

INDEX BASED CROP INSURANCE: Challenging the limitations....

Dr. Reshmy Nair,
Associate Professor
ASCI, Hyderabad



**Crop Insurance –
A Specialty Insurance**

**Crop Insurance –
Historical
Perspective**

**Understanding
Existing Products**

The Road Ahead

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**CROP INSURANCE,
The Specialty
Insurance- The Past**

Insurance

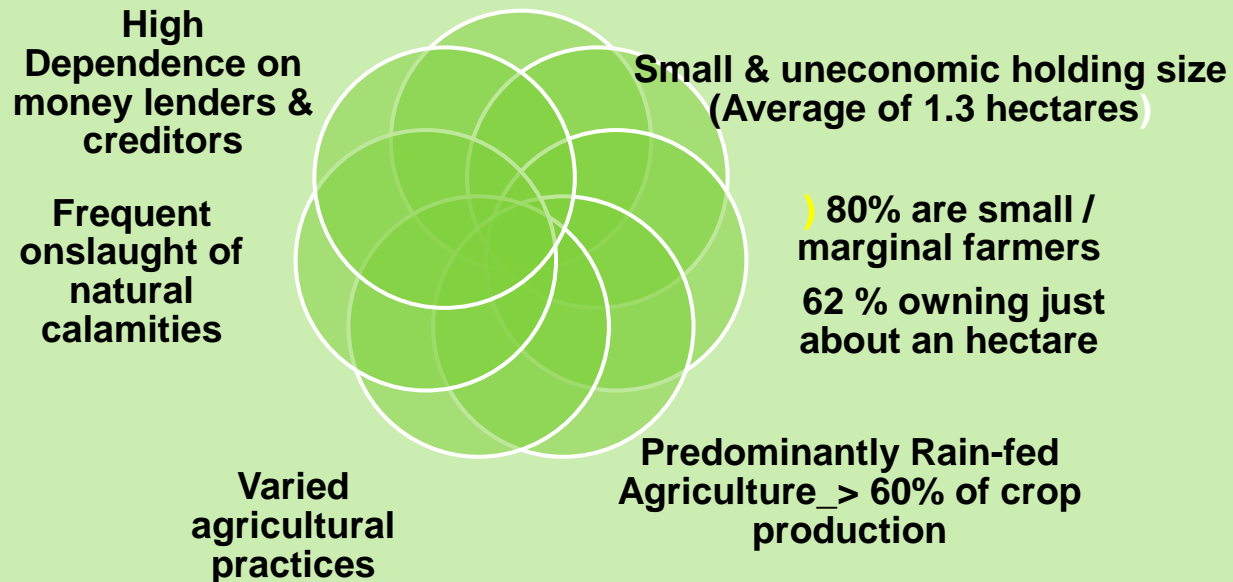
What It Is and What It is Not

- Insurance is a mechanism for spreading risk, for sharing the losses of the few among the many ”- **COLLECTIVE BEARING OF RISK.**
- Does not ‘**ELIMINATE**’ but only ‘**SPREADS RISKS**’ across space and time.
- Protection from losses due to occurrence of **INSURED PERIL.**
- Premium paid within the **TIME FRAME/ BEFORE THE LOSS**
- Insurance indemnity **ONLY** as per the **POLICY CONDITIONS**
- Indemnity only when loss exceeds the **DEDUCTIBLE** (loss to be borne entirely by the insured).

Crop Insurance - The Genesis

Features of Indian Agriculture

**Feeds over 1 bln. people . Livelihood to nearly two-thirds-
High forward & backward linkages with other sectors**



GDP growth originating in agriculture is atleast twice as effective in reducing poverty as GDP growth originating outside agriculture (World Development Report, 2008).

In India, poverty rates in irrigated districts are seen one-third what they are in districts without irrigation (World Bank, 2005)

Crop Insurance - The Genesis

Highlights

- 25 million out of 120 million farmers (20%) are insured under crop insurance schemes

- 90% are loanee farmers.

10% penetration among non-loanee farmers

Government of India targets doubling the farmers' coverage during 12th plan from 25 million to 50 million.

2011-12

Weather Index Insurance - World's largest weather-based crop insurance programme. 12 million farmers covered - Implemented in 16 states

Yield Index Insurance - World's largest Crop insurance programme. 18-20 million farmers covered. Implemented in 25 states.

THE INITIAL STEPS

- Ministry of Food & Agriculture - examined the feasibility of crop insurance – Circulated a draft scheme to all the States – Not favored by states due to paucity of funds
- Govt. of Punjab mooted a proposal requesting Gol for financial assistance in the early 1960s.
- Gol introduced a Crop Insurance Bill & a Model Scheme of Crop Insurance – referred to Dharam Narain Committee – stalled the progress.

Grounds – More emphasis on elements on “individual approach”

- 1. Breakdown of insurance principle – “ The number of claimants turns out to be nearly as large as that of the premium paying farmers”**
- 2. Elaborate administrative machinery & paucity of resources – Each insured area to be divided into blocks with one Crop Insurance Inspector and 10 crop insurance sub inspectors.**
- 3. Geographically homogeneous regions – Difficulty in delineating - absence of data on area-wise farming practices.**

Crop Insurance - The Genesis

THE FEASIBILITY-AREA APPROACH

Views of Expert Committee	Counter Arguments by V. M. Dandekar
1. Breakdown of principles of Insurance	Only if confined to one single region.
2. Elaborate administrative machinery	Not required. Existing machinery for CCEs would suffice.
2. Difficulty in distinction between avoidable/unavoidable losses	Not required in area approach
3. Compulsory insurance for viability of the scheme	Required more for administrative expediency and coverage for credit risks.
4. Lack of data for deciding homogeneous regions	Such regions do not exist. Yield experience of majority of farmers only to coincide with the area experience

“Admittedly, we came to consider it as second best as we found a crop insurance based on ‘individual approach totally impracticable. Now, instead of making it impracticable by importing into it elements of individual approach, we should accept it as the second best and agree to give it a fair trial”- Dandekar

Crop Insurance - The Genesis

YIELD INDEX INSURANCE-KEY TAKEAWAYS (DANDEKAR)

NO NEED TO

- verify the declarations of insured farmers.
- ascertain individual yields
- have an elaborate administrative machinery for yield assessment.
- verify moral hazard.
- determine sowing and harvest dates of each crop in each area.
- verify if insured farmers have sown less area or not sown at all.

