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Lessons from the TT-SEB report for the envisaged World Bank – WMO SEB manual

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WMO FORUM: Social and economic applications and benefits of weather, climate, and water services

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Presentation structure

- Categories of services considered in TT-SEB
- Main topics discussed in TT-SEB report (4 topics)
- RA VI survey on SEB needs
- Available material
- Conclusions and Links with envisaged manual

Photo by: Antonin Halas

Categories of services considered in TT-SEB

- **Meteorological services**
  - basic services (observation, modeling, data management)
  - User oriented weather services
    - re-users *and* end-users
  - Conventional climate services
    - (so far) mainly end-users
- **NOT included**:
  - Hydrological services
  - Adaptation oriented climate services
  - Other geophysical services

Main topics discussed in TT-SEB report

1. Why appraisal of socioeconomic benefits of weather and climate services
2. The process of generation of value added thanks to the provision of weather and climate services
3. Guidelines for a NM(H)S to set up (for the first time) a SEB study
4. How to best exploit the output of a SEB study

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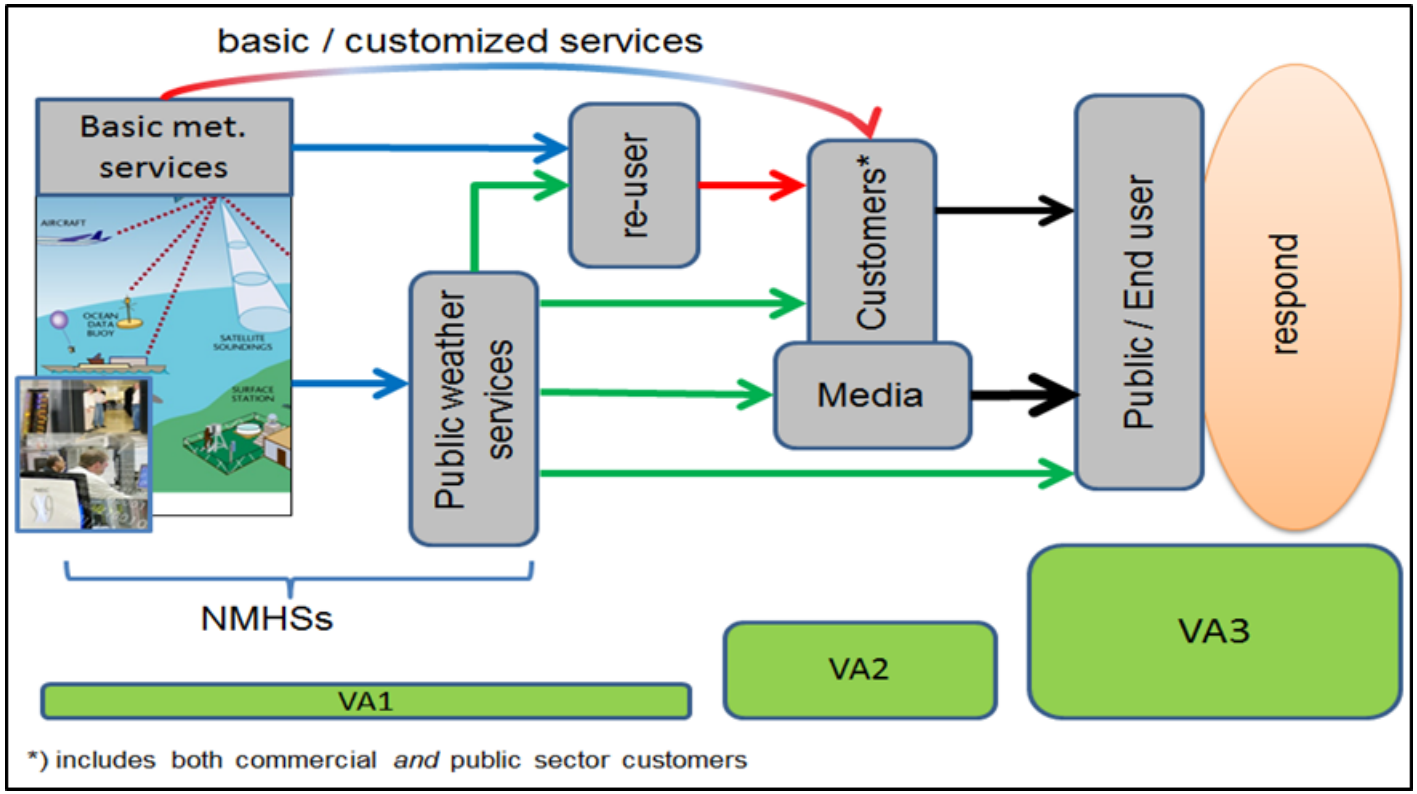
- Various annexes including a listing of appraisal methods, of publications on theory and application of economic appraisal of weather services, etc.
- In the first place addressing NMHS' senior management

