

**Beyond the damage:
probing the economic and financial
consequences of natural disasters**

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Structure of presentation

- *Background*
- *Macro-economic impacts*
- *Public finance and disasters: working towards a more explicit strategy*
- *Where from here?*

Background

- Globally the costs of natural disasters are increasing.
- But there is limited understanding of their short-term macroeconomic significance, implications for long-term development or appropriate risk management strategies from an economic perspective.

Previous research

- Study draws and builds on earlier research by the authors, including: -
 - 3 regional studies of drought in sub-Saharan Africa
 - 5 country case studies (Zimbabwe, Fiji, Philippines, Vietnam, Montserrat)

Objectives

- To increase understanding of the wider economic and financial impacts of natural disasters
- To establish factors determining vulnerability
- To identify opportunities for improving the management of risk

Country case studies

Study focused around three country studies, each exploring a particular theme

- *Dominica* – natural disasters & economic development in a small island state
- *Bangladesh* – natural disasters & public finance
- *Malawi* – climatic variability, economic forecasting & the use of climatic forecasting
- [www/proventionconsortium.org/files/](http://www.proventionconsortium.org/files/)

Methodology

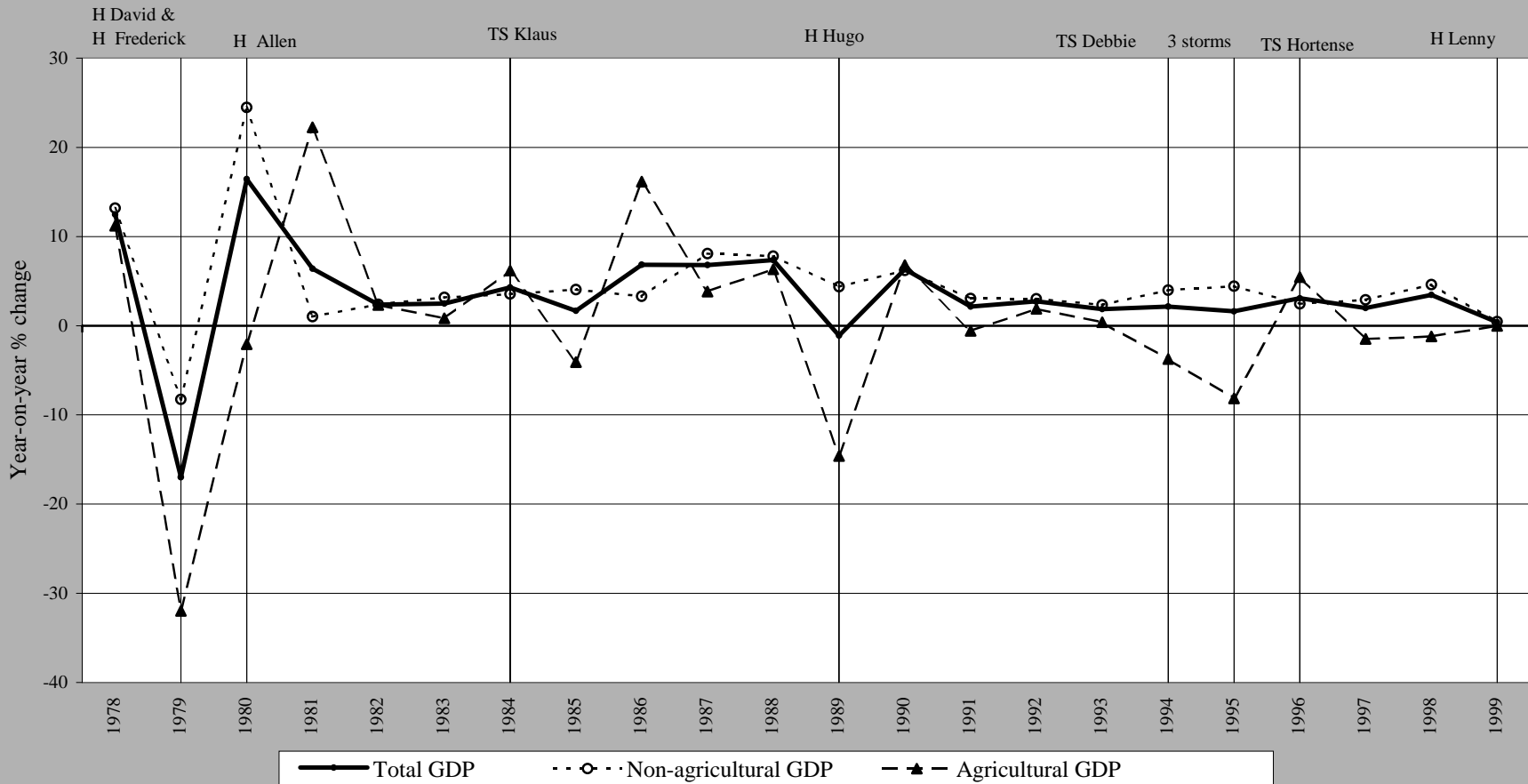
- Eclectic approach, combining quantitative and qualitative partial analyses
- Facilitates exploration of the many complex and dynamic pathways through which specific hazards can influence an economy, informing strategies for reducing sensitivity as well as for financing *ex post* costs

