



Issues Paper: Addressing the Gap in Actuarial Services in Inclusive Insurance Markets

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This paper has been produced by the Microinsurance Task Force of the Insurance Regulation Committee and has been approved by the Insurance Regulation Committee.



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1. Executive Summary

Financial inclusion, whereby all adults have effective access to financial products, including insurance, has increasingly become a global priority, particularly in low- and middle-income economies. The IAIS has supported and fostered the goal of financial inclusion through a number of initiatives, including providing guidance to regulators for appropriate and proportionate regulation and supervision of inclusive insurance. The IAA has provided input and support to the IAIS guidance with respect to actuarial roles in microinsurance. The purpose of this paper is to expand on this input and to propose specific recommendations for future action.

In mature, conventional insurance markets, actuaries play important roles in product development, pricing, risk management and solvency, and provide needed expertise that supports regulatory goals of financial soundness and consumer protection. In emerging markets, there is a need to consider the overlap between insurance and microinsurance, and whether the need for actuarial services are the same in microinsurance as they are in the broader insurance market. Certain functions or services typically provided, in more developed markets, by actuaries may not, in less developed and microinsurance markets be provided by actuaries. However, there remains a need for the risk carrier to be able to determine adequate and appropriate premiums, policy and claims liabilities and capital level, and these activities require a certain level of training and experience.

The existence of actuarial associations and the availability of trained actuarial resources vary widely by country, as does the involvement of qualified actuaries in microinsurance programmes. In emerging insurance markets, and particularly in the microinsurance context, actuarial capacity is often severely limited. Even in countries with more developed actuarial professions, actuaries are often not available to microinsurance providers, particularly where the microinsurance market is still nascent. Some countries that have well developed microinsurance markets still lack local actuarial capacity.

In areas where actuarial capacity is limited, the IAA already has a number of initiatives underway to promote the actuarial profession and to promote and encourage training. A key recommendation from this report is that these efforts should include more targeted and specific educational material related to microinsurance. These efforts will serve to increase the available supply of actuarial resources over the long-term as well as encourage the use of actuaries by microinsurance providers. Increasing global awareness of the value of actuaries in stable insurance markets may also help to create a virtuous circle whereby increased demand for trained actuaries will lead to greater efforts to improve access to education and training.

In the interim, effective approaches must be sought to meet the need for actuarial services in microinsurance markets with the resources that are currently available. A system cannot demand more than the available supply. The problem of not having sufficient actuarial capacity for microinsurance providers cannot be solved by redirecting existing actuaries from the conventional insurance industry if there are no or few actuaries to begin with. A proportionate approach to regulation and supervision lends itself to regulatory interventions that minimise the need for qualified actuaries as well as careful definition of areas where qualified actuaries are necessary and where they are not. This definition will be unique to the local microinsurance market, based on the product characteristics, microinsurance providers

and actuarial environment. The paper outlines some basic principles that might apply and provides some examples of approaches currently used in practice.

Certain functions or services typically provided by qualified actuaries may be adequately supported by actuarial technicians or well-trained non-actuaries. Defining minimum qualification requirements for specified functions or roles and increasing access to the necessary training will serve to strengthen the microinsurance market overall. Defining restricted or alternative actuarial designations may be useful, in jurisdictions where the actuarial profession is already well developed. While it does not have a remit to train non-actuaries, as part of its outreach activities the IAA could promote, encourage and support the training of non-actuaries who are carrying out actuarial work in microinsurance markets. However, it may be better to leave this to, or to work alongside, microinsurance organisations such as the ILO's Microinsurance Facility, and link such organisations with people who would be willing to provide such training (on a paid or volunteer basis).

Actuarial guidance notes and standards of practice are important tools in ensuring that actuarial services are performed in a consistent and appropriate manner, to a high standard of quality. Actuaries that belong to a recognised actuarial society that is a full member of the IAA are bound by professional codes of conduct and actuarial standards of practice. In jurisdictions where these do not exist, or where actuarial services are performed by others, there is a need to provide professional guidance and standards to ensure consistency and quality. In this paper, we outline some initial principles for developing guidance and actuarial standards of practice for microinsurance, and a key recommendation of the task force is to further develop this work. As the IAA has an interest in ensuring that actuarial services are provided in a consistent and high quality manner across jurisdictions, developing guidance for microinsurance regulators and practitioners would help to serve this interest.

A key point is that there is no single solution or "one size fits all" approach to providing actuarial services in microinsurance. Microinsurance markets are distinctly different depending on unique regional contexts and characteristics. Both the supply and demand of qualified actuarial resources vary widely between countries. For jurisdictions with well-developed conventional insurance markets, and an existing actuarial profession, the possibilities will be different than in emerging markets with no actuaries or actuarial programmes to rely on. Consequently, while general principles may be outlined, specific solutions will need to be defined at the country level in order to take into account the unique circumstances of each jurisdiction. A joint effort by the IAIS and IAA to provide guidance to regulators to assist with this work would be extremely useful. Towards this end, the task force recommends that the initial principles outlined in this paper be expanded through the development of an international actuarial note on microinsurance. The IAIS also has a role to play in encouraging regulators to develop locally specific policy and regulatory frameworks for inclusive insurance markets, and providing support for these initiatives.

In summary, our key recommendations are (see section 9 for further details):

- Develop an International Actuarial Note (IAN) on microinsurance.
- Include microinsurance in existing IAA education and awareness initiatives and develop a medium term strategy for training.
- Expand actuarial education efforts in microinsurance to include non-actuaries, particularly in countries where local actuarial associations do not exist.
- Provide additional application guidance to national insurance regulators with respect to proportionate actuarial services in inclusive insurance markets.
- Conduct additional data-gathering efforts to improve the conclusions and recommendations from this initial paper.
- Review progress of the above recommendations within two years of the publication of this paper.

2. Background

Scope and purpose

- 2.1. The IAIS published an Application Paper on “Regulation and Supervision Supporting Inclusive Insurance Markets” in October 2012 (IAIS 2012). The Application Paper provides guidance for regulation that supports inclusive insurance markets. The IAIS considers that international Insurance Core Principles (ICPs) apply to insurance supervision in all jurisdictions, but recognises that supervisors may need to adjust certain supervisory requirements and actions in accordance with the nature, scale and complexity of the risks involved.
- 2.2. In particular, the Application Paper notes that supervisory measures should not be more onerous than necessary, and that low risk activities may merit simplified means of meeting requirements. This may be extended to the need for technical expertise such as that provided by actuaries in setting premiums and technical provisions. Given a scarcity of qualified actuarial resources in many microinsurance markets, the Application Paper includes a suggestion that some actuarial functions might be supported in a shared fashion across insurers or an insurance market.
- 2.3. The IAA’s Microinsurance Working Group (MIWG) was asked to provide input during the drafting process and consultation period. The IAIS subsequently followed up on specific comments from the MIWG relating to the provision of actuarial services in microinsurance markets. The IAIS Financial Inclusion Subcommittee asked the IAA to develop a paper outlining the current issues and potential approaches or solutions as the basis for further discussion and possible collaboration.
- 2.4. In response to this request, the IAA Committee on Insurance Regulation formed a Task Force on Microinsurance to develop a short paper outlining the issues with respect to actuarial functions within microinsurance markets.
- 2.5. The purpose of this paper is twofold: to outline the current context and challenges in providing qualified actuarial or technical resources in microinsurance markets as well as to propose ideas and specific approaches to address these challenges and explore avenues for further development.
- 2.6. While the paper has been developed at the request of the IAIS, the ultimate audience for this discussion may be quite broad and includes national insurance regulators, national and international microinsurance development organisations, and individual microinsurance providers or practitioners.

About inclusive insurance markets

- 2.7. Financial inclusion is the condition whereby all working age adults have effective access to credit, savings, payments, and insurance from formal providers. Inclusive insurance, often referred to more specifically as microinsurance, is a key component of financial inclusion in a given jurisdiction and contributes to financial stability.
- 2.8. Microinsurance has been defined as “any form of protection against risks that is designed for and accessed by low-income people, provided by different categories of

carriers but operating on basic principles of insurance and funded by premiums.” (IAIS-CGAP Joint Working Group on Microinsurance 2007). While this definition leaves the door open for wide range of institutional arrangements, it still essentially requires that all should be under the supervision of the appropriate insurance regulatory authority.

- 2.9. A key point is that microinsurance is insurance, and therefore that insurance principles apply in the development, underwriting and risk management of microinsurance products. Notable characteristics of microinsurance are that it should be affordable, sustainable, convenient, and be delivered in a responsible fashion by licensed and supervised insurers and intermediaries.
- 2.10. Microinsurance products range from the fairly simple, such as credit life and funeral insurance, to the very complex, such as indemnity health insurance and index-based agriculture products. These factors require innovation at the regulatory level in order for the environment to be sufficiently flexible to encompass all types of microinsurance, yet still strong from a prudential and consumer protection standpoint. A proportional approach addresses the need for appropriate regulation and supervision while ensuring the regulatory burden for microinsurers is not excessive.

Actuarial services in microinsurance markets

- 2.11. In conventional commercial insurance markets, actuaries play important roles in terms of product development, pricing, risk management and solvency, given their professional and technical expertise. While insurance regulations in many jurisdictions require certain functions or roles to be performed by qualified actuaries, in many others, actuarial roles, including the definition of an actuary, are not defined by insurance legislation or regulation (IAA 2013).
- 2.12. In this paper we use the term “actuarial services” to refer to roles or functions that are typically performed by actuaries in commercial insurance markets. In emerging markets and microinsurance programmes, these functions and activities may not necessarily be performed by qualified actuaries. The paper proposes some initial guidelines and principles to govern appropriate and proportionate delivery of actuarial services in microinsurance markets.

