Kenya

Toward a National Crop and Livestock Insurance Program

SUMMARY OF POLICY SUGGESTIONS
Kenya

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SUMMARY OF POLICY SUGGESTIONS
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Acknowledgments

The summary note on policy suggestions was led and prepared by Daniel Clarke (Disaster Risk Financing and Insurance Program, Finance and Markets Global Practice, World Bank Group) in collaboration with the Ministry of Agriculture, Livestock and Fisheries, Kenya, and with contributions from the following: Barry Maher (Disaster Risk Financing and Insurance Program, Finance and Markets Global Practice, World Bank Group); Felix Lung (Disaster Risk Financing and Insurance Program, Finance and Markets Global Practice, World Bank Group); Sarah Coll-Black (Labor and Social Protection Global Practice, World Bank Group); Shadreck Mapfumo (Finance and Markets Global Practice, World Bank Group); Chloe Dugger (Finance and Markets Global Practice, World Bank Group); Richard Carpenter, Sommarat Chantarat, James Sinah, Andrea Stoppa, and Charles Stutley (Consultants, World Bank Group); Andrew Mude (International Livestock Research Institute); and Michael Mbaka (Financial Sector Deepening Kenya). Overall guidance was provided by Olivier Mahul (Program Manager, Disaster Risk Financing and Insurance Program, Finance and Markets Global Practice, World Bank Group) and Smita Wagh (Finance and Markets Global Practice, World Bank Group). Megan Cossey provided support in editing the report. This nonlending technical assistance (NLTA) note has been prepared as part of an NLTA to the Ministry of Agriculture, Livestock and Fisheries to support the ministry in deciding whether to establish a large-scale public-private partnership in agricultural insurance in Kenya. This note can be read in conjunction with the accompanying World Bank technical report, Kenya: Agricultural Insurance Solutions Appraisal (2015), and “Kenya: Agricultural Sector Risk Assessment Risk Prioritization” (2015), a report by the World Bank Agricultural Risk Management Team.

The note benefited greatly from the data and information provided by the Ministry of Agriculture, Livestock and Fisheries, Kenya. Special acknowledgments are extended to Kenneth Ayuko (Director, State Department of Agriculture, Ministry of Agriculture, Livestock and Fisheries) and Vincent Ngari (Deputy Director, State Department of Livestock, Ministry of Agriculture, Livestock and Fisheries). We also gratefully acknowledge the support, inputs, and feedback from Kenya’s National Treasury, the National Drought Management Authority, Kimetrica, the UK Department for International Development, and the Tegemeo Institute of Agricultural Policy and Development.

We gratefully acknowledge funding support from the Ministry of Foreign Affairs of the Netherlands and the U.S. Agency for International Development (USAID) through the World Bank’s Agricultural Insurance Development Program. The Agricultural Insurance Development Program is part of the World Bank–Global Facility for Disaster Reduction and Recovery (GFDRR) Disaster Risk Financing and Insurance Program. Contributions of the International Livestock Research Institute (ILRI) are supported by the UK Department for International Development, Australian AID, and the European Union, which fund ILRI’s Index Based Livestock Insurance Agenda.
Executive Summary

The Problem

The large majority of farmers in Kenya remain vulnerable to natural disasters, a fact that poses a significant social and economic problem. Sixty-one percent of the Kenyan population is dependent on agriculture, livestock, fisheries, and related production for their livelihoods. Over 75 percent of Kenyan farmers are smallholder subsistence farmers who are highly vulnerable to the economic effects of natural disasters like drought and flooding.

Severe drought, in particular, strikes northern Kenya approximately every three to five years, and the losses are significant. For example, during the very severe droughts between 2008 and 2011, the Kenyan economy lost an estimated K Sh 968.6 billion. The livestock sector alone incurred 72 percent of that loss, or K Sh 699.3 billion; 9 percent of all Kenyan livestock died as a result of these droughts. Losses in the agriculture sector were 12.5 percent, or K Sh 121.1 billion, corresponding to a loss of 23 percent of crops. Such devastating disasters push better-off farmers and pastoralists into poverty and push the already poor into destitution. They can take years to recover from. They can also make it more costly or simply impossible for farmers to take out loans, thus limiting opportunities for agricultural producers to invest in better tools and technologies to increase productivity.

Agricultural insurance can provide much-needed protection to keep farmers out of extreme poverty, and enable them to invest in their future; Kenya’s current agricultural insurance market, however, is suffering from a clear market failure. In Kenya, as in much of Sub-Saharan Africa, the development of a successful large-scale agricultural insurance market is constrained by several factors:

- A lack of timely, audited data, which are needed to accurately estimate premiums and payouts
- Poor understanding of and limited trust in insurance by agricultural producers
- The inability of local and national insurers to adequately access the international reinsurance markets that allow them to off-load some risk from their balance sheets—leaving them exposed to catastrophic risk and much higher premiums.

The Solution

Large-scale agricultural insurance, if implemented as a public-private partnership (PPP), can smooth agricultural income during shocks and thereby provide protection for vulnerable populations. International experience shows that sustainable, scaled-up agricultural insurance programs need to be part of a broader agriculture risk management framework for vulnerable farmers and herders, and require engagement, innovation, and action from both the public and the private sector.
The Proposal

With the goal of protecting farmers and pastoralists, the government of Kenya may consider joining with counties and the private sector to implement an agricultural insurance PPP. More specifically:

- For crop insurance, the government of Kenya intends to initially consider an “area yield index insurance” approach covering maize and wheat. Under such an approach, insured farmers would receive a claim payment if the area average yield, as measured through a series of crop cuts, was critically low.

