

EFORWOOD
Tools for Sustainability Impact Assessment

Internet database on forest models

Céline Meredieu, Christophe Orazio, Marta Baptista-Coelho and Margarida Tomé



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Preface

This report is a deliverable from the EU FP6 Integrated Project EFORWOOD – Tools for Sustainability Impact Assessment of the Forestry-Wood Chain. The main objective of EFORWOOD was to develop a tool for Sustainability Impact Assessment (SIA) of Forestry-Wood Chains (FWC) at various scales of geographic area and time perspective. A FWC is determined by economic, ecological, technical, political and social factors, and consists of a number of interconnected processes, from forest regeneration to the end-of-life scenarios of wood-based products. EFORWOOD produced, as an output, a tool, which allows for analysis of sustainability impacts of existing and future FWCs.

The European Forest Institute (EFI) kindly offered the EFORWOOD project consortium to publish relevant deliverables from the project in EFI Technical Reports. The reports published here are project deliverables/results produced over time during the fifty-two months (2005–2010) project period. The reports have not always been subject to a thorough review process and many of them are in the process of, or will be reworked into journal articles, etc. for publication elsewhere. Some of them are just published as a “front-page”, the reason being that they might contain restricted information. In case you are interested in one of these reports you may contact the corresponding organisation highlighted on the cover page.

Uppsala in November 2010

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EFORWOOD

Sustainability Impact Assessment
of the Forestry - Wood Chain



Project no. 518128

EFORWOOD

Tools for Sustainability Impact Assessment

Instrument: IP

Thematic Priority: 6.3 Global Change and Ecosystems

Deliverable D 2.5.5

Internet database on forest models

Due date of deliverable: month 30

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Start date of project: 011105

Duration: 4 years

Organisation name of lead contractor for this deliverable: ISA

Final version

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
PU	Public	✓
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	



EFORWOOD

Sustainability Impact Assessment
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WP 2.5

Deliverable D 2.5.5

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Date: September 29, 2008

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Abstract

The objective of this free access database – FORMODEL - is to describe and provide information about forest modelling tools in a straightforward, simple and hierarchically structured way. Model description catalogues the ability of models to estimate sustainability indicators as well as the improvements needed in order to improve model performance in this respect.

Most forest growth models, even if not published as such, have several publications related either with the development of some of the modules or with their integration into simulators and/or decision support systems. The description of the models is not a repetition of the related publications but rather a standardized characterization of several topics, such as model range of applicability, model type, description of model structure, etc, that are easily stored in this relational database. The database also identifies most of the relevant publications as well as the description of their content. Fig 1 shows the list of the 43 EFORWOOD models used in simulators and documented into the database.

The FORMODEL database is hosted by the European Institute of Cultivated Forests (IEFC) website (www.IEFC.net). Using add buttons (Fig. 1, see end of page) , each modeller can easily add his own model and fill the description with existing fields (Fig. 2, screen shot of the description form model). In the FORMODEL database it is not anticipated that users can freely add items to the lists provided in the form; users have to propose to the database manager the addition of items to the list and the final decision will come from the database management team.

The description form registered for each documented model can be obtained by a clic on the Id model (first column right, Fig.1). Fig.3 screen shot shows the detailed description then edited.



The FORMODEL database is available online at the following website:
http://www.iefc.net/bdd/models/modeles_liste.php?filtre_valeur=EFORWOOD&%20filtre_camp=Context