CCE Manipulation: Eliminating extreme yields from computation of the base yields.

WEATHER Index INSURANCE

- WEATHER INDEX INSURANCE
- Mid 1980s onwards - Studies reflecting the dismal performance of all risk crop insurance programmes world-wide- Rainfall insurance suggested as a response to the unsatisfactory performance of crop insurance in the past decades.
- World Bank (1992) – Drought insurance scheme for all rural households – All insureds to pay the same premium and receive the same indemnity per unit of sum insured.
- Pioneering work by J.S. Chakravarti (1920).
- *“ No insurance authority could ever maintain a supervising agency which would be able to watch and enforce that every insured field receives the required amount of care and attention at the hands of its cultivator. Unless some method can be devised by which this great difficulty is eliminated , a system of crop insurance would indeed be impossible”.*
- *“ A famine in India does not mean grain famine but money famine due to enforced unemployment of agriculturist owing to unfavorable seasonal conditions. An effective system of agricultural insurance by insuring the peasantry against serious pecuniary loss in respect of agricultural operations will render the country less liable to the ravages of famine. In this sense and to this extent agricultural insurance will also be famine insurance”*
- Solution : An indirect system of crop insurance called rainfall insurance

Crop Insurance - The Genesis

A SPECIALTY INSURANCE

SYSTEMIC RISKS –Pervasive & not random

MORAL HAZARD & ADVERSE SELECTION- difficulty of assessment of definitive action of the insured peril behind crop loss.

PRICING _ Financial viability and affordability.

INHERENT CHARACTERISTICS OF INDIAN AGRICULTURE- Non-availability of past yield records -Large number of farm holdings & inaccessibility - Large variety of crops, varied agro-climatic conditions and package of practices – collection of premium from large number of farmers – simultaneous crop harvesting - high cost of manpower and infrastructure- Illiterate farmers & Low insurance awareness.

SOLUTIONS



Area approach

Government support

Compulsory insurance

Evolution

- First ever scheme on 'Individual' approach basis (1972-78)
- Pilot Crop Insurance Scheme –PCIS (1979-1984)
- Comprehensive Crop Insurance Scheme –CCIS (1985-1999)
- Experimental Crop Insurance Scheme –ECIS (Rabi 1997-98)
- National Agriculture Insurance Scheme – NAIS (1999.....)
- Farm Income Insurance Scheme – FIIS (Rabi 2003-04 season & Kharif 2004 season)
- Rainfall based insurance (Kharif 2004...)
- Weather based insurance products (Rabi 2005.....)

CROP INSURANCE- The Present

- 1. Institutional Mechanism**
- 2. Key Features**
- 3. Issues and Challenges**
- 4. Results of the Study on WBCIS**

Types

1. Index Insurance

- Compensate farmers based on changes in an index rather than an assessment of actual amount of damage.
- Index acts as a proxy for yield: Changes in the index should reflect changes in yield.

▪ Two types of Index Based Insurance Products

- **1. Area Yield Index Insurance** (National Agricultural Insurance Scheme, NAIS and Modified National Agricultural Insurance Scheme, MNAIS).

- **2. Weather Based Index Insurance**

- **Area Yield Index:** Pays indemnity based on realizations of an index that is highly correlated with farm-level yield shortfalls. - India's national crop insurance program and the world's largest crop insurance program is area yield.

- **Weather Index Insurance:** Indemnity based on realizations of a specific weather parameter measured over a pre-specified period of time at a particular weather station. The payout whenever the realized value of the index exceeds a pre-specified threshold or when the index is less than the threshold. Two most common parameters for index insurance are rainfall and temperature.

Index Insurance - Need for wider interpretation of basic Principles of Insurance

- 1. **Principle of Indemnity:** Insurance is a contract of indemnity. Under such contracts, the insurer promises to indemnify the insured against **any loss** caused by **the occurrence of the insured event**. In other words, the insurer has to compensate the insured only for the actual loss that was sustained.
- (1) **Index based claim payment:** Under index insurance, payment is based on **an index**, not on actual loss. The index is only a proxy for the loss and may not ideally reflect the exact loss suffered by the farmer.
- (ii) **Excess/Low Claims in relation to losses:** The indemnity concept can also be construed as requiring that the insurance contracts cannot exceed Loss. Given the potential for basis risk, the **payment may exceed or may be lesser** than the loss sustained by the insured.

Need for wider interpretation of basic Principles of Insurance

- **2. Principle of Insurable Interest:** In simple terms, insurable interest means that an insured applicant should have an interest in the subject matter insured.
- Would the insurable interest mean existence of a physical, financial or larger economic interest?
- Would the potential insurance seeker need to have ownership to establish his insurable interest?
- When do the potential insurance seeker need to demonstrate possessing the insurable interest- at the time of inception of the policy, both at the time of taking the policy and at the time of the loss occurring etc or only at the time of loss occurring?.
- What are the legal mechanisms in place for the insurers to verify insurable interest and what could be the consequences for the insured?

Legislative Framework and the Potential Challenges

- **No risk to be assumed unless premium is received in advance:**
- **Refund of Premium:** Section 64VB. (3) of the Act states that “Any refund of premium which may become due to an insured on account of the cancellation of a policy or alteration in its terms and conditions or otherwise shall be paid by the insurer **directly** to the insured.
- **Register of policies and register of claims:** Section 14 (a) and (b) of the Act mentions that every insurer shall maintain a register or record of policies, in which shall be entered, in respect of every policy issued by the insurer, the name and address of the policy-holder.
- **Loss Intimation**
- **Interest Payment on Delay in Claims Settlement**
- **Elaborate Training Requirements for licensing of individual/corporate insurance agents**

Crop Insurance – The Present

NAIS – Implementation Procedures

- Area yield based approach.
- Covers –Crops subject to availability of past yield data (10 years).
- Mandatory for borrowing farmers/voluntary for others.
- Capped premiums for FCOS (1.5-3.5 % of SI) and Actuarial rates for ACH crops.
- Yields measured through **Stipulated Minimum Crop Cutting Experiments (CCEs)**.
- Ex-post financing for claims processing.
- Guaranteed yield – 60%/80%/90% of past 3/5 yrs avg.
- Sum Insured - amount of bank finance / value of guaranteed yield/ 150% of the value of Average Yield.

