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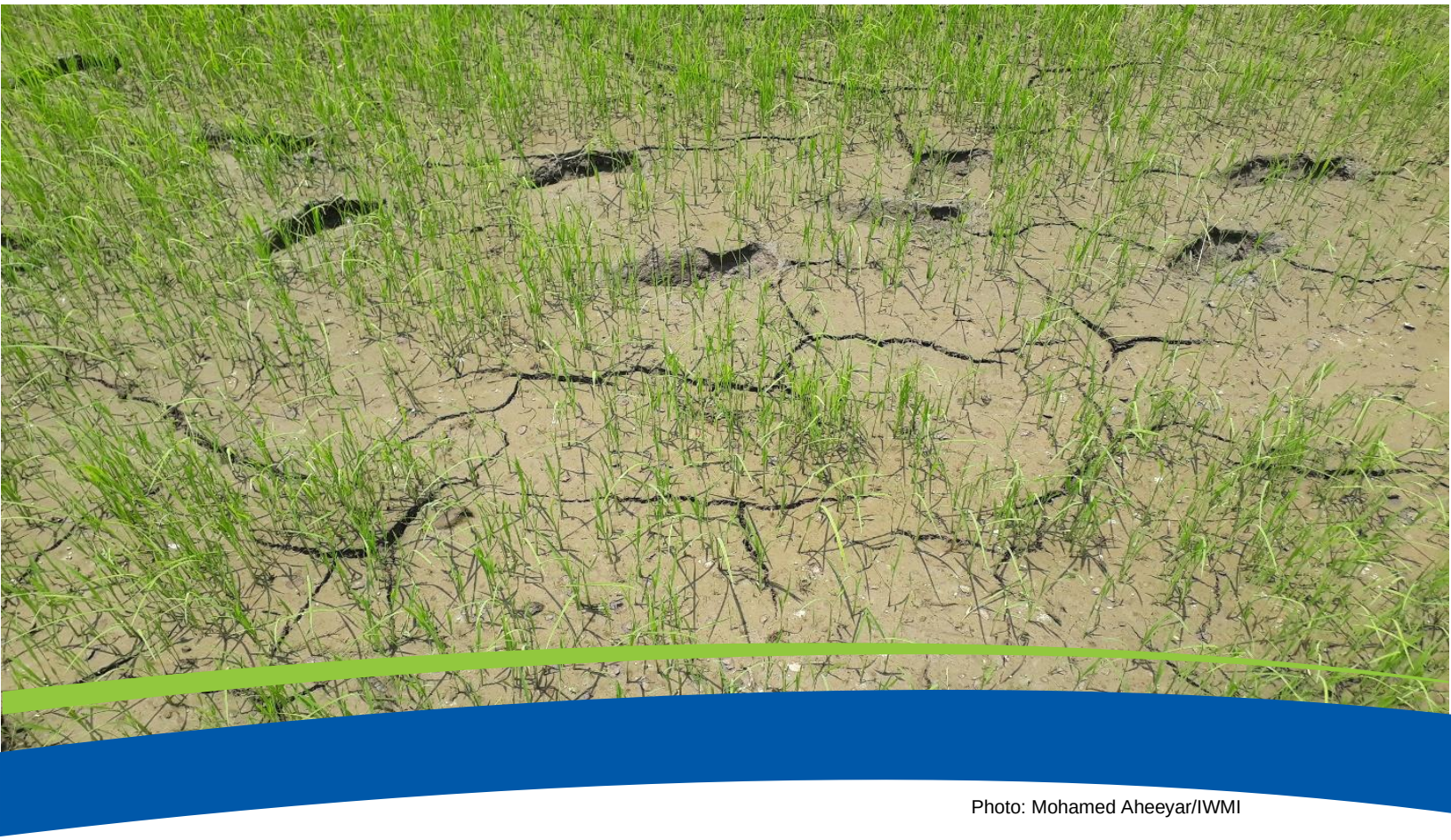

Photo: Mohamed Aheeyar/IWMI

Virtual regional dialogue on options to promote more inclusive weather index insurance

Workshop summary report
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Acronyms

AAIB	Agriculture and Agrarian Insurance Board
BICSA	Bundled solutions of Index Insurance with Climate Information and Seed Systems to Manage Agricultural Risks
CRIB	Credit Information Bureau of Sri Lanka
GDIC	Green Delta Insurance Company
IBFI	Index Based Flood Insurance
IFC	International Finance Corporation
IFPRI	International Food Policy Research Institute
IRDAI	Insurance Regulatory and Development Authority of India
IWMI	International Water Management Institute
MFIs	Micro-finance Institutions
NGOs	Non-Government Organizations
SDGs	Sustainable Development Goals
WII	Weather Index Insurance

Key Messages

- Climate change induced extreme weather events are intensifying in South Asia. **The extreme and erratic nature of these events pose serious risks for the region's economy and the millions of livelihoods** that depend on it.

- In this scenario, Weather Based Index Insurance (WII) can provide marginalized and vulnerable farmers a safety net and a risk mitigation strategy. **However, even as WII schemes have gained ground in the region, they often fail to target and reach those stakeholders that are the most vulnerable and excluded and at risk of further marginalization.**

- Reaching poor and marginal farmers is **a complex challenge that requires conscious effort and investments in strategies to help overcome context-specific barriers to their inclusion**.

- The **current focus of weather insurance is on maintaining overall production rather than who benefits, who does not and what this means for broader development goals and objectives**. This may reflect a policy disconnect between social inclusion in WII and broader development objectives, especially on poverty reduction, food and nutrition security and gender equality.

- **The need to make the link between social inclusion in WII and achieving broader development policies is especially important in South Asia** where almost 80% of farmers are smallholders.

- **Recognizing the feedback loops between not including the most vulnerable in WII and other development policies,** may trigger greater emphasis on questions of equality and equity in WII.

- **There is a clear need to sensitize government agencies and others involved in designing and implementing WII, that entry barriers go beyond economic factors.** Gender, caste, class, illiteracy, pure tenancy (landless who cultivate on rented land) and past experiences of farmers with insurance are non-economic factors that may be barriers to uptake.

- **The cost involved in identifying and overcoming entry barriers for marginal farmers is a major obstacle, given the need to cover large numbers of farmers. These costs are associated with high costs of obtaining freely available and reliable time series and real-time data.**

- **A data-driven approach to social inclusion is further complicated as available data is often limited to cropping and weather parameters with limited (if any) information on socio-economic diversities.** Addressing this important imbalance will have to overcome the technical challenges of sourcing large-scale social data.

- **Bridging this data gap will require donor and government investments at a systems level i.e. expanding national data infrastructure.** The benefits are likely to transcend WII initiatives to also support other adaptive interventions increase accessibility to marginal groups. This can go a long way in incentivizing insurers to adopt an inclusive approach from the get-go and make insurance business models economically viable. Donors for their part can also make efforts to link their support to the application of an inclusive approach by the insurer. Broader discussions are also

needed between different stakeholders on how the regulatory framework for WII can be made more effective and efficient so that it enables and encourages more insurers to enter the market.

- **However, the experiences of IWMI and other organizations in identifying and addressing inequalities in WII suggest that data gaps can be overcome at the individual initiative scale** through adequate social engagement. A lack of data alone therefore should not be a reason to exclude inclusion as a performance benchmark in WII.

- **Partnering with local NGOs/MFIs can be a cost-effective way of gaining the social science skills needed to engage meaningfully with target communities**. Such partners, if carefully selected, can bring prior knowledge of community structures and political economies, and the requisite skill sets and trust of people to the process.

- **The affordability of insurance premiums by poorer groups could be substantially reduced** through digital innovations, bundling the insurance with agricultural support services, and the application of aggregator models through a partnership with a trusted local organization. Premium payments can also be eased through installment payment schemes, and linking WII with community savings groups, where these exist.

