



## **Horn of Africa Risk Transfer for Adaptation (HARITA)**

Project Brief, August 2009

### **OVERVIEW**

Oxfam America (OA) has convened Ethiopian farmers, Swiss Re, the Relief Society of Tigray (REST), the International Research Institute for Climate and Society (IRI), Nyala Insurance, and over a half dozen other organizations to launch an innovative climate change resiliency project called “Horn of Africa Risk Transfer for Adaptation” (HARITA). Together, over the last year and a half, we have worked on designing a risk management package for farmers in the village of Adi Ha, located in Ethiopia’s northernmost state of Tigray. The project has broken new ground in the field of climate change resiliency and microinsurance by addressing the needs of smallholder producers through an unusual mix of risk reduction, drought insurance, and credit. Under the HARITA risk management package, insurance complements disaster risk reduction and long-term, sustainable investments in agriculture.



*Farmer in Adi Ha*

The project has found ways to overcome technical product design barriers, engaging clients meaningfully in product development, and creating a scalable in-kind premium payment model whereby farmers obtain insurance through their labor. The first season of results demonstrate that the HARITA model can effectively reach very vulnerable families, most of whom had previously been viewed as uninsurable. Our work has been recognized for its innovation in various international fora, journals, and media including the Clinton Global Initiative, the Global Risk Forum Davos, the UNFCCC Nairobi Work Programme, *Nature*, *New Scientist*, *Africa-wide Civil Society Climate Change Initiative for Policy Dialogues*, and others.

In late May 2009, 20% of households in Adi Ha signed up for a weather index insurance product for *teff*, a staple cereal crop. Of these households, 38% were female-headed and 65% were participants of the Productive Safety Net Program (PSNP), a well-established government program that serves 8 million chronically food insecure households in Ethiopia. Going forward, we will continue to refine the risk management model by expanding the pilot to additional villages in Ethiopia. We will also begin to explore ways to leverage international climate change adaptation funds with a hope of integrating the scheme into the PSNP at the federal level.

### **RATIONALE**

#### **Risks of Climate Change**

According to a variety of scientific studies, climate change in Ethiopia could lead to extreme temperatures, extraordinary rainfall events, and more intense and prolonged droughts and floods (IGAD and ICPAC, 2008). These projections come as particularly bad news considering the fact that more than 85 percent of all Ethiopians are engaged in smallholder, rainfed agriculture, and farms already find themselves under significant climate stress. Acute environmental degradation has depleted the country’s natural resource base and more than 90 of its districts (which include a total of more than 2 million households) are already drought-prone and regularly hit by severe water shortages. Climate change could greatly exacerbate this already difficult situation and have numerous knock-off effects on economic growth, livelihoods, health, and the rate and intensity of disasters. The major question for Ethiopia then is how best to promote farmers’ resiliency to evolving climate shocks, both big and small.

## The HARITA Model of Managing Climate Risk

The HARITA model is innovative in its holistic approach to risk management. Our approach consists of three main components: risk reduction, risk transfer, and prudent risk taking. In conjunction with appropriate government policies, accessible input and output markets, and agricultural research geared to benefit smallholders, we believe these three components can be scaled up to work synergistically. Working together, they can help promote livelihoods at the household level and greater resiliency to evolving threats, chief among them being climate change. (See Fig. 1 below.)

