WE NEED TO SHARE DATA

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Colombo, Sri Lanka

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A FEW QUOTES

One should never make up theories before having data

Sherlock Holmes

Before continuing down the road to modeling nirvana with supercomputer in tow, commensurate levels of verification data must exist to justify the exercise

Goodrich, 1990

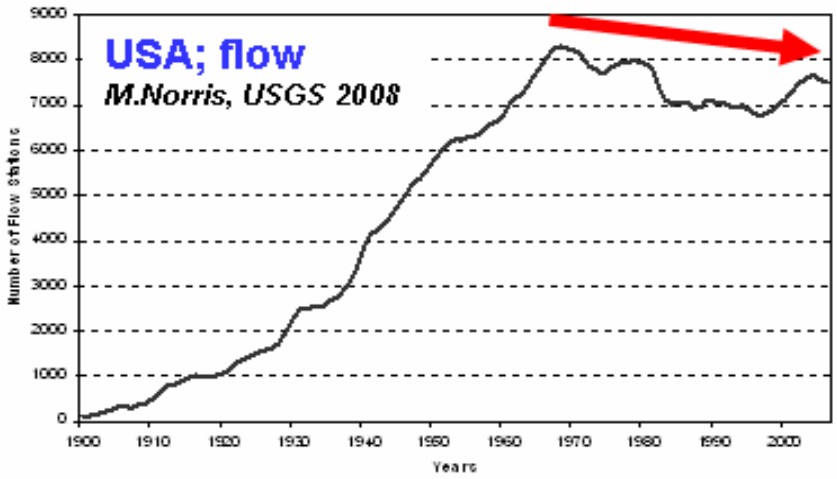
We cannot manage what we do not measure

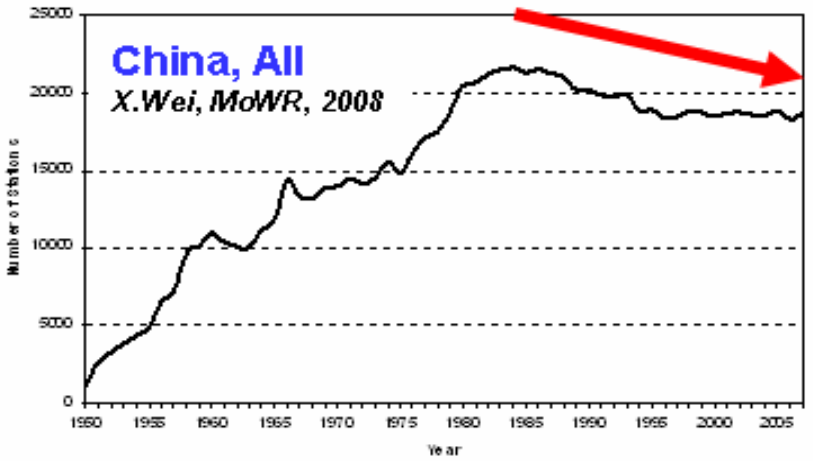
Unknown

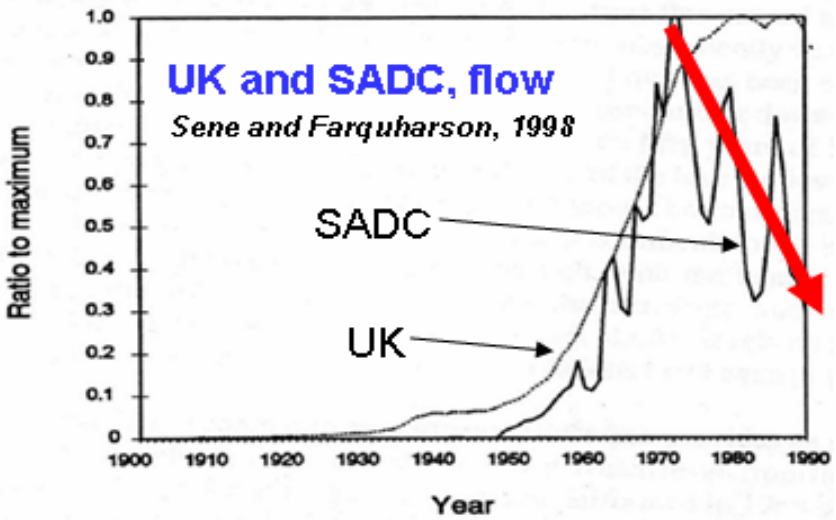
THE PROBLEM OF OBSERVED DATA AVAILABILITY

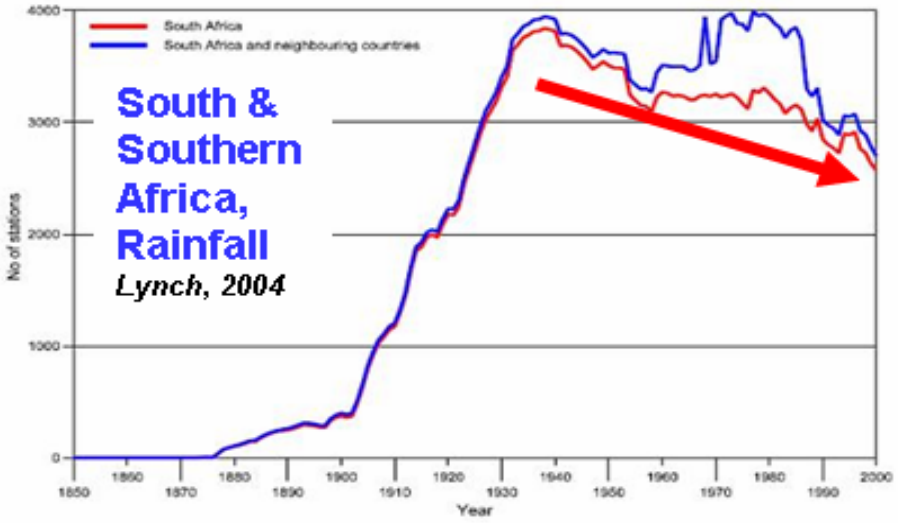
- Observed hydrological and meteorological data are the bases on which the progress in water resources science and practice depends
- Synthetic / simulated data are derivatives of observed. Improvement in the management of water resources will not come with better simulation models alone
- Slow progress with observed data collection over recent decades:
  - Developing countries remain poorly gauged
