

DRAFT

A Partnership Proposal World Deltas Data Network

Overview:

Based on recent recommendations in a Coastal GTOS Implementation Plan, a team of researchers and institutions has proposed to establish a global deltas comparative data enterprise to support research, assessment, and management in watersheds and coasts. A recent global study looked at land loss over a 10 year gap and found surprisingly rapid change in most deltas studied. Much of this loss was in the inner delta, leading to speculation about the cause. Meanwhile, scientists and others have raised serious concerns about the changes occurring in deltas due to hydrological developments and population pressure. Deltas have mostly been studied individually to date and from disciplinary perspectives, but new calls for “integrated ecosystem assessment” and “ecosystem management” demand a comparative and integrated science capability to assess issues of global and local importance. With such a capability, we will be in a good position to use deltas data and information to:

1. Study deltas in their own right
2. Study deltas as natural indicators of global and regional phenomena
3. Study and link deltas to whole watershed models that can be run forward or backward to predict either watershed phenomena from deltas data, or deltaic change from watershed information.

An international Steering Committee has been formed to guide development of this global capability, with many institutions co-leading the effort. Resources will be networked across many distributed and contributing sites, with a central web site serving as a “one-stop” node. As the partnership plans develop, agreements will be made about archiving these data at a long-term data center. These services, and the research they support, will benefit many customers, from public and private sectors to government, from science to decision making.

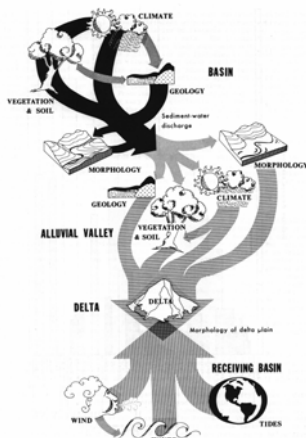


Figure 2. Processes responsible for causing river system variability.

The goal of this project is to provide customers with information needed to perform integrated science and make effective decisions to manage deltaic systems and the ecosystems they affect, in a better way.

Context:

Deltas are a key component of the “White Water to Blue Water System.” They are a highly dynamic indicator and integrator of many processes, and hence can provide rich information about the whole system. Deltas are dynamically maintained by landward and seaward processes.

Integrated science is a relatively new concept. It means looking at a system from a hierarchy (or holarchy) of perspectives from physical and geological, to environmental, ecosystemic and social.

Geological perspective

<George Hart>

Ecological perspective

<Kineman, Wessman, Ulanowitz?>

, such as general impacts of climate variability and change on land loss and vulnerability of ecosystem services

Sociological perspective

<Stanley, Pulwarty>

Major deltas research programs and sponsoring agencies.

Project Description & Strategy:

Integrated science and modeling requires data, which currently exist in fragmented form without much interoperability. This effort will establish agreements between various data providers, in-situ observing networks, satellite data products, etc. to improve interoperability and to encourage the development of integrated products of general and specific use. By providing this resource for a global set of deltas, global and regional comparisons can be made to scale up or down between local and global phenomena. Priorities for macro-ecological assessment data tend to be question or problem driven. Whereas sensor and network capabilities, and data availability, tend to drive monitoring programs. This creates a strong need for integration between needs and availability. Research and experimentation with new measures, methods of integration, and information systems is needed to meet this challenge. A collaborative effort to build common resources and knowledge is essential to advancing in this direction.

POSSIBLE COMPONENTS:

NILE-COLORADO COMPARISON – A number of comparative studies are of interest between the Nile and Colorado River deltas ...<Roger to add, maybe input from Dale/John on physical models, or also Daniel Stanley>

COLORADO RIVER WHITE WATER TO BLUE WATER – The Colorado river is under intensive study from its headwaters throughout its length in regard to water availability in the West. Completing this research by adding the delta will allow models to be developed based on up-river processes..... <Carol to change/complete>

OTHER PARTNERSHIPS – Linking the Mississippi Delta with the Gulf of Mexico Dead Zone. A NOAA Marine Science Partnership is concerned with the Mississippi

River watershed, Delta, and links to the Gulf of Mexico dead zone. As models are developed in this and other systems in the global partnership, they may be applied to analogous situations.

Funding:

Interagency and intergovernmental funding should be sought, along with international partnership funds from major environmental organizations. Research funds should be sought for specific pilot studies associated with advancing the overall effort.

Benefits of the Approach:

- Builds on WW2BW philosophy by focusing on deltas as integrators of watershed and ocean processes, and networking international sites in deltas and centers of data.
- Focus on integrated science and assessments, and comparative studies, to maximize social value of research and data/information resources.
- Builds on existing programs and institutions rather than starting something new.
- Opportunity to continue building the network and adding additional deltas and databases to enhance capacity, both generally and in specific countries.
- Opportunity to enhance and extend the Terrestrial Ecological Monitoring Sites, perhaps into new locations, and the TEMS database.