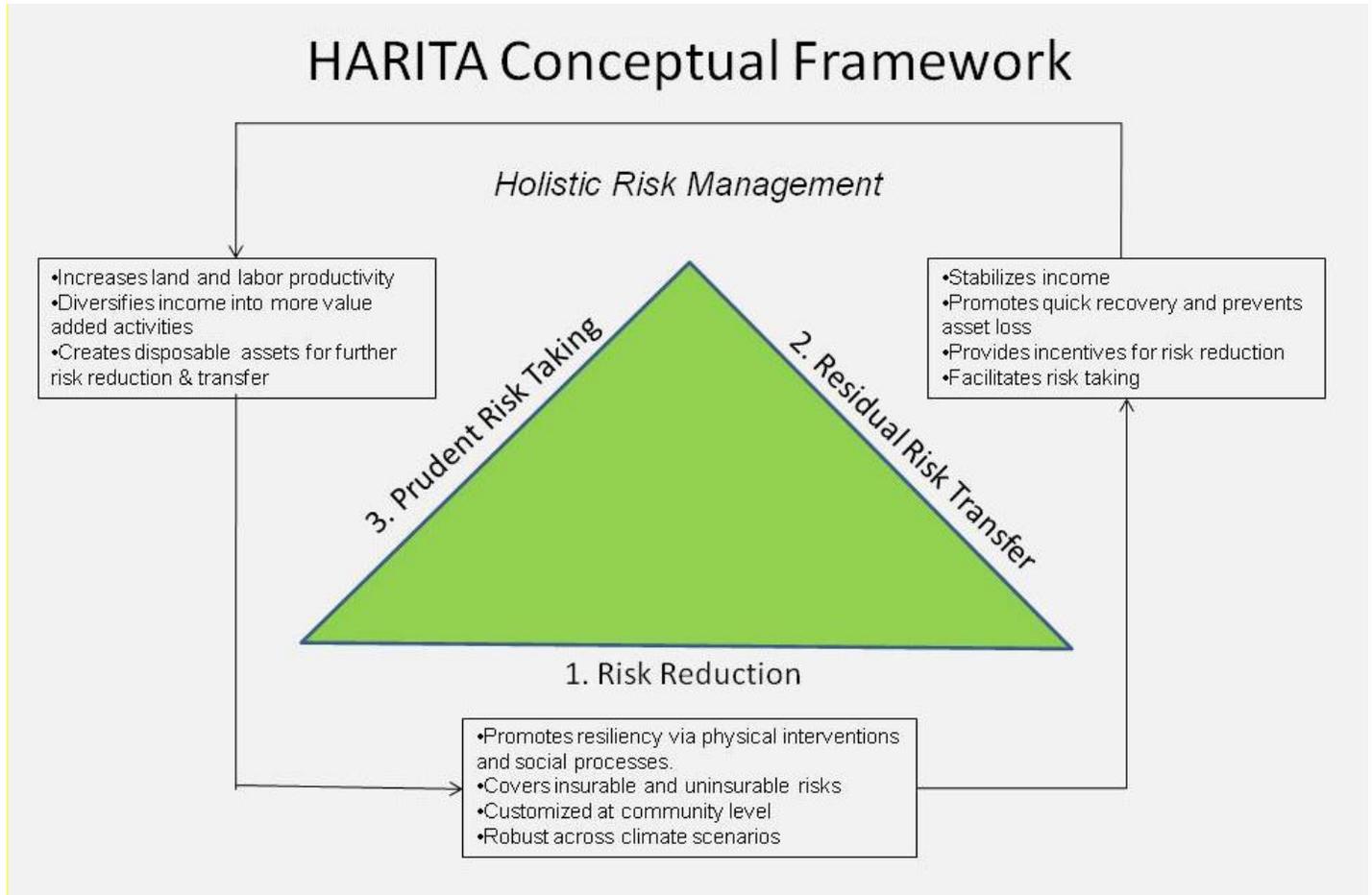


Fig. 1: HARITA Conceptual Framework

### *Risk Reduction: Minimizing Vulnerability*

HARITA considers risk reduction the foundation of any holistic risk management approach. In the case of climate change, risk reduction requires farmers to reduce their vulnerability to climate shocks by adapting their farm management practices. Global warming entails both shifts in average climate conditions (e.g. mean annual temperature, cumulative precipitation levels, onset and cessation of the rainy season) as well as increased weather variability (e.g. more frequent dry spells, flash flooding). Given enough time and resources, farmers can adapt to new, average conditions through risk reducing measures. For instance, in the face of rising average temperatures, they can select more heat tolerant crops, improve their management of water resources, and move planting dates. Such interventions can substantially reduce the risks posed by the relatively predictable, (albeit new) gradual trends.

