

ACTUARIAL TOOLKIT- SUMMARY

1) WHAT IS THE OBJECTIVE OF THE ACTUARIAL TOOLKIT?

The actuarial profession has an important role to play in developing, implementing and monitoring microinsurance schemes around the world. There are currently gaps in the awareness and application of actuarial principles and methods in microinsurance work. In particular, there is scope for improving the understanding of insurance and risk for frontline microinsurance practitioners (e.g. NGOs, Microfinance Institutions (MFIs)). The actuarial toolkit will present a series of worked examples designed to help to improve understanding of the business case for robust actuarial calculations. The toolkit may include worked examples in the fields of pricing, product design, reserving, reinsurance, investment strategy etc. To summarise:

The principle objective of the toolkit is to serve as an **educational tool** to enhance the understanding of insurance for both existing microinsurance practitioners and those in the process of microinsurance schemes.

2) WHO IS THE TARGET AUDIENCE?

The target audience is primarily frontline microinsurance practitioners (e.g. microinsurance NGOs, MFIs). However, the toolkit will be publicly available.

The toolkit is not designed to be used by insurance companies, wishing to use the toolkit for commercial purposes. However, the toolkit will be freely downloadable, under a [creative commons] license and can be freely used for training purposes. Basic user information will be captured during the registration process. This information will help us understand what kind of users are actually using the toolkit.

3) WHAT WILL THE TOOLKIT LOOK LIKE?

The toolkit will be web-based (e.g. through a Wiki) on commonly accessible spreadsheet e.g. MS Excel, Google spreadsheets. The toolkit will consist of specific worked examples in specific fields of actuarial calculations, such as pricing, product design or reinsurance. Each topic will be segmented into the following two sections:

- a) Text- Summary guidance explaining motivation for each worked example. The text will clarify the best practice for each area, with specific reference to the relevant models given in the toolkit, and discuss the robustness of the methods to alternative data and assumptions. This part of the text can be heavily based on generic actuarial education material adapted for a microinsurance context and audience, with an annotated 'further reading' list for each topic.
- b) Illustrative models- relatively simple models on commonly available free software. These models will be used for an educational purpose and will illustrate the use of actuarial principles and methods. They can also be used for simple sense checks. The models should be driven by 'simple inputs', which the user can change. The assumptions underlying the models will be carefully explained to avoid misinterpretations. Caveats on the shortcomings and limitations of these models should be clearly highlighted. These worked examples will be driven by actuarial first principles, but some examples will allow for common idiosyncrasies of microinsurance calculations, e.g. make allowance for the lack or poor quality of data.

In addition, to the above sections there can be a further section for each specific topic:

- c) Analysis of real-life Case studies e.g. How was a portfolio of Crop microinsurance priced in Malawi? These case studies can be discussed to understand what worked, what didn't, what we have learnt and how (if at all) the outcome of the case study could have been improved. This section can be compared vis a vis section a). Each case study would be accompanied by at least one worked example (albeit perhaps with illustrative, rather than real, data).

4) HOW WILL WE BUILD THE ACTUARIAL TOOLKIT?

In order to build the toolkit, the UK Working Party will work in collaboration with the IAA Working Party and actuarial societies around the world. A proposed process for building the toolkit is given below:

- a) This document, the Terms of Reference and any other ideas on the toolkit are discussed.
- b) An initial list of specific topics is finalised. A topic from the list will be chosen as per importance.
- c) For each topic, we will do the following:
 - Review existing publically available technical literature on actuarial calculations, including practice notes from actuarial societies and academic papers
 - Draft a summary text and guidance for 'best practice' (for 3a)
 - Build a theoretically sound model/s (for 3b)
 - Collate case studies and any other comments from actual microinsurance work experience. (for 3c)
 - Collate actual models used in microinsurance. (for 3c)
 - Draft an executive summary for each summary based on the above bullet points.
 - Suggest areas for future specialist technical work by academics and practitioners.