CLIMBER DISCUSSION BRIEF 6

Attempting to Address the Issues of Social Equity via Implementation of Index Insurance

Introduction

Interventions designed to manage climate risk bring issues of social equity to the fore, both with respect to how outcomes are distributed across society and how consequences will play out for future generations. Nevertheless, a focus on social equity is not inherent within the design of climate adaptation strategies and therefore needs to be deliberately addressed [1&2]. A focus on social equity, namely fairness in how people are treated in society, taking into account the social determinants and distribution of advantage or disadvantage, including ways the latter can be overcome, focuses attention on the social dynamics of interventions designed to tackle climate risk. This requires understanding how people's access to and uptake of climate risk-management interventions is shaped by existing inequalities, including those related to the uneven distribution of climate risk. In this context, the pursuit of equitable outcomes may involve trade-offs with other components of an intervention (e.g., between rapid scaling up vs. longer-term strategies to incorporate more impoverished farmers) or wider policy demands. These processes expose power relations as the distribution politics are negotiated. Thus, addressing social equity is not simply a technical concern. It is very important to note that failure to pay attention to social equity issues can result in distortions and inefficiencies that threaten the sustainability of climate adaptation and the broader contribution of agriculture to achieving the Sustainable Development Goals (SDGs).

About ClimBeR: Building Systemic Resilience Against Climate Variability and Extremes

Building Systemic Resilience Against Climate Variability and Extremes, or **ClimBeR**, is one of the Research Initiatives in CGIAR's new research portfolio that will deliver science and innovation to transform food, land, and water systems in a climate crisis. ClimBeR aims to transform the climate adaptation capacity of food, land, and water systems in the Philippines and five other countries, ultimately increasing the resilience of smallholder production systems to withstand severe climate change effects like drought, flooding, and high temperatures.

In line with this initiative, the International Institute of Rural Reconstruction (IIRR), in collaboration with the International Rice Research Institute (IRRI), developed discussion briefs that would further enhance the knowledge of ClimBer's stakeholders on *resilience*, *inclusiveness* and *women empowerment* in climate change adaptation.

[1] Eriksen, S., & Brown, K. (2011). Sustainable adaptation to climate change. Climate and Development, 3, 3–6.
[2] Collins, A. (2018). Saying all the right things? Gendered discourse in climate-smart agriculture. Journal of Peasant Studies, 45, 175–191.

Index insurance policies hold great potential for climate risk management by smallholder farmers in developing regions. Unlike conventional indemnity insurance, which relies on direct measurement of the loss or damage suffered, index insurance provides payment for loss based on a predetermined index, for example, rainfall levels, average area yield, or livestock mortality rates. Advocates of index insurance argue that with the advantages of cost reduction, timely payouts, and the use of an objective index to minimize adverse selection and moral hazard, it can overcome costly or unfeasible loss assessment by conventional means, particularly where there are a large number of small-scale farmers or where insurance markets are underdeveloped [3]. Such innovations are said to have the potential to contribute to at least six SDGs.

The paper summarised in this brief suggests that as a form of micro-insurance, more attention needs to be directed to social equity issues if index insurance is to be considered a socially sustainable climate change adaptation tool tailored to the needs of the poor.

What is index insurance?

Harvest failure due to climatic events, economic fluctuations, and illness are prominent among the risks faced by rural households. Such risks may be idiosyncratic, affecting an individual or household, or aggregate, affecting a community or region [4]. Index insurance, which protects farmers from a identified hazard, is designed for aggregate risk that covers a large area and, therefore many farming households (e.g., area yield assessment) or a specific climate risk that negatively impacts farmer livelihoods in a given location (e.g., weather-based index insurance) [5]. Payouts are triggered not by observed crop losses, but rather when a proxy (index), such as the amount of rain during a certain period or the average yield over a larger area falls above or below a pre-specified threshold. An index can be based on any objective data source for which there is a historical record, which closely correlates to the loss that is the subject of concern.

Index insurance against yield loss allows specific risks to be transferred to agricultural insurance markets. This can increase farmers' access to credit. By taking up insurance, climate risk can be addressed, and, hence, banks and other lenders are encouraged to make loans to farmers, which, in turn, facilitate farmers' investment in productivity, including the use of new agricultural technologies, such as drought-tolerant crop varieties [6], that have medium and long-term climate adaptation implications. Hence, insurance can increase resilience not only by providing a payout in bad years, thus helping farmers to protect their assets but also by enabling farmers to improve production in better years [7].

