NAEMP
National Aquatic Ecological Monitoring Program

A Database Approach to NAEMP in Korea

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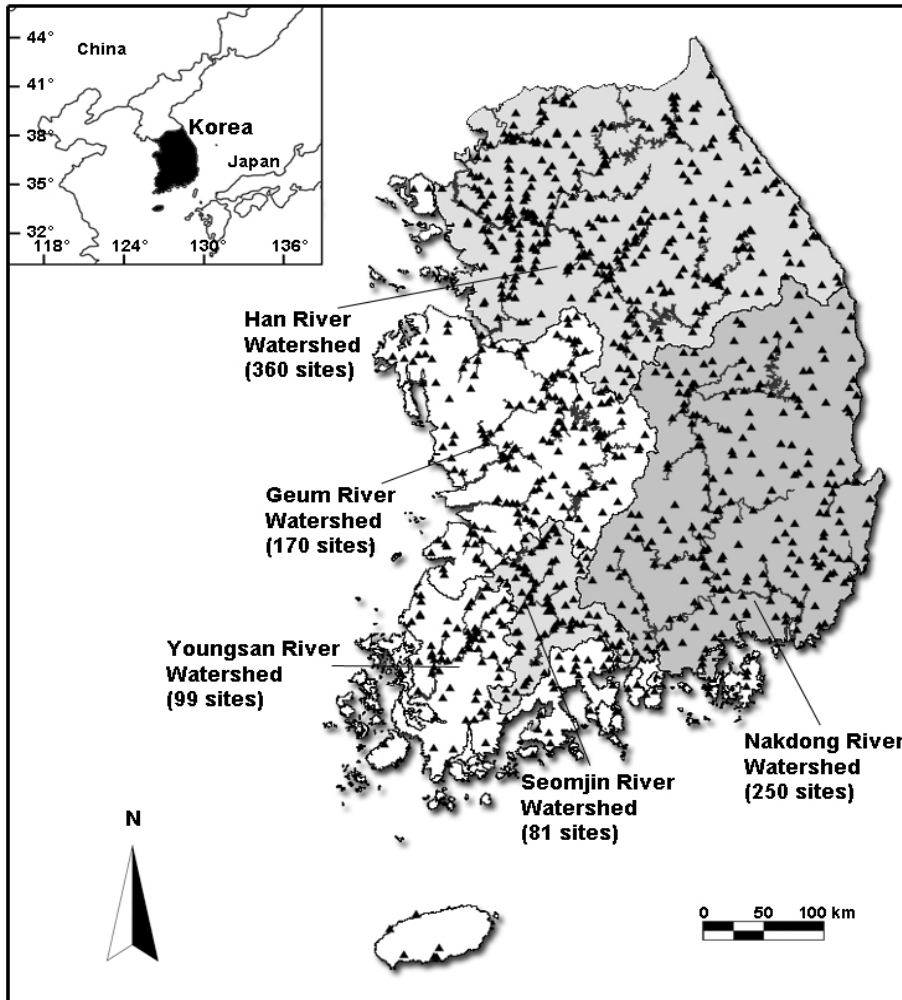**meelankang@gmail.com**

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Goal

Assess the <u>health condition</u> of rivers and streams in Korea

Establish Monitoring Network

- **Five major rivers**
  - **Han**
  - **Geum**
  - **Nakdong**
  - **Youngsan and Seo mjin**
- **Total 960 Sites**

Develop Criteria

Choose monitoring parame ters

Des

Physico-chemical parameters

    BOD, pH, DO, SS, COD, T-N, T-P

Biological parameters

    Benthic diatoms, Macro invertebrates, Fish

Habitat quality

    channel development, lateral and longitudinal conn ectivity, substrate condition, riparian land use

Simple hydraulic parameters

    Water velocity, width, and depth

Conduct monitoring

Twice every year
From 2007 to 2014

What's the Problem?

Challenging Issues

- **Data Searching**
  - Hard to know and locate what kind of data is stored in files

- **Data Reorganization**
  - New analyses or reports require a substantial amount of reorganization to structure files

- **Data Conservation**
  - Some data that are not included in file structure are likely to be lost and never recovered in the future

Database Approach!

