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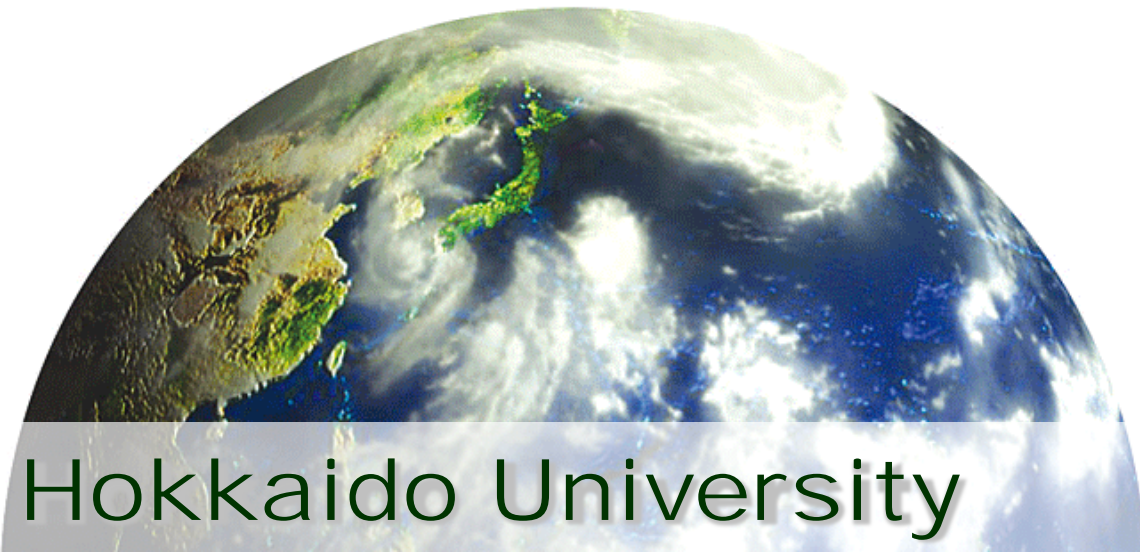
Green New Deal and Global Change

# **Global Change**

Earth system change

and its feedbacks with human society:  
agriculture, fisheries and water resources

# Sustainability Weeks 2008 -G8 Summit Round



Hokkaido University



# G8 Summit Symposium (June, 2008)

## Drastic Change in the Earth System during Global Warming

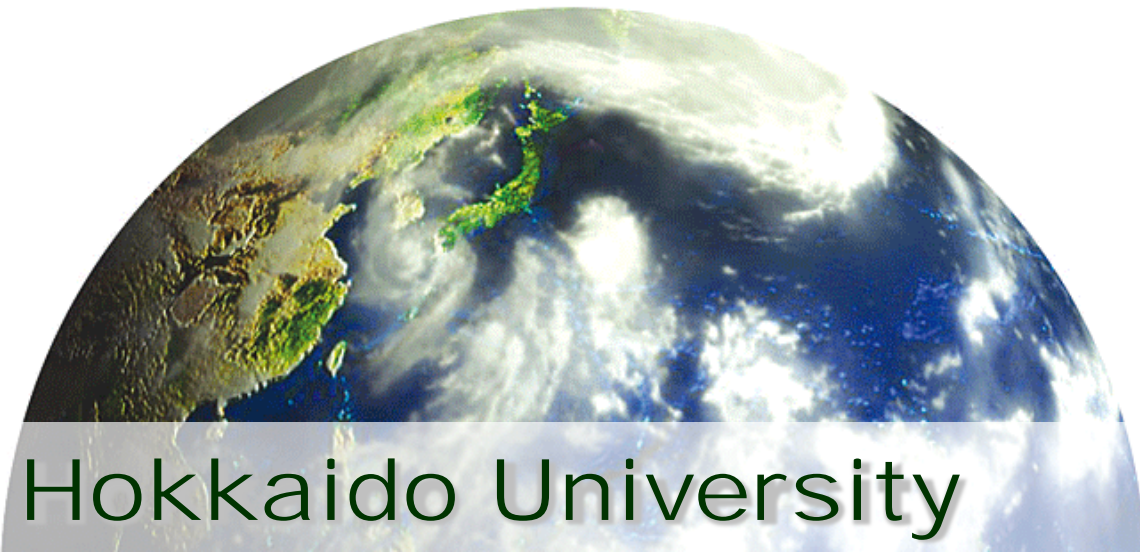
### **Five hot issues**

1. Clarify causes and magnitude of **sea level rise**
2. Decay of glaciers and Greenland and Antarctic **ice sheets**
3. When will summer Arctic **sea ice** disappear?
4. Carbon uptake or emission by terrestrial **ecosystem**
5. Marine **ecosystem** change resulting in carbon emission

Scientific clarification is required on mechanisms which yield positive feedback in the earth system.

