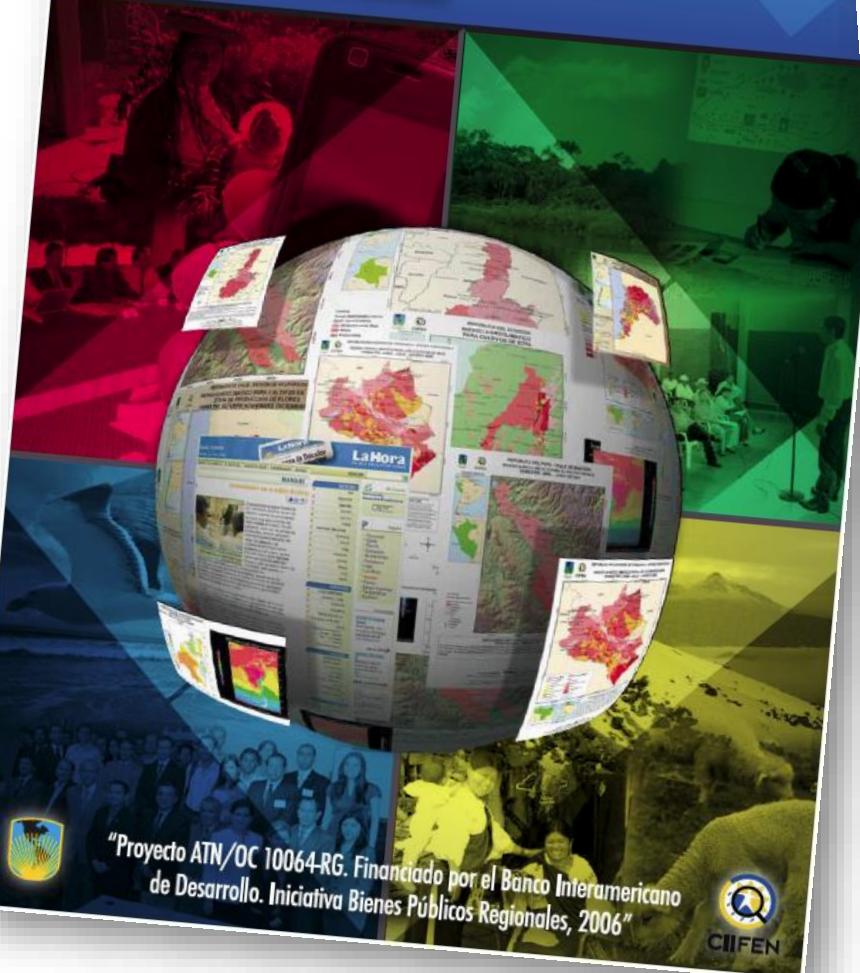


Regional effort as strategy to strengthen capacities at **National** level



CIIFEN

Guía Técnica para la Implementación de un Sistema Regional de Información Climática Aplicada a la Gestión de Riesgo Agrícola en los Países Andinos



GUÍA DE BUENAS PRÁCTICAS PARA LA PREDICCIÓN ESTACIONAL EN LATINOAMÉRICA





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Conferencias científicas internacionales organizadas por CIIFEN

I Conferencia Internacional



1st Alexander von Humboldt International Conference on "The El Niño Phenomenon and its global impact"

Guayaquil, Ecuador
16-20 May, 2005



CIIFEN

153 científicos-41 papers

<http://adv-geosci.net/6/index.html>

II Conferencia Internacional



International Workshop on ENSO, Decadal Variability and Climate Change in South America. Trends, teleconnections and potential impacts.

WCRP/CLIVAR/CIIFEN,

Guayaquil, Ecuador,
12-14 octubre de 2010.



CIIFEN

110 científicos-11 papers

<http://www.adv-geosci.net/33/index.html>



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III Conferencia Internacional

III International Conference on E N S O



Bridging the gaps between Global ENSO Science and regional processes, extremes and impacts

Guayaquil, Ecuador 12-14 November 2014

Organized by



CENTRO INTERNACIONAL PARA LA
INVESTIGACIÓN DEL FENÓMENO DE EL NIÑO

With the sponsorship of



210 científicos-25 papers
(en proceso)