1. Why investigating social-economic benefits?

- **product & market innovation driven**
  - customer satisfaction (end users; intermediates)
  - product development prioritization
  - meteorological infrastructure investments
- **internal or wider public efficiency driven**
  - charging policy & equity
  - state support justification
  - productivity comparison (yardstick competition)
- **strategic policy driven (climate, safety, economics, ….)**
  - in relation to broader resilience hazards or emergency policy framework
  - in relation to sector specific developments and strategies (e.g. safety at sea; security of supply questions, etc.)

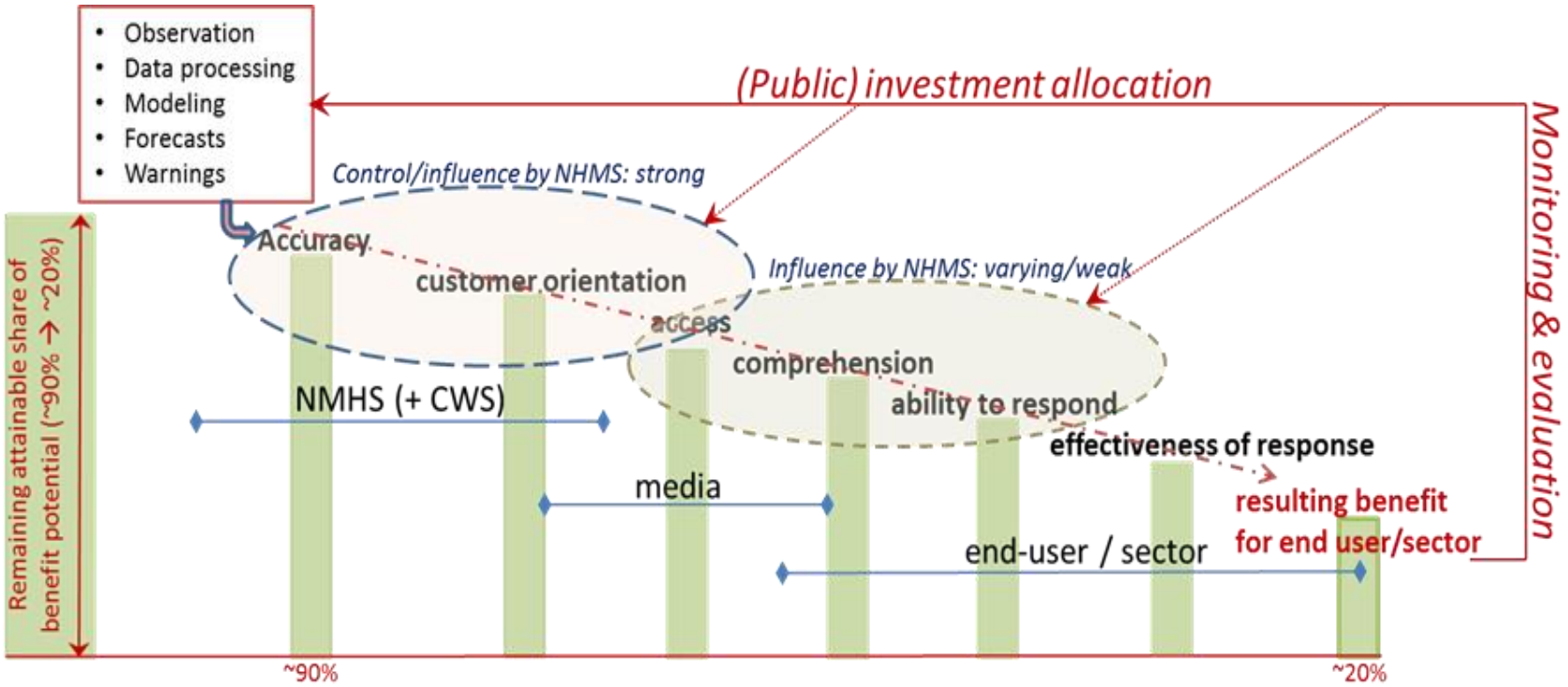
2. How weather services generate value added (1)



End users generate most of the value added by responding adequately to weather information.

