

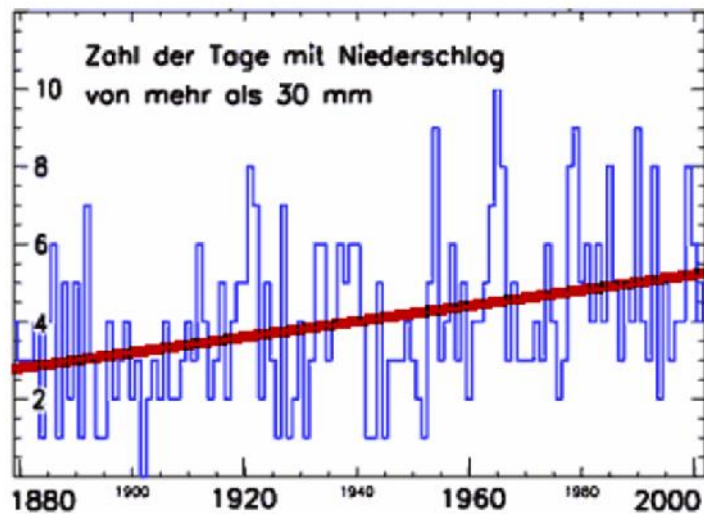
Asia-Pacific Climate Change Adaptation Forum 2013  
Songdo ConvensiA, Incheon, Republic of Korea  
18-20 March 2013  
Panel 1.3 Insurance and risk management