Register of models for forest

Number of matching rows : 43

id	name	category	type	subtype	organisation	author	country	year	species
See model 1	PP1	Growth	Empirical growth & Y...	Stand model	INRA	Lemoine B.	France	1991	Pinus pinaster
See model 15	PP3	Growth	Empirical growth & Y...	Distance independent...	INRA	C. Meredieu, Ph. Dre...	France	2002	Pinus pinaster
See model 34	Unevenaged stands	Growth	Empirical growth & Y...	Stand model	AFOCEL	AFOCEL	France	2012	Abies alba, Fagus sy...
See model 24	MOSES	Growth	Empirical growth & Y...	Distance dependent t...	BOKU	Hubert Hasenauer	Austria	1998	Abies alba, Fagus sy...
See model 26	BioS-BCG	Growth	Process based models	Distance dependent t...	BOKU	Hubert Hasenauer	Austria	1998	Fagus sylvatica, Lar...
See model 27	PrognAus	Growth	Empirical growth & Y...	Distance independent...	BOKU	Hubert Hasenauer	Austria	2012	Abies alba, Fagus sy...
See model 30	AFODOUG	Growth	Empirical growth & Y...	Distance independent...	AFOCEL	AFOCEL	France	1999	Pseudotsuga menzies...
See model 31	AFOEPI	Growth	Empirical growth & Y...	Distance independent...	AFOCEL	AFOCEL	France	1999	Picea abies
See model 32	AFOFIN	Growth	Empirical growth & Y...	Distance independent...	AFOCEL	AFOCEL	France	1999	Pinus pinaster
See model 33	Evenaged stands	Growth	Empirical growth & Y...	Stand model	AFOCEL	AFOCEL	France	2012	Abies alba, Fagus sy...
See model 37	3PG-EG-PT	Growth	Process based models	Distance dependent t...	ISA	ISA	Portugal	2012	Eucalyptus globulus
See model 38	GLOBULUS 2.1	Growth	Empirical growth & Y...	Stand model	ISA	ISA	Portugal	2001	Eucalyptus globulus
See model 39	GLOBTREE	Growth	Empirical growth & Y...	Distance dependent t...	ISA	ISA	Portugal	2003	Eucalyptus globulus
See model 40	PBLEIRIA e PBRAVO	Growth	Empirical growth & Y...	Stand model with dia...	ISA	ISA	Portugal	1987	Pinus pinaster
See model 42	PBIRROL	Growth	Empirical growth & Y...	Distance dependent t...	ISA	ISA	Portugal	2003	Pinus pinaster
See model 43	MODISPINASTER	Growth	Empirical growth & Y...	Stand model with dia...	UTAD	ISA	Portugal	2004	Pinus pinaster
See model 44	PINASTER-tree	Growth	Empirical growth & Y...	Distance independent...	ISA	ISA	Portugal	2002	Pinus pinaster
See model 45	Dryads	Growth	Empirical growth & Y...	Distance dependent t...	ISA	ISA	Portugal	2002	Castanea sativa, Pin...
See model 46	CASTANEA	Growth	Empirical growth & Y...	Stand model	ISA	ISA	Portugal	2004	Castanea sativa
See model 48	SILVES	Growth	Empirical growth & Y...	Stand model with dia...	INIA	Río Gaztelumutia, M...	Spain	1998	Pinus sylvestris
See model 49	ERVITI	Growth	Empirical growth & Y...	Stand model	University Politechn...	Erviti, J. J.	Spain	1991	Pinus halepensis
See model 50	GESMO	Growth	Empirical growth & Y...	Stand model with dia...	Universidad de Santi...	Castedo, F. & Diég...	Spain	2004	Pinus radiata, Pinus...
See model 51	GOTILWA+	Growth	Process based models	Stand model	CREAF	Gracia, C. et al.	Spain	2002	Abies alba, Eucalypt...
See model 52	MARIOLA	Growth	Empirical growth & Y...	Distance independent...	INIA	Sanchez-González, M...	Spain	2005	Quercus suber
See model 53	CAÑADAS	Growth	Empirical growth & Y...	Distance independent...	INIA	Cañadas, N.	Spain	2000	Pinus pinea
See model 54	ESPINEL	Growth	Empirical growth & Y...	Stand model with dia...	IKT	Espinel, S. et al.	Spain	1997	Pinus radiata
See model 55	ALVAREZ	Growth	Empirical growth & Y...	Stand model	Universidad de Santi...	Alvarez Gonzalez, J...	Spain	1999	Pinus pinaster
See model 56	PALAHÍ	Growth	Empirical growth & Y...	Stand model	FORECOTECH	Palahi, M. et al.	Spain	2002	Pinus sylvestris; Pi...
See model 57	SILVA	Growth	Empirical growth & Y...	Distance dependent t...	Technische Universit...	Pretzsch, H. et al.	Germany	1992	Abies alba, Alnus gl...
See model 58	BALANCE	Growth	Process based models	Distance independent...	Technische Universit...	Grote, R. et al.	Germany	1999	Fagus sylvatica, Pic...
See model 59	WALDPLANER	Growth	Empirical growth & Y...	Distance independent...	Forest Research Stat...	Nagel, J.	Germany	2006	
See model 60	BWIN	Growth	Empirical growth & Y...	Distance independent...	Forest Research Stat...	Nagel, J.	Germany	2005	Abies alba, Fagus sy...
See model 61	PEP 2.0	Growth	Empirical growth & Y...	Stand model with dia...	Forstliche Versuchs...	Yus, C. et al.	Germany	2006	Abies alba, Fagus sy...
See model 62	W+	Growth	Empirical growth & Y...	Distance independent...	Forstliche Versuchs...	Weise, U. et al.	Germany	2000	Fagus sylvatica, Pic...
See model 63	SIZE CLASS MODEL	Growth	Empirical growth & Y...	Stand model with dia...	Forstliche Versuchs...	Kandler, G.	Germany	2012	Abies alba, Fagus sy...
See model 64	WEHAM	Growth	Empirical growth & Y...	Distance independent...	Forstliche Versuchs...	Bosch, B.	Germany	2002	Abies alba, Fagus sy...
See model 65	Soderberg	Growth	Empirical growth & Y...	Distance independent...	SLU, Department of F...	Soderberg, U.	Sweden	1986	Betula verucosa, Fag...
See model 66	EKO	Growth	Empirical growth & Y...	Stand model	SLU, Southern Swedis...	Eko, P-M.	Sweden	1985	Betula verucosa, Fag...
See model 67	AGESTAM	Growth	Empirical growth & Y...	Stand model	SLU, Southern Swedis...	Agestam, E.	Sweden	2012	Betula verucosa, Pic...
See model 68	ProdMod	Growth	Empirical growth & Y...	Stand model	SLU, Southern Swedis...	Eko, P-M.	Sweden	1995	Betula sp.; Fagus sy...
See model 69	Hugin	Growth	Empirical growth & Y...	Distance independent...	SLU, Department of F...	Lundstrom, A. et al.	Sweden	2012	Fagus sylvatica, Pi...
See model 70	Forest management pl...	Growth	Empirical growth & Y...	Distance independent...	SLU, Department of F...	Jonsson, B. et al.	Sweden	1993	Betula; Picea abies;...
See model 71	EFISCEN	large scale scenario...	empirical		Alterra & EFI	Nabuurs	Europe	2010	20 main species of E...

