

Workshop Concept and Outline

"Drought Mitigation & Preparedness: Benefits of Action & Costs of Inaction"

Learning from the experiences of the IDMP and the Workshops on "Capacity Development to Support National Drought Management Policies"

Drought policy change: The Mexican case

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- Drought has been a recurrent and persistent natural phenomena
- Theories support the disappearance and migration of the Mayan and Teotihuacan cultures due to drought.
- During the Colony (1521-1821) and Independence period (XIX and XX Centuries) several food crisis were the result of drought events.
- Drought was of the main causes of 0 historical events like the 1810 Independence movement and the 1910 Mexican Revolution. 2 National Constitutions were issued at that time.

An increasing trend of drought ocurrence affected México in the XX Century



IMTA

DEL AGUA

Mexico is vulnerable to drought impacts

Percentage of area affected by droughts in Mexico until March of 2017



The 2011 drought

Regions of the country affected by drought during 2011 (86% of national territory).



The 2011 year ended up being the thirteenth driest year in Mexico's history since the last 70 years.



Some cost caused by drought in 2011

Agency	Reported data
SAGARPA	2.7 million hectares of seven of the main crops were lost, mainly in Sinaloa, Zacatecas and Guanajuato.
CONAGUA	Emergency declared by natural disaster in 1,174 of the 2,457 municipalities nationwide (47.7%).
CONANP	Reported that 64 of the 174 protected natural areas in Mexico (36.8%) were at drought risk.
CONAFOR	Mexico suffered one of the worst years in terms of forest fires. Coahuila was one of the most affected states, with about 425 thousand hectares of forest and bush burning.
USDA (EUA)	Mexico experienced the worst drought in seven decades, which generated economic losses in agricultural production that exceed 16 billion pesos (US\$ 1.3 billion).
INEGI	Losses amounted to 10% of national GDP; about 48 million Mexicans suffered from drought in arid, semi-arid and dry sub-humid areas, a problem that affected two out of every three hectares cultivated.

Reported damage costs in agriculture related to drought impacts 2000 – 2012



PRONACOSE progress



Interministerial Commission for Attending Droughts and Floods – Program monitoring

Expert Committee – Evaluate and Research Program

Drought Monitor of Mexico



http://smn.cna.gob.mx/

Programmes of Preventive and Mitigation Drought Measures (PMPMS)



26 PMPMS for each River Basin Councils32 Water Utilities PMPMS

Vulnerability and probability of occurrence of drought (2015)

- Used to allocate resources from the 105 Federal Programmes related to drought
- Give priority of the investment





- The vulnerability map is very similar to the poverty index map that the federal government uses to reduce the number of poor people according to UN parameters
- There is no record of total investment in actions to mitigate and prevent drought

Budget allocated to the Natural Disasters Fund (FONDEN) and the Fund for Prevention of Natural Disasters (FOPREDEN), and percentage that represents with respect to the total national budget.

Year	FONDEN (US Mill. \$)	FOPREDEN (US Mill. \$)	FONDEN + FOPREDEN (US Mill. \$)	National Total Budget (US Mill. \$)	% of the National Total assigned to FONDEN + FOPREDEN
2013	296.1	17.4	313.5	212,708	0.15
2014	335.8	18.0	353.8	240,173	0.15
2015	323.0	18.6	341.7	251,411	0.14
2016	432.0	19.3	451.3	255,212	0.18
2017	324.5	9.6	334.2	262,844	0.13
Average	342.3	16.6	358.9	244,469.5	0.15

Budget allocated to FONDEN and FOPREDEN

(2013-2107)



Budget allocated to the component of "Attention to Natural Disasters Contingencies of the Agricultural and Fisheries Sector" (2006-2012)

(US Mill. \$)

Year	Program or Component	Autorized budget	Modified budget	Exercised budget
2006	FAPRACC	19.9	21.1	21.1
2007	FAPRACC	16.5	22.6	22.6
2008	PACC	48.4	34.5	34.4
2009	PACC	48.4	40.4	40.2
2010	PACC	48.4	54.8	54.8
2011	CADENA	59.1	106.5	106.5
2012	CADENA	168.9	144.2	113.1
Total		409.6	424.1	392.7

US Mill. \$ Autorized budget Exercised budget

Autorized and exercised budget (2006-2012)

Figura 9. RECURSOS APLICADOS A APOYOS DIRECTOS (MILLONES DE DÓLARES)



CADENA applied to fund direct support to the agricultural sector (million US\$)

CADENA applied to fund insurance to the agricultural sector (million US\$)



Figura 22. RECURSOS APLICADOS PARA EL PAGO DE LA PRIMA DEL SEGURO (MILLONES DE DÓLARES)

Fuente: SAGARPA.