Farmers in Adi Ha participating in a community-wide vulnerability and capacity assessment (VCA) listed poor rainfall as the current, primary threat to their livelihoods and wellbeing. To limit the adverse impacts of drought and other important hazards, HARITA's partners are cooperating with farmers to design a climate change risk reduction program that is adapted to the specific needs of Adi Ha and Tigray. In 2009, farmers participating in HARITA are learning to make and use compost, which is critical for rebuilding soil nutrients and improving soil

moisture retention. In addition, they are constructing small scale water harvesting structures on farm land, as well as planting trees and grasses to promote soil and water conservation. Finally, farmers are learning how to clean *teff* seeds before they sow them in order to boost productivity. If sustained, these risk reduction activities will help minimize vulnerability to drought and improve yields.

Most significantly, HARITA is exploring ways to build its risk reduction approach upon Ethiopia's Productive Safety Net Program (PSNP), a well-established, government social protection program serving 8 million chronically food insecure households.<sup>1</sup> In 2005, the Ethiopian Food Security Office established the PSNP as a system of transferring cash and food to vulnerable households *before* they reach a crisis point. This assistance is coordinated through government and financial channels in exchange for beneficiaries' work to build community assets such as water harvesting structures or to reclaim environmentally degraded areas. The motto of the PSNP is to provide "predictable transfers for predictable needs". As of 2008, the PSNP had grown into one of the largest, social protection programs in Africa. Early impact studies suggest that the PSNP is superior to traditional, emergency food aid programs in significantly increasing household welfare (UNDP 2007); (Sharp et al. 2006). HARITA applauds the many successes of the PSNP and seeks to build upon them.

#### *Risk Transfer: Weather Index Insurance*

Insurance can play a critical, complementary role to risk reduction interventions by facilitating rapid recovery from low-frequency, but severe climatic shocks like prolonged droughts. HARITA proposes introducing micro-insurance to the PSNP's existing array of benefits. Insurance could potentially strengthen the PSNP by addressing the non-chronic, "unpredictable" needs not covered under the program. Through HARITA, farmers enrolled in the PSNP have the option to work *extra* days beyond those required for their normal payments, but instead of earning cash or food for this additional labor, they earn an insurance certificate protecting them against deficit rainfall. In other words, through this premium-for-work arrangement, farmers can receive "predictable transfers for *unpredictable* needs". (Note that richer farmers who do not participate in the PSNP are encouraged to purchase insurance with their own cash; as such, they constitute a potentially important subset of clients for the Ethiopian insurance industry.)

The premium-for-work model obviously requires an independent source of financing. At the moment, OA is providing the funds, but as HARITA scales up, funds would most likely come from large, governmental and multilateral donors. A HARITA-type risk management scheme could also tap emerging sources of climate change adaptation funds at the international level. From the perspective of donors, the HARITA approach multiplies the value of money by two: while a certain amount of aid could be used for either paying an insurance premium *or* for hiring labor to carry out risk reduction measures, with HARITA, the same amount of money results in both insurance and risk reduction simultaneously.

Over the last 18 months, the allied project partners cooperated on designing an affordable, drought insurance prototype package for *teff*. With IRI and Swiss Re in the lead at the international level, and Nyala Insurance Co. and Dedit Credit & Savings Institution (DECSI) at the regional level, the team developed a weather index insurance product for Adi Ha. Weather index insurance entails risk transfer against *events* that cause loss. If a pre-defined weather event occurs during a pre-defined time, such as a shortage of rain during a crucial period in a crop's growth, this event triggers pre-determined payments to farmers who buy the policy. "Index" refers to the fact that the insurance is based on a proxy for loss and an objectively verifiable measure of weather.

