



## Stress meeting – April 14th, 2014

### Present:

Anne-Marie  
Inga  
Lorenzo  
Markus  
Mike  
Alessandro  
Phillipe  
Sebastien  
Stephan  
Manuele  
Jane (later)

Summary stress approach:

Two main ideas:

- Having vulnerability factors for ecosystem and human health added to use/availability ratio (not followed up yet)
- Water needs (all users) / renewable water availability (more basic water stress indicator)  
->
  - How to account for water needs?

### ***Discussion on weighting***

- Jane Bare wanted to consider only human needs (not including also ecosystem needs)

Jane: Problem is that there is implicit weighting (maybe just 50:50) but is still weighting. Proper allocation of human needs vs. ecosystem needs is more a social science aspect

Some might say ecosystem need 100% of water. There is a paper for South African situation (Jane will share) for allocating water to nature and humans.

Anne-Marie: The question is not to answer who gets the water (and who the impact) but rather to assess the stress level caused by both ecosystem and human needs

Jane: Still it influences environmental decision making (as weighting will determine which situation is more damaging)

Markus: this would be most neutral approach to combine two different needs. There is no weighting.

Jane: but then ecosystem need 100% of water

Anne-Marie: No this should not be the case. It only considers a certain level of ecosystem quality and includes also resilience so ecosystem might need less than 100% for fair quality.

Stephan: some value choices is there and therefore there is some weighting. We need to decide if this is acceptable. Definitely there is some.

Anne-Marie: we need to differentiate value choice and weighting.

Lorenzo: We need to be clear what we want to assess

Anne-Marie: yes we started with loose definitions since we used water needs and not water use (since aquatic ecosystems have water use)

Manuele: Fully understand concerns of implicit weighting which occurs when we combine results in final assessment -> one option is to go with two indicators (or four indicators) having two midpoint and two endpoint indicators, but it is also possible to have a generic screening indicator? Shall such indicator address concerns on EQ or HH?

Here we should aim at a stress level and not burden to HH and EQ.

-> Sustainability approach- Not sure if ecosystem needs 100% of water

-> What indicator do we want to have (what are meanings and type of decisions?)

-> discuss with stakeholders and decision makers what makes most sense for them.

Markus: Is the suggestion of terr./aq. EQ needs and HH needs over total G+B water availability such an approach

Jane: does everyone agree that there is weighting.

Manuele: not necessarily weighting

Markus: it is the most neutral approach and there is no weighting

Stephan: Agrees that there is weighting but it is not a problem

Jane: do a testing of different combinations of ecosystem weighting (0-100% by 10% increments and check what differences are observed in the resulting maps (i.e. what areas are affected by such shares)

#### Summary:

- Can all agree that we include some aspects of human health and ecosystems?
  - General agreement
  - Manuele yes, but do some sensitivity assessments.
  - Jane agrees to test out but we still need to check the final result if there is no value judgements.
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#### ***Green water aspect (presented by Philippe):***

Idea: Blue and green water included for water consumption (only delta green water use) but over green and blue water availability

Is it only water consumption or also withdrawals?

- There is not yet a final agreement on it

Is Actual availability actual runoff (or pristine runoff)?

Manuele: why is net GW added? Green water might be lower under human use

Phillipe: Yes, this is true and then it would have negative impact (benefit)

Markus: agrees that it is strange to take the net GW which is a result of increased runoff -> maybe take the total green water

Phillipe -> therefore use natural runoff instead of actual runoff.

Markus: maybe just do calculations first and then discuss results

Phillipe will do a new result for next meeting

Manuele: is interesting, but we need to see what is the effect and meaning behind the methods.

Anne-Marie: Aquatic ecosystems not considered? Phillipe: this is only the human perspective.

INGA: what is the green water availability?

Anne-Marie: Can't we simply use then water availability as precipitation minus evaporation (not evapotranspiration) as available blue and green water?

Markus: yes this is correct

Stephan: all green and blue water is basically precipitation minus unproductive evaporation and all water consumption (green and blue) is more or less the same if we assume all water is needed either for ecosystem (runoff to the sea for aquatic and green water for terrestrial) or for humans (by LU change and blue water consumption)

Lorenzo: groundwater effects might be omitted if precipitation minus evaporation is included.

Stephan: Groundwater is mainly relevant for buffering (different time scales).

#### Summary:

Include green and blue water; no final decision on including both, but the options will be tested

Stephan: only concern is that terrestrial ecosystem might get too high weight, but results should decide.

EWR from water management plans in Spain and Europe could be used -> Montse to report next time.

Inga: EFR based on Pastor et al 2013 -> calculated % of EWR/EFR for fair ecological conditions.

Inga is in contact with the authors and will follow up. Anne-Marie and Inga will meet with her soon.

Temporal aspects are relevant -> develop monthly factors. To be discussed at next meeting