- As pastoralists can be difficult to reach and levels of vulnerability in the arid and semi-arid lands (ASALs) are high, for livestock insurance, the government of Kenya is considering purchasing index insurance on behalf of vulnerable pastoralists. This insurance would rely on free international satellite data that tracks the amount of green forage on the ground. When data indicate there is not enough forage to keep animals alive, herders receive a payout. Such an initiative would be complemented by a market for two additional livestock insurance products, a “top-up” product providing cover over and above that purchased by the government, and a product for interested pastoralists not considered vulnerable enough to be not covered by the government scheme. For this initiative, the government can build on the substantial experience of the International Livestock Research Institute (ILRI) in the ASALs.

These products should be refined with input from the private sector, and going forward insurers should continue to develop insurance products for these and other agricultural commodities. These products can also be considered by government for inclusion within the PPP over time.

Costs and Benefits

Implementing a PPP in agricultural insurance could be a way for Kenya to achieve two goals simultaneously: address the agricultural sector’s vulnerability, and enable farmers to double crop yields in some regions. The government is considering encouraging agricultural lenders—including national and local banks and credit unions—to bundle credit provision to farmers with agricultural insurance. Such an approach would not only reach a great number of potential policyholders; by making it possible for farmers to invest more money in improving their farms, (by buying better seeds, fertilizer, etc.), it could also boost agricultural productivity. For pastoralists, livestock insurance would help keep livestock, particularly breeding livestock, alive, and would thus support efforts to build large, resilient herds.

Providing financial support to agriculture insurance could be an effective way for the government of Kenya to restructure disaster relief efforts, making them more affordable, faster, and more effective. Indeed, the government of Kenya recognizes that it—along with donors—is already financially protecting rural livelihoods during times of disaster. Over the last 10 years, annual post-disaster relief has on average cost the government K Sh 4.2 billion and donors K Sh 8.1 billion. Most of that support was spent on humanitarian food assistance, but the financing of this cost is typically sought after a drought or flood has already been declared. A market-mediated approach to agricultural insurance and scalable social protection—one using insurance markets and the broader financial system—could reduce the uncertainty and increase the speed of humanitarian response expenditure (leading to potential welfare gains), while at the same time crowding in private insurance and reinsurance markets in Kenya.
The government is considering taking on a number of functions to support the creation of a sustainable agricultural insurance market. Creating this market would require both a financial investment and a range of support measures to correct market failures:

- The government is looking into treating reliable, audited data for agricultural insurance, such as crop-cutting data, weather data, and remote-sensing data, as a public good, and seeking to ensure that these data are accessible to insurers in a timely fashion. The government is considering its own role and that of the private sector in collecting, auditing, financing, and managing a central repository for such data through relevant government agencies, such as the Ministry of Agriculture, Livestock and Fisheries and the Meteorological Department. It may be necessary to invest in additional data, such as additional crop cuts, to enable more localized—and thus accurate—claim payments to farmers.

- The government could also support commercial insurers in reaching out to potential policyholders in a number of ways:
  - Providing financial support to help reduce the cost of premium payments;
  - Enabling distribution of agricultural insurance through publicly supported distribution channels, such as publicly supported agricultural credit or cash transfer programs like the Hunger Safety Net Program;
  - Leveraging its infrastructure of extension agents for awareness creation and insurance education;
  - Providing a platform to enable integration of complementary services that would increase the value of insurance provision; and
  - Carrying out public information marketing campaigns.

This report considers the costs and benefits of a program under which the government covers 50 percent of the cost of crop insurance for wheat and maize farmers and up to 100 percent of the cost of livestock insurance premiums for pastoralists, depending on beneficiary income levels. Government would cover premium payments at rates ranging from 100 percent to none at all.

Over the first five years of such a program's operation, the annual average fiscal cost to national and county governments is estimated to be K Sh 619 million, making agricultural insurance affordable for approximately 160,000 agricultural producers by 2019 (table 1). The fiscal cost to the government would slowly rise as more producers purchased insurance every year. Part of the fiscal cost of agricultural insurance may be seen as upfront financing for the government’s existing contingent liability in respect of ad hoc financial protection to farmers and pastoralists against droughts and floods.

The Way Forward

The government has key policy decisions to make, including whether to move forward with program design and implementation, which agricultural commodities and farmers to prioritize, and how national and county governments would share costs with farmers. The next steps that could be undertaken are listed in annex 1.
<table>
<thead>
<tr>
<th>Program Description (2019)</th>
<th>Annual fiscal cost (K Shs millions)</th>
<th>Estimated number of producers covered</th>
<th>Average cost per producer per year (K Shs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize: area yield index insurance</td>
<td>345</td>
<td>70,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Wheat: area yield index insurance</td>
<td>49</td>
<td>5,000</td>
<td>9,200</td>
</tr>
<tr>
<td>Pastoralists: satellite-based livestock protection insurance (fully subsidized)</td>
<td>300</td>
<td>71,000</td>
<td>4,200</td>
</tr>
<tr>
<td>Pastoralists: satellite-based livestock protection insurance (partially subsidized)</td>
<td>31</td>
<td>15,000</td>
<td>2,100</td>
</tr>
<tr>
<td>TOTAL</td>
<td>725</td>
<td>161,000</td>
<td></td>
</tr>
</tbody>
</table>
Introduction

At the request of the government of Kenya and under its guidance, a team of national and international experts conducted an appraisal of different agricultural insurance options for Kenya. This appraisal, as set out in this document and the accompanying technical analysis, lays out the costs and benefits of developing large-scale agricultural insurance that involves both the public and private spheres. The appraisal team includes representatives from the World Bank’s Agricultural Insurance Development Program, housed within the Disaster Risk Financing and Insurance Program, as well as the International Livestock Research Institute (ILRI) and Kenya’s Financial Sector Deepening (FSD).

