Institute of Natural Resource Management
National Taipei University
Class Handout of the Fall Semester, 2013

Lectures 7: Environmental Risk Assessment

- INTRODUCTION
  - □ Violation of Exceeding the Standards vs. Probability of Exceedance (超越頻率)
  - □ Hazard, Risk, and Disaster/Catastrophe（危害、危機／風險、災害）
  - □ Adaptation: Vulnerability => Exposure, Sensitivity, and Adaptive Capability
  - □ Risk Analysis, Risk Assessment, and Risk Management
  - □ Quantitative Assessment, Comparative Ranking, and Qualitative Description
  - □ Health Risks (Human Life and Disease), Environmental/Ecological Risk, and Socio-Economic Risks

- RISK PERCEPTION
  - □ "Perception is Reality" => Perception vs. Cognition
  - □ Subjective Ranking of Activities and Techniques (Hazards) => Comparative RA
  - □ Stakeholders and Interested Parties
  - □ Description of Risks for Human Lives

- RISK ASSESSMENT: FOUR STAGES
  - □ Hazard Identification 危害確認
  - □ Dose-Response Assessment 劑量效應評估
  - □ Exposure Assessment 暴露量評估
  - □ Risk Characterization 風險特徵描述

- OTHER CONSIDERATIONS AND RISK MANAGEMENT
  - □ Health Risk: Acute Toxicity vs. Carcinogenic Toxicity
  - □ Risk Communication => Acceptable Risk, Cumulative Risk, Incremental Risk
  - □ Risk of Nuclear Power
  - □ Important Figures and Risk Calculation Procedure

- HOMEWORK ASSIGNMENT #3 (Due 11/19/2013)：
  1. Please construct the assessment flowchart outlined in the "Guideline for Health Risk Assessment 健康風險評估審議規範" by using computer software such as Microsoft Visio.
  2. Please discuss and comment the scope of "Hazardous Chemicals 危害性化學物質"defined in the Guideline. Should fine particle $PM_{2.5}$ be incorporated?