ESA DUE GlobBiomass
Estimates of Biomass on a Global Scale

Schmullius, C. C. [1]; Seifert, F. M. [15]; Thiel, C. [1]; Pathe, C. [1]; Matejka, E. [1]; Hüttich, C. [1]; Urban, M. [1]; Quegan, S. [2]; Carreiras, J. [2]; Wegmüller, U. [3]; Santoro, M. [3]; Balzter, H. [4]; Tansey, K. [4]; Rodriguez-Veiga, P. [4]; Le Toan, T. [5]; Mermoz, S. [5]; Bouvet, A. [5]; Dabrowska-Zielinska, K. [6]; Hoscilo, A. [6]; Ziółkowski, D. [6]; Siegert, F. [7]; Englhart, S. [7]; Fransson, J.E.S. [8]; Herold, M. [9]; Avitabile, V. [9]; Häme, T. [10]; Rauste, Y. [10]; Shvidenko, A. [11]; Fritz, S. [11]; Schepaschenko, D. [11]; Sterenczak, K. [12]; Eriksson, L.E.B. [13]; Ulander, L.M.H. [13]; Reichstein, M. [14]; Carvalhais, N. [14]

Objectives

(1) improving quantitative biomass maps at regional and global scale using satellite and in situ data, coupled with knowledge of ecological and social constraints; provide quantified estimates of biomass changes

(2) provision of associated uncertainty maps;

(3) validation of biomass maps by working with major holders of biomass measurements and user organizations, establish common practices and standards;

(4) contribution of new scientific results on biomass stock and change estimation;

(5) with users, assessing the impact of these new products;

(6) identification of the limitations of current data and methods for future missions such as the Sentinels, BIOMASS, SAOCOM and ALOS-2.

Study Area

Global to Regional

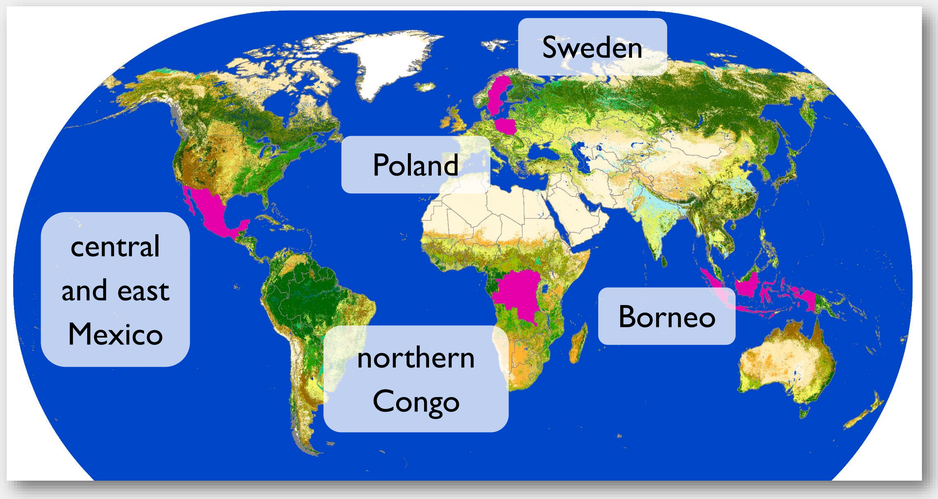

Fig. 1: Regional test regions (Background: GlobCover 2009).