The analysis builds on the 2013 situational analysis jointly conducted by the Ministry of Agriculture, Livestock and Fisheries and the German Agency for International Cooperation (GIZ) through its Adaption to Climate Change and Insurance Project, and has included analysis of potential structures, the fiscal cost to government and the economic impact on farmers, thus providing a suite of evidence that may be useful for Government deliberations.

The analysis considers potential structures for large-scale agricultural insurance in Kenya, the fiscal cost to the government of Kenya, and the economic benefits for farmers and pastoralists. It is intended to provide the government with important information for future deliberations on this issue. This work on agricultural insurance is also being supported by a broader agricultural risk assessment analysis being conducted in parallel by the World Bank’s Agricultural Risk Management Team.
The Problem:
The Agricultural Sector’s Vulnerability to Natural Disasters

Agriculture is the mainstay of Kenya’s economy. The agricultural sector accounts for 61 percent of employment and 30 percent of GDP. Over three-quarters of Kenya’s population live in rural areas. In Kenya’s arid and semi-arid lands (ASALs), pastoralism accounts for approximately 90 percent of employment and 95 percent of family incomes.

Most crop and livestock production in Kenya is rain fed, and as such is highly exposed to the weather-related perils of drought and flooding, as well as to pests and disease. According to international scientific consensus, weather-related natural hazards will become even more unpredictable and greater in scale in the coming years.

- Since 1970, Kenya has experienced a total of 41 flood events, which affected 6.9 million people, and 12 drought events, which affected 47 million people.  

- Drought in particular is the most significant cause of losses to crop and livestock production in Kenya, accounting for K Sh 699 billion in livestock losses and K Sh 121 billion in crop losses between 2008 and 2011 alone.  

- Government statistics show the loss of nearly 1 million head of cattle, or 5 percent of the country’s national herd, between 2008 and 2011.  

Disaster-related expenses are often unpredictable and can be of significant size, and post-disaster relief is often inefficient. For example:

- Over the past 12 years, the government of Kenya has spent on average K Sh 4.2 billion per year on disaster relief funding. During the catastrophic drought years from 2008 to 2011, this unbudgeted funding requirement rose to K Sh 9.3 billion per year.

- Post-disaster funding is often prone to lengthy delays (in some cases 12 months or more).

- Post-disaster relief can be poorly targeted, so that farmers most in need of financial assistance do not receive the funds.

Employing agricultural insurance as a financing instrument—and thereby planning for disaster before it strikes—can help overcome these problems.

Against this background, the government of Kenya has identified the agricultural sector as an important area of focus under its Kenya Vision 2030, which aims to transform Kenya into a middle-income country. Agricultural insurance is a stated priority of government, as reflected in the Second Medium Term Plan.
Public-Private Agricultural Insurance as Part of the Solution

Agriculture insurance can help to soften the economic blow of natural disasters. Agricultural insurance programs that are carefully designed and implemented can increase farmers’ access to credit, improve agricultural productivity, reduce the economy’s vulnerability to the effects of natural disasters, and provide much-needed social protection to the poor.

Some agricultural insurance products are already being offered in Kenya by commercial insurers. Largely in the absence of government support so far, eight local insurers currently underwrite two kinds of agricultural insurance programs in Kenya:

1. Traditional indemnity-based crop and livestock insurance products, under which insurance companies reimburse policyholders for their losses, up to the limiting amount of the policy. These are marketed to medium-size and large commercial cereal producers and commercial dairy farmers.

2. Pilot programs for index insurance, which depend on an index, such as rainfall, to determine payouts. These are being developed with donor assistance and are specifically tailored for small and semicommercial crop producers and pastoralists who have the potential to go fully commercial.

However, the agricultural insurance market in Kenya is still very small, and those who would benefit most—subsistence and small commercial farmers and pastoralists—are largely excluded from it. Despite the products already on offer, less than 1 percent of Kenyan farmers have some form of crop or livestock insurance cover. This is largely because most of the currently offered agricultural insurance products in Kenya do not cater to the needs of the smallholder and mainly subsistence-based crop and livestock producers who make up more than 75 percent of the agricultural population. These producers are mainly located in the ASALs of Kenya and are particularly vulnerable to losing their livelihoods during the severe droughts that affect Kenya every three to five years. Instead of safeguarding themselves with insurance products, they depend on support from the government and donor partners through disaster relief assistance. Without scale, very few insurance companies in Kenya are covering the administrative and operating costs for their agricultural insurance business lines, let alone generating profits on a sustained basis. Going forward, these companies face major challenges in how to reach more potential policyholders, make a profit, and achieve long-term sustainability.
A strong partnership between the public sector and the private sector could provide the foundation for a scaled-up and sustainable agricultural insurance program in Kenya. Time and again, the experience of other developing countries has demonstrated the importance of involving both government and the private sector in agricultural insurance initiatives. When only private sector insurance companies provide agricultural insurance without government support, the necessary insurance data are often unavailable. Crop yield data, for example, can be expensive and technically difficult for the private sector to gather without support from government. When the government alone offers agricultural insurance, its lack of infrastructure and expertise makes distributing policies, delivering payouts, and paying claims difficult. Experience from agriculture insurance schemes developed across the world (for example in India, Mongolia, and Morocco) shows that public-private partnerships (PPPs) can overcome these challenges by building on the comparative advantages of the respective sectors.

Agricultural insurance suffers from market inefficiencies that government involvement could help overcome. Some typical market inefficiencies in Kenya that could be addressed through government intervention include the following:

1. Reliable data required for agricultural insurance, including weather data, yield data, remote-sensing data, and livestock ownership and mortality data, are currently not collected, audited, and made available to insurance companies in a systematic manner.

