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Social Economic benefits for using climate information in managing health risks

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Social Economic benefits for using climate information in managing health risks

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Climate has been recognized as a major driver of health risks

- Climate change and variability affects inter-annual variations in human disease

- Climate change affects inter-decadal and long term trends on infectious diseases and human health

Meteorological variables affecting disease and health

- Rainfall
- Temperature
- Humidity

Rainfall

- Can cause flooding, direct injury and death
- Excessive rainfall provides breeding habitats for diseases transmitting insects such as mosquitoes and ticks

Temperature

- Excessive heat can cause heat waves, heat stress and mortality

- High temperatures increase the rate of insect and pathogen development leading to more diseases

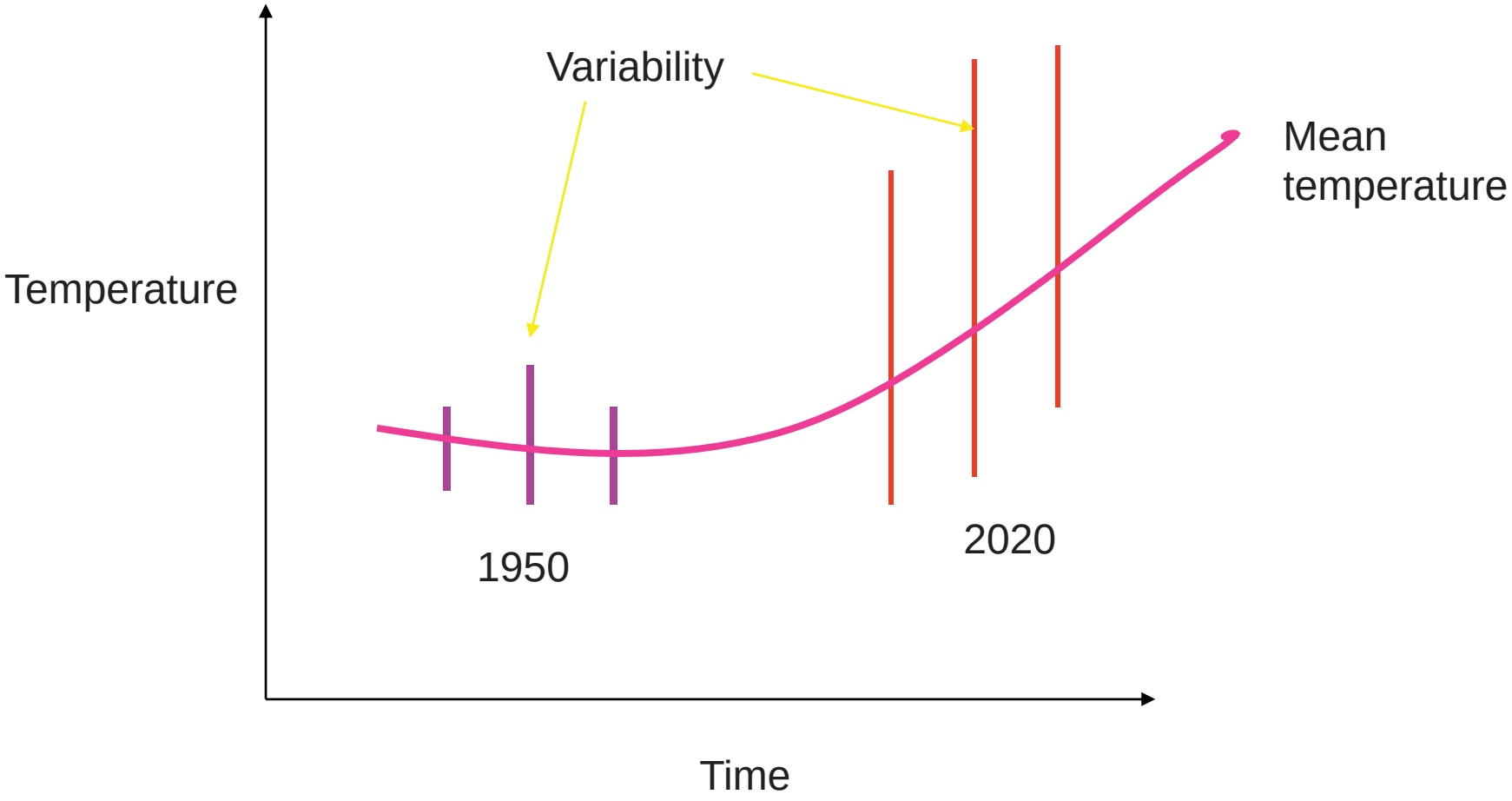
Humidity

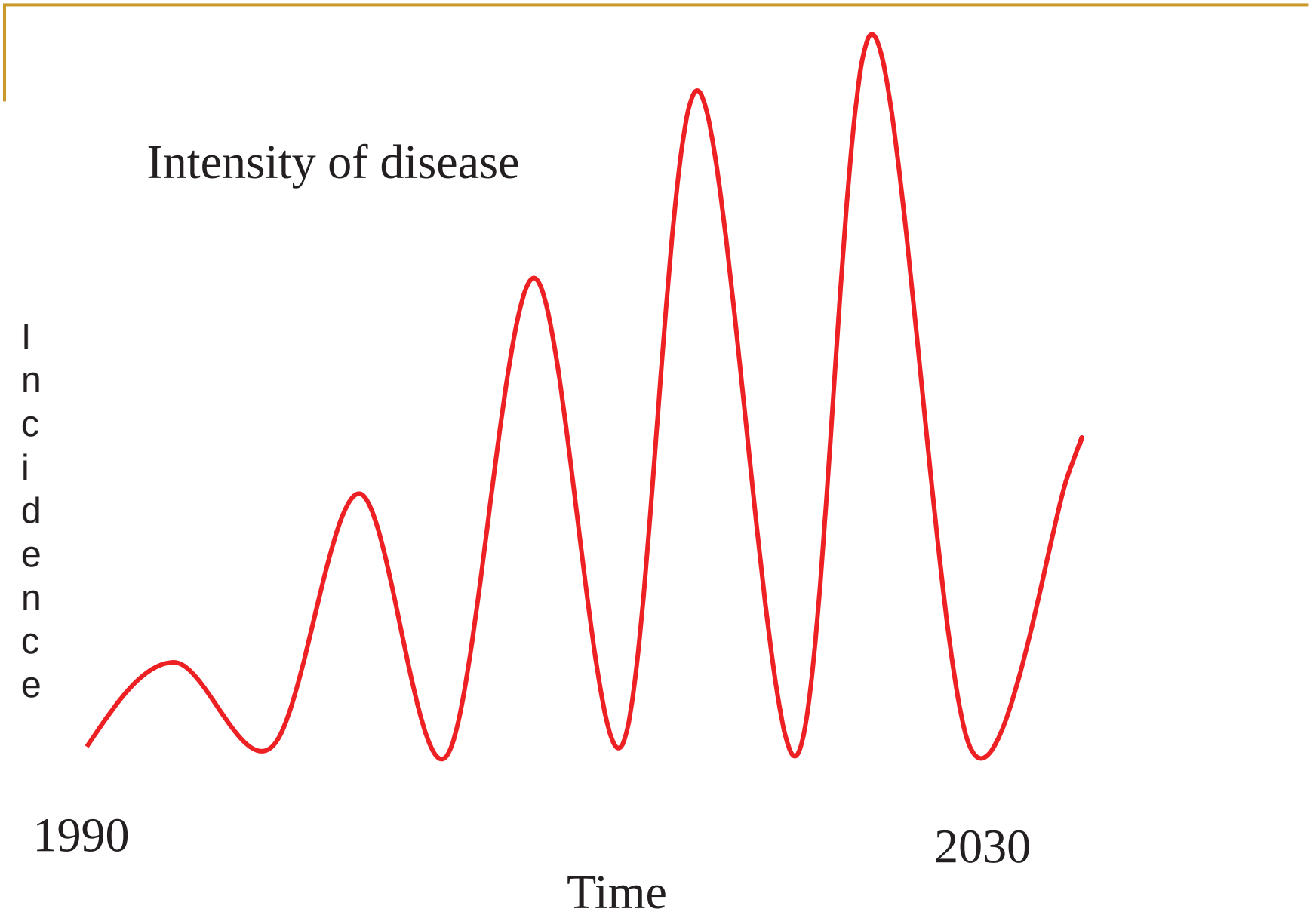
- Humidity increases the survival rates of insects and pathogens
- Excess humidity can lead to cardio vascular problems