Reliable projection on distinct indicators is crucial.

# Sustainability Weeks 2009



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# Earth system change and its feedbacks with human society

## **Linkages among four crucial components**

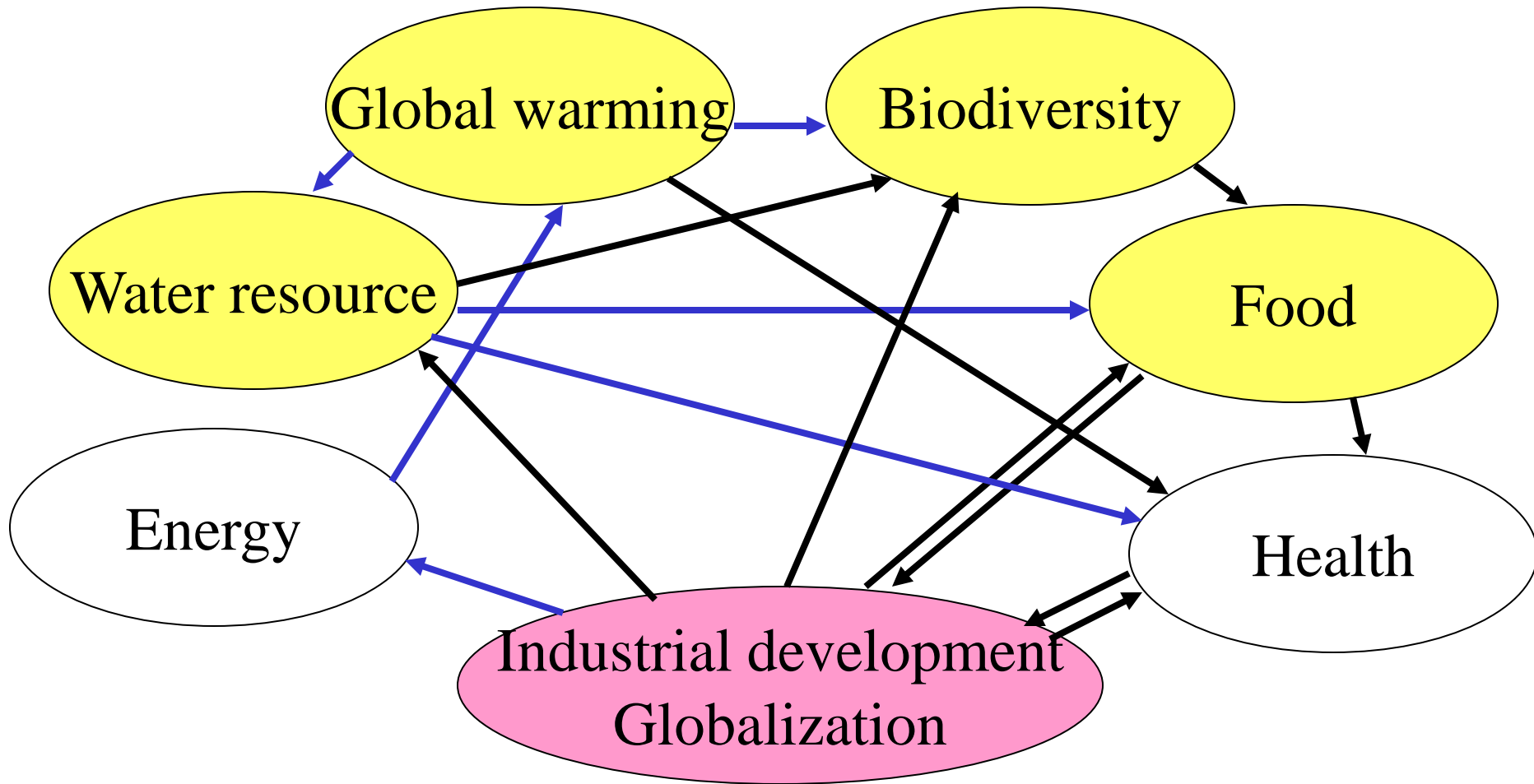
1-1. Polar region change interacting with global climate  
(D. Yang, J. Oh, M. Ikeda)

1-2. Terrestrial and marine bio-geochemical systems  
(S. Samdan, H. Shibata, A. Andreev, Y. Watanabe)

2-1. Fisheries and agriculture under global change  
(C. Zhang, M. Kaeriyama, H. Oselebe, G. Brierley,  
Y. Chi, H. Araki)

2-2. Water resources under global change  
(T. Matsushita, T. Yamada, T. Fujiwara, T. Imai,  
M. Takaoka)

# Feedbacks among Urgent Issues



Once each issue gets worse, it worsens the others.  
Can we solve all issues at once?