3. Key Issues

No single solution or approach

- 3.1. Microinsurance markets are distinctly different depending on unique regional contexts and characteristics. Both the supply and demand of qualified actuarial resources vary widely between countries. *Consequently, while general principles may be outlined, specific solutions will need to be defined at the country level in order to take into account the unique circumstances of each jurisdiction.*
- 3.2. *The need for and provision of technical actuarial services in microinsurance markets can be analysed along several dimensions.* These dimensions include regional or country-specific issues, cultural considerations, type and complexity of products and covered risks, distribution approaches, extent and maturity of existing microinsurance

programmes, and the availability of local actuarial professionals. Unique approaches may be recommended or required at the local level based on any or all of these dimensions. Instances of universality across dimensions, such as insurance core principles and international actuarial standards, must be considered as well.

- 3.3. *The type of microinsurance products found in a given market will depend upon the cultural and socio-economic environment of the country, and will impact the type and level of actuarial services needed.* For example, in some countries, funeral products are successful because of the importance of funerals; in other countries, these products may not be accepted. Similarly, the existence of a national health programme will impact the design and demand for health microinsurance. Actuarial requirements for products with long-term guarantees or significant volatility will be higher than those for limited, short-term products such as credit life.
- 3.4. *The type of microinsurance organisations active in the local market, including regulated insurance companies, cooperative or mutual organisations and informal community groups, will impact both the need for and availability of actuarial services.* For example, self-insured groups or cooperatives, where the requirements of corporate governance may be applied differently due to the organisational structure, may have the ability to reduce insurance payments or call for additional capital from members. In such situations, the requirements for actuarial oversight may be less onerous, although ensuring appropriate actuarial support and supervision from the regulator would help to ensure financial soundness.

Need for suitably qualified or experienced professionals

- 3.5. *In applying the principle of proportionality to regulation and supervision of microinsurance programmes, the overall objectives of an insurance supervisor will continue to be the protection of policyholders, and the development of safe, stable and fair insurance markets.* Proportionate regulation and supervision should not result in “second class” products for microinsurance clients.
- 3.6. *While many factors impact the success of a microinsurance programme, and retaining an actuary is no guarantee, there remains a need for the risk carrier to be able to determine adequate and appropriate premiums, policy and claims liabilities and capital levels.* It may be argued that, given the relative lack of financial resources and financial literacy in many microinsurance markets, the need for prudence and financial soundness is even more imperative. Sound application of actuarial knowledge improves the value of microinsurance programmes and encourages better risk mitigation and behaviour among microinsurance clients.
- 3.7. *A minimum level of training and experience is required in order to perform actuarial services. Developing appropriate training and certification programmes in microinsurance markets is a key component in increasing the supply of appropriately qualified actuarial professionals.* While not all circumstances or microinsurance products will demand the qualification and training of a fully qualified member of a recognised actuarial association, defining minimum qualification requirements for specified functions or roles and increasing access to the necessary training will serve to strengthen the microinsurance market overall.

- 3.8. *Professional codes of conduct are a means to ensure that professional services are delivered to a high standard, providing reassurance to the users of those services.* All qualified members of actuarial societies that are full members of the IAA are bound by their society's professional code of conduct regardless of the jurisdiction in which they are practicing (and in the UK this will include those who achieve Certified Actuarial Analyst status). Countries without a formal actuarial society may not have developed an actuarial code of conduct. Non-actuaries may not be subject to a professional code of conduct or be aware of standards of practice for the actuarial services they are performing. These circumstances may be ameliorated by developing a local code of conduct for all insurance professionals.
- 3.9. *Actuarial education notes, guidance and professional standards of practice are important tools in ensuring that actuarial professionals perform their services in a consistent and appropriate manner, to a high standard of quality.* Actuarial standards, guidance and educational notes may be developed at an international level through the IAA, at a regional level through regional actuarial associations, or at the local level. This paper therefore outlines some considerations in developing both international guidance and local standards of practice for actuarial services in microinsurance markets.
- 3.10. *Based on anecdotal evidence, actuarial services may not be performed effectively for many microinsurance providers.* It is generally only larger insurance companies located in markets with well-developed and locally available actuarial resources that are able to meet the need for actuarial services for microinsurance business on a consistent basis. While this is not to say that only qualified actuaries can perform actuarial services, it raises the question of how microinsurance providers understand and manage the risks of their business without actuarial support.
- 3.11. *There are potentially negative consequences when actuarial services are performed by persons without appropriate or sufficient training or experience.* These may include:
- Inadequate or inappropriate premiums
 - Inadequate, redundant, or inaccurate policy or claims liabilities
 - Lack of appropriate capital management
 - Poor management and business decisions, e.g., rate reductions driven by competition rather than lower claims or operating expenses
- 3.12. In the current environment, many microinsurance projects continue to be funded at least partly by donor organisations, including government aid and non-government organisations, which may serve to ameliorate negative consequences related to inadequate technical support. As the microinsurance market becomes more commercial, the potential consequences may become more severe.
- 3.13. The following are some examples of negative outcomes in microinsurance markets that are at least partly due to a lack of adequate actuarial resources:
- Indochine Insurance Company, in Cambodia, wound up due to insolvency in 2004, and the community-based health insurance (CBHI) programmes in Cambodia have not been able to wean off donor support and are mostly in deficit. While these losses may be due to a number of causes, Cambodia does not have qualified actuaries available to assist with product design, pricing and risk management.

- In the 90's CARD Philippines designed a microinsurance programme that included long term guarantees, without the involvement of an actuary or an experienced insurance person. As a result the organisation soon realized that it was not sustainable restarted the programme by forming a formal mutual benefit association (MBA) and returned some of the premiums already paid by members.
- There are many cooperatives in Philippines that run informal insurance services for their members. They begin by copying other programmes or formal products in the market, and tend to be too inclusive by including members of all ages. If programmes run into financial difficulty, they cover the losses from other areas of operation, then either make adjustments or cede the risk to an insurer (which does make pricing adjustments). Again, outcomes are usually not too disastrous for the members.

3.14. The examples given in 3.13 above did not, in the end, always turn out to be as bad as they could have. However, if there had been more experienced people available it would have reduced the risk of the problems happening in the first place and, in general, would have minimised the risk of disastrous consequences occurring.

Actuarial roles: microinsurance vs conventional insurance

- 3.15. *In emerging markets, there is a need to consider the overlap between insurance and microinsurance, and whether the need for actuarial services are the same in microinsurance as they are in the broader insurance market.* The size of the potential market may dictate the priorities. Government policy on financial inclusion and political issues may impact the decision. Depending on the local situation, microinsurance organisations might be able to leverage the actuaries already employed or available elsewhere in the broader insurance market.
- 3.16. *The predominant view is that microinsurance is, at its core, insurance; therefore, core actuarial functions are the same for microinsurance as they are for any other type of insurance.* Although we agree with this view in principle, microinsurance providers may have fewer needs in some of the traditional core actuarial areas due to the nature, scale and complexity of the products offered and therefore it would be appropriate to apply proportionality when setting regulations.
- 3.17. *The way microinsurance is viewed in the broader insurance or financial environment often depends at least in part on the view of regulator.* For instance, microinsurance may be viewed only as insurance with a lower sum insured and with no special regulations or exemptions; therefore, any mandated actuarial requirements are the same. Conversely, microinsurance may have specific regulations or exemptions.
- 3.18. *Certain functions or services typically provided by actuaries may not require actuaries in a microinsurance context.* Simple, low-risk products, with little price differentiation in the market, may be adequately supported by well-trained non-actuaries, although actuarial support at the level of the regulator or insurance association could help to ensure that overall premiums in the market are sensible and that appropriate technical provisions are maintained. A core component of this issue is the need to define the relevant actuarial services applicable to microinsurance and specify local requirements for actuarial involvement. Section 5 covers this core issue in more depth.

Available supply of actuarial capacity in microinsurance markets

- 3.19. *Finding qualified local resources is usually a challenge. Even if local actuarial resources are available, their capacity needs to be constantly built through continuing professional education.* If a local actuarial body or society exists, the programming can be facilitated and would benefit from identifying external resources/ faculty who are knowledgeable. It is eminently desirable that local actuarial associations are formed if not already in place, and are governed in a manner that promotes a culture of relevant knowledge. Continuing professional education could be delivered on-line and include education in professional as well as technical skills.
- 3.20. *The existence of actuarial associations and the availability of trained actuarial resources vary widely by country, as does the involvement of qualified actuaries in existing microinsurance markets.* Some details and examples of the current state of actuarial capacity in selected countries are provided in an Appendix. This table does not attempt to be exhaustive, but to illustrate the wide disparity in available actuarial resources, even among IAA member organisations. As of November 2013, the IAA includes 65 Full member associations and 28 Associate members¹.
- 3.21. *As illustrated in the Appendix, it is clear that local actuarial organisations in many microinsurance markets are relatively new, with few, if any, qualified actuaries as members.* Existing education options are limited, and local professional exams are not usually available. Actuarial services in microinsurance are frequently not being supplied by local actuaries, even when available, as these may earn more by working for conventional insurers.
- 3.22. *Some countries that have well developed microinsurance markets may still lack local actuarial capacity.* The only option that providers in such a market have is to hire external, often international, consultants. The fees charged by actuarial consultants are often high, especially for companies operating in smaller markets. Ghanaian companies, for instance, have hired consultants from the UK, United States, or South Africa in the past, but have found this to be expensive.

Demand for actuarial services in microinsurance

- 3.23. *In general, there is low awareness of the value added by qualified actuaries in many of the countries where microinsurance is sold.* In some countries, for example India, larger insurance companies are aware of the value added by actuaries, but smaller companies and microinsurance providers are usually not. Insurance providers and regulators in many developing insurance markets do not fully realise or appreciate the value that an actuary can add to the business. Many of these countries do not have their own actuarial societies, thus there is often no local organisation supporting advocacy and awareness of actuaries and actuarial functions.
- 3.24. *In many countries, for example South Africa and Ghana, the perceived cost of hiring and training actuaries is a major hurdle.* If the value provided by actuaries is already misunderstood, the fact that actuaries can be perceived as expensive compounds the

¹ IAA Press Release, 1 November 2013

lack of desire of microinsurance providers to employ or even contract actuaries. As another example, in Mongolia, the need for actuaries is high, but the willingness and ability of insurance companies to pay for them is limited.