  - Signs of declining observational networks globally

THE PROBLEM OF OBSERVED DATA AVAILABILITY









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  - Developing countries remain poorly gauged
  - Signs of declining observational networks globally
- Access to already collected data is limited due to various barriers

INTERNATIONAL RESOLUTIONS ON DATA SHARING

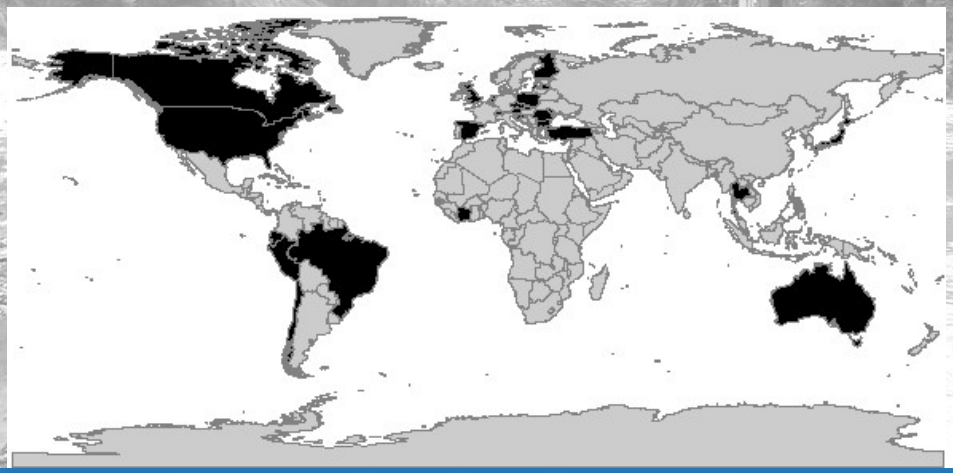
- The UN Conference on Environment and Development (Rio de Janeiro, 1992) – a call for global commitment to promoting access to systematic observations
- The UN Commission on Sustainable Development (1998) – exchange of water-related data and periodic assessment of data exchange needed
- The 12-the session (2006) of the Intergovernmental Council of UNESCO IHP - a resolution on international exchange of hydrological data for research at regional and international levels
- UN Convention of 1997 on Non-Navigational Uses of Water – urges states of international basins to exchange "readily available data"

