

SHORT TERM SCIENTIFIC MISSION REPORT

COST Action: FP1201 – FACESMAP – Forest Land Ownership Change in Europe: Significance for management and policy

Grantee: Dr Mauro Maesano
Department of Biosciences and Territory
University of Molise
mauro.maesano@unimol.it

STSM title: Forest Certification map of Europe

Reference: ECOST-STSM-FP1201-210514-044850

Time Period: from 21-05-2014 to 18-06-2014

Host: Dr Gun Lidestav
Department of Forest Resource Management
Swedish University of Agricultural Science
gun.lidestav@slu.se

WG: WG 1: Forest ownership types and motives

Please note that the results from this report are not suitable for further use and publication without agreement of the authors.

Content:

1. Purpose of the STSM
2. Description of the work carried out during the STSM
3. Description of the main results obtained
4. Future collaboration with host institution
5. Foreseen publications/articles resulting from the STSM
6. Confirmation by host institution of the successful execution of the STSM
7. Reference

Annex 1. Letter of confirmation by Department of Forest Resource Management - SLU (Umea, Sweden) of the successful execution of STSM.

1. Purpose of the STSM

Recent studies in the forestry sector show that many forest areas are privately owned by firms, individual, or organizations and publicly owned by State, communes or municipalities. The number of forestry holdings, size of landholding, and ownership types influence forest management and various other socio-economic issues linked to it. Forest owners usually determine the objectives for the use of forestland; they establish the management policies and provide the means to achieve them. Furthermore, property fragmentation can represent a potential problem for the achieving of Sustainable Forest Management practices. The private and public sector discussed extensively the SFM issue and activated several tools to support them; one of these is the forest certification. Forest certification is a voluntary instrument created in the 1990s and it intends to measure, monitor, audit, and improve forest practices at the forest level. Numerous forest certification schemes are present across the world; the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) are among the most recognized, diffused and applicable to the European contexts.

The understanding of quantifying and mapping of forest certification in Europe according to both certification schemes needs to improve. Data presented in the form of maps represent powerful sources of information, which can support international process, policymaking and decision-making, research as well as forest planning at various levels. The STSM purpose was carried out the forest certification map in Europe according to FSC and PEFC reports. The research was based on capturing a large set of data and information on European forests and elaborating it in a GIS (Geographic Information System) environment in the NUTS resolution at the II level, where it was possible. Aim of STSM research was to try to answer to the questions of WG1 (Forest ownership types and motives) regarding the management of the forest and know how many and which forests are certified according to the main schemes present in Europe.

2. Description of the work carried out during the STSM

The working plan performed in the STSM mission is given in Table 1. The research plan was divided in four stages. In the initial stage, the work was planned and the appropriate literature related to forest certification issue was reviewed. In the second one, the shapefile for all countries of the European region, from geographically point, was created. In the third one, European database of certified forests both FSC and PEFC was made, and in the final stage, the maps and the draft of report were completed.

Task	1 st Week (21.05 – 27.05)	2 nd Week (28.05 – 03.06)	3 rd Week (04.06 – 10.06)	4 th Week (11.06 – 18.06)
Working plan	X			
Literature review	X	X		
Shapefile creation	X	X	X	
Database preparation		X	X	X
Maps				X
Writing Report			X	X

Table 1: working plan.

3. Description of the main results obtained

This research aimed to collect information on European forest companies certified and geographically locate their forests at sub-national level.

In the forest certification map, the national and sub-national boundaries, relate to the second level of NUTS classification, were used for the European countries. The NUTS geo-data file was downloaded by European Commission site¹ (2010 update – European NUTS layer) and includes 36 countries (table 2).

