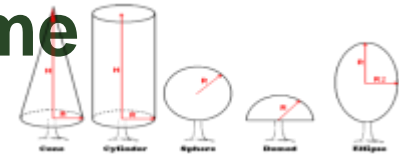
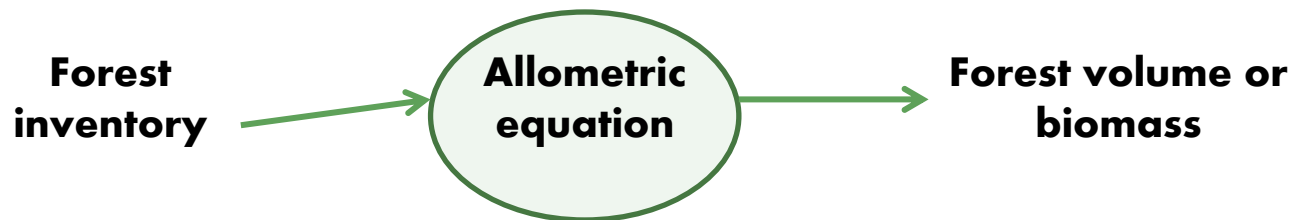


Ongoing work on the allometric equations - UN-REDD programme



Importance of Allometric equation (AE):

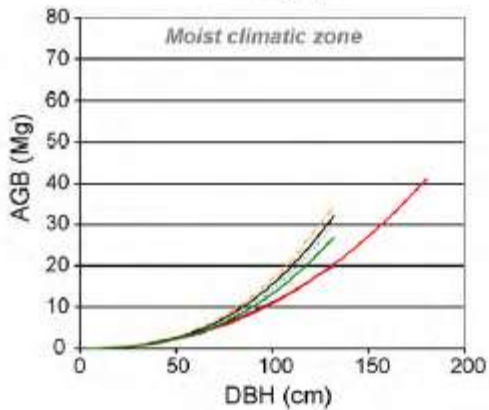
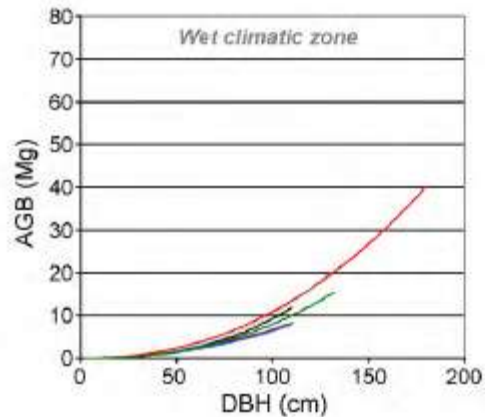
- Allometry = statistical relation between individual tree measurements;
- This relation is the results of : Genetics + Environment + History;
- Allometric equations relate tree volume or biomass to easy-to-measure tree characteristics (D, H, ...) with statistically determined parameters;
- Used to calculate Activity Data (AD) & Emission Factor (EF) in IPCC guidelines (IPCC, 2003): CO2 Emissions = AD • EF