http://www.advances-in-geosciences.net/about/scheduled_proceedings.html



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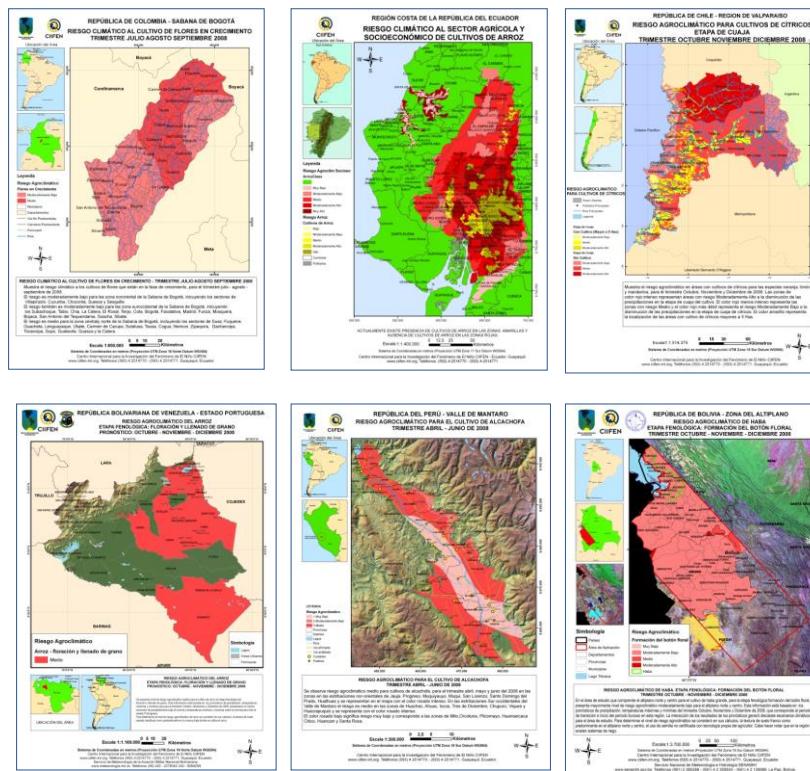
www.ciihen.org

Understanding vulnerability as part of climate services building

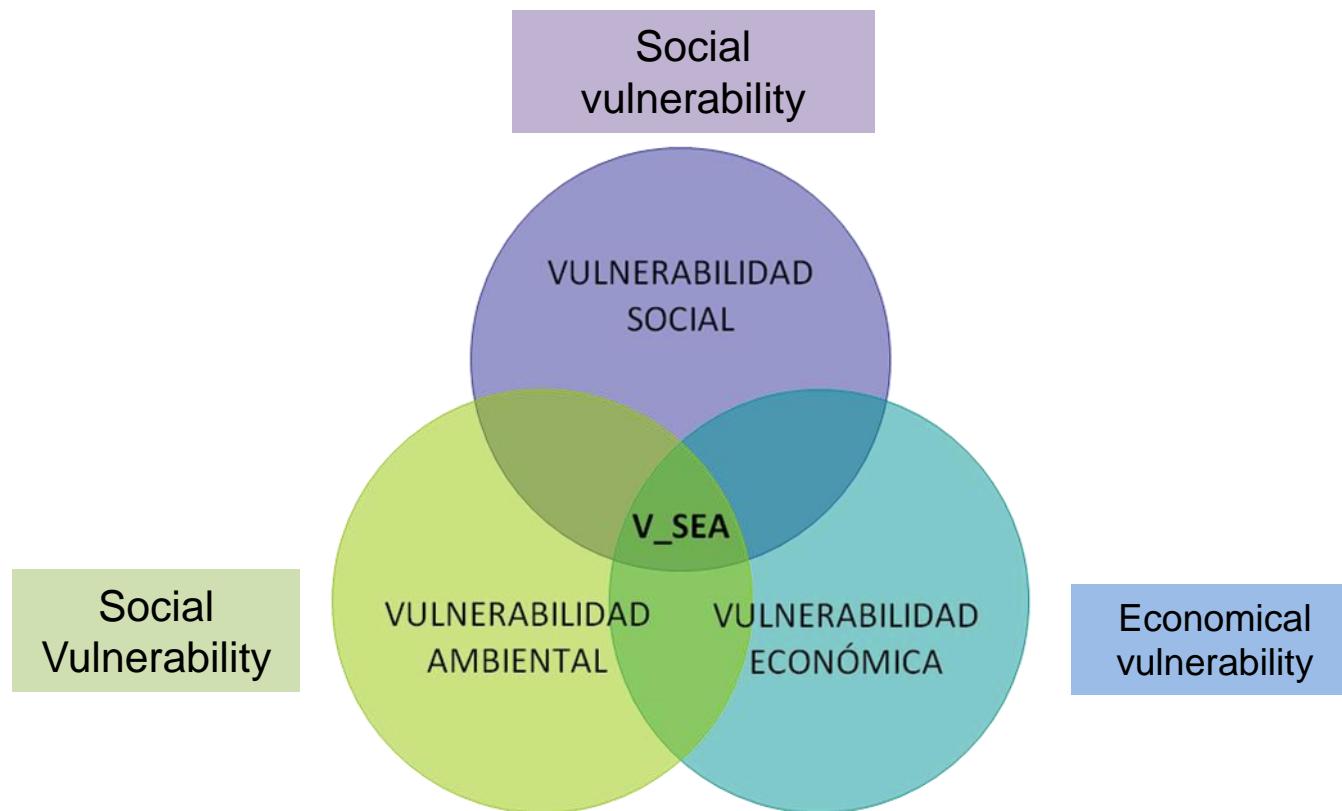


From the climate product to the climate service

Methodologies to support decision making have been developed. In the case of the agriculture sector, a geographic information system was designed to represent spatially the vulnerability of the designated crops according to the area of intervention. These systems have been implemented in the NMHSs from Western Coast of South America (WCSA).



