



InUMet



Current status of operations of RCOF-WSA



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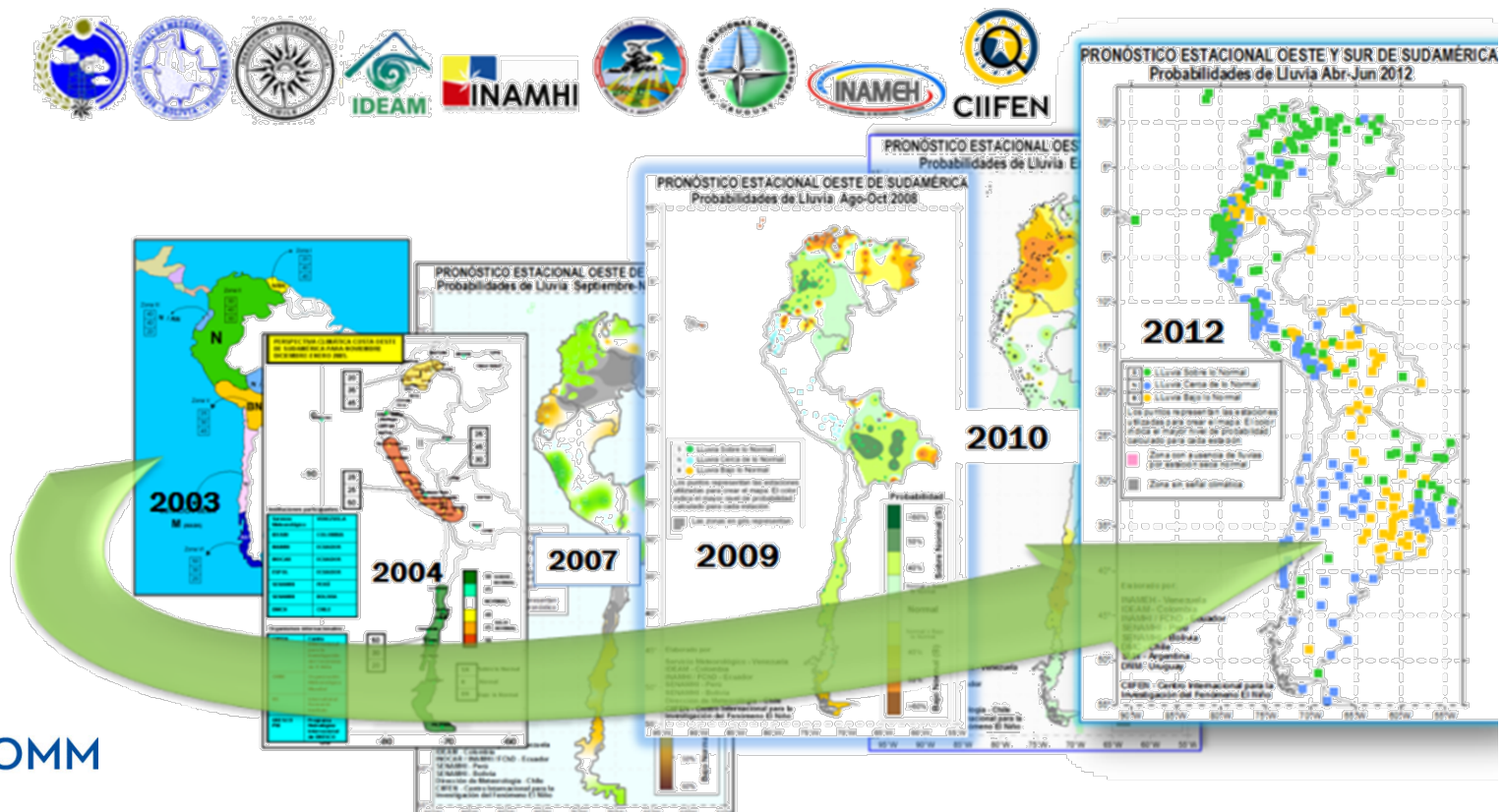
World Meteorological Organization
Organisation météorologique mondiale