Country	Code Country	n. NUTS 2	Country	Code Country	n. NUTS 2
Austria	AT	9	Latvia	LV	1
Belgium	BE	11	Malta	MT	1
Bulgaria	BG	6	Nederland	NL	12
Cyprus	CY	1	Poland	PL	16
Czech Republic	CZ	8	Portugal	PT	7
Germany	DE	38	Romania	RO	8
Denmark	DK	5	Sweden	SE	8
Estonia	EE	1	Slovenia	SI	2
Greece	EL	13	Slovakia	SK	4
Spain	ES	19	United Kingdom	UK	37
Finland	FI	5	Switzerland	CH	7
France	FR	26	Iceland	IS	1
Croatia	HR	2	Liechtenstein	LI	1
Hungary	HU	7	Montenegro	ME	1
Ireland	IE	2	Macedonia	MK	1
Italy	IT	21	Norway	NO	7
Lithuania	LT	1	Turkey	TR	26
Luxembourg	LU	1	Andorra	AND	1

Table 2: European countries².

For other countries, sub-national boundaries were taken into consideration and a code comparable with NUTS code was created for each area, to identify the exact location of the forests (table 3) (European Boundaries layer).

Country	Code Country	n. Sub-National level	Code
Albania	AL	26	From AL01 to AL26
Belarus	BLR	6	From BLR1 to BLR6
Bosnia-Herzegovina	BIH	1	BIH1
Georgia	GEO	3	From GEO1 to GEO3
Moldova	MD	1	MD01
Russia (EU)	RU	54	From RU01 to RU54
Ukraine	UA	25	From UA01 to UA25

Table 3: European countries added to the NUTS layer.

Subsequently, an only one shapefile to identify the different boundaries of European countries was formed. The new shapefile was created by integration of two layers: "European NUTS layer" and "European boundaries layer" at sub-national level, to have all states geographically present in Europe (Figure 1).

The NUTS classification³ (nomenclature of territorial units for statistics) is a hierarchical system for dividing up the economic territory of the EU for the purpose of the

¹http://epp.eurostat.ec.europa.eu/portal/page/portal/gisco_Geographical_information_maps/popups/references/administrative_units_statistical_units_1

²http://epp.eurostat.ec.europa.eu/portal/page/portal/gisco_Geographical_information_maps/popups/references/administrative_units_statistical_units_1

collection, development and harmonisation of European Union (EU) regional statistics, socio-economic analyses of the regions and the framing of EU regional policies.

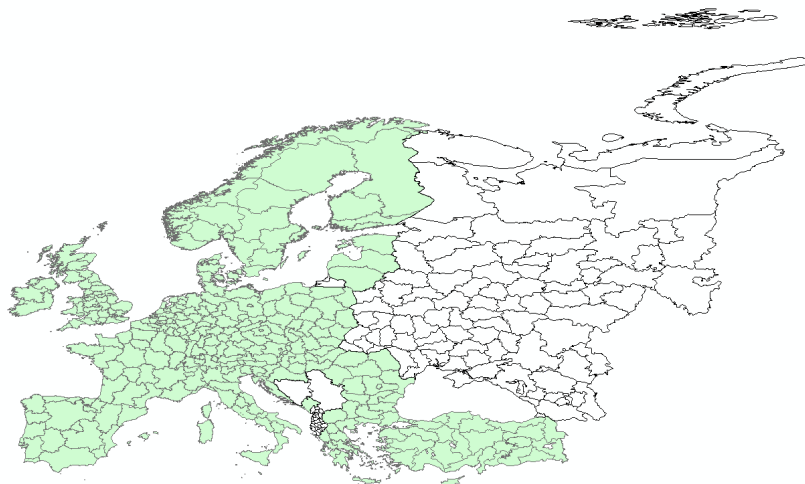


Figure 1: union shape from two layers: in green the "European NUTS layer" and in white the "European boundaries layer". European countries involved in this project.

The variables on the amount of European certified forests were collected in June 2014 from information available by FSC (<http://info.fsc.org/>) and PEFC (<http://www.pefcregs.info/>) on-line certificate database, and were imported into a Microsoft Excel sheet. Database structure was made according to the data present on the public reports freely available via Internet. The variables taken into account were: type of scheme, country, NUTS ID, certificate code, licence code, owner name, owner address, ownership type, certification type, certified, SLIMFs, certification body, total forest are, HCV1, HCV2, HCV3, HCV4, HCV5, HCV6, NUTS name, NUTS code and number of schemes (Figure 2).