UNDERSTANDING AND REPRESENTING VULNERABILITY



$$V_{SE} = (V_{AG} + V_{AC} + V_{TUR} + V_{GAN} + V_{IND} + V_{MIN}) - (CA_{CON-MOV} + CA_{ENER} + CA_{ACC_AG} + CA_{PROT_INUN}) + \\ (V_{POB} + V_{SOC-CUL} + V_{SER-BAS} + V_{SOS_ECO}) - (CA_{EDU} + CA_{SAL} + CA_{ORG}) + \\ (V_{FAC-NAT} + V_{FAC-DEGE}) - (CA_{JUR} + CA_{OPE} + CA_{PLAN})$$

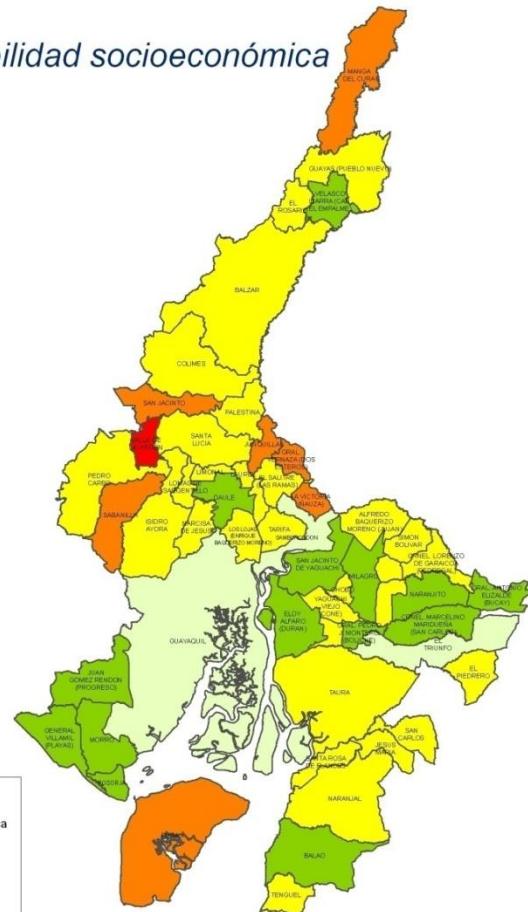
CIIFEN, 2012

Only an integrated and multi disciplinary approach can represent the reality and communicate better our messages to policy makers and stakeholders.



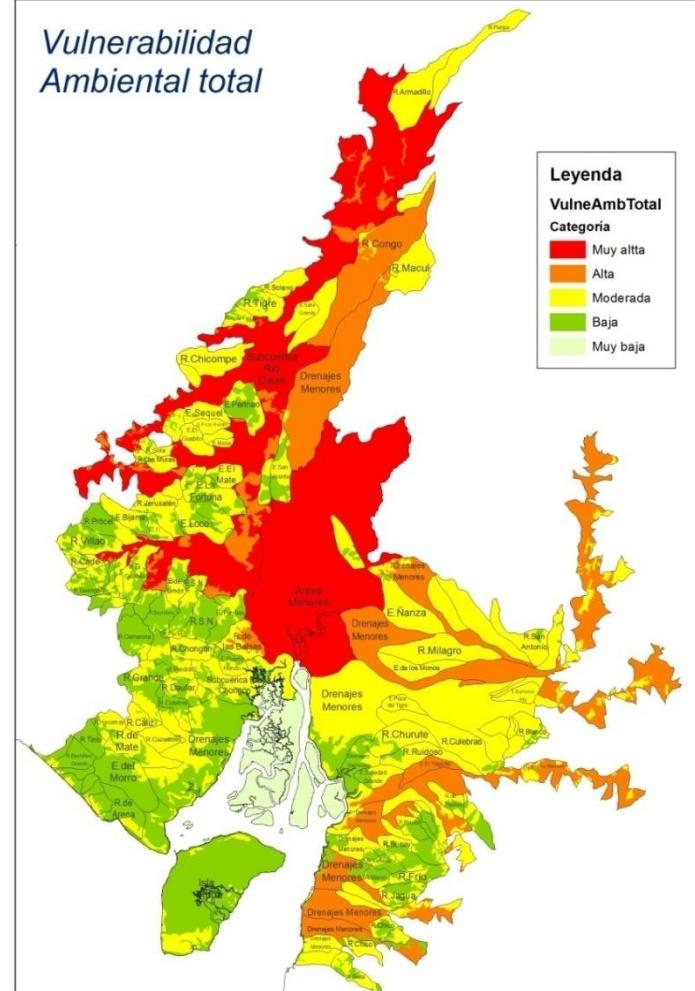
Social and economical vulnerability

Vulnerabilidad socioeconómica



Environmental vulnerability

Vulnerabilidad Ambiental total





REGIONAL INFORMATION SYSTEM TO SUPPORT PUBLIC POLICIES ON CLIMATE CHANGE AND BIODIVERSITY IN THE ANDEAN REGION



- Ministerios de Ambiente y Servicios Meteorológicos de Bolivia, Ecuador y Perú en coordinación con CIIFEN
- Empezó en Mayo 2012
- Establecer un sistema regional sobre cambio climático y biodiversidad
- Orientado a formular políticas públicas