- 3.25. *The decision to hire in-house actuaries rather than delegate or contract actuarial services may be different for microinsurance providers.* Retaining in-house actuaries might be prudent for certain day-to-day tasks, but cost might keep microinsurance providers from being able to do so. In some cases, microinsurance providers might prefer to hire outside consultants on an as-needed basis, or to employ more general practitioners who have enough actuarial knowledge to price products but will also be involved in other tasks. This decision will be affected by the complexity of the products and covered risks.

Balancing supply and demand

- 3.26. *If there is an overall lack of actuarial resources in a given country, then a sound immediate objective may be to fill the gap for actuarial services for the mainstream insurance industry first.* Another approach might be to work to fill the gap for actuarial services in general, without singling out microinsurance as a distinct sector. If the gap is filled for mainstream insurance first, it is not certain that this will eventually lead to improved actuarial capacity for microinsurance markets. There are likely other interventions that will need to take place in order to make sure that microinsurance providers can tap into the actuarial capacity once it exists in the broader insurance market.
- 3.27. *Generally speaking, the problem of not having sufficient actuarial capacity for microinsurance providers cannot be solved by redirecting existing actuaries from the conventional insurance industry if there are no or few actuaries to begin with in the region.* The solutions will be different depending on whether the problem is lack of supply, rather than lack of demand. This relates to a broader question of whether the challenge that first needs to be solved is addressing actuarial capacity overall, rather than solely in microinsurance markets. In some countries this may only be a matter of time, and responding to the needs of microinsurance providers in the short-term through other approaches may help to address the challenges while actuarial resources are being developed in the long-term.
- 3.28. *In some emerging markets, for example Ethiopia, Sri Lanka and Mongolia, reinsurers meet at least some of the need for actuarial services for the mainstream insurance market, often by providing expertise to primary insurers in the areas of underwriting, product development, and pricing.* In some cases fixed calculations are even provided. This type of arrangement can have positive spill-over effects for microinsurance, as all products underwritten by a primary insurer might be covered under an umbrella treaty with a reinsurer. On the other hand, such an arrangement could result in microinsurance providers “overpaying” for reinsurance that they need for their insurance products, but that they do not actually need for the proper risk management of their microinsurance portfolio. In Ethiopia, for example, there are few reinsurers willing to write business in that market: reinsurance is frequently only available on a quota share basis and gross premiums are typically set by the reinsurer. This is helpful in a market where there are no local actuarial professionals at all, but reinsurance premiums are relatively high (as a

percentage of premium), which poses a challenge for designing affordable microinsurance products.

- 3.29. *In some cases, for microinsurance programmes, certain actuarial roles could be assumed by appropriately qualified non-actuaries, such as management or the Board.* For instance, in South Africa, the microinsurance regulatory framework (National Treasury, Republic of South Africa 2011) proposes that microinsurance providers will be required to obtain actuarial sign-off on total premiums, but not for valuation or capital purposes. The level of prudential risk allowed in microinsurance products is limited in a way that enables the South African to take this approach. Careful consideration is needed to determine when having a non-actuary fill actuarial roles or conduct actuarial functions is appropriate, as well as to ensure that management or Board members have the appropriate knowledge to take responsibility. Corporate governance regulations, such as “fit and proper” requirements, can help in this respect.
- 3.30. *In the short-term, “volunteer actuaries” may be able to assist in meeting the need for professional actuarial services in the microinsurance market.* These could be qualified actuaries from other countries that participate in defined activities either with local actuarial organisations or directly with microinsurance providers. As an example, the ILO’s Microinsurance Innovation Facility has provided actuarial technical assistance to microinsurance providers through its fellowship and capacity building programmes. Actuaries Without Borders (AWB) provides assistance for new or developing actuarial associations although not directly to microinsurance programmes. The IAA’s Microinsurance Working Group (MIWG) may be able to serve as a network linking actuarial volunteers with local organisations or microinsurance programmes. While not a long term solution, such assistance is useful as a bridging mechanism while overall actuarial capacity is being strengthened in a given region.
- 3.31. Table 1 provides a sample of current experience in different countries in balancing supply and demand for actuarial services in microinsurance.

Table 1: Some current approaches for actuarial services in microinsurance

Region or country	Current Microinsurance Context
CIMA region (West Africa)	<ul style="list-style-type: none"> • The actuarial profession is not recognised in a legal way • The insurance code does not require any formal intervention from a qualified actuary and does not provide any guidance on the profession • Newly introduced microinsurance regulations do not include any provisions related to actuaries • Due to its small premiums and/or sums insured, microinsurance is considered less risky and easier to manage by the insurance profession, although this may not be true in practice

Region or country	Current Microinsurance Context
Ghana	<ul style="list-style-type: none"> • Significant recent collaboration between the regulator, industry, and development agencies (GIZ) to holistically address challenges facing microinsurance market, including actuarial capacity • Provisions in the proposed new insurance legislation will require appointed actuaries and in-house actuarial capacity, which is expected to increase the demand for trained and qualified actuaries for the insurance market as a whole • Actuarial capacity is a key element of new microinsurance regulatory framework • New local training initiatives are planned
India	<ul style="list-style-type: none"> • Microinsurance products are defined in insurance regulation and offered by 'lightly licensed' distributors like NGOs and self-help groups • Insurers have business targets in social and rural sector, which leads to the build-up of a microinsurance portfolio • Actuarial services are available within the commercial insurers • An appointed actuary system is in place, so most insurers have full time actuaries and trained actuarial staff • Captives, non-profit and cooperative underwriters are active in health microinsurance, but are not known to employ full-time staff. Some have grown exponentially and would benefit from actuarial expertise on reserving and capital modelling
Kenya	<ul style="list-style-type: none"> • Most insurance companies do not have actuaries, therefore microinsurers even less likely to have access to actuarial resources • Insurers hire external actuarial consultants if needed, but this is generally avoided unless required by regulation, primarily due to cost • New regulations require certain functions to be performed by actuaries for life and non-life insurance, for example, a requirement to review actuarial reserving techniques • These regulations will apply to all licensed insurers, including microinsurers unless specific exemptions are introduced
Mongolia	<ul style="list-style-type: none"> • Microinsurance is currently provided only by insurance companies • While insurance companies are required to meet certain requirements for actuarial functions, these are quite minimal • The regulator is pushing insurance companies to hire and train actuaries beyond the minimum • The Society of Actuaries in Mongolia is assisting with educational efforts
Philippines	<ul style="list-style-type: none"> • Actuarial capacity is generally available and required for formal insurance providers, with the exception of health insurance • Smaller companies and mutual benefit associations acquire services from local actuarial consultants while large companies employ their own actuaries • Some smaller companies and larger MBAs employ actuarial students or other technicians that do most of the day to day work, and who are trained and under the tutelage of external actuaries • Some smaller MBAs have invested in and formed a technical services provider which assists them with product development and actuarial services

Region or country	Current Microinsurance Context
South Africa	<ul style="list-style-type: none"> • New national regulatory framework proposed for microinsurance (National Treasury, Republic of South Africa 2011) • Framework includes specifics on the role of the actuary in microinsurance programmes, and also allows for a more restricted “microinsurance technician” role • The actuarial society is currently developing educational standards and guidance for this new actuarial role

4. Increasing Supply: Training and Certification Options

Training for actuaries, with or without certification

- 4.1. *Training and qualification requirements for actuaries are set by professional actuarial organisations or insurance regulators, and in some cases are specified in legislation.* Qualification requirements determine who may call themselves an actuary. Training requirements include the subjects that need to be studied and any specific work experience requirements. Local professional organisations may set their own exams or make use of exams set by actuarial organisations in other countries. The actual training may be provided by the professional actuarial organisation itself or by independent training organisations for some or all of the exams. The training organisations can include, in some countries, universities which provide actuarial courses at undergraduate and postgraduate level which lead to exemptions from some of the professional exams.
- 4.2. *Professional actuarial organisations may also set down requirements for on-going post-qualification education (continuous professional development or CPD).* This can take a variety of forms.
- 4.3. For members of actuarial associations that are recognised as Full Members of the IAA, and therefore must meet certain minimum educational requirements for qualification as an actuary, qualification can typically take five or more years from start to finish. Those who obtain a number of exemptions as a result of a university course may qualify in a shorter time, although this may not always happen.
- 4.4. *The International Actuarial Association (IAA) does not provide any regular training. However, there are a number of initiatives within the IAA which do provide training on an ad hoc basis.* These include Actuaries Without Borders (AWB) which arranges for volunteer actuaries to deliver specific training in countries where the actuarial profession is less developed. AWB’s objectives include “AWB also contributes to the awareness of the profession and the spread of actuarial education by encouraging AWB members to

take on teaching and coaching assignments.”² AWB does not specifically focus on inclusive insurance markets or microinsurance activities.

