

# “Weather Roulette” Game & Servicios climáticos para generación de sistemas de alerta temprana

María Elena Fernández Long  
Raúl Ramirez  
Christian Yarleque Galvez  
Erick Sossa Sánchez

Argentina  
Venezuela  
Perú  
Bolivia

*IAI-IRI Training Institute on the Use of Seasonal  
Predictions for Applications in Latin America*

# Forecast Value

## *Forecast quality*

Do the forecasts correspond well with the observations?

## *Forecast value*

Do the forecasts enable beneficial decisions?

Hagedorn, R., and L. A. Smith, 2008:  
Communicating the value of probabilistic forecasts with weather roulette. *Meteor. Appl.*, DOI: 10.1002/met.92.

# Forecast Value

*Forecast quality*

Do the forecasts correspond well with the observations?

		Pronóstico			
		A	N	B	
A		1	5	0	6
N		0	2	0	2
B		0	1	1	2
		1	8	1	10

4 ACIERTOS

# Forecast Value

*Forecast value*

Do the forecasts enable beneficial decisions?

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Obs	N	A	A	A	B	N	A	N	A	A	B	
<b>1</b>	\$100	\$105	\$110	\$83	\$99	\$134	\$161	\$193	\$203	\$152	\$137	4.3%
<b>2</b>	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	0.0%
<b>3</b>	\$100	\$135	\$182	\$109	\$148	\$199	\$269	\$323	\$387	\$232	\$244	8.8%

$$R = A \times V/C$$



Riesgo: combinacion de probabilidad

Amenaza: fenomeno o actividad, impactos a la salud, daños, en función a la frecuencia e intensidad

Vulnerabilidad : circunstancias suceptibilidad

### MODELO MATEMÁTICO DEL RIESGO

$$\text{RIESGO} = \text{AMENAZA} \times \text{VULNERABILIDAD} \quad (1)$$

$$\text{VULNERABILIDAD} = \text{EXPOSICIÓN} \times \text{SUSCEPTIBILIDAD} / \text{CAPACIDAD DE RECUPERACIÓN} \quad (2)$$

$$\text{RIESGO} = \text{AMENAZA} \times \text{EXPOSICIÓN} \times \text{SUSCEPTIBILIDAD} / \text{CAPACIDAD DE RECUPERACIÓN}$$

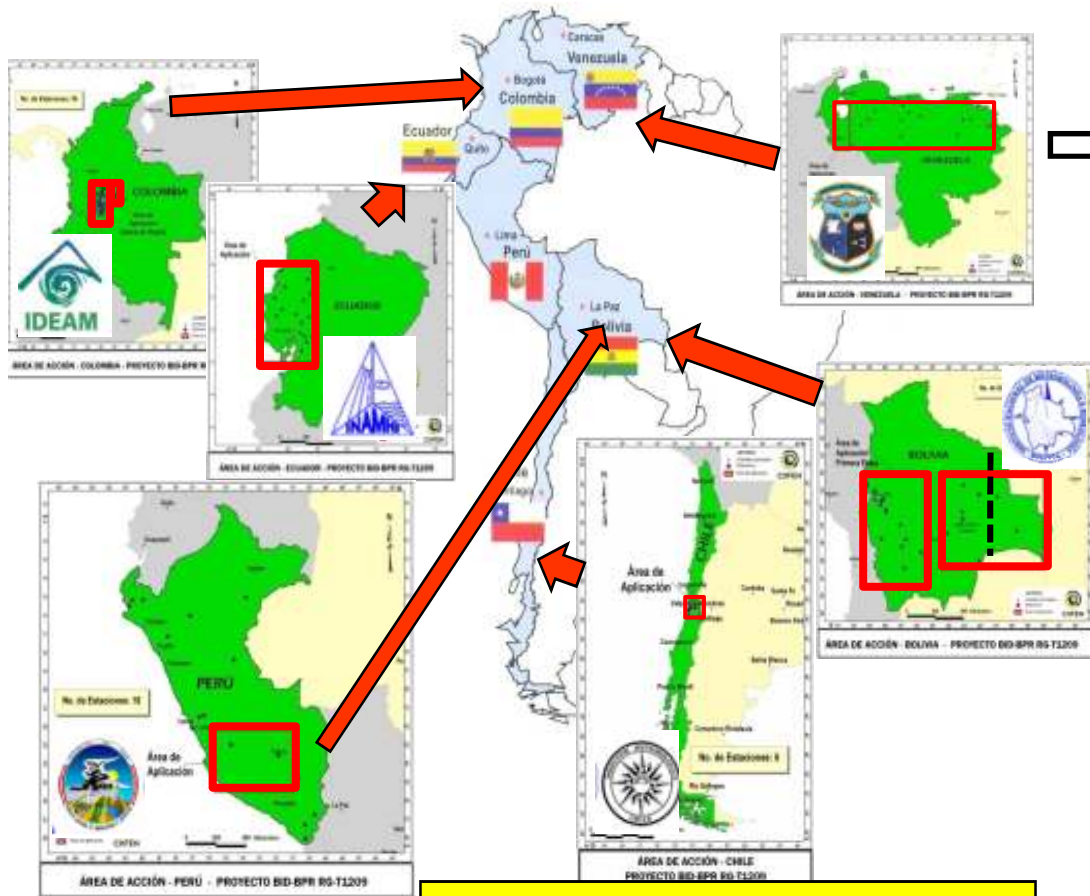
RIESGO TOTAL = SUMATORIA DE RIESGOS INDEPENDIENTES (DEBIDO A AMENAZAS INDEPENDIENTES)



