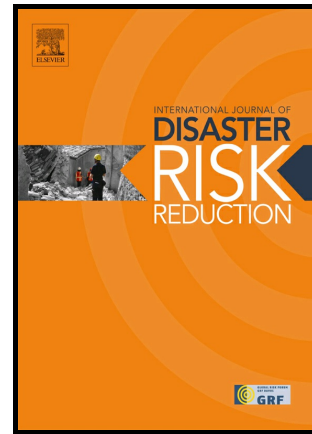


Author's Accepted Manuscript

Microinsurance for Disaster Recovery: Business Venture or Humanitarian Intervention? An Analysis of Potential Success and Failure Factors of Microinsurance Case Studies

Rebekah Yore, Joanna Faure Walker



www.elsevier.com/locate/ijdr

PII: S2212-4209(18)30126-2
DOI: <https://doi.org/10.1016/j.ijdr.2018.09.003>
Reference: IJDRR970

To appear in: *International Journal of Disaster Risk Reduction*

Cite this article as: Rebekah Yore and Joanna Faure Walker, Microinsurance for Disaster Recovery: Business Venture or Humanitarian Intervention? An Analysis of Potential Success and Failure Factors of Microinsurance Case Studies, *International Journal of Disaster Risk Reduction*, <https://doi.org/10.1016/j.ijdr.2018.09.003>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Microinsurance for Disaster Recovery: Business Venture or Humanitarian Intervention? An Analysis of Potential Success and Failure Factors of Microinsurance Case Studies

Rebekah Yore, Joanna Faure Walker

UCL IRDR (Institute for Risk and Disaster Reduction)

Abstract

To understand what elements of a microinsurance initiative may lead to an increased likelihood of its success as a disaster recovery support mechanism, characteristics of multiple microinsurance case studies were examined to test whether common trends could be identified. A review of 40 worldwide microinsurance initiatives from the last 20 years, both successful and unsuccessful, was conducted using the current literature. Examined characteristics were grouped into motivations for product development, insurance type, whether there was a pilot scheme for product launch, product coverage, product bundling, premium subsidisation, networks and partnerships, delivery channels, target markets, community input into the product design and built in education and awareness campaigns. Statistical testing suggested potential relationships between the likelihood of success and a number of varying factors, such as premium subsidisation, the incorporation of an international reinsurer, and the presence of a donor in the stakeholder network. Moreover, potential links between success likelihood and the motivation for and timing of the initiative launch were discovered. These findings, along with suggestions of minimum metrics for recording the performance of microinsurance programmes over time, are intended to help further the discussion on defining microinsurance, to inform microinsurance initiatives that may be set up to address the challenges of post-disaster transitions to recovery, and to aid in the tracking of longer-term community impact.

Keywords:

microinsurance, microfinance, disaster, risk, resilience, development, recovery

Introduction

Disasters disproportionately affect the world's poorest and most marginalised populations; their effects often exacerbate vulnerabilities and entrench social inequalities, hinder people's wellbeing and livelihood development, and stifle economic growth (1). As the World Bank sets 2020 as the target for universal financial inclusion (2), the availability, affordability and appropriateness for use of microinsurance remain the prevailing inhibitors to market entry and global expansion, enabling it to offer a better alternative to the humanitarian aid status quo. Despite ongoing experimentation in design and delivery innovations to make microinsurance work for all, no single model has yet revolutionised the approach to balancing transactional costs with affordable premiums for populations customarily excluded from formal financial systems, such as those with lower and seasonal incomes, or marginalised and informal communities, in a sustainable and context appropriate way.

Every year, large amounts of money are donated through aid to low and middle income countries following disasters, with little of the costs recuperated through insurance. Annual aid expenditure for low and lower-middle income countries in response to disasters between 2000 to 2015 averaged at \$2.2 billion (3). Much of this assistance came from global appeals and focused largely on the high profile 2004 Indian Ocean earthquake and tsunami (\$15 billion raised) and the 2010 Haiti earthquake (\$8 billion) (3). The problem lies in that the prevailing models of disaster relief aid are *reactive*,

where financial assistance is pledged during and after the event, and the amount raised is often both unpredictable and slow to materialise. Estimated current economic average annual loss (AAL) at the hands of disasters caused by natural hazards in 77 of the world's poorest countries stands at \$29 billion (3), with an estimated 10% chance of this increasing to \$47 billion in economic losses in 2018 (3). Only \$6 billion (12%) of current losses in these low and lower-middle income countries are met by humanitarian aid and a meagre \$2 billion (5%) are covered by insurance, leaving a \$39 billion shortfall that must be met by the people directly affected by disasters and their governments (3). The Global Assessment Report on Disaster Risk Reduction 2015 states that the human and economic losses associated with smaller yet repetitive disaster risks in low and middle income countries are escalating (4). The true cost of disaster risk is commonly absorbed by lower income populations and small businesses, and therefore it is often underestimated. Yet allowing the accrual of such risk can prove gravely debilitating for a country's social and economic growth prospects.

Wider penetration of microinsurance programmes could help to narrow the gap between total losses and insured losses; however, one key challenge remains in offering a clear and universally accepted definition of microinsurance, differentiating it from insurance more generally. Microinsurance, like insurance, encompasses a broad range of products, and as context often means that some microinsurance initiatives may be included in some definitions of microinsurance and not in others, clearly defining it in terms of its constituent parts can be problematic. Part of this issue lies in clarifying the identity of microinsurance according to its target market and purpose: whether it functions in a charitable capacity providing humanitarian assistance, or whether it is perceived as a commercially viable, profit-making business venture. What makes microinsurance "micro" rather than insurance more generally, could therefore lie in the fact that it is customarily considered in the context of who and for what purpose it is set up.

However, in spite of the many expositions of a precise and widely appropriate meaning, microinsurance has been referred to as "*an essential policy instrument*" (5) in meeting the Sustainable Development Goals, and adaptable insurance appears to hold enormous, yet untapped potential as a humanitarian and development support mechanism. It could encourage both a more rapid and effective return to normality following a disaster in the short-term, and potentially underpin a more robust and resilient recovery in the long-term. Lower income and marginalised populations frequently have inadequate knowledge of or access to formal financial products, which often means that in the event of a disaster, the only available option is to deplete existing savings, sell productive assets or decrease consumption to finance loss shocks (6). Reliance on ex-post (post-disaster) mechanisms such as government and aid agency assistance, international fundraising campaigns and inequitable relief and repair distribution that are all generated and routinely occur following a disaster, can often leave people in a state of uncertainty and inactivity for extended periods. This can delay and hinder reconstruction efforts, leaving populations vulnerable to further shocks in the immediate relief and transitional phases, and preventing effective planning that can support the development of more appropriate housing and livelihood resilience strategies over the longer term. Ad-hoc, post-disaster models for financing disasters have been recognised as being "deeply flawed" (7) and based on "begging bowl" (7) principles. Such approaches lack information over who and where requires what types of assistance and often result in both delayed and uneven funding and ambiguity over who owns risks and responsibilities. In terms of whether informal insurance can play a role in plugging gaps in social safety nets, research has demonstrated the inadequacies of such measures aimed at managing the increasing frequency and severity of shocks (6). Informal risk-sharing has often proven inefficient at protecting its lower income participants, illustrating that exclusion from formalised saving, borrowing and insurance mechanisms has the power to perpetuate poverty cycles, sustain risk

exposure and weaken resilience to the effects of environmental shocks (8). Whether microinsurance for disaster recovery is viewed as a humanitarian aid mechanism or as a business proposition, its continuity must be considered a success factor if it is to effectively provide rapid funding aimed at improving resilience following a disaster event.

In order to investigate how microinsurance schemes are being developed to address risk mitigation, resilience building, immediate post-disaster needs and long-term recovery, a collection of case studies was drawn upon from within the current literature on microinsurance worldwide, particularly those that have arisen in low and middle income countries within the last 20 years. Through collating a range of cases studies, the common features and characteristics could be identified and recorded, such as their choice of delivery channel, premium subsidisation decisions, agencies that came together to serve as stakeholders, policy coverage levels and insurance types. Case studies were then examined to investigate which characteristics of a microinsurance initiative's design may be considered supportive of its value as a disaster risk transfer mechanism. The characteristics were framed within the broader consideration of the simplified umbrella terms of *initiative success* and *initiative failure*. An initiative was deemed *successful* when it remained ongoing at the point of this study, or if it was only intended to remain operative for a fixed term, when it completed its entire period of operation. An initiative was deemed to have *failed* when it ended its operations unintentionally and prematurely due to unforeseen problems that made it unworkable. At this point, we have not considered the varying levels of success, such as if the microinsurance product was beneficial to its clients in its intended ways, the numbers and levels of client participation, and changing levels and methods of participation over time. Each microinsurance characteristic is statistically tested against the number of successes and failures among the case studies, so that potential links may be revealed between those characteristics and the successes and failures. Further qualitative analyses frame the findings contextually. The findings may then help in proposing new models for microinsurance as a disaster resilience measure.

Methods

An examination of the current literature, including peer-reviewed papers and industry reports, was conducted in order to identify microinsurance case studies suitable for analysis. Studies were included if they were self-identified by the implementers as microinsurance programmes, if sufficient information on the required components of the initiative could be gathered from the sources available, and if such information was clear enough that it could be objectively categorised in the same way by other observers. This enabled sufficient information on the insurance initiative to be gathered for review and analysis, but was also an important selection criterion that enabled reduced subjectivity within the study. Literature reviews in search of suitable microinsurance case studies for this paper were conducted between July and November 2017. Case studies were included if they had a project start between 1998 to 2014; the majority of start dates fell between the years 2010 and 2013.

A total of 40 microinsurance case studies was selected. Information from each microinsurance scheme was entered into a standardised case study design format created for this study, detailing the characteristics under the following categories:

1. The country and region of operation
2. The background and context in which the initiative arose

3. The type of microinsurance product and the target market (i.e. individual, institution, government, as well as indemnity-based, parametric or a combination of both)
4. Networks and partnerships (including consultants, brokers, reinsurers, insurers and delivery channels) involved in product development and launch
5. The covered risks (property, crops, health) and sums insured (how the product works), including the nature and method of payout distribution. Premiums and any level of subsidies provided by various agents
6. The reported findings, if any, and any potential for scale.

In order to understand if any of these frequent microinsurance characteristics may be potentially helpful in engineering a successful initiative, a case study database was compiled. A number of analyses were then performed to test for significance among the common characteristics reported by the microinsurance initiatives, and programme success, indicated by its continuation to the present day (at time of writing) or to the end of its intended term of operation.

By hypothesising which elements of a microinsurance scheme may support its success, without suggesting direct causation, significance of any relationship between success and the presence of identified variables can be tested at the customary 0.01, 0.05 and 0.001 levels. Four methods of statistical testing were used to test the null hypothesis that there is no relationship between the measured variables: contingency tables with Yates' Correction, contingency tables without Yates' Correction, Fisher's Exact Test, and the Benjamini-Hochberg Procedure for controlling the false discovery rate. We reject the null hypothesis if the probability falls below 0.01, thus concluding that a link between the variable and initiative success is likely. The same is true, but with less confidence, for probability values between 0.01 and 0.05. We judge probability values greater than 0.05 as insufficient to reject the null hypothesis, therefore we find no notable links in these cases.