Disasters and the macro-economy

Economic impacts

- Natural disasters can have severe short and long-term macro-economic impacts
- Short-term (6-18 month) impacts are often most easily discernible in the case of small island economies and the rural/agricultural sectors

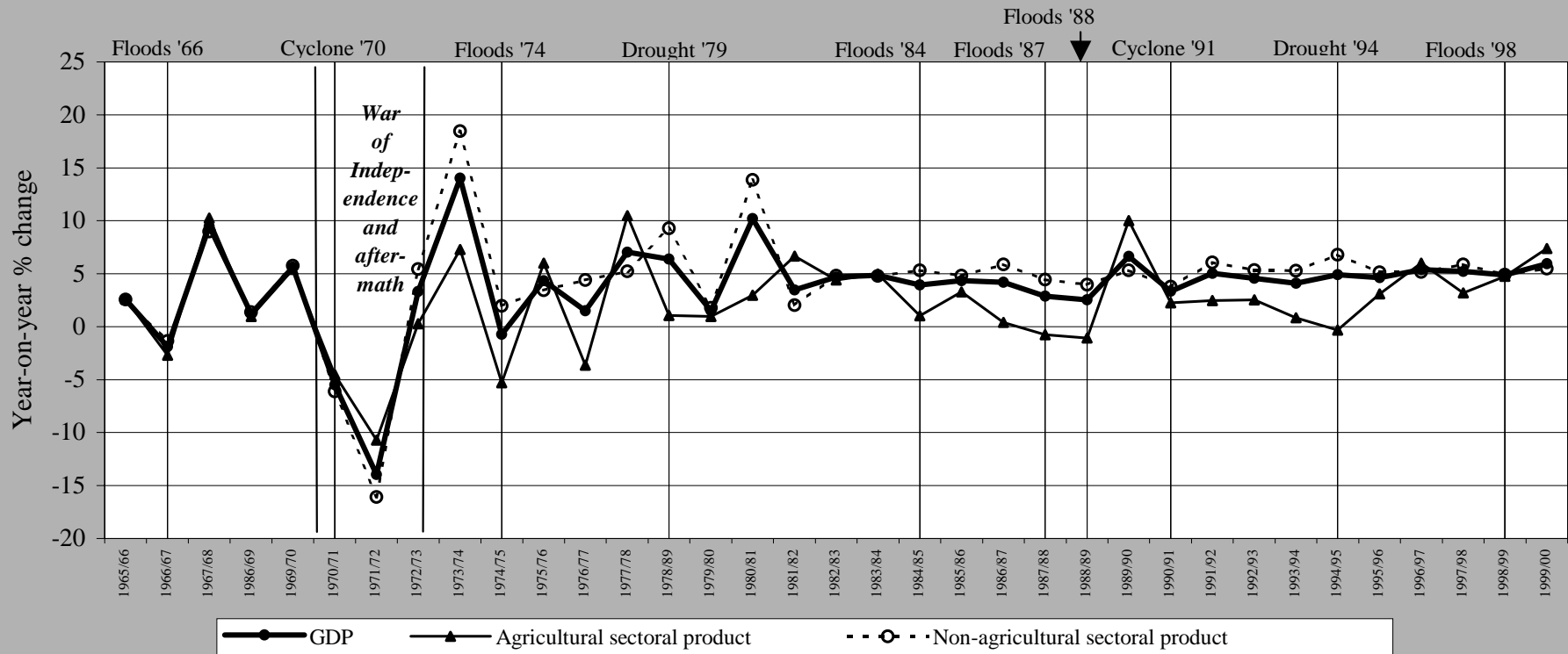
Figure 1: Dominica - real annual fluctuations in agricultural, non-agricultural and total GDP 1978-1999



