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A capitation model for bundling index-based livestock insurance with animal health services

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A capitation model for bundling index-based livestock insurance with animal health services

Why bundled index-based livestock insurance (BILI)?

Pastoral systems in Ethiopia and Kenya face multiple complex and overlapping risks, both idiosyncratic and covariate. While drought remains a major cause of livestock loss, it interacts with other shocks and stressors including feed and water scarcity, animal diseases and pests, conflict, market volatility, and seasonal liquidity constraints. Drought causes, reinforces, and is reinforced by these other shocks and stressors. The resulting adverse impacts often extend beyond the drought season and can be long term. The index-based livestock insurance (IBLI) uses the normalized difference vegetation index (NDVI) to monitor forage availability during the rainy season. Based on the NDVI values, payouts are triggered early in the dry season in anticipation of a severe drought. Studies have shown that IBLI has beneficial impacts in protecting vulnerable pastoralist populations from climate-induced poverty traps, reducing down-side income risk, improving food security, spurring investment in productivity-enhancing inputs, and mitigating resource-based conflicts. However, while IBLI is effective in mitigating covariate drought risk, it was not designed to directly address idiosyncratic risk that shapes herd survival, productivity, and household resilience. This has created a compelling rationale for moving beyond standalone insurance toward risk layering and more integrated and complementary risk-management solutions that better reflect how pastoral households experience and manage risk. The bundled index-based livestock insurance (BILI) was a result of the quest to find a product that addresses (some of) these challenges through co-creation: first understanding the bundles prioritized by pastoralists, and second, figuring out together with various stakeholders a feasible model that addresses both demand and supply side constraints. While stand-alone index insurance covers only a fraction of risks when considering the various layers of risk exposure, BILI can help address multiple constraints simultaneously, generate complementarities necessary for enhancing the ability to cost-effectively address climatic shocks, address discouragement effect that arises when IBLI does not trigger, and reduce barriers to agricultural/livestock technology adoption.

Recent evidence from northern Kenya and southern Ethiopia suggests that bundling IBLI with complementary inputs and services could make insurance more relevant and attractive to pastoral communities (Banerjee et al., 2025; Malicha et al., 2025; Shikuku et al., 2026). In northern Kenya, a choice experiment with 1,828 livestock keepers found clear preference for bundles that combined IBLI with animal health, animal nutrition, or a flexible package that allowed households to choose the service most needed at a given time; the flexible bundle emerged as the most preferred, followed by animal health and animal nutrition, while breeding was least preferred (Shikuku et al., 2026). The findings also point to important gender differences, with women showing relatively stronger willingness to pay for health- and feed-related bundles, underscoring that bundled products cannot be designed as one-size-fits-all solutions (Banerjee et al., 2025). In Borana zone, pastoralists similarly expressed strong interest in insurance bundled with veterinary care, feed, water, and, in some cases, credit and crop insurance, particularly where these services seemed to respond to immediate livelihood pressures and seasonal cash-flow constraints (Malicha et al., 2025).

What is the capitation model for BILI?

The capitation model involves providing for sale a package comprising IBLI combined with productivity-enhancing animal health inputs/services. The animal health inputs/services are those that are prioritized by pastoralists and are not currently offered for free by the government. Insurance companies negotiate, on behalf of the pastoralists, with credible and trusted private sector animal health input/service providers in Ethiopia and Kenya. The inputs include both livestock medicines (e.g., drugs) and clinical services (e.g., injections). The final package to be offered is tailored to the specific Ethiopian and Kenyan contexts. The animal health services include antibiotic treatment, tick control, deworming, and vaccination. BILI is priced based on the negotiated prices of inputs and the prevailing premium rate for IBLI. The annual premium is estimated at KES3,982 (IBLI premium = KES3,494; premium for animal health = KES488) for one tropical livestock unit (TLU). There will be a single premium rate for BILI that is inclusive of the IBLI/drought and drug components (i.e., KES3,982). This means that pastoralists buying BILI will not pay separate premium rates for IBLI and animal health services.

How does it work?

BILI triggers payout as follows.

- IBLI payout will be paid in the event of a severe drought. NDVI index threshold of 25th percentile.

- In addition, policy holders are guaranteed access to animal health inputs according to the amount of money they are entitled to under the BILI package, when their animals are sick. This means that there is a limit to the amount of claim allowed for the animal health services which is determined by the amount of money paid for BILI by the policy holder.

- To minimize moral hazard resulting from policy holders seeking animal health services even when animals are not sick, community animal health workers serve as the first point of contact in the claim process. However, this hybrid product (IBLI component = index and animal health component = indemnity) may not eliminate adverse selection problems that might arise when pastoralists with sick animals being the ones buying BILI.

Value proposition to pastoralists, underwriters, and input service providers

Pastoralists will be protected against drought through IBLI. In addition, they will be enabled to access animal health services cheaper. The negotiated price, with the promise that the project will increase the number of people seeking the services, is expected to lower the cost of the animal health services. Pastoralists will also be linked to quality inputs and to community animal health workers, hence contributing to increased livestock productivity and resilience to drought and animal health risk.

Service providers will benefit from increased demand for their services as pastoralists are encouraged to buy from them and avoid low-quality inputs. In addition, they will be connected to a network of researchers at ILRI for collaboration and knowledge exchange.

Underwriters will benefit from an expanded market for IBLI.

Partners

Partners include (1) insurance companies/underwriters: APA microfinance in Kenya and Oromia Insurance Company in Ethiopia; (2) implementing partners (Ayuda en accion, CIFA); (3) Scaling partner (AgNexus); (4) input service providers; (5) community animal health workers; (6) demand partners (national and county governments).

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