[3] World Bank. (2015). Achievements in ACP countries by Global Index Insurance Facility Phase 1 (2010–2015).
[4] Dercon, S. (2005). Risk, poverty, and public action. In In S. Dercon (Ed.), Insurance against poverty (pp. 439–451). Oxford: Oxford University Press.
[5] Greatrex, H., Hansen, J., Garvin, S., Diro, R., Blakeley, S., Le Guen, M., & Osgood, D. (2015). Scaling up index insurance for smallholder farmers: Recent evidence and insights, CCAFS Report, 14(14), 1–32.
[6] Bobojonov, I., Aw-Hassan, A., & Sommer, R. (2014). Index-based insurance for climate risk management and rural development in Syria. Climate and Development, 6, 166–178.
[7] GIIF (2015a). GIIF achievements in ACP Countries: Phase 1 (2010-2015). World Bank Group.

Climate change adaptation can be achieved by bundling farm inputs with insurance or by including insurance within a larger risk-management portfolio. Examples of the former include ACRE [8], and insurance-linked with credit in Zambia. The R4 Rural Resilience Initiative is an example of the latter approach whereby farmers can pay for the insurance through labor on climate-smart agricultural projects (Food for Assets), alongside access to credit and savings [9]. Insurance contracts are increasingly "bundled" with other products (on a mandatory or voluntary basis), including productivity-enhancing inputs and credit to improve farmer uptake of technologies and to increase financial institutions' willingness to lend

Expanding/Scaling Index Insurance:

Some technicalities effect both the scaling and reliability of index insurance. An important aspect relates to the existence and reliability of relevant data. Index insurance lowers transaction costs compared to indemnity insurance but also introduces basis risk, which is the difference between actual loss and the payout on an insurance contract. For index insurance targeted at individual farmers (i.e., micro-level), basis risk can result in a farmer experiencing yield loss but not receiving a payout or in a payout being triggered without any loss being experienced [10].

Characterized as the "Achilles heel" of index insurance [11], basis risk has implications for farmer demand for the product, the value that insurance policies hold for clients, and for the cost to insurance companies. If basis risk and price elasticity are correlated, mechanisms to lower basis risk are vital for increasing demand [12]. In this regard, new modeling, for example, based on advances in remote-sensing and proxy-based climate reconstructions, is extending instrumental records by hundreds of years and providing increasingly greater accuracy for climate information at a high temporal resolution [13].

Funding is also a factor that can influence the scalability of index insurance. Many index insurance schemes (micro, meso and macro) rely on public support to facilitate greater private insurers' involvement and enhance farmer uptake. This ranges from high public sector intervention, led by the government, to public-private partnerships (PPPs), or private system-led interventions. Convincing some donors can be very difficult as index insurance schemes can be risky investments and don't tend to be profitable.

[8] Wills, A., de Chorivit, G., Pshenichnaya, N., Morain, G., & Khadar, J. (2015). Micro-insurance in mobile agriculture – case study and takeaways for the mobile industry.
[9] Madajewicz, M., Tsegay, A. H., & Lee, R. (2017). Managing risks in smallholder agriculture: The impacts of R4 on livelihoods in Tigray, Ethiopia from 2012 to 2016.
[10] Dick, W., & Stoppa, A. (2011). Weather index-based insurance in agricultural development: A technical guide.
[11] Jensen, N., & Barrett, C. (2017). Agricultural index insurance for development. Applied Economic Perspectives and Policy
[12] Marr, A., Winkel, A., van Asseldonk, M., Lensink, R., & Bulte, E. (2016). Adoption and impact of index-insurance and credit for smallholder farmers in developing countries. Agricultural Finance Review, 76, 94–118.
[13] Bell, A. R., Osgood, D. E., Cook, B. I., Anchukaitis, K. J., McCarney, G. R., Greene, A. M., Cook, E. R. (2013). Paleoclimate histories improve access and sustainability in index insurance programs. Global Environmental Change, 23, 774–781.

Equity and Equality

Social equity is concerned with fairness and justice in how people are treated in society [14]. This implies considering how things, e.g., power, rights, resources, opportunities, etc., are socially distributed, agreeing on principles for distribution, and ensuring distribution is consistent with these principles [15]. Focusing on social equity helps us consider how social differences and associated inequalities may affect poor people's access to index insurance and how program design and implementation processes can contribute to the distribution of fair outcomes.