Crop Insurance – The Present

NAIS – Issues

- High Basis risk – Geographic, Risk Coverage, Product Design
- Delay in settlement of claims
- Inadequate indemnity level & Unattractive guaranteed yields
- Low voluntary participation
- High concentration of claims to few areas and crops.
- Open-ended and highly variable fiscal exposure for state and central government .
- High pricing for uncapped ACH crops
- Value of NAIS coverage for any given crop varies considerably across insurance units in the same state, and changes significantly year to year, even though farmers' premium rates are uniform for each crop.

Crop Insurance – The Present

Detrending the crop yield data

The Indian Experience – Cotton Crop

Use of improved seeds led to dramatic increase in yields.

Trends in yield mistaken for uncertainty

Large increases in premium resulted in vast reduction in crop insured.

State	Crop	APR without Detrending	APR with Detrending
Gujarat	Cotton	17.4	6.2
Maharashtra	Cotton	17.3	3.1
Karnataka	Cotton (I)	8.5	3.1
Andhra Pradesh	Cotton (I)	10.5	1.6

Source: World Bank

Statistical significance of trend at 5 % level

IMPORTANT - EXPERT JUDGMENT ON APPLICATION AND DETREMINATION OF TREND

Crop Insurance – The Present

Detrending the crop yield

1. Detrending (statistically significant) : To ensure that any trend in the data will not be automatically interpreted as natural variation.

NAIS - 2 yield histories

Pre Detrending

Yield A - Upward trend in Yield with less uncertainty,

Yield B - No trend but great uncertainty

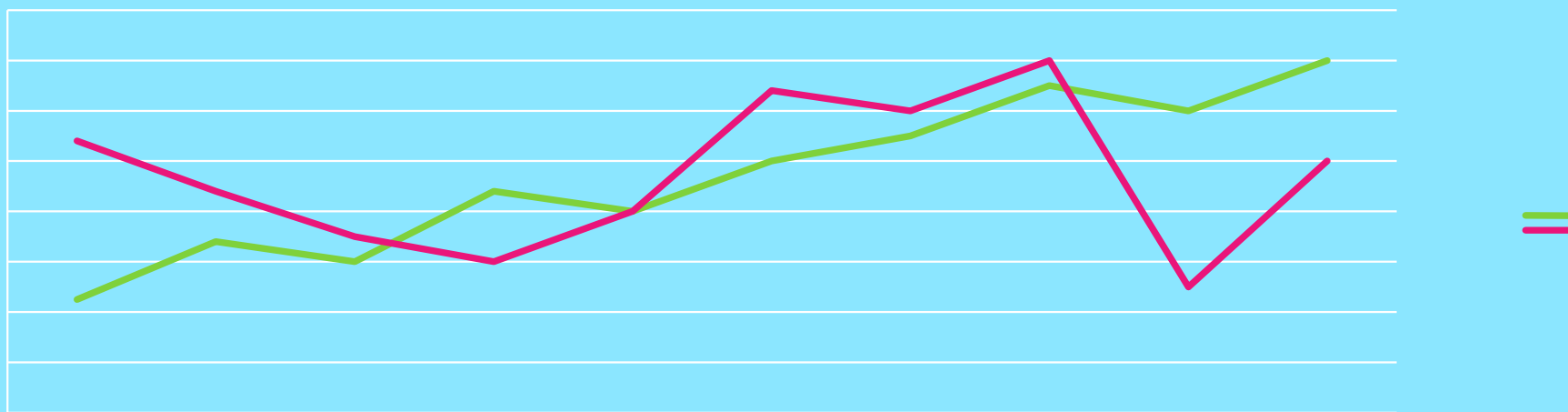
CV 32 for both yields. CV based

Premium calculation – Uniform premium rates

Post Detrending

Yield A – CV-6

Yield B – CV 32



Crop Insurance – The Present

	NAIS	DRAWBACKS	MNAIS
Guaranteed Yield	TY = 3 year/5 year moving average yield X IL.	<ol style="list-style-type: none"> 1. Linear trend resulting in low coverage and high premium rates. 2. Unusually good or bad years have high impact 3. Unrealistic uniform ILs/premium rates across the state. 4. Low coverage levels in areas with continuous adverse seasons. 	<ol style="list-style-type: none"> 1. Detrended yield data 2. Moving Average Last 7 years yield data (excluding 2 calamity yrs).
Indemnity Levels	60%, 80% and 90% - Variability in yield. CV - 0-15 - 90%; CV - 15-30 - 80%, CV>30– 60%	<ol style="list-style-type: none"> 5. Overstatement of yield in good years will increase premium rates despite low payment of indemnity. 	70%, 80% and 90% based on weighted average loss cost in each district
Actuarial Premium rates	Normal theory method based on variation in yield in the last 10 years data Coefficient of Variation – Foundation of Ratemaking	<ol style="list-style-type: none"> 6. Wide variation in the value of products 	Experienced Rating based on loss cost and loading the pure premium rates. Historical loss costs – Foundation of Ratemaking

Crop Insurance – The Present

Improvements in MNAIS – Addressing Major Drawbacks in NAIS

Drawback in NAIS	Improvements in MNAIS
<p>Basis Risk – Geographic</p>	<p>Reduction in insurance unit to GP/ village for major crops. Assessment of claims based on individual basis for localized calamities –hailstorm & landslide.</p>
<p>Basis Risk – Product Coverage</p>	<p>Coverage of prevented sowing (upto 25% (of sum insured). Coverage for and post harvest losses (available upto 14 days from harvest for crop lying in ‘cut & spread’ condition only).</p>
<p>Basis Risk – Product Design</p>	<p>More attractive guaranteed yields. Threshold yield based on average yield of the preceding 7 years excluding upto 2 calamity years Minimum Indemnity Level (IL) raised to 70%.</p>
<p>Delay in settlement of Claims</p>	<p>On-account payment upto 25% advance of likely claims as immediate relief (if the estimated crop losses is more than 50% as compared to normal) Payment of upfront premium subsidy by State and Central Governments.</p>

Crop Insurance – The Present

WBCIS - FEATURES

Features

- Area approach- each RUA linked to RRGs/RWS
- Covers (i) cereals, millets, pulses, oilseeds (ii) important commercial crops
- Linked to crop credit: mandatory for borrowing farmers & voluntary for others
- Sum Insured : Prefixed - Broadly equivalent of cost of cultivation and identical to all farmers
- Premium rates : Actuarial. Fixed at par with NAIS for FCOS and capped at 6% for ACH crops
- Government support: upfront subsidy in premium to insurers.
- ***Advantages: High incentive to protect the crop, low loss assessment costs, largely tamper proof data, faster claims settlement, easier re-insurance***

Weather Index: The Major Improvements

Improvements in recent Years

- Increases in the number of weather stations
- Larger number of players infusing competition
- Exemption of service tax improving the affordability of the products.