2. Commercial insurers are often unable to reinsure their agricultural insurance portfolio on international markets because of poor-quality or untested data collection systems. International reinsurance is critical to ensure that large-scale agricultural insurance initiatives are financially sustainable; without it companies may face massive losses.

3. Products are typically complex, making it difficult for potential policyholders to differentiate between good and bad products, and in turn weakening incentives for insurers to invest in better products.

Box 1— How Government Supports Livestock Insurance in Mongolia

Since 2005, the World Bank has supported the Government of Mongolia in setting up a public-private partnership with domestic insurance companies to offer affordable and cost-effective insurance coverage to herders. Today, 16 percent of the approximately 1 million herders in the country are insured under the Index-Based Livestock Insurance Program (IBLIP).

While the Government of Mongolia significantly subsidizes the national program, the subsidization does not take the form of direct premium subsidies. Instead:

1. The Government pays for the collection of all data used in the livestock insurance scheme, and provides audited data to accredited insurance companies in a timely manner.

2. The Government also provides a “social layer” of reinsurance to all farmers at no additional cost. While farmers purchase insurance priced commercially against relatively frequent shocks, the social layer protects against infrequent catastrophic losses when the insurance is exhausted. In other words, the Government guarantees payouts in extreme natural disaster situations, allowing insurance companies to offer affordable premiums to policyholders. Additionally, thanks to this publically funded extra layer of insurance, policyholders possess additional coverage beyond that of the insurance they purchase.

3. Finally, government extension workers provide education to herders about livestock insurance and its potential use as part of a holistic approach to herd risk management.
Meanwhile, private sector insurers provide the necessary expertise to implement large-scale agricultural insurance successfully, since providing insurance is, of course, their core business. International experience shows that agricultural insurance is most effective when private insurers contribute to certain tasks, including

- Collecting, auditing, and managing data
- Marketing and distributing insurance products
- Underwriting the risk
- Managing claims and handling loss adjustment
- Making decisions concerning risk retention and reinsurance strategies

Government contributions through a PPP in agricultural insurance could solve market inefficiencies. (See box 1 on Mongolia.) For example, government could consider supporting

- Collection and management of reliable agricultural insurance data, such as yield data, weather data, remote-sensing data, and livestock ownership and mortality data
- Outreach to potential policyholders through financial literacy campaigns or bundling of agricultural insurance with existing distribution channels, such as publicly supported agricultural loans
- Partial public reinsurance for private insurers
- Promotion of a coinsurance pool through which private sector insurers could collaborate where it is economically efficient for them to do so
- Provision of technical expertise in insurance product design and development
- Establishment and implementation of an enabling legal and regulatory environment, for example by ensuring that consumers are protected against potential abuse by insurers
The Proposal and its Benefits

A Public-Private Agricultural Insurance Program for Kenya

The government of Kenya is considering establishing a PPP covering both crop and livestock insurance. The accompanying technical report (Kenya: Agricultural Insurance Solutions Appraisal) analyzes an agricultural insurance PPP for maize, wheat, and pastoralist livestock—including cattle, goats, sheep, and camels—to show the concrete potential costs and benefits if Kenya were to adopt a large-scale agricultural insurance program aimed at these target segments of the agricultural community. The PPP could be extended to other agricultural commodities, such as coffee or horticulture, if crop insurance solutions were found to be feasible for them.

The potential beneficiaries of the large-scale public-private agricultural insurance program include both the very large numbers of subsistence crop and livestock producers located in the low-rainfall ASAL regions of Kenya and Kenya’s emerging class of smallholder commercial crop producers. This latter group in particular is extremely important for the production of food and cash crops, and its success is crucial to achieving Kenya’s Vision 2030. Because they lack money and access to credit, however, these farmers mostly use outdated and low-quality seed and fertilizer technology. A package of insurance and inputs on credit could help to remedy this problem.

Crop Insurance

A program based on an area-average approach would be most appropriate for small commercial crop producers in Kenya. Specifically, a large-scale “area yield index insurance” program is proposed. In such a program the actual average yield of the insured crop across the predefined geographical area is measured through audited crop cuts, and is compared to a pre-agreed threshold yield. If the measured average yield for an area is lower than the threshold yield, all insured farmers within that area are eligible for the same rate of claim payment. Individual crop insurance would be prohibitively expensive, or even impossible on technical and administrative grounds, for small-scale semicommercial farms in a country such as Kenya.

The government of Kenya is considering initially piloting the agricultural insurance PPP for wheat and maize farmers in selected counties. The accompanying background report explicitly investigates insurance for maize and wheat and finds that area yield indexes would provide the most appropriate basis for a product. It might also be possible to add a weather trigger to this product to provide early protection in the event of failed sowing. Analysis of product design has not yet been conducted for other crops. These products should be refined with input from the private sector, and going forward insurers should lead continued insurance product development for these and other agricultural commodities, to be considered by government for inclusion within the PPP over time.
Crop insurance will be most effective if linked to production loans that farmers take out to invest in their crop yield. Bundling agricultural insurance with production loans results in four key benefits:

1. **It can help the insurance program to achieve scale quickly.** Many large-scale agricultural insurance programs in low- and middle-income countries (for example, China and India) have achieved scale—meaning at least a fifth of farmers are protected—in part because banks or government have bundled insurance with agricultural credit on a compulsory basis.