INTERNATIONAL RESOLUTIONS ON DATA SHARING-2

- **WMO Congresses of 1995 and 1999, representing all 170 WMO member states, adopted resolutions on meteorological and hydrological data sharing respectively**
- **The 1999 resolution urged member states to provide hydrological data on a free and unrestricted basis for:**
  - **protection of life and property**
  - **international programs and projects**
  - **non-commercial uses**
- **The requirement for full, open and prompt exchange of hydrological data is recognized by the CBD, UNFCCC and UNCCD**

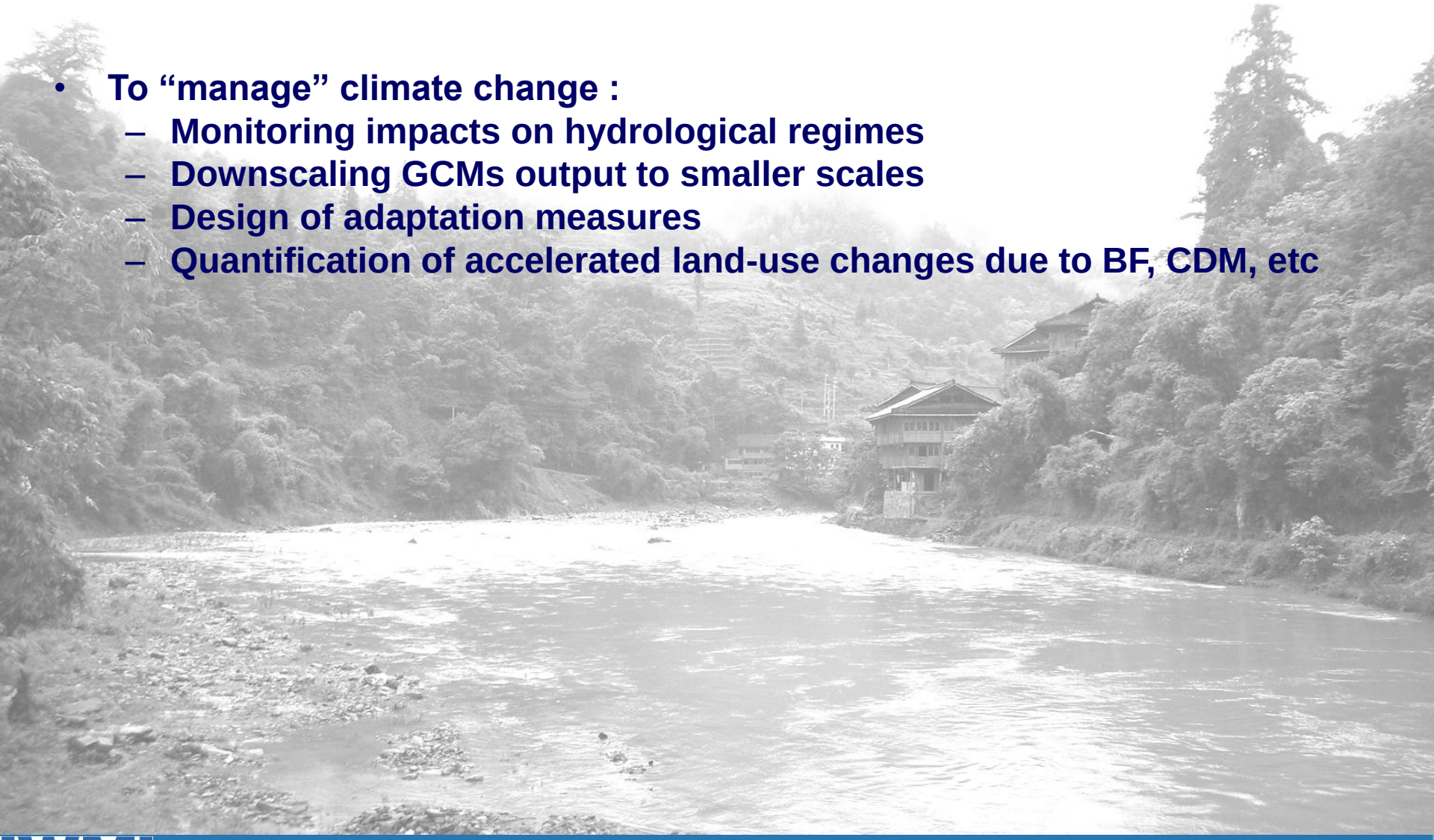
STATUS OF DATA SHARING

- Most of the water sector is probably not aware of the above documents
- The impact of these resolutions is not known / never been assessed
- There is no reinforcement mechanism
- In many developing countries data are not freely available even internally
- GRDC has only some 7300 daily and monthly data sets from stations around the globe (http://grdc.bafg.de) – but compare with 7500 daily stations of USGS alone…
- Only 20 out of 170 WMO member states share their information on the number and type of observations using the WMO INFOHYDRO on-line system:

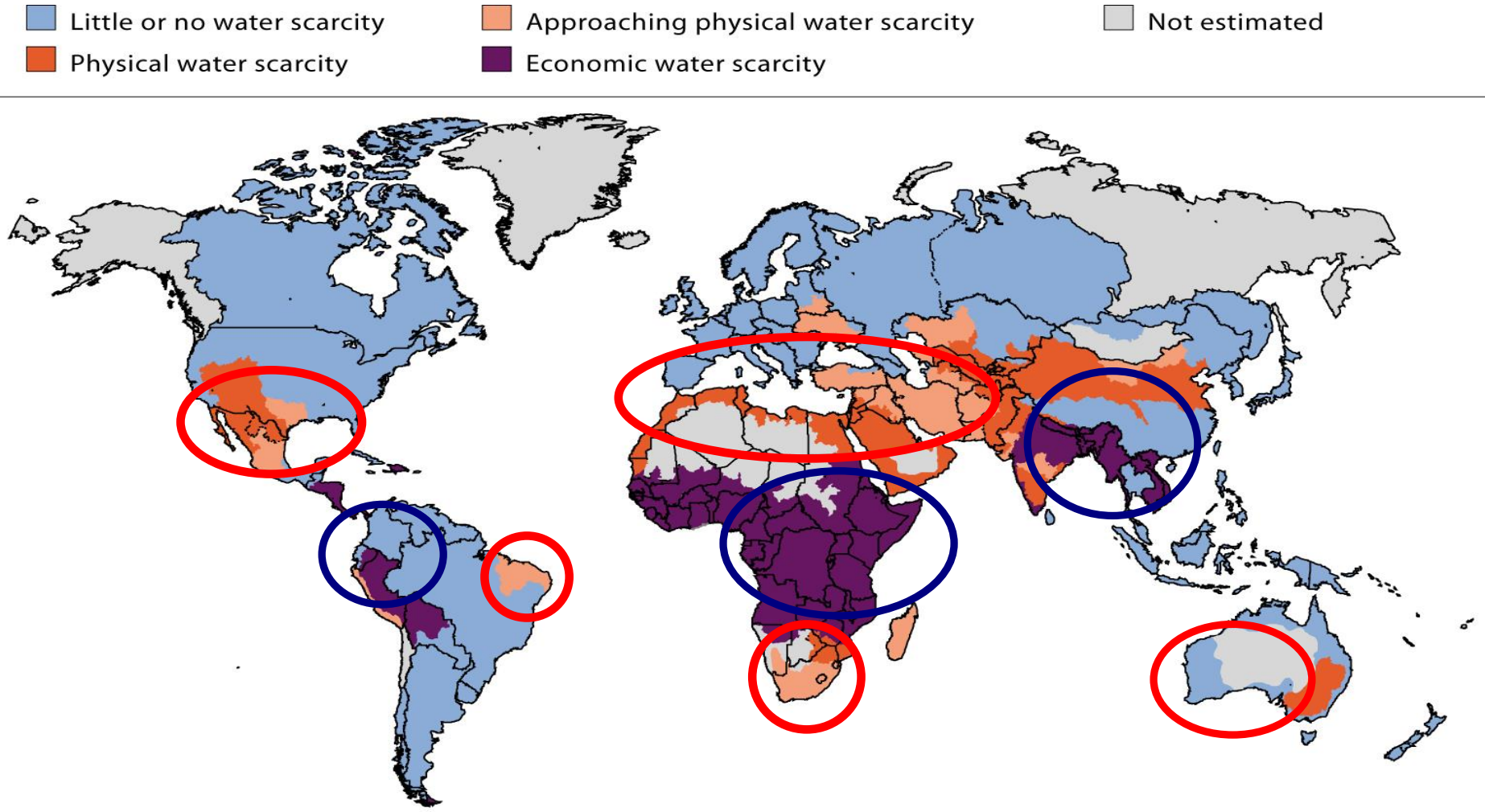


WHY SHARE DATA ?

- To “manage” climate change :
  - Monitoring impacts on hydrological regimes
  - Downscaling GCMs output to smaller scales
  - Design of adaptation measures
  - Quantification of accelerated land-use changes due to BF, CDM, etc



WHY SHARE DATA?
water scarcity, climate change and data needs



