

DESCRIPTION

Mapping of land use and land use changes to support studies of land-based influences on coastal water quality and dynamics.

USE

- › Land use and land cover inventories.
- › Monitoring of land use changes.
- › Statistical analysis of land cover changes.
- › Assessment of influence of changes on coastal water quality.
- › Input into environmental impact assessments and spatial planning activities.

INPUT PRODUCTS

- › Copernicus Global Land Service and ESA CCI Land Cover.
- › ESA Globwetland Africa Toolbox, data from Urban and Coastal TEPs, GlobLand30, Copernicus Hot Spot Service.
- › Landsat and Sentinel-2 data for higher resolution needs.

SPATIAL RESOLUTION AND COVERAGE

- › 300m for national to regional coverage.
- › 300m for large water-shed applications.
- › 10-30m for local to water-shed applications.

BENEFITS

Improved strategy and decision making:

- › Better understanding of land use impacts on the water cycle, soil erosion, coastal water quality, shoreline changes and status of coastal and marine habitats.
- › Decision support for integrated management of water sheds and coastal environments.

DELIVERY FORMAT

- › GeoTIFF, NetCDF for land use maps
- › Animated GIFs for time series of change
- › Tabulated data for statistics
- › pngs/jpeg/pdf for graphs

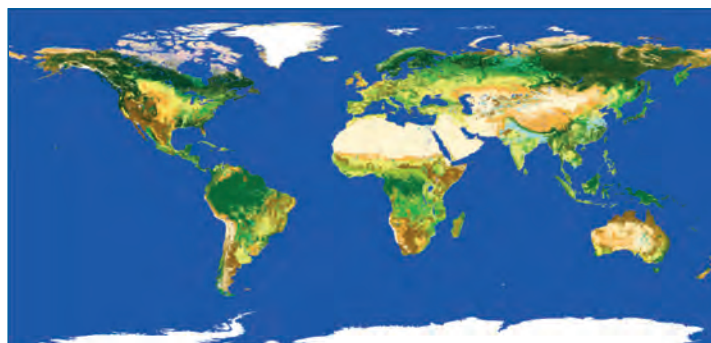
FREQUENCY

- › Yearly maps for 1995-2015 for 300m products
- › Yearly maps for selected years for higher resolution products

Land use and land use changes along coasts and in river watersheds have direct influence on water quality in coastal areas. Sediment transport in rivers responds to erosion processes which often increase when permanent vegetation such as forests are removed, and these changes will be visible in coastal water quality. The light field and nutrient availability are the main factors controlling the growth of algae – the base of the marine food web. Increases in the flow of nutrients and pollutants from land-runoff and waste water discharges also tend to accompany urbanisation and other changes in land uses.

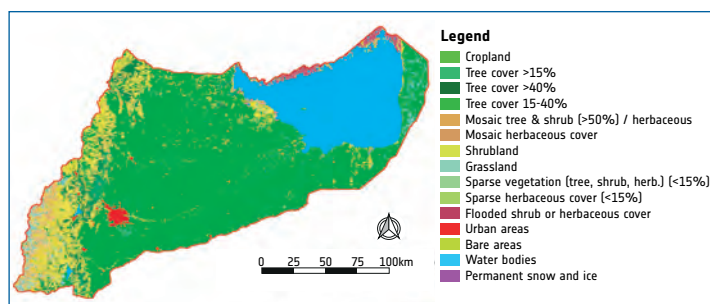
The service will combine data from global land cover services with data from higher resolution, thematically focused approaches in order to retrieve value added information and answer questions regarding the influence of land use changes on the water quality dynamics of coastal waters.

Exact product selection depends on the information requirements of the user and the scales that are of most interest. Where necessary, adaptations are available for retrieving finer scale information which is not currently available from existing data services.



VALUE	LABEL	COLOR	VALUE	LABEL	COLOR
0	No Data		120	Shrubland	
10	Cropland, rainfed		130	Grassland	
20	Cropland, irrigated or post-flooding		140	Lichens and mosses	
30	Mosaic cropland (>50%) / natural vegetation (tree, shrub, herbaceous cover) (<50%)		150	Sparse vegetation (tree, shrub, herbaceous cover) (<15%)	
40	Mosaic natural vegetation (tree, shrub, herbaceous cover) (>50%) / cropland (<50%)		160	Tree cover, flooded, fresh or brackish water	
50	Tree cover, broad-leaved, evergreen, closed to open (>15%)		170	Tree cover, flooded, saline water	
60	Tree cover, broad-leaved, deciduous, closed to open (>15%)		180	Shrub or herbaceous cover, flooded, fresh/saline/brackish water	
70	Tree cover, needle-leaved, evergreen, closed to open (>15%)		190	Urban areas	
80	Tree cover, needle-leaved, deciduous, closed to open (>15%)		200	Bare areas	
90	Tree cover, mixed leaf type (broadleaved and needleleaved)		210	Water bodies	
100	Mosaic tree and shrub (>50%) / herbaceous cover (<50%)		220	Permanent snow and ice	
110	Mosaic herbaceous cover (>50%) / tree and shrub (<50%)				

Global Land Use map provided by ESA Landcover CCI



Land use types for a water shed area



Sediment plume in the Zambezi delta as observed by the Sentinel-2A satellite