A total of 33 hypothesis tests were undertaken for a number of key characteristics. The characteristics and their component parts are displayed in Table 1.

Table 1: *Microinsurance categories and component parts that were tested for significance against initiative success (continuation of the initiative to the present day - at time of writing - or to the end of its intended term of operation) for each case study.*

Motivations for initiative Development

Market Gap in financial or service provision

Weather-based hazards (the recognition that hazards such as flooding, drought, high winds etc. are increasingly detrimental to the agriculture sector and large segments of a national population's livelihoods. This does not include case studies that initiated following a specific disaster event)

Specific disaster event

No specific reason

Disaster related (a specific disaster-related event or a more general environmental hazard as the motivation for developing a microinsurance product)

Insurance type

Multi-coverage (combination)

Single coverage (one hazard only)

Parametric

Indemnity

Combination (parametric + indemnity components)

Pilot scheme or direct product launch

Pilot scheme

Product coverage

Individual level (micro)

Aggregator level (meso)

Micro and meso levels

Government level (macro)

Stand Alone or Product Bundling products

Stand alone

Premium Subsidisation

Subsidised premiums

Low income subsidisation

Lower middle income subsidisation

Community design input

Community input

Education and awareness campaigns

Education and awareness

Key stakeholders

International consultation

Low income international consultation

Lower middle income international consultation

Reinsurer

Donor

Delivery Channels

Community/worker organisations

Companies/businesses

Single delivery channel

Initiative Instigators

National instigator

International instigator

National and international instigator

Contingency tables were constructed to analyse and record the relationship between the two dichotomous variables that we wished to test: the case studies with a chosen characteristic, and the instances of initiative success (Tables 2 and 3). Testing the contingency tables allowed us to determine how many different ways the frequencies in the totals column could be achieved, and then determine the probability that the observed cell configuration could be obtained merely by chance.

Table 2: Contingency table format used for Yates' Correction and Fisher's Exact Test calculations

	Characteristic	No Characteristic	Total
Success (S)	a	b	a + b
Failure (F)	c	d	c + d
Total	a + c	b + d	a+b+c+d = n

Table 3: Contingency table format used, populated with example case study data

	Beginning after a named disaster	Not beginning after a named disaster	Total
Success (S)	6	28	34
Failure (F)	1	5	6
Total	7	33	40

Each characteristic chosen for analysis was addressed in turn, the contingency table constructed and the results for the Chi-square (without Yates' Correction), the Chi-square Yates' Correction, Fisher's Exact Tests and the Benjamini–Hochberg False Discovery Rate (FDR) procedure calculated. The Chi-square test calculates the probability that a relationship found in a sample between two variables is due to chance (due to random sampling error). These tests however, can be biased upwards when using a 2 x 2 contingency table, and results often compute larger than they should by calculating approximate p values. Yates' Correction was therefore applied to adjust this value and create a more accurate approximation. Fisher's exact tests were applied because the relatively small sample size of 40 case studies meant that often the conditions for Pearson's chi-square test were not met when using the Yates' correction test, and many of the values within the tables were less than five. Fisher's Exact Test enabled the *exact* p-values to be determined, and the testing for relationship significance with an even greater level of precision. This test enables us to establish how extreme each particular table (combination of cell frequencies) is in relation to all the possible frequencies that could have occurred, and therefore how likely it is that the frequencies we observe for each characteristic occurred by chance or otherwise. To account for issues arising from multiple hypothesis testing, the False Discovery Rate was used to control the rate of false discoveries in statistical hypothesis testing (while 5% is an acceptable threshold for one test, multiple tests on the same data at the 5% level can result in a larger number of false positives occurring). This method regulates the number of false discoveries in the tests that result in a significant result, and is therefore considered more adept at finding truly significant results.

Results

Table 4 shows the instances of significance discovered across the tests for the 33 hypotheses. Also included in this section are brief details from the cases studies on the characteristics that showed significance in the tests, to provide extra context. A summary of the microinsurance initiatives selected and analysed, along with sources for each, can be viewed in Appendix 1.

Table 4: Summary table of the significance tests across the hypotheses. The green boxes highlight the characteristics that showed significance at 5%, 1% and 0.1% levels.

Characteristic	Total responses	Total successes (continuation to present / intended end date)	Total failures (unintended + premature cessation)	Number with characteristic	Number without characteristic	Characteristic + successful	Characteristic + failure	No characteristic + successful	No characteristic + failure	Significance without Yates (%)	Significance with Yates (%)	Fishers Exact	FDR (%)
Motivations for Initiative Development													
Specific disaster event	40	34	6	7	33	6	1	28	5	5, 1	No	No	5
Market gap	40	34	6	15	25	11	4	23	2	No	No	No	No
Weather-based hazards	40	34	6	13	27	12	1	22	5	No	No	No	No
No specific reason	40	34	6	5	35	5	0	29	6	No	No	No	No
Disaster-related	40	34	6	20	20	18	2	16	4	No	No	No	No
Insurance Type													
Multi-coverage (two + categories)	40	34	6	10	30	8	2	26	4	No	No	No	No
Single coverage (one category)	40	34	6	30	10	26	4	8	2	No	No	No	No
Parametric	40	34	6	20	20	16	4	18	2	No	No	No	No
Indemnity	40	34	6	18	22	16	2	18	4	No	No	No	No
Combination	40	34	6	2	38	2	0	32	6	No	No	No	No
Pilot scheme or direct product launch													
Pilot schemes	40	34	6	18	22	14	4	20	2	No	No	No	No
Product Coverage													
Individual level (micro)	40	34	6	27	13	23	4	11	2	5, 1	No	No	5
Aggregator level	40	34	6	6	34	5	1	29	5	5	No	No	No

(meso)													
Micro and meso levels	40	34	6	4	36	4	0	30	6	No	5	No	No
Government level (macro)	40	34	6	3	37	2	1	32	5	No	5, 1	No	No
Stand Alone or Product Bundling													
Stand alone	40	34	6	30	10	24	6	10	0	No	No	No	No
Premium Subsidisation													
Subsidised premiums	40	34	6	16	24	14	2	20	4	No	5, 1	No	No
Low income subsidisation	15	13	2	7	8	6	1	7	1	5	No	No	No
Lower middle-income subsidisation	21	17	4	6	15	5	1	12	3	5	No	No	No
Community Design Input													
Community input	40	34	6	17	23	13	4	21	2	No	No	No	No
Education and Awareness Campaigns													
Education and awareness	40	34	6	27	13	23	4	11	2	5, 1	No	No	5
Key Stakeholders													
International consultation	40	34	6	28	12	24	4	10	2	5	No	No	No
Low income international consultation	15	13	2	10	5	8	2	5	0	No	No	No	No
Lower middle-income international consultation	21	17	4	14	7	12	2	5	2	No	5	No	No
Reinsurer	40	34	6	16	24	13	3	21	3	No	5, 1	No	No
Donor	40	34	6	12	28	10	2	24	4	5	No	No	No
Delivery Channels													
Banks, MFIs, insurance	42	36	6	25	17	22	3	14	3	No	5, 1	No	No
Community/worker organisations	42	36	6	9	33	7	2	29	4	No	No	No	No
Companies/ businesses	42	36	6	8	34	7	1	29	5	5	No	No	No
Single delivery channel	42	36	6	8	34	7	1	29	5	No	No	No	No

Initiative Instigators													
National instigator	29	24	5	11	18	9	2	15	3	5	No	No	No
International instigator	29	24	5	15	14	12	3	12	2	No	5, 1	No	No
National and international instigator	29	24	5	3	26	3	0	21	5	No	5, 1, 0.01	No	No

Motivation for Initiative Development

Case Studies Citing a Specific Disaster Event

Of the 40 case studies, seven were reported to have commenced as a result of a specified disaster event in the recent past; three within the same year as the named shock events, two the following year, and two three years post the stated disaster. For the purposes of this analysis, all three time scales were grouped as one. All were successful in the sense that they remained ongoing. The only case study in this category that failed was the pilot initiative in Indonesia, which began within the same year as the disaster event (a flood event in 2009) stated as the motivation for its development. The pilot failed to progress as intended due to a failure to adjust the product design, when elements of its provision proved inadequate for the apparent needs of the target market.

Insurance Type

Three times as many microinsurance case studies offered single category coverage e.g. business, as those offering multi-category coverage e.g. two or more types of cover such as life, health and disability. Almost equal numbers of case studies offered the newer, parametric/index insurance policies as those offering the more traditional indemnity-based policies. Two cases studies offered hybrid schemes where parametric and indemnity elements were present.

Microinsurance Product Coverage

Individual Level (micro)

A total of 27 microinsurance initiatives were aimed at the individual policy holder, making up a sizeable majority of the case studies. These initiatives are aimed at low income populations, offer a range of coverage from life and health to property, business and catastrophe insurance. These initiatives mostly require individuals within the target market to pay the policy premiums themselves, at various levels of subsidisation.

Aggregator Level (meso).

Only six microinsurance initiatives were aimed at the risk aggregator, which included Microfinance Institutions (MFIs), banks, cooperatives and worker associations. These initiatives were aimed at both formal and informal institutions serving low income populations. They offer a range of coverage, and require policy premiums to be paid by the risk aggregators. Meso level coverage allows aggregators to protect their financial portfolios and therefore the accounts, savings and loans of constituent client and members, often in the event of a weather-related disaster. In such circumstances, clients and members

tend to withdraw savings, request extra credit to cover losses and damages, and require repayment moratoriums so as not to incur overwhelming debt and insolvency as they try to recover assets or income.

Government Level (macro)

Three of the microinsurance initiatives were aimed at governments, from local and federal level coverage to national level coverage. The government level policies acted as a social protection measure and aimed to cover regional farmers and crop growers, often in times of drought or excess rainfall. Policies at this level enable a central agent to manage and distribute funds upon payout to more marginalised regions, or areas incurring particularly injurious loss.

Premiums and Subsidisation

Premiums are often a deciding factor in the scale up and success of an insurance product. In microinsurance, the importance of this factor is magnified, and pricing premiums accurately is a vital design element in creating adaptable and appropriate initiatives to the needs and capabilities of even more price sensitive target markets. Premium pricing and subsidisation is a highly debated topic, requiring the expertise of technical models, detailed understanding of the target market, and the incorporation of various innovations in risk sharing for sustainability.

Education and Awareness Campaigns

Case studies incorporating considerable levels of education/awareness as well as those including a relatively small degree of education/awareness are grouped together, against those not reporting any education/awareness component at all. Some case studies admitted on reflection that their education/awareness elements were insufficient or ineffective, however they were still counted as including this element.

Key Stakeholders

International Consulting Agencies

A total of 28 out of the 40 case studies demonstrated some level of design input from an international consulting agency. Such agencies range from global, multifaceted institutions such as the World Bank to specific, industry focused and private consultancies, offering product, pricing and delivery design expertise in microinsurance initiative development. Many of the consulting agencies established and developed to specialise in financial service innovation and provide knowledge and guidance to public and private entities wishing to pioneer microinsurance products for lower-income populations.

Reinsurers and Donors

Sixteen of the 40 case studies included at least one global reinsurer; and 12 of the 40 case studies made reference to receiving financial support from at least one donor. Relatively more initiatives demonstrating support from donors continued to operate than those supported by one or more global reinsurers.

