- Global crises
- Control and management of crisis
- Dissemination of information
- Information sharing Networking (system of systems, network of networks)
- Role of science and technology
- Ultimate, common aims

- Global crisis
  - Environmental, Public health, Economic
    - Fishing, CO<sub>2</sub> emission
  - Short term vs Long term (eg. Climate variation vs Climate change)
  - Frequency and Magnitude
  - Regional vs Global (Crisis does not respect international borders.)

# Control and management of crisis

- Short term vs Long term
  - Mitigation vs Adaptation
  - Prediction vs Projection
- Preparedness
- Observation, Surveillance
- Simulation
- Regional partnership to International Cooperation

- Dissemination of information
  - Accuracy vs Mis-information (manmade disaster)
    - Data quality control
  - Timeliness
    - Rapid data collection system
  - Easy-to-understand manner
- Information sharing Networking (system of systems, network of networks)

- Role of science and technology
  - Spiral up, potential to change direction of policy
    - Identification of problems, assessing solutions, evaluation of effectiveness of measures taken, identification of new problems, ...
  - Role of government: direction, funding
  - Practicability, accessibility
  - International cooperation
    - Modification rather than innovation transfer
    - Cost, price
  - International agreement
    - Fairness, benefit and economical balance over different time frames between developed and developing countries
- Ultimate, common aims
  - Safety, health, and well-being of human beings
  - Equilibrated, sustainable, and decent society, earth environment