CoastColour Project
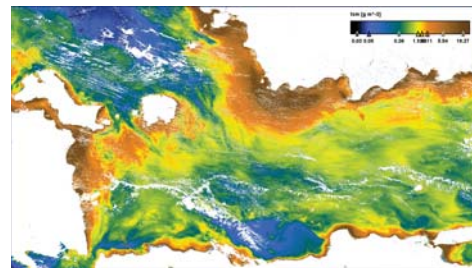## Overview and Outcome

CoastColour is a LOICZ affiliated project

ESA designed the MERIS instrument specifically to provide measurements for coastal zone management and research. In space for over 8 years now, MERIS has delivered a unique global dataset of coastal zones at 300m spatial resolution, which deserves dedicated processing with internationally agreed algorithms, and provision of specific user products, properly documented and easily accessible. This dataset will be an important contribution to further understanding of the coastal zone in climate change.

Main Results

CoastColour wants to actively demonstrate and promote MERIS capabilities for Case 2 water and increase the usage of MERIS within and outside Europe through

· Provision of a global set of MERIS FR data of coastal zones at a regional scale
· Regionally optimised algorithms for atmospheric correction
· Internationally discussed algorithms for Case2 waters processing
· Regional coastal products based on user requirements
· An international comparison of Case 2 algorithms
· Preparation of the exploitation of MERIS and Sentinel 3 products for operational Case 2 product applications and for climate change studies

Round Robin

A Round Robin intercomparison of Case2 algorithms involves the international user community:

· Dataset comprised of MERIS L1P (TOA radiance) and L2R (water leaving radiance reflectances) plus simulated and in situ reflectance data
· Users ran their water retrieval algorithms on the dataset and provided their results in September 2011
· The results were discussed on user workshops and videoconferences
· The Round Robin protocol is based on the protocol used for IOCCG Case1 algorithm intercomparison
· Evaluation includes the user algorithms, standard MERIS L2 and CoastColour processing, MODIS and SeaWiFS products
· Results will be published as an IOCCG Report/ in a peer reviewed journal

Background Image: Blue Marble © NASA

International cooperation

CoastColour keeps close contact with the users and international bodies through the user consultation workshops, direct consultation of users for in-situ data and by putting CoastColour on the agenda of the key organisations including **IOCCG**, **GEO**, **ChloroGIN**, **POGO** and **SAFARI** as well as **LOICZ**. These measures ensure a continuous exchange of information in both directions: requirements and feedback from users to the project, and up-to-date information from the project to the users and the international ocean colour and coastal zone community.

Indonesian Waters, Total Suspended Matter, 31. August 2005, orbit: 18308

User driven

46 globally distributed research and operational groups concerned with ocean colour remote sensing and coastal zone management have been identified as champion users for CoastColour. 27 coastal areas have been defined where CoastColour generates its products responding to the needs of these users. The users accompany the project by participation in the validation and the user workshops.

CoastColour products

CoastColour processes all available MERIS Full Resolution (300m) data of the test sites for the years 2005-2010. A NRT service is offered from October 2011.
The CoastColour products include a set of basic quantities which are generated over all sites as well as dedicated quality flags:

· TOA radiances
· Remote sensing reflectances and normalised water leaving radiance reflectances
· Aerosol optical depth
· Angström exponent
· IOPs
· CHL, SPM, CDOM
· Turbidity and transparency information
· FLH, MCI
· Errors, error statistics
· Flags characterising pixels

An attempt is made to generate additional experimental, site specific products, including:

· 1% depth of PAR
· Primary productivity/ PPP
· Phytoplankton biomass
· Concentration of taxon. functional types
· Effective fluorescence