Delivery Channels

Companies and Businesses

Delivery channels refer to institutions or entities through which microinsurance products are offered to the target market. The case studies featured a variety of delivery channels that were grouped into three primary categories: banks, MFIs and insurance companies; community organisations and worker associations; and companies and businesses (commercial partners). The majority of case studies offered their microinsurance products through one delivery channel only, however a number also employed more than one. Overall, 20% of microinsurance products were delivered through corporate entities such as mobile phone companies, utility companies, Postbank branches, supermarket chains, pawn shops, and mobile units. Progressively, innovation aimed at increasing the sustainability of and the access to microfinancial services, such as insurance, has harnessed the potential of cross sector partnerships. Merging the capabilities of public and private sector entities, or creating new networks purely within private industry, is often heralded as the type of innovation with the capability to transform microinsurance into a more universally viable support mechanism for low income communities. Transcendence of sectoral boundaries and the forging of unconventional partnerships in this way may have the ability to improve aspects such as outreach to particularly hard to reach target market consumers, to create simpler and more cost effective premium collection, to streamline loss adjustment and payout processes, and increase risk awareness and participatory education efforts

Initiative Instigators: National vs International

Many of the case studies featured one or more parties that began and/or led to the development and launch of the microinsurance product. These parties were classified as the initiative ‘instigators’, and were found to exist in 29 out of the 40 case studies. Such instigators were either national entities, such as the state government in Nicaragua, international bodies such as the World Bank in Malawi, or a combination of national and international agencies, such as the Cebuana Lhuillier Insurance Solutions (CLIS) - Gesellschaft für Internationale Zusammenarbeit (GIZ) partnership in the Philippines.

National Instigators

Eleven of the 29 case studies featuring initiative instigators were national entities. National instigators included all institutions and membership bodies that were established in the country of focus, and whose reach extended only nationally so to serve the people of that country. Their operations were not global, and they did not serve international consumer markets. National governments, local and regional banks and MFIs, as well as farming associations and cooperatives are all examples of national instigators discovered within the case studies.

International Instigators

International bodies, the most common type of project instigator, accounted for 15 of the 29 case studies that included a clearly stated project instigator. International instigators were generally large, global bodies with multi-programme operations worldwide, such as the UN’s World Food Programme (WFP), the International Finance Corporation (the IFC is a member of the World Bank Group), and Guy Carpenter, a consultancy offering reinsurance broking expertise, strategic advisory services, and analytics.

In summary, while no significance was found under Fisher's Exact Test, significance at one or more levels was revealed under the other tests for a relationship between the success characteristic and 16 of the microinsurance initiative characteristics. We do not imply a causal relationship through testing, but instead use the collation, review and analysis of case studies to stimulate discussion over commonalities, differences, and characteristics that may enable the success of microinsurance programmes globally. Microinsurance initiatives commencing in the wake of a specific disaster event showed significance, meaning that developing a microinsurance product as a result of local impacts experienced following a recent and relevant disaster event may be worthwhile. All levels of policy coverage found in the case studies showed some instance of significance, suggesting that individual level cover, risk aggregator e.g. banks, cooperatives, credit unions etc., a combination of individual and aggregator cover, and government level coverage may all be appropriate target markets when designing a microinsurance product. In terms of insurance premiums, it was found that subsidising premium payments revealed significance, indicating that initial, full, partial or phased subsidisation may be a valid consideration when designing a microinsurance product. The inclusion of an education and awareness campaign around insurance, how it works and its potential benefits also revealed significance. Looking to the stakeholder networks represented in the case studies, those including a reinsurer, a donor or an international broker or consulting company respectively, all revealed significant test results, at varying levels. Broken down a little further, the presence of an international broker or consulting company in the microinsurance initiatives based in lower middle-income countries also revealed a level of significance. Offering microinsurance products through delivery channels such as banks, microfinance institutions (MFIs), insurance companies and businesses such as utility and mobile phone companies all revealed significance when tested. Significance was also discovered among initiatives started by either a national body, an international body, or a national-international partnership.

Discussion

The need for financial assistance to quickly reach disaster-affected populations is widely recognised, and therefore bolstering the number of cash-based responses in humanitarian crises was a prominent theme of the 2016 World Humanitarian Summit. Innovations within emergency lending all centre on the principle of making available rapidly dispersible funds to affected populations to ease and expedite transitions into reconstruction of home and livelihood. Cash transfers however, can be experimental, subject to donor and local political influence, and unevenly distributed; they are also very firmly a response mechanism, and seldom encourage risk reduction and resilience building principles. Between 2009 and 2013, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) reported that 53 global donors spent approximately USD \$629 million on cash transfers to affected populations in response to disasters worldwide (9), and in 2016, over half of the European Commission's humanitarian food assistance was in the form of cash-based assistance (10). The problem with funds for post disaster recovery being dependent on often capricious humanitarian aid distribution and post-crisis lending is that it can create a Samaritan's dilemma of reliance on assistance for shelter and survival. This can deter and even inhibit more financially efficient programmes from taking hold, such as microinsurance, that have the ability to build resilience against future shocks (11).

The value of insurance is found in its ability to support proactive decision making based on the understanding of risk among its client base, to reduce reliance on post-disaster aid, and in the speed and reliability of funds it can deliver to those in need. A number of the case studies in this paper

demonstrate how insurance is adapting to address the time lags in the delivery of assistance often associated with aid distribution and traditional indemnity-based loss adjustment insurance models. Parametric insurance, based on measurements of the physical parameters of hazards, can potentially deliver payments to clients with very little delay following a qualifying disaster event, or, potentially even before. Crucially, while insurance is often considered an ex-post (post-disaster) enabler, as money is released after a disaster event has occurred, it can also serve as an ex ante (pre-crisis) disaster prevention and preparedness mechanism. Ex ante value can often be gained from taking out an insurance policy, especially in the realms of small business and agriculture, as understanding risk exposure enough to purchase insurance protection can in fact encourage further risk mitigating behaviour. This is often especially true when microinsurance is secured by governments and the benefits cascaded to citizens, as is demonstrated by the Ethiopian case study represented in this paper (12).

Although the benefits of microinsurance can be clearly articulated, defining microinsurance itself, particularly in light of its more recent development as an industry, can be difficult. Interpretations frequently cite low income populations as target markets, and low premiums as a defining characteristic, raising the further question of defining what is actually meant by *low income* and *low premium*. Contextually this varies; for example in Brazil, microinsurance “*aims fundamentally to preserve the socio-economic and personal and family situation of the low income population*”, defined as “*the segment of the population which monthly income per capita is up to three [times] minimum wage national reference (US\$624)*” (13). From the perspective of a national government, the need to define microinsurance from a primarily practical standpoint has led to a surge in global discussion over what makes microinsurance *micro*, and whether a quantitative, qualitative, or combination approach to definition is most appropriate. The conceptual debate continues, and as microinsurance evolves to increasingly protect portfolios and institutions that serve individuals as well as the individuals themselves, the scope of definition must widen to accommodate it in ever more innovative ways.

Conceptually, microinsurance can be viewed as an accompaniment to microfinance more generally and can create a market for the private sector while supporting public sector social security structures (14). The term arose out of a perceived industry need to highlight the need to understand and cater for the idiosyncratic features and requirements of low income populations that are largely excluded from formal financial services. While aimed generally at wider inclusivity, it has been noted that microinsurance is not necessarily for the “poorest of the poor” but helps the “working poor who have something to lose” to recover quicker from transient shocks (15). It best serves those who hover around the poverty line and who could easily fall into destitution at the hands of a poor harvest, debilitating illness, or the destruction of a business due to severe weather. However, this argument has been countered, and models including populations at the very base of the pyramid have widened further the reach of microinsurance (16).

The definition debate naturally extends to whether microinsurance should be considered business or charity, given its target market. Defining microinsurance through a humanitarian lens, irrespective of the level of coverage an initiative may provide, can lead to it being perceived as both charity and business, or even a combination of the two. The social bottom line of many microinsurance products, and the involvement of actors such as NGOs, donors, UN agencies and government departments such as the UK’s Department for International Development (DFID) lend a sense of charity to microinsurance. The Ethiopian case study in this paper for example, presents a weather index initiative forming an early example of a humanitarian aid derivative developed by the Ethiopian

government in partnership with the UN to protect farmers against drought-driven crop failure (12). Although administered through government, a global reinsurer and the World Food Programme (WFP), premiums were paid on behalf of the farmers and a cash-for-work programme was initiated in lieu of food aid when qualifying drought levels were anticipated.

Many current microinsurance schemes do benefit from assistance from donors and are perceived therefore to have a charitable element. Thirty per cent of the case studies received financial support from at least one donor, with the World Bank, the International Finance Corporation (IFC – a member of the World Bank Group), DFID and national governments occurring with the most frequency. When tested, significance was found in the relationship between the presence of a donor in the stakeholder network and the initiative success, however the nature of donor contributions could support or weaken a product's potential for financial viability. Donating to microinsurance research can provide grants to encourage the generation of new ideas and partners offering innovative insurance services. But a dependence on an internal or external funding source could call into question the sustainability of a product. Even national governments assuming the role of a donor engenders a reliance on a central source of funding that could expire, and questions have arisen over whether microinsurance can be deemed a justifiable use of limited government resources and public funds. Financial sustainability and product longevity require less reliance on funders and more viability as a business case, and among the most constructive actions a government could take to support the growth and prosperity of microinsurance for its lower-income populations is the development of sound regulatory frameworks that ensure consumer rights and protection, and efficient markets that allow it to operate competitively.

Microinsurance initiatives acting as both a humanitarian aid mechanism and a business venture can create a need for multiple parties (often cross sector) to collaborate on initiating and operating a scheme. Multi-partner networks that are aligned over aims, needs and resources are arguably even more important for the functioning of microinsurance than for microcredit. Public-private coalitions have often proven a successful model, and a general consensus exists over the advantages of strong, transparent and allied partnerships among NGOs, MFIs, community organisations and insurers. Community connections and local knowledge brought to a stakeholder network through NGO and private sector partners are most valuable when accompanied by the actuarial discipline that allows for the accurate quantification of risk, the determination of pricing and the formulation of appropriate policy contracts that can be offered by insurance providers (15). Many microinsurance initiatives have evolved to comprise complex networks of actors and stakeholders, especially the more recent products developed for the index-based agricultural market. As a result, the case studies in this paper included a number of parametric microinsurance initiatives in the form of weather linked, index-based products. Many of the weather index initiatives were more current evolutions of microinsurance design and delivery than the traditional indemnity-based insurance models, and reflect the growing awareness of governments, insurance companies and banks of the importance of supporting livelihoods more effectively and efficiently against the increasingly destructive effects of weather-based hazards. They also reflect a growing ecosystem of actors who are stepping up to play a role in a more holistic attempt to protect supply chains and economic interests, and to safeguard business continuity, as well as people.