- 4.5. The IAA’s Advice and Assistance initiative has as its objective “To support the development, organisation and promotion of the actuarial profession and actuarial education in areas of the world in which the actuarial profession is not present or is not fully developed by providing advice and assistance, when requested, to member associations, to associations seeking to become members of the IAA, and to those wishing to establish new associations or strengthen existing associations. The advice and assistance may be focused on meeting IAA membership requirements, or may be in general to develop the elements of actuarial education and an actuarial profession.”³ Although this initiative does not provide training directly it has supported regional seminars and congresses which have often contained educational and professional development material.
- 4.6. There are some actuarial associations that also provide volunteers to give seminars or teaching modules to support actuaries in less developed countries, using their own volunteer recruitment process. For example, following on from the IAA Fund introductory seminar in Mongolia, the UK’s Institute and Faculty of Actuaries (IFoA) has now provided five separate weeks of specific educational modules, including two related to microinsurance.
- 4.7. *In a given jurisdiction, there is usually a very close link between the definition of an actuary and the training requirements.* If legislation or regulations require that certain activities, for example signing solvency certificates, are carried out by actuaries, then there has to be a clear definition of what an actuary is. This definition may be in terms of full (rather than, say, associate or student) membership of a local actuarial association. In this case the standards required for full membership will need to be sufficiently robust to provide comfort that actuaries are well qualified to carry out their statutory roles.
- 4.8. *The professional actuarial associations are primarily concerned to ensure that professional standards are maintained and therefore that the qualification requirements, in terms of exams and work experience, are sufficiently demanding.* Only secondly will they be concerned about how actuarial students prepare for exams. However, the professional organisation cannot be totally unconcerned because if, for example, there was no provision of training then students are likely to find it very difficult to pass the exams and therefore the actuarial profession in that country is likely to be very unattractive.
- 4.9. *In countries that are less actuarially developed, there can be a diversity of experience levels.* There may be a relatively large number of students graduating from university with an actuarial science degree but with few opportunities to work as an actuarial trainee. Therefore they do not progress towards becoming a qualified actuary. On the other hand there may be a few actuaries who have qualified elsewhere and moved or returned to the country. One of the issues in this dichotomy is that many of these degree courses do not lead to exemptions from the professional exams in an actuarially developed country. It would therefore be worth investigating how the barriers to

² <http://www.actuaries.org/index.cfm?lang=EN&DSP=AWB&ACT=INDEX>

³ http://www.actuaries.org/index.cfm?lang=EN&DSP=CTTEES_AA&ACT=INDEX

recognition of these universities' exams could be removed. One of the challenges will be to ensure that courses and examinations cover the necessary material in sufficient rigour.

- 4.10. The experience of the actuarial education modules developed by the IFoA, with support from the IAA and Microinsurance network, demonstrates what can be done by a group of volunteers. The modules, one of which (life insurance) has been formally released, are intended as training tools for people working on microinsurance. They have been used in training sessions at the 2012 annual microinsurance conference and in a workshop run by the UK's Government Actuary's Department in Ghana funded by the UK's Department for International Development and with the support of GIZ.

Training of non-actuaries, without certification

- 4.11. *In many countries that are less developed actuarially, actuarial work is frequently carried out by non-actuaries.* Therefore, it is important to consider whether and how training should be provided to these non-actuaries, and to what extent the IAA or IAIS may wish to take some responsibility of ensuring that such training is provided.
- 4.12. *The IAA does not have any remit or requirement to train non-actuaries.* However, as having suitably qualified staff in insurance companies and pension schemes is generally recognised as a good thing, the IAA, as part of its outreach activities could promote, support and encourage the training of non-actuaries who are carrying out actuarial work. The IAA's AWB and Advice and Assistance initiatives could be used to provide support for training to non-actuaries. As an alternative, non-actuaries could be encouraged to take the IFoA's Certified Actuarial Analyst exams (see 4.19 below).
- 4.13. The IAA is, fortunately, not alone in seeking to improve the level of actuarial knowledge and experience across the world. The International Labour Organisation (ILO), the International Association of Insurance Supervisors (IAIS), the Microinsurance Network and a number of aid agencies, donors and NGOs are also contributing. There is now a wealth of on-line material and knowledge-sharing tools available to both actuaries and non-actuaries practicing in microinsurance markets.
- 4.14. When considering the training of non-actuaries it is first necessary to identify who ought to be trained. While the immediate thought might be that it is those who are carrying out actuarial type work, and this is important, *there is also a need to train insurance company boards about the importance and usefulness of actuarial work.*
- 4.15. *Any training that is provided needs to have an impact and to be sustainable.* There is little point training people on things that they are not going to use. It is also of little value to training people who are going to move on fairly quickly, although it is perhaps hard to control this.
- 4.16. It would be useful to consider if minimum standards could be applied so that if certificates of attending a course are provided then the course ought to have been accredited by, for example the IAA or ILO; a professional actuarial organisation in an actuarially developed country or by a well-renowned private sector consultancy.

- 4.17. A number of top flight universities in the United States have started offering courses on line free of charge. These are known as MOOC, massive open on-line courses⁴. The technology is available so that many hundreds or even thousands, of students can attend the courses. This technology could be used to provide training and support to both actuaries and non-actuaries. Any assessment would still need to be in traditional exam or course work style to avoid problems of cheating. Consideration would also need to be given to providing courses in French and Spanish in addition to English, in order to have a more global reach.

Restricted or “basic” credential or alternative actuarial designation for microinsurance

- 4.18. *The training that actuarial students receive in actuarially developed countries in many cases provides them with more than they would need to carry out the functions required for microinsurance (pricing, reserving and capital management).* This is because microinsurance products should be relatively simple in general and the approach to reserving and capital management is likely to be prudent and less sophisticated than in more developed countries. Although this assumes that the training received by actuarial students in actuarially developed countries combines both theory and practical experience.
- 4.19. *It may be useful for actuaries working in microinsurance to have access to a qualification which covers what they need and avoids material that is not relevant to their market.* The IFoA has recently introduced a new membership level called the certified actuarial analyst (CAA). To achieve this qualification students have to study a selection of topics from the initial (Core Techniques or CT) exams which are most relevant to people working in less sophisticated technical roles. This qualification is open to people working in the UK but is also likely to be attractive to people working in actuarially less developed countries who would like to obtain an actuarial qualification but who cannot afford the money or the time to achieve Fellowship of the UK actuarial profession (IFoA). Although the CAA syllabus does not currently have a specific microinsurance module, it may be of interest to people already working in microinsurance or who would like to do so, and who would like to have a recognised professional qualification. The IFoA may consider adding an optional microinsurance module once the certified actuarial analyst programme is up and running. CAA members of the IFoA will be required to complete work-based skills training, will be subject to the code of conduct and will need to comply with professionalism and CPD requirements.
- 4.20. The proposed South African microinsurance regulation (National Treasury, Republic of South Africa 2011) makes provision for an “actuarial technician” to certify the adequacy of total premium rates for microinsurance products. No further actuarial involvement is required in the business of licensed microinsurers. In particular, the traditionally actuarial functions of reserving and capital calculations are formula driven and do not require actuarial involvement. This is made possible by a microinsurance product definition that restricts the level of prudential risk that a microinsurer may take on. All licensed microinsurers must appoint an “actuarial technician” to be approved by the

⁴ http://en.wikipedia.org/wiki/Massive_open_online_course

regulator. Actuarial technicians must hold a microinsurance practicing certificate before applying for approval from the regulator, which has the following requirements:

- professional standing, including an Associate or Fellow of the Actuarial Society of South Africa;
- minimum relevant experience requirements;
- passing a microinsurance specific practice module; and
- a recommendation by an eligible peer.

The microinsurance practicing certificate requirements have been designed to balance the conflicting needs to ensure an adequate supply of actuarial professionals who meet minimum professional standards but are not too costly. The requirements also take into account that South Africa has a well-developed actuarial profession.

- 4.21. There may also be scope for introducing a Masters level degree in microinsurance which covers a range of topics including actuarial, finance, regulation and marketing. This might appeal to microinsurance practitioners who have already obtained a Bachelor's level degree in a related subject such as accounting or business administration.

5. Impacting Demand

- 5.1. *Given that strategies to increase the supply of qualified actuarial professions are long-term in nature, short-term approaches to balancing supply and demand for actuarial professions in microinsurance will need to focus on strategies that impact demand.* Such approaches rely on the premise that proportional requirements for actuaries can be developed and implemented at the local level. These may include re-defining the scope of required actuarial services for microinsurance, or regulatory interventions in microinsurance markets that limit the need for actuaries.

Defining proportionate requirements for actuarial services

5.2. *There are several ways in which one can examine and define actuarial roles and functions.* The IAA's recently published paper on the Role of the Actuary (IAA 2013) provides a comprehensive (although not exhaustive) list of potential roles that are typically performed by actuaries, although not all of these would always require an actuary. Actuarial roles may be classified using any of the following:

- By business function, e.g. pricing, reserving, capital management, solvency/risk management and oversight
- By product category, e.g. life, non-life, health, agriculture, index-based; or short-term versus long-term
- By stage in actuarial control cycle, e.g. problem definition, solution design, monitoring, or possibly only oversight of one or all of these
- By structure of organisation or scheme, such as co-operatives or not-for-profit organisations versus for-profit insurers, or self-insured schemes as opposed to fully insured schemes.

5.3. *Given the different approaches that can be taken to identifying actuarial functions, each jurisdiction will need to take steps to identify, assess and classify the actuarial services required for its microinsurance market, taking into account the availability of actuarial resources.* These steps might include:

- Identify unique microinsurance characteristics, if any, for each role and/or process
- Identify the unique characteristics of the microinsurance products offered in the region, which may govern the expected level of risk related to microinsurance, and inform the decision to require more sophisticated actuarial functions
- Determine the level of actuarial qualification or training required for each role/process/product, if any, depending on the expected level of risk
- Determine if actuarial certification or intervention should be required for specific products or types of organisations that are present in the region, such as community health cooperatives.

5.4. As an example of one possible approach, Table 2 lists key features of insurance products, policyholders and the environment, with descriptions of whether that feature would present a low, medium or high requirement for actuarial involvement for particular insurers, products or environments. Examples of products which would generally have relatively low, medium or high actuarial requirements are provided. This list is not exhaustive, but intended as a guide to the issues to consider. Similar tables could be produced using the actuarial roles identified in 5.2 above or using a broader set of categories such as: pricing/product development; data analysis; environmental factors (including regulation, investment market, economy); mergers and acquisitions; capital management and financial control; risk management and reserving.