Conceptualized Improvements

- Weather 'Index Plus' Crop Insurance Products (with additional cover for localized calamities) .
- Double trigger insurance products (bifurcating the sum insured among weather and yield index so that the claim payout is based on both the yield index and the weather index.

Crop Insurance – The Present

A COMPARATIVE PERSPECTIVE - APPLICABLE PREMIUM RATES

NAIS	Modified Yield Index (MNAIS)		Weather Index (WBCIS)	
	Premium Slab	Subsidy to farmers	Premium Slab for ACH crops	Subsidy to farmers
Food Crops and Oilseeds up to the loan insured/ value of threshold yield Flat rates fixed by the government .	Upto 2%	NIL	Upto 2%	NIL
	> 2-5%	40 %. Min of 2 % payable by farmers	> 2-5 %	25 %. Min of 2 % of premium
	> 5-10%	50 %. Min of 3 % payable by farmers	> 5-8 %	40 %. Min of 3.75 % payable by farmers
	> 10-15%	60 %. Min of 5% payable by farmers	> 8 %	40 %. Min of 6 % payable by farmers
	> 15%	75 %. Min of 6 % payable by farmers	Actuarial rates subject to capping of premium @ 8% (Rabi) 10% (Kharif) for food crops & oilseeds and 12% for ACH crops.	
	Acturaial rates – ACH			Max. payable by the farmer – NAIS rates for FCOS and 6% for ACH

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**Index Based Crop
Insurance – The
Performance Highlights**

The Journey So Far

Schemes	Period	Farmers Covered (Lakhs)	Premium (Cr.)	Claims (Cr.)	Claim ratio
Individual Approach Scheme	1972-78	0.03	0.05	0.38	1:7.6
Pilot Crop Insurance Scheme	1979-84	6.23	1.95	1.56	1:0.8
Comprehensive Crop Insurance Scheme	1985-1999	763	404	2303	1:5.7
National Agricultural Insurance Scheme	1999 till Kharif 2011	1700	6213	20437	1: 3.3
Modified National Agricultural Insurance Scheme	Rabi 2010-11 till Kharif 2011	15.72	335	184	1:0.55
Weather Based Crop Insurance Scheme	Kharif 2007 till Rabi 2012-13	376	6093	3308	1:0.55

NAIS – Kharif Season

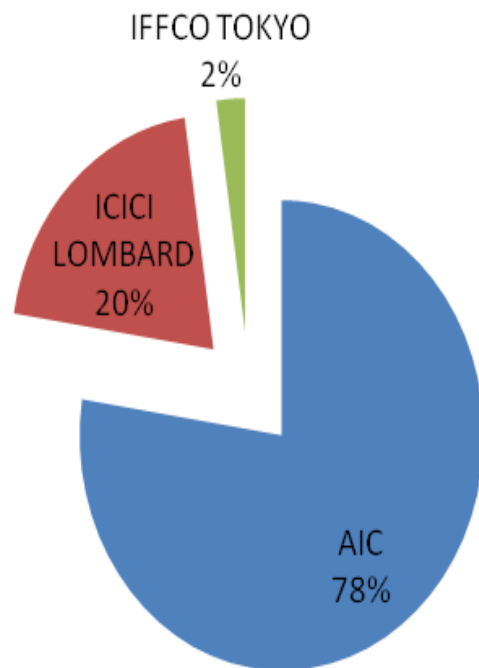
Season	FC (Lakhs)	Acreage (Lakh Hec)	SI (Rs. Cr)	TP (Rs. Cr)	Claims (Rs. Cr)	FB (Lakhs)	Pay Back (CR) %	LC %	FB/ FC
2000	84	132	6903	207	1222	36	590.3	17.7	42.9
2001	87	129	7502	262	494	17	188.5	6.6	19.5
2002	98	155	9432	325	1824	43	561.2	19.3	43.9
2003	80	124	8114	283	653	17	230.7	8.0	21.3
2004	127	243	13171	459	1038	27	226.1	7.9	21.3
2005	127	205	13517	450	1060	27	235.6	7.8	21.3
2006	129	197	14759	467	1772	33	379.4	12.0	25.6
2007	134	194	17007	525	909	16	173.1	5.3	11.9
2008	130	176	15658	512	2372	42	463.3	15.1	32.3
2009	183	258	27616	863	4616	80	534.9	16.7	43.7
2010	126	171	23705	722	1205	21	166.9	5.08	16.7
TOTAL	1304	1998	157396	5074	16999	358	335	10.80	27.45

NAIS – Rabi Season & Combined

Season	FC (Lakhs)	Acreage (Lakh Hec)	SI (Rs. Cr)	TP (Rs. Cr)	Claims (Rs. Cr)	FB (Lakhs)	Pay Back (CR) %	LC %	FB/ FC
1999-2000	6	8	356	5	8	1	160.0	2.2	16.7
2000-01	21	31	1603	28	59	5	210.7	3.7	23.8
2001-02	20	31	1498	30	65	5	216.7	4.3	25.0
2002-03	23	40	1838	39	189	9	484.6	10.3	39.1
2003-04	44	65	3049	64	497	21	776.6	16.3	47.7
2004-05	35	53	3774	76	161	8	211.8	4.3	22.9
2005-06	40	72	5072	105	338	10	321.9	6.7	25.0
2006-07	50	76	6593	143	515	14	360.1	7.8	28.0
2007-08	50	74	7467	159	809	16	508.8	10.8	32.0
2008-09	61	88	11013	290	1237	16	426.6	11.2	26.2
2009-10	56	79	10877	287	318	19	110.8	2.9	33.9
2010-11	49	68	10688	288	340	10	118	3.2	20.4
Total	457	687	63911	1519	4874	128	321	7.6	28
Grand Total (Kharif + Rabi)	1761	2685	221307	6593	21873	486	332	10	28

