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Food and Agriculture Organization of the United Nations

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ASSESSMENT**

**COUNTRY REPORTS**

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## The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2005 (FRA 2005), which is the most comprehensive assessment to date. More than 800 people have been involved, including 172 national correspondents and their colleagues, an Advisory Group, international experts, FAO staff, consultants and volunteers. Information has been collated from 229 countries and territories for three points in time: 1990, 2000 and 2005.

The reporting framework for FRA 2005 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes more than 40 variables related to the extent, condition, uses and values of forest resources. More information on the FRA 2005 process and the results - including all the country reports - is available on the FRA 2005 Web site ([www.fao.org/forestry/fra2005](http://www.fao.org/forestry/fra2005)).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2005 is:

Mette Løyche Wilkie  
Senior Forestry Officer  
FAO Forestry Department  
Viale delle Terme di Caracalla  
Rome 00100, Italy

E-mail: [Mette.LoycheWilkie@fao.org](mailto:Mette.LoycheWilkie@fao.org)

Readers can also use the following e-mail address: [fra@fao.org](mailto:fra@fao.org)

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The Global Forest Resources Assessment 2005 Country Report Series is designed to document and make available the information forming the basis for the FRA 2005 reports. The Country Reports have been compiled by officially nominated country correspondents in collaboration with FAO staff. Prior to finalisation, these reports were subject to validation by forestry authorities in the respective countries.

## Report preparation and contact persons

### This report has been prepared by:

Roman Michalak (National Correspondent)  
Forest Research Institute  
Bitwy Warszawskiej 1920R nr 3  
00-973 Warsaw  
e-mail: [R.Michalak@ibles.waw.pl](mailto:R.Michalak@ibles.waw.pl)  
tel +48 22 8223201 ext. 160  
fax +48 22 8224935

### Other professionals involved in the reporting process:

Grzegorz Zajączkowski  
Forest Research Institute  
Bitwy Warszawskiej 1920R nr 3  
00-973 Warsaw  
e-mail: [G.Zajaczkowski@ibles.waw.pl](mailto:G.Zajaczkowski@ibles.waw.pl)  
tel +48 22 8223201 ext. 163  
fax +48 22 8224935

Marek Jablonski  
Forest Research Institute  
Bitwy Warszawskiej 1920R nr 3  
00-973 Warsaw  
e-mail: [M.Jablonski@ibles.waw.pl](mailto:M.Jablonski@ibles.waw.pl)  
tel +48 22 8223201 ext. 160  
fax +48 22 8224935

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# 1 Table T1 – Extent of Forest and Other wooded land

## 1.1 FRA 2005 Categories and definitions

| Category  | Definition   |
|---|--|
| 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 <i>in situ</i> . It does not include land that is predominantly under agricultural or urban land use.   |
| 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 <i>in situ</i> ; 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. |
| Other land  | All land that is not classified as “Forest” or “Other wooded land”.  |
| Other land with tree cover (Subordinated to “Other land”) | Land classified as “Other land”, spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.  |
| Inland water bodies                                       | Inland water bodies generally include major rivers, lakes and water reservoirs.  |

## 1.2 National data

### 1.2.1 Data sources

| References to sources of information                    | Quality (H/M/L) | Variable(s)                        | Year(s)              | Additional comments   |
|---|-----------------|------------------------------------|----------------------|---|
| Central Statistical Office;                             | H               | Country area, inland water bodies, | 1990<br>2000<br>2002 | Information achieved from the Central Statistical Office database   |
| Central Statistical Office, Yearbook “Environment 2001” | H               | forest area                        | 2000                 |   |
| Central Statistical Office, Yearbook “Environment 2004” | H               | forest area                        | 2003                 |   |
| Central Statistical Office, Yearbook “Forestry 1995”    | H               | forest area                        | 1990,<br>1994        | Definition of forest was changed in 1991. For 1990 forest area doesn’t contain grounds related to forestry. |
| FAOSTAT   | H               | Country area, Land area            | 1990<br>2000<br>2002 |   |

### 1.2.2 Classification and definitions

| National class             | Definition   |
|----------------------------|--|
| Forest                     | (1) Ground covered with forest vegetation, of area above 0.1 ha; it includes forest grounds temporarily deprived of forest vegetation, and (2) grounds related to forestry (forest roads, nurseries etc.). |
| Other wooded land          | Not defined.   |
| Other land with tree cover | Not defined.   |
| Inland water bodies        | Inland water bodies include rivers, lakes, water reservoirs and interior sea water. Since 2001 contained ponds and ditches has been removed from this category (into land area).                           |

