

RESILIENCE AND RISK REDUCTION EVIDENCES OF FINANCIAL INNOVATIONS

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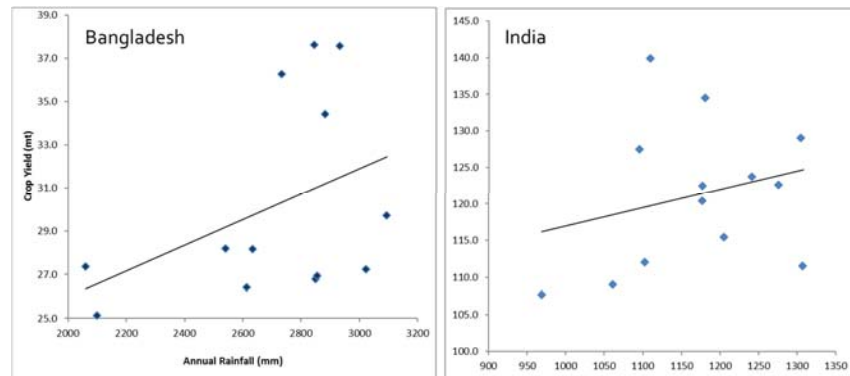
Presented at the Workshop on 'Resilience Continuum:
Comprehensive Risk Management in the Face of Climate
Change, '15-16th Sept, ISID Complex, New Delhi.

Outline

- Finances in Resilience Continuum
- Current financial approaches
- Digging out resilience and risk reduction evidences
- Conclusions

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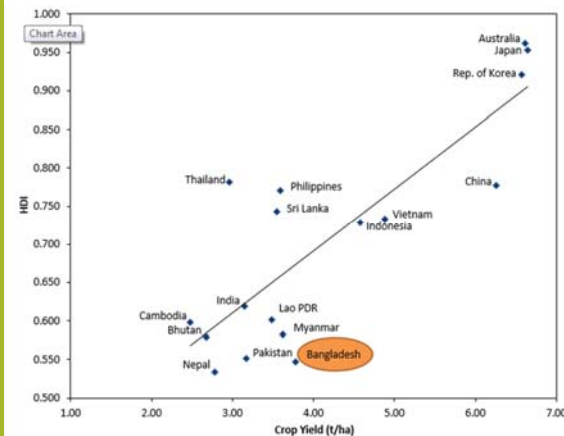
Weather and Wealth are Related!



The case of paddy production and weather (annual rainfall) in Bangladesh and India

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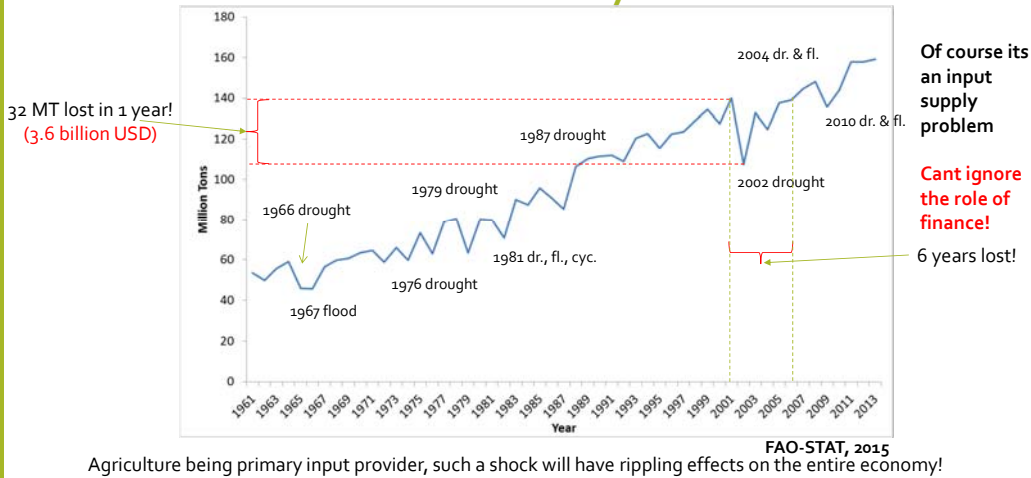
Crop Production and HDI are Highly Related



