UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

COMMITTEE ON ENVIRONMENTAL POLICY
CONFERENCE OF EUROPEAN STATISTICIANS

Joint Intersectoral Task Force on Environmental Indicators

THIRD NATIONAL REVIEW OF THE APPLICATION OF ENVIRONMENTAL INDICATORS

Submitted by the former Yugoslav Republic of Macedonia[1]

I. EVALUATION OF FURTHER FIVE INDICATORS FROM THE *UNECE INDICATOR GUIDELINES* [2]

Please respond to the following questions on each of the five indicators by filling in Table A hereunder.

[1] Prepared by Violeta Panovska, State Statistical Office and Katerina Nikolovska, Ministry of Environment and Physical Plannig.
[2] These indicators were selected by the Joint Task Force, at its meeting held in Geneva on 3-4 May 2010, for the discussion at it next meeting to be held on 1-2 September 2010 in Geneva. The description of the indicators is available online at: www.unece.org/env/documents/2007/ece/ece.belgrade.conf.2007.inf.6.e.pdf.

Table A. EVALUATION OF FURTHER FIVE INDICATORS FROM THE *UNECE INDICATOR GUIDELINES*

Indicator	A. Effective inter-agency cooperation mechanisms to produce the indicator	B. Data quality assurance and control procedures for the production of the indicator	C. Publication of the indicator in statistical compendiums and state-of-the-environment reports
Reuse and recycling of freshwater	The State Statistical Office conducted statistical surveys, used reporting method for irrigation, public water supply, water supply, water use, and discharged of wastewater in industry and water management by enterprises.	Data quality should be guaranteed by institutions that make measure, calculate and publish the same.	Data for the indicators are published in: - " Statistical Yearbook " edited and published by State Statistical Office " - "Environmental statistics " published by State Statistical Office as a regular biannual publication, prepared in cooperation with Ministry of Environment
Polluted (non-treated) wastewaters	The State Statistical Office conducted statistical surveys, used reporting method for irrigation, public water supply, water supply, water use, and discharged of wastewater in industry and water management by enterprises.	Data quality should be guaranteed by institutions that make measure, calculate and publish the same.	Data for the indicators are published in: - " Statistical Yearbook " edited and published by the State Statistical Office - "Environmental statistics " published by the State Statistical Office as a regular biannual publication, prepared in cooperation with Ministry of Environment

Indicator	A. Effective inter-agency cooperation mechanisms to produce the indicator	B. Data quality assurance and control procedures for the production of the indicator	C. Publication of the indicator in statistical compendiums and state-of-the-environment reports
Forest and other wooded land	Cooperation between Ministry of Environment and Physical Planning and Ministry of Agriculture Forestry and Water Management	Establishment of comprehensive and continuous monitoring	Statistical review: Agriculture, 5.4.5.03 504 Forestry state Statistical Office, Republic of Macedonia Special plan for forest management, FRA2010, SOEF 2011
Energy intensity	The State Statistical office (SSO), produces this indicator. The data for calculating the indicator are used from: - Energy Balances (*that ere produced in subject matter department at SSO*) - Sector for National Accounts at SSO	Energy balances are created in accordance with "Energy Statistics Methodology Eurostat F4, 1998''.	This indicator is not published in statistical or other publications. Energy balances of the Republic of Macedonia are published annually *(www.stat.gov.mk).* The data from the Sector of National Accounts that are used for calculation are not published.
Composition of road motor vehicle fleet by fuel type	No data available		

Notes:

Question A. Effective inter-agency cooperation mechanisms to produce the indicator

Please describe cooperation arrangements, if any, which have been established in your country to collect the necessary data for the indicator. These may involve statistical agencies, ministries of water management, agriculture, transport, interior, environment, economic development and energy,

hydro-meteorological services and agencies on geology, as appropriate. The description should cover problems met, solutions found and possible further steps envisaged or needed.