Within the range of actors behind a microinsurance initiative, the need for a recognised, respectable body was demonstrated within the case studies. The significance tests demonstrate a relationship between the initiative success characteristic and the microinsurance schemes initiated by national bodies (such as a country government), international agencies (such as a global insurance brokerage

firm e.g. International Finance Corporation, the Global Index Insurance Facility) not originating from the country of operations, and a national-international entity partnership (such as a national government and United Nations alliance). The significance tests also suggest that delivering microinsurance through commercial entities such as service providers, as well as the more traditional, and predictable, banks, MFIs and insurance agencies, may be a characteristic encouraging the success of microinsurance product. Those with vested interests in successful harvests and longer-term service use, for example companies providing agricultural inputs such as seeds and fertilizer, and mobile phone companies using insurance as a means to encourage customer loyalty, are increasingly weighing in on microinsurance design and provision. Accessing and paying for insurance must be straightforward and conducted through trusted entities. Mobile network operators are often effective distributors of microinsurance products as their frequent contact with customers means they are both accessible and are viewed with familiarity and trust. This interaction that is commonly missing between insurance providers and clients generates mistrust. Mobile money can combine greater trust, wider and easier accessibility, and more appropriate and efficient payment options. Varied and expansive stakeholder networks can bring new and alternative insights into consumer needs, conditions and behaviour, as well as more effective ways of reaching and retaining target markets; and whether microinsurance is built on a humanitarian assistance, business, or combined model, varied stakeholder networks and channels of delivery can also help to build trust among consumer communities, connect people to national and commercial systems who may otherwise have existed unaccounted for in on the peripheries of society, and even encourage pre-disaster risk mitigation activities and longer-term resilience strategies.

The role of governments in microinsurance initiatives varies and needs to be considered within the context of pre-existing national-level social security provisions for citizens. According to the International Labour Organisation (ILO), numerous governments worldwide do not adequately provide social safety nets for their low-income populace; the estimated inclusion of only 20% of populations in social security systems, including health care, across many developing countries demonstrates a stark underservicing of potentially vulnerable swathes of society (15). Nations vulnerable to disasters exhibit heightened risk exposure and risk accumulation, and could benefit from microinsurance as a means of not only transferring excess risk but also building resilience to further shocks. State assistance, which is often suggested for the extreme poor, could take the form of insurance premium subsidies, through public-private partnerships (PPP) enabling a stratum of society not deemed commercially viable to engage with as a market, to also access insurance-based risk sharing protection. Premium subsidisation revealed significance in relationship to microinsurance success in the tests conducted for this study, and a number of methods to both incentivise and increase access to insurance among target markets were employed through subsidy models in the case studies.

While even conditional cash transfers can direct to a degree how financial assistance is used, direct financial assistance ought to be accompanied by advice and longer-term evaluation processes to ensure that it is supporting resilience in the right ways. Poor insurance penetration can often simply be due to a person's challenges with temporal liquidity, rather than not being able to afford insurance full stop; a farmer may not have a regular enough income to be able to pay monthly premiums, but may be in a position to pay annually following a harvest. Microinsurance can offer financial or in-kind assistance in much the same way as cash transfers, and good provider practices can encourage trust, a deeper understanding of and appreciation for the risks their consumers face, and the holistic management of those risks. The institutional connection microinsurance can afford populations frequently excluded from formal finance could be leveraged to mandate appropriate risk mitigation strategies and to encourage ongoing resilience relevant to consumer housing and livelihoods, helping

to elevate the actual and perceived value proposition of microinsurance among those constituting the non-traditional insurance markets.

The tests in this study revealed significance when client education and awareness campaigns featured as a characteristic of a microinsurance initiative. A current lack of conclusive academic and business-based research surrounding the centrality of education to the success of microinsurance products, leaves us with very mixed opinions. However, research has shown that with no targeted effort to deliver education to insurance policy holders, claims ratios remain unduly low (15), as financial literacy and trust on the part of clients have been found to be two key determinants of microinsurance demand (17). An education component is frequently considered to benefit both client and provider, and equally important is appropriate guidance on microinsurance design and delivery for providers, in order to promote the understanding of basic insurance theory, contextualised product design, pricing in markets sparse with data, underwriting, and to recognise and plan for the intricacies of mitigating moral hazard and adverse selection (18). However, educational programmes can be resource intensive and require additional funds, potentially making the scheme more expensive and less commercially viable.

Given the need to reduce administrative expenses, the often low-cost of individual microinsurance policies (small scale premium payments) and the potential need for educational programmes to accompany initiatives, some have advocated the use of group rather than individual policies. Administering individual level cover to clients is frequently the most resource and time intensive method of delivering microinsurance, and initiatives in Haiti and Kenya represented in the case study analysis undertaken for this paper altered their models from serving individuals to instead target groups, small and medium enterprises (SMEs) and institutional portfolios for this reason. Adjusting delivery models for client groups aimed to ease the financial strain imposed by serving individuals, in the pursuit of more sustainable operations. Testing for relationships between product coverage levels and potential initiative success among the case studies however, uncovered significance at various levels for initiatives delivered at all three levels of coverage, from those offering protection directly to the individual policy holder, through to those providing coverage on the behalf of many groups or individuals via institutional-level protection.

Critical to a humanitarian initiative is the need to provide a benefit to the target communities, and not just focus on whether the initiative is a short-term success or failure, or a viable business venture from a profitability and sustainability perspective. In order to assess the long-term impact of microinsurance in terms of improving resilience and providing real benefit, we need the right metrics for measuring continued performance and effect. However, standardised longer-term impact reporting appears rare at the individual case study level, both in the form of continuous self-reflective lessons learnt and officially measured external assessments. The need for longitudinal research spanning beyond one to three years, but instead for up to five and 10 years post-implementation was evident from both the literature and the practitioners questioned. Coherent, publicly available information beyond initial feedback is uncommon, and limited the information that could be consistently included in the case studies presented here. While resources such as the International Labour Organization's (ILO) *Impact Insurance Facility* offers some insight into general root causes of microinsurance programme failures across a small collection of its own facility partner schemes (19), broader, more longitudinal impact for all case studies should be made available for external scrutiny. This would not only allow the success or failure of an insurance product to be better tracked over time but would also reveal more subtle indicators of true client value, to determine if the microinsurance product had actually proven useful and had helped. It may be that it enabled better financial protections, greater

community awareness of risk, better calculations of risk or simply more people benefiting from being financially included. In light of this need, we suggest an initial framework, consisting of two data recording forms, for documenting a number of microinsurance product key performance indicators at various reporting periods over a longer time scale (see figure 1). The first form illustrates the information that should initially be collected at the outset of a microinsurance programme (figure 1a). The second form then recommends that at a minimum, the following criteria, both intended and achieved, should be recorded throughout the lifecycle of the programme (figure 1b). These criteria include the number of clients throughout a programme’s lifetime; the areas (e.g. towns, villages) covered by the programme; the active partners in the provider network; whether the programme is funded or financially self-sustaining, and any structural changes to the microinsurance product. The wider impacts both intended and achieved in the short, medium and long-term should also be captured, such as levels of client risk awareness, preparedness and mitigation, and the social or economic benefits to the community.

Launch date				E.g. Number of potential clients available, areas clients live, socio-economic profile of area(s), demographic and ethnic profile of area(s), hazards faced, any current or previous insurance activity in target communities, how microinsurance product could help etc.
Location/area				
Pilot product or full product launch				
Background: needs assessment, situation analysis, competition analysis and identified market gap information				What, if any, target market consultation/involvement occurred in the design of the microinsurance product?
Community consultation				
Community education/awareness				What, if any, education and/or awareness training was offered to the target market?
Insurance coverage	Single category	Multiple categories		
	Voluntary	Bundled (with other financial products)		
Insurance category/categories	Indemnity	Parametric	Combination	
	Home/Property	Disaster resilience	Accident	
	Business	Life	Credit	
Premiums	Payment schedule	Subsidised (including partially)	Unsubsidised	
	Incentives (e.g. savings scheme)			E.g. via banks, credit unions, local shops, mobile/digital payments etc.
Payment	Payment trigger details (parametric)	Payment distribution method	Payment type	
				e.g. cash, goods in kind, etc.
Network and partnerships				
				Names, expertise and roles in the design and delivery of the microinsurance product
				Trigger parameters e.g. wind speed, temperature, rainfall total etc.

Figure 1a: Microinsurance Provider and Product Registry form

Programme start date		
Programme end date		
Programme ongoing or ceased		
Number of clients		
Areas covered (e.g. villages, towns, cities)		
Client education / awareness training carried out since last reporting period		
Active partners in stakeholder network		
Reliant on funding or self-sustaining		
Structural changes to microinsurance product since last reporting period		
Client hazard mitigation / protections in place		
Client risk awareness		
Client emergency response plan(s) (if required)		
In depth client consultation: what works, what requires improvement, client needs		

Figure 1b: *Microinsurance Product Monitoring, Assessment and Impact Evaluation form*

Figure 1: *Suggested format for the minimum information that should be recorded for microinsurance schemes required for building a detailed database of case studies allowing a full synthesis of case study success. Figure 1a illustrates the Microinsurance Provider and Product Registry form, to be recorded at the outset of the scheme launch. Figure 1b illustrates the Microinsurance Product Monitoring, Assessment and Impact Evaluation form, to be recorded at the following intervals: six months post implementation; one year post implementation; five years post implementation (including detailed evaluation); ten years post implementation (including detailed evaluation); and one month post termination for schemes ending intentionally and unintentionally. For each microinsurance scheme, the minimum information below should be recorded at each reporting period suggested in order to assess changes. Any significant changes or shortfalls between intended targets and actual targets achieved should be accompanied by further detail and explanation.*

Systematic reviews that are functional for practitioner use can help in identifying gaps in knowledge, in sharing good practices, in understanding where lessons can be learnt, and in bringing together details and references of wide-ranging programmes around the world. A review considering microinsurance from both a humanitarian and business approach can help practitioners identify who they are targeting as a client base or beneficiaries, what they ultimately want to gain from introducing a microinsurance product to their chosen market, and how they can tailor their products to be better fit for purpose. Here we considered the continuation of microinsurance schemes only, but to assess levels of success and failure from both humanitarian and business standpoints, a framework such as that suggested here, enabling the systematic reporting of the types of impact observed and the key drivers of them over the longer term could assist practitioners to capture this data and report on the effects for longer term resilience themselves. One major obstacle to comprehensive and extended periods of reporting is the associated financial and administrative burden, applying additional strain to often already stretch resources. Microinsurance as a business proposition may be primarily interested in a

product's success in terms of sustainability and profitability for the provider throughout the duration of the product's operations. This is important for the viability and longevity of a product. These provider networks, often including banks, insurance companies and reinsurance companies, may be better resourced to carry out continual reporting over longer time periods than those typically associated with the humanitarian interests, often NGOs, credit unions, governments, whose focus may lie more on success as community impact and client benefit. Interplay between the business and humanitarian success priorities, and a sharing of resources could then allow more extensive and long-term monitoring to be conducted across microinsurance schemes.

