

## VISION STATEMENT

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A *desirable future 2050* is an ecologically sustainable situation, i.e. a situation where there is no undermining of the life support system. The *pathway* to such a situation involves clarification how the life support system functions, including the insufficiently focused role of the bloodstream of the biosphere - freshwater. Some fundamental features worth highlighting is the fundamental balancing functions of freshwater-related processes in the global system: physically (evaporation/condensation), chemically (crystallisation/solution) and biologically (water molecule splitting/re-assembly through respiration).

A fundamental *constraint* includes the current conceptualisation of human activities in the landscape, especially the separation of land use and water - even in the structure of the Lund meeting. Water has many parallel functions in both nature and society: body functions, socio-economic functions, biomass production function, carrier functions, and habitat functions. At the land surface, the precipitation is partitioned into two water flows: infiltrated soil water (*green water*) accessible to plants and returning to the atmosphere as evapotranspiration, and liquid runoff (*blue water*) appearing in two forms, surface water runoff and groundwater recharge and flow. Water is locally distributed in catchments/river basins where the flow through the system has also an integrating function, causing impacts on aquatic ecosystems. Water's many functions calls for a governance systems that operates based on an integrated understanding of the way freshwater links land use activities and changes. A guiding principle should be eco-hydrosolidarity with an integrated approach to land use, water use and functions, and ecosystem health, and between upstream and downstream activities.

It will be necessary to enhance the water-dependent self-organising potential and resilience of landscapes.

*"This will require a shift in thinking from economic, technological and societal development as an independent process to a world view of social-ecological coevolution within the frame of the biosphere... Human capability to solve basin-level conflicts of interest will have to be developed, based on an approach that feeds on this shift in thinking.....All of the above will require an expansion from the dominant view of freshwater as an input in social and economic development to the recognition and appreciation of the essential functions in the life-supporting environment. It is in this context that the catchment-based approach, with adaptive comanagement systems, holds promise for a prosperous societal development. This needs to be supported and stimulated by governance at various levels, including integrated applications of the set of single-issue conventions and principles of the 1990's, such as drought/desertification, biodiversity, freshwater, climate change and forestry". (Falkenmark&Folke 2003)*

Some dominant regional features to enhance the self-organising capacity of living systems through freshwater management are the following:

- In semiarid regions, basically savanna biomes. to recreate the functions of freshwater in local landscapes by soil and water conservation and facilitate infiltration and plant water uptake for ecosystem services;
- In the humid tropics, basically rainforests, to safeguard freshwater functions in existing forested landscapes and maintain the self-organising capacity for ecosystem services by hindering leaching of organic material and nutrients;
- In the temperate zone, basically the industrialised regions, to break the emissions of polluting substances into freshwater flows, e.g. groundwater pollution and deterioration of aquatic food webs and ecosystems,

### Reference.

Falkenmark, M.&Folke, C. 2002

The ethics of socio-hydrological catchment management: Towards hydrosolidarity.

*Hydrology and Earth System Sciences*, 6:1-9