Climate change and variability

- Most climate change scenarios predict that extreme climate events will increase in intensity and frequency
- This will be associated with intensified and more frequent health risks

Climate change and variability



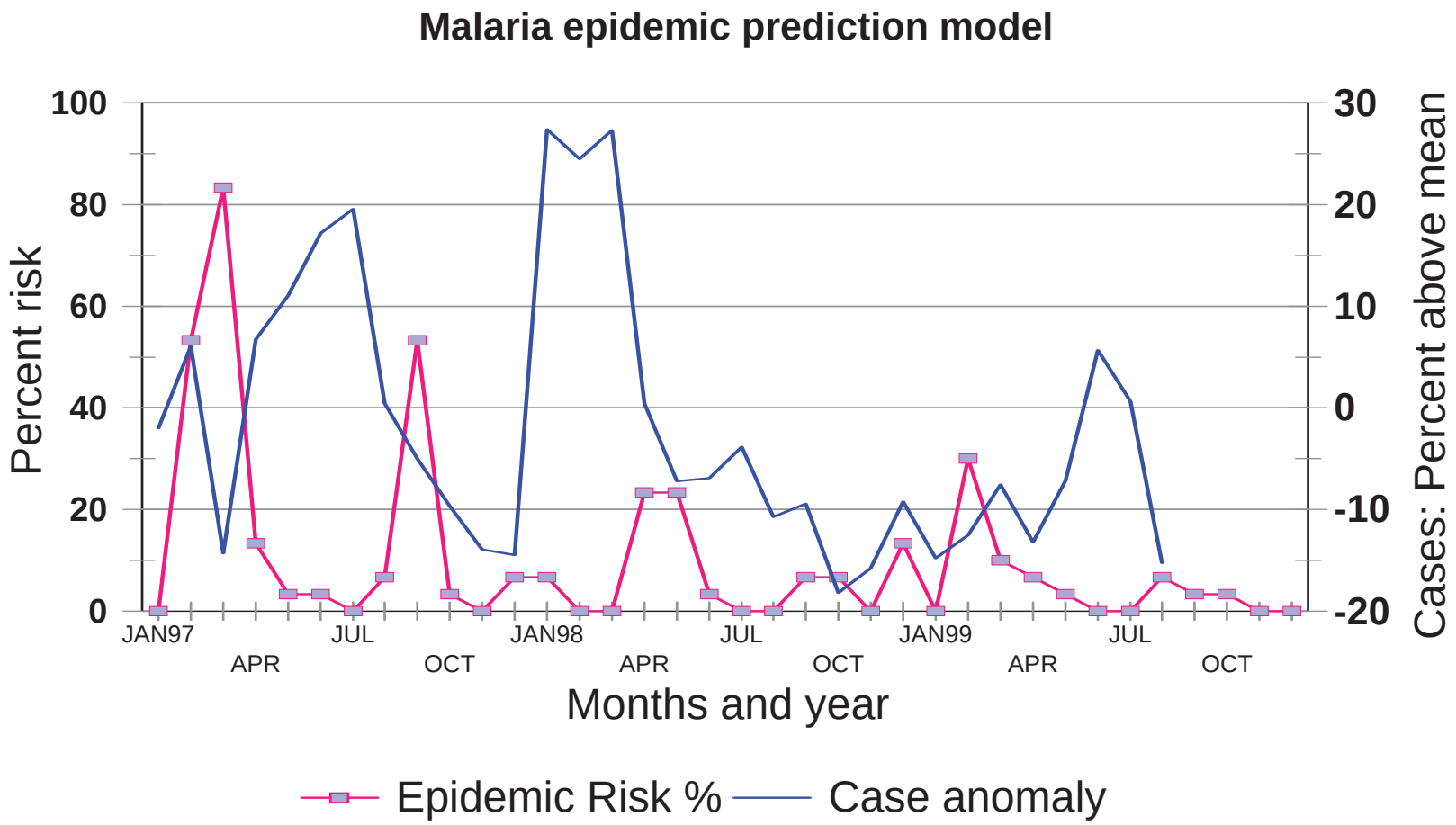

Intensity of disease
Incidence
1990
2030
Time

It is cheaper to prevent than to cure

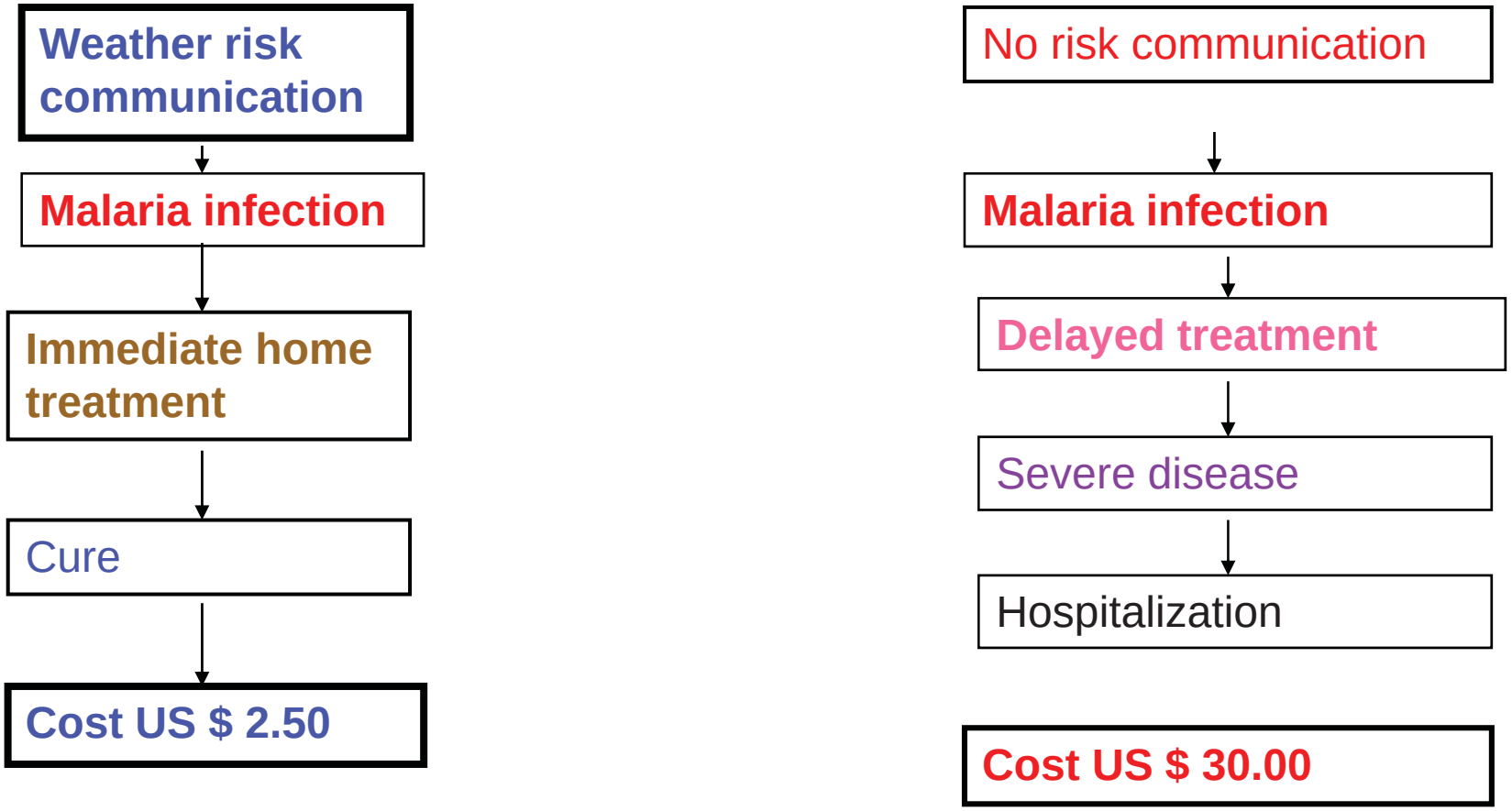
- Most policy makers in health sector like to know the economic benefits of any intervention