How microinsurance can fill both a humanitarian and a business gap, depending on the economic status of the populations the products are aimed to assist, is depicted in Figure 1. The humanitarian purpose is more appropriately suited to those with the lowest income levels, as premium subsidisations can enable more extensive inclusivity among populations unable to support a microinsurance business model, by forming part of a social security provision offered by the state. The business venture on the other hand, is better suited to populations with enough reliable, disposable income to be able to afford premiums. We see that along the poverty line, a degree of overlap is deemed possible, where both a humanitarian intervention and a business venture are potentially suitable. Ordinarily, populations in this segment may access microinsurance as a business model, but income instability may still exist and even for a relatively minor event, a humanitarian approach may be suitable to prevent those affected falling below the poverty line. Figure 1 also overlays the microinsurance characteristics showing significance in this study with all potential target markets for microinsurance products, suggesting at which levels each characteristic is most appropriate for achieving maximum inclusivity. While the wealthy constitute the regular insurance market, microinsurance coverage levels can extend across the rest of the income scale. For populations sitting around and below a given poverty line, educational programmes and alternative channels for payment and payout could determine the accessibility of a microinsurance product. If microinsurance is to work for the extreme poor, premium subsidisation becomes particularly important in supporting the social security function that can form a part of state assistance programmes, for which external funding becomes necessary. However, if developing the business model of microinsurance, sustainability must be sought beyond a reliance on funding from donors and external sources.

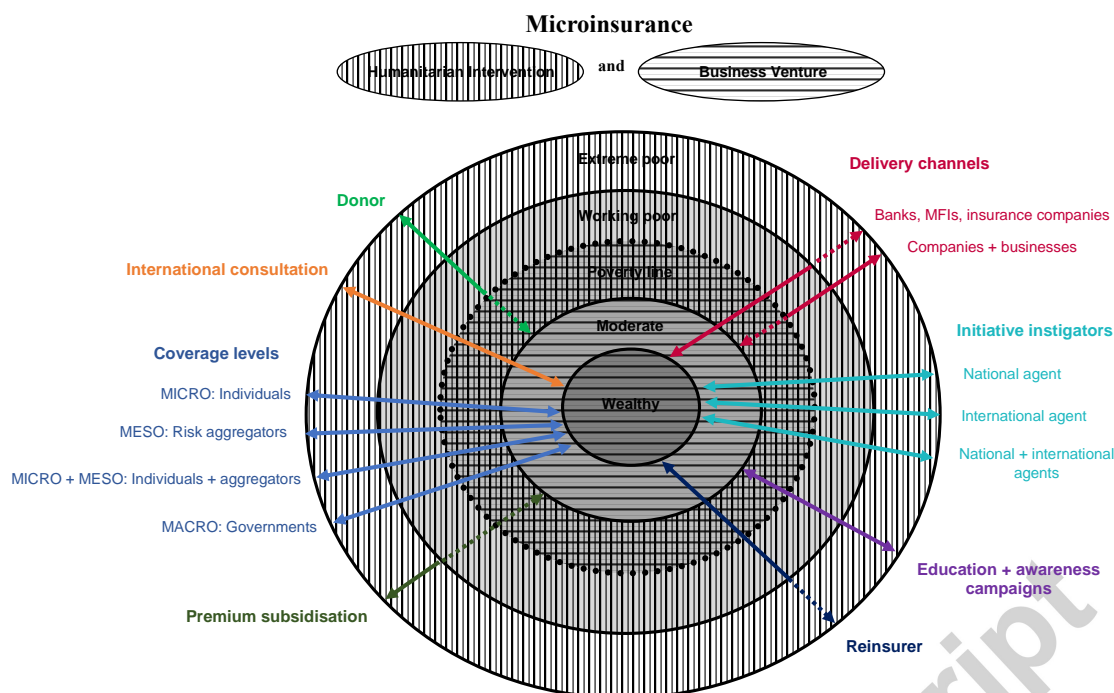


Figure 2: Markets for insurance, from the wealthiest in society to the poorest. The segments with vertical lines signify the target markets that often benefit from, and are appropriate for microinsurance as a form of humanitarian and development assistance. The segments with horizontal lines indicate the markets for which insurance as a business venture is often better suited. The two overlap among the populations hovering around the poverty line (depicted by the check pattern), suggesting that the humanitarian model, the business model, or a combination of both can be suitable, depending on the context. The microinsurance characteristics showing significance in this study are overlaid in colour, intersecting the segments where we suggest they are most appropriate. Where the coloured lines are dashes, the characteristics are considered potentially helpful but more discretionary for that market segment.

Microinsurance for post-disaster recovery is hard to sell. Clients are often required to pay in advance and to trust the provider to deliver payment should a trigger event occur. This demands a substantial leap of faith from populations often entirely unfamiliar with formal financial services and for whom anticipatory payments for an event that may occur at some point in the future are largely unimaginable given the immediate, daily challenges. This is especially true when building materials, relief supplies and cash assistance are routinely distributed free of cost following larger disaster events, and particularly so in the evolving landscape of humanitarian response, where cash-based post disaster support is set to continue rising. Substantial research on post disaster recovery exists, however relatively little on self-recovery and reconstruction is available. By 2015, almost 60 million people globally were displaced by conflict, climate change and disasters (20,21,22). A total of 30% of these displaced people are provided shelter by humanitarian organisations (23), the majority of which are temporary structures that do not “catalyse the self-recovery process, creating instead an undesirable dependence on external aid” (24,25,26). The remaining people are left to construct their own shelters and, where able, to begin the rebuild process entirely unassisted. Just as post-disaster shelter decisions need to be considered in the context of pre-existing housing policies, costs and construction mechanisms (27), the development of disaster-focussed microinsurance schemes must be considered within the specific context of the local humanitarian needs identified to increase resilience

against known risks, the players essential for building trust in the initiative, the financial mechanisms in place for payments and payouts. Longer term reporting that leads to better understandings of resilience and microinsurance client needs can help make it less of a hard sell to unfamiliar or sceptical audiences, especially in the humanitarian context. Ultimately, in each case it must be decided to what extent a microinsurance initiative is required to be a humanitarian intervention or a business venture, or a mixture of both (figure 1).

Conclusions

In the wake of disasters, if microinsurance is to challenge the humanitarian status quo and present a viable alternative to aid, cash transfers and emergency lending, it must be affordable, accessible, appropriate, timely and consistent. It must also be operationally sustainable for its intended period of its campaign. Routinely, in post disaster environments, people remain uncertain of what assistance they may receive and when it may arrive. Affected populations with few resources may be solely or largely reliant on external help to temporarily shelter, to permanently rebuild and to resume life as before, which can leave them for dangerous lengths of time more acutely exposed to immediate and future shocks that could further heighten their vulnerability.

Defining microinsurance, as a contextualised response to regional hazards and their associated localised risks, means understanding on the part of the microinsurance provider the daily practicalities and constraints of their target market. This involves going beyond the simplistic approach of basing the value proposition on cost and benefits alone, but focussing on how consumers access and experience the product and accompanying services (28). Clearly delineating this target market, as well as how and why microinsurance can serve its needs also helps in defining whether microinsurance serves purely as a humanitarian mechanism, whether it fulfils solely a business function, or whether it intersects them both and operates as a combination of the two.

The statistical testing in this study aimed to highlight some of the key mainstream factors in widespread and effective microinsurance design, without delineating causality between success, failure and the presence of certain features. It was discovered that commencing a microinsurance initiative following a specific disaster event, offering microinsurance at individual (micro), aggregator (meso), micro and meso, and government (macro) levels all revealed significance. Additionally, subsidising premiums, including an education and awareness campaign, an international consultation element (and particularly in lower middle income case studies), a reinsurer and a donor all demonstrated significance. Case study microinsurance initiatives instigated by a national, international, and national and international partnership all showed significance. And finally, significance was found when delivering microinsurance products via banks, MFIs, insurance companies, and through commercial entities and businesses. These factors suggest that consideration be made for promoting awareness of risk and vulnerability among consumers, and the merits of insurance as a viable ex ante and ex post mechanism for transitions to disaster recovery for individuals, risk aggregators and governments. The tests encourage us to examine subsidising premiums to encourage take up among and retention of low-income clientele, and reveal the importance of carefully deliberating the makeup of stakeholder networks, particularly with regard to microinsurance product funding, portfolio risk sharing, initiative design and implementation, and the delivery channels to best penetrate target markets. All of these factors ought to be considered in the design of future microinsurance initiatives to support transitions to disaster recovery.

Perhaps as important as the analysis of key microinsurance features themselves in this study, has been the emphasis on the need for more detailed and systematic reporting of microinsurance programme performance over the course of a product's lifetime. Through more substantive, period reporting of microinsurance performance, it would be possible to not only determine the success or failure of programmes based solely on their predicted or unpredicted continuation or cessation, but also to examine in greater depth, and over longer time frames, their value of service to the communities they strive to assist.

References

- (1) Shepherd, A., Mitchell, T., Lewis, K., Lenhardt, A., Jones, L., Scott, L., Muir-Wood, R. (2013) The geography of poverty, disasters and climate extremes in 2030, Overseas Development Institute (ODI) Available at: <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8633.pdf>
- (2) Churchill, C., Phillips, R.D., Reinhard, D. (2011) Introduction to the 2011 Symposium Issue of JRI on Microinsurance *The Journal of Risk and Insurance*, 2011, Vol. 78, No. 1, 1-5 Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1539-6975.2010.01407.x/abstract>
- (3) Stander, D. (2017) RMS: The Role of Catastrophe Risk Finance in Developing Nations. Available at: <http://www.rms.com/blog/2017/07/24/the-role-of-catastrophe-risk-finance-in-developing-nations/>
- (4) United Nations (2015) Global Assessment Report on Disaster Risk Reduction. Available at: http://www.preventionweb.net/english/hyogo/gar/2015/en/gar-pdf/GAR2015_EN.pdf
- (5) Hinchberger, B. (2015) Devex: Index insurance: What you need to know. Available at: <https://www.devex.com/news/index-insurance-what-you-need-to-know-87211>
- (6) Murdoch, J. (1999) Between the State and the Market: Can Informal Insurance Patch the Safety Net *The World Bank Research Observer* Vol.14(2) pp.187-207
- (7) Clarke, D.J., Dercon, S. (2016) *Dull Disasters: How Planning Ahead Will Make a Difference*. Oxford: Oxford University Press
- (8) Jalan, J., Ravallion, M. (1999) Are the Poor Less Well Insured? Evidence on Vulnerability to Income Risk in Rural China *Journal of Development Economics* Vol.58(1) pp.68-81
- (9) UNOCHA (2017) Cash transfer programming. Available at: <https://www.unocha.org/legacy/philippines/about-ocha-philippines/cash-transfer-programming>
- (10) European Civil protection and Humanitarian Aid Operations (2017) Cash-based assistance. Available at: http://ec.europa.eu/echo/what/humanitarian-aid/cash-based-assistance_en
- (11) Chen H. & Cummins D. J. (2010) Efficient Mechanisms for Supplying and Diversifying Microinsurance for Natural Disasters *Working Paper Series of The Geneva Association* Available at: https://www.genevaassociation.org/media/30021/2_GA_ED_369_Paper_Session_5H_1_CHEN_CUMMINS_Natural_catastrophes,Micro_insurance,Operations.pdf
- (12) Alderman, H. & Haque, T. (2007) *Insurance Against Covariate Shocks: The Role of Index-based Insurance in Social Protection in Low-income Countries of Africa*. World Bank Publications