# **Weather Index Insurance for Agriculture (WIIA) - A market base solution -**

**Takashi Hongo  
Senior Fellow  
Mitsui Global Strategic Studies Institute**

# Climate Change Impact on Water Cycle : Precipitation

## Germany

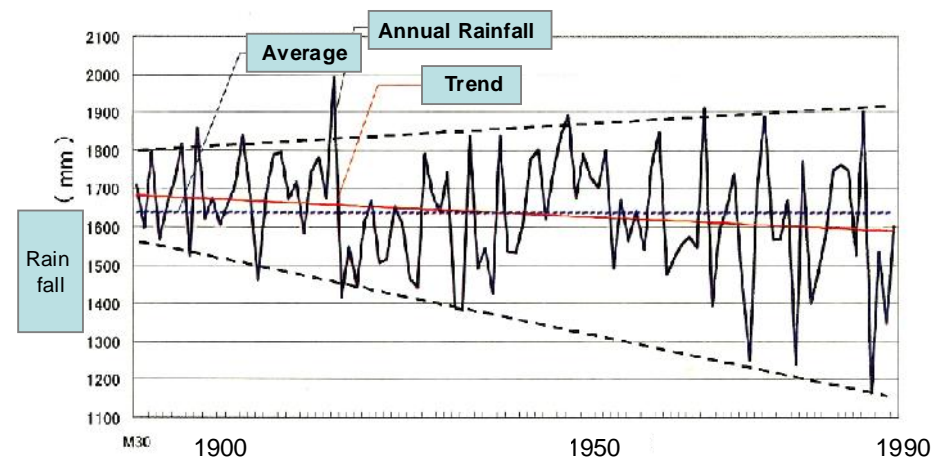


Source: Wetterstation Hohenpeißenberg

Source : Prof.Koike, Tokyo Univ.  
At JBIC seminar

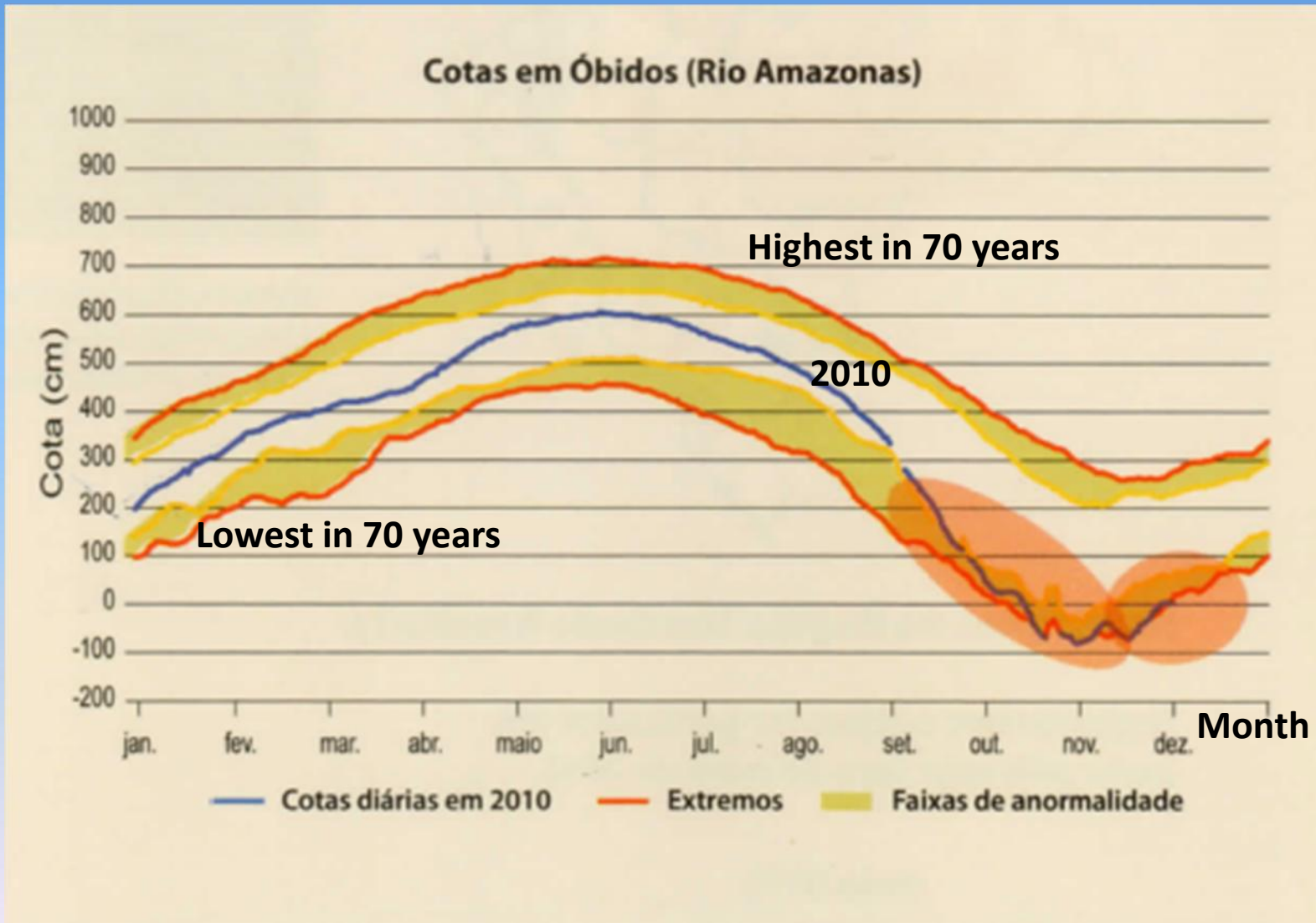
## Japan

### Changing Pattern of Annual Rainfall in Japan



Japans government' MLIT HP  
<http://www.mlit.go.jp/tochimizushigen/>

## Climate Change Impact on Water Cycle : Water level of River Amazon

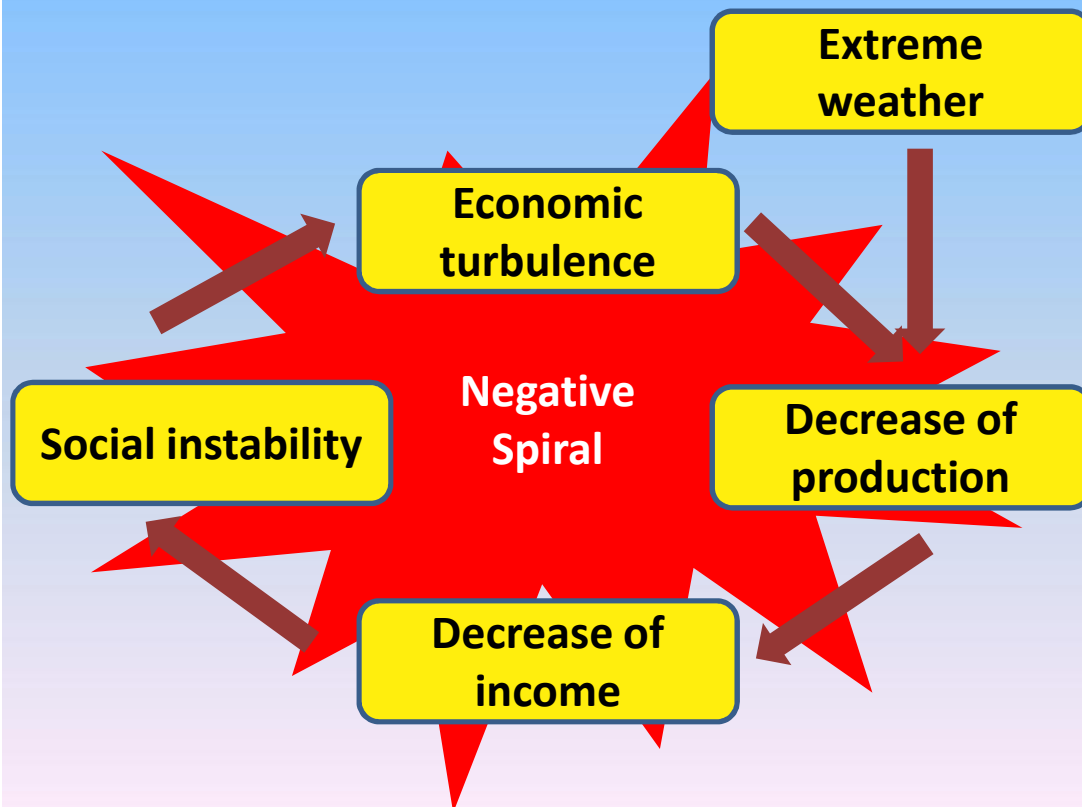


Source : Agencia Nacional del Aguas (Brazil)