5.5. *In practice, it is unlikely that any insurance portfolio would score ‘low’ on all the dimensions, or indeed would score ‘high’ on all dimensions, so some interpretation would be required.* Not all products will fit the listed categories – a health insurance product which covers only outpatient visits might have lower need for actuarial involvement than a full hospitalisation product. A funeral insurance product which is fully renewable and where premiums are not adjustable might have medium or even high need for actuarial involvement.

5.6. Of course, even if the product type indicates a lower need for actuarial support, many of the other ‘non-product’ features may lead to a higher need for actuarial involvement, including uncertain investment environments, an insurer with poor internal controls, or situations where data is limited.

Table 2: Assessment of Required Actuarial Involvement - Example

Feature	Extent of actuarial involvement required		
	Low	Medium	High
Product Features			
Benefit type	Fixed lump sum	Benefit varies according to event (eg: reimbursement of losses), but are subject to a modest cap.	Uncapped (or high-cap) benefits which vary according to the insured event. Amount of benefit not immediately apparent from contract. Periodic payments (eg: annuities) Inflation-linked benefits
Sum insured	Low	Medium	High / uncapped
Term of insurance	Short-term – all benefits paid within the same period (year) that the premium is received.	Medium – most benefits paid within the same period as premium is received.	Long-term insurances, with an element of guaranteed renewability. Long-tail classes, where insured events may occur sometime after the premium is paid.
Frequency of insured event	Regular (e.g.: annually)	Less than once per year.	Rare / uncommon events.
Predictability of insured event	Cost of claims in a given year (period) can be predicted with a high degree of certainty. This might occur, for example, in larger portfolios, products with regular insurance events and relatively low sums insured.	Cost of claims in a given year (period) can be predicted with a good degree of certainty, but there is some fluctuation from year to year.	Cost of claims fluctuates considerably from year to year. This might occur where claims are linked to irregular events (eg: weather events), even where sums insured are low; small portfolios, or high sums insured.

Feature	Extent of actuarial involvement required		
	Low	Medium	High
Moral hazard and anti-selection	Minimal opportunity for 'moral hazard' in terms of anti-selection or claiming due to product design. High participation minimises potential for anti-selection.	Moderate risk of anti-selection and moral hazard, but measures in place to manage this (e.g.: good risk selection, strong community participation etc.)	High risk of anti-selection inherent in the product. Moral hazard risk high due to product design.
Product examples	Credit life Funeral insurance (term life assurance)	Life insurance Health insurance Property insurance	Crop insurance, livestock insurance Weather-related products Pension schemes / annuities Disability insurance
Other Features			
Quality and/or extent of data	Good quality, comprehensive, relevant data is available, with several years history available	Some gaps in data, which can be met relatively easily by reference to industry data or other schemes / countries.	New product with limited history; limited local data to understand risks or historical data available for a short timeframe only.
Investment environment	Limited investment risk as product is generally short-term and investment returns are of little consequence to overall product profitability.	Some investment risk, but investments are in well-matched investment portfolios (e.g.: investment-linked products); or Invested in low-risk investments and political environments.	Investment returns are critical to the profitability of the product. Funds are invested in assets exposed to some risk and variability and with less stable political environments.
Reinsurance	Significant portion of risk is reinsured to reputable reinsurers through easy-to-understand contracts.	Some risk retained by microinsurer. Reinsurance arrangements are clear and with reputable reinsurers.	Limited reinsurance, for catastrophic risks only, and limited recourse to additional funding. Non-standard reinsurance arrangements.
Significance / size	The potential maximum loss from an insurance portfolio is small relative to the other operations of the (e.g.; microfinance) organisation.	The potential maximum loss from an insurance portfolio is medium.	The insurance portfolio is the main business of the organisation.

Feature	Extent of actuarial involvement required		
	Low	Medium	High
Control Cycle	Insurer has an effective control cycle to monitor product performance, and adequacy of premiums and outstanding claims in a timely way, with the ability to adjust product (premiums, benefits, claims management etc.) to maintain performance.	Good control cycle in place to monitor product performance and premiums / outstanding claims adequacy, with some ability to adjust product to reflect poor performance.	Product performance is not monitored with sufficient regularity. Product design allows minimal opportunities for management to respond to poor performance.
Operational risk	Well-managed microinsurer with good processes for fraud detection etc.		Poorly managed insurer

Regulatory interventions to minimise the need for qualified actuaries

- 5.7. The IAIS Application Paper outlines the principles for proportionate regulation of inclusive insurance markets which indicates that such regulation should take into consideration the nature, scale and complexity of the business being regulated. *One possible approach to proportionate regulation is to adopt specific microinsurance regulations that prescribe allowable product types and features that serve to limit the inherent risk in such a way that the need for qualified actuarial professionals is limited.*
- 5.8. Microinsurance regulations could include a tiered or progressive structure whereby products of increasing risk or complexity are permitted only with stricter requirements for licensing, regulatory reporting, and risk management, including actuarial certifications.
- 5.9. *Microinsurance market development could be boosted by explicitly prohibiting certain product offerings within local markets.* For example, products with arguably low value in microinsurance markets or with high risk, such as variable annuities, unit-linked endowment policies or with-profits policies, could be disallowed as microinsurance. The beneficial impact of prohibiting certain product classes is that it removes the need for actuarial certification.
- 5.10. *The nature of an insurer's business should be considered in deciding whether an actuary's certification is necessary.* Regulatory oversight of small, mono-line insurers offering simple products could be managed with a formulaic capital calculation e.g. a health insurer within a small geography with a cap on benefits per life. However, multi-line insurers with complex product offerings would need to evaluate correlations within the different business lines to arrive at the capital requirement and may require the services of a qualified actuary for regulatory certification. Such approaches should include considerations in the formula for diversification or lack of it.

- 5.11. *Relative size of an insurer within a local jurisdiction needs to be a criterion for regulatory oversight and actuarial certification.* A mono-line insurer offering simple products would ordinarily have light regulatory oversight and minimum or no certification by a qualified actuary. But if such insurer becomes larger by acquiring a market share beyond a pre-defined threshold, additional requirements or standards would become operational.
- 5.12. *The frequency and depth of regulatory review could vary with the complexity of the underlying business.* Peer and regulatory review can be more (less) frequent for multi-line (mono-line) insurers with complex (simple) product portfolios, say every year (once in three years). For example, an onsite review of multi-line, complex product insurers would aid in comprehending data collection and business processes. In contrast, offsite reviews may suffice mono-line, simple product insurers. Alternately, regulatory reviews for microinsurance might be less intense but on the same frequency as for mainstream insurers. The frequency and depth of regulatory reviews will also depend on the capacity of the regulator in terms of its own actuarial expertise. The IAA could work with the IAIS to help enhance the actuarial capacity of regulators.
- 5.13. *Adopting mandated standards or formulas for microinsurance may also minimise the need for actuaries in some cases.* As standalone microinsurance underwriters are not likely to be systemically important financial institutions and while microinsurance portfolios within large financial institutions continue to be small, some areas of actuarial practice may need lighter application than others. Developing collective formula-based approaches for actuarial work is discussed further in Section 7.

Examples of proportionate regulatory requirements for actuarial services

- 5.14. The microinsurance regulatory framework recently developed for Ethiopia includes four tiers of potential microinsurance providers, with corresponding requirements for licensing, permitted products, regulatory reporting and risk management.⁵ The tiers were designed to facilitate the introduction of simple and relatively low risk microinsurance products in a financially sound manner, while also minimising the regulatory burden for smaller microinsurance providers. In particular, as there are no local actuaries, all actuarial services must be outsourced to foreign professionals, at considerable cost. Minimising the regulatory requirements for actuarial services on a proportional basis enables more organisations to enter the microinsurance market at the low end.
- Class A: existing insurance companies possessing a valid license for general insurance, long-term insurance or both; no restrictions on products
 - Class B: new, dedicated microinsurance companies, licensed only for microinsurance business activities; restrictions on allowable products and maximum insured amounts

⁵ The framework was developed by the National Bank of Ethiopia in 2013 with the assistance of FIRST Initiative/World Bank. The report is not published but may be made available upon request. Legal versions of the draft regulations are currently under development.

- Class C: microfinance institutions (already permitted by legislation to offer microinsurance); additional restrictions on allowable products and maximum insured amounts
- Mutual Benefit Providers: a registration option for cooperatives and mutual organisations to provide risk protection benefits to their members only, based on strict limits and fixed parameters.

Under this scheme, the existing requirements for actuarial investigations or certifications will be unchanged for Class A providers. For the new classes of microinsurance providers, with restrictions on product types and features, the regulator will prescribe standard formulas for determining technical provisions and solvency, which will need to be developed with the assistance of external actuarial experts. Actuarial certifications for premiums, technical provisions or solvency will not be required, except in a case where the regulator has granted approval for an unrestricted product that is conditional upon an actuarial certification.

- 5.15. In India, as an example of proportional regulation applied to the mainstream insurance market, a life insurer's appointed actuary needs to be a full-time employee while a non-life insurer can have an appointed actuary on a consulting basis. Obviously the regulator realises that life insurance business needs significant and long-term actuarial judgment that affects the long-term outcome and sustainability. On the other hand, for the short-term nature of non-life business, a full-time employed appointed actuary has not been insisted upon, but non-life insurers are expected to set up an actuarial department and build actuarial capacity.

6. Increasing Awareness

- 6.1. Emerging insurance and microinsurance markets have limited awareness of actuaries and the value that actuaries can provide to their business. *Policymakers, regulators, insurance companies, microinsurance providers, microinsurance practitioners need to be sensitised to the need for actuarial services and the value they can add.*
- 6.2. *The IAA can play a significant role in increasing awareness of the role of actuaries in emerging and inclusive insurance markets.* The IAA's Task Force on the Role of the Actuary has a strategic objective to assist in developing a strong brand for actuaries internationally. It has recently developed a set of generic documents to demonstrate the value of actuaries to potential users of actuarial services that can serve as the basis for communication with relevant stakeholders. These materials can be used and adapted for the microinsurance market as well.
- 6.3. *Support from the IAA and other international organisations help promote the profession and create awareness of the value of actuaries, at the policy and regulator level as well as the industry level.* The IAA Fund and IAA Advice and Assistance (A&A) Committee have conducted seminars in emerging insurance markets to present the role of the actuary in addition to providing support to local actuarial societies for development. Such seminars and training could be expanded to include more coverage related to microinsurance specific issues such as those described in this paper.