WBCIS – FARMERS COVERED

SHARE OF FARMERS INSURED UNDER WBCIS (2007-08 TO 2010-11)



WBCIS – PERFORMANCE HIGHLIGHTS - SEASON-WISE

Sl. No.	Season	FI (Lakhs)	SI (Cr.)	GP (Cr.)	Claims (Cr.)	Gross Claim Ratio	Farmers Claim Ratio	Loss Cost	FB/FC
1	Kharif 2007	0.4	53	7	5	75	370	10	81
2	Rabi 2007-08	6	1699	138	101	73	236	6	30
3	Kharif 2008	2	351	36	16	44	167	5	59
4	Rabi 2008-09	2	536	45	33	73	298	6	63
5	Kharif 2009	12	2115	212	158	74	261	7	78
6	Rabi 2009-10	12	2857	235	187	79	331	7	50
7	Kharif 2010	49	5683	600	192	32	112	3	37
8	Rabi 2010-11	44	8649	695	444	64	252	5	58
9	Kharif 2011	69	10866	1030	410	40	124	4	51
10	Rabi 2011-12	47	10034	821	692	84	335	7	31
11	Kharif 2012	79	11990	1295	612	47	150	5	49
12	Rabi 2012-13	52	11368	983	384	39	143	3	25
GRAND TOTAL		376	66275	6093	3308	55	193	5	46

WBCIS – PERFORMANCE HIGHLIGHTS (State-wise: Kharif 2007-2011)

	FI (Lakhs)	GP (Cr.)	Claims (Cr.)	% Premium	Payback % Gross Claim Ratio	Payback % Farmers Claim Ratio	Loss Cost	FB/FC
Rajasthan	126	1410	663	47	47	160	4	38
Bihar	32	652	375	22	58	242	5	76
Andhra Pradesh	10	360	213	12	59	151	6	68
Madhya Pradesh	7	233	121	8	52	178	5	78
Karnataka	4	62	37	2	59	175	6	74
Total (5 States)	179	2717	1409	91	57	175	6	74
Grand Total	196	2999	1548	100	52	180	5	50

WBCIS GROWTH HIGHLIGHTS

2. States Covered: From pilot in Karnataka in 2007 to 15 states in 2011-12.

The top five states cover about the total 90% coverage with Rajasthan accounting for almost half of the total premium.

Out of the total surplus of 1450 cr, 750 cr. has come from Rajasthan. The proportion of farmers benefitted is also lowest in the state.

WBCIS – PERFORMANCE HIGHLIGHTS -AIC

Sl. No.	Season	Farmers Covered (Lakhs)	Farmers' Premium (Cr.)	Total Premium (Cr.)	Total Claims (Cr.)	Loss Cost (%)	Farmers' Claim Ratio	Gross Claim Ratio	FB/FC
1	Kharif 2007	0	1	7	5	9.9	370	75	81
2	Rabi 2007-08	6	42	135	100	6.0	237	74	30
3	Kharif 2008	2	8	32	14	4.6	173	45	63
4	Rabi 2008-09	2	9	36	26	6.2	301	73	67
5	Kharif 2009	11	56	199	153	7.7	271	77	78
6	Rabi 2009-10	9	40	161	138	7.0	345	86	53
7	Kharif 2010	39	131	461	150	3.4	115	33	35
8	Rabi 2010-11	28	115	428	289	5.5	252	68	61
9	Kharif 2011	53	272	837	342	4.1	126	41	51
10	Rabi 2011-12	32	148	557	581	17	393	104	53
11	Kharif 2012	35	246	726	539	30	219	74	85
12	Rabi 2012-13	37	188	632	384	13	204	61	36
TOTAL UPTO RB 12-13		254	1255	4206	2728	136	217	65	54

WBCIS – PERFORMANCE HIGHLIGHTS - ICICI

Sl. No.	Season	Farmers Covered (Lakhs)	Farmers ' Prem (Cr.)	Total Prem (Cr.)	Total Claims (Cr.)	Loss Cost (%)	Farmer s'Claim Ratio	Gross Claim Ratio	FB/FC	
1	Rabi 2007-08	0	1	3	1	4.4	191	52	66	
2	Kharif 2008	0	1	4	2	4.4	127	37	24	
3	Rabi 2008-09	0	3	10	7	6.4	288	74	36	
4	Kharif 2009	0	4	13	5	3.8	114	36	51	
5	Rabi 2009-10	3	17	75	49	5.6	298	66	43	
6	Kharif 2010	10	41	138	42	3.4	102	30	42	
7	Rabi 2010-11	12	49	211	115	4.2	232	54	50	
8	Kharif 2011	12	39	127	45	2.4	117	36	50	
9	Rabi 2011-12	10	39	169	136	6	346	80	36	
10	Kharif 2012	19	64	225	0	0	0	0	0	
11	Rabi 2012-13	19	64	225	0	0	0	0	0	
TOTAL UPTO RB 12-13		73	293	1137	40055	401	3	137	35	29

WBCIS – PERFORMANCE HIGHLIGHTS – INSURANCE COMPANY WISE

Insurance Company	Farmers Covered (Lakhs)	Sum Insured (Cr.)	Gross Premium (Cr.)	Total Claims (Cr.)	LOSS COST (%)	FARMERS CLAIM RATIO (%)	GROSS CLAIM RATIO (%)	FB/FC (%)
AIC (12 Seasons)	254	45490	4206	2728	136	217	65	54
ICICI (11 Seasons)	73	12440	1136.46	400.55	3	137	35	29
IFCO Tokyo (8 Seasons)	24	3789	347	144	3.80	153.05	41.51	58
Chola MS (5 Seasons)	1	270	7	24	1	52	14	33
HDFC ERGO (4 Seasons)	16	2585	234	21	7	32	9	8
Total	368	64574	1713	5930	3318	5	194	56

