Introduction and Background

- In Ethiopia, 84 percent of the rural population are engaged in farming and pastoral activities. The small holder farmers produce 90 percent of crops.

- Droughts can highly reduce agricultural production compared to normal for affected areas; therefore food insecurity remains an issue. At least about 8 million people are considered to be chronically food insecure (World Bank, 2008) and covered by the Productive Safety Net Programme (PSNP).
Introduction and Background …Contd

- In addition, on average 4 million people face acute food insecurity in the last five years (2005 to 2009), and have been covered by the emergency relief food.

- It is through this realization that the Government of Ethiopia (GoE), World Bank and WFP have introduced innovative ways to tackle food insecurity in a more predictable manner through weather based index in support of the Government food security programmes and the recently GoE adopted Disaster Risk Management framework.

Thus GOE policies emphasize risk management

- The Government and its partners have been developing a user friendly risk index and insurance scheme tailored for the agro-pastoralists and the poor small holder farmers.

- Risk insurance and in particular “index insurance” could be applied across a diverse range of weather-related risk problems, and has been applied at macro level covering the PSNP and micro level covering individual farmers/groups.
GoE Risk management

- The first weather based index insurance was piloted in 2006. However no extreme events occurred in 2006, hence no payout was made. However, valuable lessons were learnt from the pilot.

A Risk Management Framework

- Following the pilot, WFP, the World Bank, DFID and the Government converted the drought insurance to a risk financing framework in 2007.
Database for LEAP

The DRM approach relies heavily on the data generated by sectors and departments such as

- The MoARD
- The National Meteorological Agency (NMA);
- The Ministry of Water Resources (MoWR) and other agencies.

From framework to action at various levels

<table>
<thead>
<tr>
<th>Level of Purchase/Operation</th>
<th>Participating Agencies</th>
<th>Index Insurance for Disaster Relief</th>
<th>Index Insurance for Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macro</td>
<td>Government</td>
<td>Government protects itself against shocks: early liquidity/first relief outlays</td>
<td>Government reinsures insurers</td>
</tr>
<tr>
<td></td>
<td>Relief Agencies</td>
<td>Funds its operations through an index-based risk-transfer contract or provides coverage through an index trigger contingent voucher</td>
<td></td>
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<tr>
<td>Meso</td>
<td>Financial Service provider (FSP)</td>
<td>Government could use banks, FSPs, input suppliers, farmers’ associations and NGOs to distribute vouchers for catastrophe insurance</td>
<td>FSP buys portfolio insurance or group insurance to retail to farmers, linked to credit</td>
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<tr>
<td></td>
<td>Farmer Association</td>
<td>Farmers’ association buys group insurance to retail to farmers, linked to credit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Input Supplier</td>
<td>Input supplier buys group insurance to retail to farmers, linked to input purchases</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NGO</td>
<td>NGO buys group insurance to retail to farmers</td>
<td></td>
</tr>
<tr>
<td>Micro</td>
<td>Farmer</td>
<td>Farmer receives explicit, redeemable, predictable coverage against a well-defined shock, and the premium is paid for mostly by government</td>
<td>Farmer buys insurance as part of a package (e.g. credit and other financial services, technology, agricultural information)</td>
</tr>
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</table>

Source: WFP, IFAD, 2010
From Weather Insurance to Risk Financing

Description of the Risk Finance Components

<table>
<thead>
<tr>
<th>Early Warning</th>
<th>Contingency Finance</th>
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</thead>
<tbody>
<tr>
<td>• With reliable baseline and trigger points</td>
<td>• of budgeted contingency plans</td>
</tr>
<tr>
<td>• Continue the development of the Livelihoods Early Assessment and Protection (LEAP) software and Index at regional level for a) cropping areas; b) pastoral areas; and c) floods</td>
<td>• Establish timely emergency financing through use of contingency financing for safety net and non safety net woredas</td>
</tr>
<tr>
<td>• Development of other early warning triggers and monitor their performance</td>
<td>• WFP participates in contingency finance packages and manages the index with other stakeholders</td>
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<table>
<thead>
<tr>
<th>Contingency Planning</th>
<th>Capacity Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>• for appropriate and timely response</td>
<td>• for effective plan implementation</td>
</tr>
<tr>
<td>• Support contingency planning process</td>
<td>• Help to build planning and implementation capacity at regional and woreda level</td>
</tr>
<tr>
<td>• Develop budgeted contingency plans at woreda level</td>
<td>• Develop capacity in Ethiopia to trigger contingency funds at regional level</td>
</tr>
<tr>
<td>• Link the contingency plans to the DRM</td>
<td>• Capacity of woredas to develop contingency plans to scale up safety nets</td>
</tr>
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</table>