# WIIA : Weather Index Insurance for Agriculture

**Agriculture is the most vulnerable sector by Climate Change**

Please see at “Potential of Weather Index Insurance for Agriculture in developing countries”, T Hongo  
[http://www.ubraintv.com/docs/Weather\\_Index\\_Insurance\\_for\\_Agriculture\\_FIN.pdf](http://www.ubraintv.com/docs/Weather_Index_Insurance_for_Agriculture_FIN.pdf)



**Risk mitigation**

- Infrastructure
- Weather forecast
- Breed improvement
- Economic loss cover

**Insurance  
(WIIA)**

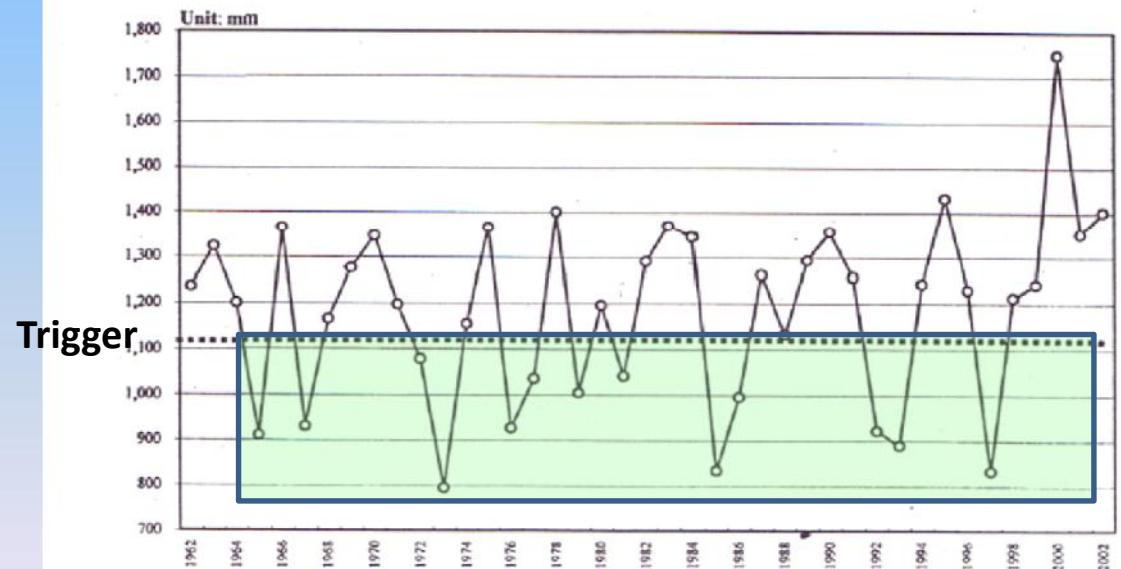
# Case Study : WIIA in Thailand by Sonpo Japan Insurance



## Why Khon Caen?

- ✓ Highly dependence on agriculture
- ✓ Depend on natural water supply
- ✓ Availability of weather and agriculture data
- ✓ Local partnership

