Index Insurance Training
Underwriting and product design

Yield-index insurance (YII) checklist of underwriting and product design for regulators and insurers

- ☑ <u>Is the underlying yield data suitable for this client?</u> This is a crucial factor as many publicly available yield datasets may NOT be representative of what the client/beneficiaries are actually experiencing and hence can result in basis risk due to the differences in the yield datasets.

- ☑ <u>How many years of historical yield data is available?</u> (should be at least 5 years) Yield data is usually scarce (compared to weather data) and hence the underwriter should look into multiple sources of yield data to ensure that a critical volume of yield data is available. At least 5 years is required although a stochastic approach should be followed if few years of historical data is available.

- ☑ <u>Is the granularity of the yield data suitable for claims settlement?</u> Very important to ensure the resolution at which the AYII product is implemented results in low spatial basis risk and is suitable for the client/beneficiary in terms of being representative of their actual experience.

- ☑ <u>What is the additional concentration risk involved, especially if data is not very granular?</u> Important to have granularity of data to avoid concentration risk for the insurer, which is high if the spatial granularity is low.

- ☑ <u>What is the exposure to unknown/unprecedented risks e.g. locusts, army worms?</u> Important to assess exposure to unknown risks in order to price and reserve adequately for events, which may not have happened in the (often limited) past yield data, including certain epidemics, which may not have occurred previously.

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- ☑ <u>How applicable are the trigger levels from perspective of basis risk?</u> Important for the underwriter to assess the implications of the selected trigger levels on basis risk by also correlating simulated past payouts with records of past losses experienced by the customer/beneficiary.

- ☑ <u>Which statistical distributions to use for YII pricing?</u> This is a key actuarial assumption to make if using statistical/stochastic pricing, which is good to use for YII pricing.

- ☑ <u>How much use to make of population data or yield data from other sources?</u> For yield index, it could be possible to make use of yield data from other sources and to price on a Bayesian credibility basis. Hence, yield data from multiple sources would be useful and also for carrying out sense-checks on the data.

- ☑ <u>How quickly will the yield data be available for claims settlement?</u> This is a key operational aspect, which determines the suitability of the underlying yield data to use for claims settlement in order to ensure relatively speedy payouts.

- ☑ <u>How should the Sum Insured value be defined e.g. expected yield or % of cost of production, loan amount etc?</u> For all index insurance products, the sum insured can vary between different options and should be decided based on adequacy of coverage, feedback from customers, affordability of resultant premium, any regulatory guidelines on under/over insurance etc.