



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 PD1.0.3
Elements to the progress report of Year 3

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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)	X

Public Deliverable PD1.0.3 Elements to the progress report of Year 3

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Module 1 Activity Reporting for Year 3

Abstract:

This deliverable is also the Activity report of Module 1 for Year 3 (2008-2009) of the EFORWOOD project. It includes the following filled in templates as required by the European Commission:

- Template 1, Section 1,2,3
- Template 1a and 1b for WP1.0
- Template 1a and 1b for WP1.1
- Template 1a and 1b for WP1.2
- Template 1a and 1b for WP1.3
- Template 1a and 1b for WP1.4
- Template 1a and 1b for WP1.5

This report presents the latest status of the development in order to create a decision support tool for sustainability impact assessments, called ToSIA, based on case study applications for a regional defined case in Baden-Württemberg/Germany, a production-driven case in Västerbotten/Sweden and a consumption-driven case on the Iberian Peninsula, as well as the preparations for a EU25+2 case.

Key words: activity reporting, decision support tool, sustainability impact assessment, Case Studies, ToSIA

- Template 1, Section 1,2,3

MODULE 1

Partners: EFI, KU, BOKU, IFER, UMB, CTFC, Alterra, vTI (formerly BFH), VTT, FCBA, SFI, CATIE, CIFOR, CIRAD.

The general aim of Module 1 is to provide a framework for the sustainability impact assessment within EFORWOOD, and to co-ordinate the selection of social, economic and environmental sustainability indicators (SIN), which will be applied consistently throughout the project. The aim is to develop a set of Tools for the Sustainability Impact Assessment (ToSIA) of the FWC, and apply it to assess sustainability impacts (SI) of changes in current European FWCs, integrating results of Modules 2-5. External factors and EU policies influencing the FWC as well as changes within the FWC affecting the sustainability are considered in deriving scenarios of alternative FWCs to be applied throughout the project. Cost-Benefit, cost efficiency and Multi-criteria analysis are used to evaluate the overall SI of scenarios of changing political or economical drivers affecting FWCs. A partial equilibrium model of the global forest sector is used to analyse impacts of global developments on the European FWC and to assess how changes in the European FWCs will impact on sustainability level in forestry and forest industries in regions outside of Europe.

Key objectives for the current reporting period were:

- Revision of a set of policy-relevant, coherent and internationally compatible FWC sustainability indicators to assess the sustainability of the FWC, applicable also as an international reference set for the forest sector FWC sustainability.
- Development of options for a policy analysis interface component that allows taking impacts of policy drivers and policy instruments into account in the ToSIA base and scenario runs, and evaluation of policy implications of SIA results.
- Compilation of data collected by Modules 2-5 for case studies, and for EU-FWC, to continuously update the tool for data export from database to exchange format readable by ToSIA, and to assess data quality
- To further develop and validate the EFI-GTM model for assessing impacts in the European FWC of European policy changes, and to link its results to the ToSIA system; to provide consistent data input for the model from other module; to provide a roundwood supply econometric study, and a report on expected impacts of European policy changes on global markets and trade relation
- To continue the development and testing of ToSIA model variants for the SIA of the FWC, and to establish a commonly agreed set of scenarios for studying alternative FWCs; to analyse scenarios of modified FWCs using Single FWCs, and to assess the sustainability of current FWCs and to analyse scenarios of modified FWCs in case studies
- To test and demonstrate MCA and CBA methods and to further develop the MCA-TOSIA interface and the handling of CBA-calculations in ToSIA in order to contribute to the development of TOSIA-E.

Main work achievements during the third year include:

- completion of the revision of the FWC sustainability indicator set, ready to be used and for further testing in EFORWOOD case studies; overall coordination of the EFORWOOD Indicator Task Force, incl. data collection protocol elaboration.
- development of draft options for a policy analysis interface of TOSIA, along the lines described above. PD1.1.7 delivered for internal review
- Database structure and software solutions have been adjusted for case studies to meet ToSIA requirements and to include the revised set of indicators, and further adjustments were made for the EU-FWC analysis
- Workshops on chain designing for EU-FWC and Case Studies have been organized
- Data for EFI GTM model has been collected and implemented in the model EFI-GTM, and validation of the model is ongoing. The policy changes to be analysed have been defined, and data input from M2 on Natura 2000 is expected for further analyses with the EFI-GTM. The roundwood supply study has been completed and is expected to be published in 2008.
- ToSIA tool has been further developed. The implementation of the final ToSIA version using Open Modelling Interface framework has started, and a first version of a graphical user interface has been designed and implemented.
- Reference future and scenario storylines have been developed and the implementation of scenarios for the case study applications has been coordinated through the Scenario Task Force.
- MCA and CBA methods have been tested and demonstrated, and the conceptual developments needed for the integration of the CBA tool into TOSIA have been investigated. The user interface of the CBA tool in TOSIA has been developed.
- First results of the project have been presented at international conferences, and three scientific manuscripts were submitted within the period.

