

Weather and Risk

Risk and Uncertainty

- **Types**
 - Production Risk
 - Price Risk
 - ➔ Income Risk
- **Income risk affects welfare and livelihood, causing indebtedness and poverty**

Production Risk

- **Floods and droughts**
 - discourage returns and, thus, discourage investment and adoption of new technology
 - Linkages between risks, vulnerabilities, and poverty traps

Risk Management by Farmers

● Informal methods

- Applying low inputs or some traditional methods of production, cropping patterns
- Borrowing money or selling assets after bad events

● Formal methods

– Crop Insurance Programs

- High admin. costs and require large manpower
- Expensive and difficult to manage
- **Asymmetric information** → **Adverse selection** and **moral hazard**
- Not applicable in developing countries

– Weather Index Insurance

Weather Index Insurance

- An insurance contract that insures against specific events, such as floods or droughts that affect crop yields
- Use **indices** (such as rainfall levels) as **proxies** for the losses
 - No need for **loss assessment** by insurance companies at the farm level (**assessment is labor intensive and loss may depends on farmers' effort**)
 - measure rainfall levels at publicly-owned weather stations
 - Insurance does not related to farm profit, so no effect on incentive to do best
- **Basis risk**
 - Crop yield may not well correlated with the rainfall level
 - Farms far away from **25 km.** of the weather stations

Reading

**Sukanda Lewis, “Weather Index Insurance:
Bringing Security to Thai Farmers”, 2010**