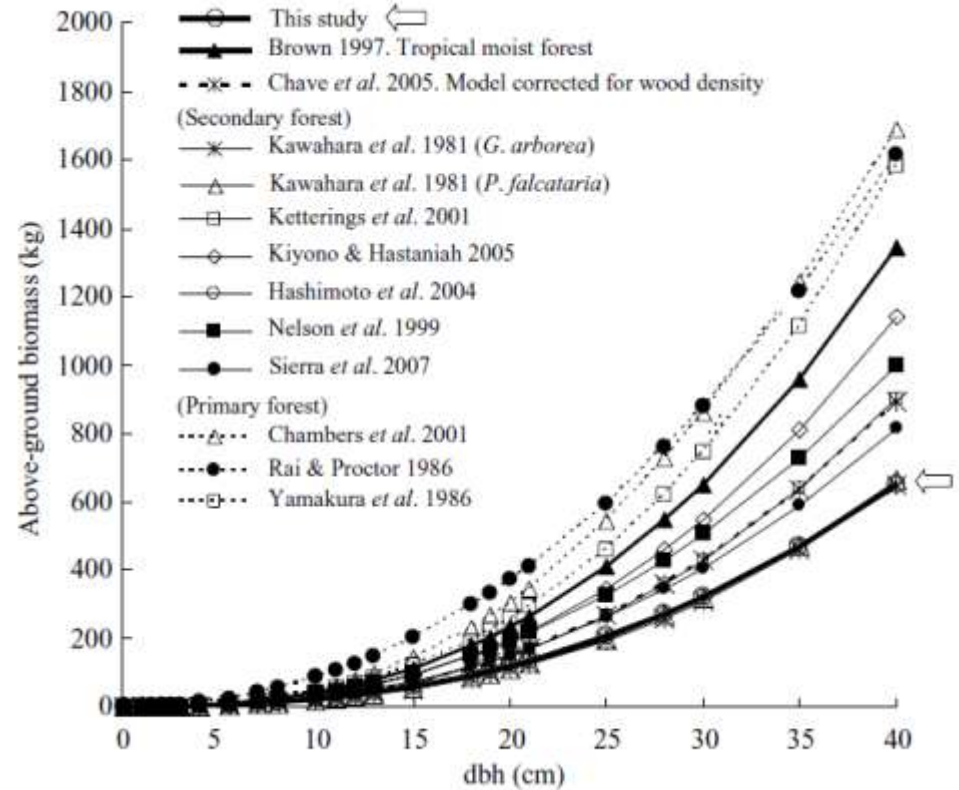
Uncertainties due to model selection:

20 to 40% uncertainty into a live-tree carbon estimate, possibly making this form of error the largest source of uncertainty in estimation of live-tree carbon stocks. The effect of model selection could be even greater if models are applied beyond the height and DBH ranges for which they were developed (Melson, S. L et al. 2011).

Impact of allometric equations on carbon stocks



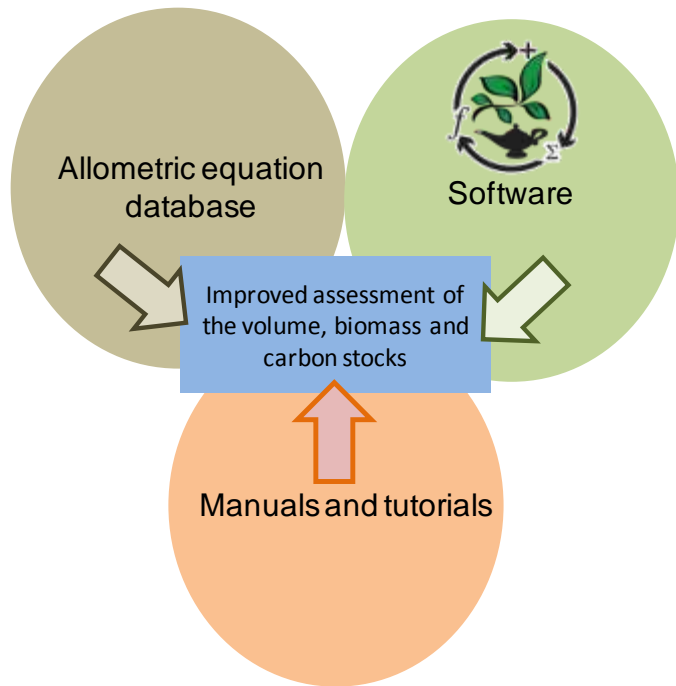
- This study
- Brown et al. 1989 (DBH)
- - - Brown et al. 1989 (DBH & H)
- IPCC 2006 (DBH)
- Brown, 1957
- Chave et al. 2005 (DBH & WD)
- - - Chave et al. 2005 (DBH & H & WD)



Kenzo et al. (2009)

Henry et al. (2010)

[GlobAllomeTree] -> Webplatform to improve assessment of volume biomass and carbon stocks



- 🌳 Statistical information relative to all the equations (correlation coefficient, sample size, confidence intervals etc.);
- 🌳 Geographical location of the allometric equations with their respective climatic data;
- 🌳 Transparent access to the original references
- 🌳 Free access to the geo-referenced allometric equations for your project;
- 🌳 Individual equation or group of equation in xls or CSV.