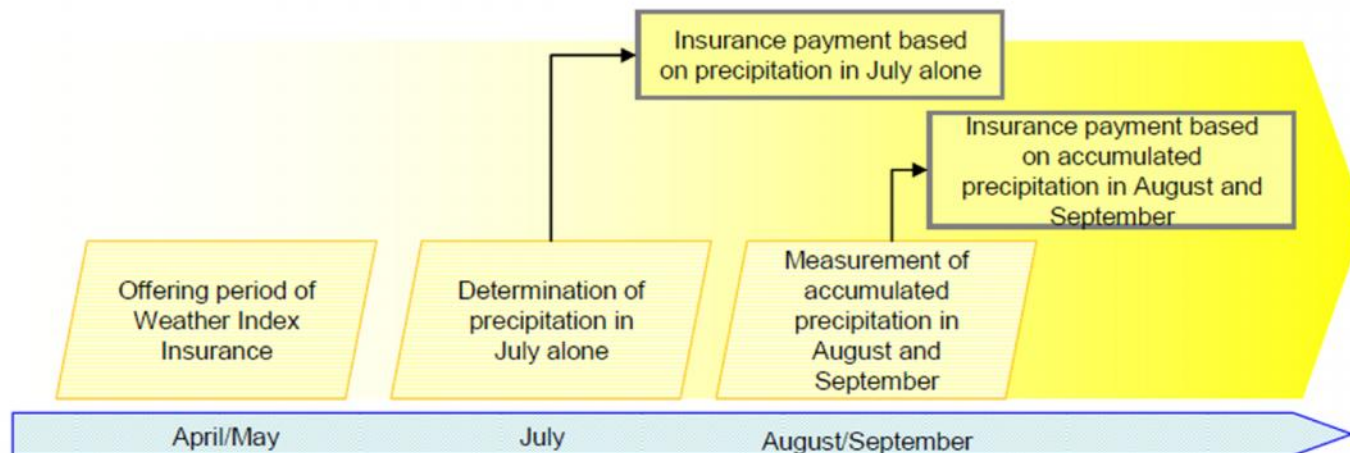
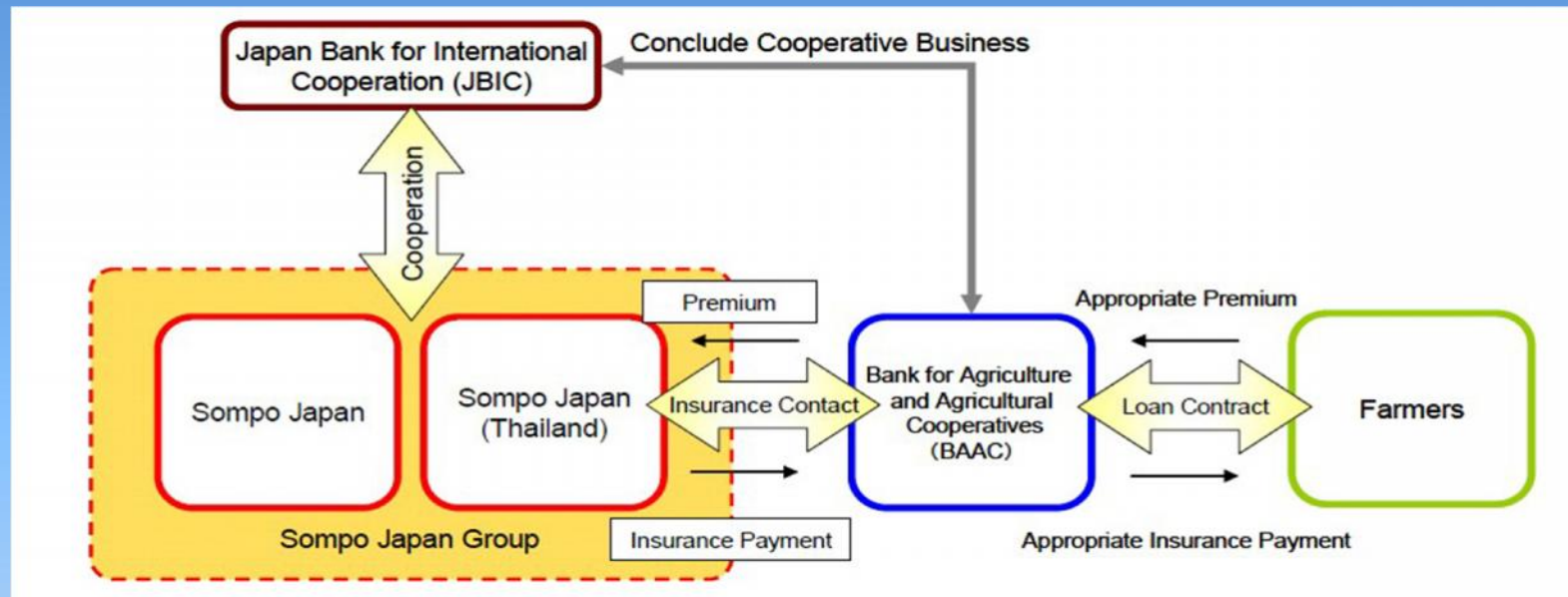
Figure 1.1: Long-term Trend of Annual Rainfall in Khon Kaen, 1962-2002



Source: Data are from the Khon Kaen Meteorological Station.

Source : JBIC report

# Case Study : WIIA in Thailand by Sonpo Japan Insurance



\* When the accumulated precipitation in July alone meets the criteria for the payment of insurance payments, this insurance contract will be terminated.