### 1.2.3 Original data

| National Categories | Area (1000 hectares)      |      |                           |              |
|---------------------|---------------------------|------|---------------------------|--------------|
|                     | 1990                      | 1994 | 2000                      | 2003         |
| forest - (1)        | 8694                      | 8732 | 8865                      | 8942         |
| forest – (2)        | should be estimated       | 188  | 194                       | 197          |
| Other land          | 21749                     |      | 21376                     | 21489        |
| Inland water bodies | 825                       |      | 834                       | 641          |
| <b>TOTAL</b>        | <b>31268<sup>a)</sup></b> |      | <b>31269<sup>a)</sup></b> | <b>31269</b> |

a) Difference between total area (31268,3 and 31268,5) results from the change of country borders due to Vistula river-bed alteration.

## 1.3 Analysis and processing of national data

### 1.3.1 Calibration

|                                    | Land area (1000 hectares) |       |                    |
|------------------------------------|---------------------------|-------|--------------------|
|                                    | 1990                      | 2000  | 2002(3)            |
| FAOSTAT                            | 30442                     | 30436 | 30629 <sup>1</sup> |
| National data                      | 30443                     | 30435 | 30628 <sup>2</sup> |
| Difference FAOSTAT – National data | -1                        | +1    | +1                 |

<sup>1</sup> FAOSTAT 2002 figure.

<sup>2</sup> National 2003 figure.

The difference has been incorporated into the category for the purpose of this report

### 1.3.2 Estimation and forecasting

The area of grounds related to forest (position “2” in forest definition) for year 1990 is estimated basing on data for 1994. The area of forests for the 2005 is estimated by extrapolation annual differences between data for year 2000 and 2003. The area of “Other lands” for 2000 and 2005 results from differences between calibrated “Total land area” and “forest area” for reported years. The area of “Inland water bodies” for 2000 and 2005 comes from calibration the national data with FAOSTAT figure.

## 1.4 Reclassification into FRA 2005 classes

### 1.5 Data for National reporting table T1

| FRA 2005 Categories                       | Area (1000 hectares) |               |               |
|---|----------------------|---------------|---------------|
|   | 1990                 | 2000          | 2005          |
| Forest                                    | 8881                 | 9059          | 9192          |
| Other wooded land                         | n. d.                | n. d.         | n. d.         |
| Other land                                | 21561                | 21377         | 21437         |
| ...of which with tree cover <sup>1)</sup> | n. d.                | n. d.         | n. d.         |
| Inland water bodies                       | 826                  | 833           | 640           |
| <b>TOTAL</b>                              | <b>31 268</b>        | <b>31 269</b> | <b>31 269</b> |

1) Area of “Other land with tree cover” is included in the area reported under “Other land” and should therefore be excluded when calculating the total area for the country.

### 1.6 Comments to National reporting table T1

According to the Polish definitions, the minimum area of forest should be at least 0.1 ha. Up to now there is no data evaluating the share of forest tracts greater than 0.1 ha and less than 0.5 ha. The total number of those forest tracts is big but we are of the opinion that the area occupied by them is not significant therefore this item has not been adjusted. In the Polish cadastral system exist categories like “woodlots” (233 thousand ha in 2003), “public and settlement green areas in towns” (57 thousand ha in 2003), but there is no other information about the use and features of that grounds (e.g. green areas could include lawns). For this purpose these categories were not included under the *other wooded land* neither *other land with tree cover*.

## 2 Table T2 – Ownership of Forest and Other wooded land

### 2.1 FRA 2005 Categories and definitions

| Category          | Definition  |
|-------------------|---|
| Private ownership | Land owned by individuals, families, private co-operatives, corporations, industries, religious and educational institutions, pension or investment funds, and other private institutions.          |
| Public ownership  | Land owned by the State (national, state and regional governments) or government-owned institutions or corporations or other public bodies including cities, municipalities, villages and communes. |
| Other ownership   | Land that is not classified either as “Public ownership” or as “Private ownership”.   |

### 2.2 National data

#### 2.2.1 Data sources

| References to sources of information                 | Quality (H/M/L) | Variable(s)                  | Year(s)    | Additional comments |
|--|-----------------|------------------------------|------------|---------------------|
| Central Statistical Office, Yearbook “Forestry 2001” | H               | Private and public ownership | 1990, 2000 |                     |

#### 2.2.2 Classification and definitions

Comply with FRA 2005 definitions.