2. **It can increase rural lending and thus agricultural productivity.** As figure 1 shows, the production risk faced by crop producers in Kenya, as measured by the fair cost of insuring the risk (the “pure premium rate”), varies significantly from division to division. Without a way to put a price on this risk and manage it, banks typically restrict their lending to farmers, a practice referred to as “risk rationing.” Agricultural insurance can both put a price on risk and allow banks to transfer the risk off of their balance sheets, enabling greater lending to support investments in better seeds, better fertilizers, and new technologies.

3. **It protects farmers.** Agricultural insurance can protect farm income and revenue in times of severe crop losses and ensure that farmers are able to repay their loans, thereby remaining creditworthy.

4. **It improves the solvency position of rural banks.** Agricultural insurance reduces the vulnerability to natural disasters of both farmers and the banks that lend to them, protecting them against agricultural shocks.

The accompanying background report estimates that an area yield index insurance program linked to seasonal production credit for maize farmers could bring about significant productivity gains, up to double in medium- and high-potential maize areas of Kenya, and almost double in wheat areas. Such an increase would strengthen Kenya’s food security and could potentially lead to reductions in the probability of farmers falling into poverty—specifically, the probability could be reduced by 78 percent, 39 percent, and 29 percent, respectively, for farmers in the high- and medium-maize zones and in the wheat region.
Livestock Insurance

The government is considering initially purchasing an index insurance cover against drought on behalf of selected vulnerable pastoralists in the two Hunger Safety Net Program (HSNP) counties Turkana and Wajir. Building on the existing experience of the ILRI, the government would purchase, on behalf of selected vulnerable pastoralists, an insurance product that issued payouts based on a forage availability index. This approach would offer a 100 percent subsidy for a predetermined level of coverage and be designed to protect rapidly deteriorating livestock assets. Though the insurance coverage is purchased by the government—and is known as “macro coverage”—the insurance companies would pay claims directly to the final beneficiaries in case of a drought, allowing pastoralists to keep their livestock, particularly their breeding stock, alive. The government could use the existing census conducted by the National Drought Management Authority (NDMA) for the HSNP—which currently provides cash transfers to the 100,000 poorest households across four counties (Mandera, Marsabit, Turkana, and Wajir)—to assist in the identification and verification of beneficiaries. In addition, the government could use the HSNP payment system as a way to distribute the payouts. This could be complementary to the use of mobile payment options. Thus existing HSNP infrastructure would be used to facilitate identification and registration of beneficiaries as well as distribution of the financial protection.

The government is also considering supporting the development of a voluntary livestock insurance market beyond fully subsidized coverage for the very poor. The government would foster this market by making sure that insurance providers underwriting the government’s macro coverage also develop infrastructure to allow for voluntary purchases of livestock insurance contracts, as well as top-up products for program recipients who may need additional coverage. These additional policies, which would cover the slightly less vulnerable, would be partially subsidized by the government.

To be cost-effective, the government-subsidized livestock macro coverage would need to be integrated into the framework of existing social protection and insurance programs. In the HSNP counties, two other relevant programs are already being operated—the HSNP cash transfer program for the 100,000 poorest households, and the ILRI livestock index insurance program that has covered over 4,000 pastoralists since its inception in 2010. To avoid overlap between the three programs, the State Department of Livestock would utilize the NDMA’s classification of households according to wealth status, and provide livestock insurance to the people immediately above the HSNP’s target beneficiaries. Private insurers could then offer coverage (partially subsidized or otherwise) to those not targeted in the free government program, and provide top-up contracts to any targeted households that demanded additional coverage. This layering approach is illustrated in table 2. The figures used are indicative and subject to change as the insurance program is concretized.

Beyond these two pilot counties, the government of Kenya is considering rolling out livestock insurance to all ASAL counties going forward. The government recognizes that the pastoralist population affected by severe drought stretches far beyond the pilot counties, but given the availability of payment infrastructure and relevant data, has chosen to focus initially on two pilot counties. The diagnostic analysis conducted for this policy note and the accompanying background report focuses on the four HSNP counties for illustrative purposes.
The accompanying background document estimates that a large-scale program that insures pastoralists against drought and includes different levels of government subsidies for premiums—to complement existing social protection to the poorest—would both significantly reduce the risk that the poorest households would be forced into destitution during catastrophic droughts and allow vulnerable households to grow their viable herd. Under the program, the probability that vulnerable households would suffer irreversible losses of viable herd and be trapped in long-term poverty is reduced 80 percent. These impacts would greatly reduce food insecurity and chronic poverty in the region.

### Table 2— Proposed Livestock Safety Net and Insurance Program for Kenya’s Four Hunger Safety Net Program Counties: (Mandera, Marsabit, Turkana, and Wajir)

<table>
<thead>
<tr>
<th>Form of financial protection against disasters</th>
<th>Income level of beneficiary</th>
<th>Number of pastoralists expected to be covered across four counties over next five years (of 470,000 total)</th>
<th>Government’s contribution to cost of premium or welfare payments (%)</th>
<th>Cost per beneficiary for government (K Shs/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsubsidized livestock insurance</td>
<td>Middle-income (US$1/day or more)</td>
<td>0</td>
<td>0</td>
<td>n.a</td>
</tr>
<tr>
<td>Partially subsidized livestock insurance</td>
<td>Low-income (below US$1/day)</td>
<td>15,000 (by 2019)</td>
<td>50, 25&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2,100</td>
</tr>
<tr>
<td>Macro-level insurance program</td>
<td>Ultra poor (below national rural poverty line of US$0.5/day)</td>
<td>71,000</td>
<td>100&lt;sup&gt;c&lt;/sup&gt;</td>
<td>4,200</td>
</tr>
<tr>
<td>Hunger Safety Net Program scalable cash transfers</td>
<td>Hardcore poor (below national food poverty line of US$0.3/day)</td>
<td>100,000</td>
<td>100&lt;sup&gt;c&lt;/sup&gt;</td>
<td>21,000</td>
</tr>
</tbody>
</table>

Note: n.a. = not applicable.

