

**USE OF KISSEL SERVER AS A PLATFORM FOR THE
EXPANSION OF RESEARCH ON THE WATER QUALITY OF
ASIAN WATER BODIES**

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ABSTRACT

Monitoring of all relevant aspects of water bodies is highly important for their sustainable use. To achieve this all research findings should be easy accessible and presenting those in a user friendly manner will be highly advantageous. Therefore, development of a database on the coastal water bodies of Sri Lanka on KISSEL server system was initiated, for the benefit of all interest groups including the general public. Presently it contains water quality data of lagoons and estuaries for over two decades. This was extended from a local scale to a regional scale. In this extension, algorithm improvement or tuning based on *in-situ* data sets was carried out for optimization. The aim was to expand the databases on water bodies using satellite analysis within selected Asian countries. It was initiated through KISSEL server system to benefit pollution monitoring and sustainable use of water bodies. Water bodies of Japan, Sri Lanka, Vietnam, Thailand, Indonesia and Philippines were selected considering their economic and ecological importance. *In-situ* research parallel to satellite overpass were conducted on the following water bodies. Local Universities and/or Research Institutes collaborated with the collection of field data and will involve in future continuous monitoring programs and KISSEL related activities.

Country	Water Body	Collaborating Institute
Japan	Lake Kasumigaura & Lake Senba	Ibaraki University, Hitachi, Japan
Sri Lanka	Bolgoda Lake & Madu Ganga Estuary	University of Kelaniya, Kelaniya [†] , Sri Lanka
Vietnam	West Lake, Hanoi & Dong Hoa - Can Gio	University of Science, Ho Chi Minh City [†] , Vietnam
Thailand	Pasak Chonlasit reservoir	Asian Institute of Technology, Bangkok, Thailand*
Philippines	Taal Lake	Technological Institute of the Philippines*, Philippines
Indonesia	Musi River	Sriwijaya University, Palembang, Indonesia [†]

†KISSEL Project was established and actively involved in KISSEL activities

*Collaboration is in progress

ASTER, MODIS, Landsat ETM, ALOS and QuickBird were used as satellite data sources and previously developed Chlorophyll-a concentration estimation algorithms were validated and applied. Regression analysis of atmospherically corrected satellite data on each day with in-situ sampling data were used for algorithm validation. Those algorithms were then used to retrieve water quality data using past satellite imageries. Recent water quality degradations of many water bodies in selected Asian countries were observed. High resolution satellite based water quality distribution maps of the study sites were developed using these algorithms. Monitoring of long term changes of water quality and improvements of databases are carried out at present.

Key words: KISSEL, remote sensing, water body