The purposes for conducting SEB analysis vary over time and across countries, consequently reviewed service segments and applicable appraisal methods will vary.

2. How weather services generate value added (2)



The value added attributable to weather information boils down to the *differential effect* on end-users' operations: having weather information as compared to lacking it.

Improvement of the effectiveness of weather services should stretch beyond the basic tasks of a NMHS and include (1) media choice & access, (2) quality, tailoring, and comprehensibility of messages, (3) abilities and capabilities of end-users

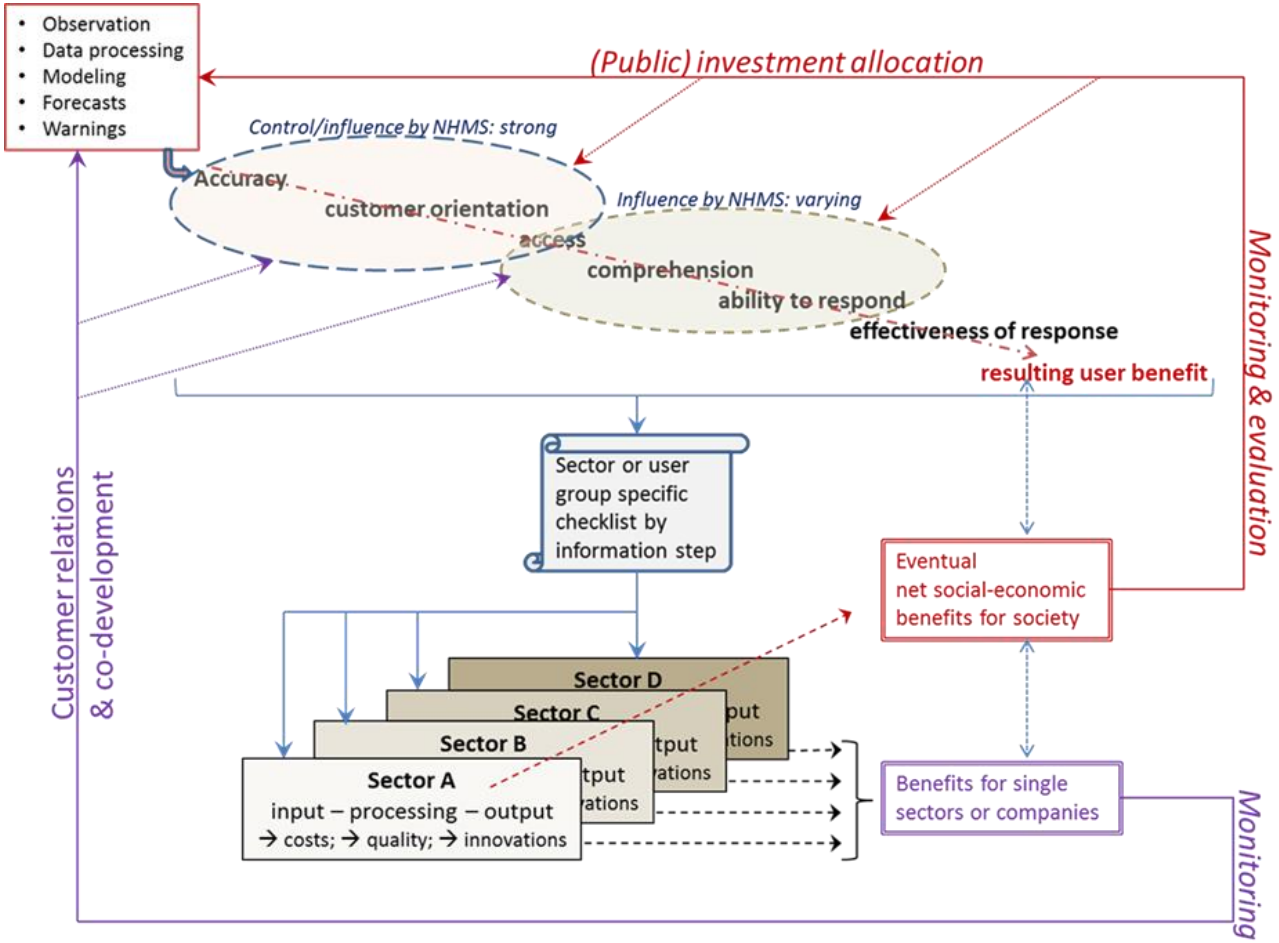
3. Guidelines for setting up a SEB study