Source: Benson and Clay, 2001

- In spatially larger countries experiencing localised disasters on an annual basis, short-term impacts can be more difficult to discern
- Longer-term impacts are more difficult to determine empirically but may be significant
- Negative impacts are not inevitable at an economy wide level

Figure 2: Bangladesh - real annual fluctuations in GDP, agricultural and non-agricultural sector product 1966-2000



Source: Benson and Clay, 2002

- However, there may be severe *distributional* impacts, with gainers and losers, even where impacts on macroeconomic aggregates are minimal.

Policy implications

- Natural hazards require more serious consideration in economic policies and strategies
- Particular effort is needed to minimise impacts of disasters on priority areas of policy (e.g. poverty reduction and key sectors)

Type of hazard

- Patterns and forms of economic vulnerability are distinct for the two broad categories of hazard
 - *hydro-meteorological hazards* – higher probability, predictable events, associated with adaptation in economic and social activity; incidence of occurrence probably being altered by human actions
 - *geophysical hazards* - mostly low probability, seemingly random events with associated risks widely almost wholly discounted

Policy implications

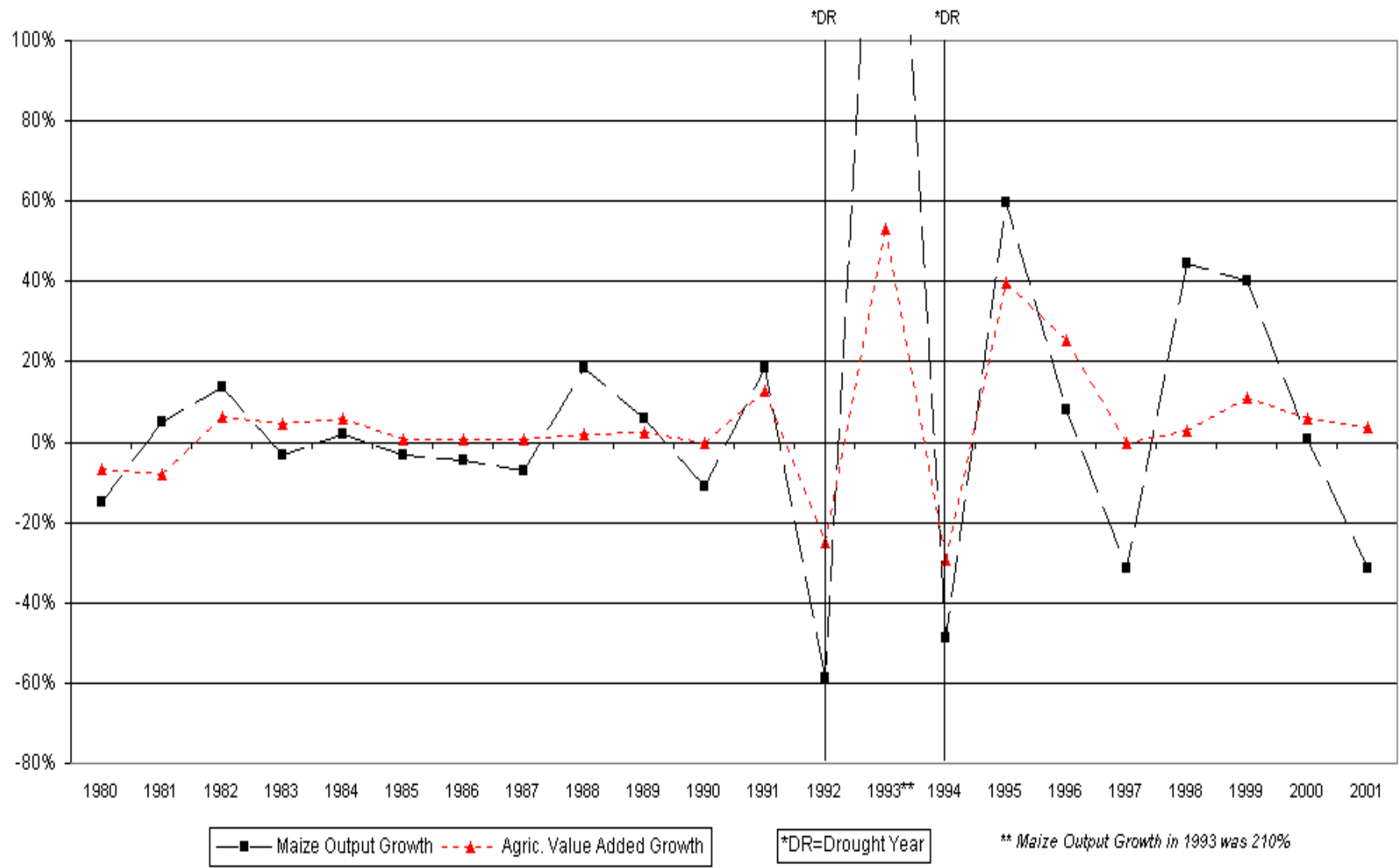
- Risks emanating from different types of hazard need to be examined separately and a cohesive management strategy then developed
- Risks from geophysical hazards need to be better recognised