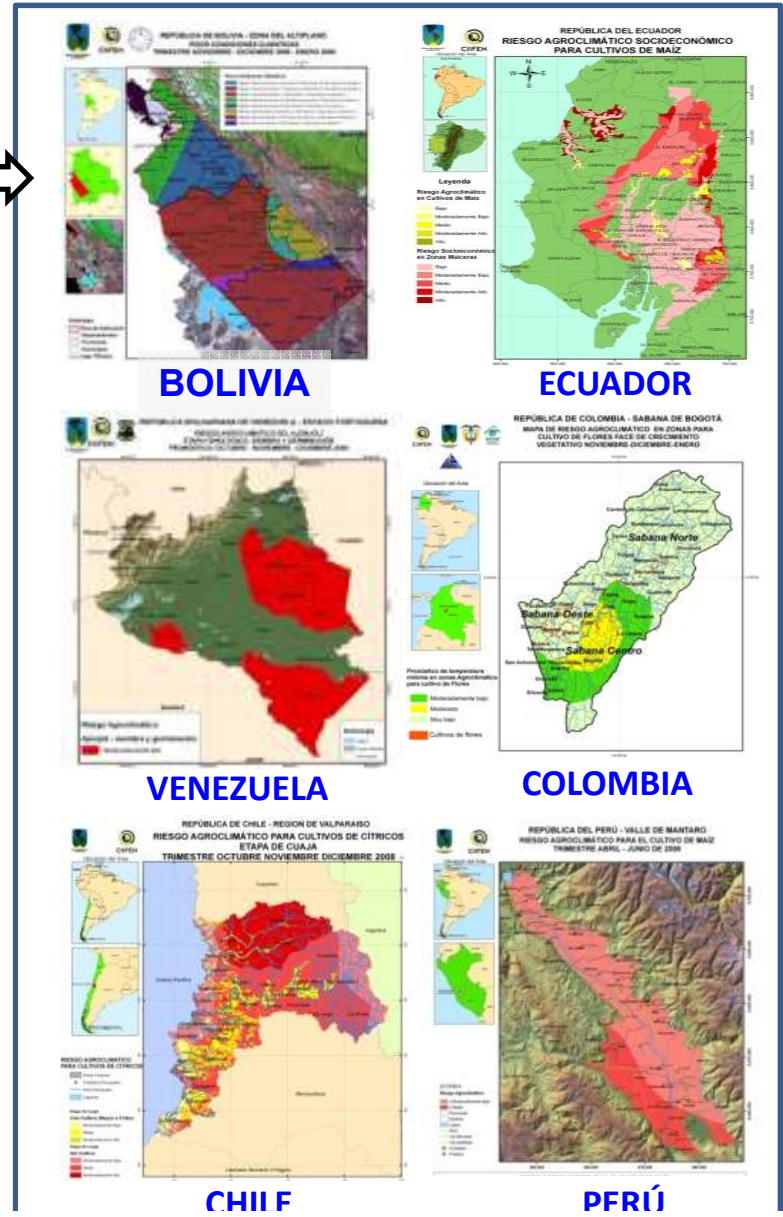
# INFORMACION

Global

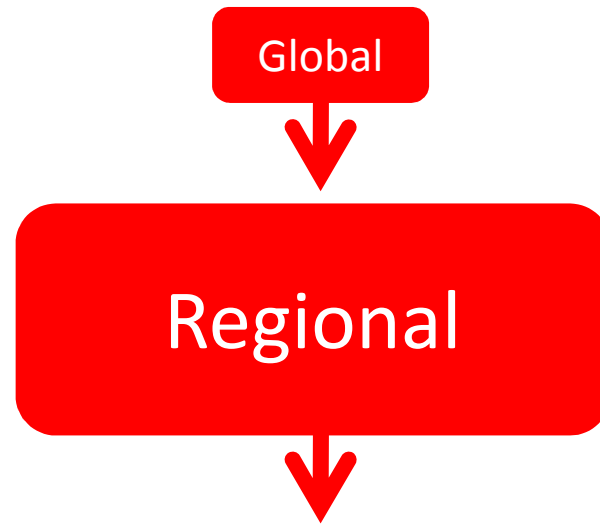
# Climate-Agriculture Risk Mapping System in the Andean Countries



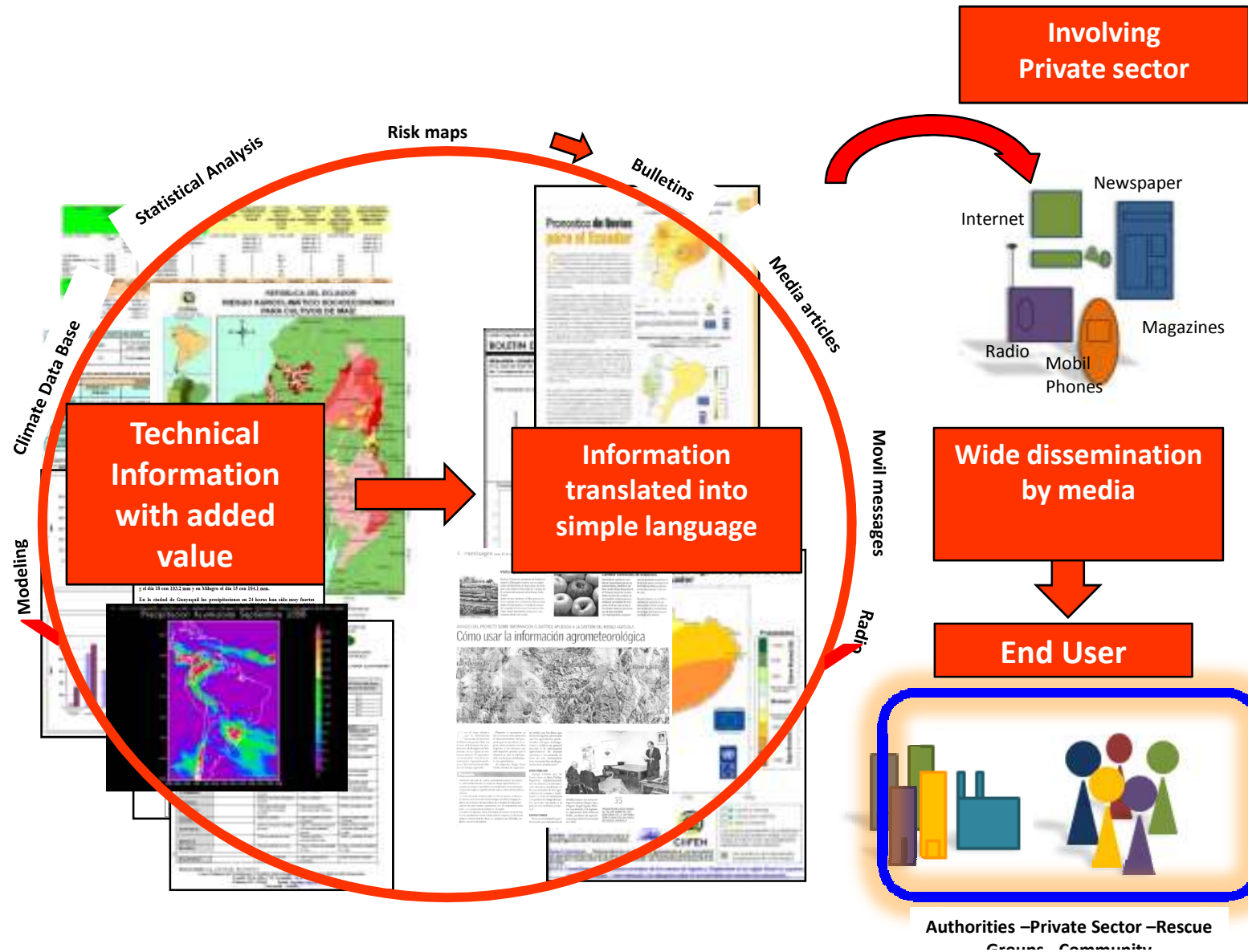
**CROPS:**  
**Venezuela:** Rice, Corn, Sorghum and Sesame  
**Colombia:** Flowers (Roses), Rice.  
**Ecuador:** Corn, soybean and rice.  
**Bolivia:** Potato, haba y quinoa.  
**Perú:** Potato, corn and artichoke.  
**Chile:** citrus(orange, lemon and Mandarin orange), avocado.