- In Mongolia in 2011, the IAA Fund and IAA A&A Asia subcommittee sponsored an industry seminar on the Role of the Actuary which significantly increased awareness of the value of actuaries within the industry, as well as at the policymaker level. This seminar included a session on microinsurance. Similar introductory seminars are planned for Myanmar and Nepal.
- In 2013, the IAA Fund and the IAA A&A Africa sub-committee sponsored the Third African Actuarial Congress in Lomé, Togo, hosted by the Association Actuarielle au Togo. The Congress included speakers on professional topics and actuarial education, including microinsurance, developing an actuarial analyst qualification, a train the trainer programme for university lecturers in Senegal, actuarial capacity-building in Ghana, Takaful insurance, regional mortality tables, Solvency II, and insurance accounting.

7. Developing Actuarial Guidance and Practice Standards for Microinsurance

- 7.1. *The question of how to ensure the stability of microinsurance providers is not a trivial one to answer.* Developing a set of actuarial practice standards in microinsurance has considerable implications for stable functioning, growth and long-term client value in the microinsurance market.
- 7.2. *A long-term objective might be to develop an International Standard of Actuarial Practice (ISAP) for microinsurance that would be applicable across jurisdictions.* However, given the wide diversity in microinsurance markets and actuarial resources in those markets, as described earlier, this may not be feasible in the short-term.
- 7.3. *An immediately available option would be to develop a general and non-binding educational note to provide basic principles for actuarial services in microinsurance that may be used as a reference by regulators, microinsurers and actuarial professionals in setting local regulations and requirements.* This approach could be implemented through, for example, the development and adoption of an International Actuarial Note (IAN) on Microinsurance by the IAA.
- 7.4. *An International Actuarial Note on microinsurance should be sufficiently generic to be applicable to most microinsurance jurisdictions and linked to existing microinsurance capacity building tools such as those developed by the Microinsurance Network and other international organisations.* Generic principles and guidance may make it easier for actuaries from more developed actuarial markets to work in microinsurance, and would be relatively easy to maintain if developed through a central organisation.
- 7.5. *In regions where there is a sizeable microinsurance market as well as a reasonably well developed actuarial profession, such as India and South Africa, actuarial practice standards for microinsurance (APSMs) could be developed by the local regulator or actuarial profession to meet specific local requirements as well as ensure consistency with standards for the mainstream insurance industry.* The IAA could play a role in outlining principles for the development of APSMs that would assist regulators and actuarial associations to develop specific local standards.

7.6. To assist with both of these objectives, in this section we outline some preliminary considerations in developing an IAN or similar guidance that could be applicable across microinsurance jurisdictions, as well as some initial guidance for jurisdictions that might be prepared to develop local APSMs.

Benefits of IANs and APSMs

- 7.7. *Consistency and clarity of practice are greater and risks of non-compliance (including legal risks) lesser within a profession where established professional standards and guidance are available.* Regulating and supervising foreign actuaries in emerging markets can be a challenge, which could be compounded by the lack of actuarial expertise within regulatory offices. Guidance notes and APSMs would narrow the definition of applicable practice standards thereby creating a more consistent code of regulation that is in line with the needs of local microinsurance markets. It would be worth identifying specific issues relating to the use of foreign actuaries in microinsurance markets to ensure consistent practice and supervision.
- 7.8. *Consistent guidance and standards of practice across microinsurance markets in different countries offers benefits of learning to insurers and academia.* Consistency in actuarial practices also helps regulators, policymakers and government to evaluate the practices and health of insurance providers. Analysis of product offering, business practices and financial statements would become meaningful if the approach lends to comparability.
- 7.9. *Consistency in actuarial practices through guidance notes and APSMs promises to be a cornerstone of sustainability of microinsurance underwriters especially for standalone microinsurance underwriters, predominantly microinsurance underwriters or mono-line mutual underwriters such as community-based health insurance programmes.* For an insurance business line which has a low claims frequency or where a claim event is subjectively interpreted, the question of customer protection is paramount. The sustained existence of underwriters is also an overarching factor for customer protection.
- 7.10. *APSMs can provide explicit guidance unique to the risk characteristics of the local microinsurance market for the functions of pricing, reserving and solvency.* APSMs would consider the covariate nature of risks, risk ceding principles, and margins for charges, among others. Adequate pricing is often the foundation of sufficient reserving and in turn, sufficient reserving is necessary to secure solvency. Markets do not develop when underwriters and service providers are constrained in their product offerings, which today are difficult to price in microinsurance markets. Strong guidance to address the pricing question would be a worthwhile intervention to complete the circle of reserving and solvency.
- 7.11. From a product line standpoint, both an International Actuarial Note on microinsurance and APSMs could demonstrate significant value for agricultural microinsurance and health microinsurance - areas of latent demand and microinsurance market opportunity that require appropriate technical expertise to design and price well.
- 7.12. *APSMs could potentially pave a framework for regular and appropriate data collection and analysis.* Lack of reliable and sufficient data hampers decision-making and pricing.

Setting actuarial practice standards would motivate underwriters and service providers to appropriately capture business data.

Defining proportionate standards of practice for microinsurance

- 7.13. *Defining proportionality in actuarial services is difficult.* Proportionality lays out the building blocks of the need for actuarial talent. In less developed microinsurance markets, the definition of proportionality in actuarial services will need to be approached differently than in more developed microinsurance markets. The proportionality principle works two ways: it justifies simpler and less burdensome ways of meeting requirements for low risk activities; and it also justifies applying more sophisticated methods and techniques for more complex risk situations.
- 7.14. *Proportionality in setting local APSMs needs to be specific to the local jurisdiction and market.* An IAN on microinsurance published by the IAA could provide principles and application guidance supporting standards of actuarial practice for microinsurance. Local APSMs would need to build on or adapt any such IAN.
- 7.15. *Local APSMs will need to define levels of actuarial certification:* first, a definition of 'actuary' would be necessary; second, when certification by an actuary is warranted and last, when work could be done by a non-actuary. The tasks outlined for certification by an actuary would normally be critical to the microinsurance underwriter's strategy e.g. pricing. On the other hand, tasks set aside for certification by a non-actuary (including an actuarial technician) could be managed by a formulaic approach e.g. formula-based capital measurement.
- 7.16. *Establishing appropriate linkages within the microinsurance sector would be an essential preparatory action for establishing an APSM framework.* In most microinsurance markets, the local industry would consist of fully regulated entities, organisations regulated under a different law, such as cooperatives and NGOs, unregulated community-based schemes and mutual schemes.
- 7.17. *When microinsurance business is written by a regulated insurer, a separate set of APSMs is not warranted.* In principle, one would not carve out a microinsurance portfolio of a regulated insurer and apply APSMs just because of its 'microinsurance' nature. The regulated insurer would defer to actuarial standards that are applied at large to the insurance industry. For regulated insurers, APSMs merely serve as posts of reference and additional guidance.
- 7.18. *Guidance notes and APSMs, like any other standards, are good only for a phase of time and need to be flexible in order to accommodate changing markets.* In view of emerging experience and the development of new actuarial knowledge, revisions to APSMs would be necessary.

Formula-based approaches for microinsurance providers developed on a collective basis

- 7.19. *In jurisdictions where there is a lack of trained actuarial resources and local actuarial knowledge, one approach to providing actuarial services could be to develop formula-based approaches for microinsurance providers on a collective basis. An IAN could outline appropriate principles and recommendations to assist regulators who might wish to pursue this approach. Some initial considerations are discussed here.*
- 7.20. *Standard factor-based formulas for calculating solvency capital and certain types of technical provisions would minimise the need for actuaries within the overall microinsurance market. Care would need to be taken to not veer toward an overly simplistic approach which ignores the underlying risk. For example, setting an IBNR estimate for non-life business using the basic chain-ladder method on cash claims data may not be appropriate if the business is longer-tailed.*
- 7.21. *APSMs could specify the minimum level as a formula or prescription. Example, under ICP 14 'Procedures for Valuation', when including a wider range of potentially smaller institutions, it may be necessary to consider applying standards that leverage sector-wide expertise to develop valuation guidance capable of being economically implemented for small, low risk, less complex insurers. Similarly, to deliver the intent of ICP 16 "Enterprise Risk Management for Solvency Purposes" certain activities could be specifically limited and requirements notified based on the nature of risks undertaken and capable of being economically implemented for small, low risk, less complex insurers.*
- 7.22. *As an example of proportional solvency requirements, in the Philippines, microinsurers are now required to hold PHP500 million (USD 12 million) as regulatory capital, which is substantially lower than the PHP 1 billion which many traditional insurers are required to hold. Mutual benefit associations have even lower capital requirements. Similarly, South Africa has proposed a lower capital standard for microinsurers: ZAR 3 million (USD .36million) compared to ZAR 5 million (short-term insurers) or ZAR 10 million (long-term insurers). Additional examples of proportional formula approaches for solvency and reserving may be found in (Biener, Eling and Schmit 2013) and (Collins 2013).*
- 7.23. *The need to keep formulas current and in sync with the microinsurance market is a challenge. Formula review hence becomes necessary and the review frequency needs to be defined while defining the formulaic approach.*
- 7.24. *To develop the foundation of actuarial input, the local actuarial profession will need to actively partner with the microinsurance industry. For example, mortality and morbidity tables can be drawn up and industry databases can be developed with clearly articulated and well executed joint projects. Such partnerships in early stages of the microinsurance industry will minimise the need for independent research and deliver benefits of scale.*
- 7.25. *While formulaic approaches may be reasonable to offset a current lack of actuarial resources and local actuarial knowledge, regulators and local actuarial associations will need to ensure that this does not hamper development of the local actuarial profession.*

Formula or factor based approaches leave less incentive on the table to explore more valuable business models and may stifle competition, but that may be a relatively smaller issue for microinsurance.