	A	B	C	D	E	F	G	H
	Type of scheme	Country	NUTS ID	Certificate Code	License Code	Owner Name	NUTS Name	NUTS code
1	FSC	Italy	IT	ICLA-FM-000001	FSC-C017290	SELVAMAR S.S.	Umbria	IT2
2	FSC	Italy	IT	ICLA-FM-000334	FSC-C084190	ERSAF	Lombardia	ITC4
3	FSC	Italy	IT	ICLA-FM-000490	FSC-C106479	UNIONE DI COMUNI MONTANA COLLINE	Toscana	IT11
4	FSC	Italy	IT	ICLA-FM/COC-001009	FSC-C009224	PARTECIPANZA DEI BOSCHI	Piemonte	ITC1
5	FSC	Italy	IT	ICLA-FM/COC-000272	FSC-C010580	AGENZIE AGRICOLE DI TORVISCOSA s.s.SOC	Fiuli-Venezia Giulia	ITH4
6	FSC	Italy	IT	ICLA-FM/COC-001010	FSC-C018126	AZIENDA AGRICOLA ROSA ANNA E ROS	Lombardia	ITC4
7	FSC	Italy	IT	ICLA-FM/COC-001010	FSC-C018126	AZIENDA AGRICOLA ROSA ANNA E ROS	Emilia-Romagna	ITH5
1113	PEFC	Russia	RU	BV-PEFC-FM/COC-004071		OJSC Mondy SLPK	Respublika Komi	RU18
1114	PEFC	Russia	RU	6260-01		ZAO Petrovles Podporozhye and ZAO Pe	Leningradskaya oblast'	RU41
1115	FSC	Ukraine	UA	SGS-FM/COC-002711	FSC-C005093	State forest enterprises of Lviv regional forestry an	Lviv	UA13
1116	FSC	Ukraine	UA	SGS-FM/COC-002273	FSC-C014579	State forest enterprises of Zakarpattia regional forestr	Zakarpattia	UA23
1117	FSC	Ukraine	UA	SGS-FM/COC-002786	FSC-C020885	State Enterprise "Novohrad-Volynsky Forest-Hunting Enterprise" of Zhytomyr	Zhytomir	UA25
1118	FSC	Ukraine	UA	FC-FM/COC-804039	FSC-C102078	GP "Teterevsky Leskhov"	Kiev	UA11
1119	FSC	Ukraine	UA	SGS-FM/COC-010027	FSC-C104805	State enterprise "Berehomets Forest-Hunting Enterprise" of Chernih	Chernihov	UA02
1120	FSC	Ukraine	UA	FC-FM/COC-804092	FSC-C105803	Separated Subdivision of National University of Life and Environmental Sciences	Kiev	UA11
1121	FSC	Ukraine	UA	SGS-FM/COC-009688	FSC-C106043	State enterprise "Sokyrnianske forestry	Chernihov	UA02
1122	FSC	Ukraine	UA	SGS-FM/COC-009833	FSC-C107473	State Enterprise "Zhytomir Forestry" of Zhytomir Region	Zhytomir	UA25
1123	FSC	Ukraine	UA	RA-FM/COC-005919	FSC-C108277	State enterprise Vygodna fores	Ivano-Frankovsk	UA07
1124	FSC	Ukraine	UA	SGS-FM/COC-010194	FSC-C112359	State Enterprise "Solotyn Forestry" of Ivano-Frankovsk Reg	Ivano-Frankovsk	UA07
1125	FSC	Ukraine	UA	SGS-FM/COC-010185	FSC-C112709	State Enterprise "Delyatyn forestry" of Ivano-Frankovsk Reg	Ivano-Frankovsk	UA07
1126	FSC	Ukraine	UA	RA-FM/COC-006788	FSC-C117938	State Enterprise Smilyanske for	Cherkassy	UA01
1127	FSC	Ukraine	UA	RA-FM/COC-006802	FSC-C118386	State enterprise Kyvopil fore	Vinnitsa	UA21
1128	FSC	Ukraine	UA	SGS-FM/COC-010059	FSC-C119106	State Enterprise "Storozhynets Fc	Chernihov	UA02
1129	FSC	Ukraine	UA	SGS-FM/COC-010070	FSC-C119248	SE "Broshnivske FE"	Ivano-Frankovsk	UA07
1130	FSC	Ukraine	UA	SGS-FM/COC-010183	FSC-C120631	State Enterprise "Putyla Forestry" of Chernivtsi Regiona	Chernihov	UA02