Work Plan

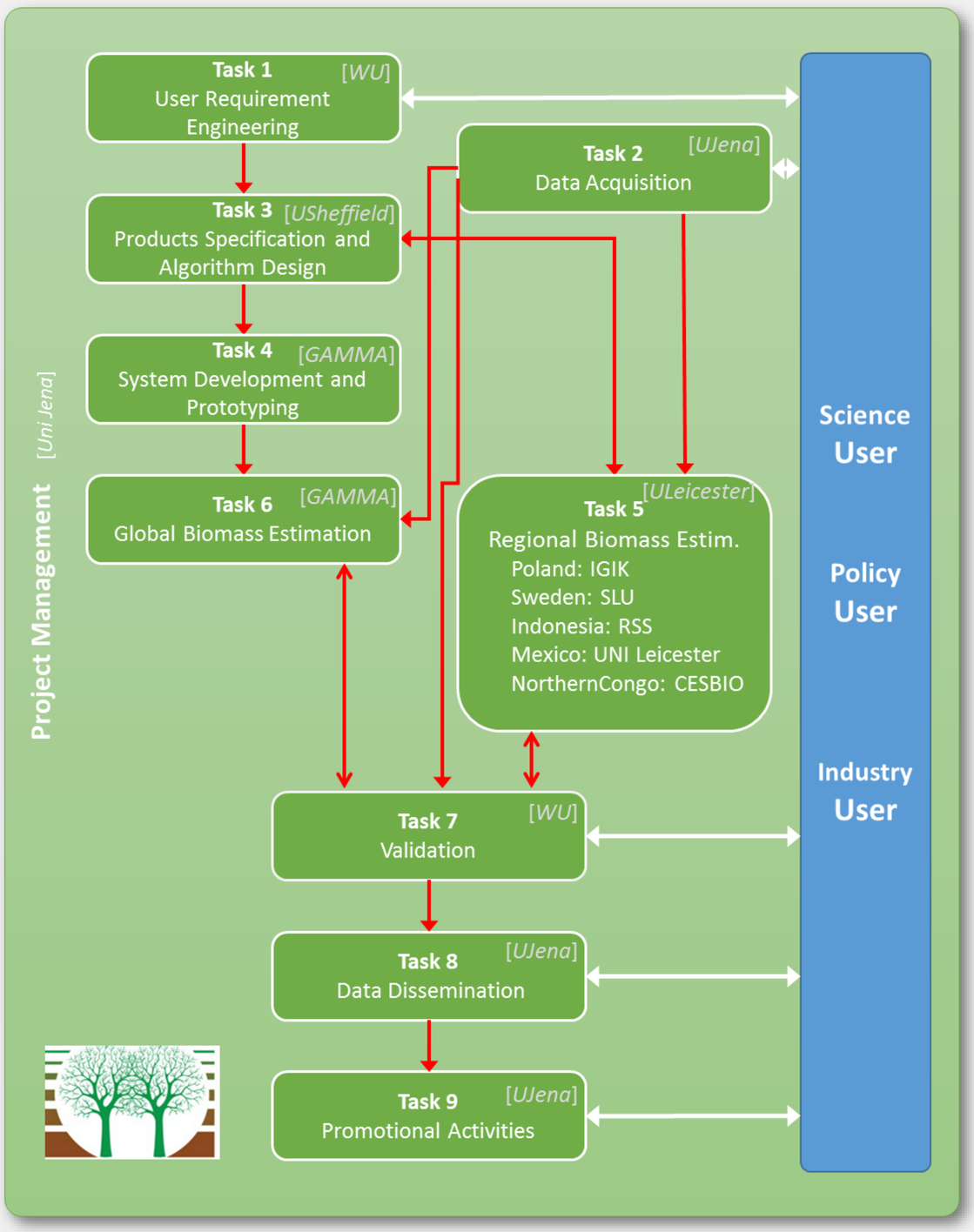

Fig. 2: Overview of work plan.