Determinants of vulnerability

- Factors determining vulnerability from a macroeconomic perspective are complex and dynamic
- Vulnerability can shift quickly (negatively or positively) in countries experiencing rapid growth and socio-economic change

- Where vulnerability has **declined**, this can be linked to factors such as
 - appropriate investments in mitigation
 - favourable developments in economic structure
 - favourable production technologies
 - favourable changes in the domestic and external economic environment
- Where vulnerability has **increased**, there is a similar combination of influences. Rapid changes may be insidious, unapparent until there is a shock

Fig. 4.2 Malawi Agricultural Sector Growth Rates, 1980 - 2001 (% per annum)



In Malawi there are multiple influences contributing to increased vulnerability:

- non-sustainable agricultural practice;
- poorly supported structural changes in agriculture;
- institutional weaknesses in the agricultural sector, including deteriorating statistics;
- de-industrialisation, with the reintegration of South Africa into the regional economy;
- political instability and problems of governance;
- the short-term behaviour of aid donors, contributing to volatility of public finances; and
- the effects of HIV/AIDS on human resources.

Policy implications

- Regular re-assessments of risk, exploring areas both of sensitivity and resilience, are required
 - to understand factors determining vulnerability and
 - to ensure that risk management strategies remain appropriate

Public finance and disasters: working towards a more explicit strategy

Overall impacts

- Major natural disasters are likely to create significant budgetary pressures
- Impacts on broad fiscal aggregates are often largely non-transparent, however, as governments strive to respond within existing budgetary envelopes by **reallocating** resources

- It can be difficult to ascertain total levels of expenditure on either post-disaster response or mitigation and preparedness, except
- Climatic disasters have major budgetary impacts on low-income SSA countries that typically have a weak revenue basis and high aid dependence

Common features of reallocations

- The brunt of financial reallocations appears to fall primarily on capital expenditure and social sectors
- There may be considerable in-kind reallocation under recurrent expenditure
- Reallocations are typically poorly documented
- Conditions under which decisions reallocations are made are typically far from ideal

External aid

- Disasters appear to have little impact on trends in total aid flows
- Many donors appear to respond to disaster crises by reallocating resources and bringing forward existing commitments to affected countries

Options for transferring risk

- insurance
- instruments for spreading catastrophic risk directly to the capital market
- risk pooling
- disaster reserves

Policy implications

- Governments need to develop appropriate 10 year plans for financing disaster-related costs
- Better information is required on the cost of disasters to facilitate development of risk management strategies, including investment in mitigation, and preparedness and ex ante financial planning
- A full reassessment of the impacts of a disaster is needed 18-24 months after the event

- Reallocations of budgetary resources post-disaster should occur through a formal process, in the context of a careful strategic review
- International community needs to be alert to the potential budgetary consequences of disasters in low-income countries
- International community responsible for funding of hazard information as **public good**

Where from here?

Agenda for further investigation and strengthening of analytic capacity

- Improving damage assessment capabilities
- Differentiating between different types of risk
- Disaggregating impacts of hazards and exploring distributional consequences

- Stocktaking of different methodological approaches for analysing vulnerability and disasters
- Strengthening multi-disciplinary cooperation between natural and social scientists on analysis and management of risks