<sup>a</sup> Classification based on distribution livestock holding size for Marsabit County, which may not be similar in other HSNP counties.

<sup>b</sup> Contribution is from State Department of Livestock, based on annual assumed budget of K Sh 300 million per year.

<sup>c</sup> Contribution is from National Drought Management Authority.

### Role of Government in the Proposed Public-Private Partnership

Figure 2 shows the roles and responsibilities that the government of Kenya is considering taking on to promote the development of sustainable agricultural insurance markets.

With regard to data, the government is considering increasing the number of crop cuts for insurance purposes. Crop cuts are sample assessments of crop yields conducted in selected locations. They provide the data baseline that enables insurers to offer area yield insurance.
Crop cuts are currently conducted by ward officers in Kenya. Going forward, these may be complemented by publicly supported data collection by private sector stakeholders.

In order for crop-cut results to better represent actual yields, however, the government is considering expanding beyond the current number of crop cuts and enabling more localized yield estimation, as this would make it possible to offer farmers more accurately priced and designed insurance products. If the increased workload is too much for ward officers, the government is considering outsourcing some crop cuts to private companies (as has been done in India, for example), with ward officers providing oversight.

In addition, the government is considering working with local insurers to establish an audit process for yield data that is acceptable to international reinsurers. Currently, the collection of agricultural production data is coordinated by government agencies, and work is underway to further enhance the data collection system. To be useful for insurance purposes, however, the data will need to be subject to a strict audit mechanism acceptable to international reinsurers.

It is possible, for example, to share crop-cutting data with insurers on the day of the cutting via cell phone, enabling real-time data auditing and therefore lower insurance premiums. This method has been successfully piloted in India (see box 2). In addition, insurers and government can spot-check data, and freely available satellite data can be used as an additional check. Without such an audit mechanism, companies will not have affordable access to international reinsurance markets and will be unable to off-load some of the risk from their balance sheets—meaning that they will be unable to offer affordable insurance.

Kenya’s national and county governments may consider becoming involved in efforts to reach out to potential policyholders. Currently less than 1 percent of Kenyan agricultural producers are insured against the impact of natural disasters, mostly through small, fragmented donor-supported pilots. The analysis in the accompanying background report, however, shows that by year 7 of operation of the crop insurance program about 135,000 maize and wheat growers, or about 20 percent of emerging small-scale crop producers, could be covered by insurance. Achieving such large-scale coverage is fundamental to the sustainability of agricultural insurance programs, because it makes it possible to spread costs of provision among numerous policyholders.

- Building on the existing social protection infrastructure, particularly for the livestock insurance program
- Encouraging credit institutions to make insurance compulsory for farmers who take out agricultural credit from agricultural banks (specifically for the crop insurance program)
- Providing financial support to reduce farmer premiums
- Promoting effective linkages with complementary public services in target areas
- Launching public awareness campaigns through extension services
Box 2— Improving the Quality of Yield Data in India

For the past eight years, the Government of India has been working on improving its agricultural insurance programs, which cover approximately 34 million farming households with the support of technical assistance from the World Bank. The National Agricultural Insurance Scheme suffered from a number of problems, including a lack of consistency in the way crop cuts were conducted and recorded, a scarcity of trained personnel, and insufficient monitoring of crop cuts. As a result, the Scheme suffered from significant delays in paying claims to farmers, and did not always pay claims when farmers had been severely affected.

To address these challenges, the Agricultural Insurance Company of India joined forces with the World Bank to establish a pilot program where crop cuts were video recorded with GPS-tagged footage using mobile phones. The data, along with the yield estimates, was then provided to insurance companies by text message at the time of the crop cuttings to allow real-time monitoring. This innovative use of technology greatly improves the quality of data collected and thus the trust of insurers and reinsurers and ultimately lowers the insurance and reinsurance premium. It is also an example of how the speed and auditing of data can be significantly improved through using developments in technology.
Box 3— Setting Up A Coinsurance Pool in Turkey

Prior to 2006 only 0.5 percent of farmland in Turkey was insured. A number of private insurance companies provided limited crop and greenhouse insurance, while livestock insurance was as yet poorly developed. At the time, the Government did not support agricultural insurance, but rather provided limited ad hoc post-disaster relief to crop and livestock producers after catastrophic losses.

In 2006, the Government of Turkey established the Tarsim Agricultural Insurance Pool. Established by law, it comprises 16 private commercial companies, each with a 6.25 percent share in the company. Tarsim underwrites crop and livestock risk on the behalf of coinsurers. The Government subsidizes half of most premium payments. No other companies are allowed to offer agricultural insurance. With Tarsim operational, the number of policy sales has increased from 218,938 to 744,093 (an increase of 240 percent) and premium income for participating companies has increased from TL 47 million to TL 273 million (USD 23 million to USD 131 million, a 482 percent increase). Turkey has grown to be the third largest agricultural insurance market in Europe by premium volume.

The advantages of Tarsim include:

- Cost savings, since administrative and operating costs of all insurers are shared through the pool;
- Better reinsurance rates, as the pool can buy coverage for a more diversified portfolio than if each insurer tried to do it individually;
- The ability to maintain underwriting and data quality standards;
- Easier coordination of government support.