#### 2.2.3 Original data

| FRA 2005 Categories | Area (1000 hectares)     |             |                          |            |
|---------------------|--------------------------|-------------|--------------------------|------------|
|                     | Forest (1) <sup>a)</sup> |             | Forest (2) <sup>a)</sup> |            |
|                     | 1990                     | 2000        | 1990                     | 2000       |
| Private ownership   | 1475                     | 1524        | 0                        | 0          |
| Public ownership    | 7219                     | 7341        | should be estimated      | 194        |
| <b>TOTAL</b>        | <b>8694</b>              | <b>8865</b> |                          | <b>194</b> |

<sup>a)</sup> division made in reference to national definition of forest

### 2.3 Analysis and processing of national data

#### 2.3.1 Calibration

#### 2.3.2 Estimation and forecasting

The area of grounds related to forest (position “2” in forest definition) for year 1990 was estimated in table T1.

### 2.4 Reclassification into FRA 2005 classes

### 2.5 Data for National reporting table T2

| FRA 2005 Categories | Area (1000 hectares) |             |                   |              |
|---------------------|----------------------|-------------|-------------------|--------------|
|                     | Forest               |             | Other wooded land |              |
|                     | 1990                 | 2000        | 1990              | 2000         |
| Private ownership   | 1475                 | 1524        |                   |              |
| Public ownership    | 7406                 | 7535        |                   |              |
| Other ownership     | 0                    | 0           |                   |              |
| <b>TOTAL</b>        | <b>8881</b>          | <b>9059</b> | <b>n. d.</b>      | <b>n. d.</b> |



### 3 Table T3 – Designated function of Forest and Other wooded land

#### 3.1 FRA 2005 Categories and definitions

##### *Types of designation*

| Category                 | Definition   |
|--------------------------|--|
| Primary function         | A designated function is considered to be primary when it is significantly more important than other functions. This includes areas that are legally or voluntarily set aside for specific purposes. |
| Total area with function | Total area where a specific function has been designated, regardless whether it is primary or not.   |

##### *Designation categories*

| Category / Designated function | Definition   |
|--------------------------------|--|
| Production                     | Forest / Other wooded land designated for production and extraction of forest goods, including both wood and non-wood forest products.   |
| Protection of soil and water   | Forest / Other wooded land designated for protection of soil and water.  |
| Conservation of biodiversity   | Forest / Other wooded land designated for conservation of biological diversity.  |
| Social services                | Forest / Other wooded land designated for the provision of social services.  |
| Multiple purpose               | Forest / Other wooded land designated to any combination of: production of goods, protection of soil and water, conservation of biodiversity and provision of social services and where none of these alone can be considered as being significantly more important than the others. |
| No or unknown function         | Forest / Other wooded land for which a specific function has not been designated or where designated function is unknown.  |

#### 3.2 National data

##### 3.2.1 Data sources

| References to sources of information  | Quality (H/M/L) | Variable(s)       | Year(s) | Additional comments       |
|---|-----------------|-------------------|---------|---------------------------|
| BULiGL 1991; Wyniki aktualizacji stanu powierzchni leśnej i zasobów drzewnych w Lasach Państwowych na dzień 1 stycznia 1991 r. (Update of forest area and wood resources for State Forest Holding). | H               | forests functions | 1990    | for State Forests Holding |
| BULiGL 2001; Wyniki aktualizacji stanu powierzchni leśnej i zasobów drzewnych w Lasach Państwowych na dzień 1 stycznia 2001 r. (Update of forest area and wood resources for State Forest Holding). | H               | forests functions | 2000    | for State Forests Holding |
| BULiGL 2004; Wyniki aktualizacji stanu powierzchni leśnej i zasobów drzewnych w Lasach Państwowych na dzień 1 stycznia 2004 r. (Update of forest area and wood resources for State Forest Holding). | H               | forests functions | 2003    | for State Forests Holding |

|  |   |                           |                   |   |
|--|---|---------------------------|-------------------|---|
| Forest Holding).                                     |   |                           |                   |   |
| Central Statistical Office, Yearbook “Forestry 2001” | H | Area of protective forest | 2000              | for private and community ownership,  |
|  |   | Area of forests           | 1990, 2000        | for state owned forests managed by other ministries than Ministry of Environment and Agricultural Ownership Agency. |
| Central Statistical Office, Yearbook “Forestry 2004” | H | Area of forest            | 1990, 2000, 2003, | for national parks  |
|  |   | Area of protective forest | 2003              | for private and community ownership,  |
|  |   | Area of forest            | 2003              | for state owned forests managed by other ministries than Ministry of Environment and Agricultural Ownership Agency. |