Index insurance differs from traditional insurance where compensation to a policyholder is based on the estimated value of what was actually lost. Traditional crop insurance is problematic because farmers have an incentive to neglect their crops in order to gain a higher payout. When properly designed, index insurance avoids this problem of "moral hazard" since the index cannot be influenced by farmers' behavior. Index insurance also has lower administrative costs, because it is generally easier and cheaper to verify weather (e.g. rainfall levels) in a given region than to visit individual farms to assess damage. Because administrative costs are lower, index insurance packages are more affordable. Importantly, the payout can be set up to

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<sup>1</sup> Program costs are approximately US \$500m annually; the PSNP is supported by a wide range of donors including the World Bank, the WFP, DFID, and USAID, among others.

occur as soon as the loss-causing event is detected. In the case of insufficient rains, this gives farmers resources and time to manage a shortage in food production. Thus weather index insurance could help smallholder farmers by allowing them to stabilize their incomes and recover more quickly from climate-related shocks.

Finally, because the insurance contracts are priced from year to year, the premium charged can also reflect changing risks over time, including not only climate change trends but also seasonal rainfall predictions (see Osgood et al., 2008). In this way, the market signals to farmers what production strategies are likely to succeed given the current conditions.

#### *Prudent Risk Taking: Credit*

The final component of the HARITA model involves prudent risk taking, primarily in the form of credit for purposes of livelihood diversification (e.g. honey production), technology adoption (e.g. high-yield seed varieties, irrigation), and entrance into more profitable lines of business (e.g. producing high value horticultural crops like spices and vegetables). With insurance in hand, poor producers can make potentially optimal production decisions even in the face of uncertainty, meaning they can afford to plant high-yield seeds purchased on credit despite the uncertainty of future precipitation levels. Insurance serves as a partial guarantee for banks and microfinance institutions that are reluctant to make substantial unsecured loans for inherently risky agricultural activities. In this way, insurance has the potential to reduce the interest rate on lending as well.



*Children in Adi Ha*

If farmers were able to take “smart risks”, the gains resulting from credit-based investments made during wet years could be much larger than the losses resulting from failure during occasional dry years. In general, Ethiopia receives average to above-average rainfall in 60 percent of all years (Hess et al., 2006). Furthermore, one recent study in Ethiopia “confirms a positive relationship between the level of [climate change] adaptation and the availability of credit. In particular, access to credit increases the likelihood that farmers will employ soil conservation methods, change planting dates, and irrigate” (Deressa et al., 2008). We are therefore working with Dedebit Credit & Savings Institution in Tigray to increase access to credit by providing concessional loans to insured farmers who wish to make prudent investments in their livelihoods.

#### **How HARITA Complements Other Risk Management Efforts**

The HARITA model addresses a weak layer of climate risk management in Ethiopia. HARITA is positioned to take on community-level, mass risks, such as localized droughts that are not severe enough to trigger outside assistance but that nonetheless overwhelm farmers’ coping capacity. This missing layer of risk management is sorely needed and was missing during the infamous famine of 1984, during which up to a million people perished. New research suggests the tragedy did not grow out of a massive drought as previously thought. Rather, a number of scholars argue that the famine was, in part, the result of multiple small droughts in prior years that eroded the coping capacity of communities over time. This series of events meant that by 1984, farming communities were almost completely unable to handle even a relatively modest drop in rainfall (Fraser, 2007). The main implication then is that helping farmers deal with small shocks along the way is just as important as helping them deal with high profile, catastrophic, regional and national emergencies (which are often a reflection of weakness in the mechanisms to deal with minor shocks).

#### **INNOVATIONS AND ACHIEVEMENTS**

Given that development practitioners have relatively deep experience with risk reduction and credit, HARITA has focused on exploring the potential and limits of the little understood tool of agricultural micro-insurance. Few existing index insurance projects have reached the stage of actual financial transaction, and most are small-scale pilots or one-year test period initiatives. While these projects prove index insurance “works” at a technical level, it remains to be seen how they can be scaled up and used effectively as an “industrial strength” tool for development that better serves the needs of the poor. HARITA seeks to tackle four key barriers to using weather insurance at scale.