- Agriculture can provide the most cost effective means of bringing people out of poverty (World Bank)
- This is more so in LDCs where the agriculture and development are strongly correlated than the developing and large economies

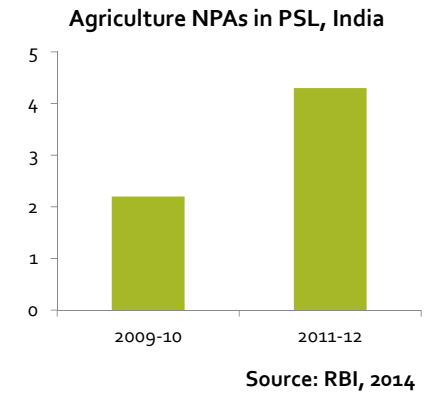
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Access to Finance is Important. Climate Impacts Crop Production: Paddy in India

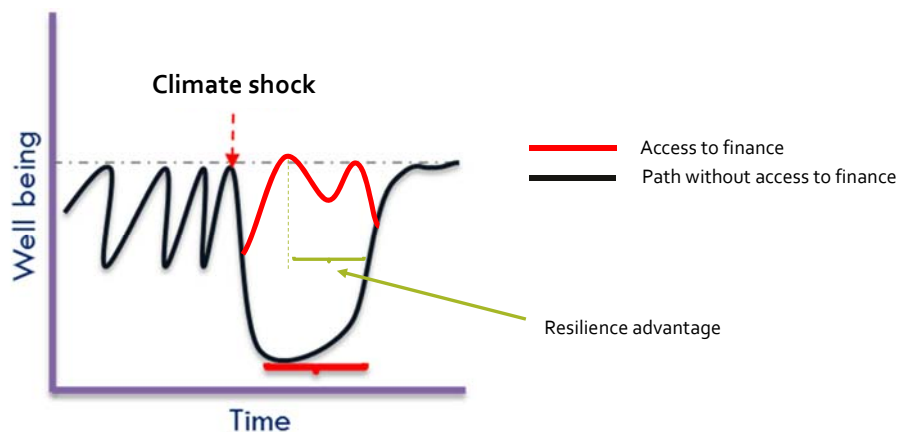


When Individual Loss becomes a Collective Loss: Impact of 2010 Drought on NPL of Banks in India

- Increase in farm loan defaults (figure on the right).
- Increased burden on government: farm loan waivers to the tune of **14.4 billion US\$** in 2008 by GOI, in comparison GOI spent only **~163 million USD** on insurance in 2008.



What Difference Access to Finance Makes to Resilience?



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Financial Tools

- Microcredit
- Cash transfers (including conditional cash transfers)
- Insurance

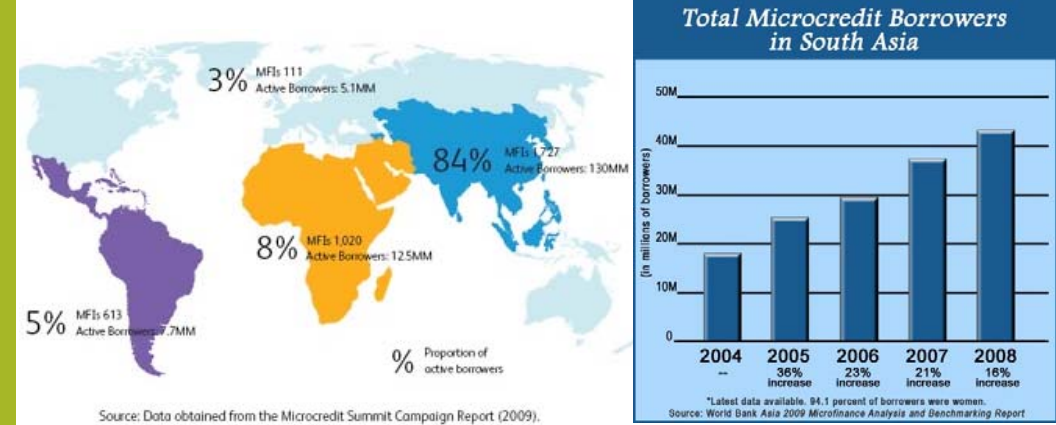
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Microcredit