Summary of Module work

During year 3 of the project, M1 has fulfilled most of its specific objectives for the current period and has also co-ordinated several project task forces (EU-FWC- Indicators, Scenarios). Work activities have mainly included:

- (i) **Model development**, including ToSIA, EFI-GTM model, MCA and CBA methods, including coordination within Module 1 and other Modules and task forces
- (ii) **Data collection** and development of the EFORWOOD database.
- (iii) **workshops and training** (on data collection and wood-chain design, on ToSIA tool, etc)
- (iv) **reporting** i.a. on ToSIA development, development of indicator sets, data collection and tools for that, and impact assessment methods, impacts of European policy changes on global markets and trade relations.

Focus of the research activities in the third year has been on methodological and tool development: prototypes of ToSIA, its graphical interface, integration of impact assessment methods, development of indicator protocols, data collection, and evaluation methods of the

overall sustainability impacts of scenarios of changing political or economical drivers affecting FWCs. Considerable efforts have been made to coordinate Module 1 within the overall framework of EFORWOOD.

- Template 1a and 1b for WP1.0
- Template 1a and 1b for WP1.1
- Template 1a and 1b for WP1.2
- Template 1a and 1b for WP1.3
- Template 1a and 1b for WP1.4
- Template 1a and 1b for WP1.5

Periodic Activity Report, WP Leader
Annual report 12 months

WP leader	Risto Päivinen	WP number	1.0
Date			
<p>Work package objectives, starting point of work at beginning of reporting period.</p> <ul style="list-style-type: none"> • to ensure that the objectives of M1 within the project months 25-42 are fulfilled and deliverables provided according to time schedule; • to guarantee module coherence and effective information and data flow between WPs and with other Modules; • to co-ordinate the linkages with IP management in M0 and with other modules 			
<p>Progress towards objectives, tasks worked on, achievements made with reference to planned objectives, contractors involved.</p> <p>The achievement of the objectives of WP1.0 within the project months 25-36 have been met by regular meetings of the partners of WP1.0:</p> <ul style="list-style-type: none"> - two physical meetings: in Vienna in Month 31 and in Bordeaux in Month 36, to review the project progress, data collection, reporting and budget, and to assess the fulfilment of objectives. - regular telemeetings between the partners of WP1.0 - email correspondence 			
<p>Deviations from workprogramme (if any), corrective actions taken, nature and reason for problem, contractors involved.</p> <p>-</p>			

WP leader	Ewald Rametsteiner	WP number	1.1
Date			
<p>Work package objectives, starting point of work at beginning of reporting period.</p> <ul style="list-style-type: none"> (i) to revise a set of policy-relevant, coherent and internationally compatible FWC sustainability indicators that is able to assess the sustainability of the FWC, based on the results of their trial application in EFORWOOD. The same set should be able to be used as a international reference set for the forest sector FWC sustainability. (ii) to develop options for a policy analysis interface component that allows taking impacts of policy drivers and policy instruments into account in the ToSIA base and scenario runs and to evaluate policy implications of SIA results. 			
<p>Progress towards objectives, tasks worked on, achievements made with reference to planned objectives, contractors involved.</p> <p>Tasks worked on: both (i) and (ii)</p> <p>Achievements made: (i) – completion of the revision of the FWC sustainability indicator set, ready to be used and for further testing in EFORWOOD case studies; overall coordination of the EFORWOOD Indicator Task Force, incl. data collection protocol elaboration.</p> <p>(ii) development of draft options for a policy analysis interface of TOSIA, along the lines described above. PD1.1.7 delivered for internal review.</p>			
<p>Deviations from workprogramme (if any), corrective actions taken, nature and reason for problem, contractors involved.</p> <p>No deviation from work programme in terms of contents. Slight delay in policy analysis interface, as this is dependent on overall TOSIA development.</p>			