- Physical water scarcity increases – more ‘operational’ sharing will be needed
- Economic water scarcity increases – better access to data for design

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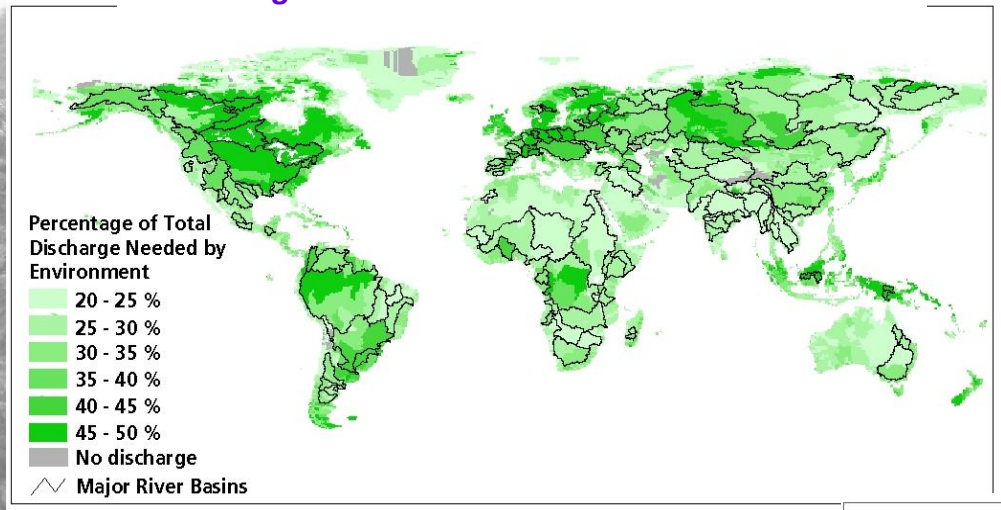
- To protect aquatic environment through Environmental Flow allocations