- Few studies have been carried out to estimate the social economic benefits, however even crude estimates reveal that the use of climate data in health interventions can lead to substantial savings

Malaria epidemics after anomalous temperatures



Malaria case study: risk communication

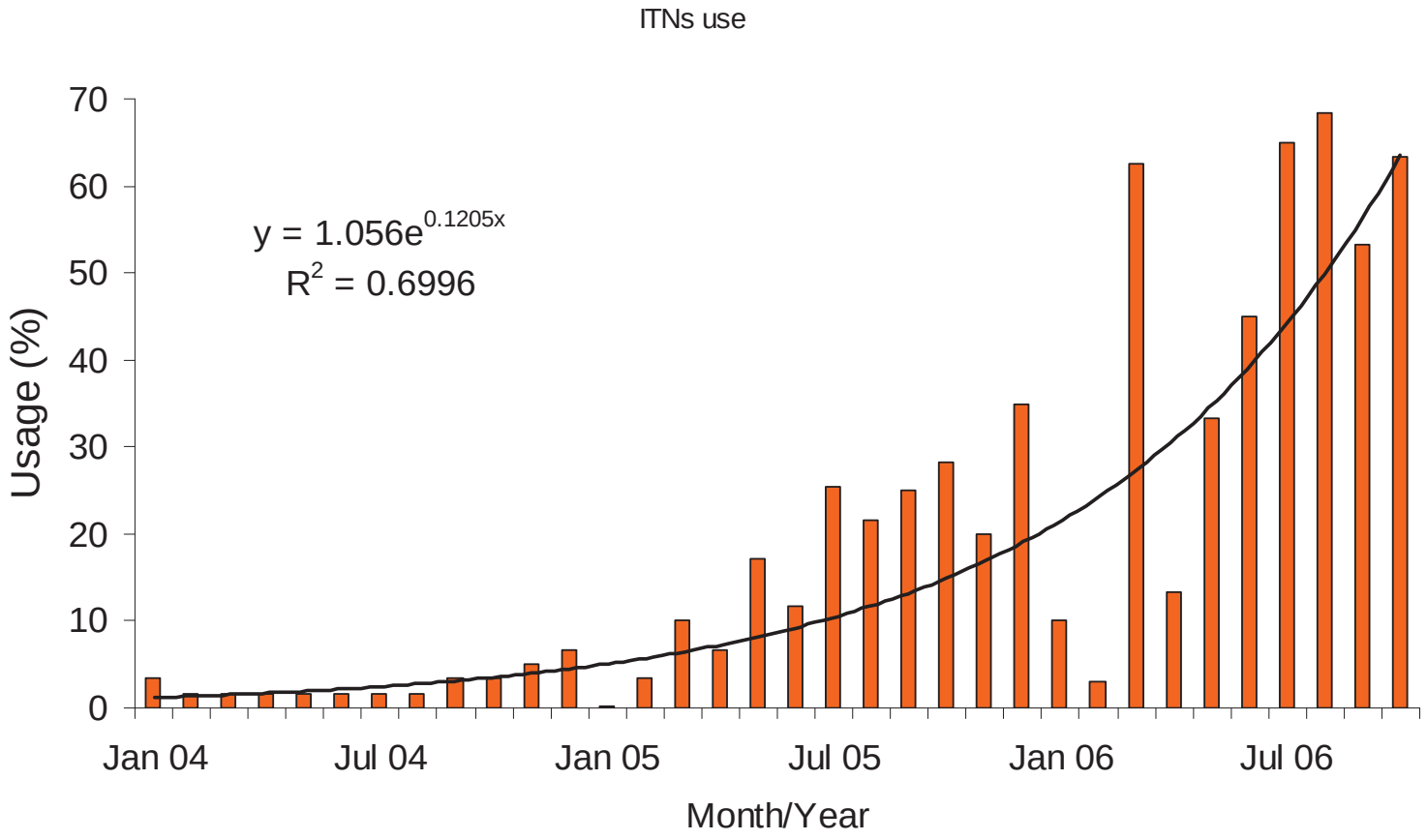