- The framework developed by IWMI to promote inclusive WII was seen as comprehensive, although the above stated challenges are likely to impede its operationalization. **A milestone towards the adoption of the framework could be the willingness to pilot it, which could allow for learnings, refinements, and assessments of its efficacy in promoting inclusion in comparison to additional implementation costs.**

Background

Over the past decade, countries in South Asia have experienced more frequent and intense extreme weather events – floods and droughts – driven by climate change. In 2021 alone, Bangladesh, India, and Nepal experienced intense monsoon rainfall and floods spurred by an erratic monsoon, even as parts of India and Pakistan experienced intense heatwaves and drought The Intergovernmental Panel on Climate Change's (IPCC) latest report released in August 2021, suggests that such events are only likely to increase, noting that at 1.5 degrees and 2 degrees Celsius global warming levels, mean precipitation and monsoon extremes are projected to intensify in summer over India and South Asia.[1]

In the context of South Asia's predominately agrarian economy, the extreme and erratic nature of these events has serious implications for the region's economy and the millions of livelihoods that depend on it. It has been estimated that floods have been responsible for over 80 percent of all economic losses caused by disasters in the South Asia region with an annual average cost of over US $1 billion.[2] Droughts are equally if not more devastating. The IPCC 2021 report notes that in the future parts of South Asia may experience temperatures more than 41 degrees Celsius intensifying and prolonging heatwave and drought.[3] Amidst those that are most acutely and disproportionately impacted by these events are the region's small and marginal farmers and landholders that depend predominately on earning and income from agriculture and related sectors for their lives and livelihoods. These groups are also more vulnerable and at risk from the impacts of these natural disasters due to their greater exposure and poor capacity to adapt and hence lower resilience.[4]

In a scenario of increased vulnerability to weather induced shocks, Weather Based Index Insurance (WII) offers farmers and other food producers a safety net and can function as an effective risk mitigation strategy. However, even as WII schemes have gained ground in different countries in the region, such schemes often fail to target and reach those stakeholders that are the most vulnerable and at risk from further social and economic marginalization (Aheeyar et al. 2019[5]; Johnson et al. 2019[6]; Fisher et al. 2018[7]). Governments and insurers for their part also face challenges in trying to attract clients and

[1] IPCC, 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press. Available online https://www.ipcc.ch/assessment-report/ar6/ (accessed on 2 November 2021).

[2] Bronkhurst, V.B. Disaster Risk Management in South Asia: A Regional Overview, The World Bank: Washington DC, USA, 2021. Available online https://openknowledge.worldbank.org/handle/10986/13218 (accessed on 2 November 2021)

[3] IPCC, 2021

[4] Aheeyar, M, de Silva, S and Barua A. Social Dimensions of Weather Index Insurance in reaching marginal stakeholders: Lessons from Asia and Africa. Webinar Summary Report, IWMI, June 2021. Available online https://cgspace.cgiar.org/bitstream/handle/10568/114417/WII_Webinar%20report%20_June%202021.pdf?sequence=1&isAllowed=y (accessed on 2 November 2021)

[5] Aheeyar, M.; De Silva, S.; Senaratna-Sellamuttu, S.; and Arulingam, I. 2019. Unpacking barriers to socially inclusive Weather Index Insurance: towards a framework for inclusion. Water 2019, 11, 2235; https://doi.org/10.3390/w11112235

[6] Johnson, L.; Wandera, B.; Jensen, N. and Banerjee, R. 2019. Competing Expectations in an Index-Based Livestock Insurance Project. *The Journal of Development Studies*, 55(6), 1221-1239.

[7] Fisher E.; Hellin J; Greatrex H and Jensen N. 2018. Index insurance and climate risk management: Addressing social equity. *Dev Policy Rev.*; 00:1–22.

customers for such schemes and in the interests of ensuring broad coverage, often are unable to identify those individuals, groups, or communities that are most in need of such support.

As one amongst a range of adaptation mechanisms in the face of climatic uncertainty, WII initiatives and products need to be designed and implemented in a way that recognizes the heterogeneity and complex socio-economic diversity amongst small scale farmers and other food producers to address structural issues related to poverty, inequality and exclusion that are at the core of countries' development objectives and goals. Consequently, innovative approaches, strategies and tools are needed to support governments, insurers, and other insurance stakeholders to be able to understand the social, cultural, institutional, and economic contexts of local communities and design and rollout insurance products appropriately.

To discuss these issues further the International Water Management Institute (IWMI) organized a virtual regional dialog on **"Options to promote inclusive weather index insurance (WII)"** on October 27 – 28, 2021. Bringing together government representatives, insurers, practitioners, academics and civil society representatives from within and outside the South Asia region, the dialogue sought to discuss the feasibility of a transdisciplinary framework developed by IWMI that would enable different stakeholders engaged in implementing WII with the tools and approaches to tailor WII products and schemes to accommodate the needs of the most disadvantaged groups (see Annex 1 for the agenda and Annex 2 for a list of participants).

Regional Dialogue on Options to Promote Inclusive Weather Index Insurance

Context and objectives

IWMI's research and experience across South Asia has illustrated the complex social and economic diversities within and amongst farmers in the region. The large percentage/proportion of farmers in the region are small and marginal farmers who are engaged in different types of sustenance-based agriculture and include a considerable percentage of landless farmers with little to no legal rights over the land they till. Largely invisible also are the women farmers and women-headed households who due to socio-cultural norms and practices do not legally inherit or have ownership rights over their land. Social and cultural divisions based on caste, class, ethnicity, and gender mean that those small and marginal farmers that need support the most are often those that are the first to be left out of schemes such as WII. Illiteracy and lack of information and awareness about WII and its benefits, again mean that many farmers are not able to avail these benefits.

Given these social diversities and complexities, **Dr. Simon Langan, Director, Digital Innovations and Country Manager Sri Lanka, IWMI**, emphasized the importance of research to generate evidence on what works, what doesn't and how things are changing and evolving on the ground. He noted that generating a strong evidence base is critically important as a step towards influencing policy. As stakeholders that are critical to the food production system, Dr. Langan emphasized the importance of engaging and listening to the voices of smallholder farmers and finding more effective ways to address issues of inclusion in the context of WII against the backdrop of ever-increasing weather variability and climate uncertainty.

Underscoring, the importance of inclusion in WII, **Mr. Mohamed Aheeyar, Researcher on Agricultural Water Management, IWMI**, in his presentation noted that most WII programs have adopted a

technocratic approach to the design and roll out of products with a limited focus on the social science aspects. Combined with a poor understanding of local factors, diversity, and heterogeneity within and across farmer communities this narrow approach has resulted in a plethora of challenges including: (i) insufficient outreach to explain key product features that influence farmer purchase decisions (e.g. risks covered, payout trigger and rates); (ii) inability to overcome entry and system barriers in designing products; (iii) lack of trust amongst farmers to pay premiums to unknown institutions; (iv) failure to attract the target clients most in need of protection against weather shocks; and (v) inadvertently risking the expansion of existing inequality and poverty gaps.

To overcome these challenges, it is important to address the qualitative and not just quantitative dimensions of insurance. Specifically, financing and implementing stakeholders need to consider questions related to (i) who purchases and benefits from insurance; (ii) do they include the most vulnerable to these risks? (iii) if not, why are these groups being left out? (iv) what are the (individual, household, national) consequences of missing out the most vulnerable? And finally, (v) how can products and related processes better include the most vulnerable? Failure to address these issues risks maladaptation of WII products and of addressing the core objectives of index insurance which is designed to reduce communities' vulnerability to climate and weather induced disasters.

To discuss these issues further, the regional dialogue focused on the following key objectives:

(i) To enable a better understanding of how different stakeholders view the issue of social inclusion and practical considerations in promoting this.
(ii) To share best practices and experiences.
(iii) To discuss and finetune the draft IWMI "Framework for a Systematic Approach to Inclusive and Equitable Weather Index Insurance Schemes".
(iv) To identify practical challenges, issues and opportunities faced by different stakeholders – government, insurers, and reinsurers; donors and practitioners on integrating more inclusive approaches to WII in their work.
(v) And to work towards identifying a set of follow up actions and commitments on how to develop more socially inclusive WII products that will come

Social Inclusion and Gender in Weather and Climate Index Insurance

Weather and climate index insurance can greatly increase the resilience of marginalized groups and communities, however, such insurance schemes often shy away from directly addressing issues or challenges related to poverty. As **Dr. Deepa Joshi, Lead Scientist – Gender Youth and Inclusion, IWMI**, illustrated in her presentation on social inclusion in weather and climate insurance, it is key for us to acknowledge that at the heart of any WII scheme are people who are acutely experiencing the effects of climate change in addition to various other challenges. Dr. Joshi highlighted how often the poor often get caught between credit institutions - that view them as uncredit worthy – and development actors – who in the interests of advocating for greater social protection and an expanded role for the public sector – often neglect the role that economic and financial instruments such as insurance can play in providing safety nets for the most marginalized.

Dr. Joshi noted that many of the existing insurance schemes are very technocratic and mostly focused on crops. However, IWMI's experience in Bihar, India illustrates that there are other resources and assets such as livestock and labour that are also impacted by climate change. In addition, most climate insurance schemes have a limited focus on staple crops such as – rice, wheat, and maize – and tend to benefit

farmers with larger landholdings as compared to smallholder and marginalized farmers. Further insurance schemes, by focusing only on crop yield, often fail to consider the yearlong labour and effort that goes into the production of crops such as paddy for example. Thus, crop insurance does not always respond to addressing issues of everyday poverty and livelihoods that is the lived experience of many small and marginal farmers.

As a step towards bridging the divide between the current design of WII products with the lived experiences of smallholder farmers, IWMI in a pilot project[8] in Bihar, India, is using digital technology to document and analyse the experiences of vulnerable and marginalized communities. Using an ethnographic tool called "Sensemaker" IWMI is (i) collecting stories and lived experiences of smallholder farmers; (ii) analyzing these stories to make sense of emerging patterns and narratives and (iii) bringing together stakeholders who design programs with those that are experiencing climate vulnerabilities – to co-design and co-create solutions. Approaches such as this seek to better understand how insurance and other climate resilience tools can be better designed and adapted to reflect the lived experience and reality of those that these products seek to benefit.