*First coordination meeting. May 2012
Guayaquil-Ecuador*

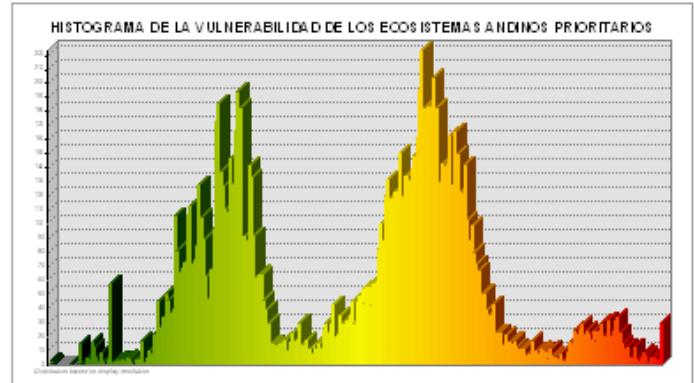
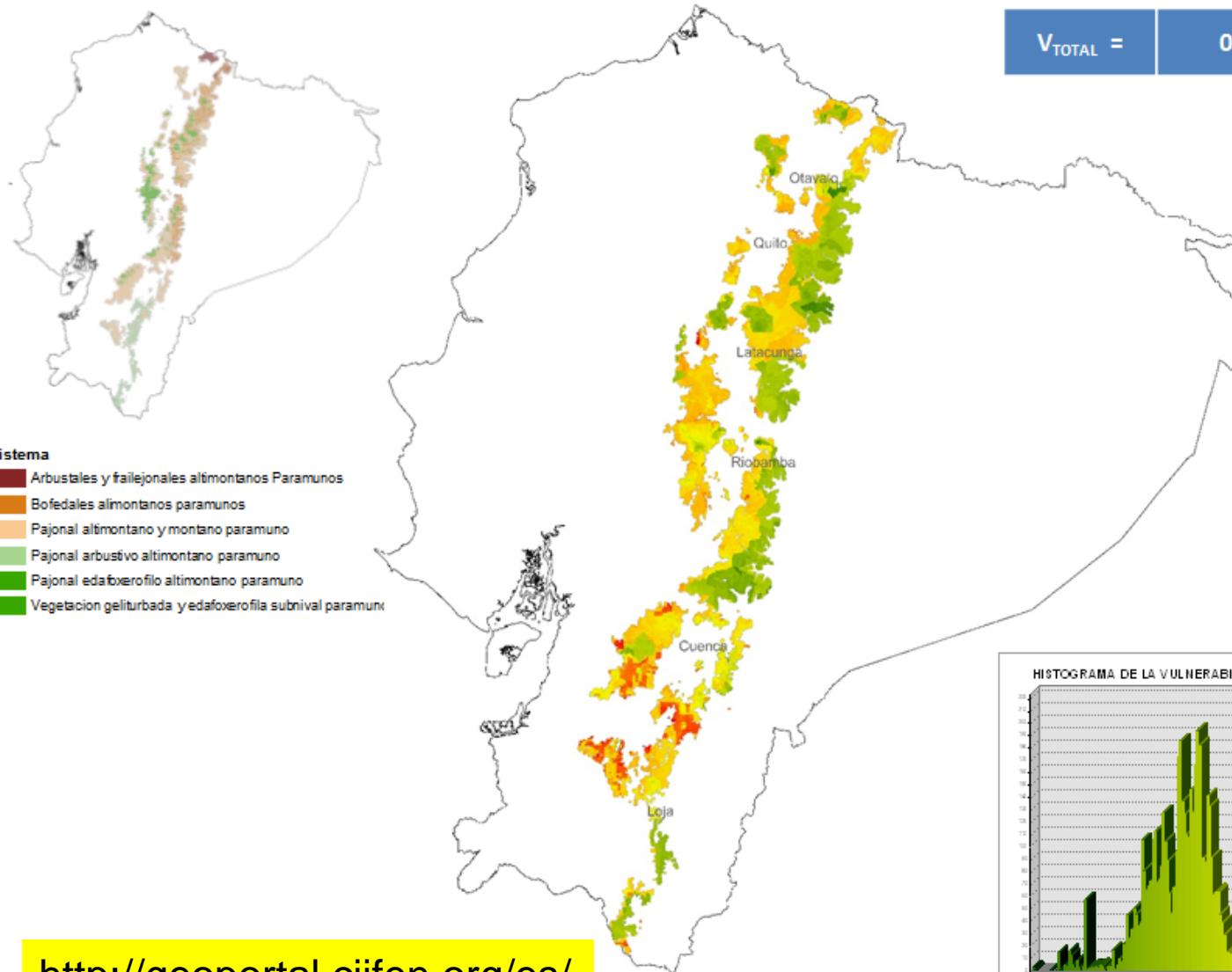