WP leader	IFER, Martin Černý	WP number	WP 1.2
Date	31 October 2008		
<p>Work package objectives, starting point of work at beginning of reporting period.</p> <ul style="list-style-type: none"> (i) compile the data collected by Modules 2-5 for case studies (ii) compile the data collected by Modules 2-5 for EU-FWC (iii) continuously update tool for data export from database to exchange format readable by ToSIA (iv) continuously update data in the database (v) provide assessment of data quality 			
<p>Progress towards objectives, tasks worked on, achievements made with reference to planned objectives, contractors involved.</p> <ul style="list-style-type: none"> (i) Database structure for case studies was adjusted to meet ToSIA requirements and to include actual set of indicators. New module specific attributes were added. The current database is stored and maintained at IFER. <ul style="list-style-type: none"> o Workshop on chain designing for Case Studies was organized at IFER; topology for Case Studies was created during this workshop (ii) Database structure for EU-FWC is adjusted; it is still necessary to incorporate changes to enable providing parameters of the topology for different time stamps. The current database is stored and maintained at IFER. <ul style="list-style-type: none"> o Workshop on chain designing for EU-FWC was organized at IFER; topology for EU-FWC was created during this workshop (iii) Software solution for the interface between EFORWOOD database and ToSIA is continuously updated (iv) Continuous technical support for entering data into the database is provided <ul style="list-style-type: none"> o Software tool allowing EFORWOOD partners to enter data into the common EFORWOOD database and to design chains called EFORWOOD database client is continuously updated. New functionality was added (copy/paste chain structure, search in products and processes, download collected data, download basic statistics). o Application server (an application that provides connection between the clients and the database) has been updated. (v) Functions to provide assessment of data quality are incorporated into the EFORWOOD database client 			
<p>Deviations from workprogramme (if any), corrective actions taken, nature and reason for problem, contractors involved.</p> <p>Data collection for case studies is not fully finished yet. The data collection was affected by changes in the data collection protocols:</p> <ul style="list-style-type: none"> o Set of indicators had been changing until month 32; readiness class 3 indicators have been added. o The information flow over the M2/M3 boundary: New M2/M3 specific attributes have been introduced to ensure the fluent flow in ToSIA o The share that describes product split has been changed to „product split ratio from many to one“ and „product split ratio from one to many“ 			

WP leader	Birger Solberg	WP number	1.3
Date	October 17, 2008		
Work package objectives , starting point of work at beginning of reporting period.			
<ol style="list-style-type: none"> 1. Further develop the EFI-GTM model (which includes production, costs, demand and international trade of roundwood, chips and forest industry products and which covers the main FWCs in Europe at country level) 2. Provide and secure consistent data input for the model from other modules and WPs 3. Provide the roundwood supply econometric study (deliverable D1.3.3) 4. Finish the report on expected impacts of European policy changes on global markets and trade relations (deliverable PD1.3.5) 5. Validate the model EFI-GTM and link its results to the ToSIA system 6. Use the EFI-GTM for assessing impacts in the European FWC of European policy changes 			
Progress towards objectives , tasks worked on, achievements made with reference to planned objectives, contractors involved.			
<p>The main data has been collected (in cooperation with other WPs, in particular JPC in WP 4.3) and implemented in the model EFI-GTM. The first validations of the model have been done. The work in the reporting period has been concentrated on points 1, 2, 3, 4 and 5 above. Point 6 has been done for base scenarios A1 and B2. The policy changes to be investigated has been defined, and we are waiting for the data input from M2 on Natura 2000 to do more analysis with the EFI-GTM.</p> <p>The roundwood supply study has been finished and has been evaluated positively at the first evaluation level. It is expected that the next two levels will also be positive and the final report published by end of November.</p> <p>The link between the EFI-GTM runs and the ToSiA system has been extensively discussed in relation to the case-studies and the European FWC study.</p>			
Deviations from workprogramme (if any) , corrective actions taken, nature and reason for problem, contractors involved.			
<p>The following deviation has occurred:</p> <ul style="list-style-type: none"> - Report on expected impacts of European policy changes on global markets and trade relations (deliverable PD1.3.5) has been delayed because of lacking input from some of the INCO partners. This input has now arrived, and the final delivery will be ready by end of November. It is expected not to delay the overall work in WP1.3. 			