Crop Insurance –The Present

WBCIS Vs NAIS

1. BETTER COVERAGE OF SMALL/MEDIUM INTENSITIES

	Kharif 2007		Kharif 2008		Rabi 2008-09	
	WBCIS	NAIS	WBCIS	NAIS	WBCIS	NAIS
No. of IUs	140		148		57	
% claim producing area	44	4	62	22	51	3

2. TIMING OF INDEMNITY PAYOUTS

NAIS – More than a year

WBCIS: before the next season. Average comparative advantage of 6-7 months

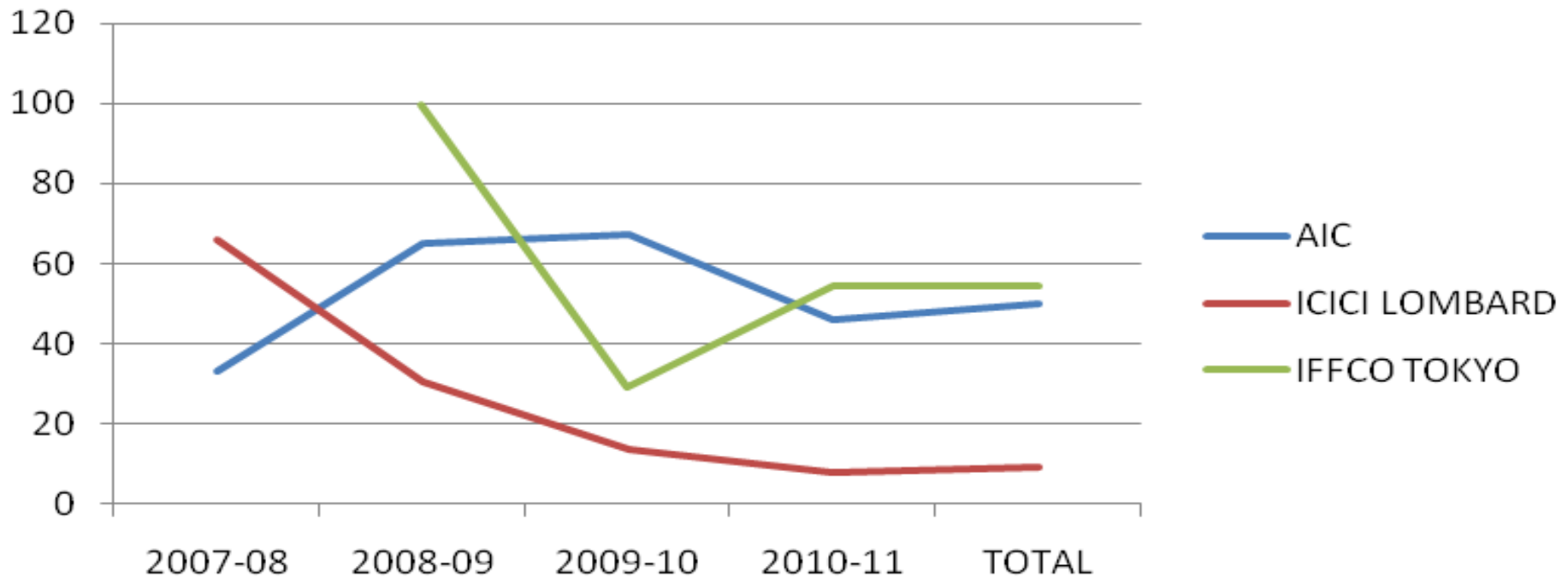
Crop Insurance –The Present

WBCIS Vs NAIS

3. BETTER DISTRIBUTION OF INDEMNITY BENEFITS:

Proportion of insured benefitted: NAIS: < 25%: WBCIS: Avg 45%, For some crops > 80%.

Claims producing areas: WBCIS: very high proportion vis-a vis NAIS.



The problem with insurance which makes it difficult to succeed is that either its utility is not recognized or it is given too much responsibility.

Crop Insurance –The Present

General Criticism against WBCIS: Low/Inadequate payouts vis- vis NAIS

Are Comparisons/logical Expectations from the Product beyond the product delivery capacity of an insurance product???

RAJASTHAN. KHARIF 2009 SEASON

	WBCIS					NAIS			
	Per Farmer Claims	FB/FC	Loss Cost	Farmers Claim Ratio	Total Claim Ratio	Per Farmer Claims	FB/FC	Loss Cost	Farmers Claim Ratio
Total	1701	77	9.88	294	99	6650	81	51	1760

Crop Insurance –The Present

Insurers Contention – Transformation of the product from medium intensity losses to high frequency low intensity losses to a larger number of insureds.

S. No.	Season	Claims Per Farmer Beneficiary WBCIS (Rs.)	Claims Per Farmer Beneficiary NAIS (Rs.)
1	Kharif 2007	1486	5745
2	Rabi 2007-08	5364	5131
3	Kharif 2008	1472	5636
4	Rabi 2008-09	2776	7640
5	Kharif 2009	1749	5736
6	Rabi 2009-10	3118	5477
7	Kharif 2010	1067	5303
8	Rabi 2010-11	1756	3159
	Avg.	2348	5478

However, even in the most disastrous season, the WBCIS payouts have not exceeded the total premium received for the lead insurer while being highly dissatisfactory for the others...