8. Key Principles in Developing Country-Specific Solutions

Maturity of insurance and microinsurance markets

- 8.1. *Among countries where microinsurance is offered or being introduced, possibly only South Africa could be considered to be a mature conventional insurance market. A mature market may be defined as one that has passed both the emerging and growth phases of the industry. Earnings and sales growth tend to be slower in mature markets and there may be a lack of significant innovation. In contrast, most microinsurance markets are still emerging: microinsurance has expanded rapidly in India, and is growing or diversifying on the foundation of developing insurance markets in South America and Asia, whereas in Africa, microinsurance is relatively nascent.*
- 8.2. *A key step in determining regulatory requirements for actuarial services is to assess the current levels of insurance and microinsurance in the country, and the professional expertise available, including actuaries and other insurance professionals. This initial analysis will form the basis of any policy or regulatory recommendations. The maturity of the conventional insurance market will impact the availability of actuaries as well as the industry's understanding of the value of actuarial functions. The Access to Insurance Initiative (A2ii) has conducted a number of microinsurance diagnostic studies for selected countries that include this type of analysis⁶.*
- 8.3. *The maturity of the conventional market may govern the development of a long-term strategy for meeting the need for actuarial services in microinsurance. For example, a relatively mature market is likely to require a different strategy than an emerging market when it comes to actuarial services, and may be able to set objectives on a shorter time-frame.*

⁶ Published country diagnostics are available at <http://www.a2ii.org/knowledge-centre/reports/country-diagnostics.html>.

Regulatory environment

- 8.4. *The existence of specific microinsurance regulations in a jurisdiction may impact the requirements for actuarial services relating to microinsurance products.* Microinsurance regulations may not include any provisions relating specifically to actuarial services, or they may provide for exemption of certain requirements. Conversely, a lack of microinsurance specific regulations or exemptions may inadvertently create a barrier for the development of the microinsurance market. For example, if microinsurance is regulated under the same regulations as mainstream insurance, and these regulations require an actuary to sign off on technical provisions or premiums for insurance, then an attempt to formalise informal providers of microinsurance will subject them to regulations that they cannot in practice comply with.
- 8.5. *Some jurisdictions have chosen to develop specific microinsurance regulations that in some cases include relaxed requirements or exemptions in respect of actuarial services.* This approach may be justified if the nature, scale and complexity of defined microinsurance products in the jurisdiction indicate that the risk in these products can still be managed effectively under relaxed requirements.

Availability of actuaries and training organisations

- 8.6. *Assessing the supply of existing actuarial resources, including the capacity of the local actuarial association if there is one, is another step in determining requirements for actuarial functions within the microinsurance market.* This assessment might include the size of the local actuarial profession, its affiliation with the IAA, actuarial education and qualification standards, as well as the existence of local actuarial standards of practice. The extent of local training which is relevant to microinsurance is also a consideration.
- 8.7. *There may be some capacity within the industry to provide education and qualification of non-actuaries that could be permitted to perform actuarial services for microinsurance programmes.* This type of education and certification may be available through other institutions or training partners, such as universities or industry associations.
- 8.8. *The existence and availability of potential local training partners will impact the options available.* In many cases, 'local' training partners in this sense are mostly absent. In some countries, microinsurance courses may be provided by ILO, GIZ or other donor organisations. In the CIMA region, the Insurance Institute in Yaoundé is introducing a subject in the Masters programme of insurance and the Adonai Institute in Benin has introduced the subject in the syllabus of actuarial sciences.
- 8.9. *In Ghana, the National Insurance Commission and the Actuarial Society of Ghana, with assistance from GIZ, conducted an Actuarial Capacity Assessment study that was subsequently used to revise regulations both for the mainstream insurance industry and the microinsurance market (Akanko Achaw and Baidoo 2012).* The methodology and approach adopted for this study is a useful example of an assessment of existing actuarial capacity that could be a starting point for other jurisdictions.

Roles of regulatory body and actuarial profession

- 8.10. *At the local level there will be a need to clarify the role of the regulator and the role of those carrying out actuarial work, including any formal actuarial profession, in terms of*

setting education levels, standards of practice, obligations and responsibilities for actuarial functions. In more mature insurance markets, these areas are often wholly or partly determined by the actuarial profession, although separate institutions may hold responsibility for technical standards of practice. In emerging markets, these appear to be primarily determined by existing insurance legislation, or the regulator, if at all.

9. Recommendations

The task force presents the following recommendations for follow up and future initiatives. While relevant to all microinsurance stakeholders, they include specific suggestions for stakeholders who may best be placed to provide leadership for these initiatives. We have not provided timescales for these recommendations or necessarily listed them in priority order as that will be the responsibility of the IAA leadership to determine.

9.1. Develop an International Actuarial Note on Microinsurance⁷.

- A joint initiative between the IAA and the IAIS Financial Inclusion Subcommittee would be useful to develop an IAN to expand on the principles outlined in this paper. Depending on the scope, particularly if expanded to include guidance for non-actuaries, it might require additional donor involvement and funding. This IAN on microinsurance and any associated education could include the following:
 - General guidance on requirements and specific approaches for proportionate actuarial services in microinsurance that is applicable across jurisdictions.
 - A set of principles for a local jurisdiction to evaluate its existing actuarial capacity and demand and develop a strategy for bridging the gap. Examples that may be used as a reference include the diagnostic toolkit developed by A2ii, and the approach used in Ghana to conduct an assessment of local actuarial capacity.
 - Additional principles and guidance for actuarial associations to follow in developing APSMs that can be applied locally, and develop guidance on how actuaries or trained non-actuaries can meet these standards.
 - Principles and pre-requisites to be considered in developing a microinsurance-level actuarial accreditation in a jurisdiction, for example: a significant and growing microinsurance market, a sufficiently formalised actuarial profession able to develop the education requirements and manage the certification, and appropriate enabling regulations.

9.2. Include microinsurance in existing IAA education and awareness initiatives and develop a medium term strategy for promoting, encouraging and supporting training.

⁷ International actuarial notes are educational and non-binding in nature. They show practices commonly used by actuaries and are not intended to define the practice or practices that would be adopted by all actuaries. Their purpose is to familiarize the actuary with approaches that might be taken in the practice area in question. They also serve to demonstrate to clients and other stakeholders, and to non-actuaries who carry out similar work, how the actuarial profession expects to approach the subject matter.

- Support educational initiatives by local and regional actuarial associations especially those including microinsurance through the Advice and Assistance (A&A) Subcommittees.
 - Develop a formal microinsurance presentation for use in A&A seminars to promote the value of actuaries in microinsurance, and to outline the unique considerations of the microinsurance market.
- Include microinsurance topics in training provided by volunteers belonging to the AWB initiative. These could be short, standardised training modules developed by microinsurance experts, possibly through the IAA MIWG, that could be delivered during any AWB training mission or training missions carried out by other actuarial organisations such as that recently conducted by the IFoA in Mongolia.
- Investigate how greater use could be made of volunteers from actuarially developed countries to teach university courses, to act as mentors and to teach short courses in preparation for actuarial exams, with a focus on the development of inclusive insurance markets. This is an area where the MIWG may provide assistance and leadership.
- Develop standard microinsurance training modules for qualified actuaries in developed insurance markets who wish to work in microinsurance markets, either on a volunteer or commercial basis. Actuarial professionals moving to the microinsurance sector need specific microinsurance orientation and training to provide appropriate advice and assistance to this sector. These training modules could be developed and delivered by the MIWG.

9.3. Expand actuarial education efforts in microinsurance to include non-actuaries, particularly in countries where local actuarial associations do not exist.

- This would include training people who are carrying out actuarial type work without any formal training in this work and also providing training a wider group of people on the value of formal actuarial training.
- Through its collaboration with various microinsurance organisations, including the ILO's Microinsurance Innovation Facility, the Microinsurance Network and A2ii, the MIWG should seek to provide a greater leadership role in actuarial training although not necessarily taking responsibility for the delivery of such training. Efforts in this area will ensure that training with respect to actuarial services in microinsurance is consistent and of a high quality, whether targeted towards actuarial professionals or non-actuaries working in microinsurance.
- A database should be developed of the on-line materials and tools that are available through international microinsurance organisations in terms of their actuarial content and applicability for delivering actuarial services in microinsurance markets. This would be a helpful guide both to qualified actuaries and non-actuaries performing actuarial services in microinsurance, and could be made available through the IAA website.

9.4. Following on from recommendation described in 9.1 above, discuss with the IAIS the appropriateness of providing additional application guidance to national insurance regulators with respect to proportionate actuarial services in inclusive insurance markets. In addition to the proposed joint initiative with the IAA to develop guidance notes, the IAIS could encourage insurance regulators to undertake the following activities in their jurisdiction:

- Identify and create linkages with key microinsurance stakeholders in the local context. These would typically include the insurance regulatory authority, the local insurers' association, the local actuarial association (if one exists), and microinsurance organisations that are active in the country, including not-for-profit and cooperative microinsurance providers.
- Undertake efforts to educate key stakeholders on the value of actuaries and actuarial services as a whole. It may not be obvious to all relevant stakeholders how the actuarial profession can contribute to the insurance industry or to microinsurance specifically. The IAA's "Role of the Actuary" paper may be used as a starting point to introduce actuarial functions in such cases. Ideally, education should be provided by a team that includes a mix of actuaries and non-actuaries, as well as international and local members, in order to embrace local characteristics while providing a wider context.
- Identify and assess any existing regulatory requirements relating to actuarial services and how these currently apply to microinsurance providers. This should include an assessment of whether or not such regulations impose a barrier to the development of microinsurance and whether or not the regulation of microinsurance in the jurisdiction may allow for alternative provisions.
- Define proportionate requirements for actuaries and actuarial functions for microinsurance providers that take into consideration the available actuarial resources. Actuarial functions may not need to be performed by qualified or even part-qualified actuaries, although minimum skill and experience requirements may be defined.