WP leader	Marcus Lindner	WP number	1.4
Date			
<p>Work package objectives, starting point of work at beginning of reporting period.</p> <p>WP1.4:</p> <p>Objectives of this work package for the month 25 – 42 are:</p> <ul style="list-style-type: none"> • to continue the development and test ToSIA model variants for the SIA of the FWC • to establish a commonly agreed set of EFORWOOD scenarios for studying alternative FWCs • to analyse scenarios of modified FWCs using Single FWCs <p>to assess the sustainability of current FWCs and to analyse scenarios of modified FWCs in case studies</p>			
<p>Progress towards objectives, tasks worked on, achievements made with reference to planned objectives, contractors involved.</p> <p>ToSIA tool and the framework development continued in WP1.4 during the period. EFI as a WP leader has carried the main responsibility of the work and co-ordinated it by an active dialogue between the people responsible for data collection and the ToSIA development team in WP1.4.</p> <p>The ToSIA decision support tool framework development was continued. The Prototype 3 was finalised and the implementation of the final ToSIA version (final within EFORWOOD) using OpenMI (Open Modelling Interface) framework was started. The calculation engine has been re-coded (work still on-going) and the first draft of the graphical user interface has been designed and implemented (work to be continued in 2009).</p> <p>WP1.4 partners (EFI, FLD and vTI (former FBH)) actively contributed on the development and revision of the of the data collection protocols (DCP) for the case studies and EU-FWC. Also a training for the data collectors was organised in Lisbon in November 2007.</p> <p>WP1.4, ALTERRA as a main partner, defined, quantified drivers and documented them for the reference futures A1 and B2 to applications of the EFORWOOD project. The scenario development was initiated by supporting the identification of the market, technology and policy driven scenarios developed mainly in other modules.</p> <p>Development of the whole EU-level application was supported by classification of types of wood assortments and wood products, defined the data structure for acquisition of flow of wood commodities and acquisition of mass flows of wood commodities for the EU 25 plus Norway and Switzerland for the reference year 2005. Partner responsible: vTI.</p> <p>Also, EFI presented the results and the project in an international conference and three scientific manuscripts were submitted within the period.</p>			
<p>Deviations from workprogramme (if any), corrective actions taken, nature and reason for problem, contractors involved.</p> <p>Results analysis of case studies has been delayed a bit due to slow progress in data</p>			

submission from project partners in M2-M5. During the EFORWOOD week in Vienna scenarios have been selected for the different ToSIA tool applications. It has been agreed now to focus on a smaller number of scenarios per application, because the data collection efforts were found to need more effort than earlier estimated. As a consequence of these decisions, there will be only a limited amount of scenario data available within EFORWOOD. It is now evident that only pre-defined scenario data can be analysed within the project lifetime and that the development of more flexible response functions between varying scenario drivers and indicator results will need to be postponed to a possible follow-up project.

The decisions during the EFORWOOD week in Bordeaux to focus the results analysis on a smaller number of indicators should allow to complete the planned ToSIA applications despite of the delays that occurred up to now.

WP leader	CTFC	WP number	1.5
Date	October 10, 2008		
<p>Work package objectives, starting point of work at beginning of reporting period.</p> <p>The overall objectives of this work package for the months 25-42 are to:</p> <ul style="list-style-type: none"> • complete D1.5.5, which served the function of being a parallel test and demonstration of MCA and CBA applied to the demonstration case study Baden-Württemberg • contribute to the development of the DCP on socio-economic indicators and improve it as lessons learned from data collection become known • further develop the functionalities within the MCA-evaluation software module • further develop the MCA-TOSIA interface and the handling of CBA-calculations in TOSIA; the efforts which will lead to the development of TOSIA-E. 			
<p>Progress towards objectives, tasks worked on, achievements made with reference to planned objectives, contractors involved.</p> <p>During the last months of 2007 and the early months of 2008, substantial effort was put into supplementary data and information collection concerning the valuation or costs estimates of various externalities. Furthermore, substantial effort was put into supplementing the data available from the test chains to establish a reasonable fundament for D1.5.5, but also a needed effort for the overall performance of TOSIA. This also resulted in several improvements of the DCP on socio-economic indicators headed by the WP-leader, which have been implemented during the spring and summer of 2008. The data material and analyses in and the writing up of PD1.5.5 represent the main output of the period. An additional output resulting from the lessons learned was the data collection session at the EFORWOOD week in Vienna 2008.</p> <p>In addition to these efforts, the partners have continued the discussion and conceptual developments needed for the integration of the CBA tool into TOSIA, and the WP-leader has worked intensively on this during a longer visit at EFI during the summer of 2008. The user interface of the CBA tool in TOSIA has been developed in collaboration with WP1.4.</p> <p>Based on the experiences and feedback from the stakeholder workshop on the BW-case study in Freiburg, September 2007, the functionalities of the MCA-evaluation software module have been improved and extended. It includes now, inter alia, a feature to handle subclasses of indicators and the option to tailor preference functions specifically to the needs of the user. The MCA team participated in a workshop in Uppsala in September 2008 on ToSIA development. There the general frame for the integration of the MCA software module within ToSIA was defined.</p> <p>Given the progress of EFORWOOD in data collection, time has been spent on analysing and determining which end-user options should and could be with reason made available in TOSIA-E. In preparation of the last phases of EFORWOOD additional data collection is ongoing on the social costs of emission to water (N, P etc.), and on other key externalities (recreation, transport accidents, carbon sequestration, etc.).</p>			
<p>Deviations from workprogramme (if any), corrective actions taken, nature and reason for problem, contractors involved.</p> <p>Due to the delay in the scenario development and the associated data collection, the project deliverable PD1.5.6 has been postponed until the summer 2009. The delay is believed to have</p>			