### 3.2.2 Classification and definitions

Definitions are given in three tables, for years 1990, 2000 and 2003 independently. Some terms given for one year are results of connection of subcategories given for another year.

#### Definition for year 2003

| National class               | Definition  |
|------------------------------|---|
| Production                   | <i>Other than listed below</i>  |
| Protection of soil and water | <i>Soil protecting (anti-erosion) forests</i><br><i>Water protecting forests</i><br><i>Timberline zone forests</i>  |
| Conservation of biodiversity | <i>National Parks</i><br><i>Reserves</i><br><i>High natural value forest</i><br><i>Refuge of game</i><br><i>Seed forests</i>  |
| Social services              | <i>Forests around cities</i><br><i>Forests around health-resorts</i><br><i>National defence forests</i><br><i>Experimental forests</i><br><i>State owned forests managed by other ministries than Ministry of Environment and Agricultural Ownership Agency</i><br><i>Protective forests of community ownership</i><br><i>Protective forests of private ownership</i> |

#### Definition for year 2000

| National class               | Definition   |
|------------------------------|--|
| Production                   | <i>Other than listed below</i>   |
| Protection of soil and water | <i>Soil protecting (anti-erosion) forests</i><br><i>Water protecting forests</i><br><i>Timberline zone forests</i>           |
| Conservation of biodiversity | <i>National Parks</i><br><i>Reserves</i><br><i>High natural value forest</i><br><i>Refuge of game</i><br><i>Seed forests</i> |
| Social services              | <i>Forests around health-resorts</i><br><i>National defence forests</i><br><i>Experimental forests</i>                       |

|  |   |
|--|---|
|  | <i>Forests in industrial zones</i><br><i>Urban forests</i><br><i>Forests of recreational sites</i><br><i>Landscape forests</i><br><i>State owned forests managed by other ministries than Ministry of Environment and Agricultural Ownership Agency</i><br><i>Protective forests of community ownership</i><br><i>Protective forests of private ownership</i> |
|--|---|

## Definition for year 1990

| National class               | Definition   |
|------------------------------|--|
| Production                   | <i>Other than listed below</i>   |
| Protection of soil and water | <i>Soil protecting (anti-erosion) forests</i><br><i>Water protecting forests</i><br><i>Timberline zone forests</i>   |
| Conservation of biodiversity | <i>National Parks</i><br><i>Reserves</i>   |
| Social services              | <i>Forests around health-resort</i><br><i>Forests in industrial zones</i><br><i>Forests of recreational sites</i><br><i>Landscape forests</i><br><i>State owned forests managed by other ministries than Ministry of Environment and Agricultural Ownership Agency</i> |

## 3.2.3 Original data

for the State Forests Holding

| FRA 2005 Categories / Designated function     | Area (1000 hectares) |             |             |
|---|----------------------|-------------|-------------|
|   | Primary function     |             |             |
|   | 1990                 | 2000        | 2003        |
| <b>Forest</b>                                 |                      |             |             |
| Production                                    | 4523                 | 4245        | 4176        |
| Protection of soil and water:                 |                      |             |             |
| <i>Soil protecting (anti-erosion) forests</i> | 140                  | 279         | 309         |
| <i>Water protecting forests</i>               | 560                  | 1232        | 1405        |
| <i>Timberline zone forests</i>                | 2                    | 3           | 3           |
| Conservation of biodiversity:                 |                      |             |             |
| <i>Reserves</i>                               | 43                   | 66          | 73          |
| <i>High natural value forest</i>              | -                    | 45          | 58          |
| <i>Refuge of game</i>                         | -                    | 67          | 76          |
| <i>Seed forests</i>                           | -                    | 12          | 13          |
| Social services:                              |                      |             |             |
| <i>Forests around cities</i>                  | -                    | -           | 645         |
| <i>Forests around health-resorts</i>          | 75                   | 65          | 67          |
| <i>National defence forests</i>               | -                    | 104         | 135         |
| <i>Experimental forests</i>                   | -                    | 52          | 46          |
| <i>Forests in industrial zones</i>            | 175                  | 10          | -           |
| <i>Urban forests</i>                          | -                    | 641         | -           |
| <i>Forests of recreational sites</i>          | 618                  | 65          | -           |
| <i>Landscape forests</i>                      | 654                  | 67          | -           |
| <b>Total</b>                                  | <b>6790</b>          | <b>6953</b> | <b>7006</b> |