Figure 2: database

Reports analysis involved 43 European countries. Within the FSC database are displayed the public report summary of the main audit and sometimes others documents

³ http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction

(surveillance audit, notes, etc.), while in PEFC database are shown only the main data of the certification. Regarding FSC matter, 499 reports were analysed, of these 5 were certified as Forest Management (FM) and 494 as Forest Management and Chain of Custody (FM/COC), while about the type of certification were 363 single certification and 136 group certification. Concerning PEFC issue, 284 records were explored and of these 97 were single certification, 112 group certification and 75 regional certification. In total 783 certified were investigated.

European FSC certified forest area was 70,416,019 hectares. This result is lower than that reported officially by the FSC (2014) because only part of Russia (European Russia) was considered in this work. On the other hand, European PEFC certified forest area was 85,784,952 hectares. This result is much lower than that reported officially by the PEFC (2014) because in online database many surface data were missing (Table 4).

Country	FSC [ha]	PEFC [ha]
Austria	575	2755452
Belarus	4901127	8397100
Belgium	20910	289050
Bosnia-Herzegovina	1519235	
Bulgaria	409674	
Croatia	2038296	
Czech Republic	49544	1845321
Denmark	199557	253285
Estonia	1177048	1836260
Finland	461787	19687046
France	19827	7930166
Germany	971913	7350877
Hungary	320963	
Ireland	447219	
Italy	50944	778356
Latvia	1749109	1683641
Lithuania	1066170	
Luxembourg	20535	31185
Nederland	125734	
Norway	346385	9098302
Poland	6879591	7304356
Portugal	336838	236385
Romania	2554089	
Russia	25541794	2018554
Slovakia	142483	1242760
Slovenia	249649	10210
Spain	194284	1689975
Sweden	12054376	9812789
Switzerland	695871	182377
Turkey	2908707	
Ukraine	1401352	
United Kingdom	1560434	1351505
Europe	70416019	85784952

Table 4: European certified forest area.

The values according to each country were reported in table 5.

Country	Forest Area [ha] ⁴	OWL [ha]	Total [ha]	% FSC forest	% PEFC forest
Austria	3776000	134000	3910000	0,01%	70,47%
Belarus ⁵	7894000	914000	8808000	55,64%	95,33%
Belgium	677000	28000	705000	2,97%	41,00%
Bosnia-Herzegovina ⁴	2185000	549000	2734000	55,57%	0,00%
Bulgaria	3327000	0	3327000	12,31%	0,00%
Croatia	2135000	346000	2481000	82,16%	0,00%
Czech Republic	2629000	0	2629000	1,88%	70,19%
Denmark	445000	48000	493000	40,48%	51,38%
Estonia	2090000	134000	2224000	52,92%	82,57%
Finland	21897000	1032000	22929000	2,01%	85,86%
France	14537000	1618000	16155000	0,12%	49,09%
Germany	10741000	0	10741000	9,05%	68,44%
Hungary	1801000	0	1801000	17,82%	0,00%
Ireland	465000	50000	515000	86,84%	0,00%
Italy	7590000	1767000	9357000	0,54%	8,32%
Latvia	3173000	113000	3286000	53,23%	51,24%
Lithuania	1945000	84000	2029000	52,55%	0,00%
Luxembourg	86000	1000	87000	23,60%	35,84%
Nederland	345000	0	345000	36,44%	0,00%
Norway	9130000	2134000	11264000	3,08%	80,77%
Poland	8881000	0	8881000	77,46%	82,25%
Portugal	3327000	155000	3482000	9,67%	6,79%
Romania	6371000	160000	6531000	39,11%	0,00%
Russia	808950000	73220000	882170000	2,90%	0,23%
Slovakia	1922000	0	1922000	7,41%	64,66%
Slovenia	1188000	21000	1209000	20,65%	0,84%
Spain	13818000	9574000	23392000	0,83%	7,22%
Sweden	28512000	2020000	30532000	39,48%	32,14%
Switzerland	1151000	71000	1222000	56,95%	14,92%
Turkey	9680000	10368000	20048000	14,51%	0,00%
Ukraine	9274000	41000	9315000	15,04%	0,00%
United Kingdom	2611000	20000	2631000	59,31%	51,37%
Total	988777000	104468000	1093245000	6,44%	7,85%