no downstream impact on EFORWOOD.

Periodic Activity Report, WP Leader
Annual report 12 months

1 Period: November 1, 2007 - October 31, 2008

Table 1. List of Deliverables

Del No.	Deliverable name	WP No.	Due date	Actual/ Forecast delivery date	Estimated indicative person- months *)	Used indicative person- months *)	Lead contractor
PD1.0.3	Elements to the progress report of Year 3	WP1.0	Month 36	Month 36			EFI
PD1.1.6	Revised FWC-sustainability set document	WP1.1	Month 27	Month 30			BOKU
PD1.1.7	Options for a policy analysis interface for ToSIA	WP1.1	Month 30	Month 36			BOKU
D1.3.3	Report on results of roundwood supply econometric study	WP1.3	Month 34	Month 34			UMB
PD1.3.4	Report on validation /calibration of the model on hypothetical data	WP1.3	Month 24	Month 25			UMB/EFI
PD1.3.5	Report on expected impacts of European policy changes on global markets and trade relations	WP1.3	Month 24	Month 37			UMB/INCO partners
D1.2.5 (update)	Database of case studies and summary report of database development.	WP1.2	Month 36	Month 36			IFER
D1.4.5 (update)	Second prototype TOSIA-FWC in open source for single chains	WP1.4	Month 23	Month 27			EFI
D1.4.6	Documentation of ToSIA developments up to month 23	WP1.4	Month 23	Month 27			EFI

D1.4.6	Documentation of ToSIA developments up to month 23	WP1.4	Month 23	Month 37			EFI
D1.4.7	EFORWOOD documentation of Scenarios (Month 30).	WP1.4	Month 30	Month 37			ALTE RRA
D 1.5.5	<i>A technical report documenting the results of the MCA, CBA and CEA for the demonstration case study</i>	WP1.5	Month 26	Month 29			CTFC / BOKU
PD 1.5.6	<i>A report on MCA and CBA evaluations of the regional case study with explicit consideration of the handling of alternatives and scenarios</i>	WP1.5	Month 38	Month 45			CTFC /BOKU

*) if available

Table 2. List of Milestones

List all milestones, giving date of achievement and any proposed revision to plans.

Milestone No.	Milestone name	Workpackage No.	Date due	Actual/Forecast delivery date	Lead contractor
M1.0.7	WP1.0 meeting 6	1.0	Month 31	Month 31	EFI
M1.0.8	WP1.0 meeting 7	1.0	Month 36	Month 36	EFI
M1.2.2	Database structure for case studies available to model ToSIA (Month 27) and expanded with data structure for incorporation of response functions	1.2	Month 33	Month 33	IFER
M1.2.3	Database structure for European FWC analysis available to model ToSIA	1.2	Month 36	Month 36	
M1.3.2	New roundwood supply elasticities	1.3	Month 34	Month 34	UMB
M1.3.3.	Calibration of model on hypothetical data	1.3	Month 24	Month 25	UMB/EFI

M1.4.3	Selection of EFORWOOD scenarios for alternative FWCs	1.4	Month 30	Month 30	Alterra
M1.4.4	Response function methodology ready for scenario analysis of changing sustainability of FWCs	1.4	(Month 33)	Alternative method selected	EFI
M1.4.5	Prototype User-Interface for ToSIA ready for external use	1.4	(Month 33)	Month 36	EFI
M1.5.6	A common framework for programming and software development established together with WP1.4	1.5	Month 30	Month 30	CTFC