Question B. Data quality assurance and control procedures for the production of the indicator

Please describe data quality assurance and control procedures for the production of the indicator. The description should cover problems met, solutions found and possible further steps envisaged or needed. References should be made to any international methodologies and guidelines that are followed to ensure data quality and control.

Question C. Publication of the indicator in statistical compendiums and state-of-the-environment reports

Please present the evidence of the indicator publication in statistical compendiums and state-of-the-environment reports (titles, names of the publishing houses, cities and years of the publications, languages, number of copies published, Internet addresses, and whether time-series data was published on the indicator.

II. TIME SERIES DATA ON THE INDICATORS FOR 2003-2009

Please fill in the tables below with the data on each of the five indicators.

Table1. Reuse and recycling of freshwater: *the former Yugoslav Republic of Macedonia*

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
1	Freshwater use, total (including 2)	mio m^3/y	826.0		1622.4		950.6		847.1		538.7		665.8		
2	Reused or recycled water, total	mio m^3/y	23.7*		0.4		0.0		0.07		0.1		45.6		
3	Share of reused or recycled water in the total volume of water used (2/1x100)	%	0.8		0.01		0.0		0.003		0.003		1.9		
	Share of reused or recycled water in the total volume of water used by:														
4	Households	%	0.0		0.0		0.0		0.0		0.0		0.0		
5	Agriculture, forestry and fishing (ISIC 01-03)	%	0.0		0.0		0.0		0.0		0.0		0.0		
6	*of which* for irrigation in agriculture	%	0.0		0.0		0.0		0.0		0.0		0.0		
7	Manufacturing (ISIC 10-33)	%	0.8		0.01		0.0		0.003		0.003		1.9		
8	Electricity industry (ISIC 351)	%	0.0		0.0		0.0		0.0		0.0		0.0		
9	Other economic activities	%	0.0		0.0		0.0		0.0		0.0		0.0		

Notes: Reused of water in the former Yugoslav Republic of Macedonia is a case only for manufacturing purposes, mining and quarrying.

Data for 2009 is not published yet.

Table 2. Polluted (non-treated) wastewaters: *the former Yugoslav Republic of Macedonia*

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
1	Wastewater, total volume	mio m^3/y	2453.9		3633.3		1654.9		1722.4		3053.6		1811.7		
2	Non-treated wastewater, total volume discharged into water bodies	mio m^3/y	2353.4		3531.7		1551.6		1622.4		2956.2		1716.9		
3	Share of non-treated wastewater in the total volume of wastewater generated (2/1x100)	%	95.9		97.2		93.8		94.2		96.8		94.8		
	Share of non-treated wastewater in the total volume of wastewater generated by:														
4	Households	%	0.0		0.0		0.0		0.0		0.0		0.0		
5	Agriculture, forestry and fishing (ISIC 01-03)	%	-		-		-		-		-		-		
6	Manufacturing (ISIC 10-33)	%	5.9		19.7		9.6		15.5		5.0		12.8		
7	Electricity industry (ISIC 351)	%	0.0		0.0		0.0		0.0		0.0		0.0		
8	Other economic activities	%	0.008		0.002		0.9		1.5		0.9		0.3		

Note: Wastewater treatment is the process of removing contaminants or organic material from wastewater and household sewage (including water from swimming pools etc.) by means of physical, chemical and biological processes like dilution, screening, filtering, sedimentation etc.

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Table 3. Forest and other wooded land: *the former Yugoslav Republic of Macedonia*