9.5. Conduct additional data-gathering efforts to improve the conclusions and recommendations from this initial paper. The IAA's MIWG could provide leadership in this area, in collaboration with other microinsurance organisations. Such data-gathering efforts might include:

- Survey microinsurance providers, regulators, and other stakeholders in various jurisdictions to determine to what extent they believe that the need for actuarial services is being met in the microinsurance market.
- Conduct a specific survey of microinsurance practitioners across various markets to evaluate their awareness and understanding of the need for and value of actuarial services.
- Work with A2ii to include a specific assessment of the actuarial environment in microinsurance as part of A2ii's country diagnostic and self-assessment programmes for regulators.

9.6. Review progress of the above recommendations within two years of the publication of this paper.

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Appendix: Actuarial capacity in selected microinsurance markets

Region/ Country/	Local actuarial society	IAA Status	Number of actuaries	Actuarial Education and Roles	Current microinsurance initiatives or experience
Africa/ Benin	Association des Actuaries Beninois	Associate (2008)	Most members located outside Benin		
Africa/ Ghana	Actuarial Society of Ghana (1996)	Associate (1998)	100 members: 1 fellow, 4 associates (in Ghana)	<ul style="list-style-type: none"> Approximately 1200 actuarial graduates trained at Ghanaian universities 40 out of 100 members write professional exams (mainly SOA) 	<ul style="list-style-type: none"> An actuarial capacity assessment was conducted for the insurance industry as a whole, which includes microinsurance Working with IFoA to develop actuarial capacity in the country
Africa/ Ivory Coast	Institut des Actuaries de Cote d'Ivoire (1999)	Full (2005)	15 members; 9 fully qualified actuaries		
Africa/ Kenya	The Actuarial Society of Kenya (1993, officially launched 2005)	Full (2008)	17 fully qualified actuaries	<ul style="list-style-type: none"> Most insurance companies do not have in-house actuaries Many graduates from university courses but most do not go on to work as actuaries or go elsewhere because the demand for actuarial skills is not high 	
Africa/ Morocco	Association Marocaine des Actuaries (1998)	Full (2008)	125 members: 24 fully qualified actuaries	<ul style="list-style-type: none"> Members are locally accredited 	

Region/ Country/	Local actuarial society	IAA Status	Number of actuaries	Actuarial Education and Roles	Current microinsurance initiatives or experience
Africa/ Senegal	Institut National des Actuaries au Senegal (2011)	Associate (2012)	10 members	<ul style="list-style-type: none"> Master in Actuarial Science programme to start in 2013 	<ul style="list-style-type: none"> Some interest in Takaful products
Africa/ South Africa	Actuarial Society of South Africa (1948)	Full (1996)	990 Fellows 46 Associates 1451 students	<ul style="list-style-type: none"> Existing members of actuarial society are focused on the conventional insurance market 	<ul style="list-style-type: none"> On-going initiatives to develop the actuarial profession in Africa
Africa/ Togo	Association Actuarielle au Togo (2013)	Not an IAA member		<ul style="list-style-type: none"> Actuarial degree was supposed to start in Oct 2013 but did not due to a lack of applicants 	<ul style="list-style-type: none"> Microinsurers are typically a captive insurer owned by a cooperative organisation
Africa/ Uganda	The Actuarial Association of Uganda (2007)	Associate (2012)	300 members, including university students; no fully qualified actuaries	<ul style="list-style-type: none"> Majority of members have a certificate in financial mathematics and are in the first stages of professional exams, mainly IFoA 	
Africa/ Zambia	Actuarial Society of Zambia	Associate (2013)	28 members		<ul style="list-style-type: none"> Nascent microinsurance market Donor involvement has helped rapid growth for microinsurance since 2009
Africa/ Zimbabwe	Actuarial Society of Zimbabwe (1997)	Associate (1998)	80 members, 4 fully qualified actuaries	<ul style="list-style-type: none"> Majority of members have local university degrees and are writing IFoA 	
Asia/ Bangladesh	Actuarial Society of Bangladesh (2007)	Associate (2010)	30 members; some also members of IFoA (UK) and IAI (India)	<ul style="list-style-type: none"> Actuarial profession still underdeveloped Development supported by IAA A&A as well as other international actuarial educational organisations 	

Region/ Country/	Local actuarial society	IAA Status	Number of actuaries	Actuarial Education and Roles	Current microinsurance initiatives or experience
Asia/ China	China Association of Actuaries (2007)	Full (2010)	541 fully qualified actuaries		<ul style="list-style-type: none"> The range of CIRC approved microinsurance products is currently limited
Asia/ India	Institute of Actuaries of India (1944)	Full (1996)	8500 members: 260 Fellows; 150 Associates	<ul style="list-style-type: none"> Mutual exemption arrangement with IFoA Existing profession focused on conventional insurance industry; most MI products underwritten by conventional industry Approx 8000 actuarial students but not enough jobs in core actuarial functions in insurance and pensions; students often work in other financial services, data analytics and business process outsourcing 	<ul style="list-style-type: none"> Some actuaries are starting to work in microinsurance. ILO microinsurance fellows have provided some support
Asia/ Mongolia	The Society of Actuaries of Mongolia (2009)	Associate (2010)	21 members, no fully qualified actuaries	<ul style="list-style-type: none"> Inadequate support from employers to develop and train actuaries Sustainable development of a local actuarial profession is a challenge 	

Region/ Country/	Local actuarial society	IAA Status	Number of actuaries	Actuarial Education and Roles	Current microinsurance initiatives or experience
Asia/ Philippines	Actuarial Society of the Philippines (1953; reorganised and re-registered in 1969)	Full (1998)	310 members: 69 Fellows, 67 Associates; 172 Affiliates	<ul style="list-style-type: none"> • 2 local universities offer degrees in Actuarial Science • Actuarial qualification is linked to the US SOA exams; for Fellowship also requires 2 local exams • One of the local exams includes a specific microinsurance component 	<ul style="list-style-type: none"> • More MI products are being priced by formal insurance companies and mutual benefit associations (MBAs) and as such by accredited actuaries. • Regulators issued a joint memorandum circular in 2010 which compelled cooperatives, MFIs, and rural banks to formalize their informal insurance programmes, increasing the need for actuarial support • HMOs have been largely unregulated, and as such their pricing and reserving need not be carried out by professional actuaries
Asia/ Sri Lanka	Actuarial Association of Sri Lanka (2008)	Associate (2008)	61 members: 13 Fellows (4 local); 10 Associates	<ul style="list-style-type: none"> • 7 of 22 insurance companies have actuarial departments • High demand for actuaries due to new regulations • No local actuarial education available; University of Colombo planning MSc course in 2014 • To date, no assistance or input requested from actuarial society members by MI providers 	<ul style="list-style-type: none"> • MI activities are mostly informal or provided through non-insurance organisations such as MFIs, NGOs, and Agriculture Insurance Board • Some commercial insurers have started offering MI products • No specific MI regulations, and much of sector not regulated under Insurance Act • Some assistance from international donors to develop MI market

Region/ Country/	Local actuarial society	IAA Status	Number of actuaries	Actuarial Education and Roles	Current microinsurance initiatives or experience
Asia/ Vietnam	No actuarial association			<ul style="list-style-type: none"> Limited actuarial resources 	<ul style="list-style-type: none"> Some existing microinsurance projects MFI association has been involved in sponsoring microinsurance training in Vietnam Actuarial support for microinsurance has been primarily outsourced and supported by grants from development agencies
Asia/ Nepal	No actuarial association			<ul style="list-style-type: none"> Most actuarial students write IAI (India) actuarial exams 	<ul style="list-style-type: none"> In the process of developing and adopting microinsurance regulations
Latin America/ Brazil	Instituto Brasileiro de Atuária (1969)	Full (1996)	867 fully qualified actuaries	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> A number of microinsurance initiatives
Latin America/ Colombia	Asociación Colombiana de Actuarios (1970)	Full (2013)	5 fully qualified actuaries	<ul style="list-style-type: none"> Most actuaries have a degree in Actuarial Science from the local university and write SOA (US) exams Involvement of actuarial profession in the development of microinsurance is very limited Some involvement in pricing but the actuarial side of microinsurance needs to be further developed 	<ul style="list-style-type: none"> No separate regulations for microinsurance Industry operates using a qualitative definition for microinsurance based on product design and target low income market Limited data available for setting appropriate assumptions for the microinsurance market (such as mortality assumptions) Fasecolda (Colombian insurers association) has been collecting data on the microinsurance market since 2007

Region/ Country/	Local actuarial society	IAA Status	Number of actuaries	Actuarial Education and Roles	Current microinsurance initiatives or experience
Latin America/ Mexico	Colegio Nacional de Actuarios A.C. (1967)	Full (1996)	515 fully qualified members	<ul style="list-style-type: none"> • 2 exams (Reserves, Pricing) required for signing certificate • Signing certificates available for 4 specialties: life, casualty, accident and health, pensions • 80 hours of CPD required for renewal every 2 years • Education requirements for local actuarial qualification: <ul style="list-style-type: none"> a) University degree (ITAM, UNAM, Anahuac and UDLA offer actuarial science) b) At least 3 years of experience c) Three recommendations from certified actuaries 	<ul style="list-style-type: none"> • No separate regulations for microinsurance; the industry operates using both a qualitative and quantitative definition of microinsurance
Latin America/ Peru	Asociación de Actuarios del Perú (2014)	Not an IAA member		<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Specific microinsurance regulations adopted in 2009 • A number of microinsurance initiatives in the country