Through other, more technical types of assistance, the government of Kenya is considering further promotion of agricultural insurance. The highly specialized and technical nature of insurance solutions requires a great deal of technically sound support, both in the form of capacity within commercial insurance companies and in the form of a supportive regulatory and legal environment. The government of Kenya could provide such support in these ways:

- Offering technical expertise to insurers, such as how to design products and apply actuarial pricing
- Supporting coordinated investments in other types of data, such as weather and remote-sensing data, which may be useful for the design and implementation of improved insurance products
- Enacting legislation that enables the Insurance Regulatory Authority to establish and implement an appropriate regulatory framework

The government is considering establishing a Program Steering Committee with representation from both the government and the private sector to examine options for an institutional framework. Among other things, the Program Steering Committee should consider both international experience and the local context in determining the appropriate functions of the public and private sectors, and should make recommendations for the development of an institutional framework to accommodate them. For the latter, as recommended by the Ministry of Agriculture, Livestock and Fisheries report, the Program Steering Committee could consider whether a separate entity should be established to coordinate public policy and provide support to the individual private sector companies that sign up for the PPP.
The Program Steering Committee may advise whether the government of Kenya should promote the establishment of a coinsurance pool by interested insurers, which would enable the pooling of risk. Given the high costs of designing and distributing agricultural insurance to small farmers, some form of cooperation between insurers is desirable; cooperation creates economies of scale and thereby cost savings for insurers. The Program Steering Committee may therefore consider recommending that the government of Kenya establish an agricultural coinsurance pool by interested insurers. Special consideration may be given to structuring the pool with a lead insurer. Coinsurance would enable the pooling of risk, which could ultimately result in making policies more affordable for farmers. Box 3 gives an example of such a coinsurance pool in Turkey.
Cost

Any agricultural insurance program aiming to operate at a large scale will entail a substantial fiscal cost to the government.

The fiscal implications of a large-scale insurance program depend on who the beneficiaries are, how much they contribute to the cost of financial protection, and the ratio of cost sharing between national and county governments. Everyone needs financial protection against disasters, but the government may assume a greater or lesser share of the costs depending on the commodity or geographical area. First, the size of fiscal implications depends on how many policyholders will be eligible for insurance coverage. Second, the size of public subsidies determines the size of fiscal implications. Third, public cost could be shared between central and county governments. For example, counties could be offered the choice to opt in or out of any national agricultural insurance program, with those that opted in participating in cost sharing with national government and farmers.

The government already offers some financial protection to farmers and pastoralists through drought- and flood-response mechanisms, and part of the fiscal cost of agricultural insurance may be seen as upfront financing for this existing contingent liability. Traditionally, government and donors have financed disaster responses ad hoc after a disaster has struck. Under an insurance solution, government and donors could shift the financing to ex-ante expenditure over a longer time period through premium payments and/or subsidies. In this way, funds would be more readily available in the case of disaster.

Calculations suggest that the government could facilitate insurance coverage for 75,000 crop producers and 86,000 pastoralists by 2019 for a total fiscal cost of K Sh 725 million per year (see table 1). These calculations take into account the cost of risk and the charges required to cover data, reinsurance fees, administration cost, tax, profits, and any other cost of doing business. Given the challenges linked to maintaining the long-term financial stability of the insurance scheme, the government will also consider devising a long-term financing strategy before undertaking such large premium subsidies.
Moving Forward

In order for it to partner with the private sector to prepare and implement a large-scale agricultural insurance program, the government should consider taking the following next steps.

The government of Kenya may build on the recommendations by the Program Steering Committee to take the lead in formulating a national policy on agriculture insurance, in cooperation with county administrations and private insurance companies. The policy would address the objectives for agricultural insurance, including social objectives, the functions and roles of each party to the PPP, and the institutions most suitable for delivering those functions. Once finalized, the policy would provide the blueprint for the institutional and legal framework for agricultural insurance.

The government of Kenya may develop a road map for establishing the institutions required for large-scale agricultural insurance programs, with the goal of covering at least a fifth of Kenya's agricultural producers. In order to offer livestock insurance by October 2015, interim responsibilities for relevant tasks would be assigned within the government until an institutional solution is established.

As next steps for establishing livestock insurance, the government of Kenya may decide how to integrate the proposed insurance product with other existing protection mechanisms. The government intends to finalize the design of the envisaged insurance coverage and make a number of implementation decisions, including
• Determining the amount of financial support available

• Deciding on who the beneficiaries will be and defining the registration process (the required decisions are described in full in annex 1)

• Defining how to fit the proposed policy into the existing framework to ensure complementarities with other mechanisms, given the other insurance and social safety net instruments in place in the HSNP counties

• Identifying the appropriate insurance companies to underwrite the risk and the optimal way to structure their contribution

• Determining the share of responsibilities and roles of the national and county governments in selected program counties

As next steps for crop insurance, the government of Kenya may seek consultations with agricultural banks and work with private sector insurers to develop a data audit system acceptable to international reinsurers. Reaching scale for crop insurance will depend on how well it is integrated into existing distribution channels, such as production credit. Thus the government could enter consultations with commercial agricultural banks with the aim of establishing an agricultural insurance partnership. Equally, government could promote the timely availability of reliable crop-cutting data to insurers, for example through same-day text messages.