Line	Category	Unit	2000	2005	2009
1	Forest	km^2 or 1'000 ha	958	975	998
1a	of which protected	%			
2	Other wooded land	km^2 or 1'000 ha	143	143	143
2a	of which protected	%			
3	Total forest and other wooded land (1+2)	km^2 or 1'000 ha			
4	Share of forest and other wooded land in total land area	%	37	37	37
5	Growing stock composition of forest				
5a	o Coniferous	1000 $м^3$	8640	7630	7640
5b	o Broadleaved	1000 $м^3$	70250	68750	68770
5c	o Growing stock of the 10 most common species				
	1st *Fagus Sylvatica - Beech*	1000 $м^3$	46270	n.a	n.a
	2nd Querqus spp. - Oak	1000 $м^3$	19860	n.a	n.a
	3rd Pinus spp. - Pine	1000 $м^3$	6300	n.a	n.a
	4th Abies alba - Fir		1590	n.a	n.a
	10th *Scientific and common name*	1000 $м^3$			
	Remaining	1000 $м^3$	4870	n.a	n.a
6	Protective forests	km^2 or 1'000 ha			
7	Share of protective forests in total forest and other land (% of 3)	%			
8	Share of forest and other wooded land under a management plan or equivalent (% of 3)	%	92	92	92
9	Area of regeneration	km^2 or 1'000 ha	105	105	105
10	*Naturalness* of *forest and other wooded land*				
10a	o Undisturbed by humans	km^2 or 1'000 ha	0	0	0

Line	Category	Unit	2000	2005	2009
10b	o Semi-natural	km^2 or 1'000 ha	n.a	n.a	n.a
10c	o Plantation	km^2 or 1'000 ha	105	105	105

** or data of the recent year after 2005*

Note: For separate categories, please see:

SOEF 2011 - NATIONAL DATA REPORTING FORMS ON PAN-EUROPEAN INDICATORS FOR SUSTAINABLE FOREST MANAGEMENT, United Nations, Geneva, 2010
http://timber.unece.org/fileadmin/DAM/publications/Enquiry_Quantitative_indicators_2011_final.doc

FRA 2010 - GLOBAL FOREST RESOURCES ASSESSMENT 2010, SPECIFICATION OF NATIONAL REPORTING TABLES FOR FRA 2010, Working paper 135, Rome 2007
http://www.fao.org/forestry/51315/en/

Information about national correspondents to FAO Forest Resources Assessment can be found on: http://www.fao.org/forestry/42756/en/

DEFINITIONS

Forest

Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under
agricultural or urban land use.

1. Explanatory notes

- *Forest is determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 meters in situ.*
- *Includes areas with young trees that have not yet reached but which are expected to reach a canopy cover of 10 percent and tree height of 5 meters. It also includes areas that are temporarily unstocked due to clearcutting as part of a forest management practice or natural disasters, and which are expected to be regenerated within 5 years. Local conditions may, in exceptional cases, justify that a longer time frame is used.*
- *Includes forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific environmental, scientific, historical, cultural or spiritual interest.*
- *Includes windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 meters.*

- *Includes abandoned shifting cultivation land with a regeneration of trees that have, or is expected to reach, a canopy cover of 10 percent and tree height of 5 meters.*
- *Includes areas with mangroves in tidal zones, regardless whether this area is classified as land area or not.*
- *Includes rubber-wood, cork oak and Christmas tree plantations.*
- *Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.*
- *Excludes tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover. Note: Some agroforestry systems such as the "Taungya" system where crops are grown only during the first years of the forest rotation should be classified as forest.*

Source: FRA2010

Other wooded land
Land not classified as "Forest", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds in situ; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.

Explanatory notes

The definition above has two options:

- *The canopy cover of trees is between 5 and 10 percent; trees should be higher than 5 meters or able to reach 5 meters in situ.*
  or
- *The canopy cover of trees is less than 5 percent but the combined cover of shrubs, bushes and trees is more than 10 percent. Includes areas of shrubs and bushes where no trees are present.*

Includes areas with trees that will not reach a height of 5 meters in situ and with a canopy cover of 10 percent or more, e.g. some alpine tree vegetation types, arid zone mangroves, etc.

Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.

Source: FRA2010

Protected forest or other wooded land
Forest or other wooded land area within formally established protected areas independently of the purpose for which the protected areas were established.

Explanatory notes
- *Includes IUCN Categories I – IV*
- *Excludes IUCN Categories V-VI*

Source: FRA2010

Growing stock composition of forest

Growing stock
Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.