CIIFEN

VULNERABILIDAD DE LOS PÁRAMOS EN ECUADOR

 $V_{TOTAL} =$

$$0.3 \times (S_{SE} - CA_{SE}) + 0.7 \times (S_A - CA_A)$$





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Information Systems and User Interfaces

Sistema de Visualización de Vulnerabilidades

ESTRATEGIA PROVINCIAL DE CAMBIO CLIMÁTICO FASE II: DIAGNÓSTICO

Este informe brinda una visión generalizada de la vulnerabilidad al cambio climático actual y las expectativas del futuro. A través de un análisis detallado de los factores que contribuyen a la vulnerabilidad, se identifican las debilidades y las fortalezas para establecer prioridades y estrategias para mitigar el impacto del cambio climático en la provincia. Se recomienda una estrategia integral que aborde tanto las causas como las consecuencias del cambio climático en la provincia.



Sistema de Visualización de Vulnerabilidades

Vulnerabilidad Ambiental por Factores naturales

La vulnerabilidad ambiental por factores naturales es determinada por la combinación de vulnerabilidad por factores ambientales y factores humanos. Los factores ambientales incluyen factores geográficos, hidrológicos y ecológicos, así como factores socioeconómicos y culturales. La vulnerabilidad ambiental es medida en función de la exposición a los factores ambientales y la sensibilidad de las personas y las comunidades a estos factores.

Mapa de vulnerabilidad ambiental por factores naturales

Sistema de Visualización de Vulnerabilidades

Vulnerabilidad Ambiental por Factores naturales

La vulnerabilidad ambiental por factores naturales es determinada por la combinación de vulnerabilidad por factores ambientales y factores humanos. Los factores ambientales incluyen factores geográficos, hidrológicos y ecológicos, así como factores socioeconómicos y culturales. La vulnerabilidad ambiental es medida en función de la exposición a los factores ambientales y la sensibilidad de las personas y las comunidades a estos factores.

Mapa de vulnerabilidad ambiental por factores naturales

Detalles:

- Vulnerabilidad ambiental (Estado de defensa)
- Distribución de red hidráulica por subcuenca
- Sistema nacional de datos profundos
- Áreas menores



Political response:

- Land Use Plans.
- Infrastructure regulations.
- Development Plans
- Regulatory framework