Early warning ! early treatment, saves money

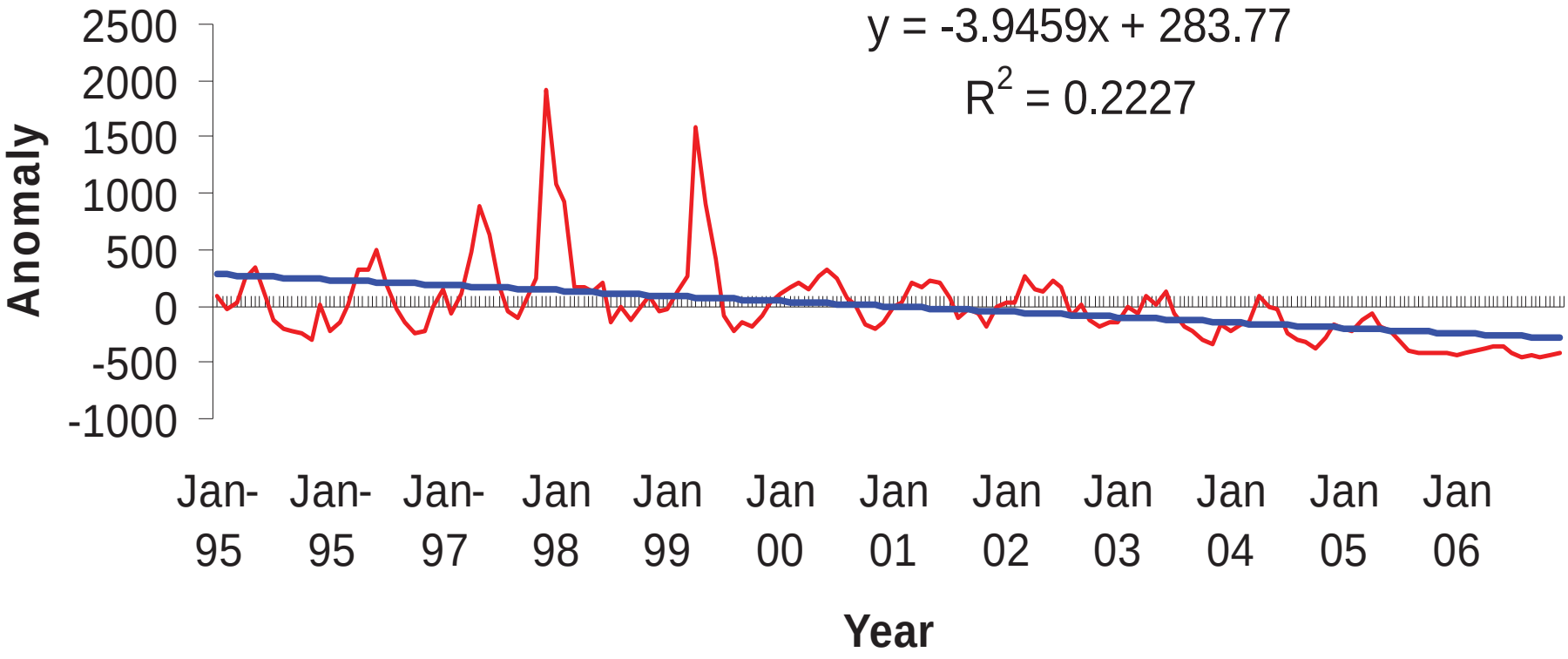
Kenya government distributes
6 million free bed nets with long lasting insecticides since 2005

The risk of epidemic malaria significantly reduced

Adaptation to epidemic malaria in Western Kenya: Increased use of insecticide treated bed nets