- Microcredit services are those services designed to provide **financial access to the poor and underprivileged** who can't access the formal financial services such as banks.
- Initial ideas of microcredit may have started in the 15th century but gained momentum after 1970s and more so in 2000s. Muhammad Yunus of Bangladesh has been one of the pioneers in microcredit and received Nobel Prize for it, and networks such as CGAP.
- They are operated by small institutions (microfinance institutions) and the delivery mechanism is often group based lending or for individuals
- Often **accompany appropriate capacity building** support to educate borrowers to manage finances and livelihood activities (e.g. business skills, book keeping, alternative livelihoods etc)

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Growth in Microcredit



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Cash Transfers

- Cash payments by governments and philanthropic organizations has long been widely practiced however were mostly one-off payments
- Cash transfers as a steady stream of financial support has emerged recently when governments realized that the **developmental programs are often less efficient in cost-benefit terms** (i.e. a very small fraction of the total amount spent on most developmental programs reach and benefit the poor). On the contrary, when cash was put in the hands of the poor, the research has shown that they can do innovative investments bringing them out of poverty much faster and efficiently
- **Conditional cash transfers** are even more a **targeted** approach where cash is contingent upon meeting an expectation of the participant (e.g. child education, vaccination etc) and is known to increase the public program participation and poverty alleviation - an effective tool for **behavioural change**

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Risk Insurance

- Acts as a financial access tool
 - Provides access to loans when made conditional for borrowing as in the case of agricultural loan. Insurance has enabled millions of borrowers to obtain crop loans which they otherwise may not be able to
 - Soon after disaster when the communities need the finances the most
- The Asia Pacific region ranks fifth in terms of insurance premiums and the non-life insurance in particular rank after life, automobile and health insurance
- More and more governments are putting in place agriculture insurance or are studying the possibility of putting in place agriculture insurance with subsidy on premium
- The role of insurance in risk reduction has largely been theorized but the reality may be different on the ground

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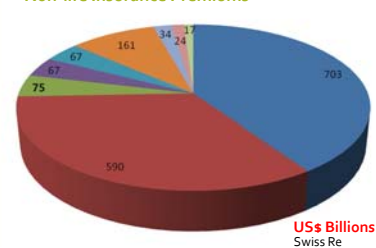
Risk Insurance

- In agriculture sector, primarily introduced as a means of buffering economic shocks from natural hazards
- If designed well, insurance can provide several benefits
 - Emphasis on **risk mitigation** compared to response
 - Provides a **cost-effective** way of coping financial impacts
 - Covers the **residual risks** uncovered by other risk mitigation mechanisms.
 - Provides opportunities for **public-private partnerships**.
 - Helps communities and individuals to **quickly renew and restore the livelihood** activity.
 - Depending on the way the insurance is designed, the insurance mechanism can **address a variety of risks** of climatic and non-climatic nature.
 - **Reduced burden on government**

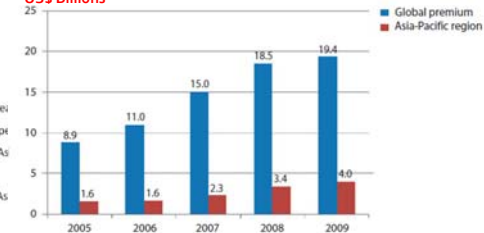
Arnold, 2008; Siamwalla and Valdes, 1986; Swiss Re, 2010 ¹³

Current Insurance Coverage

Non-life Insurance Premiums



US\$ Billions



Source: Global Premiums Iturrioz, 2010

- In contrast, Asia and Africa have one of the highest agricultural populations in the world
- The rural areas in these regions are reported to have highest poverty and seasonal unemployment where buffering income fluctuations will have significant socio-economic impacts

Why Insurance has not Scaled Up?