# Case Study : WIIA in Thailand by Sonpo Japan Insurance

## Measurement of precipitation



Source : JBIC report

## Insurance payment briefing



Source : Sompo Japan Insurance

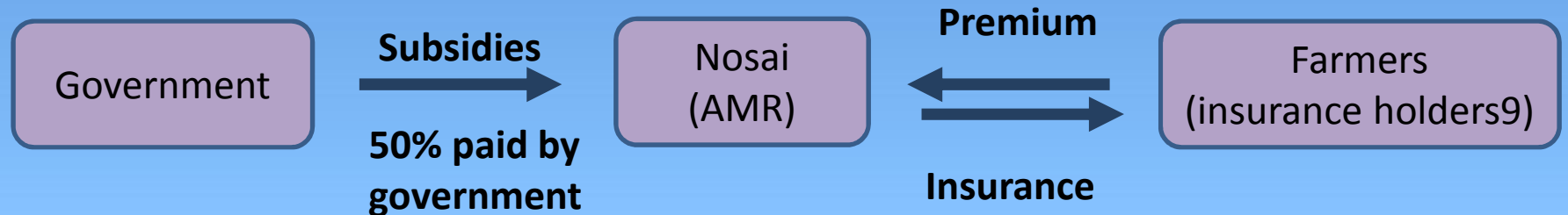
## Lessons learned

- **Date gathering**
  - Production, income, decrease of income and weather data such as daily precipitation data, flooded area, flooded period are crucial
- **Reliability of index**
  - Farmers shall share co-relationship between decrease of production/income and extreme weather.
- **Local partner for development and marketing**
  - It can not be realized without local partner. Thank you for BAAC!
- **Varieties of insurance products and scale up to nation wide scheme**
  - Now only rice is covered but demand for agriculture products is appeared.
- **Flood insurance**
  - Combination of drought insurance and insurance is needed because of the serious drought in 2011 in Thailand.
- **Reduce the burden of insurance holder**
  - Incentive to purchaser of insurance products by government



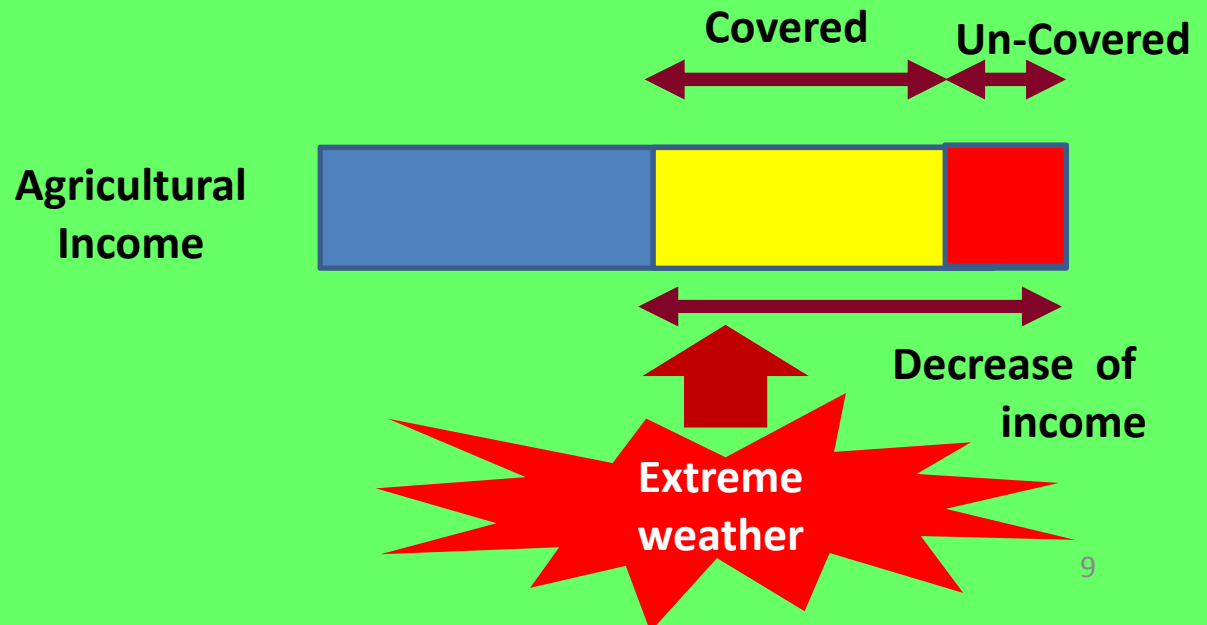
# NOSAI : Agricultural Insurance scheme of Japan

(AMR : Agricultural Mutual Relief Associations)