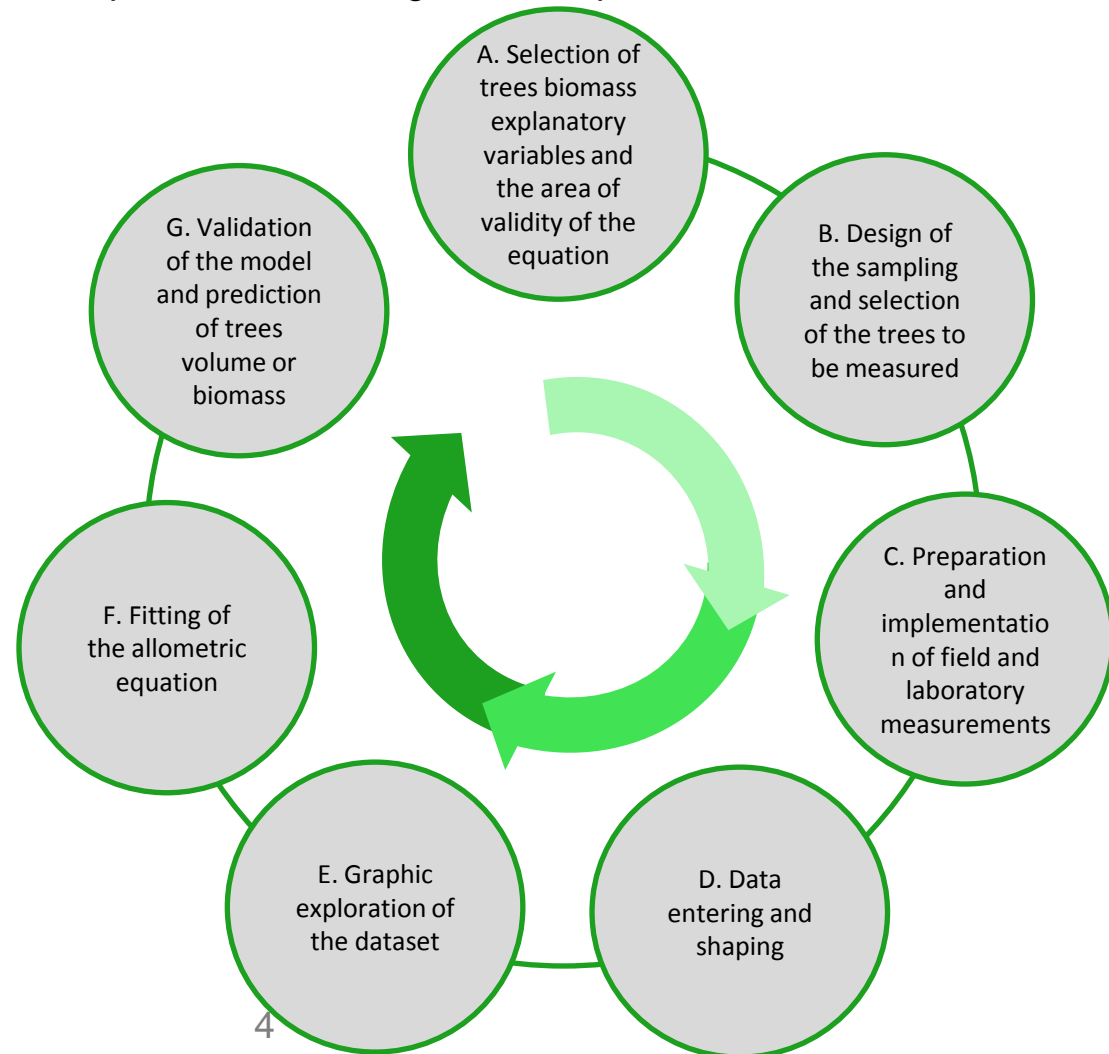
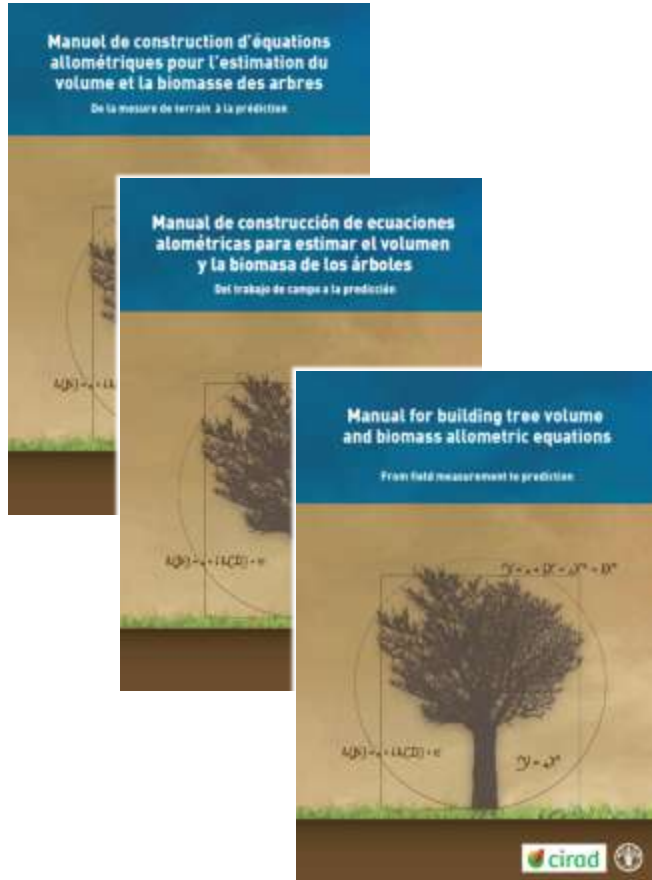
- 🌳 Data harmonization to facilitate their use, allow comparison of the results;
- 🌳 Identification of tree compartments for each equation (stem, root, branch, foliage, etc..).