- **High residual risks in agriculture:** Only 35-40% of agriculture is irrigated in Asia; low expansion of drought and flood-tolerant varieties; poor extension facilities
- Inefficiencies attributable to **adverse selection** and **moral hazard**
- **Poor availability of data** to assess risks for designing effective risk insurance systems (e.g. weather data and data on crop loss)
- **Willingness to pay:** Economic, cultural and perceptual issues with both people at risk and policy makers
- Lack of **trust** on the insurance providers
- Poorly developed re-insurance industry
- And so on...
- **High insurance costs:** Costs to whom and compared to what alternative risk management strategy?

How to overcome these limitations?

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Addressing High Insurance Costs

Subsidy on Premium

Country	% Premium Subsidy
China	60%
Japan	49%
India	30%
Pakistan	70%
Philippines	100%*
ROK	50%

*for subsistence farmers only
FAO 2011

- Most governments address the insurance costs through subsidy on premium. Premium subsidies **rose 250 percent** over 2007 subsidy levels in the Asia Pacific region.
- Advantages
 - Easy to implement
 - High political impact
- Disadvantages
 - The real cost of risk is not conveyed to farmer
 - Possibility of high risk seeking behaviour
 - Disproportionately benefits rich farmers
 - Overall insurance costs remain same or even higher

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Willingness to Pay

Savings-Linked Insurance (Unit Linked Insurance Plan)



- Cheaper premium
- Poor households can have quick access to finances (overdraft with withdrawal on premium) and hence will not feel deprived of money for long periods of time
- Interest earned on savings can provide additional advantage: Promotes savings
- Help build assets in the long-term while protection against catastrophic risks
- Innovations in savings-linked insurance include designing insurance products based on interest earned on savings could substantially reduce the premium burden on insurance holders

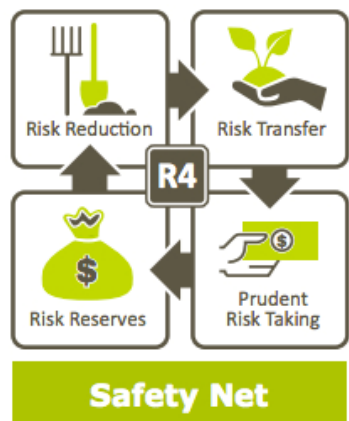
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Innovations in Insurance

- **Combining Insurance with Payment of Ecosystem Services**
 - Payment of ecosystem services and carbon capture and sequestration proceeds could be linked to insurance premiums and or investments made on risk mitigation options that can generate substantial PES proceeds.
 - E.g. certain types of intensive row-cropping systems and ecological farm scapes can promote ecosystem services such as a clean and well-regulated water supply, biodiversity, natural habitats for conservation and recreation, climate stabilization, and aesthetic and cultural amenities such as vibrant farm scapes etc. (Robertson et al. 2014).
- **Combining insurance with social security programs**
 - 40% of global population is not protected and 75% are inadequately protected
 - Combining social security and insurance can help extend social protection to under-served populations and can reduce the overall costs of insurance for the vulnerable sections of the population while extending financial inclusion benefits

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Bundling Approaches



WFP 2016

- Bundling of risk management options can have synergistic impact on the overall insurance costs
- **HARITA R4 Rural Resilience Initiative** of Oxfam, WFP
 - Risk reduction through water harvesting and other activities through which farmers can earn vouchers to pay for their insurance
 - Risk transfer through insurance: Partly subsidized and partly paid by the participating farmers
 - Provide avenues for livelihood diversification for prudent risk taking

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Indicators for Assessing the Effectiveness

Climate change vulnerability indicators	Economic change vulnerability indicators
Share of resistant crops	Change in access to credit
Percentage irrigated area	Change in subsidies
Access to infrastructure	Change in market facilities
% of income from non-farm sources	Change in livelihood diversity
% living in hazard prone area	Reduction in debt
% reduction in crop yield	Change in assets (focus on durable assets)
	Business continuity
	Income smoothing

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Evidence for Effectiveness Microcredit (RCTs)