## <Insurance products>

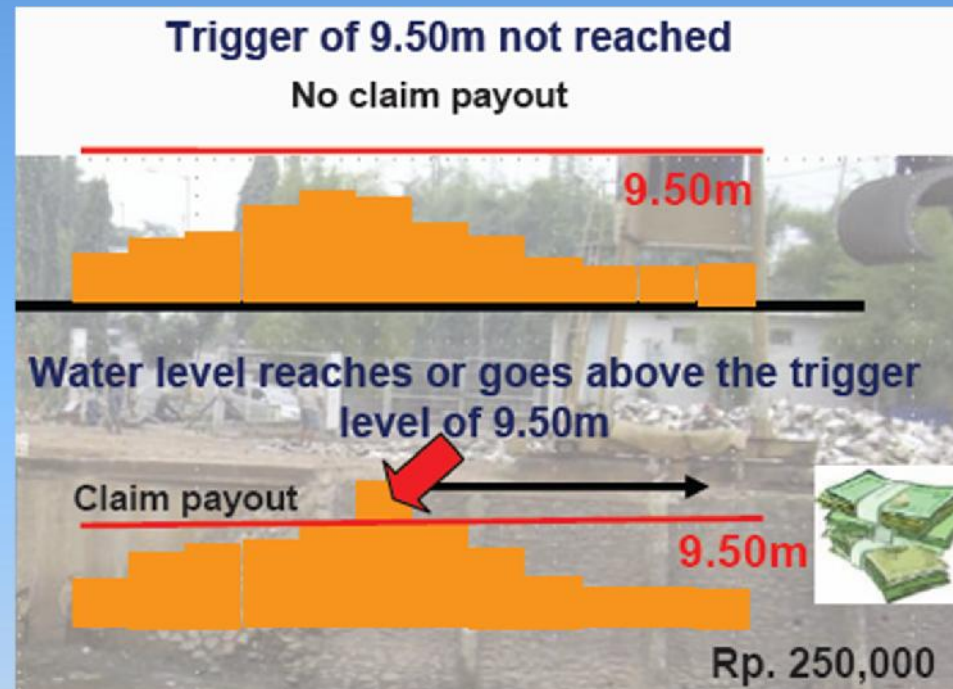
Rice, wheat and Barley Insurance  
Livestock Insurance  
Fruit and Fruit-tree Insurance  
Potato, beans etc. Insurance  
Greenhouse Insurance