Annex 1 contains a summary of the actions and the time frame for the preparation and implementation of the proposed large-scale PPP for livestock and crop insurance that the government of Kenya will consider and decide upon.
## Annex 1
Summary of Next Steps for the Government of Kenya

<table>
<thead>
<tr>
<th>Type of actions</th>
<th>Short term actions</th>
<th>Medium term actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional design</strong></td>
<td><strong>National policy on agriculture insurance</strong></td>
<td><strong>Implement the national policy on agricultural insurance.</strong></td>
</tr>
<tr>
<td></td>
<td>Program Steering Committee to coordinate development of national policy on agricultural insurance, which will define functions of government, counties, and the private sector.</td>
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<td></td>
<td><strong>Government institutions</strong></td>
<td><strong>MALF agricultural insurance Program Steering Committee to evaluate proposed institutional options and adopt one for sustainable operation of agricultural insurance in Kenya.</strong></td>
</tr>
<tr>
<td><strong>Risk financing</strong></td>
<td><strong>Coinsurance pool</strong></td>
<td><strong>Develop road map to pilot coinsurance pool; refine and potentially institutionalize.</strong></td>
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<td></td>
<td>Facilitate negotiations with private sector insurance and reinsurance companies on initial method of developing a livestock coinsurance pool in Kenya. Investigate possibility of coinsurance pool acceptable to all relevant insurers.</td>
<td></td>
</tr>
<tr>
<td><strong>Enabling environment</strong></td>
<td><strong>Monitoring and evaluation (M&amp;E)</strong></td>
<td><strong>Implement M&amp;E framework.</strong></td>
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<td></td>
<td><strong>Consumer protection</strong></td>
<td><strong>Address any potential shortcomings, e.g. through appropriate regulation.</strong></td>
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<tr>
<td></td>
<td>The Insurance Regulatory Authority should advise on the state of consumer protection under envisaged insurance program.</td>
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<tr>
<td><strong>Livestock insurance</strong></td>
<td><strong>Fiscal support</strong></td>
<td><strong>Institutionalize agreed cost-sharing formula.</strong></td>
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<tr>
<td></td>
<td>Determine the amount of available resources to provide financial support to the livestock insurance program.</td>
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<tr>
<td></td>
<td>Consult with county governments to agree on optimal cost-sharing contributions across national and county governments.</td>
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<tr>
<td></td>
<td><strong>Support product design and development</strong></td>
<td><strong>Further test and refine macro-level asset protection product.</strong></td>
</tr>
<tr>
<td></td>
<td>Carry out analysis and design of features of macro-level asset protection product.</td>
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<td></td>
<td>Coordinate with NDMA to define coordination between insurance and social safety net mechanisms in HSNP counties with relevant government of Kenya agencies.</td>
<td><strong>Ensure complementarity of various mechanisms.</strong></td>
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<td></td>
<td><strong>Integration with HSNP</strong></td>
<td></td>
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<tr>
<td></td>
<td><strong>Product design</strong></td>
<td><strong>Institutionalize partnership.</strong></td>
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<td></td>
<td>Design timing and amount of potential claim payments.</td>
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<td></td>
<td>Liaise between MALF, NDMA, and county governments to secure access to HSNP database and optimally leverage HSNP infrastructure in support of livestock insurance.</td>
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<tr>
<td>Type of actions</td>
<td>Short term actions</td>
<td>Medium term actions</td>
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<tr>
<td>Outreach</td>
<td>Define collaboration with service providers (risk carriers, distributors, etc.).</td>
<td>Institutionize process.</td>
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<td></td>
<td>Design and implement registration process</td>
<td>Institutionize role of national and county governments in outreach.</td>
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<td></td>
<td>Consult with county governments to define their role in outreach process and how national government can support.</td>
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<td></td>
<td>Liaise with county governments on the role of extension workers in consumer awareness campaigns</td>
<td>Define roles between of government of Kenya and private sector in awareness creation.</td>
</tr>
<tr>
<td>Crop Insurance</td>
<td><strong>Fiscal support</strong></td>
<td><strong>Data</strong></td>
</tr>
<tr>
<td></td>
<td>Determine the amount of available resources to provide financial support to crop insurance program, including premiums subsidies.</td>
<td>Select size and shape of insurance units, number of crop cuts per insurance unit, and resourcing.</td>
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<tr>
<td></td>
<td><strong>Data</strong></td>
<td>Implement expanded yield data collection methodology.</td>
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<td></td>
<td>Define changes in agricultural data collection and auditing to align with requisite reinsurance quality (and speed), including liaising with private sector to determine private sector role.</td>
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<tr>
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<td><strong>Eligibility</strong></td>
<td><strong>Eligibility</strong></td>
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<td></td>
<td>Decide on crop types and locations to pilot government crop insurance program in Kenya (maize/wheat, subsistence farmers/commercial crop producers, districts/divisions).</td>
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<tr>
<td></td>
<td><strong>Outreach</strong></td>
<td><strong>Outreach</strong></td>
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<tr>
<td></td>
<td>Link to credit: Liaise with banks, rural lending institutions, and microfinance institutions to establish partnership for crop insurance linkage to agricultural credit.</td>
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<tr>
<td></td>
<td>Link to credit: Liaise with government of Kenya lending institutions to the rural sector on linkage of agriculture insurance to credit.</td>
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<td>Liaise with county governments to understand county government role in crop insurance outreach, in addition to counties to pilot in first year of operation.</td>
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</tr>
<tr>
<td>Risk financing</td>
<td>Develop strategy for public sector support to financing of crop insurance risk, including providing reinsurance, supporting development of coinsurance pool, and establishing a risk financing fund.</td>
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<tr>
<td></td>
<td>Support product design and development</td>
<td>Support product design and development</td>
</tr>
</tbody>
</table>
Endnotes


4 Ibid.

5 Ibid.

6 For a detailed review of these programs see, Financial Sector Deepening, Review of FSD’s Index-based Weather Insurance initiatives (Nairobi: FSD, 2013).

7 Data are from FAOSTAT (Food and Agriculture Organization of the United Nations Statistics Division), 2014. http://faostat.fao.org/. Exceptions include the ILRI livestock predicted mortality index insurance program, which is targeted at resource-poor pastoralists located in northern Kenya, and the UAP-Syngenta Weather Index Insurance program, which is targeted at small-scale commercial crop producers in higher-rainfall regions of southwestern and southern Kenya.