Microcredit cases	Impact of financial inclusion		
	Increased	Decreased	No evidence/impact
Savings and borrowings, Uganda	<ul style="list-style-type: none"> Borrowing Savings 		
Microcredit program, India	<ul style="list-style-type: none"> Borrowing Investments in existing businesses Profits of pre-existing businesses Business expansion 		<ul style="list-style-type: none"> Consumption Health Education Women's empowerment Poverty Business profits
Microcredit program, Mexico	<ul style="list-style-type: none"> Borrowing Investments in existing businesses Business expansion Trust Female decision making 	<ul style="list-style-type: none"> Fire sales Depression 	<ul style="list-style-type: none"> Micro-entrepreneurship, Income Labor supply Expenditures Social status Subjective well-being Repayment frequency Default Food consumption (during intervention)
Seasonally adjusted microcredit, Bangladesh	<ul style="list-style-type: none"> Food consumption during lean season 		

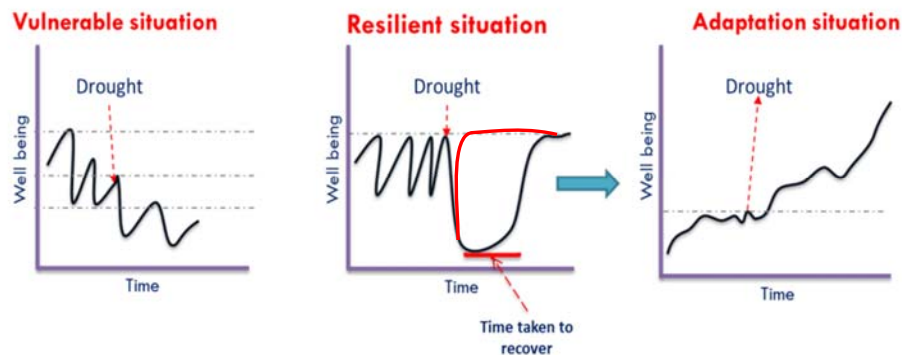
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Effectiveness of Cash Transfer Programs

Cash Transfer Cases	Impact of financial inclusion		
	Increased	Decreased	No evidence/impact
Pantawid Pamilya, Philippines	<ul style="list-style-type: none"> Child school enrolment Child health 		Dependency
Productive Safety Nets Programme, Ethiopia	<ul style="list-style-type: none"> Food security Education Farming Livestock Wage negotiation Dependency 	<ul style="list-style-type: none"> Selling of productive assets during stress periods Vulnerability to disasters and climate change 	
Minimum Living Standards Scheme, China	<ul style="list-style-type: none"> Income to poor 		Poverty gap reduction
Bolsa Família, Brazil	<ul style="list-style-type: none"> School enrolment Vaccination Social Entrepreneurship Women empowerment 	<ul style="list-style-type: none"> Social inequality Poverty 	

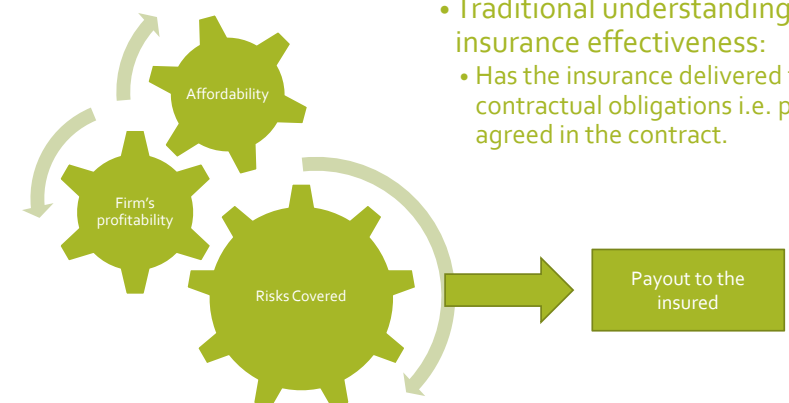
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Effectiveness of Insurance