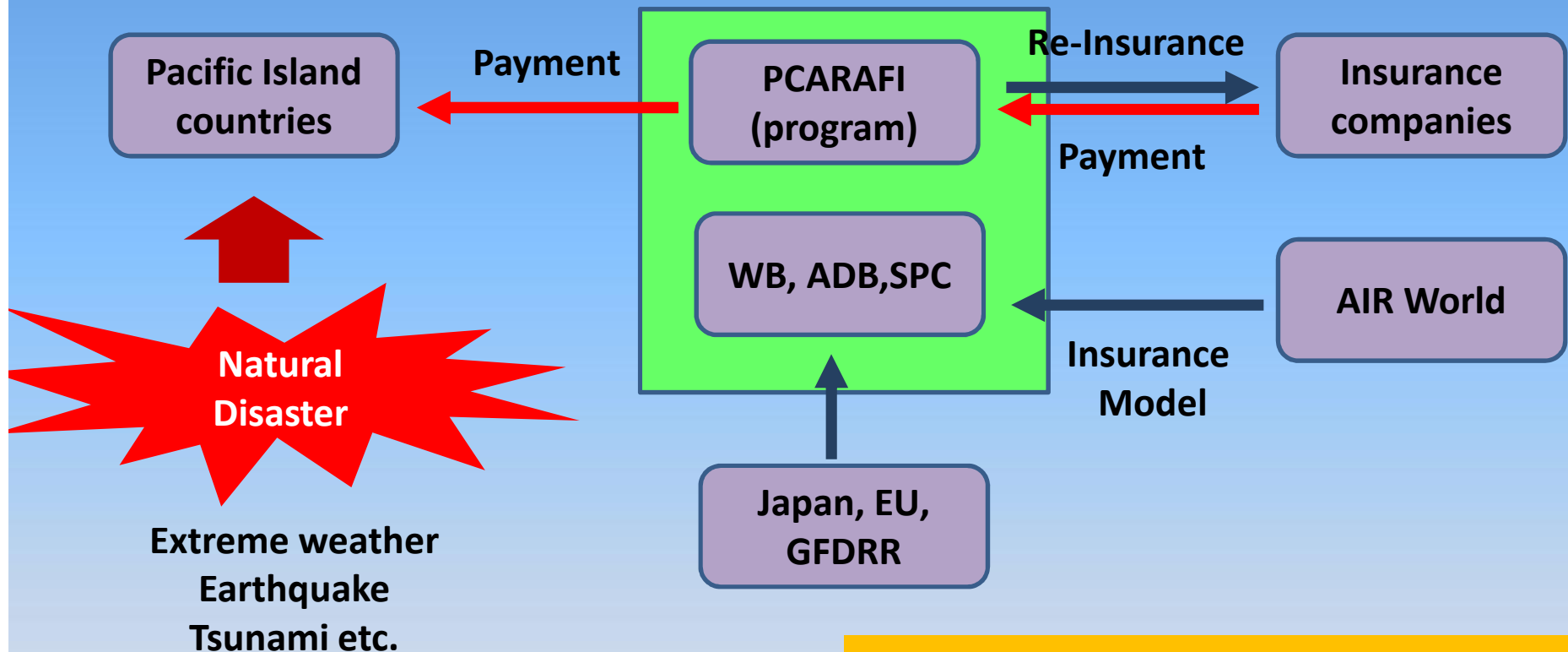
# Flood insurance by GIZ : Jakarta



Source : GTZ



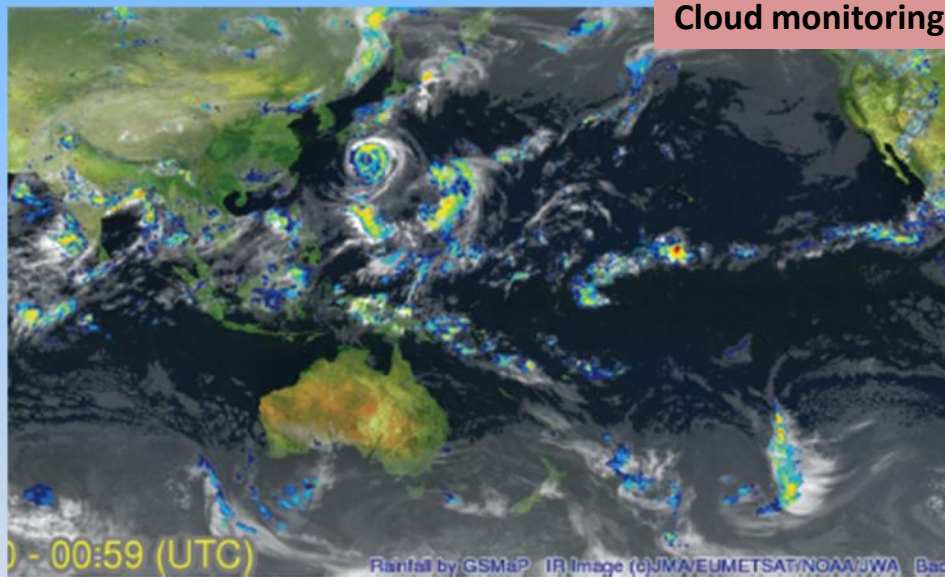
## Natural Disaster Insurance : PCRAFI



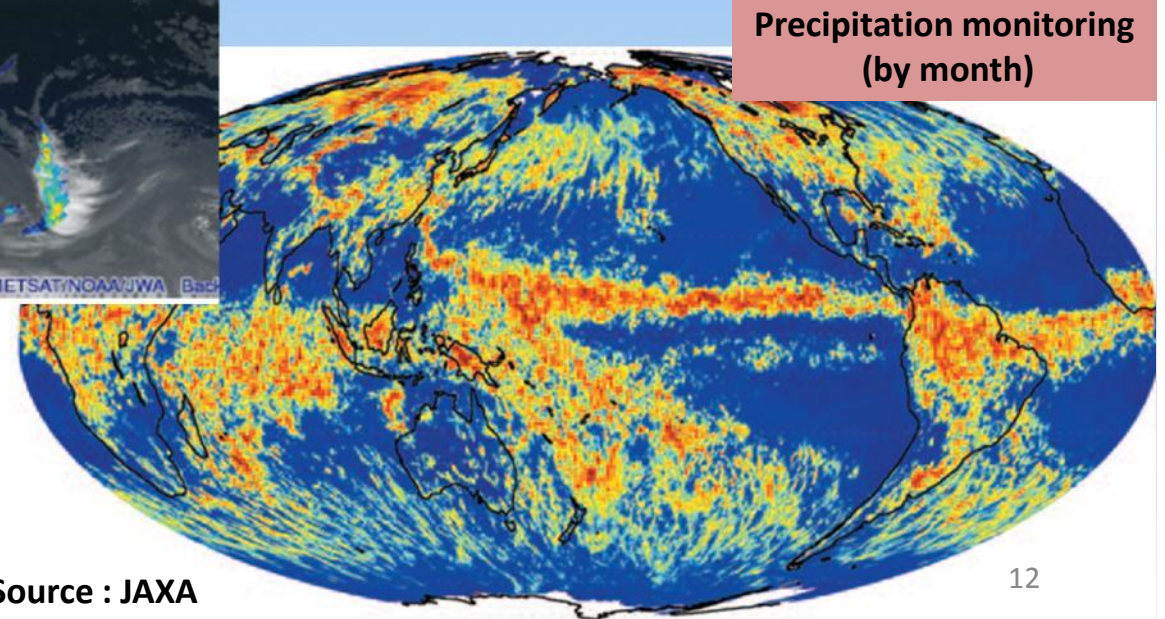
- ✓ Cost is funded by donors.
- ✓ Payment will be made by triggers and no investigation.
- ✓ Insurance companies buy derivatives.
- ✓ Model is made by private companies and multilateral is intermediary