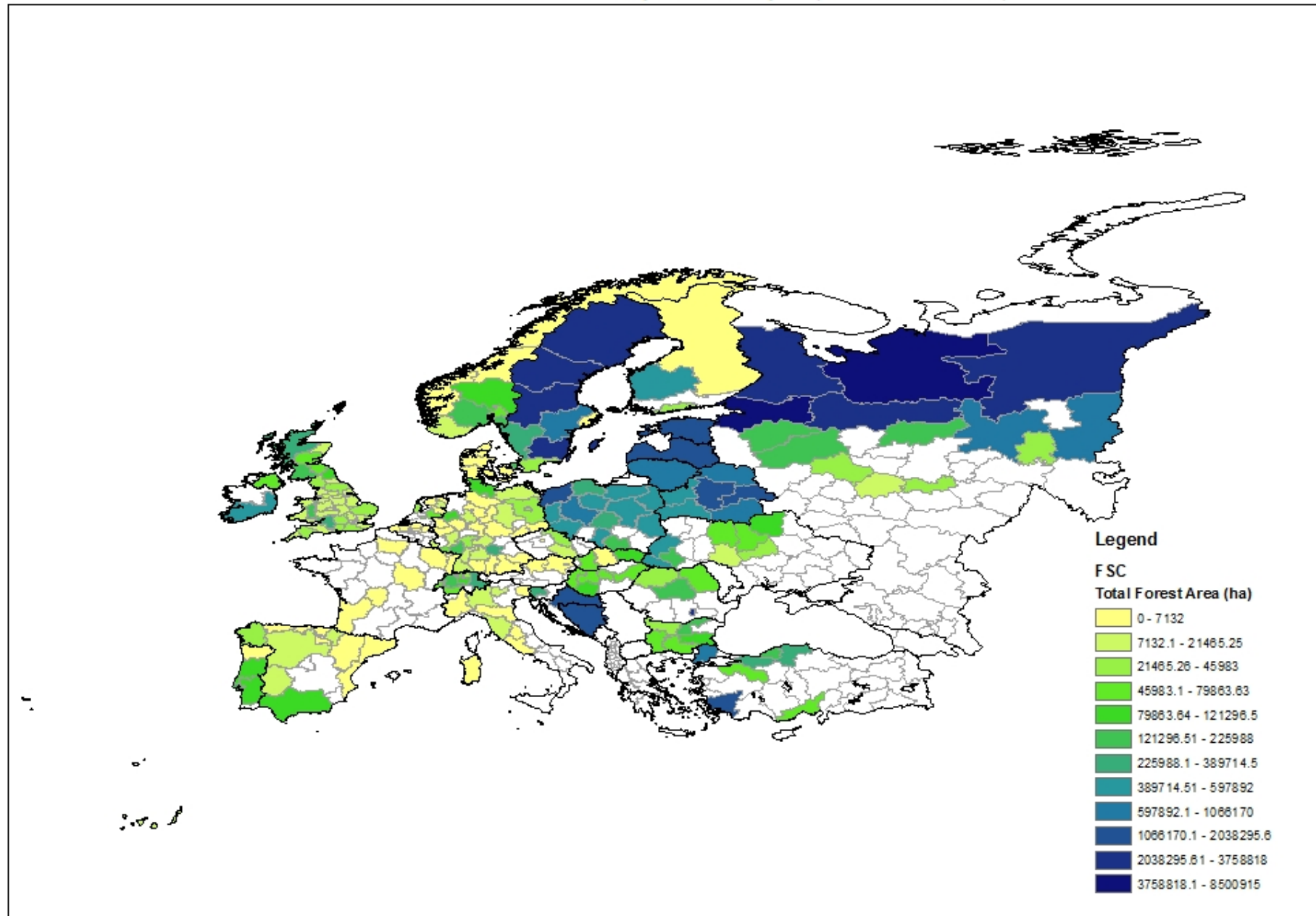
Table 5: percentage of certificated forest area for each country.