| ID | Ecosystem | Country | Biomass | Species | Output |
|-----|------------|----------|---------------------|----------------------------|---------------|
| 411 | Forest | Dominica | Tropical dry forest | <i>Boltonia plagiata</i> | volume |
| 416 | Forest | Dominica | Tropical dry forest | <i>Dalmanella</i> | volume |
| 417 | Forest | Dominica | Tropical dry forest | <i>Colplogenium repens</i> | volume |
| 420 | Forest | Dominica | Tropical dry forest | <i>Pyramnia angustata</i> | volume |
| 491 | Forest | Dominica | Tropical shrubland | AB 01 | volume |
| 470 | Forest | Dominica | Tropical shrubland | <i>Acacia robusta</i> | fresh biomass |
| 471 | Forest | Dominica | Tropical shrubland | <i>Acacia kuroi</i> | fresh biomass |
| 472 | Forest | Dominica | Tropical shrubland | <i>Acacia mollis</i> | fresh biomass |
| 473 | Forest | Dominica | Tropical shrubland | <i>Acacia spiralis</i> | fresh biomass |
| 480 | Forest | Dominica | Tropical shrubland | <i>Dichromyia cuneata</i> | fresh biomass |
| 481 | Forest | Dominica | Tropical shrubland | <i>Dysoxylum</i> | fresh biomass |
| 486 | Forest | Dominica | Tropical dry forest | <i>Acacia kuroi</i> | biomass |
| 487 | Forest | Dominica | Tropical dry forest | <i>Colplogenium repens</i> | biomass |
| 721 | Forest | Dominica | Tropical shrubland | <i>Acacia robusta</i> | biomass |
| 722 | Forest | Dominica | Tropical shrubland | <i>Acacia robusta</i> | biomass |
| 723 | Forest | Dominica | Tropical shrubland | <i>Acacia kuroi</i> | biomass |
| 724 | Plantation | Dominica | Tropical shrubland | <i>Acacia kuroi</i> | biomass |
| 725 | Forest | Dominica | Tropical shrubland | <i>Acacia kuroi</i> | biomass |
| 726 | Forest | Dominica | Tropical shrubland | <i>Dalmanella</i> | biomass |
| 740 | Forest | Dominica | Tropical shrubland | <i>Acacia kuroi</i> | biomass |



[GlobAllomeTree] -> Manual for building tree volume and biomass allometric equations, from field work to prediction

- 🌳 Designed for students, researchers and engineers who wish to acquire the knowledge and methodology to establish accurate allometric equations;
- 🌳 Exhaustive approach from the field work to the prediction following seven steps.



Training and daily support of national experts to improve the development of new models at country scale



🌱 CD containing training materials + exercises + results



🌱 Report on AE development and guidelines for destructive measurement



Contacts & documentation

Contact: Matieu.henry@fao.org

Manual on building tree allometric equations:

<http://www.fao.org/forestry/fma/80797/en/>

Progress of UN-REDD programme in partner and pilot countries

<http://www.un-redd.org/>

Country progress: e.g. Vietnam

<http://www.vietnam-redd.org/>