Design a Data Model
Develop Database
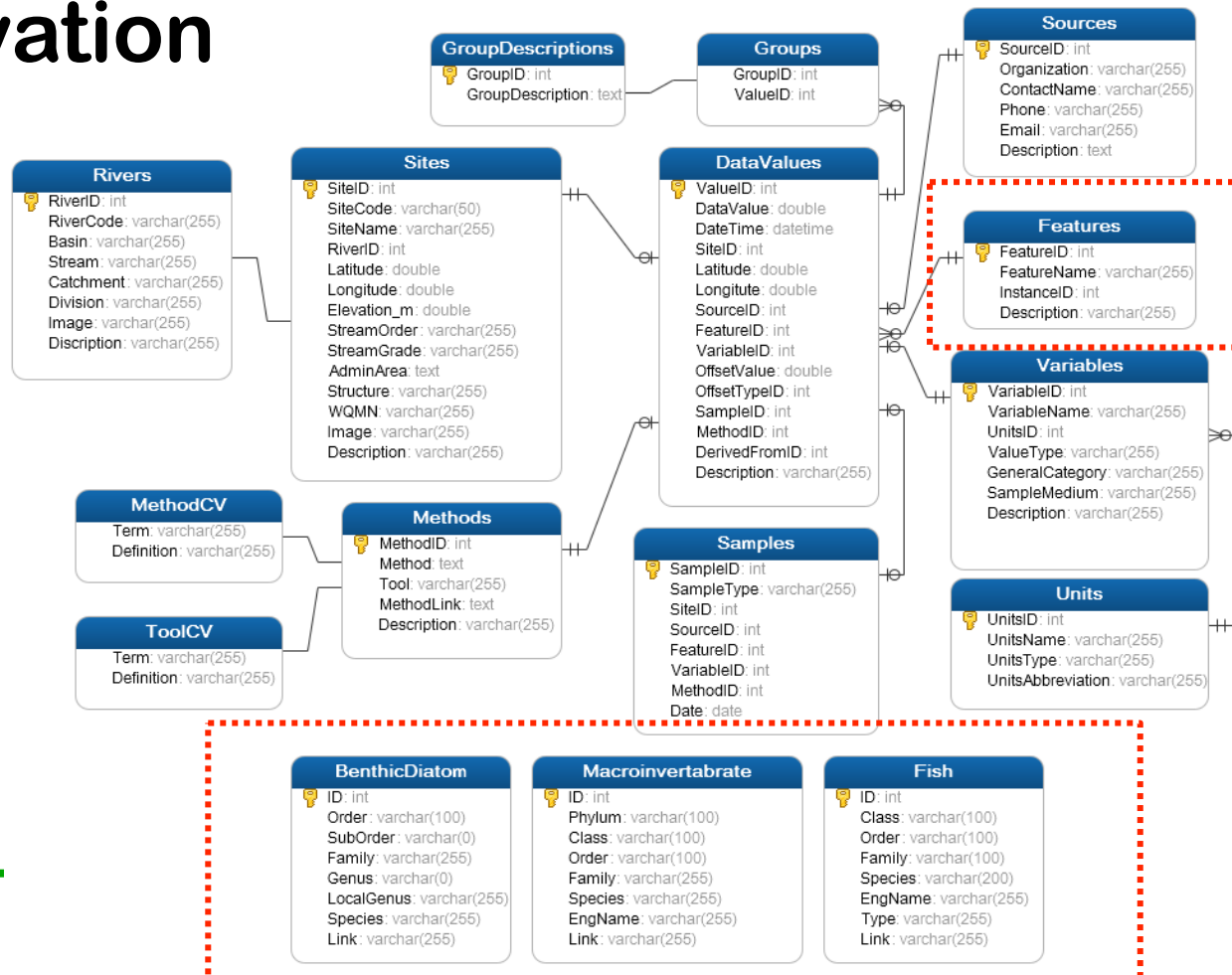## Support Data Access