for other public and private forests

| FRA 2005 Categories / Designated function  | Area (1000 hectares) |      |      |
|--|----------------------|------|------|
|  | Primary function     |      |      |
|  | 1990                 | 2000 | 2003 |
| <b>Forest</b>  |                      |      |      |
| Production   | 1533                 | 1547 | 1576 |
| Conservation of biodiversity: <i>National Parks</i>  | 119                  | 191  | 192  |
| Social services: <i>State owned forests managed by other ministries than Ministry of Environment and Agricultural Ownership Agency</i> | 256                  | 69   | 63   |
| <i>Protective forests of community ownership</i>   | -                    | 29   | 27   |
| <i>Protective forests of private ownership</i>   | -                    | 81   | 84   |

### 3.3 Analysis and processing of national data

#### 3.3.1 Calibration

Data for forests managed by the State Forests Holding refers only to forests defined in position “1” in the forest definition (Table T1). This figure should be enlarged by value of grounds related to forestry – position “2” in forest definition. The conversion factors for 1990, 2000 and 2003 are 1.02696, 1.02718 and 1.02726 respectively.

#### 3.3.2 Estimation and forecasting

For the purpose of further evaluation of “Total area with function – production”, the area of “seed forests”, “defence forests” and “experimental forests” in 1990 had to be estimated. Stands designated for serving these functions were present in that time, however, not reported in national statistics. Relevant values available for 2000 were adopted for 1990. The above changes resulted in the increase of areas of “social services” and “conservation of biodiversity” classes, and automatically diminished the area of “production” class.

for the State Forests Holding

| FRA 2005 Categories / Designated function | Area (1000 hectares) |      |      |
|---|----------------------|------|------|
|   | Primary function     |      |      |
|   | 1990                 | 2000 | 2003 |
| <b>Forest</b>                             |                      |      |      |
| Production                                | 4473                 | 4360 | 4290 |
| Protection of soil and water              | 721                  | 1556 | 1764 |
| Conservation of biodiversity              | 56                   | 195  | 226  |
| Social services                           | 1723                 | 1031 | 917  |
| <b>Total - Forest</b>                     | 6973                 | 7142 | 7197 |

Relevant values for the 2005 are estimated by extrapolation differences between data for year 2000 and 2003.

### 3.4 Reclassification into FRA 2005 classes

“Total area with function - production” for year 2000 and forecasted for year 2005, were estimated as a total forest area, diminished by the area of:

- *National Parks,*
- *Reserves,*
- *National defence forests,*
- *Experimental forests,*
- *Seed forests,*
- *Timberline zone forests.*