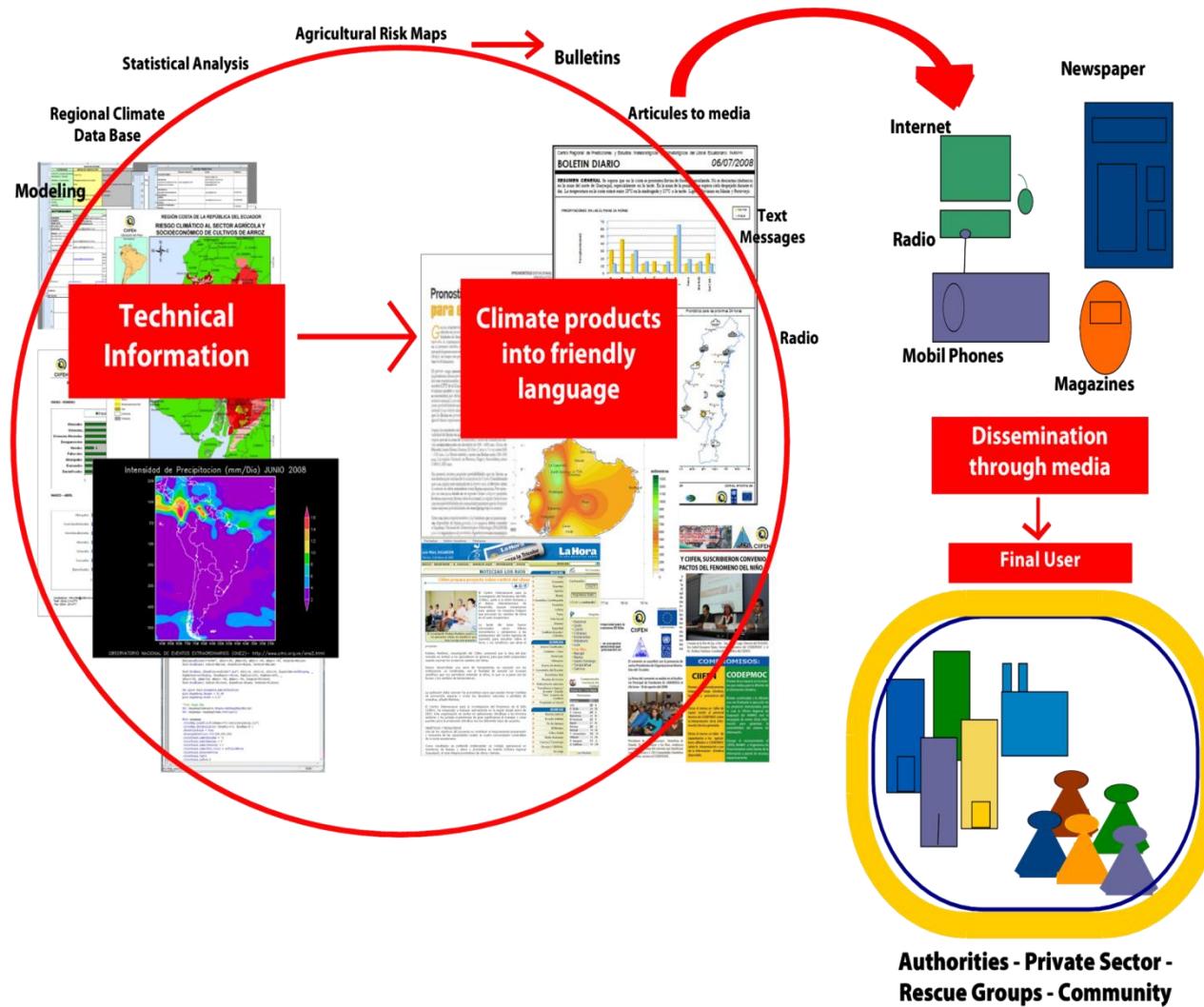
www.cordilleracostera.org



CIIFEN

Building the Climate service

Climate Information System in the Andean Countries





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PROYECTO

Esfrentando el
Cambio Climático
en la Cordillera Costera,
Ecuador



Inicio

Nosotros

Qué hacemos

Cordillera TV

Sala de prensa

Galería de fotos

Publicaciones

Capacitación

Contacto

Ejecutado por:



Financiado por:



Unión Europea

Socio



Ministerio
del Ambiente



Centro de CAPACITACIÓN



El Consorcio Enfrentando al Cambio Climático en la Cordillera Costera (CECCCO) es una iniciativa de este proyecto, que nació el 14 septiembre del 2011 en la ciudad de Guayaquil como respuesta de los GAD para trabajar mancomunadamente ante los efectos del cambio climático. Desde esa fecha, el proyecto apoya al fortalecimiento, la institucionalización y operativización del Consorcio.



EVENTOS

TALLERES PARA LA ACTUALIZACIÓN DE LAS NORMATIVAS COMUNITARIAS...

Talleres para fortalecimiento de capacidades

Durante todo el mes de enero del 2014, se han realizado talleres en Manglar Alto, las Balsas y Dos Mangas en Santa Elena; y en San Pablo y Pedro Pablo Gómez en Manabí para recopilar información que permita llevar a la actualización de las normativas comunitarias para uso sustentable de los recursos naturales en Chongón Colonche. Éste es un proceso que se inició en 2013 con dos talleres que convocaron a representantes de las comunas La Entrada, Las Núñez, Olón, San Francisco, Rio Blanco, Dos Mangas, Barcelona, La Barranca, Sube y Baja, Iceras, Salanguillo, Las Balsas y La