Agricultural insurance 2008 – 2011

Indicador	2008	2009	2010	2011
SS	21,902,572.70	21,832,754.02	21,952,745.02	22,136,741.58
SSK SST	5,612,662.33	5,626,024.44	5,676,585.73	6,225,955.07 15 910 786 51
51AINCFA/55	4.07/0	4.30 /0	0.32 /0	1.52 /0
STANCFAR/SSR	13.53 %	7.77 %	7.92 %	19.00 %
STANCFAT/SST		3.20 %	6.03 %	3.03 %
STANCP/SS STANCPR/SSR	14 45 %	18.37 %	16.65 %	21.51 %
STANCPT/SST	6 35 %	8 99 %	15 50 %	16.69 %
STAC/SS	23.85 %	37.63 %	61.27 %	55.55 %
STACK/SSK STACT/SST	3.27%	78.03 %	22.45 %	26.79 %
51AC1/551	30.94 %	11.12 70	/4.00 70	00.80 70

SS=Superficie sembrada (hectáreas). SSR=Superficie sembrada en riego (hectáreas). SST=Superficie sembrada en temporal (hectáreas). STANCFA = Superficie total asegurada no catastrófico por fondos de aseguramiento. STANCFAR = Superficie total asegurada no catastrófico por fondos de aseguramiento en riego. STANCFAT = Superficie total asegurada no catastrófico por fondos de aseguramiento en temporal. STANCP = Superficie total asegurada no catastrófico privada. STANCPR = Superficie total asegurada no catastrófico privada en riego. STANCP = Superficie total asegurada no catastrófico privada. STANCPR = Superficie total asegurada no catastrófico. STACR = STANCPT = Superficie total asegurada no catastrófico privada en temporal. STAC = Superficie total asegurada catastrófico. STACR = Superficie total asegurada catastrófico en riego. STACT = Superficie total asegurada catastrófico en temporal. Fuente: Elaboración propia con datos de la CNSF, Agroasemex y Sistema de Información Agroalimentaria de Consulta (SIACON-SAGARPA).

SS= Agricultural área; SSR= Irrigation; SST= Rainfed agricultura STAC/SS= Agricultural insured área against catastrophic events México changed the strategy from a reactive to proactive in the agricultural sector (include livestock and fisheries) in the National Development Plan 2013-2018:

• Design and set a insurance mechanism against climatic and market risks

Agricultural shift:

Reduce (and protect) the cost for the Federal Budget and transfer the risk to the insurance market

Reduce the risk to the agricultural sector

2016 Creation of the New Agricultural Insurance Programme with the fusion of the following Programmes:

- Subsidy for Agricultural Insurance Programme
- Aid of Agricultural ReInsurance Fund Programme
- Attention to natural disaster contigencies in the agricultural and fisheries sector (CADENA)

Priority to extreme poverty communities and counties, as well as rural and urban áreas with priority attention (drought vulnerable)

The target is to have all the agricultural (irrigated and rainfed) area insured by 2018.

Progress

- Almost all of the Pronacose components in place and operational
- The benefits of Pronacose are not evident until now due to:
- Floods continue to be the most attractive phenomena to attend (fund) with priority
- The drought at a national scale has recedeed
- Pronacose's actions slowed down and lack strong follow up
- There is no official national record of investment in drought

Future challenges ...

- 1. Perform the monitoring and evaluation of the PMPMS (River Basin Councils, water utilities and Irrigation districts.
- 2. Start a communication and information campaign about drought and PRONACOSE's benefits with focus on:
- Expand knowledge of drought and best practices to address drought
- Promote preventive actions through finantial schemes including and combining climate variability and climate change. Politically almost no politician invest in such measures because are hardly "seen" during his administration.
- Document actions that have proved that prevention costs are less expensive than that of recovery. That would help to promote the effectiveness of the strategy.

Future challenges

- Promote downscaled actions (regional to local), and promote training so a culture of prevention can be implemented.
- 3. Implement the research programme for the different approaches: climatology, engineering, agronomy, sociology, education, to contribute to the preventive benefit.
- 4. Develop drought outlooks so input for a preventive action can be supported.
- 5. Transit from "drought guidelines" to specific legislation on drought
- 6. Make PRONACOSE an effective public policy.



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Thank you

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