Building on the theme of inclusion, **Dr. Berber Kramer, Senior Research Fellow, International Food Policy Research Institute (IFPRI)** outlined a framework to incorporate gender in agriculture and weather insurance programs. The framework proposes a three-pillared approach that considers gender inclusion in terms of its ability to (i) reach (create equality); (ii) benefit (create equity) and (ii) empower (create justice) men and women (see Figure 1). With reference to the framework, Dr. Kramer noted that most insurance programs tend to focus on how they can increase their reach to ensure that they have equal enrolment amongst men and women. She noted however that conventional extension systems used to create awareness of insurance programs may not reach women, as extension officers are often male, and women may be excluded from/in meetings due to restricted mobility, workload, childcare, and social norms. In this context, mobile-phone (SMS, IVR), reaching women at home, and working with female champions might be more gender-inclusive approaches.

Most findings indeed show that insurance does not reach women and men equally. For example, according to Akter et al (2016)[9] and Clarke and Kumar (2017)[10] women in Bangladesh have lower index insurance uptake rates than men. Similarly, according to Hill et al (2013)[11], compared to men, women are less likely to purchase agricultural insurance and buy lower-value insurance policies than men in Ethiopia (as is the case in Takahashi et al. 2016)[12].

[8] The project "Doing science with society" is funded by the CGIAR Gender Platform

[9] Akter, S.; Krupnik, T.J.; Rossi, F. and Khanam, F., 2016. The influence of gender and product design on farmers' preferences for weather-indexed crop insurance. *Global Environmental Change,* 38, pp.217-229. https://doi.org/10.1016/j.gloenvcha.2016.03.010

[10] Clarke, D.J. and Kumar, N., 2016. Microinsurance decisions: Gendered evidence from rural Bangladesh. *Gender, Technology and Development,* 20(2), pp.218-241. https://doi.org/10.1177/0971852416639784

[11] Hill, R.V., Hoddinott, J. and Kumar, N., 2013. Adoption of weather-index insurance: learning from willingness to pay among a panel of households in rural Ethiopia. *Agricultural Economics*, 44(4-5), pp.385-398. https://doi.org/10.1111/agec.12023

[12] Takahashi, K., Ikegami, M., Sheahan, M. and Barrett, C.B., 2016. Experimental evidence on the drivers of index-based livestock insurance demand in Southern Ethiopia. *World Development*, 78, pp.324-340. https://doi.org/10.1016/j.worlddev.2015.10.039

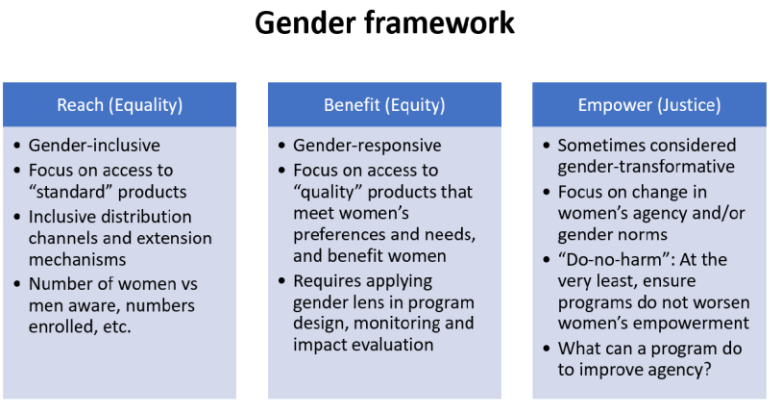


Figure 1. Source: IFPRI

Even when insurance reaches men and women equally, it does not benefit them equally. For this, it is necessary to have insurance that is gender-responsive in its design and implementation. This requires a focus on creating access to quality products that are tailored to women's preferences and needs and applying a gender lens in program design, monitoring, and impact evaluation. A third and critically important aspect is to think about what insurance programs can do to change the status quo in terms of gender norms and empower women relative to men (i.e., the domain for justice). While studies on this are underway, they remain limited; highlighting the need for more research in this area. At a minimum, programs should aim towards doing no harm to ensure that programs do not inadvertently worsen a woman's status, agency, or position in the household. Finally, in considering these three dimensions, it is also important to address issues of intersectionality and recognize that there are different types of men and women and that their needs and preferences will change over time based on stages in their life. In conclusion, in addressing issues of gender and inclusion it is necessary to consider and make available a menu of insurance policies that consider the diversity of men and women's needs and constraints.

Index Based Crop Insurance for Climate Risk Transfer: IWMI's Experience in South Asia

Dr. Giriraj Amarnath, Research Group Leader- Water risks and Disasters, IWMI, noted in his presentation the main reasons for poor insurance penetration for floods in South Asia are the lack of adequate flood risk and vulnerability modeling data; high costs involved in getting access to data; variation in types of floods and associated damage and consequent difficulties with flood damage assessment. In this context, data availability is important as without it risk modeling is not possible for insurance and reinsurance companies. Given the challenges of data availability, parametric insurance schemes – based on more accessible and affordable data sources such as weather stations or satellite data – offer important insurance solutions, especially for marginal and small holder communities.

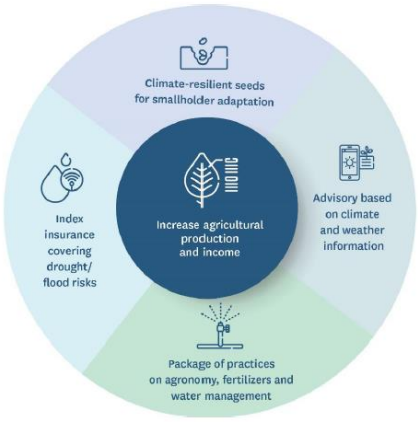
In South Asia, IWMI is piloting two types of index insurance products:

(i) **Index based flood insurance (IBFI)**: IBFI is useful in places where data availability is an issue. For example, in places where rainfall is not frequent, but communities are dependent on water from upstream catchments and therefore vulnerable to floods. In this context, IBFI is an innovative approach to developing effective payout schemes for low-income, flood-prone communities. Using hi-tech modelling and satellite imagery with other data to predetermine flood thresholds, IWMI has been piloting this approach in Bihar, India, Sri Lanka, and

Bangladesh since 2017. To date over 7000 households have been covered with a payout of USD 150,000 in the last four years by insurance companies. In Bangladesh, IWMI has piloted IBFI in partnership with Oxfam, Green Delta Insurance Company, the World Food Program, and several local partners. Using digital data provided by IWMI, the project was able to estimate losses experienced by casual labourers using flood information and Green Delta Insurance Company was able to make payouts worth BTD 5.4 million/USD 62,934 through mobile banking.

(ii) **Bundled solutions of Index Insurance with Climate Information and Seed Systems to manage Agricultural Risks (BICSA)**: BICSA seeks to de-risk insurance through bundled solutions that build resilience to supply chains and improve agricultural productivity and income. Through the product, IWMI and its partners offer a package of practices based on the use of agricultural technology. In India and Sri Lanka, IWMI has provided WII together with drought/flood tolerant hybrid seed inputs, weather forecasts and agriculture advisory services to insured farmers. To date, the pilot scheme has shown some success. In the last agricultural (Yala) season in Sri Lanka, IWMI was able to cover over 1300 households across 5 districts. Weather advisories via SMS were provided to farmers mobiles directly twice a week using weather forecast data acquired from (Indian Institute of Tropical Meteorology (IITM), European Centre for Medium-Range Weather Forecasts (ECMWF) and others, agriculture advisories once a week via SMS in consultation with farmers and agriculture officers. In total 17,161 SMS were shared in Sinhala and Tamil and weather insurance successfully paid out over LKR 1.56 million /USD 7,732 to over 1.56 million to farmers distributed as a demand draft by partnering with insurance company SANASA.

BICSA



Source: IWMI

In terms of lessons learned from IWMI's experience, one of the key requirements in index insurance is to ensure open access data for insurers. Easy access to reliable and affordable data, allows more affordable insurance premiums and helps build transparency and trust among users. Equally, it is necessary to promote innovative climate insurance models that consider how to incentivize and support farmers. For example, discounts in premiums for farmers participating in WII could be given if they are practicing organic farming or integrated nutrient and/or pest management. Similarly, if farmers grow drought or flood resistance crops or are making other efforts towards low carbon input cultivation and improving soil quality, drainage, and irrigation systems etc., similar discounts could be provided. Such innovations are important steps towards supporting and building broader resilience within farming systems and agrarian practices, such that insurance becomes a backup rather than first order solution. Finally, digital inclusion and the use of technology are important and highly relevant in sharing climate services in promoting livelihood security and building resilience among smallholder farmers.