There are crucial differences between equality and (social) equity. Equality refers to being the same or being treated equally. However, while equity also relates to equivalence, it may mean treating people differently to overcome barriers that can impede the realization of equal outcomes. If principles of distribution address barriers that disadvantage some social groups more than others, then seeking equality of outcomes, in terms of fairness and justice, maybe a reasonable goal. For example, gender barriers may require differential targeting of women to ensure equal outcomes with men.

Index Insurance Through the Lens of Social Equity

Ensuring index insurance is as fair as possible raises the question of how issues relevant to social equity can be incorporated into the design and implementation of index insurance interventions. The table below (Table 1) identifies four components of social equity, building the parameters that shape the scope for fair distribution: equitable access, equitable procedures, equitable representation, and equitable distribution.

To better understand these four components, it is useful to illustrate them via real-life examples. For this, we can turn to the IBLI and ACRE programs. IBLI was developed as a risk-management tool by research institutions (ILRI, Cornell University, and the University of California, Davis). It aims to mitigate the effects of drought on the welfare of pastoralists in the arid and semi-arid rangelands of northern Kenya and southern Ethiopia by extending access to formal insurance cover. According to an index, registered pastoralists receive a payout when there is a severe lack of forage. In these rangelands, prolonged periods of abnormally low rainfall give rise to droughts, which account for 75% of livestock deaths in the Horn of Africa. Since its inception in 2012, IBLI's philosophy has evolved from emphasizing asset replacement to asset protection. Technical and product design and implementation have also changed, with contracts adjusted to improve accuracy, generate indemnity payments earlier, and make the drought indices more generalizable and scalable. Nevertheless, basis risk and insurance product quality remain key challenges, as do implementation mechanisms and financing [16].

[14] Guy, M. E., & McCandless, S. A. (2012). Social equity: Its legacy, its promise. Public Administration Review, 72(S1), 5–13.
[15] Jones, H. (2009). Equity in development: Why it is important and how to achieve it (ODI Working Paper No. 331).
[16] Carter, M. R., Janzen, S. A., & Stoeffler, Q. (2018). Can insurance help manage climate risk and food insecurity? Evidence from the pastoral regions of East Africa. In G. Lipper, L. McCarthy, N. Zilberman, D. Asfaw, & S. Branca (Eds.), Climate smart agriculture: Building resilience to climate change (pp. 201–225) (52nd ed.).

ACRE represents itself as the largest private sector-led index-based insurance program in Africa, although it, too has received World Bank/IFC GIIF funding. ACRE aims to mitigate risk of weather shock on agricultural production. Its target is smallholder farmers in general, with insurance "bundled" with other products. ACRE's design incorporates five key partners: farmers and/or farmer groups, the micro-insurance provider (insurers/reinsurers), seed companies and distributors, mobile network operators, and agrovets who give information and supplies [17]. For small-scale farmers, an organization/company ("farmer aggregator") is insured on their behalf (co-operative bank, agribusiness/seed company, etc.); large-scale farmers buy directly. The aggregator pays for a percentage of the insurance cost and subsequent payout, and a donor pays the remainder based on a subsidy model [18]. The aggregator benefits from return customers and information about farmer practices. For the maize seed guarantee scheme, a farmer buys a bag of seed containing a card code active for 21 days, registers through SMS, and the location is noted; satellite imagery and automated weather stations monitor rainfall, and, if insufficient, there is an automatic reimbursement.

For examples of how these four components are integrated into these two programs please refer to Table 2 below.