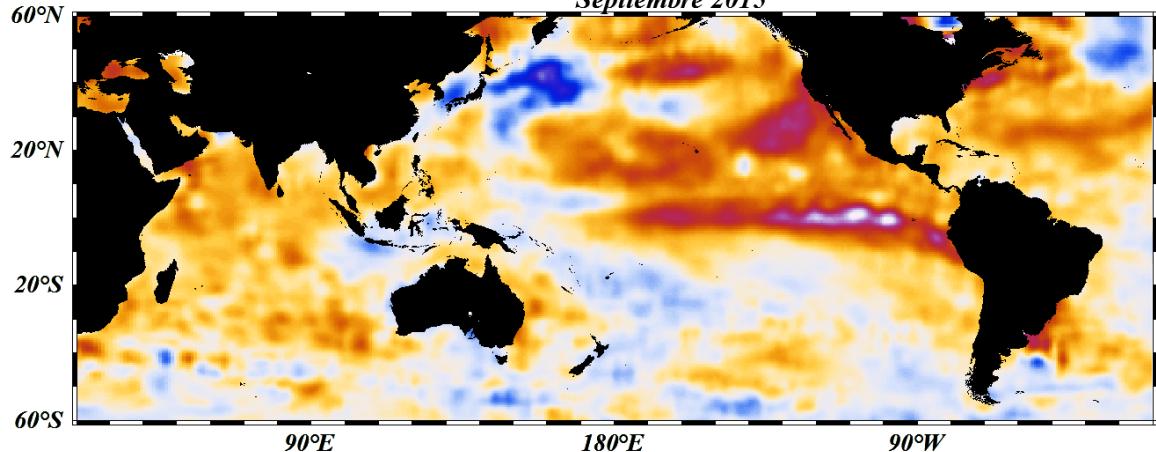


<http://cordilleracostera.org/portal/>

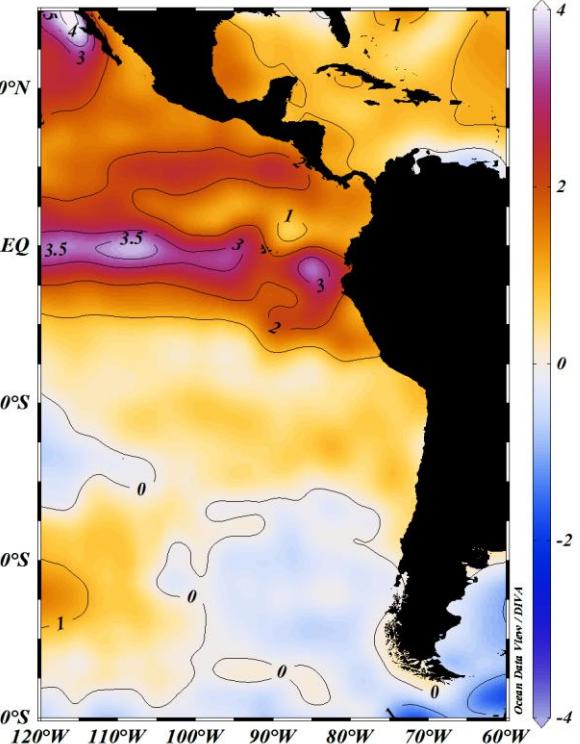


CIIFEN

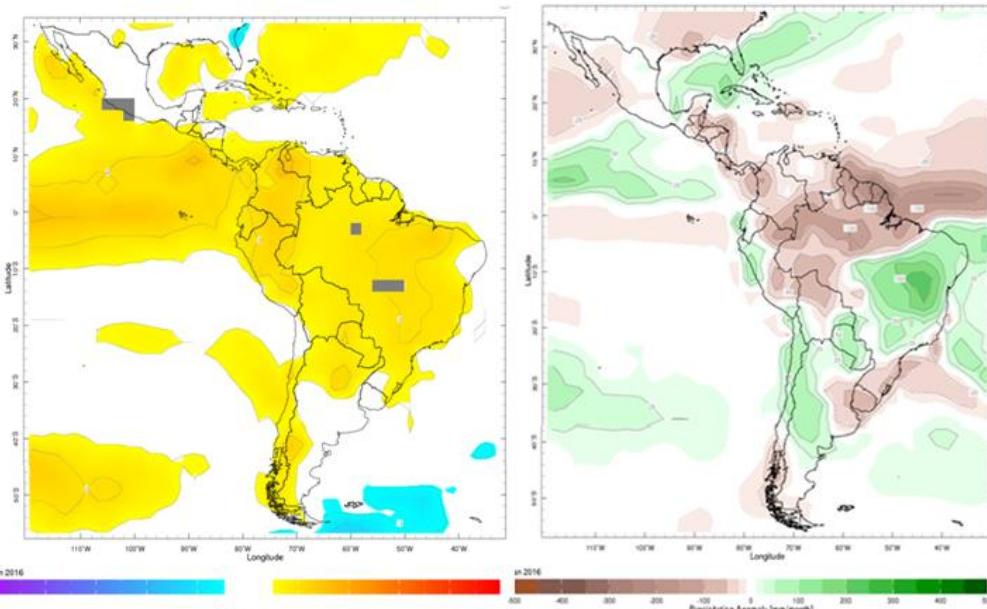
Anomalía de Temperatura Superficial del Mar ($^{\circ}\text{C}$)
Septiembre 2015



Anomalía de Temperatura Superficial del Mar ($^{\circ}\text{C}$)
11 - 17 Octubre 2015



CIIFEN Fuente: NOAA NCEP EMC CMBGLOBAL Rey_Smith OIv2
El Niño 2015-2016 Impactos en Latinoamérica a Enero 2016



Providing climate services:
El Niño 2015-2016 and lessons
learnt



Climate Services: El Niño 2015-2016



Consciente de la importancia de este fenómeno climático, la UEEES invitó a Julián Hernández del Centro Internacional para las Investigaciones de Fenómeno del Niño (CIIFEN) quien habló a estudiantes de Ingeniería Ambiental y al público en general sobre

Gobierno Prov Manabi
@GADManabi

El delegado del @ciifen Julian Hernández, explica a los alcaldes condiciones climáticas #FenomenoDelNiño



El Director del CIIFEN presentó en la sede de la Comisión Permanente del Pacífico Sur, el análisis de El Niño 2015-2016 ante los Presidentes de los Comités Nacionales del Programa EPPEN de Chile, Colombia, Ecuador y Perú.



A través de la Coordinación de ECHO en Bolivia, CIIFEN junto con SENAMHI-Bolivia presentaron el análisis de las condiciones El Niño 2015-2016 y la predicción climática para Bolivia a las autoridades del Viceministerio de Defensa Civil y la cooperación internacional

CIIFEN fue invitado a presentar el informe de las condiciones de El Niño 2015-2016 en el Taller Regional de DIPECHO-Sudamérica coorganizado con la oficina regional UN-EIRD para las Américas.



