

## FLOOD MONITORING from Space

### Near-real-time water management.

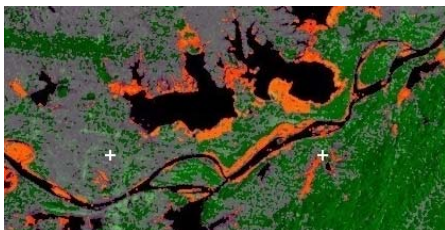
The effects of flooding, known to be disastrous in many areas of the world, can be much mitigated by operating a Spatial Decision Support System (SDSS), near-real-time analysing multi-temporal space imagery for intelligent decision support.

- Flooding in southern Asia causes loss of life and capital on a yearly basis. Governmental decision makers at all levels continuously fight the devastating forces of nature. More often than not however, they find it next to impossible to even achieve an image of the rapid flooding developments in the relative area.

- Space-borne radar images, near-real-time processed and fed into an SDSS, will allow for a **day-to-day analysis of the flooding situation**.

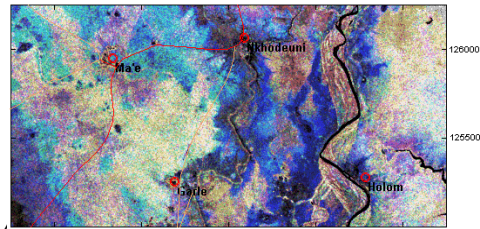
- **GPS-compatibility** ensures direct control over measures taken in the field.

- Flooding of grasslands in the floodplains of major African rivers like the inner delta of the Niger, the Senegal Valley, the Sudd in Sudan, or the Kafue Flats in Zambia, is a major factor, decisive for grazing potential, fisheries and nature conservation (among others) in these ecosystems. Timing and duration of the floods determine the system's productivity.

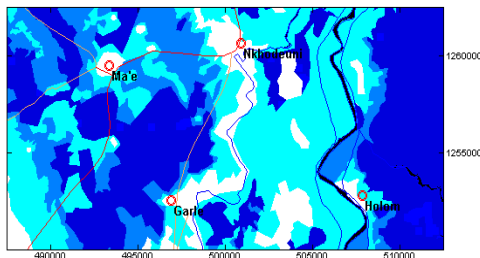


*The Yang-tse-kiang, downstream from Wuhan, China, July 27th 1999. Change detection reveals areas that are flooded (orange), saturated in water (grey) and untouched (blue). Radarsat scanner image. Grid points are 50 km apart.*

- Monitoring of flooding under a dense grass cover, as carried out by



*A radar colour composite image of the Waza-Logone Plain, Cameroon. Red - radar image in December. Green - radar image in November. Blue - radar image in October*



*Flooded areas. Blue areas flooded from October till December, light blue areas from October till November, cyan areas flooded in October. White areas not flooded.*

Geosat International and partners, proved to be a valuable alternative for time-consuming, costly, and less accurate topographic surveys over extensive, almost inaccessible plains where slight differences in elevation have a profound effect on "creeping" water flow.

### References

- Geosat International, 2000. Training Facility on Application of RS and GIS for Hazards Forecast and Assessment. Commercial Document.*
- Geosat International, 1999. Radar, water and African Floodplains. Commercial Document.*
- Parbleu Technologies, 1999. The Yang-tse-kiang valley floods project. Commercial Document.*