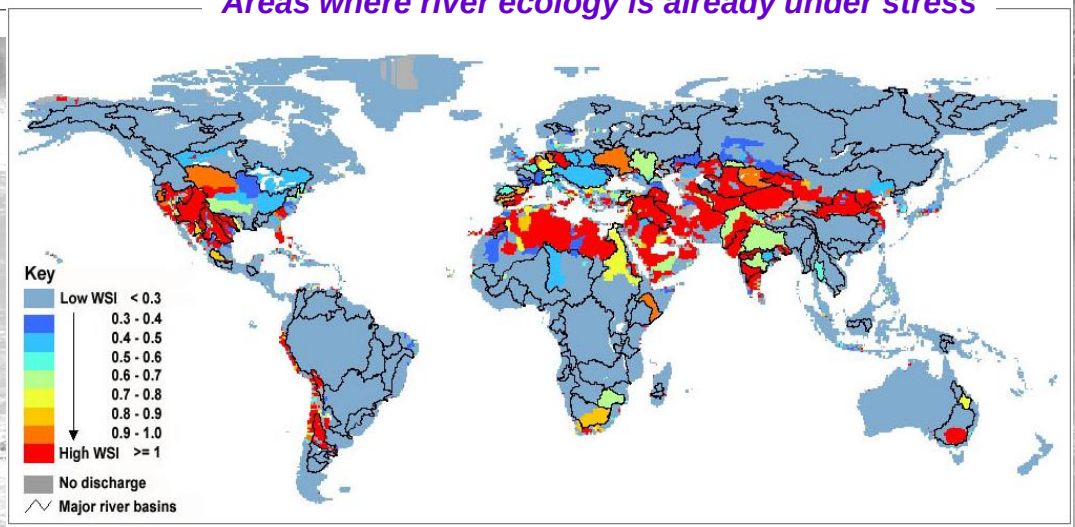
WHY SHARE DATA?
environmental flow management

Percentage of annual flow needed for environment



Environmental flow assessment and implementation are impossible without access to detailed hydrological data