In patient malaria case anomalies: Mukumu Hospital Kakamega



Possible benefits

- Avoided hospitalization
- Prevented deaths
- Prevented abortions
- Prevented school absenteeism
- Prevented loss of work days

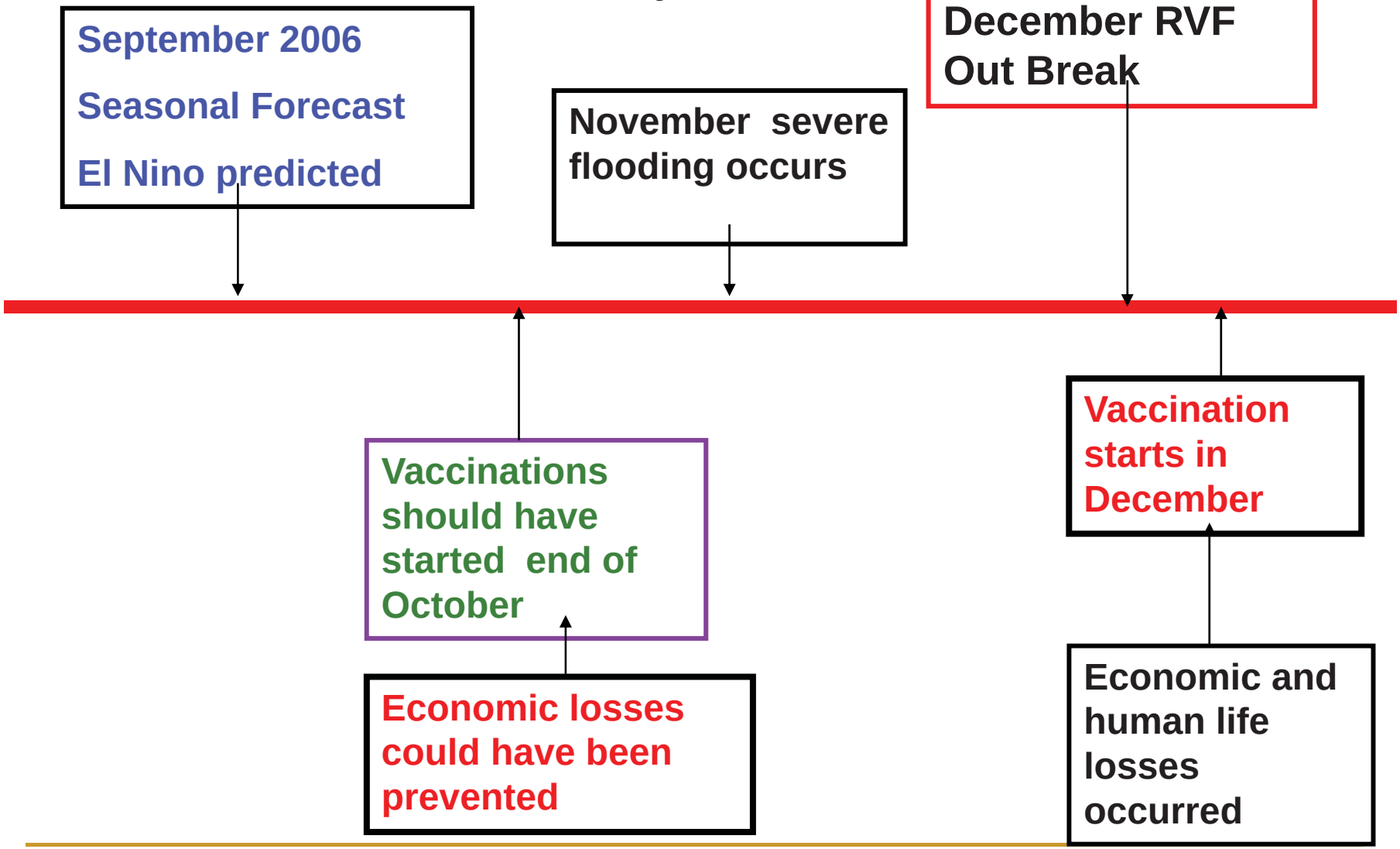
Rift Valley Fever in Kenya

Effects of the 2006/7 El Nino

Economic loss in live stock business because of Rift Valley Fever in Kenya 2007

Economic loss per week Ksh	Number of weeks	Total loss Ksh	US $
45,000,000.00	10	450,000,000.00	6,428,571.43
Value of red meat business in Kenya		45,000,000,000.00	642,857,142.86
Cost of single vaccine dose	Doses required	Total cost of vaccine	
27.00	2,000,000.00	54,000,000.00	771,428.57
Estimated logistical cost		50,000,000.00	714,285.71
Total cost of vaccination		104,000,000.00	1,485,714.29
Potential savings		346,000,000.00	4,942,857.14

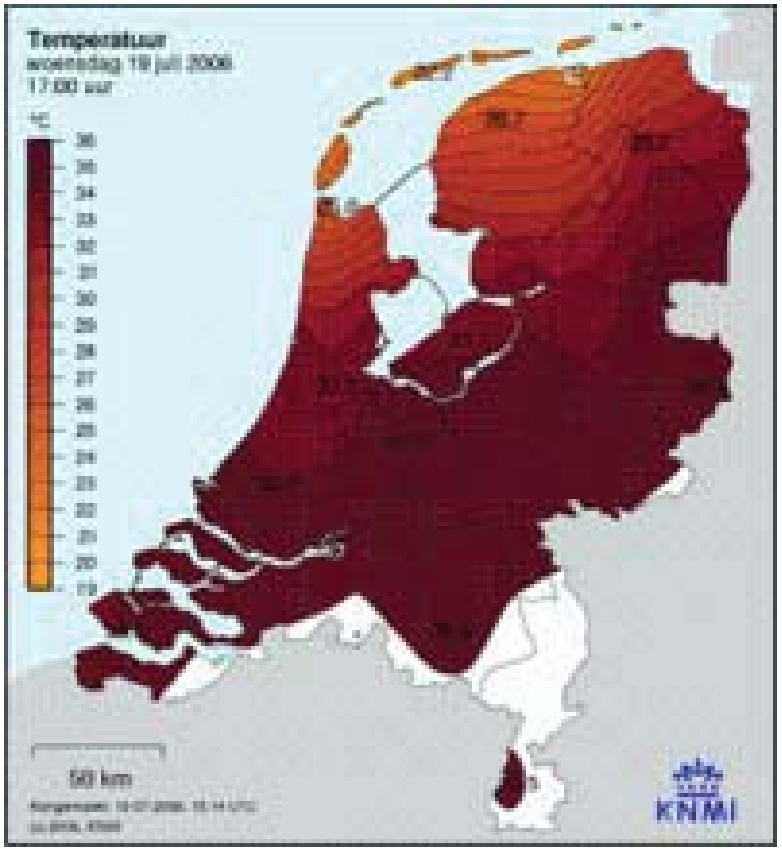
Poor use of weather forecast to prevent Rift Valley fever in Kenya 2006-7



Heat waves in Europe

- Heat waves are becoming a common feature in European summers
- Belgium experienced two heat waves in July, 2006. Before 1990 a heat wave occurred about once every 8 years, but during the last decade the country averages one heat wave per year.
- 35,000 people died across Europe in the heat wave of 2003.
- In the same year 15,000 people, mostly the elderly, died in France.

Netherlands heat wave: 2006



- The white areas are temperatures above 36 degrees Celsius.
- July 2006 is the warmest July on record for the Netherlands. Around 500 or 1,000 more people than usual died in July 2006

Effects of 2006 heat waves much lower that those of 2003 after early warning

- "After the drama of 2003 we prepared a vigilance plan which has been functioning since Jun. 1," Gilles Bruecker, director of the French Institute of Health Surveillance told IPS. "We wanted to anticipate the risks, and prevent any deaths."

  The plan provided for particular attention to the elderly and children. A ban on intensive sports activity during the hottest parts of the day was in force all over the country.

Conclusions

- Early warning leads to early interventions and reduces economic loss and human mortality

Acknowledgements

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