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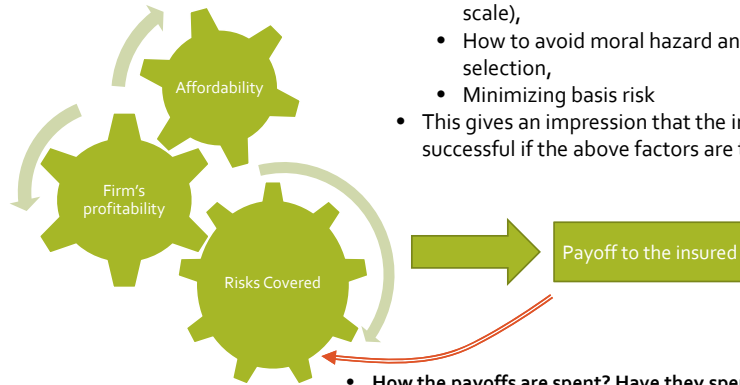
The Notion of Insurance Effectiveness



- Traditional understanding of insurance effectiveness:
- Has the insurance delivered the contractual obligations i.e. payout as agreed in the contract.

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Is this sufficient?

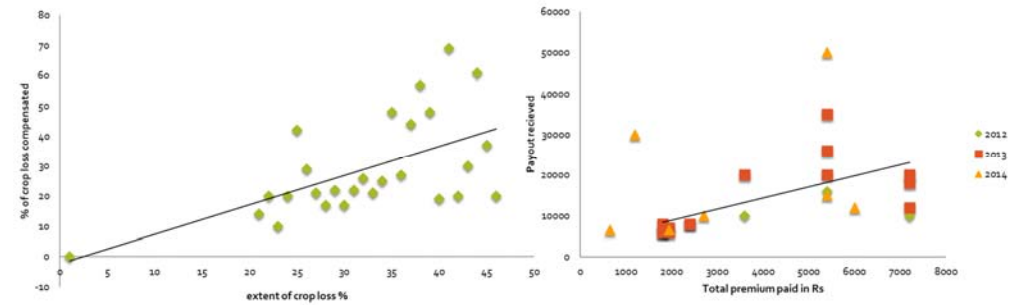


- Most literature and experiences talks insurance effectiveness in terms of
 - How many people are insured (Economies of scale),
 - How to avoid moral hazard and adverse selection,
 - Minimizing basis risk
- This gives an impression that the insurance will be successful if the above factors are taken care of!

- How the payoffs are spent? Have they spent on risk mitigation?
- Has there been long-term reduction in risks?

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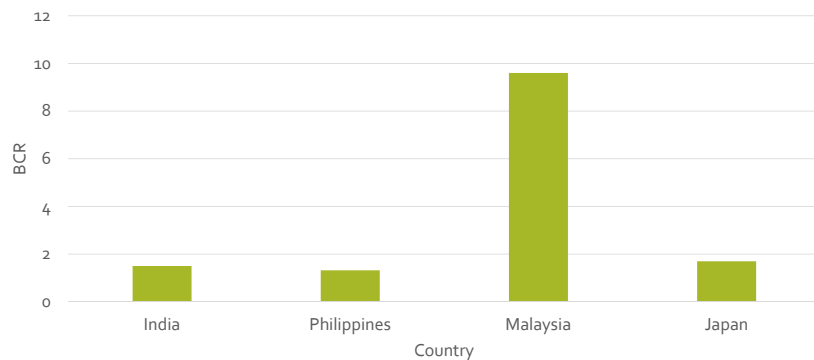
Loss vs Payouts, Premium paid vs Payout Received: An example from India



Lack of incentive and discouraging information > mistrust?