- (13) The Superintendence of Private Insurance (SUSEP) (Ministry of Finance) (2008) Microinsurance in Brazil. Available at: <http://www.susep.gov.br/menuingles/microinsurance>
- (14) Smolker, A., Moser, A., Allmann, A., Hollnack, D., Spranger, M. (2008) Microinsurance Schemes for Property: Examples from Latin America. The 14th World Conference on Earthquake Engineering
- (15) Wharton University of Pennsylvania (2009) Social Impact: Micro Insurance: A Safety Net With Too Many Holes? Available at: <http://knowledge.wharton.upenn.edu/article/micro-insurance-a-safety-net-with-too-many-holes/>
- (16) Goldberg, M. & Palladini, E. (2010) Managing Risk and Creating Value with Microfinance. World Bank Publications
- (17) Eling, M., Pradhan, S. & Schmit, J.T. (2014) The Determinants of Microinsurance Demand *The Geneva Papers on Risk and Insurance – Issues and Practice* Vol.39(2) pp.224-263
- (18) The Centre for Insurance and Risk Management (CIRM), Wharton School, University of Pennsylvania (2009) Scaling Micro Insurance in Developing Countries. Available at: http://www.preventionweb.net/files/8360_8360ScalingMicroInsuranceinDevelopingCountriesCIRMWhartonTrainingProgramme-flyer.pdf
- (19) ILO (2015) Impact Insurance: Learning from Others' Mistakes (Paper 42). Available at: <http://www.impactinsurance.org/sites/default/files/MP42.pdf>
- (20) Nebehay, S. (2015) World's Refugees and Displaced Exceed Record 60 Million: U.N. *Reuters*. <http://www.reuters.com/article/us-un-refugees-idUSKBN0U10CV20151218>.
- (21) Gaynor, T. (2015) UNHCR - 2015 Likely to Break Records for Forced Displacement - Study. *UNHCR*, December available at: <http://www.unhcr.org/news/latest/2015/12/5672c2576/2015-likely-break-records-forced-displacement-study.html>.
- (22) United Nations News Service (2015) UN News - Global Forced Displacement for 2015 on Track to Break All Records, Topping 60 Million – UN. United Nations-DPI/NMD - UN News Service Section. Available at: <http://www.un.org/apps/news/story.asp?NewsID=52859#.V0Qua2Z2ORs>
- (23) Saunders, G. (2016) Need for Innovation in Sheltering. Berlin: IFRC SRU. Available at: <https://issuu.com/shelterresearchunit>.
- (24) Shelter Centre (2010) Shelter after Disaster: Strategies for Transitional Settlement and Reconstruction. Available at: <http://sheltercentre.org/node/12873>.
- (25) SPHERE Project (2011) Humanitarian Charter and Minimum Standards in Disaster Response. Available at: <http://www.ifrc.org/PageFiles/95530/The-Sphere-Project-Handbook-20111.pdf>.
- (26) Baquero, I. A. (2013) Organized Self-Help Housing as an Enabling Shelter Development Strategy. Lund University. Available at: http://www.hdm.lth.se/fileadmin/hdm/Publications/9_Organized_self-help_housing_as_an_enabling_shelter_development_strategy.pdf.
- (27) Faure Walker J.P. and Crawford C. (2017) Cash in housing context: Transitional shelter and recovery in Japan, *International Journal of Disaster Risk Reduction* 24, 216-231

(28) CGAP (2013) Why People Don't Buy Microinsurance. Available at:
<http://www.cgap.org/blog/why-people-don't-buy-microinsurance>

Case Study Sources

Bangladesh (BIMA Mobile Life)

Karakoti, H. & Yeo, P. L. at CGAP (2014) Three Lessons from Mobile Microinsurance in Bangladesh. Available at: <http://www.cgap.org/blog/three-lessons-mobile-microinsurance-bangladesh>

Airtel (2014) Robi "BIMA Mobile Insurance"
 Available at: <http://www.airtel.com.bd/robi-bima-mobile-insurance/>

Brazil (Municipalized Risk Group (GRM®))

IFAD (2010) The Potential for Scale and Sustainability in Weather Index Insurance for Agriculture and Rural Livelihoods. Available at: <https://www.ifad.org/documents/10180/32647150-6e8a-41f3-8642-404768cfc99f>

Burkina Faso & Mali (Siman Panga)

Magnoni, B. & Sobol, D. at CGAP (2015) Loan Protection for Maize Farmers in Burkina Faso. Available at: <http://www.microfinancegateway.org/library/loan-protection-maize-farmers-burkina-faso>

Burkina Faso & Madagascar (Airtel Mobil'Assur)

Allianz (2015) Microinsurance Product Pool: overview and assessment of Allianz microinsurance products. Available at:
https://www.allianz.com/media/responsibility/documents/AllianzSE_Microinsurance_ProductPool44_20150401_MH.pdf
 IFC. World Bank Group. Inclusive Business Case Study: MicroEnsure. Available at:
https://www.ifc.org/wps/wcm/connect/e7ce3d93-0c66-45fd-b428-b6af222f6ad5/MicroEnsure_FINAL_low+res.pdf?MOD=AJPERES

China (WRMF Index Insurance)

IFAD. IFAD-WFP Weather Risk Management Facility (WRMF). Available at:
<https://www.ifad.org/topic/wrmf/overview>
 IFAD (2010) The Potential for Scale and Sustainability in Weather Index Insurance for Agriculture and Rural Livelihoods. Available at: <https://www.ifad.org/documents/10180/32647150-6e8a-41f3-8642-404768cfc99f>

Colombia (Seguro de Hogar)

Allianz (2015) Microinsurance Product Pool: overview and assessment of Allianz microinsurance products. Available at:
https://www.allianz.com/media/responsibility/documents/AllianzSE_Microinsurance_ProductPool44_20150401_MH.pdf

Colombia (SaNASA Insurance)

Fedesarrollo, S. Z. at ILO Microinsurance Innovation Facility (2010) Case Studies on the Use of Alternative Models for the Distribution of Microinsurance in Colombia. Available at:

http://cenfri.org/documents/microinsurance/2011/Colombian%20microinsurance%20distribution%20case%20studies_website.pdf

De la Torre, V. E. B at MAPFRE (2008) The base of the pyramid, the challenge of microinsurance. Available at:

http://www.mapfre.com/ccm/content/documentos/mapfrere/fichero/en/Articulo_2_n49_trebol_i.pdf

Ethiopia (Weather Index Insurance for Drought & Food Security)

Araya, N. S. at IFAD (2011) Weather Insurance for Farmers: Experience from Ethiopia. Presented at the IFAD Conference on New Directions for Smallholder Agriculture (24-25 January 2011).

Available at: <https://www.ifad.org/documents/10180/4ae3f78b-40a7-4ad4-a3ea-cdb16da06c28>

Tadesse, M. A., Shiferaw, B. A. & Erenstein, O. (2015) Weather index insurance for managing drought risk in smallholder agriculture: lessons and policy implications for sub-Saharan Africa. *Agricultural and Food Economics* Vol.3(26). Available at:

<https://agrifoodecon.springeropen.com/articles/10.1186/s40100-015-0044-3>

Ethiopia (HARITA)

Greatrex, H., Hansen, J., Garvin, S., Diro, R., Blakeley, S., Le Guen, M., Rao, K. & Osgood, D. at CCAFS (2015) Scaling up index insurance for smallholder farmers: Recent evidence and insights.

Available at:

https://cgspace.cgiar.org/bitstream/handle/10568/53101/CCAFS_Report14.pdf?sequence=1

Ghana (Crop Price Insurance)

Karlan, D., Kutsoati, E., McMillan, M. & Udry, C. (2010) Crop Price Indemnified Loans for Farmers: A Pilot Experiment in Rural Ghana. Available at:

<https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-crop-price-indemnified-loans-for-farmers-a-pilot-experiment-in-rural-ghana-jan-2010.pdf>

Yeh, L. at The Borgen Project (2013) Blog: Crop Price Insurance for Farmers in Ghana. Available at: <https://borgenproject.org/crop-price-insurance-farmers-ghana/>

Ghana (Life Insurance)

Tran, M. (2013) Ghana mobile firms offer free insurance to keep customers hanging on. *The Guardian: Microfinance*. Available at: <https://www.theguardian.com/global-development/2013/may/02/ghana-mobile-free-insurance>

Levin, P. (2012) Tigo, Bima, and MicroEnsure bring a “Freemium” model to mobile insurance.

GSMA. Available at: <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/tigo-bima-and-microensure-bring-a-freemium-model-to-mobile-insurance>

Advison Finance (2015) Mobile Insurance And Risk Framework In Ghana. Available at:

https://a2ii.org/sites/default/files/reports/2015_mobile_insurance_risk_assessment_ghana.pdf

Ghana (Obra Pa)

Microinsurance Centre (2012) MILK Brief #10: "Doing the Math" with Property Insurance in Ghana. Available at:

<http://www.microinsurancecentre.org/resources/documents/policyholder-value-of-microinsurance/milk-brief-10-doing-the-math-with-property-insurance-in-ghana.html>

Magnoni, B. (2013) Studying MicroEnsure’s “Obra Pa” Insurance in Ghana. Making Finance work for Africa Blog. Available at:

<http://aff.mfw4a.org/africa-finance-forum-blog/time/2013/03/11/blogpost/studying-microensures-obra-pa-insurance-in-ghana.html>

Haiti (MiCRO Natural Catastrophe & Weather Index Insurance)

MiCRO. Haiti. Available at: <http://www.microrisk.org/countries-regions/haiti/>
 IFC Microinsurance Catastrophe Risk Organisation (MiCRO - Haiti). Available at:
http://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/retail+finance/insurance/micro

India (BASIX)

BASIX. BASIX Insurance. Available at:
http://www.basixindia.com/index.php?option=com_content&task=view&id=97&Itemid=113

India (VimoSEWA)

VimoSEWA. Products. Available at: <http://www.sewainsurance.org/products.aspx>
 Garand, D. (2005) VimoSEWA India. CGAP Working Group on Microinsurance. Available at:
<http://www.microinsurancenet.org/groups/vimosewa-india>

India (Weather Protect)

Allianz (2015) Microinsurance Product Pool: overview and assessment of Allianz microinsurance products. Available at:
https://www.allianz.com/media/responsibility/documents/AllianzSE_Microinsurance_ProductPool44_20150401_MH.pdf

India (Cattle & Livestock Insurance Policy)

Allianz (2015) Microinsurance Product Pool: overview and assessment of Allianz microinsurance products. Available at:
https://www.allianz.com/media/responsibility/documents/AllianzSE_Microinsurance_ProductPool44_20150401_MH.pdf

Indonesia (Alert 1 Manggarai Protection Card)

FARMD. Alert 1 Manggarai Protection Card. Available at:
<http://agriskmanagementforum.org/project/alert-1-manggarai-protection-card>
 Artemis (2009) Munich Re brings index-based flood micro-insurance to Indonesia
 Available at: <http://www.artemis.bm/blog/2009/05/07/munich-re-brings-index-based-flood-micro-insurance-to-indonesia/>

Kenya (Linda Jamii)

Safaricom. Linda Jamii. Available at: <https://www.safaricom.co.ke/about/innovation/social-innovation/linda-jamii>
 Business Daily (2015) Britam pulls plug on individual sales for popular health cover. Available at:
<https://www.businessdailyafrica.com/Britam-pulls-plug-on-low-income-individual-cover/-/539552/2737956/-/r2pwin/-/index.html>

Kenya, Rwanda & Tanzania (Kilimo Salama - agricultural insurance)

Kilimo Salama. About Kilimo Salama. Available at: <https://kilimosalama.wordpress.com/about/>
 IFC. Kilimo Salama (Safe Farming) Weather Index Insurance in Kenya: Early Market Success. Available at:

<http://www.ifc.org/wps/wcm/connect/e0ed35804c33fc309479def12db12449/KS+story.pdf?MOD=AJPERES>

Malawi (Rainfall Data for Localised Crop Specific Insurance)

GFDRR (2012) Weather Index-based Crop Insurance in Malawi. Available at:

http://siteresources.worldbank.org/EXTDISASTER/Resources/Malawi_WeatherInsurance_Final.pdf

Malawi (National-level drought risk management)

World Bank. Mitigating the Impact of Drought on Food Security in Malawi: Case study. Available at:

http://treasury.worldbank.org/bdm/pdf/Case_Study/Malawi_WeatherHedge_FoodSecurity_2015.pdf

Mexico (Rainfall index insurance program for catastrophic risk and disaster relief)

IFAD (2010) The Potential for Scale and Sustainability in Weather Index Insurance for Agriculture and Rural Livelihoods. Available at: <https://www.ifad.org/documents/10180/32647150-6e8a-41f3-8642-404768cfc99f>

Mongolia (Index-Based Livestock Insurance)

World Bank (2016) Mongolia - Index-Based Livestock Insurance Project. Available at:

<http://documents.worldbank.org/curated/en/320451476970893810/Mongolia-Index-Based-Livestock-Insurance-Project>

World Bank (2009) Mongolia: Index Based Livestock Insurance Project. Available at:

<http://www.worldbank.org/en/news/feature/2009/09/23/index-based-livestock-insurance-project>

Mozambique (Weather Index Insurance)

GIIF. Index Insurance Forum: Guy Carpenter & Co LLC – Mozambique. Available at:

<https://www.indexinsuranceforum.org/project/guy-carpenter-co-llc-mozambique>

Nepal (Microlife insurance (endowment))

SCBF. Innovative Microinsurance Products for Rural Poor in Nepal: Project Factsheet. Available at:

http://scbf.ch/wp-content/uploads/2014/08/2011-04_FactSheet_Nepal_PlaNetFinance_ManushiPrimeLife.pdf

Nicaragua (INSS Health Insurance)

Centre for Health Market innovations. Seguro Facultativo de Salud (Nicaraguan Social Security Institute). Available at: <http://healthmarketinnovations.org/program/seguro-facultativo-de-salud-nicaraguan-social-security-institute>

Diaz, F. S., Field, E., Fitzpatrick, A., Hatt, L., Islam, M., Monada, M. G. & Thornton, R. (2010) Social Security Health Insurance for the Informal Sector in Nicaragua: A Randomized Evaluation. *Health Economics* 19: 181-206. Available at:

<https://www.povertyactionlab.org/evaluation/extending-health-insurance-informal-sector-through-microfinance-nicaragua>

Pakistan (BIMA)

Bima. Products and Services. Available at: <http://www.bimamobile.com/our-services/>

Bima. Bima Pakistan & Warid Launch Affordable Insurance Services for Every Family. Available at:

<http://bima.com.py/bima-pakistan-warid-launch-affordable-insurance-services-for-every-family/>

MILVIK. BIMA Insurance. Available at: <http://milvikpakistan.com>

Pakistan (Aga Khan)

AKDN (2008) First Microinsurance Agency established in Pakistan. Available at:
<http://www.akdn.org/press-release/first-microinsurance-agency-established-pakistan>

McGuinness, E., Mandel, J., Korda, H. & Ttayyab, A. (2010) Assessment of Health Microinsurance Outcomes in the Northern Areas, Pakistan - Baseline Report. Available at:
<http://www.fsassessment.umd.edu/publications/pdfs/Health-Microinsurance-Pakistan.pdf>

Peru (ENSO Business Interruption Index Insurance (EBIII))

Skees, G.R. (2009) ENSO Business Interruption Index Insurance (EBIII). Available at:
http://globalagrisk.com/Pubs/2009_Skees_Peru_EBIII_feb.pdf

Skees, G.R. & Murphy, A.G. (2009) ENSO Business Interruption Index Insurance (EBIII) for Catastrophic Flooding in Piura, Peru. Available at:
http://globalagrisk.com/Pubs/2009_Skees_Murphy_Peru_CAT_Flooding_feb.pdf

Philippines (Calamity insurance)

Martirez, M. H. (2015) Effectiveness of Microinsurance programs in Philippines: Metrics used for measuring the effectiveness by MicroEnsure. Available at:
https://www.iges.or.jp/files/research/natural-resource/PDF/20140704/4_Metrics_Used_for_Measuring_MI_Effectiveness_WHMinMalaysia_v3.pdf

Microinsurance Centre (2012) MILK Brief #17: "Doing the Math" – Calamity Microinsurance in the Philippines. Available at: <http://www.microinsurancecentre.org/resources/documents/policyholder-value-of-microinsurance/milk-brief-17-doing-the-math-calamity-microinsurance-in-the-philippines.html>

Philippines (CLIMBS Weather Index)

CLIMBS. Products we Offer. Available at: <http://climbs.coop/wordpress/>
 Microinsurance. Climbs Life & General Insurance Cooperative. Available at:
<http://www.microfinancecouncil.org/wp-content/uploads/2016/09/Mr.-Fermin-Gonzales-CLIMBS-Life-Gen.-Insurance-Coop.pdf>

MicroCapital (2010) MICROCAPITAL BRIEF: Coop Life Insurance & Mutual Benefit Services (CLIMBS), Munich Re, GTZ Partner to Create Microinsurance Product in the Philippines. Available at: <https://www.microcapital.org/microcapital-brief-coop-life-insurance-mutual-benefit-services-climbs-munich-re-gtz-partner-to-create-microinsurance-product-in-the-philippines/>

Philippines (CLIS Pawnassurance)

Cebuana Lhuillier. Insurance. Available at: <https://www.cebuanalhuillier.com/insurance/>

Humarang, J. (2015) Entrepreneur Philippines: Affordable insurance for just P25 every four months. Available at: <https://www.entrepreneur.com.ph/news-and-events/affordable-insurance-for-just-p25-every-four-months>

Rwanda (MicroEnsure Weather Index Insurance)

IFC. MicroEnsure (Rwanda). Available at:

http://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/retail+finance/insurance/microensure

Senegal (Drought Index-Insurance for groundnut farmers)

IFC. Drought Index-Insurance pilot for groundnut farmers – Senegal. Available at:

http://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/retail+finance/insurance/drought+index-insurance+pilot+for+groundnut+farmers++senegal

Sri Lanka (SANASA Insurance)

SANASA. Sanasa Insurance. Available at: <http://www.sicl.lk>
 World Bank (2007) Providing Financial Services in Rural Areas: A Fresh Look at Financial Cooperatives. Available at:
<https://openknowledge.worldbank.org/bitstream/handle/10986/7935/400430ESW00WHI0Areas0BOX00SECURITY0.pdf?sequence=1>

Uganda (Micro Life Insurance)

McCord, M. J. (2000) MicroInsurance in Uganda: A Case Study of an Example of the Partner-Agent Model of MicroInsurance Provision. Available at:
http://www.microsave.net/files/pdf/MicroInsurance_in_Uganda_A_Case_Study_of_an_Example_of_the_Partner_Agent_Model_of_MicroInsurance_Provision.pdf

Ukraine (Index Insurance)

IFAD (2010) The Potential for Scale and Sustainability in Weather Index Insurance for Agriculture and Rural Livelihoods. Available at: <https://www.ifad.org/documents/10180/32647150-6e8a-41f3-8642-404768cfc99f>
 Hlyvynska, O. & Zaripov, A. (2017) Index Insurance Forum: Index Insurance in Ukraine: Opening Doors for Agribusiness. Available at: <https://indexinsuranceforum.org/region/ukraine>

Vietnam (Assurance Décès Emprunteur)

OECD (2015) Disaster Risk Financing A global survey of practices and challenges: A global survey of practices and challenges. Paris: OECD Publishing
 VINARE <http://vinare.com.vn/en/default.aspx>
 Dao, L.V. & Tai, L.V. (2014) Agricultural insurance in Viet Nam. *International Journal of Economics, Commerce and Management* Vol.2 (9) Available at:
http://www.academia.edu/8384801/Agricultural_insurance_in_Viet_Nam

Vietnam (Agriculture insurance programme)

Dang Minh (2017) Agricultural insurance in Vietnam: pilot programme and pre-conditions for a public-private partnership approach. *Asia Pacific Journal of Administration* Vol.39(1) pp.63-71. Available at:
<http://www.tandfonline.com/doi/abs/10.1080/23276665.2017.1291555?journalCode=rapa20>

Appendix 1

Country of Operation	Income Status	Name of Programme	Insurance Type Single / Multiple	Parametric (P) / Indemnity (I)	Start Date	Stand Alone/Bundled	Protection/Target Level	Community Input	Education/Awareness	Instigator	Consultancy/Broker	Donor	Reinsurer	Delivery Partners	Pilot or Product Launch	Motivation	Premium Subsidies	Status Success = ongoing + ceased intentionally Failure = ceased unintentionally
Bangladesh	Low	Bima Mobile Life	Life (single)	I	2012	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None specified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Companies + businesses	Product launch	Market gap identified	<input checked="" type="checkbox"/>	Ongoing
Burkina Faso & Mali	Low	Siman Panga	Business (single)	P	2011	Bundled	Micro & Meso	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None specified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Banks + insurance companies	Product launch	Awareness of hazard/disaster risks	<input checked="" type="checkbox"/>	Ongoing
Burkina Faso & Madagascar	Low	Airtel MobilAssur	Life (single)	I	2014	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None specified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Companies + businesses	Product launch	None specified	<input checked="" type="checkbox"/>	Ongoing
Colombia	Low	"Seguro de Hogar"	Property and home business (multiple)	I	2012	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None specified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MFIs	Product launch	Market gap identified	<input checked="" type="checkbox"/>	Ongoing
Colombia	Low	SanASA Insurance	Life, funeral, property, personal accident, business (multiple)	I	1998	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	International	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Companies + businesses	Product launch	None specified	<input checked="" type="checkbox"/>	Ongoing
Ethiopia	Low	Weather Index Insurance for Drought & Food Security	Business (single)	P	2006	Stand alone	Macro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	International	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Government	Pilot	Disaster in recent past (1-3 years)	<input checked="" type="checkbox"/>	Ceased intentionally
Ethiopia	Low	HARITA	Business (single)	P	2009	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National and international	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MFIs	Product launch	Awareness of hazard/disaster risks	<input checked="" type="checkbox"/>	Ongoing
Haiti	Low	MICRO Natural Catastrophe & Weather Index Insurance	Business (single)	P + I	2011	Bundled	Meso	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None specified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MFIs	Pilot	Disaster in recent past (1-3 years)	<input checked="" type="checkbox"/>	Ongoing
Kenya/ Rwanda/ Tanzania	Low	Kilimo Salama - agricultural insurance	Business (single)	P	2014	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None specified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Banks, MFIs, community grps + worker associations, companies + businesses	Product launch	Awareness of hazard/disaster risks	<input checked="" type="checkbox"/>	Ongoing
Kenya	Low	Linda Jamii (tied to a savings model - benefits passed back to customer)	Health (single)	I	2012	Stand alone	Meso	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Companies + businesses	Product launch	Market gap identified	<input checked="" type="checkbox"/>	Ceased unintentionally
Malawi	Low	Rainfall Data for Localised Crop Specific Insurance	Business (single)	P	2005/6	Bundled	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	International	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Community groups + worker associations	Pilot	Disaster in recent past (1-3 years)	<input checked="" type="checkbox"/>	Ongoing
Malawi	Low	National-level drought risk management	Business (single)	P	2008	Stand alone	Macro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Government	Pilot	Awareness of hazard/disaster risks	<input checked="" type="checkbox"/>	Ceased unintentionally
Mozambique	Low	Weather Index Insurance	Business (single)	P	2012	Stand alone	Meso	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	International	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Community groups + worker associations	Pilot	Market gap identified	<input checked="" type="checkbox"/>	Ongoing
Nepal	Low	Microlife insurance (endowment)	Life and health (multiple)	I	2013	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Banks + insurance companies	Pilot	Market gap identified	<input checked="" type="checkbox"/>	Ongoing
Rwanda	Low	MicroEnsure Weather Index Insurance	Business (single)	P	2010	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	International	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Banks, community groups + worker associations	Product launch	Market gap identified	<input checked="" type="checkbox"/>	Ceased unintentionally
Uganda	Low	Micro Life Insurance	Life (single)	I	2011	Bundled	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	International	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Banks	Product launch	Market gap identified	<input checked="" type="checkbox"/>	Ongoing
Ghana	Lower middle	Crop Price Insurance	Business (single)	I	2007	Stand alone	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None specified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Banks + insurance companies	Pilot	Market gap identified	<input checked="" type="checkbox"/>	Ceased intentionally
Ghana	Lower middle	Life Insurance	Life and disability (multiple)	I	2010 & 2014	Bundled	Micro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	International	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Companies + businesses	Product launch	Market gap identified	<input checked="" type="checkbox"/>	Ongoing
Ghana	Lower middle	Obra Pa (property insurance: hybrid model - offers clients payment of their outstanding loan balance + one month's interest to the MFI + a cash payout)	Life, funeral, disability, property and businesses (multiple)	I	2011	Bundled	Micro & Meso	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	International	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Banks	Product launch	Disaster in recent past (1-3 years)	<input checked="" type="checkbox"/>	Ongoing