Country Experiences on Inclusive Weather Index Insurance – India and Sri Lanka

Across the South Asia region, several countries are implementing and experimenting with different kinds of crop and weather-based index insurance programs. These schemes reflect a growing appreciation by governments, the private sector, and other stakeholders on the need to provide farmers with insurance products that provide them with some protection from weather and climate induced shocks and disasters.

India

In India, agriculture remains the mainstay of the economy and is a source of employment and livelihood for millions. There are an estimated 146 million operational farm holdings with an average small size of farm holding (approximately 1.08 ha). More than 85 percent of India's farmers are small and marginal farmers and 68 percent of farmers own less than 1 hectare of land.

In his presentation, **Mr. Dilip D. Dange, Deputy General Manager (Non-Life), Insurance Regulatory and Development Authority of India (IRDAI)** noted that, in India, the government has introduced two crop insurance schemes: (i) the Pradhan Mantri Fasal Bima Yojana (PMFBY)[13] and (ii) the Restructured Weather Based Crop Insurance Scheme (RWBCIS)[14]. The schemes are reinsurance driven and marked based programs. The sum insured offered for the crop is close to the cost of cultivation and scale of finance and the claim process is largely automated and eligible claims are paid within 30 to 45 days from the end of the risk period. The schemes have well-structured operational guidelines and clearly defined timelines for different activities and clearly defined roles and responsibilities of different stakeholders that include – central government, state government, insurance companies, financial institutions, banks, weather data providers as well as insurance intermediaries (banks, micro-insurance agents etc) and reinsurers.

In terms of premium and claims of yield-based programs, under the PMFBY, the range of premium collected is INR 280 – 290 billion with a claim ratio of around 85 percent (premium to claim ratio for the first four years). The area insured is in the range of 50 million hectares per year and farmers insured are in the range of 55 – 60 million every year. The RWBCIS is a smaller program with the premium ranging between INR 16-35 billion annually and claim ratios in the range of 90 percent. The area insured is in the range of 1.6-2 million hectares per year from year to year with 2 – 2.5 million farmers joining weather-based crop insurance each year.

Key challenges in the implementation of weather index implementation in India include (i) inadequate weather stations and delays in receiving weather data which serve as a hindrance to expeditious pay-outs and claim settlement; (ii) high costs of weather data especially from private data providers; (iii) poor understanding of insurance product features by farmers; (v) lack or limited coverage of many weather risks such as hailstorm, thunderstorm and floods causing catastrophic losses; (vi) poor design of weather index resulting in the inability of the index in capturing yield loss; (vii) issues regarding the installation, maintenance and auditing of weather stations; (viii) product design challenges especially in keeping premium rates balanced and affordable (ix) also issues with moral hazards i.e. wrong crop reporting or data tampering, security of weather station etc; and (x) issues regarding basis risk.

[13] The PMFBY is a predominantly area yield index cover complemented by add-ons such as cover for prevented, failed sowing, localised calamity, post-harvest losses and on account payment for mid-season adversity.
[14] The RWBCIS a predominantly area weather index cover complemented with add-on/index plus cover for localised natural calamities (such as hailstorm, cloud-burst etc) involving farm level assessment.

Key learnings from India include the fact that yield index-based covers are preferred by farmers. Weather index covers can be used for crops where standard yield estimation methods are not available for offering yield index-based cover, where historical yield data at the unit level is not available, and in the case of perennial crops as well as horticulture, vegetables, and multiple picking crops. Weather index cover can be made more attractive/beneficial by offering suitable add-ons such as hybrid covers, weather, yield, and crop loss assessment at individual farm levels. It is important to engage and consult different stakeholders including the government, farmers (assess the farmer requirement, key risks, premium affordability) and crop experts in the design of products to improve the acceptability. Crop and location specific weather parameters and pay out triggers need to be identified involving local agriculture universities, insurers and government. Considering the high cost of cover, a premium subsidy is necessary to make the product affordable for farmers. The use of existing rural financial institutions and government infrastructure is useful in program implementation, and it is important to have continuous involvement of government machinery in the implementation and monitoring of the program. The use of technology at all levels of program implementation such as product promotion, farmer enrolment, crop monitoring, loss assessment and claim assessment, etc. is key to reduce the operational cost for a lower premium.

Finally, from India's experience, some of the key steps needed to increase weather insurance acceptance include, enhancing farmer awareness, creating realistic knowledge of weather insurance through capacity building of stakeholders and awareness programs for farmers; adopting reliable, sustainable pricing; product servicing and timely pay-out and affordable premium rates. Offering additional premium subsidy for marginal/needy farmers, transparent implementation processes, effective grievance redressal mechanisms, proper weather insurance product design, minimizing the basis risk through product structure, weather station network etc, and developing need-based hybrid/index plus product involving indemnity cover, weather cover and yield cover and using technology more efficiently.

Sri Lanka

Agriculture is a key aspect of Sri Lanka's economy and even in 2021, employment in agriculture is more than 20 percent. In her presentation, **Ms. Kasundari Dissanayake**, **Head of Planning, Agriculture and Agrarian Insurance Board (AAIB) Sri Lanka**, noted that agriculture insurance was introduced in the country in 1958 as a pilot program. Subsequently, in 1961, the first-ever agriculture insurance policy was introduced as the Crop Insurance Act of 1961 – a compulsory insurance program wholly owned by the government.
In the era of closed economy, Sri Lanka's agriculture policy was focused on achieving self-sufficient agriculture therefore government involvement was significant. However, after 1977 in the era of the open economy, government involvement was reduced, and the compulsory scheme was made into a voluntary insurance program. In the 1990s the insurance sector opened to the private sector however the involvement of private insurers was limited due to high costs for cost estimation and high claim ratios. Post-2000, and in the wake of several climate-related weather events and disasters, the Government of Sri Lanka has focused attention on the agriculture insurance sector.

As a risk transferring method, fertilizer subsidy bundled insurance scheme was introduced in Sri Lanka as a national insurance program with no involvement by the private sector. In 2017, a contributory insurance scheme was introduced where 90 percent of the premium was paid by the government and farmers only had to pay LKR 675 to buy an insurance policy. This was subsequently extended for paddy, maize, potato, soya, onion etc. The sum insured by acre was LKR 40,000 considering the cost of production. This highly subsidized premium rate was charged only up to 5 acres for paddy and 2.5 acres for other crops. The scheme covered damages incurred only due to flood, drought, and elephant trampling. To cover damages

such as pests and diseases, farmers had to pay LKR 200 per acre. Initially, the scheme received a high rate of registration and positive response.

In 2018, the Government of Sri Lanka converted the scheme into a free insurance scheme – however, it has become a huge burden on the Government with annual compensation paid to farmers for crop losses ranging between LKR 2,000-5,000 million annually. To overcome this, there is a need for the government to pay greater attention to ensuring fair and efficient claim settlement as compared to eye estimation. It is also necessary to deal with reinsurance agreements to bear with unexpected shocks. In addition, IT based comprehensive risk analysis solutions are also required.

In terms of weather-based index insurance methods, in 2018, the Government of Sri Lanka introduced an index-based insurance scheme that included provisions for the meteorological department to set up sophisticated weather stations island-wide and make weather data freely available for the general public. The technical support for introducing index insurance was provided by IFC. In terms of product development procedures, AAIB did a survey of data available in different government departments such as agriculture, meteorology, and disaster management. As data available was high for rainfall, it was used to develop rainfall index products. In addition, for irrigated land, tank water level data was also used as a dual check. With respect to claim calculation – measures were taken to match claims percentages of index calculations with ground-level eye estimation.

Some of the challenges that have been faced include difficulties in the accuracy of claims. For example, it has been found that drought claims are more accurate than flood claims. Index insurance is a highly technical method and requires regular and frequent capacity building sessions especially when there is staff turnover. Side by side scheduled farmer awareness programs are also needed however AAIB's experience has been that despite this knowledge transfer and penetration efficiency have been quite low. Considering technological advancements – AI, GIS, remote sensing, and automated weather forecasting etc., is useful in bridging the gap of basis risk in claim calculation and estimation.

Finally, greater efforts are needed to analyse some of the challenges that are faced by different stakeholders in the insurance market. Drone-based loss assessment can be used however these are quite costly and not sustainable in the long term. There are also major challenges in identifying policyholders and farmlands as Sri Lanka does not have a comprehensive database like the Credit Information Bureau of Sri Lanka (CRIB) which includes all details including credit information. There is a need to develop a proper procedure to identify claims susceptible areas and damage prone areas and charge different premium rates based on the risk they have faced. This is needed to increase the profitability in the insurance sector as this information can then be shared with the private sector, banks, and other financial institutions, loan granting banks. The government should take steps to create a centralized risk management system and ensure data availability for the private sector and other stakeholders.

