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# Economic Valuation of Climate Services Activities

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December 12, 2014

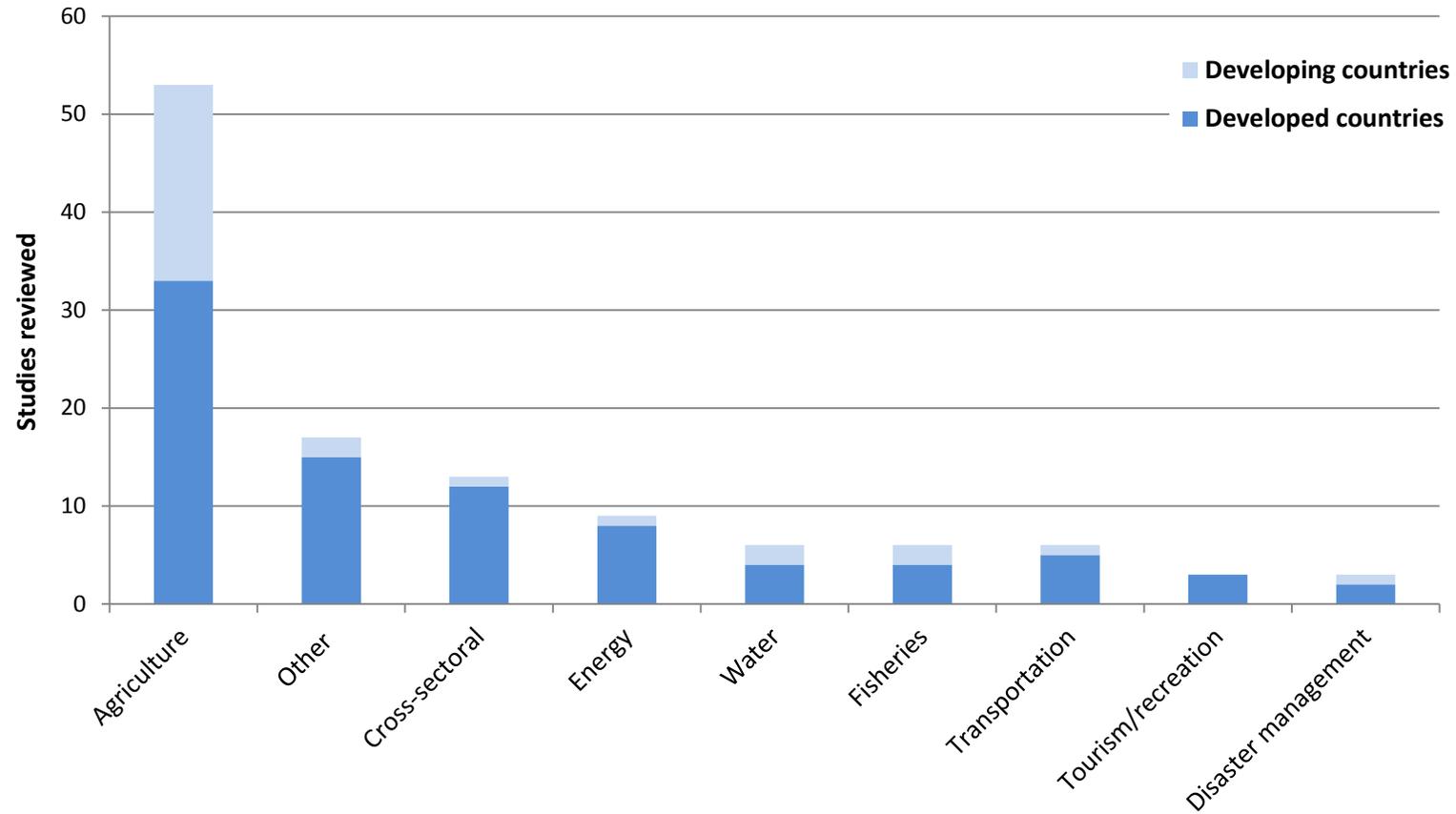


Climate Services  
Partnership

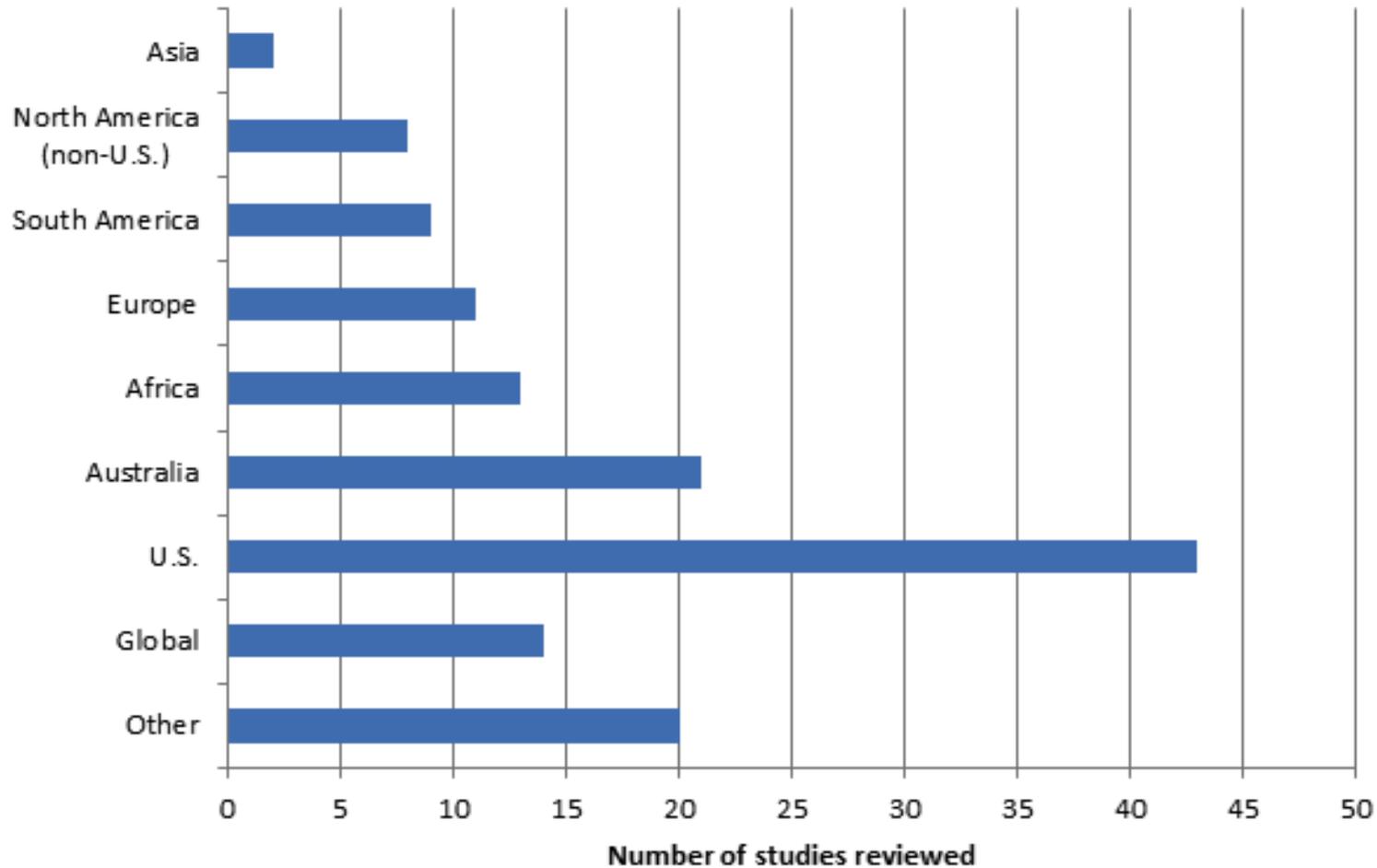
# Background on the Working Group

- The Economic Valuation of Climate Services Working Group (WG) was formed at ICCS 1 in New York in October 2011
- The WG's mandate was to promote the diffusion of climate services in developing countries by documenting the economic benefits of these service
- Janet Clements (Stratus Consulting) and her team reviewed more than 140 benefit studies in developed and developing countries and produced a synthesis report:  
*The Value of Climate Services Across Economic Sectors – A Review of Relevant Literature*

# Literature Survey: Distribution by Sector



# Study Characteristics: Geographic Distribution of Studies



# Example Benefit Estimates – Agricultural Studies



## Farm level

- \$0.44 – 0.85 in willingness-to-pay by households in Zimbabwe for improved seasonal forecasts
- \$9-35 per acre by adjusting crop mix to ENSO phase in Argentina

## National/Sub-National

- \$1.1 million in annual benefits for Australian farmers in Merredin region with forecasting technology that provides 30% decrease in seasonal uncertainty
- \$10 million annually for Mexico economy with use of ENSO early warning system by farmers