Step	Task	Ready in month no.
1	Explaining and proving the need for SEB studies	3
2	Make or buy decision (outsource SEB at least the 1st time)	3
3	Partner in science for review	4
4	Functional specification document	5
5	Identification for potential contractors	6
6	Evaluation of tenders and commissioning of the study	6
7	Processing of contracts, performing the study	16
8	Recurrent review process	17
9	Acceptance of study output after quality control	17
10	Internal & external communication plan to exploit the insights	18

A SEB study can only start in earnest when the top management is thoroughly convinced of the benefits of performing SEB studies and fully supports its realization and exploitation of results

4. How to best exploit the output of a SEB study

>> the benefit of showing the benefit <<



By understanding how economic benefits are generated and how a larger share of the potential (maximum) benefits can be realized, the NMHS can embark in a systematic process of product and service improvement with higher pay-backs to the NMHS and society at large

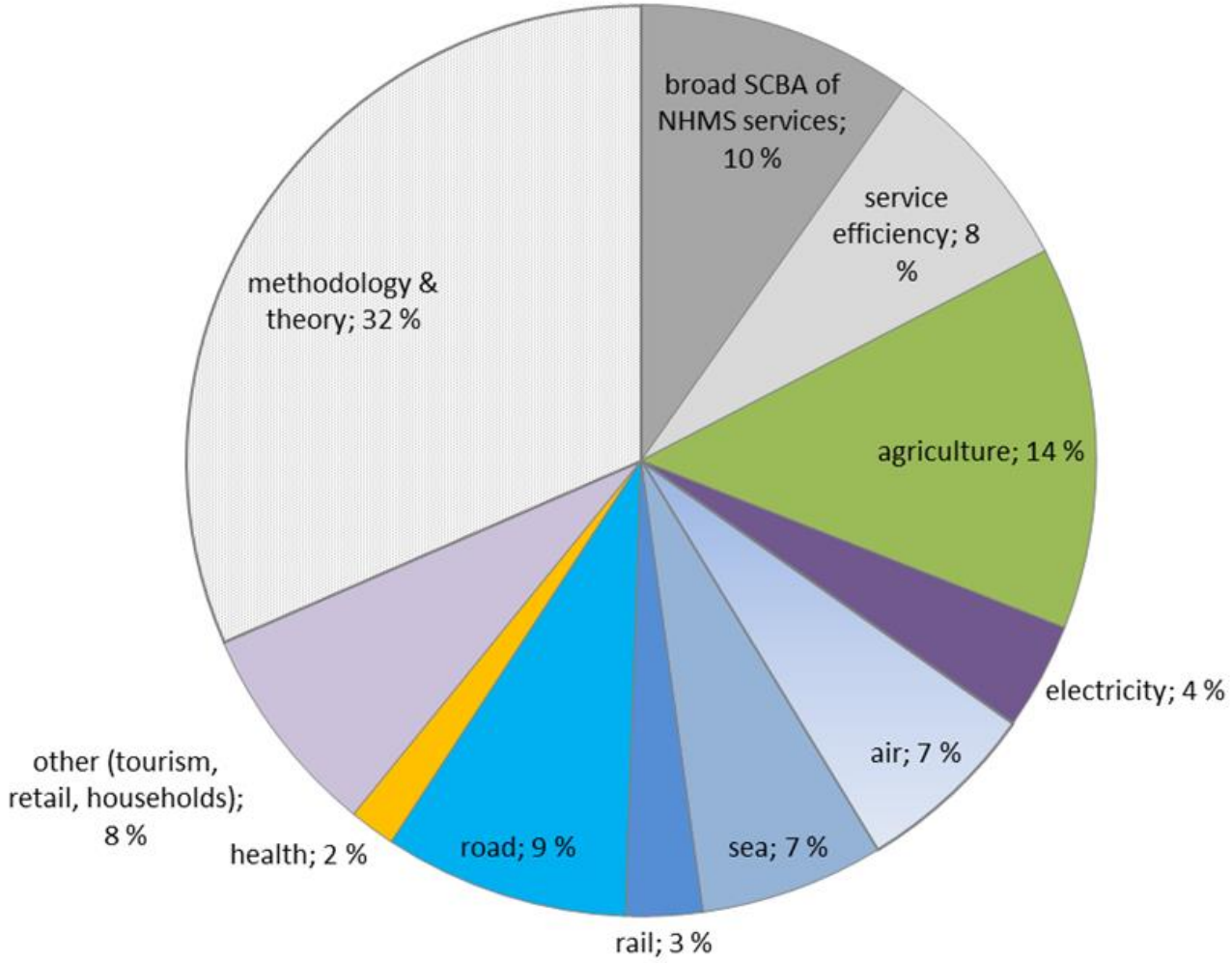
Overview of methods in a nutshell

	Survey	Quick scan - SCBA	Full blown SCBA	MCDA	Expert judgement (Delpi etc)
Innovation driven					
Customer satisfaction	X				X
Product development prioritization	X	X		X	X
Investments in observation & modelling		X	X		
Efficiency driven					
Charging policy	X	X	X		
State support justification		X	X		
Productivity comparison		X	X		
Strategic policy driven					
Hazard & resilience framework			X	X	
Sector specific strategies		X	X	X	

Main results from the RA VI survey

- Internet based survey among all RA VI members, 25 responded
- 84% (of the respondents) carries out user surveys
- 57% of those holding surveys, extracts information w.r.t. the (extent of) benefits realized by the end-user or re-user
- 28% has carried out SEB studies, and 43% is planning these
- Genuine cost-benefit studies are reported by 22%
- Reasons for carrying out SEB studies (more than 1 option allowed):
  - Justifying public funding 68%
  - Investment / R&D prioritization 44%
  - Service development (incl. charging structures) 56%
- Large interest for supportive facilities via WMO regarding:
  - guidance (for 1st time), sharing results/experiences, methods, funding

Available material review – Literature review



- 185 topics in 145 publications, of which 78 in peer reviewed journals
