

Sharing and utilizing hydro-meteorological data in MAHASRI

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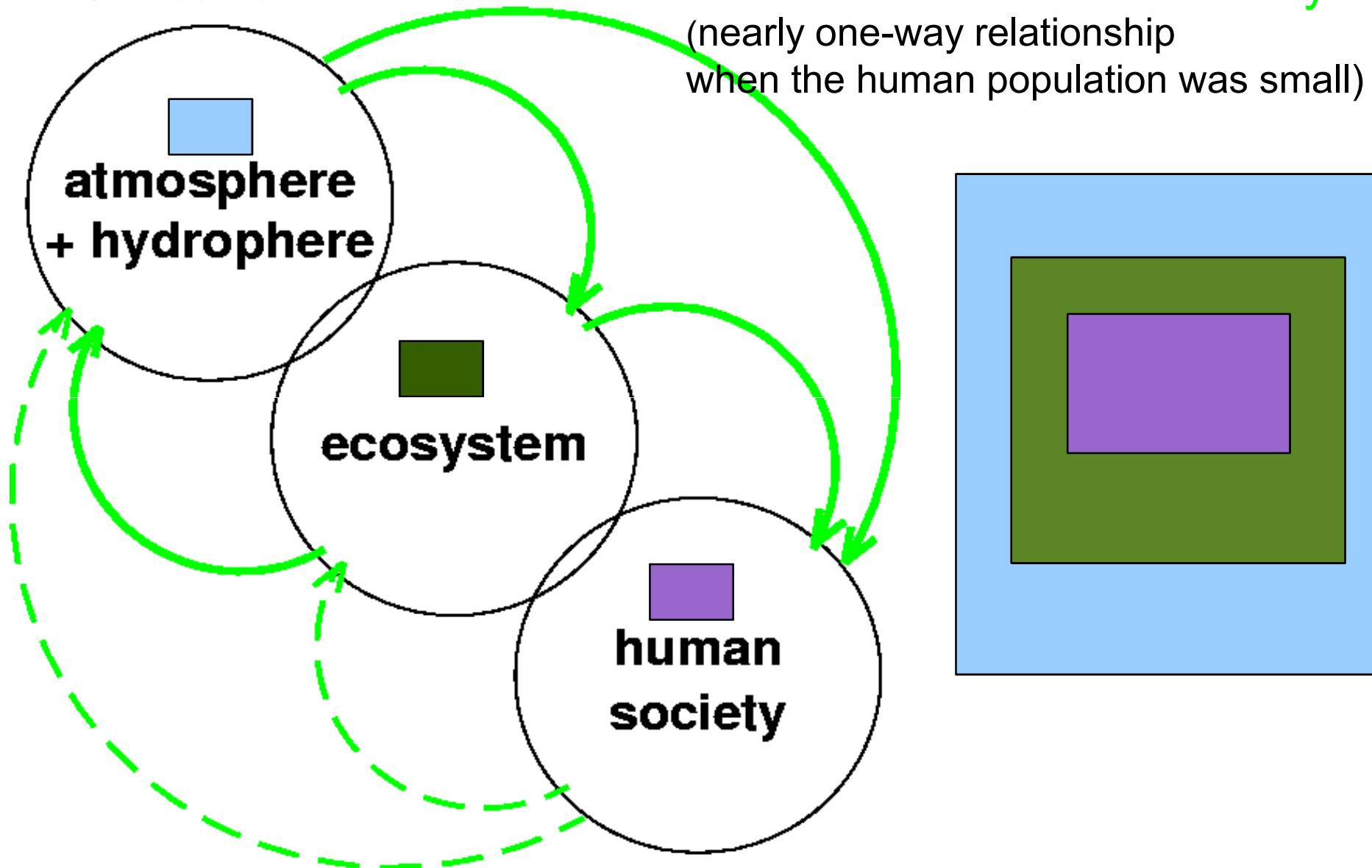
A personal (not official), experimental (not to be sustained) web site
<http://mahasri.world.coocan.jp/>