UNISDR-Las Américas

25 de septiembre

Eduardo Zambrano, experto de CIIFEN, presentó las condiciones El Niño 2015-2016 en el





Climate Services in Latin America: El Niño 2015-2016

- Contribution to the RCOF of Central America.
- Report to UNASUR authorities and Regional action Plan –DIPECHO.
- Report to the National authorities of the Caribbean region-UNISDR-DIPECHO
- Report to Bi-national Forum Ecuador-Peru.
- Report to the Council of Ministries of Paraguay.
- Report to the National authorities of Bolivia.
- Report to National authorities of the CPPS ERFEN Programme (Colombia, Ecuador, Peru and Chile).
- Report to WHO/PAHO for Focal points in Central and South America.
- Report to WFP Focal points in South America.
- Report to PLAN INTERNATIONAL Focal points in Latin America
- Report to International Conferences: (Latin American workshop on non linear phenomena, Colombia and 8th ACRE workshop, Chile).
- More than 60 presentations to different sectoral users from public and private sector in the region: RISK MANAGEMENT, AGRICULTURE, FISHERIES, ENERGY, HEALTH, INFRASTRUCTURE, TRANSPORT, TOURISM, INSURANCE.
- More than 56 interviews/articles with international media.
- Record on visits to CIIIFEN web site and more than 3550 followers from 43 countries (90% Latin America) in Facebook.

The critical gaps of the provision of climate services



- To **package** the information from multiple sources in a **simple, understandable and consistent message** is essential.
 - Climate services are **not available** to all...
 - The **most vulnerable** communities are not so **well informed** as the authorities, private investors and most of the urban population.
-
- The **last mile** to deliver **actionable climate services** to these users is the big challenge.



Effective climate services are possible...

- A product becomes a service when is used.
- Improved climate services require face to face interaction with target audiences.
- A mutual learning of providers and users is the basis for sustained dissemination networks for climate information.





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Some thoughts about Climate Services to Water sector





Climate Services in the Water Sector, some thoughts:

- A climate **product** itself is not a climate **service**.
- A climate service implicates a **complex and continuous** chain of processes and activities (**production, dissemination/delivery, use and application**).
- There are **overlapping efforts** to offer information to water sector: diverse portals, similar information from different UN, academic or other international organizations. There is a **need to package** the information for specific users.
- It is evidenced a **strong emphasis in the provision** side, but probably less efforts on building the user interface (which is not necessarily a web based tool).
- **Human interfaces are essential** to build up a sustainable and effective climate services for water sector users.



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Potential contributions of CIIFEN





Potential contributions of CIIFEN to CliMWaR-LAC and Water security project in LAC:

OPERATIONAL ASPECTS

- 1) To offer the operational structure of the **RCC-WSA** as a mean to enhance drought monitoring and early warning capacities.
- 2) To offer the current **CIIFEN's dissemination mechanisms in Latin America** with emphasis in Western South America region for services oriented to support water resources management.
- 3) To implement as part of our operational exchange with the NMHS from WSA the **seasonal forecast including more complex analysis with SPI and eventually SPEI plus other remote sensing products which are in construction**.
- 4) To contribute in **the integration and “translation” of the different drought monitoring information sources at global and regional level produced by several institutions, UN agencies and countries** in order to **facilitate the understanding of wider communities of beneficiaries**, the use and effective application of such information and the necessary elements to ensemble an **adequate climate user interface** for water managers.



Potential contributions of CIIFEN to CliMWaR-LAC and Water security project in LAC:

CAPACITY BUILDING

- 5) To contribute in close coordination with NMHS on building up communities of users at national level considering the governmental institutions framework and including other stakeholders.
- 6) To share the experiences of CIIFEN in the assessment of climate vulnerability in different geographic environments and spatial scales, considering social, economic and environmental dimensions. This is essential to prioritize on climate services for water security.
- 7) To share the experiences and lessons learnt of CIIFEN implementing adaptation actions in semi-dry environments with local communities and increasing their climate resilience.
- 8) To share the experiences on enhancing local governance to support climate risk management and long term adaptation processes.



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Limited but clear climate information, successfully delivered, could make the difference to trigger the user's response.



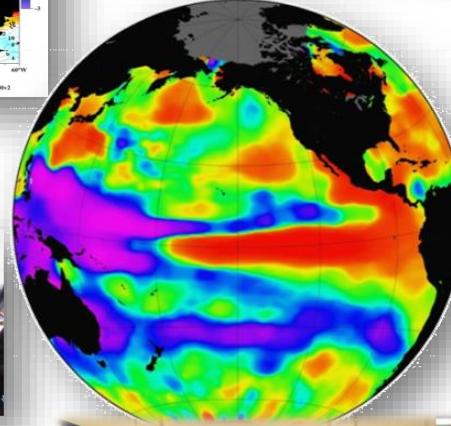
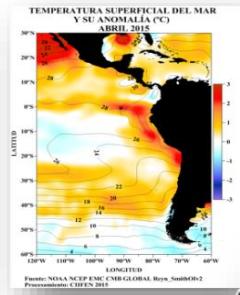
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Muchas gracias!



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