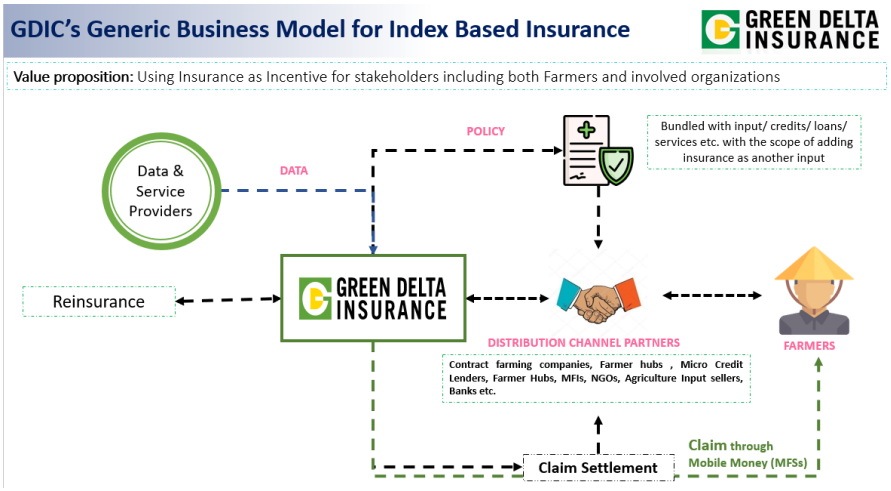
Insurers' perspectives on current initiatives, challenges, and future opportunities

Insurance companies in South Asia are increasingly looking at ways in which index insurance products can be made more inclusive and reach a broader range of stakeholders. However, as was evident from insurer presentations from Bangladesh, Nepal, and Sri Lanka, insurers face several challenges.

Bangladesh

In his presentation, **Mr. Syed Moinuddin Ahmed, Additional Managing Director and Company Secretary, Green Delta Insurance Company Limited (GDIC)** described the company's journey in implementing WII products. GDIC started its operations of WII with a small pilot in 2015 with the direct support of the International Finance Corporation. Over the past 6 years, it has scaled up its operations across 21 districts and 8 divisions of Bangladesh. GDIC has developed WII products for 10 crops including cash crops and covers 8 significant index perils that lead to significant crop losses due to climate change in Bangladesh. Green Delta has covered floods in 4 districts of 3 divisions. To date, 34,233 farmers have made claimants/received insurance payouts and Green Delta has impacted the lives of 675,937 and 183,735 beneficiary farmers.

GDIC works with several stakeholders including data and service providers as well as a diversity of distribution channel partners including contract farming companies, farmer hubs, micro-credit lenders, seed companies, NGOs, MFIs, etc. Efforts have been made to digitize and use technology to make settlement claims and payments to farmers. The company has also made concerted efforts to address issues of inclusivity, including organizing community awareness programs, focus group discussions and yard meetings to raise awareness on insurance products and build trust, as well as workshops and training for awareness creation among the field officers and their authorities and enable technical knowledge sharing on insurance product, trigger points, premium, and claims settlement. Finally, field officers of the partner organisations reach the farmers individually on a regular basis to build trust, awareness and create a positive impact.



Source: Green Delta Insurance

Some of the challenges experienced in developing an inclusive business model include: (i) illiteracy and lack of awareness amongst farmers; (ii) gender imparity in sharing knowledge and providing services to men and women; (iii) inability of farmers to pay premiums to avail index based agriculture insurance especially as the target groups are largely below the poverty line; (iv) domestic challenges including lack of government intervention and regulatory guidelines as well as challenges in scaling up due to the application of GST and VAT on premiums.

Potential solutions or steps to increase inclusivity in WII include (i) replication of inclusive business models for agriculture insurance of other insurers, (ii) enrollment of 20-30 percent of landless farmers along with regular beneficiaries of partner organizations, (iii) developing the skill and knowledge base of field

resources across the agriculture value chain, (iv) introduction of digital innovations supported by the government, (v) bundling of agriculture and disaster relief subsidies by the government, and (vi) organizing separate and dedicated awareness programs to educate male and female farmers. Finally, going forward appropriate changes in the regulatory framework are required in order to incentivize more insurers to enter the market and boost innovation in business models and insurance products.

Nepal

As with other countries in South Asia, agriculture in Nepal is increasingly being impacted by climate change with agriculture production and productivity being impacted by frequent droughts, floods, and other climate-related events. As **Mr. Udit Kafle, Deputy General Manager, Shikhar Insurance, Nepal** noted in his presentation, crop insurance was introduced in Nepal in 2013 for crops such as paddy, vegetables, fruits, cardamom, mushroom, cereal seed, etc. The basis of valuation was input cost and the types of risks covered included – fire, lightning, accident, "acts of god", and disease, etc. However, as the insurance was based on crop and not yield value, farmers were not properly compensated resulting in a lack of interest. There was therefore interest and demand for insurance on yield (product cost) and quick settlement of payment claims. This led to a move towards WII.

The first ever WII was introduced in the country in 2016 for apple farming in the Jumla area of north-west Nepal – a remote area that experiences both droughts and hailstorms. The trigger point for insurance claims is if the total rainfall between April – May in a given year is 60 mm of rainfall or less. In the first year of the scheme, no claims were paid however, subsequently claims have been paid every year. Notably, claims have been going up each year from 321 claims in 2017 and claims paid of NPR 1,527,511/USD 12,841 to 1353 claims in 2021 and NPR 25,070,749/USD 210,768 claims paid.

Shikhar Insurance is now working on scaling up WII in Nepal. From 1 area in Jumla district, WII has now expanded to 12 areas in 5 districts. Shikhar Insurance has used a variety of delivery channels including direct marketing by the insurance company, through micro-finance institutions (MFIs), agents, cooperatives, and rural groups. In 2018, pilot projects were also started in western Nepal in paddy and sugarcane in Belauri area Kanchanpur district. Shikhar Insurance is also studying the potential in other areas for paddy, wheat, maize, and sugarcane.

Key challenges experienced by Shikhar Insurance include the availability of reliable data due to few weather stations particularly in remote areas and challenges in using satellite data as it often does not match with data on the ground. Building the trust and confidence of farmers in crop insurance is another key challenge. Going forward Shikhar Insurance is looking to expand into more crops and areas, to cover other risks such as hailstorms and floods, identifying crop and weather parameters working with the government, international NGOs etc. Shikhar Insurance's efforts were awarded in 2019 with the 3rd prize in "Innovative Climate Change Adaption in Nepal"– a prize supported by UK aid funded Adaptation at Scale.

Sri Lanka

In his presentation, **Mr. Ravindu Mangala Herath, Assistant General Manager, Sanasa General Insurance Company Limited** noted that Sanasa introduced an index insurance program in Sri Lanka in 2010 and in 2012 for tea. Sanasa's approach has been to take a systematic product development process to make insurance products more inclusive. When Sanasa first introduced an insurance product in 2010, the company conducted an institutional assessment. Recognizing that it did not have the capacity or

knowledge to implement such a program, it recruited 30 agriculture graduates to implement the index insurance program. Subsequently, Sanasa conducted market research with a demand side survey for 2000 farmers based on which a prototype product was developed. The focus from the outset was on trying to develop a simple, affordable, and accessible product. The product was tested with 100 farmers covering key aspects such as coverage, benefits, premiums, claim processing, etc. In terms of the roll out of the insurance, Sanasa conducted training and capacity development programs for SANASA staff on different aspects such as marketing, technical aspects of the insurance products, and strategic considerations.

Some of the key challenges faced by Sanasa relate specifically to the (i) product: the product development process takes time due to basis risk, issues regarding the availability of historical data, etc., (ii) client: lack of trust in insurance, inability to pay premiums upfront, low literacy about transferring risk through insurance, lack of confidence on the reliability of data (types of weather stations, weather data collection methods, missing data, availability of backup stations): (iii) distribution: a limited number of distribution channels, high rate of distribution cost (commissions); (iv) insurance companies: lack of skilled staff for agriculture insurance and challenges in arranging reinsurance facilities.

Sanasa has had some success in addressing these challenges. In 2018, Sanasa tackled the issue of data availability by establishing 35 community base weather stations in Sri Lanka and using satellite data with the support of IWMI to develop a WII product. To raise awareness about WII, Sanasa developed a teledrama to educate farmers. Sanasa also developed a mobile application 'ifarm', which allows farmers to easily apply for insurance. The entire process through the application is automated from enrolment to claim settlement. Sanasa also provides farmers with a premium subsidy for WII to overcome the financial challenges faced by farmers at the commencement of the cultivation period and this has helped it is gradually taken off.

One of the key learnings from Sanasa's experience has been that insurance programs have significantly higher success rates when they are integrated as a part of ongoing agricultural programs. The successful introduction and execution of insurance schemes depend on intensive informational and education campaigns that need to take place on an ongoing basis. A long-term perspective and consistency in the approach are of crucial importance for the success of any insurance scheme or product. Including farmers as key stakeholders in all steps contributes greatly to better understanding, acceptance, and ownership of the process. It is necessary and important to establish partnerships and relations with relevant state and public and private sector actors. Full transparency of the process has ensured active participation and contribution of the farmers and the authorities. Finally, the use and introduction of innovative technologies improves accuracy and contributes to efficiency and effectiveness. Lastly, creativity and innovation are necessary to think of diverse ways in which benefits can be brought to farmers.

