



environment, forestry & fisheries

Department:
Environment, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

continuation of documented historical forest management practice (Grassi et al., 2018). Meanwhile the gross-net approach is retained for afforestation and deforestation.

The advantage of this approach, in a South African forest industry perspective, is that implementation of improved management practice or deployment of genetically improved nursery stock can potentially increase any removals and hence companies can account removal credits for these activities. The suggested framework allows for the continuation of sustainable management practice and utilisation of HWP without unfairly debiting accountable emissions due to age class legacy effects (see Box A. 1).

The development of forward-looking baselines requires the implementation of modelling frameworks that simulate changes in forest age class structure based on silvicultural rules defined for different species and existing stands over the defined reference period.

A.11.2. Current Forest Carbon Modelling Capacity

The development of a forward-looking baseline requires the ability to dynamically model forest C stocks based on silvicultural practice and shifts in the state of the forest (i.e. age class shifts as a result of management etc.). Based on a review of the forestry industry's capacity to develop and use complex tier 3 models for reporting or development baselines (this project and Knowles and Christie, 2018), it is suggested that the capacity is not sufficiently developed to implement such an approach.

A phased approach to the implementing of reporting should be implemented that allows entities to report using Tier 1 methodology unless the information is available for an entity to submit information using higher tier calculation.

A study by Ndalowa (2014) highlighted the potential use of internationally available models, such as CBM_CFSv3 (Kurz et al., 2009) or CASMOFOR (Somogyi, 2019), for reporting and modelling future GHG profiles from South African plantations. However, it was also suggested that considerable time and resources are required to implement this at a company or national scale (Knowles and Christie, 2018). Other national platforms such as the carbon calculator are being developed to calculate carbon stocks in above- and below ground biomass pools (du Toit et al 2016, 2019). We are also aware that some companies such as Sappi have produced carbon stock change forecasts based on Mean Annual Increment (MAI) growth curves and inventory information.

It is noted, however, that the basic information and allometric equations for the calculation of above ground biomass changes are available (du Toit et al., 2016) and these together with growth curves can be used to develop integrated modelling frameworks, which can simulate forest stock changes using different silvicultural assumptions but not for different climatic conditions.