### **How to integrate insurance with risk reduction**

As described above, HARITA integrates insurance with both risk reduction and credit. Most weather index pilots have bundled insurance only with credit. HARITA's model is different in that it thoroughly integrates all three elements. By allowing very vulnerable farmers to pay their premiums through risk reducing labor, farmers benefit even when there is no payout—the risk reduction measures taken in their communities pay dividends, even during the wet years. The labor-for-premium model also allows insurance and credit to stand as independent components. In most index insurance pilots, farmers have been required to take insurance and credit as a package. Under HARITA, however, farmers may choose to bundle the two, but they are not required to do so. The independence of credit and risk transfer means that farmers do not lose access to insurance once they have repaid their loans, and that farmers who do not want a loan can still obtain insurance.

### **How to engage farmers meaningfully in insurance design**

Farmers in Adi Ha have been central participants in the design of the weather index insurance package by contributing ideas, feedback, and advice. Toward that end, a team of five community members were elected by their peers to join the “Pilot Design Team” to manage the initiative. In addition, a focus group of 21 farmers participated in a number of test workshops on climate change, financial literacy, and insurance. In addition, IRI conducted experimental economic risk simulations and focus group discussions with farmers to understand their preferences for key parts of the insurance contract, such as coverage levels and frequency of payout. What we learned through this process of engagement resulted in a much more attractive product, and improved the financial service providers' ability to educate farmers effectively. HARITA's emphasis on farmers' interests differs from the dominant model of product design that revolves primarily around the interests of lenders and insurers.



*Community Members of  
Pilot Design Team*

### **How to overcome weather data barriers**

Designing rainfall index insurance normally requires at least 30 years of reliable, daily precipitation data. In most developing countries, rain gauges are sparsely distributed and limited in quality and duration. Not surprisingly, most weather insurance pilot locations have been selected for the quality of local rainfall records. These data-supply-driven pilots have demonstrated that weather insurance products are viable at the pilot level; however, the general lack of weather data is a serious barrier to extending weather insurance to the vast majority of poor communities. For this reason, we have been working with IRI to explore new techniques to enhance sparse local datasets through a combination of satellite imagery, rainfall simulators, and statistical tools that incorporate information from the closest stations. IRI carefully studied the time series in Adi Ha and surrounding areas, and developed a viable index and an open-source methodology for handling data gaps. While continued refinement will be necessary, IRI's approach was examined and accepted by the insurance and reinsurance providers, Nyala Insurance Co. and Swiss Re.

### **How to increase insurance take-up by farmers**

While some index insurance pilots have attracted solid demand from farmers, it is unclear why take-up has not been automatic or stronger given the many theoretical benefits of risk transfer. Academic research and index insurance pioneers have found that farmers struggle to understand complex financial products, much less afford them. HARITA has tried to overcome these two barriers by employing culturally appropriate popular education methods developed in conjunction with farmers, such as storytelling and participatory games. We also believe that in-kind premium payments allow poor clients—who may not be rich in cash, but who are rich in labor—to purchase much more coverage than they could afford otherwise.

There is reason to believe we are overcoming these barriers, as evidenced in the strong uptake of *Wahisna*<sup>2</sup>, the HARITA affiliated risk management package offered by Ethiopia's Nyala Insurance Company in late May

<sup>2</sup> In Tigrinya, this literally means “security” or “collateral”, a name given to the product by farmers in Adi Ha.

2009. Over the course of two days, approximately 600 farmers attended project enrolment activities, and 200 households signed up for the package, representing roughly 20% of the village. Roughly 38% of enrollees were female-headed households (recognized as the poorest of the productive poor) and 65% of enrollees were participants in the PSNP. By definition, these two groups constitute the most vulnerable farmers in Adi Ha. At the outset of this project, the received wisdom was that agricultural risks for farmers this poor were nearly uninsurable, but the HARITA model is a direct challenge to this notion. Over time, as livelihoods improve and farmers graduate from the PSNP, they become candidates for the commercial insurance market where they can pay for insurance in cash. Already, 35% of the enrollees (ones who are better off and not in the PSNP) did pay in cash, using the disposable assets they had built over time.

These initial results, suggest that HARITA has made important breakthroughs in extending effective access to insurance and holistic risk management to the most vulnerable households in Adi Ha. Going forward, we will monitor farmers' experience with and without the HARITA package to better understand how it is or is not contributing to increased resiliency.