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Fig. 1: Screen shot of models list obtained by selecting EFORWOOD context in the FORMODEL database.



Add a new model

Use Ctrl and shift keys for multiselect clicking on the lists
Use add button to add a new item in a list

Model Identification

Model Name:

Year:

Author:

e-mail:

Organisation (Multi select):

Country:

Modelling approach

Model category:

Model type:

Model sub-type:

Primary unit of simulation:

Time step:

Time scale:

Stochasticity:

Range of applicability

Region (HTML welcome):

Fig. 2: Screen shot showing partly the model description form to be filled by the modeller.

Model Characteristics

Id	62
Last update	2008-05-07
Name	W+
Year	2000
Author	Weise, U. et al.
Email	Send a message
Organisation	Forstliche Versuchs- und Forschungsanstalt Baden-Württemberg (FVA)
Country	Germany
Category	Growth
Model type	Empirical growth & Yield models
Sub-type	Distance independent tree model
Level	Tree
Time step	Year
Time scale	Long term
Stochasticity	Deterministic
Stand composition	Monospecific
Forest structure	Even
Species	Fagus sylvatica, Picea abies, Pseudotsuga menziesii
Sylvicultural system	Clear cutting
State variables - Growth	Basal area, Total volume
State variables - Prediction	Basal area
Tree variables - growth	Diameter at Breast Height
Tree variables - prediction	Tree Height, Volume over bark without stump
Submodule : Sylvicultural practices	Initial density (seedling, plantation); Selection of crop (or future) trees; Thinning
Submodel : Climate parameters	Site index
Input state variables	Stand : Dominant height, Stand : Number of trees per hectare, Stand: Age, Stand: dominant diameter, Stand: species
Climate inputs	Site index
Output state variable	Stand : basal area, Stand : dominant diameter; Stand : dominant height; Stand : Number of trees per hectare, Stand: total volume, Tree : Crown length/crown ratio; Tree : Diameter at Breast Height, Tree : Height
Context	EFORWOOD

[Back to the list](#) - [Update the model](#)

Fig. 3: Screen shot of one of a model description form.