### 3.5 Data for National reporting table T3

| FRA 2005 Categories /<br>Designated function | Area (1000 hectares) |              |              |                          |                  |                  |
|--|----------------------|--------------|--------------|--------------------------|------------------|------------------|
|  | Primary function     |              |              | Total area with function |                  |                  |
|  | 1990                 | 2000         | 2005         | 1990                     | 2000             | 2005             |
| <b>Forest</b>                                |                      |              |              |                          |                  |                  |
| Production                                   | 6006                 | 5907         | 5839         | 8544                     | 8624             | 8701             |
| Protection of soil and water                 | 721                  | 1556         | 1902         | n. d.                    | n. d.            | n. d.            |
| Conservation of biodiversity                 | 175                  | 386          | 440          | n. d.                    | n. d.            | n. d.            |
| Social services                              | 1979                 | 1210         | 1011         | n. d.                    | n. d.            | n. d.            |
| Multiple purpose                             | 0                    | 0            | 0            | not appl.                | not appl.        | not appl.        |
| No or unknown function                       | 0                    | 0            | 0            | not appl.                | not appl.        | not appl.        |
| <b>Total – Forest</b>                        | <b>8881</b>          | <b>9059</b>  | <b>9192</b>  | <b>not appl.</b>         | <b>not appl.</b> | <b>not appl.</b> |
| <b>Other wooded land</b>                     |                      |              |              |                          |                  |                  |
| Production                                   |                      |              |              |                          |                  |                  |
| Protection of soil and water                 |                      |              |              |                          |                  |                  |
| Conservation of biodiversity                 |                      |              |              |                          |                  |                  |
| Social services                              |                      |              |              |                          |                  |                  |
| Multiple purpose                             |                      |              |              | not appl.                | not appl.        | not appl.        |
| No or unknown function                       |                      |              |              | not appl.                | not appl.        | not appl.        |
| <b>Total – Other wooded land</b>             | <b>n. d.</b>         | <b>n. d.</b> | <b>n. d.</b> | <b>not appl.</b>         | <b>not appl.</b> | <b>not appl.</b> |

### 3.6 Comments to National reporting table T3

Regarding the total area with specific function, information available in national classification system, enables the NC to evaluate the area of forest not serving production function only.

## 4 Table T4 – Characteristics of Forest and Other wooded land

### 4.1 FRA 2005 Categories and definitions

| Category              | Definition   |
|-----------------------|--|
| Primary               | Forest / Other wooded land of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed. |
| Modified natural      | Forest / Other wooded land of naturally regenerated native species where there are clearly visible indications of human activities.  |
| Semi-natural          | Forest / Other wooded land of native species, established through planting, seeding or assisted natural regeneration.  |
| Productive plantation | Forest / Other wooded land of introduced species, and in some cases native species, established through planting or seeding mainly for production of wood or non wood goods.   |
| Protective plantation | Forest / Other wooded land of native or introduced species, established through planting or seeding mainly for provision of services.  |

### 4.2 National data

#### 4.2.1 Data sources

| References to sources of information                 | Quality (H/M/L) | Variable(s)   | Year(s) | Additional comments |
|--|-----------------|---|---------|---------------------|
| Central Statistical Office, Yearbook "Forestry 1991" | H               | Strictly protected area of forests in reserves and national parks | 2003    |                     |
| Central Statistical Office, Yearbook "Forestry 2001" | H               | Strictly protected area of forests in reserves and national parks | 2000    |                     |
| Central Statistical Office, Yearbook "Forestry 2004" | H               | Strictly protected area of forests in reserves and national parks | 1990    |                     |
| Database of State Forest Holding                     | M               | Area of plantations   | 1990    |                     |

#### 4.2.2 Classification and definitions

| National class        | Definition   |
|-----------------------|--|
| Primary               | Strictly protected area of forests in reserves and national parks.   |
| Modified natural      |  |
| Semi-natural          | Separation between modified natural and semi-natural forests is not feasible due to the fragmentation and varied quality of data on forest origin. Assuming that forests of artificial origin consist prevailing part of this group, relevant forests have been reported under semi-natural class. |
| Productive plantation | Plantations of fast growing species with short rotation period and forests of introduced species.  |
| Protective plantation | Not defined  |

#### 4.2.3 Original data

| FRA 2005 Categories   | Area (1000 hectares) |             |             |
|-----------------------|----------------------|-------------|-------------|
|                       | Forest               |             |             |
|                       | 1990                 | 2000        | 2003        |
| Primary               | 30                   | 51          | 53          |
| Modified natural      |                      |             |             |
| Semi-natural          |                      |             |             |
| Productive plantation | 32                   |             |             |
| <b>TOTAL</b>          | <b>8881</b>          | <b>9059</b> | <b>9139</b> |

### 4.3 Analysis and processing of national data

#### 4.3.1 Calibration

Not applied

#### 4.3.2 Estimation and forecasting

Total forests area for the 2005 is estimated by extrapolation differences between data for year 2000 and 2003. For primary forests and productive plantations the latest available data were received. The amount of forests as semi-natural for 2005 results from the difference between total and remaining categories.

