GOFC-GOLD EFFORTS IN SUPPORT OF GLOBAL LAND COVER MAPPING ACTIVITIES

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Background on GOFC-GOLD Land Cover Project office

The Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD) is a coordinated international effort to ensure a continuous program of space-based and in situ forest and land cover observations to better understand global change, to support international assessments and environmental treaties and to contribute to natural resources management.

For several years the Project Office has been involved in the design and development of different global land cover products and reference datasets. The office has been involved in (1) identifying user requirements from the climate modelling community, (2) the development of the land cover ECV products, and (3) assessing the quality of the land cover ECVs.

The GOFC-GOLD Land Cover Office is engaged in multiple international initiatives such as GEO GLC Task (Task Leader), GCOS/TOPC activities (GLC and LC ECV Expert), ESA LC-CCI (accuracy assessment and product comparison).

Global Land Cover Reference datasets

- CEOS Cal/Val-LPV addresses user-oriented validation of global land products.
- Global land cover (GLC) maps and their accuracy information are useful to different scientific communities. These communities have varying requirements for GLC datasets.
- To date, several GLC reference datasets have been produced and used for production and accuracy assessment of the specific maps.

Objectives

- Analyse the published literature to provide information on GLCR datasets and their user requirements.
- Assess the potential uses and limitations of different GLCR datasets for four targeted user groups.
- Provide access to available GLCR datasets and guide the user to the most appropriate dataset based on their specific needs.

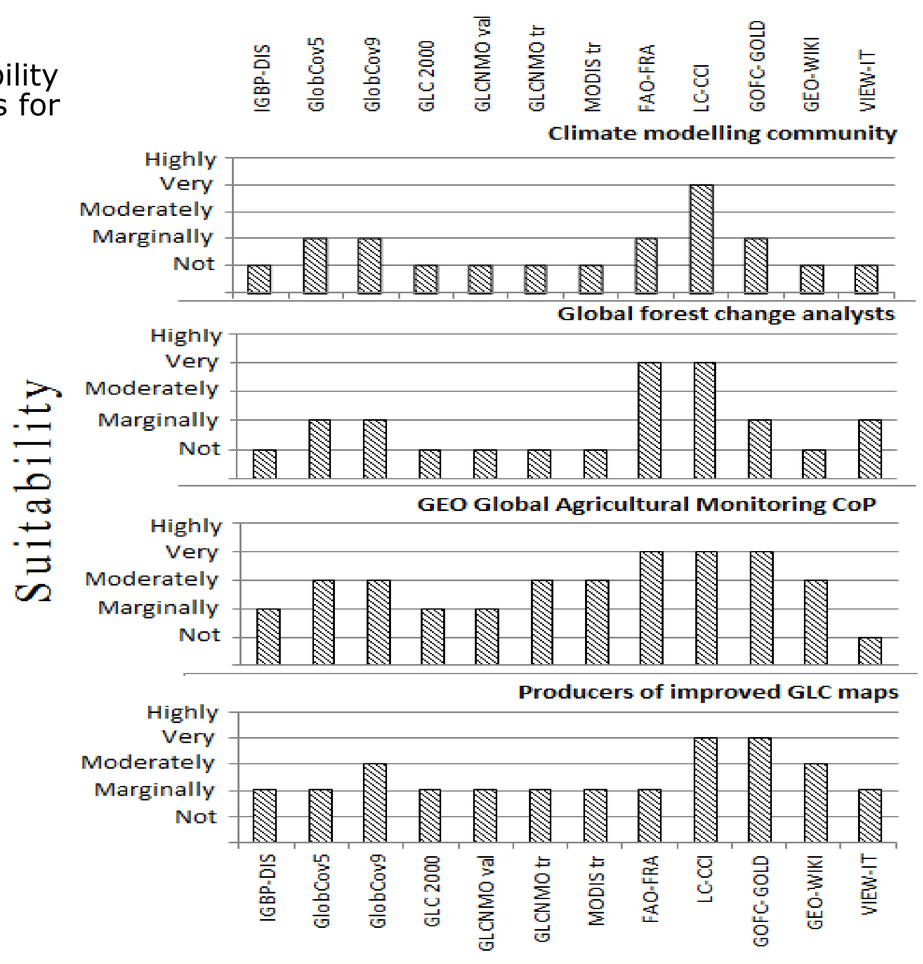

Figure 1. Suitability of GLCR datasets for different users

Conclusions

- Provide systematic information about GLCR datasets and their re-usability in different use cases useful for guiding appropriate usage of datasets for specific uses.
- Need to further coordinate international efforts to increase integrity of GLC maps and reference datasets and to make them publicly accessible.
- Need to increase general usability of GLCR datasets, use of probability sampling scheme, LCCS-based legend, sample selection and sample unit area independent of any GLC maps and provide quality assurance information are recommended.

Web portal

Figure 1. Main page of the GOFC-GOLD reference data portal

Available datasets

Name	Sampling design	Sample size	Sample unit, size	Source reference data	Legend
GLC 2000	2 stage stratified Cluster sampling	1265 253 PSU 5SSU in each PSU	3 by 3 pixels	Landsat 2000, aerial photographs, thematic maps, NDVI profile	LCCS 22 class
GlobCover 2005	Stratified random sampling	4258 3167 certain	5 by 5 pixel	SPOT VGT-NDVI profile, Google Earth	LCCS 22 class
STEP	Stratified	1780		Landsat, Google Earth	IGBP 17 classes + other classes LCCS in the future
VIIRS	Stratified random sampling	500	5 by 5 km blocks	VHSR (<2-m)	IGBP legend, and LCCS in the future

Upcoming datasets

Boston VHSR (Boston U.), GlobCover 2009 (UCL), GLCNMO (ISCGM), Land Cover CCI (ESA), NELDA dataset (Oregon S.U.), Global urban ground truth dataset (Tokyo U.), FROM-GLC dataset (Tsinghua U.)

Conclusions

- Web portal accessible from GOFC-GOLD LC PO website
- More (consolidated) datasets to be added in coming months
- Improved international coordination needed (via GEO GLC Task)

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