Explanatory notes

- *Countries must indicate the three thresholds (X, Y, W in cm) and the parts of the tree that are not included in the volume. They must also indicate whether the reported figures refer to volume above ground or above stump. These specifications should be applied consistently through the time series.*
- *Includes windfallen living trees.*
- *Excludes smaller branches, twigs, foliage, flowers, seeds, and roots.*

Source: FRA2010

Broadleaved
All trees classified botanically as *Angiospermae*. They are sometimes referred to as "non-coniferous" or "hardwoods"
Source: SoEF2011

Coniferous
All trees classified botanically as Gymnospermae. They are sometimes referred to as "softwoods"
Source: SoEF2011

Forest composition
In this table, countries are requested to report the Growing stock of the ten most common species plus remaining species. Note that the figures in this table only apply to land classified as Forest.

Source: FRA2010

Protective functions
The function of forest/other wooded land in providing protection of soil against erosion by water or wind, prevention of desertification, the reduction of risk of avalanches and rock or mud slides; and in conserving, protecting and regulating the quantity and quality of water supply, including the prevention of flooding.

Includes: Protection against air and noise pollution.
Source: TBFRA2000

Regeneration (Reforestation)
Re-establishment of forest through planting and/or deliberate seeding on land classified as forest.

Explanatory notes

- *Implies no change of land use.*
- *Includes planting/seeding of temporarily unstocked forest areas as well as planting/seeding of areas with forest cover.*
- *Includes coppice from trees that were originally planted or seeded.*
- *Excludes natural regeneration of forest.*

Source: FRA2010

Naturalness of forest and other wooded land

Naturalness is specified in the following classes:

Undisturbed by man (forest/other wooded land)
Forest/other wooded land which shows natural forest dynamics, such as natural tree composition, occurrence of deadwood, natural age structure and natural regeneration processes, the area of which is large enough to maintain its natural characteristics and where there has been no known significant human intervention or where the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established.

Semi-natural forest/other wooded land
Forest/other wooded land which is neither "forest/other wooded land undisturbed by man" nor "plantation" as defined separately.

Plantation
Forest stands established by planting or/and seeding in the process of afforestation or reforestation. They are either:
of introduced species (all planted stands), or
intensively managed stands of indigenous species which meet all the following criteria: one or two species at plantation, even age class, regular spacing.
Excludes: Stands which were established as plantations but which have been without intensive management for a significant period of time. These should be considered semi-natural.

Source: SoEF2011

Table 4. Energy intensity: *(the former Yugoslav Republic of Macedonia*

Line	Category	Unit	2003	2004	2005	2006	2007	2008	2009
	Inland consumption of energy by category:								
1	solid fuels	1000 tonnes of oil equivalent (ktoe)	1415	1385	1459	1419	1461	1492	
2	oil	ktoe	876	895	912	968	1042	946	
3	*gas*	ktoe	65	57	62	66	85	96	
4d	nuclear	ktoe							
5e	renewables	ktoe	302	310	293	318	237	254	
6	***Gross Inland consumption (1+2+3+4+5)***	ktoe	2658	2647	2726	2771	2825	2788	
	Gross domestic product (GDP):								
7	at 2000 market prices in the national currency	mln-national currency	234036	243588	253581	263608	279818	293673	
8	at 2000 market prices in USD	mln USD	4119	4298	4534	5034	5580	6289	
9	in USD in PPP **1)**	mln USD	15089.18	15424.2	16275.9	16429.7	17337	17801.18	
	Energy intensity								
10	at 2000 market prices in the national currency (6/7)	ktoe/1'000 units of national currency	11.36	10.87	10.75	10.5	10.1	9.5	
11	at 2000 market prices in USD (6/8)	ktoe/1'000 USD	645.3	615.9	601.235	550.1	506.3	443.3	
12	in USD in PPP (6/9)	ktoe/1'000 USD	176.1	171.6	167.5	168.7	162.9	156.6	