Regional Mapping Approach

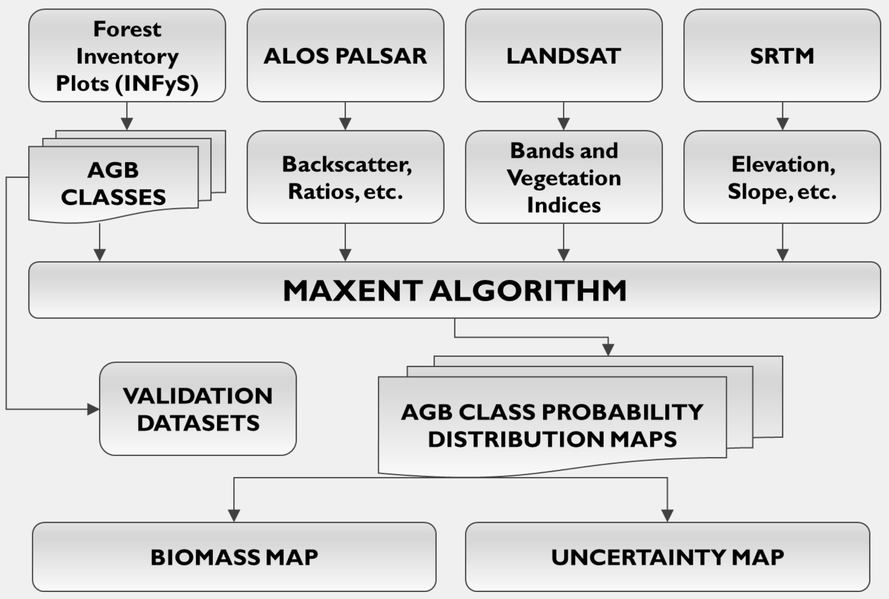

Fig. 3: Example of regional approach based on a MaxEnt data mining workflow to produce aboveground biomass and uncertainty maps.

Global Mapping Approach

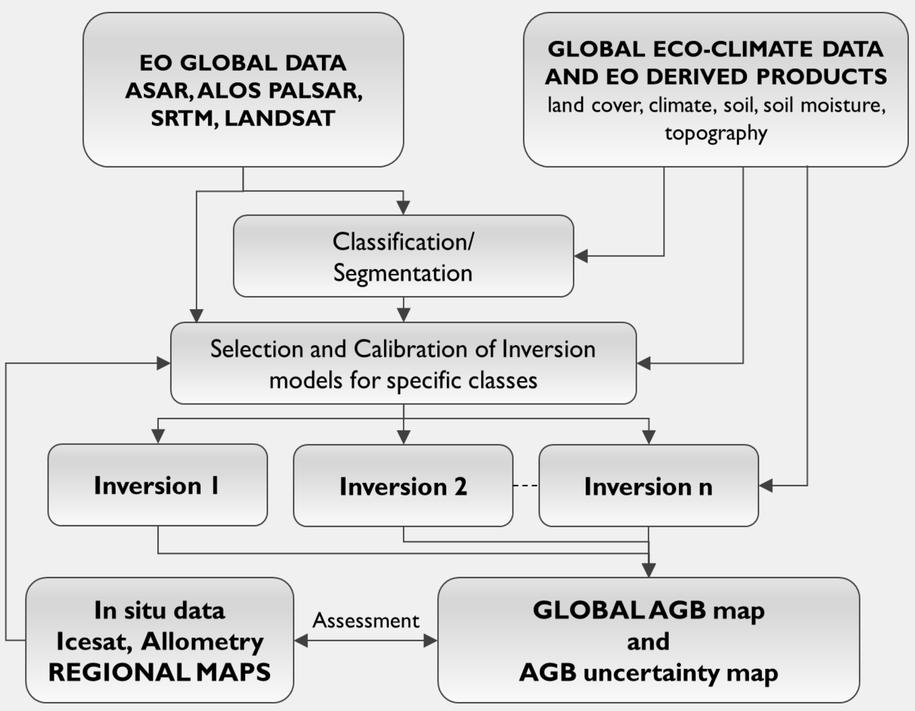

Fig. 4: General overview of the global mapping approach.

Outcome

Table 1: Expected Outcome, Impacts and Benefits for Users.

	Science	Policy	Industry
Regional	• reducing uncertainties: modelling, estimating, observation and monitoring	• improving national carbon reporting, land management, capacity building in REDD+	• improving harvest methods, forest resource planning, auditing remote areas
Global	• improving global carbon modelling and estimation of carbon sources and sinks	• trans-boundary monitoring of logging, estimates of fuel wood for management	• detecting large, industrial logging disturbances, deforestation and degradation

Team

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