## Sector-level

- \$36 million in benefits to Canadian hay production with daily precipitation forecast
- \$1.1 billion in losses to U.S. agriculture from incorrect 2000 drought

## Global/National

- Global annual value of ENSO phase information in agriculture ranges from \$399 million to \$556 million to \$1,390 million.
- Global value of climate prediction approximately \$900 million



# Example Benefit Estimates – Other Sectors

## Energy

100% increase in net weekly income for wind energy producers in Europe with medium-range forecasts

\$1 to \$6.5 billion in decadal hydropower benefits for Ethiopia with perfect ENSO-based precipitation forecast

## Transportation

\$11 million in avoided costs of carrying extra fuel for Qantas Airlines in Australia due to improvements in terminal aerodrome forecast information

\$56.1–60.1 million in avoided costs to Swiss economy with use of weather services in the transportation sector

## Water

Up to \$11.6 million in annual welfare benefits with perfect ENSO forecasts in the Northern Taiwan regional water market

\$100-350 million in annual benefits to Georgia in drought years with use of water management strategies based on precipitation index forecast.

## Fisheries

\$902,000 in average annual total welfare benefits related to Pacific Coho salmon fishery with use of perfect ENSO forecast.

## Background on the Working Group (2)

- In September 2012, meeting with WMO and WB led to the organization of a workshop at WMO to gauge interest among a group of climate services practitioners and economist to develop a primer on the economic valuation of climate services.
- The primer, titled “*Forecast Value: Economic Assessment of Meteorological and Hydrological Services*” has been drafted and comments on the final draft are due next week. The primer is expected to be distributed by WMO in March 2015.

# Primer Details

- 10 chapters and 5 appendices covering 400 pages
  - Chapter 1 Introduction
  - Chapter 2 The production, delivery, and use of meteorological and hydrological services
  - Chapter 3 The purposes of met/hydro Socio-economic benefit studies (SEB)
  - Chapter 4 Designing and commissioning SEB
  - Chapter 5 Economic essentials
  - Chapter 6 Defining and measuring costs
  - Chapter 7 Defining and measuring benefits
  - Chapter 8 Benefit-cost analysis
  - Chapter 9 Communicating the results of SEB
  - Chapter 10 Looking forward

# Capacity building

- CSP and WMO provided training on the valuation of climate services for NMHSs in 2013):
  - Brunei for Southeast Asian met services
  - South Africa for Southern African met services
  - Curacao for Caribbean met services
- CSP and WMO will offer training courses on the design of SEB studies in 2015:
  - One-week training workshops designed to help met services prepare terms of reference for SEB studies
  - Workshops are planned for the Caribbean, Southern Africa and Europe