- 24 in Met.Apps, but also in journals on agriculture, transport, energy (electricity), statistics, operations research, ITC, regional studies, environment, natural resources, public finance economics, public health
- 10 WMO / WB
- 63 ‘grey literature’

Lessons for the Manual (1)

- Carefully identify all possible purposes for SEB studies and review consequences for the required appraisal methods and overall approach
- SEB studies can help to generate further benefits for society and the NMHS (‘*the benefit of showing the benefits*’), but that requires embedding of surveys and SEB study cycles in the NMHS’ management system
- SEB studies are only useful if fully supported and grasped by the senior management of a NMHS
- For the understanding and promotion of the creation of value added based on weather & climate services a sufficiently wide scope should be applied:
  - in the addition to the adequacy of the meteorological service production aspects like (1) media choice & access, (2) quality, tailoring, and comprehensibility of messages, (3) abilities and capabilities of end-users

Lessons for the Manual (2)

- Even though the current appraisal methods are by and large capable of appraising weather and climate services there are many details which merit tailoring, whereas feedback into macro-economic assessments entails graver difficulties;
  - in short, a convincing appraisal benchmark is as yet missing
- It seems that, at least for the next couple of years, guidance regarding the set-up, commissioning and result exploitation of SEB studies is as important as thorough guidance on selection and application of valuation methods
- With respect to adaptation oriented climate services challenges will expand in several ways, inter alia due to broader scoped partnerships, other character of the evidence, and the larger and more diverse uncertainties
- Assuming rising demand for SEB studies for weather, climate and hydrological services consider focused action to raise awareness among economists (environmental, infrastructure, finance)

Task Team Social-economic benefits (TT-SEB)

- One out of 6 task teams of the RA VI Working group on Service Delivery and Partnership (WG SDP)
- Assignments:
  - Review of the Madrid Action Plan
  - Review of relevant literature and projects
  - Guidelines & tool for method selection
  - Indications for follow-up activities
- Team members:
  - Thomas Frei (MeteoSwiss), Leander Jamin & Axel Thomalla, (DWD), Francisco Espejo (AEMET), Adriaan Perrels (FMI; team leader),

Thank you

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