Recognition for Sanasa's work has included national and international awards including the National Agribusiness awards for consecutive 4 years from 2012 for the innovative product development in the finance and insurance service category. In addition, Sanasa Insurance won the National business excellence awards in 2018 and 2019 for introducing innovative products in the agriculture sector.

Towards an Inclusive Framework for Weather-Based Index Insurance

Building on the discussions on the importance of social inclusion in WII, on Day 2 of the regional dialogue participants were introduced to IWMI's inclusive framework for weather-index based insurance that draws on its experience with WII in the South Asia region. In presenting the framework, **Mr. Sanjiv de Silva, Senior Regional Researcher on Natural Resources Governance (IWMI)** noted that while WII has the

potential to be pro-poor this has not always been the case in practice. IWMI's draft framework outlines how this potential could be realized in practice.

Drawing on insights from IWMI's fieldwork and experiences from third-party's insurance, IWMI's framework takes a process-oriented approach that recognizes that actions supporting inclusion and equity run through the entire process of WII design, implementation, and post-implementation and further that inclusion and equity considerations should also influence the composition of actors involved in WII design and implementation (see Figure 3).

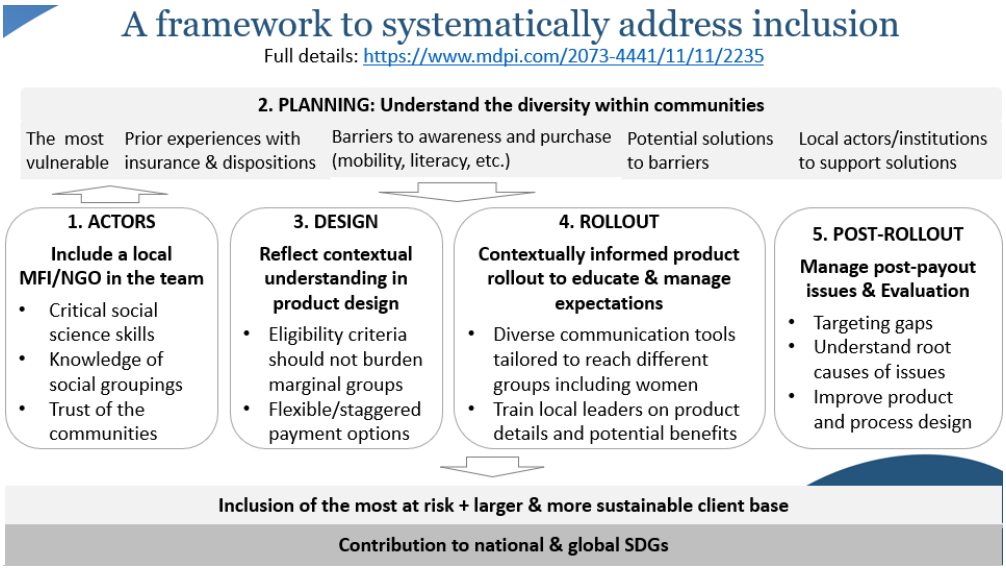


Figure 3. Source: IWMI

The framework is structured around five primary steps or stages that would broadly constitute the development and implementation of a WII product i.e. (i) team constitution, (ii) contextualization and assessment of challenges in developing an inclusive product, (iii) product development, (iv) product implementation and (v) post-payout risk management and adaptation (see Annex 3 for the detailed framework). In this manner, the framework is meant to help incorporate inclusion and equity considerations from the outset, through the design, implementation, and post-payout stages. It emphasizes the centrality of a sound contextual analysis to unpack farmers into landless (i.e., pure tenants), marginal/small, and large farmer classes, recognizing also the importance of consistently being sensitive to specific interests of and challenges faced by women across these farmer classes. It also makes clear that the process does not stop with the insurance payout, since managing unmet expectations of farmers post-payout will be necessary if long-term demand for the product is to occur.

The framework also recognizes that its operationalization is likely to involve additional up-front costs, although this investment is expected to increase not just the accessibility of the WII, but the likelihood of a long-term client base. As such, the level of investments could be expected to decrease significantly after the first year since households will be familiar with the product, and more trusting if the implementation process has been well managed, consultative, and transparent.

Stakeholder Perspectives on IWMI's Inclusive Framework – opportunities, challenges, and way forward

Weather index insurance involves a multitude of actors including policymakers, financiers, developers, implementers, and beneficiaries. Each actor has a different role to play in the process and has a unique perspective on the approach, process, and its implementation. To discuss and seek feedback from different stakeholders' participants were grouped into three groups representing key stakeholders participating in the dialogue i.e. (i) government; (ii) insurers and re-insurers and (iii) civil society and NGOs.

In breakout groups, participants discussed (i) the feasibility of framework (in terms of cost and return, availability of human resource, timeframe, existing regulations, etc.); (ii) challenges in implementing the framework and ways in which the framework could be improved; (iii) current initiatives that could support proposed actions in the framework as well as next steps to implement it.

Government

In the government stakeholder group, as the government representatives were largely from Nepal, the discussion primarily focused on the feasibility of implementing the framework in the context of Nepal. Participants noted that WII is a nascent concept in the country and is still in the pilot stage. However, participants felt that this was therefore an opportune time to engage with different stakeholders on the need to address issues of inclusion in WII.

On specific aspects of the framework and its feasibility, the group's views were:

Feasibility:

- The framework is very relevant to the context of Nepal where there are many marginalized tenant farmers who for various reasons are not able to access agriculture insurance schemes. While the government is focused on expanding agriculture insurance schemes, the response has been mixed as many farmers have had poor experiences with insurance programs in the past.

- Given the recent pilot and introduction of WII, this is an opportune time to engage with stakeholders on the importance of inclusion in WII and the framework can serve as an important roadmap.

- The timeframe outlined in the proposed framework is quite feasible. In terms of funds, with Nepal's federal structure, there are funds available with local and provincial governments that could be tapped.

Challenges:

- WII is quite a nascent concept in Nepal and there are not a lot of on-going projects. Availability of weather data is a key challenge and the availability of disaggregated data on gender and social inclusion is even more so.

- Most insurance companies in Nepal are in urban areas so access and reach to rural farmers is quite limited.

- While local and provincial governments have funds that could be accessed, there is a question on the extent to which inclusion is a local priority.

- WII is costly compared to crop insurance and farmers are not attracted to it. It is, therefore, necessary to explore why farmers do not find WII rates attractive and this is something that could be explored through the framework.

- There is also a lack of awareness, high skilled human resources in terms of tackling issues regarding inclusion amongst different stakeholder groups involved in WII. In Nepal for example, in some remote locations, the availability of reliable data and instruments is a basic challenge.

Future proposed actions:

- Efforts are needed to motivate insurance companies to come on board and incorporate gender and social inclusion dimensions in WII schemes.

- Data availability issues need to be addressed and for this, it is necessary to have a rigorous baseline survey that captures disaggregated data on gender and social inclusion.

Insurers and Reinsurers

The group had representation from insurance providers from Bangladesh, India, Nepal, and Sri Lanka. Insurers generally agreed that the framework was useful and provided a practical roadmap for insurers and other stakeholders to look at addressing inclusion in WII.
On specific aspects of the framework and its feasibility, the group's views were:

Feasibility:

- The emphasis on local partnerships was welcomed by insurers, many of whom were already working with different community and locally based organisations and partners in their programs.

- One of the principal concerns raised was winning over shareholders who are largely concerned with the profit aspects of insurance rather than the social aspects. Insurers noted it would be necessary to try and bridge the gap between the social and economic dimensions to ensure that there is a win-win for all stakeholders involved.

- Beyond profitability, there were also concerns around the initial investment costs and subsequently costs of distribution that would be involved in implementing the framework and how and by whom these would be borne.

Challenges:

- The non-availability of granular, reliable, and affordable historical data was raised as a key constraint for insurers.

- The affordability of insurance schemes for the poorest and most marginal farmers was raised as another area of concern. To address this issue, it was suggested that governments, donors, and

other external actors could provide some initial financial assistance and support to underwrite upfront costs.

- Lack of awareness and interest among farmers and lack of interest in WII products was raised as an issue raising a question about whether there is even interest on the part of governments or insurers to address issues of inclusion in WII when getting farmers interested in WII is already such a challenge. This illustrates the continued need to build awareness and create trust amongst farmers as users.

- In terms of payouts, insurers noted issues, where payouts are calculated externally and consequently, may not cover losses actually incurred.

- Finding NGO and civil society partners with the right social sciences skills and capacity to address inclusion and equity issues was also flagged as a challenge.

- Finally, insurers noted that equality does not always translate into equity. Balancing both equality and equity concerns thus presents a key challenge in designing inclusive insurance products that adequately address the socio-economic complexities on the ground.