Crop Insurance –The Present

Product Comparison

Rajasthan, Kharif 2011 Season				
Heads	Guar		Groundnut	
	Company A	Company B	Company A	Company B
Sum Insured (SI)	6000	6000	7000	7000
Premium (as % of SI)	10	10	10	10
Burning Cost (as % of SI)	9.2	5.4	8.1	3.5
Risk Margin (as % of SI)	0.8	4.6	1.9	6.5
Highest Historical Payout	3425	1200	2550	1080
Highest Historical Payout as % of SI	57	20	42	15
Frequency of Payout >10% of SI	5	9	10	6
Frequency of Payout >25% of SI	5	0	4	0

Crop Insurance –The Present

Product Comparison

Rajasthan, Kharif 2011 Season

	Sesame		Bajra	
	Company A	Company C	Company A	Company C
Sum Insured	6000	6000	6000	6000
Premium (as % of SI)	10	10	10	10
Burning Cost (as % of SI)	6	3.0	7	3.5
Risk Margin (as % of SI)	4	7	3	6.5
Highest Historical Payout	2072	1428	1777	1740
Highest Historical Payout as % of SI	34	24	30	29
Frequency of Payout Exceeding 10% of SI	8	3	11	5
Frequency of Payout Exceeding 25% of SI	2	0	3	1

Crop Insurance –The Present

Product Comparison

Rajasthan, Kharif 2011 Season

	Maize		Paddy	
	Company A	Company D	Company A	Company D
No. of Years considered	38	37	38	37
Sum Insured	7000	7000	7000	7000
Premium (as % of SI)	10	10	10	10
Burning Cost (as % of SI)	6.6	5.4	7.2	6.3
Risk Margin (as % of SI)	3.4	4.6	2.7	3.7
Highest Historical Payout	2000	3995	2139	4573
Highest Historical Payout as % of SI	28	57	31	65
Frequency of Payout Exceeding 10% of SI	9	7	12	7
Frequency of Payout Exceeding 25% of SI	1	1	3	1

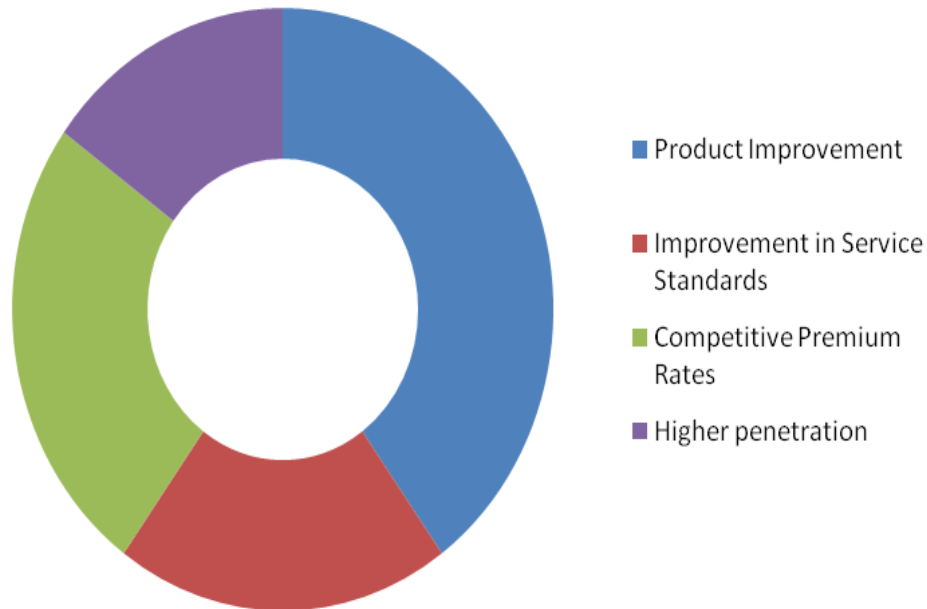
Crop Insurance –The Present

Lack of product benchmarking and uniform standards in product design has allowed the insurers to have considerable discretion to top up the pure premium, with its adverse implication on the cost benefit ratio of the product.

Erosion in the credibility of Insurers

Crop Insurance –The Present

Opening up the Sector for Private Sector Participation in WBCIS



- No marked improvisations on the existing product structures.
- No perceptible change in premium rates or service delivery.
- No perceptible improvement in penetration levels among the non-borrowing segment (AIC- 4.9%; Private companies - 1.95% to 4.8 %).

Key Impact

- Sense of empowerment among the SGs
- Greater flexibility among insurers for product modifications – **product makers to takers???**.
- Greater transparency among insurers regarding product utility/payouts.

Criteria by SGs to Evaluate Products

Past payout experiences of the products offered.

- Assessment of individual triggers and occurrence of the event in the recent past.
- **Product payouts in unfavourable cropping seasons.**
- Product design based on research inputs by agricultural scientists.
- **Recommendation: Guidance from the TSU**

WBCIS Evaluation Study – Primary Research

Seas	Weather Peril (Severity)	Weather Peril (Frequency)	Weightage in Sum Insured
Kharif	<ol style="list-style-type: none"> Excess/Unseasonal Rainfall Pests and diseases Rainfall volume (Jaipur) <p>Low rank to drought, long dry spells</p>	<ol style="list-style-type: none"> Deficient rainfall Pests and diseases 	<ol style="list-style-type: none"> Rainfall Volume and Distribution – More than 75 % of SI. Rainfall Volume – 60-75% of SI. Excess/UR – less than 20% of SI
Rabi	<ol style="list-style-type: none"> Frost High winds/dust storm Pest diseases Hailstorm Deficit rainfall (volume) 	<ol style="list-style-type: none"> Frost Deficient rainfall Pests and Diseases 	<ol style="list-style-type: none"> Temperature (Min/max/mean) – 60% of sum insured. Unseasonal rainfall – 40% of SI.

Kharif : 60-75% SI for rainfall volume & distribution..
 But peril that ranked highest in severity was unseasonal/excess rainfall
 Pest & diseases is not covered but ranked highest by many respondents

Rabi : 60:40 weight age to temperature: unseasonal rainfall (UR).
 UR does not figure prominently in neither the frequency nor severity of weather perils

Experiences in the just concluded season and/or any major standalone experience in the immediate past may have influenced farmers perceptions. The perceptions need to be evaluated with historical experiences of different perils to serve as inputs for product design.

Crop Insurance –The Present

Payouts and Yield Reducing Perils – Major Conclusions

In 19 of the 26 term sheets/payouts evaluated along with farmers responses, the payout triggering weather peril was also reported as the dominant cause of reduction in yield.

Conclusions:

Higher payouts in adverse seasons and reported cause of yield matching the payout triggering weather peril (majority of causes) rules out randomness of weather insurance payouts

No concrete conclusion regarding the sufficiency of payouts vis-à-vis the yield data.