1) **EU 27=100**

Note: For individual categories see, for instance, *Energy Statistics Manual*, OECD/IEA/Eurostat, 2007 (http://www.iea.org/textbase/nppdf/free/2005/statistics_manual.pdf)

Table 5. Composition of road motor vehicle fleet by fuel type: *the former Yugoslav Republic of Macedonia*

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
	Passenger cars														
1	**Total (1a(i)+1b(i)+1c(i)+1d(i) +1e(i)+1f(i))**	Million vehicle kilometres													
1a	Petrol														
1a(i)	Number	Million vehicle kilometres													
1a(ii)	Share of **1**	%													
1b	Diesel														
1b(i)	Number	Million vehicle kilometres													
1b(ii)	Share of **1**	%													
1c	Gas														
1c(i)	Number	Million vehicle kilometres													
1c(ii)	Share of **1**	%													
1d	Electricity														
d(i)	Number	Million vehicle kilometres													
1d(ii)	Share of **1**	%													
1e	Biofuel														
1e(i)	Number	Million vehicle kilometres													
1e(ii)	Share of **1**	%													
1f	Other fuel														
1f(i)	Number	Million vehicle kilometres													
1f(ii)	Share of **1**	%													
	Buses and motor coaches														
2	**Total (2a(i)+2b(i)+2c(i)+2d(i) +2e(i) +2f(i))**	Million vehicle kilometres													
2a	Petrol														

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
2a(i)	Number	Million vehicle kilometres													
2a(ii)	Share of **2**	%													
2b	Diesel														
2b(i)	Number	Million vehicle kilometres													
2b(ii)	Share of **2**	%													
2c	Gas														
2c(i)	Number	Million vehicle kilometres													
2c(ii)	Share of **2**	%													
2d	Electricity														
2d(i)	Number	Million vehicle kilometres													
2d(ii)	Share of **2**	%													
2e	Biofuel														
e(i)	Number	Million vehicle kilometres													
2e(ii)	Share of **2**	%													
2f	Other fuel														
2f(i)	Number	Million vehicle kilometres													
2f(ii)	Share of **2**	%													
	Trolleybuses														
3	**Total**	Million vehicle kilometres													
	Motorcycles and mopeds														
4	**Total**	Million vehicle kilometres													
	Goods vehicles														
5	**Total (5a(i)+5b(i)+5c(i)+5d(i) +5e(i)+5f(i))**	Million vehicle kilometres													
5a	Petrol														

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
5a(i)	Number	Million vehicle kilometres													
5a(ii)	Share of **5**	%													
5b	Diesel														
5b(i)	Number	Million vehicle kilometres													
5b(ii)	Share of **5**	%													
5c	Gas														
5c(i)	Number	Million vehicle kilometres													
5c(ii)	Share of **5**	%													
5d	Electricity														
5d(i)	Number	Million vehicle kilometres													
5d(ii)	Share of **5**	%													
5e	Biofuel														
5e(i)	Number	Million vehicle kilometres													
5e(ii)	Share of **5**	%													
5f	Other fuel														
5f(i)	Number	Million vehicle kilometres													
5f(ii)	Share of **5**	%													
	Other motorised vehicles														
6	**Total (6a(i)+6b(i)+6c(i)+6d(i) +6e(i)+6f(i))**	Million vehicle kilometres													
6a	Petrol														
6a(i)	Number	Million vehicle kilometres													
6a(ii)	Share of **6**	%													
6b	Diesel														

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
6b(i)	Number	Million vehicle kilometres													
(ii)	Share of **6**	%													
6c	Gas														
6c(i)	Number	Million vehicle kilometres													
6c(ii)	Share of **6**	%													
6d	Electricity														
6d(i)	Number	Million vehicle kilometres													
6d(ii)	Share of **6**	%													
6e	Biofuel														
6e(i)	Number	Million vehicle kilometres													
6e(ii)	Share of **6**	%													
6f	Other fuel														
6f(i)	Number	Million vehicle kilometres													
6f(ii)	Share of **6**	%													
	Bicycles														
7	**Total**	Million vehicle kilometres													