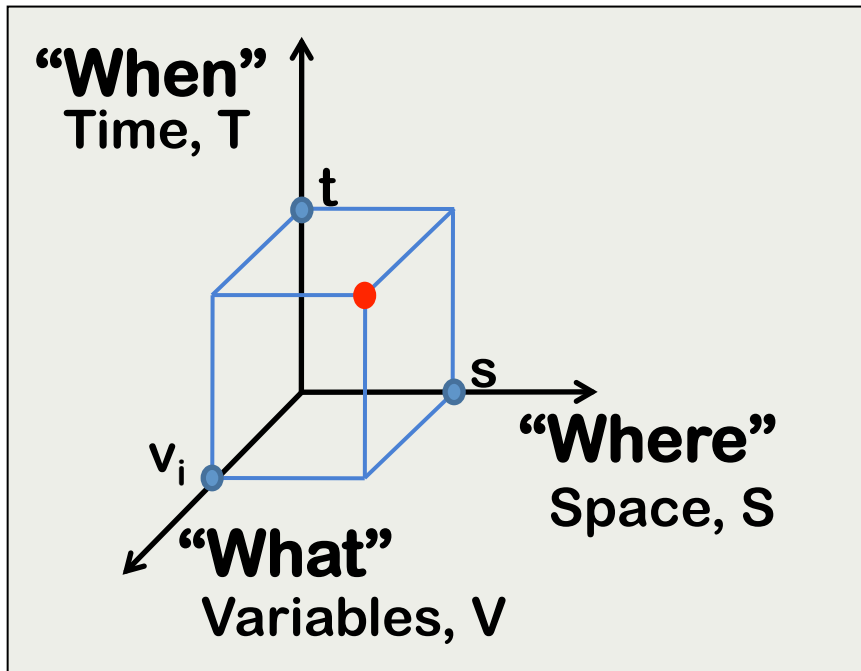
Related Work?
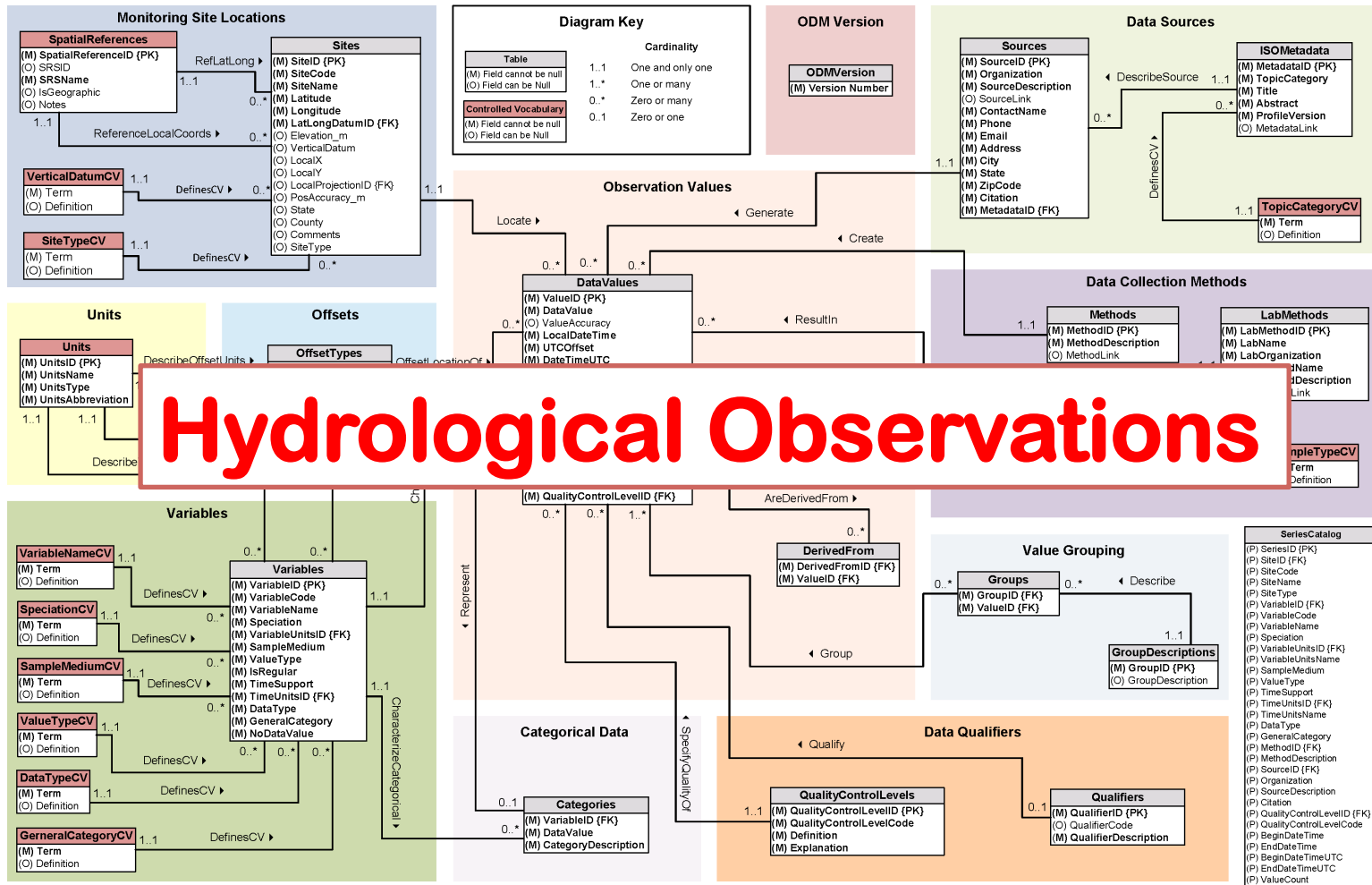
Hydrological Observations