MAHASRI/HyARC Workshop
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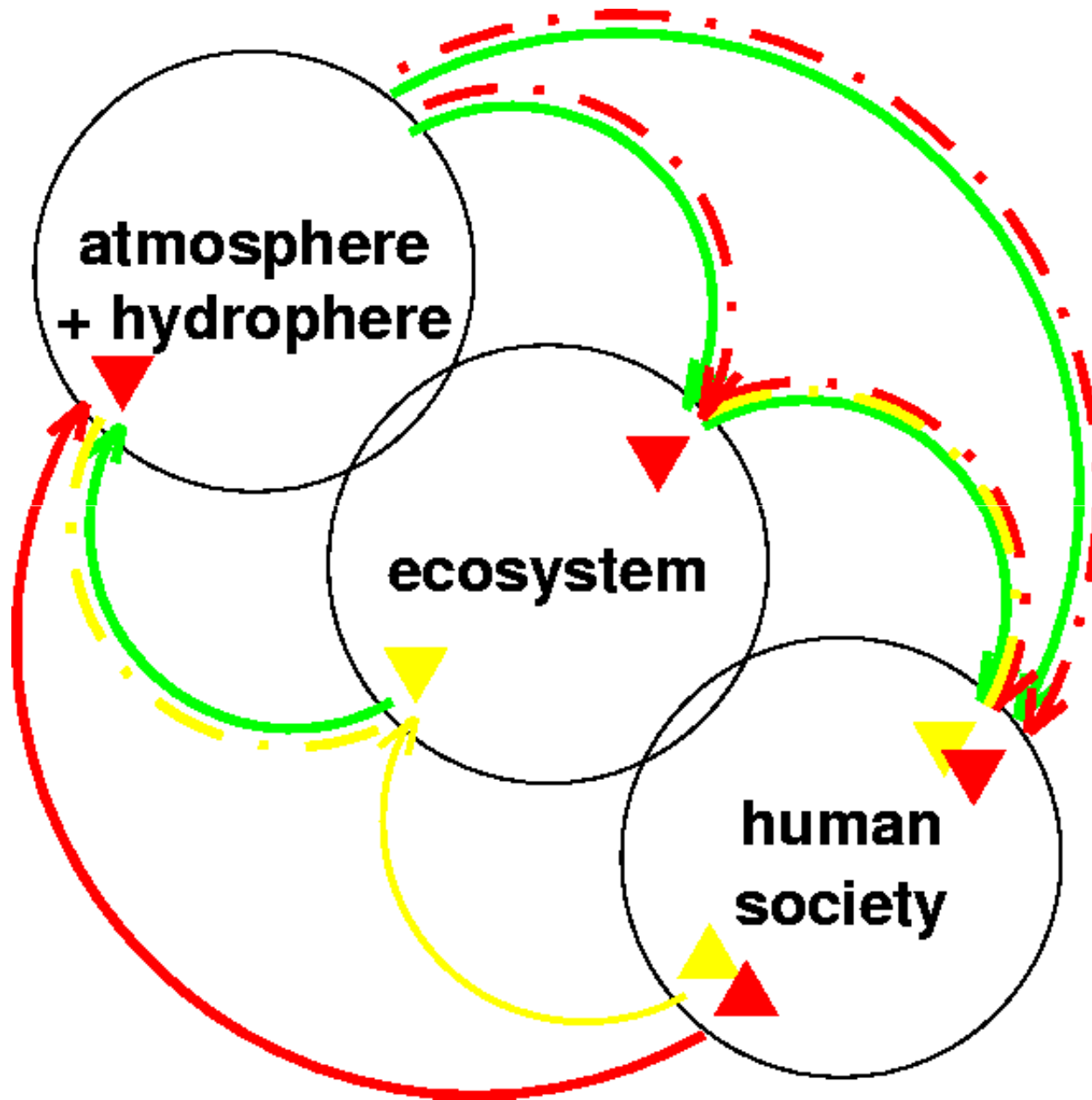
1. Background In What world do we live?

Global environment: constraints to the human society

(nearly one-way relationship
when the human population was small)



Global environmental issue: feedback (human - nature - human)



Climate change is a serious issue to **ecosystem**, because it is compounded with **human direct influence** (land use change, fisheries, etc.).

Climate change is a serious issue to the **human society**, because it is compounded with the issue of the limit of **energy resources** which it can use.

Adaptation and mitigation to climate change

We must live in a changing climate. We must *adapt* to it.

The society needs to prepare for likely variability of climate.

The likely change is *warming* in the global average.

Regional changes will be more complicated.

Cases of both “*too much water*” and “*too little water*” are likely to become more frequent.

But also, as far as human activity is changing climate, we have a hope to reduce, in other words *mitigate*, the change.

We must shift *energy resources* to *renewable* ones:

solar radiation, winds, water flow, biomass, etc.

... parts of the energy cycle of the climate system

(exception: geothermal energy, tidal energy)

Not concentrated, not uniform, intermittent.

Local societies must have knowledge of their availability.

Climate change projection [skipped]

We wish to anticipate climate change.

But we cannot *predict* some factors of climate change (e.g. volcanic eruption) years ahead.

Also we think that human behaviour may change with the knowledge of climate change.

So scientists decided to cut the loop and tentatively think the following way.

- **Climate** is a physical system of the atmosphere and the ocean, and **the concentration of carbon dioxide** is an external factor.
 - The **concentration** is determined by the global carbon cycle coupled with the global ecosystem, where **anthropogenic emission** is an external factor.
 - The **emission** is determined by the **socio-economics** of the world.
- ... Climate simulations designed this way are called *climate change projections* rather than *predictions*.

Climate change projectionn [skipped]