Table 1: Parameters for Social Equity Assessment Framework

THE PARAMETERS: WHAT COUNTS FOR SOCIAL EQUITY?	
In what ways does the intervention give scope for social equity concerns? Which stakeholders have interests, power and/or influence in driving social equity? What opportunities and/or barriers exist for generating fair(er) outcomes?	
Equity dimension	Key issue/examples of relevant questions
Access	Whether and how farmers are able to obtain index insurance, taking into account differences based on power, social characteristics (gender, ethnicity, etc.), wealth, resources and vulnerability to climate risk. • *Which farmers are most vulnerable to climate risks and do they have access to index insurance? Are these farmers those who are being targeted? Are any social groups excluded?* • *How inclusive is the intervention? What barriers, if any, prevent take-up of index insurance by specific groups of farmers? (e.g. social, political, economic, institutional or geographical barriers). Do barriers relate to existing (historically rooted) inequalities?* • *What opportunities exist to enhance take-up of index insurance?* • *Are there gender inequalities in the: (a) Impact of climate risks? (b) Access to index insurance? (c) Distribution of benefits? Can action be taken to address gender-related barriers?*
Procedures	Whether and how farmers and related stakeholders are able to participate in index insurance scheme decision-making and/or implementation, as well as in establishing rules and procedures themselves. • *Is decision-making transparent and accountable (and perceived to be so)?* • *Which stakeholders are involved in decision-making? Are processes inclusive?* • *Do women have equal opportunities to participate? (also taking into account opportunities for different groups of women—young/old, poor/wealthy, ethnic/religious divisions, etc.)* • *Are there effective mechanisms for dispute resolution and consumer protection?*
Representation	Whether and how farmers and related stakeholders are able to have their knowledge, norms and values taken into account. • *How are social equity and fairness understood by different stakeholders?* • *What are farmer/stakeholder understandings of climate risk in relation to their practices? Are these understandings gender differentiated?* • *Do the experiences of farmers/stakeholders regarding the impact of climate risk accord with assumptions embedded in insurance models?* • *What knowledge and values are held regarding investment in insurance products? How do they relate to other formal and informal risk-management/coping strategies engaged in by men and women?*
Distribution	Whether and how farmers and related stakeholders are able to benefit from index insurance, including the distribution of benefits across a farming population. • *How are burdens and benefits distributed?* • *Are benefits equitably distributed in current form (including for women)? If not, are there ways to improve fair distribution?* • *If specific groups of people are excluded from the intervention, are they able to access risk-management measures more appropriate to their circumstances? E.g. social protection through cash transfers.* • *Are there unintended (and negative) social impacts? Are they mitigated?*

[17] Refer to reference 8
[18] Refer to reference 8

Conclusion

Suppose agricultural index insurance is to be a climate change adaptation tool tailored to the needs of the poor in developing countries. In that case, attention needs to be paid to issues of social equity. The allure of index insurance can mask issues of power, social inequality, and differential impact in rural communities. The need to be aware of the danger of implicitly reinforcing inequality through the design and delivery of index insurance underlines how more consideration needs to be given to the way uptake of index insurance is shaped by existing inequalities and, in turn, how these inequalities contribute to differential development outcomes for smallholder farmers/pastoralists. The four components presented in the paper that is summarised here could be implemented to improve levels of social equity in such programs

.

A long-standing debate within index insurance circles is whether insurance should be subsidized to make it more accessible to poorer farmers. This is echoed within social equity concerns. For example, subsidizing the insurance premium could ensure that the benefits of the index insurance are shared across the farming population. However, such an approach can also distort the market.

Do we need to acknowledge that the main target group for index insurance is a "better off" category of nevertheless vulnerable farmers? If so, does it make more sense to focus on effective interventions for this group at the expense of the distribution of benefits to the poorest and most vulnerable farmers? Or can more informed targeting and innovative mechanisms be encouraged that ensure greater access to index insurance for a larger group of poor farmers, including marginalized categories such as poor women or single-headed households? For example, suppose the poorest, most asset-constrained farmers/pastoralists are to benefit from climate risk reduction. In that case, a conclusion is a need to integrate index insurance within a wider social protection system providing cash, assets, or food transfers.

Paying attention to the parameters of social equity within index insurance interventions helps ensure that outcomes are more equitable, with greater potential for inclusion and fairer distribution. There are no simple solutions, but they suggest that debate over social equity will lead to greater clarity over the development contribution that can be made by index insurance, together with refinement of the evidence base for assessing outcomes. This is especially important in light of the millions of dollars donors and governments are targeting at index insurance and the arguments that these investments will contribute to realizing some of the SDGs, including no poverty and gender equality.

Reference

This brief and the information within are based on a previously published report; Fisher E, Hellin J, Greatrex H, Jensen N. (2019)- Index insurance and climate risk management: Addressing social equity. Dev Policy Rev. 2019;37:581–602. A link to the original paper is available here.

CGIAR INITIATIVE ON Climate Resilience

To learn more about this Initiative, please visit: on.cgiar.org/ClimBeR.
To learn more about other Initiatives in the CGIAR Research Portfolio, please visit www.cgiar.org/cgiar-portfolio.

Partners:

IRRI International Rice Research Institute

IIRR INTERNATIONAL INSTITUTE OF RURAL RECONSTRUCTION