What more is there?

Taxonomic information for Biological Observation

Data Access

Query: Space, Time, Variables and Taxonomy

Data Management System

#1 Current Analysis	**#2** Current Analysis	**#3** **Future** Analysis	**#4** **Future** Analysis	**#N** **Future** Analysis

… …

NAEMP Data Management System

Inter-Observation Relationship Layer

Monitoring Data Query System
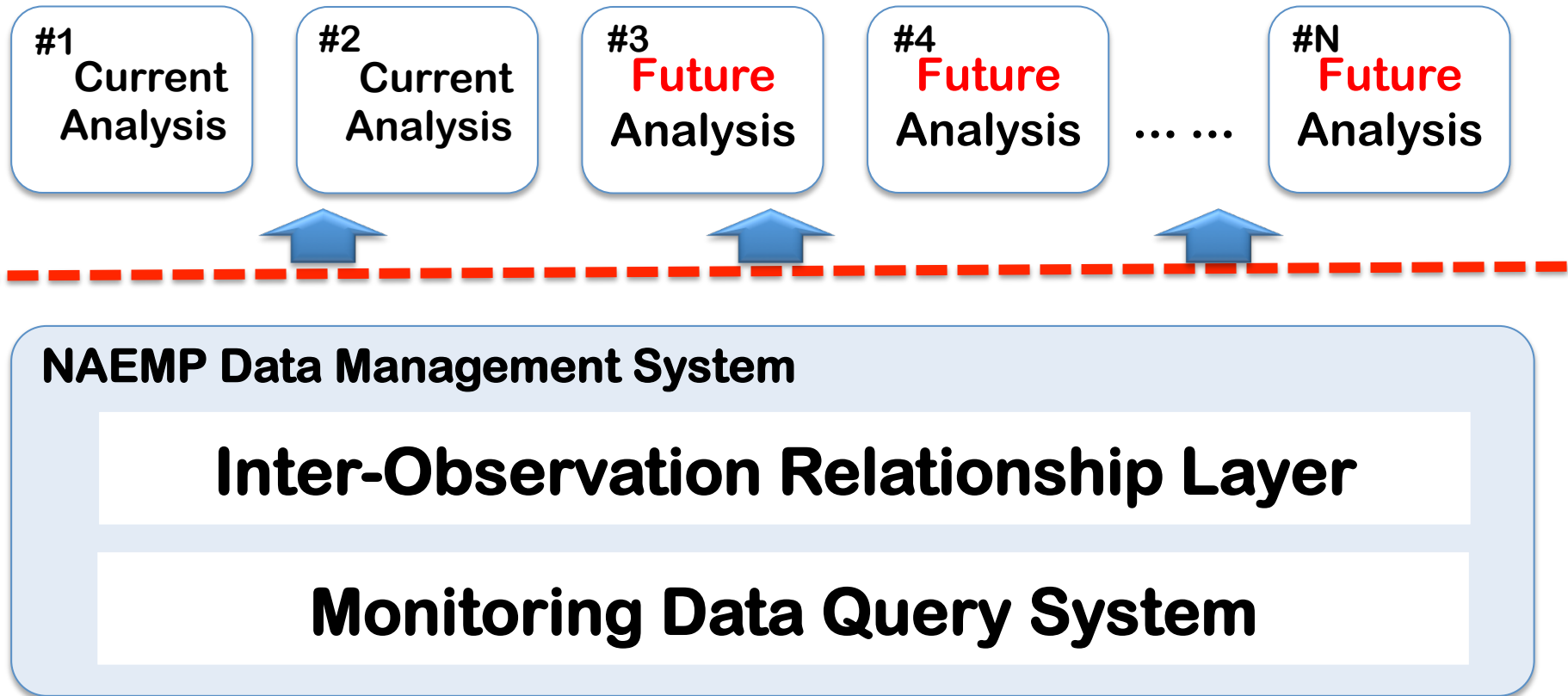
Summary

- **Brief introduction to NAEMP in Korea**

- **Challenging issues in data management**
  - **Largely raised from spreadsheet file based management for specific analysis ad report**

- **The Database Approach**
  - **Adding the support for monitoring data based on the CUAHSI ODM**
  - **Supporting Data Access by Query System**

Thank you ☺