# INFORMACION



# Climate Information system in the Andean countries



# INFORMACION

Global

Regional

Local



# Improving the Climate information Chain (1)

Information Flow with the media

Including private sector

Alliances Signed with Key Stakeholders

Private Sector



Mobil Phone Company

AVANCES DEL PROYECTO SOBRE INFORMACIÓN CLIMÁTICA APLICADA A LA GESTIÓN DEL RIESGO AGRÍCOLA

Cómo usar la información agrometeorológica



Chile: V Región oct/08



Ecuador: Los Ríos mar08



Venezuela: Maracay sept/08



Bolivia: El Alto dic08

Programa en vivo en Radio PACHAQAMASA



Perú, aug./08

Alertan a campesinos sobre riesgos climáticos



# Improving the Climate information Chain (2)

## Alliance with Telefónica MOVISTAR

MOVISTAR and MESSAGE PLUS, agreed to assign free messages to a group of 1000 users previously identified in areas prone to flooding.



**INAMHI inform:** intense precipitation over central zone of Manabí for the next 6 hours. **WARNING.**

## Installation of HF Radio Equipment for alternate emergency communications

Installation of radio equipment for 10 locations of intervention area in Ecuador. Divided between the offices of INAMHI and COEs



**Pachaqamasa radio (El Alto, Bolivia) interview about climate information use in Aymará native language**



**BOLIVIA**

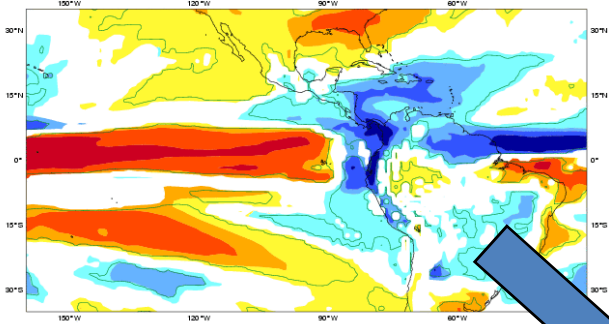
## Use of Climate Risk Maps Training Workshops. Ministry of Litoral-Ecuador



Applied to: Agriculture, Health, Education, Building, Human settlements and Biodiversity.

NMS is working on translation and bulletins shipping with Forecast in Aymará through Pachaqamasa radio (Bolivia)

ECMWF Seasonal Forecast  
 Mean precipitation anomaly  
 Forecast start reference is 01/01/08  
 Ensemble size = 41, climate size = 275  
 System 3  
 FMA 2008  
 Shaded areas significant at 10% level  
 Solid contour at 1% level



Forecast issue date: 15/01/2008



CIIFEN  
 Difusión de Información Climática

Comunicación con TELEFONICA MOVISTAR

Formación de Comunicadores Comunitarios y Capacitación del Agua (FOCAL)

CIIFEN 2009