Prabhakar et al., 2017 26

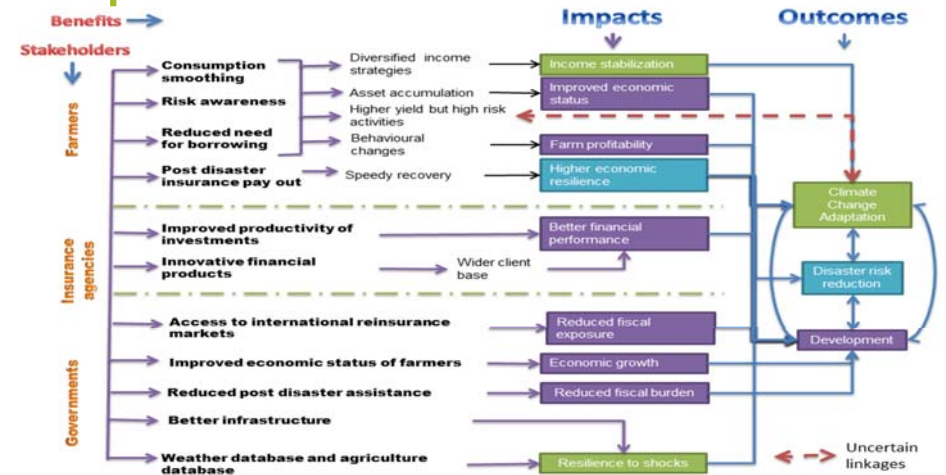
Cost Benefit Analysis: Simple vs Comprehensive



Prabhakar et al., 2017

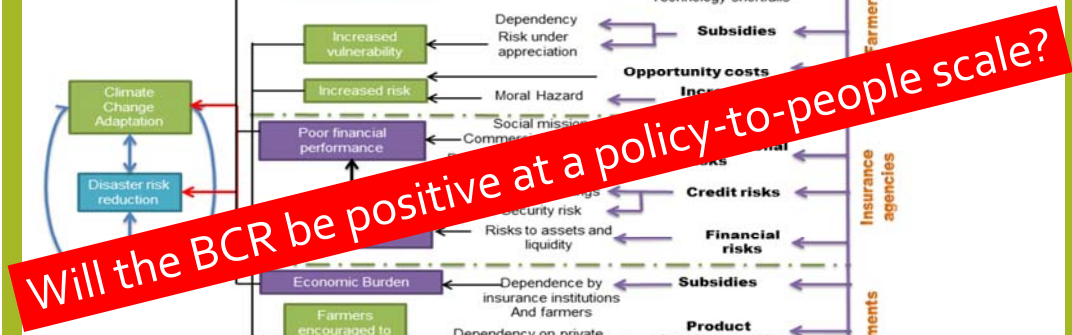
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Comprehensive BCR of Insurance: Benefits



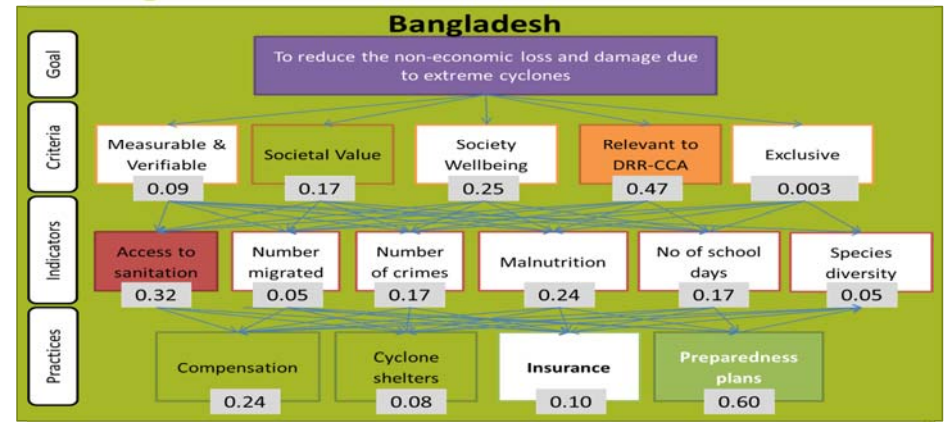
Source: Prabhakar et al., 2014 28

Costs...