Contingency Financing Compared to Traditional Appeal Process

Source: Adapted from Risk Finance Framework
The overall situation about Risk Financing Mechanism (RFM) in Ethiopia

Guideline for the Productive Safety Net Program (PSNP) RFM has already finalized and used as a reference as of April 2009 RFM activities going in DRMFSS at all level

There is RFM task force at Federal level and has performed so many activities by designing action plan as follows:-

- RFM familiarization workshop at Federal level held on 8-9 April, 2010
- RFM familiarization workshop at regional level held from May 31, 2010 to June 7, 2010 at different regions.
- RFM familiarization workshop at Woreda level as June 20, 2010 (still on going process in some Woredas)
- About 190 Woreds (75% of the total PSNP Woredas) prepared contingency plan which is one of the pillars of RFM (still on going for the rest).

Source: DRMFSS
The Statistical Method to estimate needs

The statistical Method to estimate needs

The basis of the analysis is based on the fact that WRSI and yield reduction is closely correlated to the population in need over time. The model formulation is based on the log-model employed to relate drought condition to the number of beneficiaries to be targeted with livelihood protection actions is

\[ N = N_0 + K \left( \log(W_M - F) - \log(W_{RSI} - F) \right) \]

where \( K = \frac{N_N - N_0}{\log(W_M - F) - \log(W_{RSI} - F)} \)

and the parameters are:
- \( N_0 \): Needs in case of optimal rainfall (chronic food insecure)
- \( N_N \): Population at risk
- \( W_{RSI} \): Lowest observed value of RWRSI
- \( W_M \): Optimal RWRSI (e.g., \( W_M = 100 \))
- \( F \): Systemic failure level

The parameters \( N_0 \) and \( N_N \) must be derived either from historical records (for example from the population input data) or from additional knowledge on the current situation in the field. A driving example can be to use the maximum number of beneficiaries as a proxy for population at risk and the minimum number of beneficiaries as a proxy for chronic food insecure. An alternative can be to use vulnerability assessment from companion surveys.

The model parameters \((K, N_0)\) are calibrated by training the model with historical data for needs \((N)\) and RWRSI \(^*\) (Sandro Calmanti, 2010).

The HEA / LIAS Interface as Trigger for Risk

Finance and Insurance

The Interface between LEAP and HEA

Data is automatically input into the HEA LIAS & SMART sheets and the scenario is run, generating beneficiary numbers by woreda

\[ RISK = f(\text{Hazard, Vulnerability/Capabilities}) \]

Parameters mapped or exported back into LEAP

Risk \( = f(\text{Hazard, Vulnerability / Capacity to cope}) - \) This equation sits at the heart of the DRMFSS disaster risk management strategy

Source: Adapted from DRMFSS/WFP - Lorraine Coulter, 2010
Weather Index pilots in Ethiopia have shown that international institutions such as the World Bank, World Food Programme (WFP), The Food and Agricultural Organization (FAO); the local insurance companies such as Nyala Insurance and in 2010 Oromiya Insurance Company; can support the implementation of index insurance.

Furthermore, the index insurance can provide *ex ante* risk management framework which is inline with the new Government thinking of implementing a disaster risk management framework in Ethiopia.
Conclusions ...Contd

- Added to this, there is a very close linkage between input markets, output markets and financial markets with the index, such that this could stimulate production and reduce overall vulnerability of the rural poor.

- Moreover, index can be used at macro level to scale up the productive safety net programme through use of contingency funds; or some of the needs could be met through micro schemes such as the farmer insurance and any additional transitory needs could then be met through an emergency appeal.

- Hence, use of the weather index in Ethiopia has a potential to reduce food insecurity as response mechanisms could be put in place well in advance before affected vulnerable farmers use negative coping mechanisms, thereby protecting assets and livelihoods.

Thank You