Crop Insurance –The Future

1. **Institutional Mechanism** – Absence of a Crop Insurance Legislation/Regulation to an Institutional Model promoting growth of the sector
2. **Product Design - WBCIS**
3. **Government Support** – Capped premium to Need based Support.
4. **Area Approach** – Lower units (MNAIS/WBCIS)/Adherence to Technical specifications to minimize basis risk/Better utilisation of technology.
5. **Compulsory Insurance** – Voluntary to Greater Transparency

Legislative/Regulatory Framework

Absence of a Crop Insurance Legislation and/or Enabling Regulations

Widen the scope of the regulations in the short run



An all encompassing legislation on agriculture risk protection in the long run

WBCIS – The Future

Product –Design -WBCIS

WBCIS Payouts

Farmers' dissatisfaction in a bad year will greatly exceed the short term satisfaction of receiving some payouts in a good year.

Saving basket of premium” in a bad cropping year– topped by a share of premium subsidy ???

Fine tune existing products with the help of research inputs/ hydro meteorological information on water requirement of different crops.

Considering viability margins, frequency /magnitude of payouts to be discussed transparently with the stakeholders.

Considering risk profile/nature of risks affecting the crop/ existing pricing and product utility – decide on implementation/non implementation.

WBCIS – The Future

Product –Design -WBCIS

Catastrophic Losses

Ideally, weather insurance is best suited to cover catastrophic losses – Lower Basis Risk.

Top up CAT cover with the existing product.

Agriculture income stabilization program like the Canadian Agriculture Income Stabilization Program (CAIS) with suitable modifications.

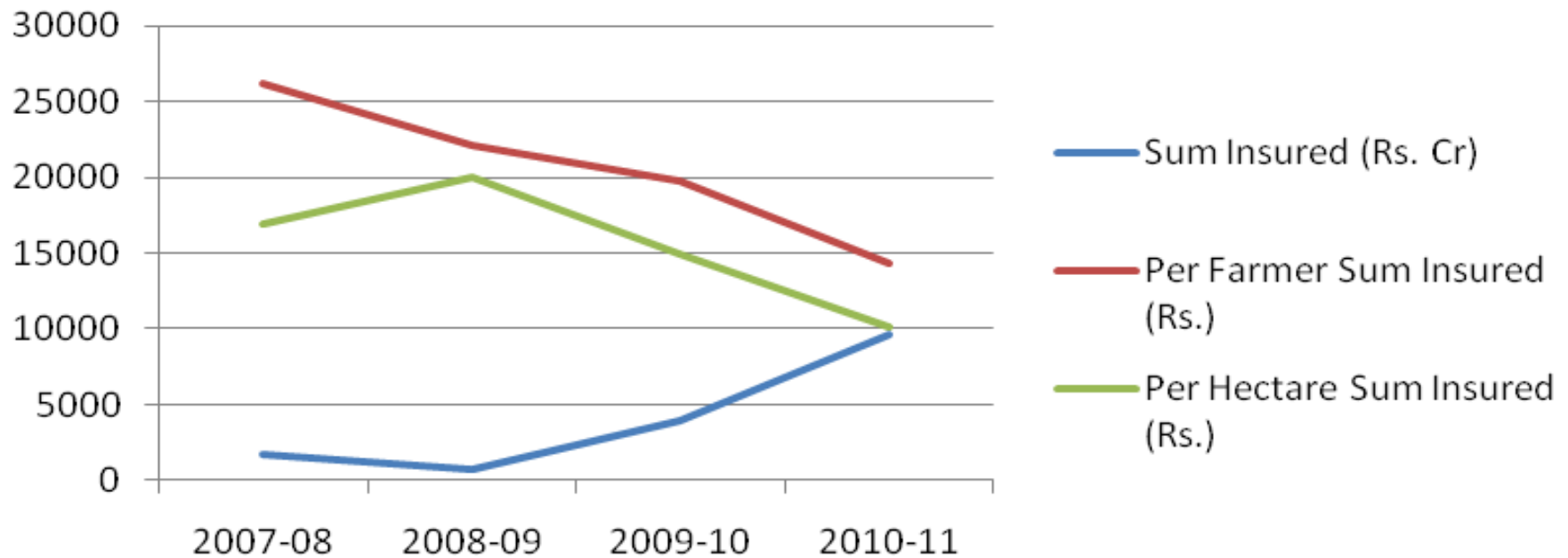
Modified versions of standalone generic product like the Catastrophic Insurance Fund in USA or the NABARD-SEWA generic product piloted in Gujarat .

WBCIS – The Future

Product –Design -WBCIS

Drastic reduction of sum insured to almost half coupled with the bifurcation of sum insured.

Some additional compensation for the loss of crop in the final stages – ((shifting the sum insured /portion of SI of the earlier covers in case of no payouts or small payouts under these covers).



WBCIS – The Future

Product –Design -WBCIS

Promoting Transparency/ Addressing Product Design Basis Risk

Weather indexed insurance contracts to include a ten year history of what the claim payments would have been, using data from the contractual weather station.

Allowing the insured' choice of WS as per the location of his/her field.

Evaluating the possibility of referencing more than a single WS for the insuring farmers.

Choice of covering specific perils, with the option of additional covers on payment of suitable premium.

Assessment of losses on account of such risks on individual basis in areas with high incidence of localized risks

Yield Index Insurance - Suggestions for Improvement

IMPROVING QUALITY OF CCEs: WB SUGGESTIONS

- Treating outlier yields by using Winsorized mean of CCEs (mean calculated after replacing the highest and lowest values with the second highest and second lowest values).
- Development of National Procedures Manual for CCEs - clarifying the reasons for the yield losses so as to exclude yield losses attributable to non insured perils
- National System for ongoing training of specialized personnel tasked with conducting or overseeing the process of CCEs for insurance purposes.
- 1. CCEs to be conducted by trained loss adjustors in areas where large claims are expected due to observable adverse agricultural conditions.
- 2. Supervisory role for loss adjustors in other areas.

Yield Index Insurance - Suggestions for Improvement

IMPROVING QUALITY OF CCEs: WB SUGGESTIONS

- Independent, random CCE audit.
- Weather data, satellite images/ remote sensing technology to target CCEs in areas where claim payouts are high.
- Video recording of the official CCEs.
- IU size could be reduced in areas with heterogeneous yields and increased in those areas with homogeneous yields.
- Real time reporting of CCEs by requiring primary workers to send yield data by mobile phone.



QUESTIONS, PLEASE

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