Country of Operation	Income Status	Name of Programme	Insurance Type	Parametric (P) / Indemnity (I)	Start Date	Stand Alone/Bundled	Protection/Target Level	Community Input	Education/Awareness	Instigator	Consultancy/Broker	Donor	Reinsurer	Delivery Partners	Pilot or Product Launch	Motivation	Premium Subsidies	Status Success = ongoing + ceased intentionally Failure = ceased unintentionally
India	Lower middle	BASIX	Business (single)	P	2003	Stand alone	Micro & Meso	☑	☑	International	☒	☒	☑	Banks + insurance companies	Pilot	Market gap identified	☒	Ongoing
India	Lower middle	VimoSEWA	Life, health, assets, death (multiple)	I	2001	Stand alone	Micro	☒	☒	National	☑	☑	☒	Banks + insurance companies	Product launch	Disaster in recent past (1-3 years)	☒	Ongoing
India	Lower middle	Weather Protect	Business (single)	P	2014	Bundled	Micro	☒	☑	International	☒	☒	☒	Banks	Product launch	None specified	☑	Ongoing
India	Lower middle	Cattle & Livestock Insurance Policy	Business (single)	I	2005	Bundled	Micro	☒	☑	None specified	☑	☒	☒	Banks, MFIs, worker associations + companies/businesses	Product launch	None specified	☒	Ongoing
Indonesia	Lower middle	Alert 1 Manggarai Protection Card	Business and property (multiple)	P	2009	Stand alone	Micro	☑	☑	None specified	☑	☒	☑	Banks + insurance companies	Pilot	Disaster in recent past (1-3 years)	☒	Ceased unintentionally
Mongolia	Lower middle	Index-Based Livestock Insurance	Business (single)	P	2005	Stand alone	Micro	☒	☒	National	☑	☑	☒	Banks	Pilot	Disaster in recent past (1-3 years)	☒	Ongoing
Nicaragua	Lower middle	INSS Health Insurance	Health (single)	I	2007	Stand alone	Micro	☒	☒	National	☑	☑	☒	MFIs	Pilot	Awareness of hazard/disaster risks	☒	Ongoing
Pakistan	Lower middle	BIMA	Accident (single)	I	2015	Stand alone	Micro	☒	☑	International	☒	☒	☒	Companies + businesses	Product launch	Awareness of hazard/disaster risks	☒	Ongoing
Pakistan	Lower middle	Aga Khan	Life and health (multiple)	I	2007	Stand alone	Micro	☑	☑	International	☒	☑	☒	Community groups + worker associations	Pilot	Market gap identified	☒	Ceased unintentionally
Philippines	Lower middle	Calamity insurance	Natural catastrophe - property and business (multiple)	I	2011	Bundled	Micro	☒	☒	International	☑	☒	☒	Banks	Product launch	None specified	☒	Ongoing
Philippines	Lower middle	CLIMBS (Coop Life Insurance & Mutual Benefit Services) Weather Index	Business (single)	P	2011	Stand alone	Meso	☒	☑	International	☑	☒	☑	Community groups + worker associations	Product launch	Awareness of hazard/disaster risks	☒	Ongoing
Philippines	Lower middle	CLIS – "Pawmassurance" and "Microinsurance"	Death and fire (multiple)	I	2011	Stand alone	Micro	☒	☑	National and international	☒	☑	☒	Banks + companies/businesses	Product launch	Market gap identified	☒	Ongoing
Senegal	Lower middle	Drought Index-Insurance for groundnut farmers	Business (single)	P	2011	Stand alone	Micro	☒	☑	National	☑	☒	☑	Community groups + worker associations	Pilot	Awareness of hazard/disaster risks	☑	Ongoing
Sri Lanka	Lower middle	SANASA Insurance	Business (single)	P	2011	Stand alone	Micro	☒	☑	National	☑	☒	☑	Insurance companies, community grps + worker associations	Product launch	Market gap identified	☒	Ongoing
Ukraine	Lower middle	Index Insurance	Business (single)	P	2003-2005	Stand alone	Micro	☑	☑	National and international	☒	☒	☒	Insurance companies	Pilot	Market gap identified	☒	Ceased unintentionally
Vietnam	Lower middle	Assurance Décès Emprunteur	Life (single)	I	2008	Bundled	Micro & Meso	☒	☑	None specified	☑	☒	☒	MFIs	Pilot	Market gap identified	☒	Ongoing
Vietnam	Lower middle	Agriculture insurance programme	Business (single)	P + I	2011	Stand alone	Meso	☒	☑	National	☒	☑	☑	Insurance companies	Pilot	Awareness of hazard/disaster risks	☑	Ongoing
Brazil	Middle	Municipalized Risk Group (GRMB) in Rio Grande do Sul, Brazil	Business (single)	P	2001	Stand alone	Micro	☒	☑	National	☑	☒	☑	Companies + businesses	Product launch	Awareness of hazard/disaster risks	☑	Ongoing
China	Middle	WRMF Index Insurance	Business (single)	P	2008	Stand alone	Micro	☒	☑	National	☑	☑	☒	Insurance companies	Pilot	Awareness of hazard/disaster risks	☑	Ongoing
Peru	Middle	ENSO Business Interruption Index Insurance (EBII)	Business (single)	P	2010	Stand alone	Meso	☒	☑	None specified	☑	☒	☑	Banks + MFIs	Product launch	Awareness of hazard/disaster risks	☒	Ongoing
Mexico	Middle	Rainfall index insurance program for catastrophic risk and disaster relief	Business (single)	P	2002	Stand alone	Macro	☒	☒	National	☑	☒	☑	Government	Pilot	Awareness of hazard/disaster risks	☑	Ongoing

Appendix 2

Microinsurance Initiative	Source
Bangladesh (BIMA Mobile Life)	Karakoti, H. & Yeo, P.L. (2014) Airtel (2014)
Brazil (Municipalized Risk Group (GRM®))	IFAD (2010)
Burkina Faso & Mali (Siman Panga)	Magnoni, B. & Sobol, D. (2015)
Burkina Faso & Madagascar (Airtel Mobil' Assur)	Allianz (2015) IFC World Bank Group
China (WRMF Index Insurance)	IFAD IFAD (2010)
Colombia (Seguro de Hogar)	Allianz (2015)
Colombia (SaNASA Insurance)	Fedesarrollo, S.Z. (2010) De la Torre, V.E.B. (2008)
Ethiopia (Weather Index Insurance)	Araya, N.S. (2011) Tadesse, M. A. et al. (2015)
Ethiopia (HARITA)	Greatrex, H. et al. (2015)
Ghana (Crop Price Insurance)	Karlan, D. et al. (2010) Yeh, L. (2013)
Ghana (Life Insurance)	Tran, M. (2013) Levin, P. (2012) Advision Finance (2015)
Ghana (Obra Pa)	Microinsurance Centre (2012) Magnoni, B. (2013)
Haiti (MiCRO Weather Index Insurance)	MiCRO IFC
India (BASIX)	BASIX
India (VimoSEWA)	VimoSEWA Garand, D. (2005)
India (Weather Protect)	Allianz (2015)
India (Cattle & Livestock Insurance Policy)	Allianz (2015)
Indonesia (Alert 1 Manggarai Protection Card)	FARMD Artemis (2009)
Kenya (Linda Jamii)	Safaricom Business Daily (2015)
Kenya, Rwanda & Tanzania (Kilimo Salama - agricultural insurance)	Kilimo Salama IFC
Malawi (Localised Crop Specific Insurance)	GFDRR (2012)
Malawi (Drought risk management)	World Bank
Mexico (Rainfall index insurance)	IFAD (2010)
Mongolia (Index-Based Livestock Insurance)	World Bank (2016)

	World Bank (2009)
Mozambique (Weather Index Insurance)	GIIF
Nepal (Microlife insurance (endowment))	SCBF
Nicaragua (INSS Health Insurance)	Centre for Health Market Innovations Diaz, F. S. et al. (2010)
Pakistan (BIMA)	Bima MILVIK
Pakistan (Aga Khan)	AKDN (2008) Mcguinness, E. et al. (2010)
Peru (ENSO EBIII)	Skees, G.R. (2009) Skees, G. & Murphy, A.G. (2009)
Philippines (Calamity insurance)	Martirez, M. H. (2015) Microinsurance Centre (2012)
Philippines (CLIMBS Weather Index)	CLIMBS Microinsurance MicroCapital (2010)
Philippines (CLIS Pawnassurance)	Cebuana Lhuillier Humarang, J. (2015)
Rwanda (Weather Index Insurance)	IFC
Senegal (Drought Index-Insurance)	IFC
Sri Lanka (SANASA Insurance)	SANASA World Bank (2007)
Uganda (Micro Life Insurance)	McCord, M. J. (2000)
Ukraine (Index Insurance)	IFAD (2010) Hlyvynska, O. & Zaripov, A. (2017)
Vietnam (Assurance Décès Emprunteur)	OECD (2015) VINARE Dao, L.V. & Tai, L.V. (2014)
Vietnam (Agriculture insurance programme)	Dang Minh (2017)