Future proposed actions:

- Insurers noted that there was a need for a broader discussion on the regulatory framework within which WII currently operates so that it can be made easier for insurers to operate.

- Making WII financially viable for insurers and other stakeholders was also critically important to help reduce costs and to make such schemes more widely available and accessible. It was suggested that one approach could be for governments to make weather data freely available to insurers. Another option discussed to reduce the cost is to exempt crop insurance from the government's regular business taxes.

- Insurers also noted that there is also a need for greater investment in the sector as a whole and specifically in terms of – capacities, digital inclusion, developing support in terms of technology and last mile connectivity – providing mobile phones and internet coverage for example).

- Finally, greater cooperation and dialogue between national, local government, academia, and think tanks was deemed important and necessary to determine how best to take forward more inclusive approaches and frameworks.

Civil society and NGOs

The group included representatives and practitioners from civil society, NGOs, academia, and other organisations. The group also agreed that the framework was well designed and comprehensive and could serve as a useful tool and guide for stakeholders engaged in WII noting that there were specific challenges given the scale and diversity of the target populations in South Asia that would need to be considered.

On specific aspects of the framework and its feasibility, the group's views were:

Feasibility and Challenges

- It was noted that the framework could be quite challenging to implement in practice and that it was necessary to acknowledge that despite the best intentions even inclusive WII products could end up excluding certain groups or individuals inadvertently.

- Most of the insurance products currently available are highly subsidized and in most cases only one product is available. In general, the market is not open and tailored products are needed to be designed to suit different communities, stakeholders. However, as compared with mainstream products, more inclusive products are likely to have higher costs and greater investment in terms of input, transaction, facilitation, and outreach, etc.

- On the demand side, a concern was raised regarding the viability of designing an inclusive product that addresses the diversity and needs of the region's large and diverse population. A feasible solution could be to make efforts to try and include and engage with more local organizations and institutions from the start and throughout the implementation process.

- On the supply side, it was noted that the feasibility of the framework would depend on the extent to which concerns over profitability are addressed. Further that it is necessary to acknowledge that both ends – profits and equity – need to meet in the middle and find common ground. Therefore, it would be important to develop strategies that would enable and incentivize suppliers to go out and design inclusive products.

- Another key consideration in terms of inclusion is how to ensure that different stakeholders are involved from the beginning of the process and right through its implementation and review. Communication in this context is critically important. Engaging with farmers and building trust through capacity building and awareness generation activities have implications in terms of cost.

- To better understand what is happening on the ground the importance of engaging with local institutions was emphasized. It was suggested that tapping into local governance systems and structures could also help to tackle some of the infrastructure and capacity issues that can serve as constraints.

Future proposed actions:

- Given complex socio-economic diversities on the ground, consideration could be given to developing or promoting options to make the existing products to be more inclusive so that they specifically target certain excluded and vulnerable groups i.e., women farmers, women self-groups, etc., tribal groups, etc. This could be one way to address issues of exclusion that are bound to happen with most mainstream products.

- Aside from product design, communication is absolutely critical. Given the complexity of insurance products, it is necessary to think through how these can be made accessible to farmers. Dissemination and outreach using different kinds of tools i.e., pamphlets, leaflets as well as existing communication systems and infrastructure is important.

- Regulators have a large role to play at each stage in terms of the regulatory framework and environment but also in collecting and making data available. They could also potentially have a role to play in trying and testing products and facilitating its trial and testing.

- It is also important to consider the risk assessment side of the story and think of ways in which to better document and assess how farmers are living and experiencing extreme events such as drought and climate hazards etc. to get a fuller picture.

- Finally, WII cannot be viewed as a disaster management tool or a panacea for all climate induced challenges experienced by farmers. It must be viewed as one amongst a menu of approaches, strategies, and safety nets that are made available to them.

Conclusion

To conclude, as this two-day regional dialogue illustrated, climate and weather index insurance has gained tremendous ground in South Asia in the last decade. Given the region's largely agrarian economy that depends on the labour and input of predominantly small, marginal, and landless tenant farmers, WII products are not simply financial instruments but are key to building local community resilience and addressing issues of poverty and inequality on the ground.

The regional dialogue also highlighted several ongoing crop and weather-based index insurance schemes that are being implemented by governments and insurers across the region. However, it was evident that most of such schemes and initiatives do not specifically address issues of social inclusion and gender. A critical gap to emerge is the lack of connectivity between WII and key social parameters in broader development policy. By viewing WII purely as a means to encourage continued production, the importance of inclusion in supporting poverty reduction and food/nutrition security appears to be lost. Thus, re-positioning WII as a tool to guard against deepening gaps between social strata and hence as a contributor to broader development policy goals along with benchmark criteria, emerges as an essential step that can signal the importance of inclusion to other WII actors.

IWMI's framework for inclusive WII provides a roadmap for how different stakeholders involved in the design, implementation, and post-implementation aspects of WII can address issues of inclusion. However, there are still several challenges with respect to the integration and implementation of inclusive approaches in WII. These include the lack of reliable and affordable data in terms of weather and crop data but also more importantly data on gender and other social inclusion aspects; added financial costs associated with addressing inclusion aspects; lack of awareness, skills and capacity amongst stakeholders on how to integrate more inclusive approaches in WII; the need for financial support from donors and governments to enable and incentivize insurers and others to adopt such inclusive frameworks particularly in the start-phase and lack of conducive regulatory frameworks to enable insurers and other stakeholders to enter the market.

Going forward there is a need to continue dialogue and discussion with different stakeholder groups involved in WII to re-emphasize the importance and benefits of adopting a socially inclusive framework and approach to the design and implementation of WII. Generating further data that diagnoses WII performance with respect to inclusion will be key, as will be the creation of coalitions of actors who can speak on this issue. IWMI's experience in the South Asia region and its own pilot efforts in this space

suggests that WII products that take into consideration the diversity and heterogeneity of local populations and farmer groups that are their beneficiaries are more likely and effective at building local community resilience to the impacts of climate change and weather-induced disasters. Further that if stakeholders involved in WII are willing to work in partnership whether it is government, private sector, insurers, MFIs, donors, and practitioners – that there is scope to work towards more inclusive approaches and find workable solutions to some of the data, finance, outreach, and capacity building challenges that have been identified as key barriers to more inclusive WII products.

Annex 1. Agenda

Day 1

04:00-04:05 Welcome and opening remarks by **Dr. Simon Langan,** Director, Digital Innovation and IWMI Sri Lanka Country Manager

04:05-04:10 Instructions from the moderator **Ms. Mandakini D. Surie**, International Development Practitioner and Consultant

04:10-04:20 Objectives of the dialogue by **Mr. Mohamad Aheeyar**, Researcher, IWMI

04:20-04:30 Setting scene: Social inclusion in climate insurance: why it is important by **Dr. Deepa Joshi**, Lead Scientist – Gender Youth and Inclusion, IWMI/WLE

04:30 – 05:00 Country presentations on inclusive weather index insurance: objectives and challenges (Government)
India: Mr. Dilip . D. Dange, Deputy General Manager (Non-Life), Insurance Regulatory and Development Authority of India (IRDAI)
Sri Lanka: Ms. Kasundari Dissayanake, Head of Planning, Agriculture and Agrarian Insurance Board (AAIB)

05:00-05:10 Index based crop insurance for climate risk transfer: Current status, challenges, and way forward, **Dr. Giriraj Amarnath**, Research Group Leader, Water risks and Disasters, IWMI

05:10 – 05:55 Insurer's perspectives on insurance models and inclusive strategies
Lessons from index insurance models implemented by SANASA Insurance in Sri Lanka, **Mr. Ravindu Mangala Herath**, Assistant General Manager, Sanasa General Insurance Company Limited
Lessons from index insurance products implemented by Green Delta insurance Ltd in Bangladesh, **Mr. Syed Moinuddin Ahmed**, Additional Managing Director & Company Secretary, Green Delta Insurance, Bangladesh
Agricultural insurance experiences of Shikar Insurance, Nepal, **Mr. Udit Prasad Kafle**, Deputy General Manager, Shikhar Insurance, Nepal
Gender-inclusive insurance - A Global perspective, **Dr. Berber Kramer**, IFPRI

05:55-06:10 Discussion, Q&A Moderated by **Ms. Mandakini D. Surie**

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Day-2:

04:00-04:05 Welcome and Introduction to the sessions **Ms. Mandakini D. Surie**, Moderator

04:05 – 04:15 Introduction to the Dialog- Draft framework and overall objectives **Mr. Sanjiv de Silva**, Senior Regional Researcher in Natural Resources Governance, IWMI

04:15 – 04:20 Instructions for group work **Ms. Mandakini D. Surie**, Moderator

04:20-05:00 Discussion of the Framework and Guidelines: possibilities, challenges, options (three breakout sessions)

