



Active Members meeting minutes – April 2nd 2014

Present :

Alain Wathelet
Jane Bare
Francesca Verones
Jeremy Guest
Julie Clavreul
Kevin Harding
Lorenzo Benini
Markus Berger
Masaharu Motoshita
Michael Lathulliere
Raldo Krüger
Sebasteien Humbert
Alessandro Mansardo
Cecile Bulle
Manuele Margni
Stephan Pfister

First a review of the work is presented, please refer to attached slides for details.

This discussion occurs at the end of the presentation :

Stress index

Masaharu : Considering the needs of HH and ecosystems as equally important is using an implicit weighting

AM : yes, we consider that 1m³ required, for Human and ecosystem, is 1 m³ because we do not assess impacts on any of those areas of protection but rather assess the stress, or pressure, on the water resource by comparing the total requirements from all users with the availability, hence representing the extend to which the local needs and availability differ.

Masaharu : Ah yes, this is ok, but then it would be better to write on the slide « water needs for all users » to show that its not a weighting but an inclusive consideration of all the users – including ecosystem users.

AM : yes, you are correct, and I am correcting it on the slide. Does everybody now agree with this representation ?

General discussion at the end

Alain : Do you work on ecoinvent 3 or do you have to build new inventory data ?

AM : We try to work based on the data currently available in ecoinvent 3, unless there is a general agreement that something important is missing. One of the goal of this methods is not only to be consensual but applicable.

Rando : The impacts are due to a decrease water availability. What about increased water availability.

AM : good point. We are aware that we have to link the positive and negative impacts. Currently no models allow this. This is one impact pathway currently not modeled.

Markus : Increased water availability can have negative impact... Exemple deforestation can increase water availability as runoff and modify the water availability through evapotranspiration

Stephan : Stephan: flooding and land slide / erosion issues should be land use linked and not part of water resource assessment

Raldo : Actually, I was not talking about large scale increase like flooding, but rather small increase in runoff which can cause even large impacts on ecosystems.

Note : Additional information received by email following the meeting :

Land use changes can result in both increased and decreased water availability to the surrounding ecosystem landscape. The negative impacts of decreased water availability are commonly recognized, but increased water availability can also have negative impacts on a natural ecosystem, and I think it's important to somehow include that in the model / index.

Just to give you more background on this, ecosystems have adapted to exist in their particular climatic envelopes, and by extension rainfall pattern envelopes. So a change in water availability (on either the upper or lower side) can have a detrimental impact on the ecosystem dynamics, as it changes the resource availability and therefore competition dynamics for those resources between different ecosystem components.

As an example of how increased water availability can impact a natural ecosystem, in a semi-arid shrubland the dominant plants are long-lived perennials that have adapted to be extremely water efficient. With increased water availability, weedy, short-lived plants can establish more easily, and compete more effectively for the available nutrient resources in the soil. This decreases the nutrients available for the perennials, and over time they die out and are replaced by a predominantly weedy vegetation mix, completely different to the natural mix that was there previously and less ecologically stable than the natural state.

AM : the point you bring forward even slight increased in the river scan have negative consequences.To my knowledge, we definitely do not have any models modeling this. It would be interesting to dig deeper, any documentation is welcome and if someone has a master student who wish to dig on that...