Assessing the Socio-Economic Benefits of Meteorological and Hydrological Services

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Outline

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Assessing the Socio-Economic Benefits of Meteorological and Hydrological Services

Guidance document on socio-economic benefit assessment for NMHS

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- editors highlighted in red
- economists underlined
Sponsors

Project

• U.S. Agency for International Development (USAID) - Climate Change Resilient Development (CCRD) program

• The World Bank

• World Meteorological Organization

Support in-kind from:

• National Center for Atmospheric Research
Assessing the Socio-Economic Benefits of Meteorological and Hydrological Services

Purpose:

• increase awareness of socio-economic benefits of meteorological and hydrological services;
• provide rigorous basis and practical guidance for evaluating the economic benefits of individual services and service-providing organisations; and
• assist in communication of the results of socio-economic benefit studies to users and potential users of the services, to governments and other funding organisations and to public and private decision-makers at all levels of society
Background

- Importance of socio-economic benefits assessment
- Information value chain
- *Economics Primer*
Business as usual ...

Forecast ⇔ Economic Value
Motivation for SEB Studies

NMHS Budgeting
- In the past, WCH services understood to generate benefits greater than costs
- As costs have increased, NMHSs required to justify expenditures in terms of benefits of their services

Why value forecasts?
1. Program justification (benefit-cost analysis)
2. Program evaluation
3. Guidance for research investment
4. Inform users of forecast benefits
5. Develop end-to-end-to-end forecast & warning system

Why socio-economic benefits assessment?
Weather Information Value Chain and SEB Studies

National Hydro-Meteorological Services (e.g., NWS)

Media / Broadcasters

Emergency Managers / Public Officials

Vendors / Private Sector Meteorology

Economic Sectors / Stakeholders

Monitoring Observation

Modeling Forecasting

Dissemination Communication

Perception Interpretation

Information Use / Decision Making

Economic Values

Cognitive Task Analysis

Communication

Geography / Anthropology

Cognitive Psychology

Risk Communication

Sociology

Decision Analysis

Economics

Weather

Forecasting

Monitoring Observation

Dissemination Communication

Perception Interpretation

Information Use / Decision Making

Economic Values
Economics Primer

- NOAA NWS International Activities Office
- Translated into Spanish
- Revise based on feedback
  - Economists
  - Practitioners
  - WMO Workshops
    - Sofia, Bulgaria
    - Nanjing, China

http://www.sip.ucar.edu/primer.php
Efforts to date

• USAID CCRD - literature review on socio-economic benefits of climate services

• Geneva – April 2013
  – CCRD, the World Meteorological Organization (WMO) and The World Bank co-organized a 4-day workshop
  – Develop document outline
  – Agreed on writing assignments
  – Initial planning of field trials

• WMO Seminars
  – Brunei – October 2013
  – South Africa – November 2013
  – Curacao – December 2013

• Jamaica – ICSS – December 2013
  – Project team meeting
Status and planning

- Draft document – under iterative revision
- Writing Workshop
  - Boulder – April 2014
- Publish document – Summer 2014
SEB Document

- Production and use of weather, climate and water hydrological services
  - Value chain

- Economics chapters
  - Economic essentials (theory)
  - Defining and measuring costs
  - Defining and measuring benefits
  - Benefit cost analysis

- SEB study
  - Designing and commissioning an SEB study
  - Communicating the results of an SEB study

- Case studies

- Appendices
  - Overview of meteorological, hydrological and related services
  - Short history of NMHS SEB studies
General Framework of Case Studies

• Background and description of service
• Study objective (e.g., decision analysis, obtain funding, justify program)
• Methods
  – Benefits and costs analyzed
  – Valuation methods/type of study
  – Data requirements/collection efforts
  – Resources required, including cost and expertise
  – Time to complete
  – Sensitivity analysis/uncertainty
• Findings/Results
• Communication of results
Case Studies

• Caribbean Agrometeorological Initiative (CAMI)
  – bring together the meteorological and agricultural agencies of 10 Caribbean nations to deliver climate services to farmers
  – evaluation of climate services under the auspices of the Climate Services Partnership (CSP) and funded by the USAID CCRP
  – 3 years into project – not possibly to evaluate socio-economic benefits
  – evaluating project successes and limitations

• Mozambique
  – assessment of benefits of improved hydrometeorological services in Mozambique under World Bank program
  – next presentation
Future Work

- WMO support future case studies
- World Bank country projects
- USAID CCRD
Thank You!

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(I can provide contact info for all the document co-authors as well)