05:00-05:30 Group presentations

05:30-06:10 General discussion and way forward -Common and different views, next steps, and commitments towards the possibility to implement/test the Guidelines and what is needed for formal adoption, Moderated by **Mr. Sanjiv de Silva**, Senior Regional Researcher in Natural Resources Governance, IWMI

Annex 2. List of Participants

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Annex 3. Framework for a Systematic Approach to Inclusive and Equitable Weather Index Insurance Schemes

The table below brings together insights from the WII pilots in Bihar and Sirajganj and the literature review into a systematic approach to how future WII could address issues of inclusion and equity. This framework is cognizant of the Social Equity Assessment Framework for Index Insurance presented by Fisher et al. (2018), which presents a set of key aspects to consider for assessing dimensions of social equity, grouping these in terms of equitable access, procedures, representation, and distribution. The framework presented below adopts a more process-oriented approach to make clear that inclusion and equity considerations run through the entire process of WII design, implementation, and post-implementation. Indeed, these aspects should influence even the composition of actors involved in WII design and implementation. This framework is structured around five primary steps or stages that would broadly constitute the development and implementation of a WII product. In this manner, the framework is meant to help incorporate inclusion and equity considerations from the outset, through the design, implementation, and post-payout stages. It emphasizes the centrality of a sound contextual analysis to unpack farmers into landless (i.e. pure tenants), marginal/small and large farmer classes, recognizing also the importance of consistently being sensitive to specific interests of and challenges faced by women across these farmer classes. It also makes clear that the process does not stop with the insurance payout, since managing unmet expectations of farmers post-payout will be necessary if long-term demand for the product is to occur.

The framework also recognizes that applying the suggested framework is likely to involve significant additional up-front costs in the first year, although this investment is expected to increase not just the accessibility of the WII, but to ensure a long-term client base. As such, the level of investments could be expected to decrease significantly after the first year since households will be familiar with the product, and more trusting if the implementation process has been well managed, consultative, and transparent.

Table: Key steps to promote equity in index insurance design and implementation

Steps	Key considerations
Step 1: Team constitution	
• Include local partner institution(s) with appropriate knowledge, skills, and trust in target communities	This/these partner(s) will be central to i) ensuring product design is conscious of the different needs and capacities of households in the target communities; ii) ensuring implementation supports marginal farmers including women understand the product and prepare all documentation for eligibility, and iii) enhance risk management post-payout to ensure misunderstandings amongst farmers who did not receive a payout do not undermine the long-term demand for the product.
Step 2: Contextualization and assessment of challenges to developing an inclusive product	
Through the local partner institution(s), extend the feasibility assessments that will inform product design to an understanding of the socio-economic and institutional contexts. This will involve disaggregating farmers into farmer classes (landless, marginal, small, large) based on their landholdings and the area cultivated. This disaggregation, and attention to gender, can be used to: ○ Identify whether there is a correlation between farmer class and vulnerability to climatic risks, and interest in WII;	

Steps	Key considerations
○ Understand how men and women in different farmer classes are able to know about, understand a WII product and afford to purchase the product; ○ What other barriers may exist amongst each farmer class. ○ Identify the local institutions (local government organizations, line agencies) and their de jure and de facto roles, as these may become important actors in supporting or hindering product implementation. ○ Identify any community-based organizations and their activities, as these such as savings groups, may provide support to especially marginal men and women who wish to purchase insurance.	
• Who are the most vulnerable to weather-induced crop loss/damage?	• Are climatic risks the same for all farmers? ○ Is the depth and duration of flooding is same across all the cultivation land or do elevation and other biophysical differences mean some areas are more prone than others? ○ What are the characteristics of the farmers in these most vulnerable areas e.g. mainly landless/marginal farmers with limited asset bases?
• What is the level of trust in WII products and private insurance schemes more generally, and does this differ between different farmer classes?	• Is there prior experience with WII? ○ What were the experience and resulting perceptions of this kind of insurance amongst different farmer classes and women farmers and non-farmers? ○ To what extent has the prior experience shaped the understanding of WII products amongst men and women across farmer classes and varying literacy levels? • Are there discernible differences in willingness to purchase WII between men and women, and between different farmer classes? • Is there a correlation between willingness to purchase WII and degree of vulnerability?
• How will existing inequalities affect different farmer households' ability to know of the availability of a WII product; to understand it, and to afford it, especially of the most vulnerable? How can WII best serve these groups, including women farmers?	• How many farmers are landless? ○ Does landlessness coincide with high vulnerability to weather-related risks? ○ What are the specific challenges for especially landless and marginal/small farmers in terms of understanding the product; meeting eligibility criteria and affording the product? • How variable is literacy amongst men and women of different farmer classes? • Will mobility be an issue for women in terms of learning about the availability of the WII product? This may vary across farmer classes. • How do household dynamics influence decisions on whether to purchase the WII product, especially in the case of women farmers? This may vary across farmer classes. • Where there is out-migration of men, are the women in these households empowered to take decisions on the purchase of the WII product?

Steps	Key considerations
	• What additional challenges may women-headed households face (e.g., meeting eligibility criteria, filling forms accurately, accessing information or obtaining signatures from local government, etc.)?
Step 3: Product development	
• Given the heterogeneous local context in terms of farmer needs and capabilities, to what extent can product development minimize these challenges, while maintaining a business case?	• To what extent can the WII product be designed to address the disaggregated understanding of vulnerability across farmer classes? • How can eligibility criteria be structured to minimize burdens on the most marginal groups, including women? • How can pay for the product be made flexible to make it affordable to marginal groups (e.g., through staggered payment)? • Can the use of mobile transfers be used to minimize the transaction costs for the insurer and payout recipients alike?
Step 4: Product rollout	
• How can product rollout address the challenges that cannot be addressed through product design, especially concerning landless and marginal men and women farmers?	• How can trust in the product be built? E.g. o Through clear and inclusive communication strategies (see below). o Providing sufficient time for awareness to be created, recognizing that messages may need to be repeated several times. o By training local level leaders about the product and potential benefits, if their word is a source of confidence amongst farmers. • How can misunderstandings post-payout be minimized to ensure long-term demand is not undermined? o All awareness material should clearly emphasize payout trigger points, perhaps using scenarios to make clear the uncertainties involved. o Make clear what data links to the trigger point, how these are collected and associated uncertainties. o Explore whether farmers have options to verify all/some of this data (e.g., if some data such as rainfall are reported in newspapers) o Make farmers aware of variations in climatic events such as floods across several years, so they understand that conditions in one year may be different the next year and that the value of insurance is that this variability is covered in the long term. This will be an important perspective post-payout for farmers who do not receive any compensation, with respect to their decision to continue with insurance. • What strategies can address differences in literacy with respect to farmers' ability to hear about and understand the product? E.g.

Steps	Key considerations
	○ Using written, visual, and auditory media ○ Training local partner staff about the product • How could landless farmers be assisted if the eligibility criteria include proof of a land title or access to cultivable land? ○ Consider whether landowners will verify the lease of their land to their tenants. ○ Alternately, explore whether village leaders/ local government can perform this function. • How can a lack of mobility of women be overcome? E.g. ○ Using communication tools that reach women in the house such as radio, television, and social media ○ Showing video or street drama close to the homesteads ○ Employing female mobilizers who may be more attuned to social norms, have greater access to women and be more trusted by women.
• Which partner(s) will be responsible for these activities, and how much time and funds will be needed?	• It is assumed that the local partner(s) will be entrusted with these key activities, which concurrently will ensure greater inclusiveness of landless and marginal women and men farmers and build a basis for long-term demand for the WII product. • This will also involve ensuring the local partner(s) bring(s) the necessary social science skills to implement the activities that constitute implementation. Gaps may need to be filled by hiring suitable national consultants who ideally speak local dialects and are conversant with local customs. • Since the implementation process will consist of multiple activities, each addressing specific challenges linked to all or specific farmer classes or women specifically, realistic time and budget allocations for each will be essential. There will likely be variations in the time and budget needs of these activities.
• What roles could local institutions play in assisting the implementation process?	The assessment of local government, line agencies, and community-based organizations can be used to identify whether these can play specific supporting roles. These could include ○ Local government or village leaders (if they exist) certifying tenancy agreements to help landless farmers meet eligibility criteria ○ Local savings groups provide loans to their members to purchase insurance. Many such schemes typically target women from marginal households.
Step 5: Post-payout risk management and adaptation	
• What activities will be needed to assess farmer experiences, resulting in views about the product and how this may affect future demand?	Even with sound implementation, the complexity of the product means that the risk of misunderstandings and disappointment amongst farmers who did not receive a payout is likely to be high. There is for example likely to be a difference between what farmers perceive visually (e.g., level of flooding) compared to the finer resolutions of the data used for the payout trigger. Time and budget

Steps	Key considerations
	should be set aside for the local partner(s) to understand what the issues are; their root causes (i.e., what about the product is misunderstood), and to develop and implement suitable activities to clarify these issues. What activities will be best suited will depend on the individual circumstances but will likely involve clarifying how payout is triggered, and how the payout amount is calculated.

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