## **MAJOR PARTNERS AND INSTITUTIONAL ROLES**

As with all programming, Oxfam America has adopted a "local-to-global" approach, using our convening power to connect local partners with international donors and advisors.

### *Local*

- **The Adi Ha Community.** Central participants in the design of the pilot.
- **The Adi Ha Farmers Cooperative.** Primary organizing body for farmers in the community.

### *Regional/National*

- **Relief Society of Tigray (REST).** Established in 1978. Working with Oxfam since 1984 on development issues. Largest NGO in Ethiopia (and one of the largest in Africa). Operates the PSNP in six regions of Tigray.
- **Nyala Insurance Company.** Private insurer in Ethiopia with a strong track record of interest in agricultural insurance.
- **Dedebit Credit and Savings Institution (DECSI).** Second largest micro-finance institution (MFI) in Ethiopia with nearly comprehensive coverage of Tigray. Named by *Forbes* magazine as one of the top 50 MFI's in the world.
- **Mekele University.** Member of the National Agricultural Research System. Provides technical expertise and research in agricultural best practices.
- **Ethiopia's National Meteorological Agency.** Technical support in weather and climate data analysis.
- **Tigray Regional Food Security Coordination Office.** Oversight of the PSNP in the pilot area.
- **Tigray Cooperative Promotions Office.** Responsible for helping organize farmers at the village level.
- **Institute for Sustainable Development (ISD).** Research organization dedicated to promoting sustainable farming practices.



*Local partners and technical advisors*

### *Global*

- **Swiss Re.** Global re-insurer and leader on climate change advocacy. Funding and technical expertise.
- **International Research Institute for Climate and Society (IRI).** Member of Columbia University's Earth Institute. Research and technical expertise in climate data and weather index design for rural farmers.
- **Index Insurance Innovation Initiative at University of California-Davis.** Emerging research partnership on index insurance between academia and development organizations, with UC-Davis and Oxfam America taking lead roles.
- **Goulston & Storrs.** Legal expertise.
- **Weil, Gotshal, & Manges, LLP.** Legal expertise.

## **REACHING FOR SCALE: 2009–2010 AND BEYOND**

Since September 2008, the HARITA team has been exploring options for gradual scale up to a national level program. In 2009–2010, we plan to pursue a modest expansion of the pilot to four new villages in Tigray and one new village in Amhara, another drought-prone area of the country. We will also conduct a feasibility study on the potential for insuring irrigated farmers in Oromia. Expansion to new regions in Ethiopia and beyond will eventually diversify the risk pool and strengthen the risk management scheme.

The activities undertaken by the end of 2010 will lay the groundwork for eventual scale up across Ethiopia. At this stage, however, the project will only be spread across two regions with a goal of enrolling a small number of households. We are intentionally keeping numbers small while we document lessons learned, refine the model, and establish new partnerships. Finally, we are beginning to draw broader policy lessons from our experience with HARITA and to explore how a scaled-up initiative could be linked to proposals at the United Nations' international climate negotiations. We also aim to influence powerful international actors by documenting lessons, encouraging debate, and formulating policy proposals.

## **CONCLUSION**

Through our efforts to promote the resiliency of smallholder producers to climate stress, Oxfam America and its project partners have found fertile terrain in HARITA. We are proud that a number of media outlets have chosen to recognize our contributions to climate change adaptation. For the next 18 months, we propose another round of innovation in our search to develop an integrated set of tools that will reduce vulnerability to climate-related risk. This toolbox must prove useful and effective in a variety of regions and over a variety of risks. Our proposed approach incorporates three flexible tools. First, we are helping farmers prepare for gradual shifts in average climate conditions through community-driven risk reduction measures. Second, we are exploring the limits and potential of experimental weather index insurance to help farmers prepare for greater weather variability. And third, we are finding ways to link risk reduction and risk transfer to credit so that this financial tool will remain accessible even in the face of increasing climate stress. We hope the results of the HARITA initiative will demonstrate that farmers can create more stable, resilient communities if they have access to the right tools.

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