The forest certification map according to FSC and PEFC schemes is below reported.

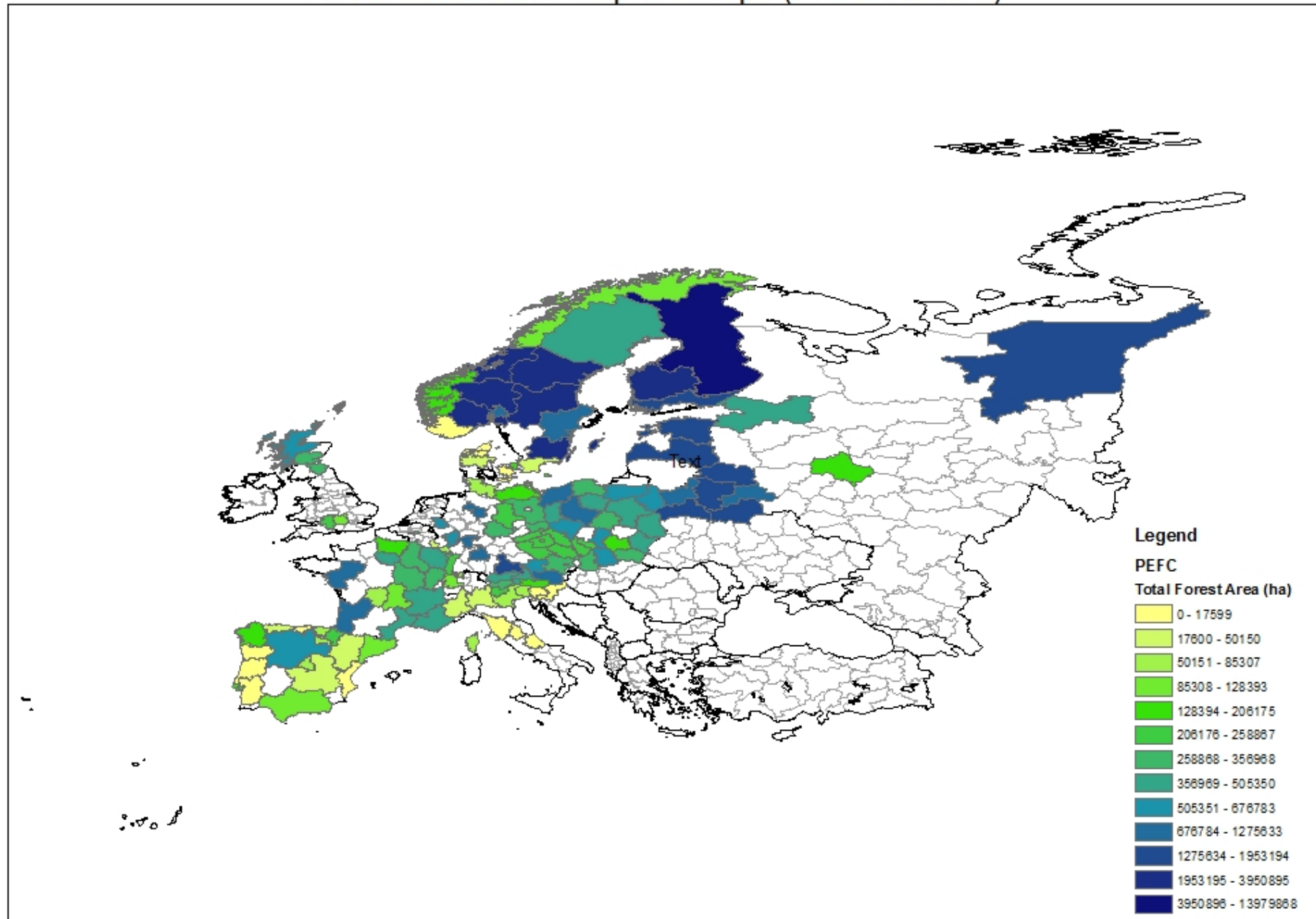
⁴ http://www.foresteurope.org/documentos/State_of_Europes_Forests_2011_Report_Revised_November_2011.pdf

