Main outcomes general:

- Benefits are linked to economic possibilities of services
- Budget and revenue from selling data is an issue, there need a sustainable solution and a new business model. GBON and SOFF are examples for meteorology.
- Technology is only a part of the problem, policy and funding are required.
- WMO can provide support for data sharing systems, including common data format
- Permanent monitoring structures are needed
- What about "non-governmental" data?
- If data is not measured then Services cannot be punished for not sharing
Main outcomes of Key discussion topic 1&2:

- National and regional data exchange is needed. At regional/global level other scales are relevant and need to be discretized accordingly.

- Formats and standards are needed (Water ML2).

- Especially for global data sharing, a prioritization is required.

- Timeliness and time scale to define as well (daily, monthly, etc).

- Political will is an issue -> resulting in imbalance of investments and benefits.

- Products need to be developed at national and regional levels to facilitate cooperation.

- Data already shared, especially for research; commercial activities related to specific legislation.
Main outcomes of Key discussion topic 3:

- Identify data that have an impact on society and prioritize them.
- Data to be shared include historical data.
- Data type must be defined according to local needs, WHYCOS to be implemented to address these needs.
- Lack of funding restrains data collection and hence data sharing.
- Data must be checked and well described (metadata to be shared as well, data format and standard to be used).
- (from chat: recommending hydrologic modelling products for use in broader earth systems modelling work important as well)
Main outcomes and conclusion of the workshop:

- There are good examples, e.g. in Latin America, for sharing data and showing benefits (win-win situation): motivation is key.
- A new business model is required for installation and maintenance/operation of measurement network, and the related political will.
- Capacity building is necessary.
- It is a key to demonstrate benefit of sharing data, showing how data impact society, at all scales, increasing political will.
Main outcomes of Key discussion topic 1:

- 1 Sharing data is important for improving flood forecast accuracy

- 2 Benefits of sharing data might be clear, but some countries have problems sharing data for security reason. Separate discussion with those countries should be considered

- 3 Inflows from upstream are essential for water management but often unknown

- 4 In many countries, data are collected by different institutions, national and UN coordination is required. A unified data policy can help engaging with different stakeholders (within a country)

- 5 Trustworthiness of data sources is an issue. Standards?
Main outcomes of Key discussion topic 2:

1. Transboundary scale is very important. Also exchange forecasting and other products to improve services. Political action plan is needed to complement resolutions/regulations.

2. Knowing water food security is a major challenge, water footprint can be a frame for exchanging data. (There is a link to net water positive operation of private sector – secretariat)

3. Identifying specific topics (objectives) can help data sharing, as many governments are not ready to allow sharing data with global centers. Thematic data collection (example: Arctic Hycos) is important to show value of cooperation.

4. Publish regular report on data exchange to motivate stakeholders?

5. Cooperation between on site and satellite observations is important, Lake and Reservoir data center as an example.
Main outcomes of Key discussion topic 3:

• 1 hourly data useful for flood forecast

• 2 Discriminate real and historical data; countries more ready to share e.g. yearly data

• 3 Define a set of priority stations and then agree on which data need to be exchanged and what metadata needs to be registered

• 4 There are existing platforms for exchanging data

• 5 quality assured as well as real or near real time data needs to be exchanged
Main outcomes and conclusion of the workshop:

• 1 Global willingness to share data for flood and droughts and for climate models, but aware there are limitation and difficulties

• 2 All space and time scales are required, easier to share at transboundary scale, for historical data

• 3 WMO regulation can help and motivate countries.

• 4 National and Institutional policies are main obstacles – only a political action plan can resolve this

• 5 sharing forecasts is a key to motivate cooperation

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