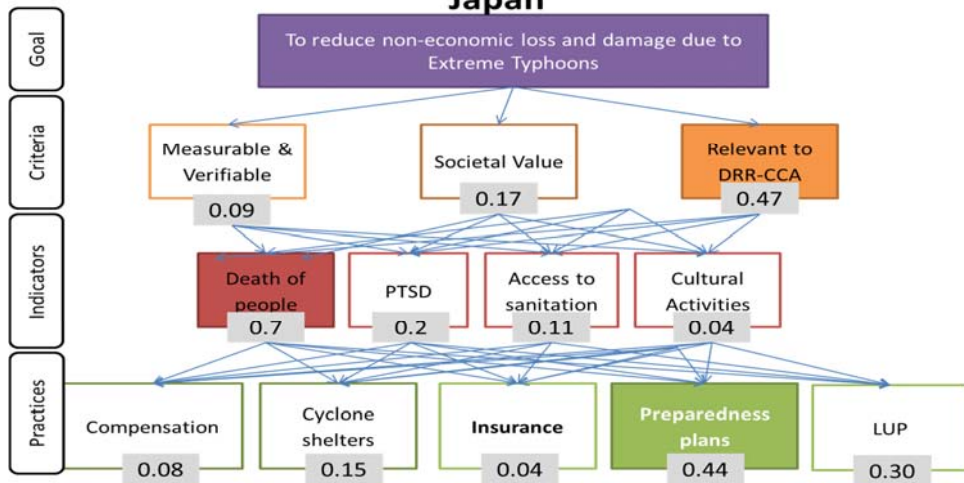


Source: Prabhakar et al., 2014 29

What about non-economic loss and damages?



Japan



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Which approach satisfies which indicators

Indicators	Most satisfying inclusion programs
Share of resistant crops	Crop insurance (Low to moderate)
Percentage irrigated area	Cash transfers (low)
Access to infrastructure	Cash transfers (moderate)
% of income from non-farm sources	Microfinance (moderate to high)
% living in hazard prone area	None (none)
% reduction in crop yield	Crop insurance (low)
Change in access to credit	Microfinance (very high), cash transfer (low), insurance (high)
Change in subsidies	None (none)
Change in market facilities	Cash transfer (low), microfinance (low)
Change in livelihood diversity	Microfinance (moderate)
Reduction in debt	Cash transfer (high)
Change in durable assets	Cash transfer (moderate)
Business continuity	Microfinance (very high), insurance (moderate)
Income smoothing	Insurance (high), microfinance (low)

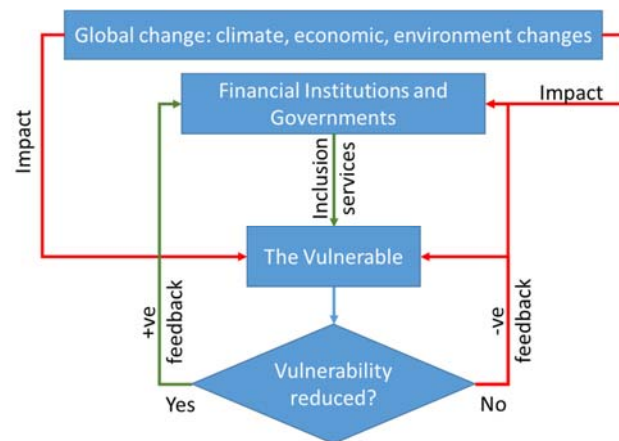
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Risk Reduction Potential of Financial Tools

	Vulnerability reduction potential									
	Economic changes					Climate change				
	1	2	3	4	5	1	2	3	4	5
CCT	■					■				
Microfinance	■					■				
Insurance	■					■				

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Financial Institutions Themselves are Vulnerable to Shocks too!



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Success is Conditional

- Savings increased only when members with high propensity to save are included. Borrowings increased only among those with less propensity to save and are poor and vulnerable.
- Positive effects were observed among the ultra-poor on the food intake during lean season after one year of intervention.
- All measures have different impacts, works differently for climate change and economic changes.

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Cont....

- No one-size-fits-all strategy works!
- Financial tools have shown positive trends in some indicators. However, there is **no evidence** that these indicators have led to risk reduction though it is highly likely that they could improve the **enabling conditions** for risk reduction.
- Risk reduction actually depends on more important enabling environment such as hazard, vulnerability, and risk assessments, presence of DRR plans and policies, regulations and laws that determine how risk reduction takes place on the ground. There is a need to conduct **RCTs** for deeper understanding on how the financial tools will help uptake and sustainability of these risk reduction measures.

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THANK YOU!

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