**WMO International Workshop on Global
Review of Regional Climate Outlook
Forums, Ecuador, 5 – 7 September 2017**

RCOF-WSA background

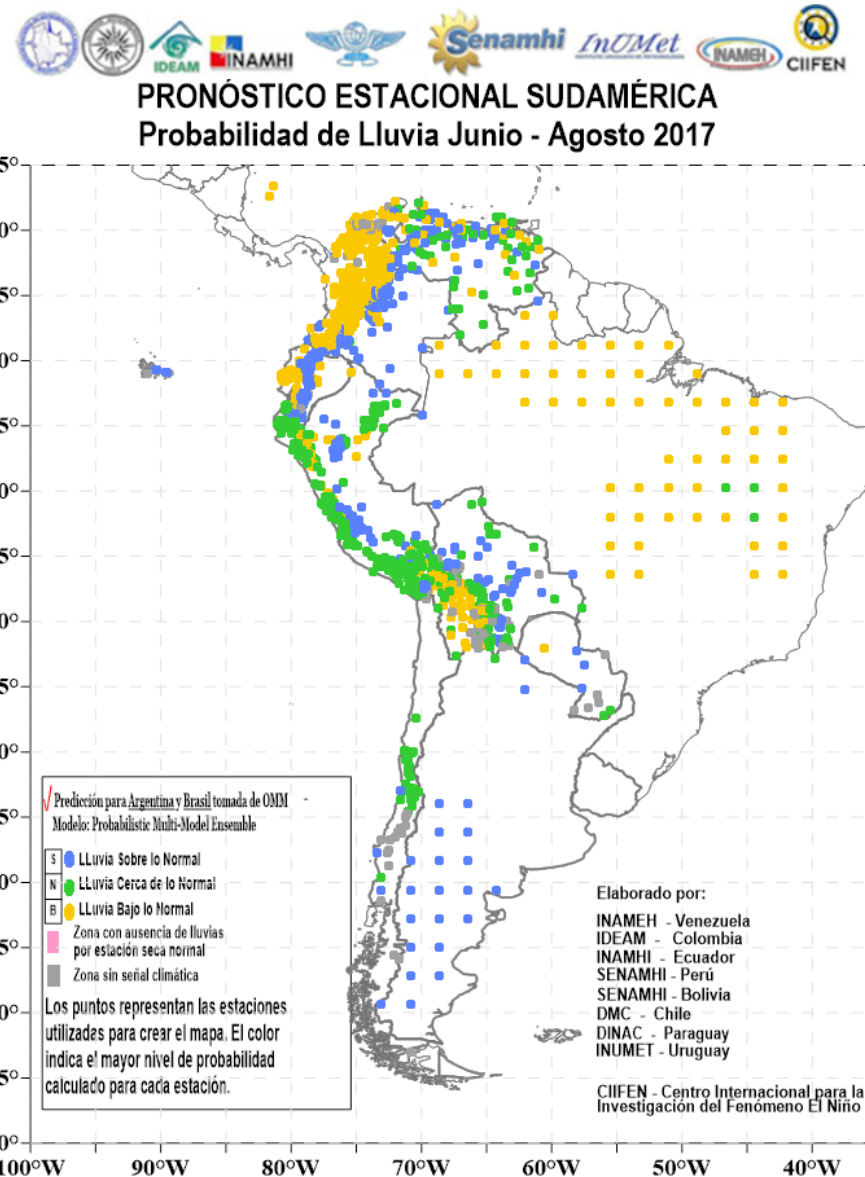
In 2003, NMHSs of **Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela** undertook the implementation of the WSA-RCOF, under the auspices of WMO and with the coordination of CIIFEN. By coordination of the RCC-WSA hosted by CIIFEN, RCOF-WSA sessions are organized on an **annual basis**, generally at the end of the year, to **assess the work done, training, discuss challenges and set future priorities**. The rotation principle to host WSA-RCOF sessions is applied, and so far, forums have been held in the different participating countries: in Ecuador (2003, 2004, 2010, 2012, 2014); Chile (2005, 2011); Colombia (2006, 2013); Bolivia (2007, 2015); Venezuela (2008); Peru (2009, 2016).



The RCOF-WSA process (1/2)

Implementation process:

- **Monthly seasonal forecast** is based on a statistical analysis of over **1300 weather stations** that are integrated based on the probabilities of precipitation and temperature. Is **virtually prepared since 2005 (without interruption)**, by each NMHS, compiled by CIIFEN and distributed to a wide range of **users (+/-11 000)**.
- 578 temperature and 1335 precipitation stations. 1981-2010 reference period.
- Every month, **NMHSs send probability tables to CIIFEN**, which processes it to make regional maps with the higher probability of rainfall, maximum and minimum temperature. A descriptive bulletin is prepared by CIIFEN. Once approved by NMHSs is **distributed to a list of roughly 11,000 users**. Forecasts are made using IRI's Climate Predictability Tool-CPT.
- Previous season forecast is evaluated using a **simple skill score** (yes/no approach). Other metrics, such as ROC curves (available in CPT) are also used by NMHSs to evaluate the skills.



The RCOF-WSA process (2/2)

- The **RCOF** generated **NCOF** in various countries (some examples are, SENAMHI-Bolivia, IDEAM-Colombia, DMC-Chile, INAMHI-Ecuador (not continued).
- The RCOF mechanism was the basis for CIIFEN to become in 2015 a **WMO Regional Climate Center for Western South America** (RCC-WSA) in close coordination with the National Meteorological and Hydrological services of Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela .

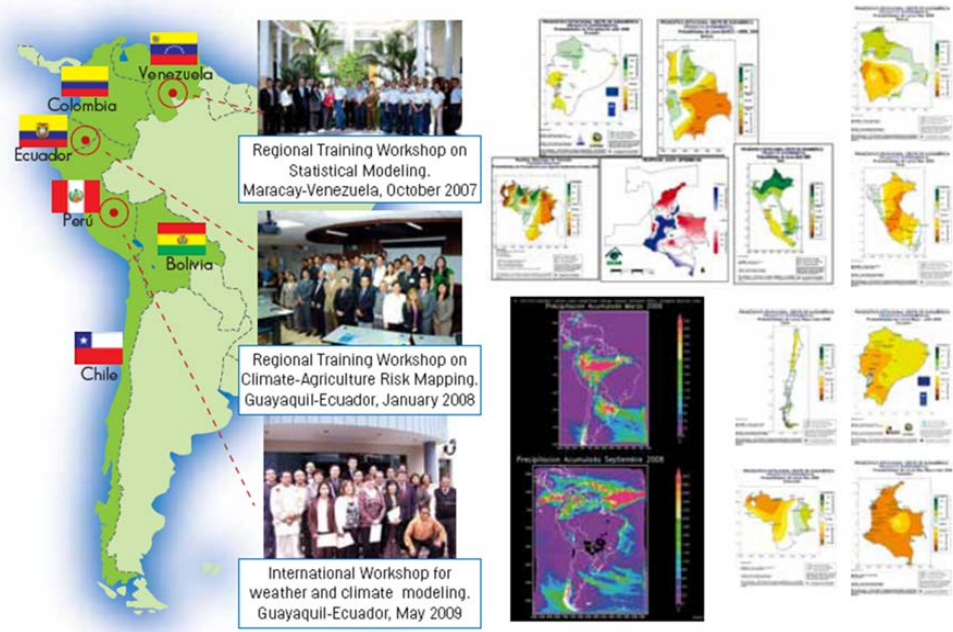


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Capacity Development activities

STRENGTHENING CAPABILITIES FOR SEASONAL FORECAST

- Many specialized training courses have been held in line with a strategy for strengthening capabilities for the provision of climate services. As a result, more than **200 experts in the region** have been trained.
- Strategic objectives for capacity building are:
 - ✓ Strengthening capacities for **climate data management**
 - ✓ Capacity building for **seasonal prediction**.
 - ✓ Strengthening for tailored **climate services** to priority sectors.



Some topics covered in trainings are: **Fundamentals** in seasonal forecast, sources of predictability, use of **CPT** to tailoring seasonal forecast, **verification** and forecast performance metrics, data **quality control**, and data homogenization.

Main gaps in capacity building are:

- ✓ Better understanding of the regional climate system
- ✓ Improve data quality control and homogenization techniques
- ✓ Subseasonal prediction.



CIIFEN



The RCOF has enabled the implementation of regional projects which had enhanced the technical cooperation, mutual assistance and sustained capacity building efforts. *CIIFEN has implemented 4 regional projects in the last 10 years.*



User Involvement

- Users of WSA-RCOF products are *agricultural* producers, private *agricultural* sectors, government *risk management* agencies, humanitarian non-profit organizations, *water resource* management officials and public *health* organizations.
- During the annual RCOF meeting, users from different sector are *invited to participate and show how the information is used by them*, and also what can be improved in terms of the product and its *communication* mechanism.
- The format and design of climate forecasts has changed many times as a result of *user feedback*.
- For example, many people were confused about *values of terciles*. We removed these from maps.
- *Language in all information products has evolved to use as little jargon as possible* in order to make the information more accessible.



SWOT analysis (1/2)

Strengths

- *Strong regional coordination: CIIFEN as RCC-WSA*
- *Common methodology for seasonal forecasting*
- *Virtual coordination for RCOF and monthly production*
- *High technical capacity in the region*
- *Support of regional projects for capacity building*

Weaknesses

- *Employment instability in most of NMHSs*
- *Few Technical personnel in most of NHMS*
- *Few research on climate aspects.*
- *Limited interaction between universities and NMHS*



SWOT analysis (2/2)

Opportunities

- *Support of the CIMHET (leaded by AEMET)*
- *Increasing climate financing*
- *EUROCLIMA+ Call for proposals*

Threats

- *Overlapping between CC institutions and NMHSs.*
- *Alternative providers of seasonal forecast at National level.*
- *Sectors and/or other governmental institutions implements/hires private climate prediction services.*

The Way Forward 1/2

1. Statistical *downscaling of NMME* forecast (1-3 months).
Using CPT: NMME rainfall forecast as “explanatory” variable and *CHRIPS* database as “response” variable.
Result: higher resolution (5 km) forecast of monthly precipitation.
2. Tailor the forecast in *terms of fixed critical thresholds* (mm) or in terms of percentiles (eg. 90p, 10p)
2. Redigned *Training* to RCOF’s NMHSs to apply the methodology
3. Design/implement *tools to visualize* forecasts
4. Look forward for *higher resolution temperature database* (eg. EUSTACE initiative)



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The Way Forward 2/2

5. To provide support to NMHSs to implement *NCOFs or Sector Users COFs*
6. To implement an *updated capacity building program* including the fundamentals of *subseasonal* prediction.
7. To foster *research on regional and subregional atmospheric processes* critical for improving the seasonal prediction.
8. To review and document the experience on the use of specific *predictors/domains* for the different *subregions and seasons*.
9. To harmonize the *verification systems* in the NMHSs from the region.
10. To increase the *number of stations* used for statistical seasonal forecast.
11. To develop tools for *tailoring seasonal forecasts* for agriculture, water resources and risk management.



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Muchas gracias
Thank you
Merci



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