⁵ <http://www.fao.org/forestry/country/32185/en/>

Forest Certification map of Europe (FSC scheme)



Forest Certification map of Europe (PEFC scheme)



4. Future collaboration with host institution

The host institution, the Swedish University of Agricultural Science (SLU) and the North European Regional Office of the European Forest Institute – EFINORD, were directly engaged in the achievement of the project. Future collaboration with both, in the fill gaps inside the database was planned, especially in ownership issue and in overlay the Forest map of Europe (Kempeneers et al, 2011; Päivinen et al, 2001; Schuck et al., 2002) to identify the percentage report of forest certified for each NUTS II level.

5. Foreseen publications/articles resulting from the STSM

I wish to publish the results from this STSM project in journal related to forest inventory and planning in English language.

6. Confirmation by host institution of the successful execution of the STSM

See Annex 1.

7. Reference

- FSC (2014). Global FSC certificates: type and distribution (May 2014).
- Kempeneers, P., Sedano, F., Seebach, L., Strobl, P., San-Miguel-Ayanz, J. 2011: Data fusion of different spatial resolution remote sensing images applied to forest type mapping, IEEE Transactions on Geoscience and Remote Sensing, in print.
- Päivinen, R., Lehtikainen, M., Schuck, A., Häme, T., Väättäinen, S., Kennedy, P., & Folving, S., 2001. Combining Earth Observation Data and Forest Statistics. EFI Research Report 14. European Forest Institute, Joint Research Centre - European Commission. EUR 19911 EN. 101p.
- PEFC (2014). Global statistics :SFM e COC certificatio (January 2014).
- Schuck, A., Van Brusselen, J., Päivinen, R., Häme, T., Kennedy, P. and Folving, S. 2002. Compilation of a calibrated European forest map derived from NOAA-AVHRR data. European Forest Institute. EFI Internal Report 13, 44p. plus Annexes;



Department of Forest Resource Management

2014-06-18

TO WHOM IT MAY CONCERN

Dear Management Committee members,

This is to certify that Dr. Mauro Maesano (Department of Biosciences and Territory, university of Molise, Italy) successfully has completed his Short Term Scientific Mission, at our Department. During his stay, May 21st to June 18th 2014, literature related to forest certification issue has been reviewed, a shapefile for all countries of the European region has been created, and a European database of certified forests is developed. Finally, a draft of report has been prepared.

It had been a pleasure to have Dr. Mauro Maesano at the Department, and we look forward to further cooperation with him on this important subject.

A handwritten signature in black ink, reading 'Johan Fransson', is positioned above the printed name.

Johan Fransson
Head of Department

Postal address
SE-901 83 Umeå
SWEDEN

Visiting address
Skogsmarksgränd

Tel.
+46 (0)90-786 85 31

E-mail
johan.fransson@slu.se