# Data gathering : Satellite Technology

- ✓ Remote sensing technology is improving year by year.
- ✓ Use the satellite technology system for data gathering and estimation of the situation timely
- ✓ It may cheap option in the future



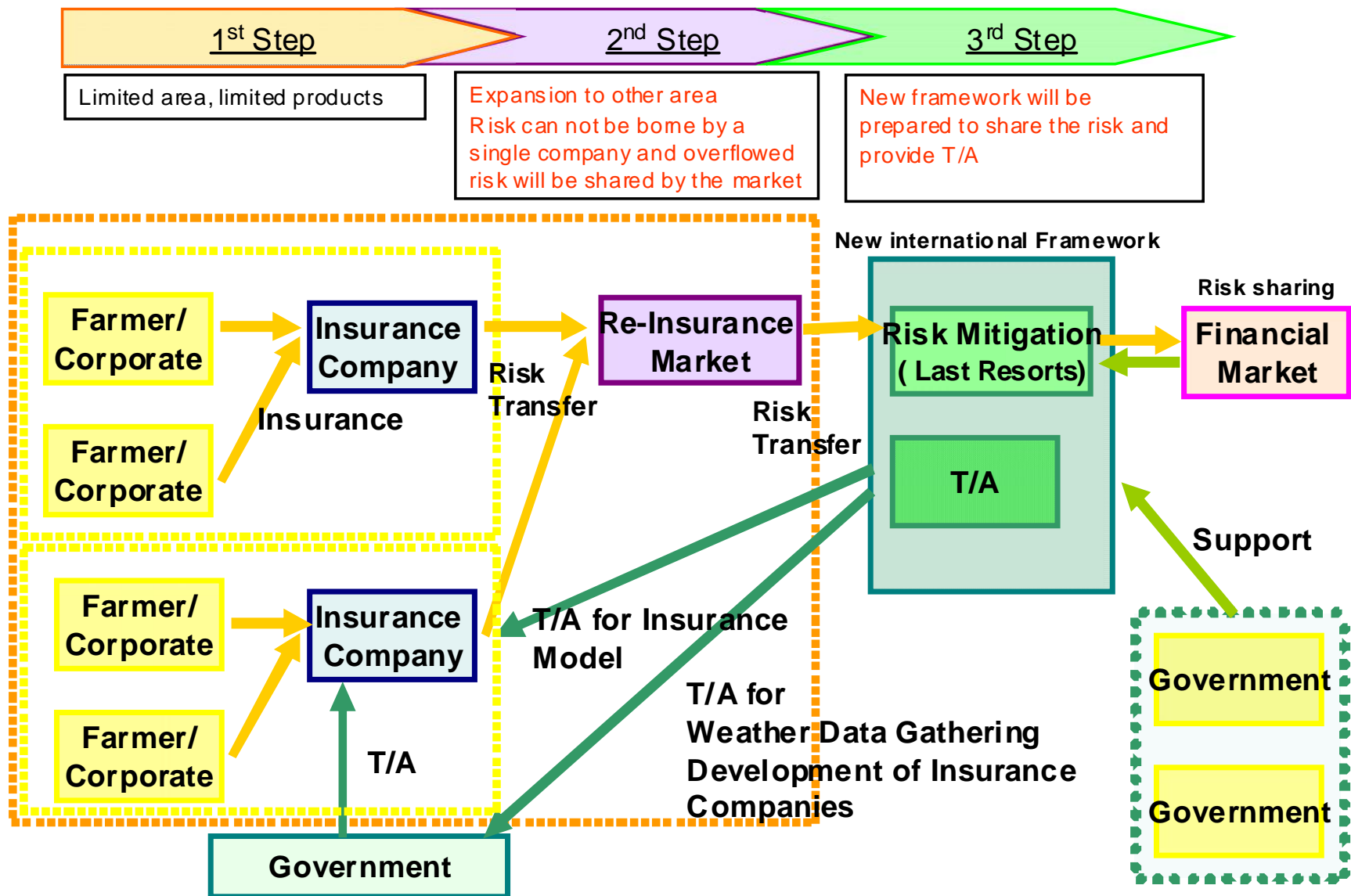
Source : JAXA



Source : JAXA



# International Development of Weather Insurance



Source : Study on Market-based Adaptation –Weather Index Insurance– J (BIC)



# Conclusion

- Market base approach for Adaptation is needed and available
- Weather Insurance could be an option  
however,  
incentive for reducing premium is effective  
data gathering for modeling is crucial
- For the scale up the scheme,  
combination with science and technology  
international framework  
are recommended.