Areas where river ecology is already under stress



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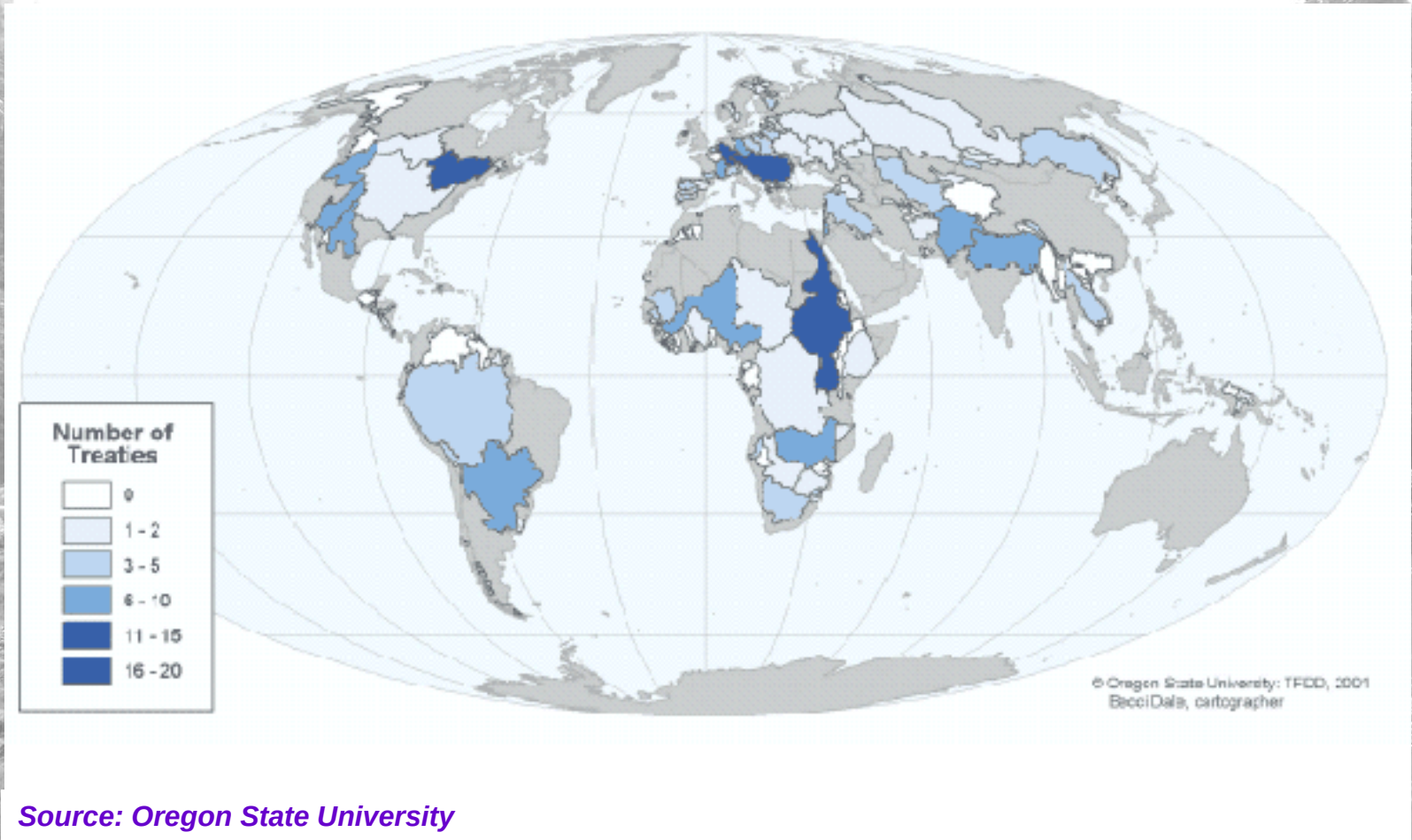
WHY SHARE DATA ?
International transboundary basins



Source: Oregon State University

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- To prevent loss of data by backing up national archives
- To improve accuracy of global hydrological models, in turn, providing data for data-poor regions - a form of international humanitarian help

OPTIONS TO IMPROVE DATA SHARING ?

- **Give up, accept slow or no progress in data collection and sharing. Gradually move into a world of synthetic data and live happily in it**

  Realistic?

- **Promote understanding of**
  - **economic benefits of hydro data for various uses**
  - **economic losses due to lack of data or limited access**
  - **data value in the context of sustainable development**

  A role for PUB?

- **Develop national and international networks with informal or semi-formal data sharing arrangements** ***A role for Internet?***

OPTIONS TO IMPROVE DATA SHARING – 2 ?

- Develop a mechanism to enforce implementation of existing international resolutions on data sharing (similar to Kyoto Protocol). Existing resolutions primarily 'appeal' to governments to share the data
- Set clear goals and timeline – e.g. "all globally available daily flow data are shared freely by 20XX and available at www.YYY.org
- Aim to improve data sharing in the short-term at least for non-commercial purposes and/or issues of extreme importance (e.g. research, flood management)
- Define incentives for data sharing
- Develop a mechanism by which industrialized nations provide resources on data collection improvement for the poorer nations
- Mobilize international networks and organizations

We need to share data, otherwise we won't manage

THANK YOU

Join discussion on data sharing at http://publog.iwmi.org