### 4.4 Reclassification into FRA 2005 classes

#### 4.5 Data for National reporting table T4

| FRA 2005 Categories   | Area (1000 hectares) |             |             |                   |      |      |
|-----------------------|----------------------|-------------|-------------|-------------------|------|------|
|                       | Forest               |             |             | Other wooded land |      |      |
|                       | 1990                 | 2000        | 2005        | 1990              | 2000 | 2005 |
| Primary               | 30                   | 51          | 53          |                   |      |      |
| Modified natural      | -                    | -           | -           |                   |      |      |
| Semi-natural          | 8819                 | 8976        | 9107        |                   |      |      |
| Productive plantation | 32                   | 32          | 32          |                   |      |      |
| Protective plantation | -                    | -           | -           |                   |      |      |
| <b>TOTAL</b>          | <b>8881</b>          | <b>9059</b> | <b>9192</b> |                   |      |      |

#### 4.6 Comments to National reporting table T4

The area of primary forest is not directly monitored. For the purpose of this table relevant values were seized with use of protectiveness status – areas strictly protected were qualified.

## 5 Table T5 – Growing stock

### 5.1 FRA 2005 Categories and definitions

| Category                 | Definition   |
|--------------------------|--|
| 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. |
| Commercial growing stock | The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of Z cm or more.  |

### 5.2 National data

#### 5.2.1 Data sources

| References to sources of information               | Quality (H/M/L) | Variable(s)   | Year(s) | Additional comments |
|--|-----------------|---------------|---------|---------------------|
| Central Statistical Office. Yearbook Forestry 1991 | H               | Growing stock | 1990    |                     |
| Forest Report 2001                                 | M               | Growing stock | 2000    |                     |
| Forest Report 2003                                 | M               | Growing stock | 2002    |                     |

Additionally sources indicated in the Table 3 apply here as well

#### 5.2.2 Classification and definitions

| National class           | Definition   |
|--------------------------|--|
| Growing stock            | Volume over bark of all living trees more than 7 cm in diameter at breast height. Includes the stem from ground level and may also include branches to a minimum diameter of 7 cm. |
| Commercial growing stock | No definitions available   |

#### 5.2.3 Original data

| FRA 2005 Categories | Volume (million cubic meters over bark) |        |        |                   |      |      |
|---------------------|---|--------|--------|-------------------|------|------|
|                     | Forest                                  |        |        | Other wooded land |      |      |
|                     | 1990                                    | 2000   | 2002   | 1990              | 2000 | 2005 |
| Growing stock       | 1484.8                                  | 1736.0 | 1787.3 | -                 | -    | -    |

### 5.3 Analysis and processing of national data

#### 5.3.1 Calibration

Not needed

#### 5.3.2 Estimation and forecasting

Estimation is not needed data is available for current reference years. The forecasting for the year 2005 was made using linear extrapolation (2000-2002).

### 5.4 Reclassification into FRA 2005 classes

Commercial growing stock was derived by multiplying the total growing stock by the share of area of forests available for wood supply ("Total area with function: production"). Therefore relevant sources indicated in the Table 3 apply here as well. For the needs of estimation of "Commercial growing stock" in 2002, the share of "Total area with function – production" calculated for the year 2003 was applied.



| FRA 2005 Categories      | Volume (million cubic meters over bark) |        |        |                   |      |      |
|--------------------------|---|--------|--------|-------------------|------|------|
|                          | Forest                                  |        |        | Other wooded land |      |      |
|                          | 1990                                    | 2000   | 2002   | 1990              | 2000 | 2005 |
| Growing stock            | 1484.8                                  | 1736.0 | 1787.3 | -                 | -    | -    |
| Commercial growing stock | 1428.5                                  | 1652.6 | 1695.6 | -                 | -    | -    |

## 5.5 Data for National reporting table T5

| FRA 2005 Categories      | Volume (million cubic meters over bark) |        |        |                   |      |      |
|--------------------------|---|--------|--------|-------------------|------|------|
|                          | Forest                                  |        |        | Other wooded land |      |      |
|                          | 1990                                    | 2000   | 2005   | 1990              | 2000 | 2005 |
| Growing stock            | 1484.8                                  | 1736.0 | 1864.3 | -                 | -    | -    |
| Commercial growing stock | 1428.5                                  | 1652.6 | 1760.1 | -                 | -    | -    |

| Specification of country threshold values                                       | Unit       | Value | Complementary information |
|---|------------|-------|---------------------------|
| 1. Minimum diameter at breast height of trees included in Growing stock (X)     | cm         | 7     |                           |
| 2. Minimum diameter at the top end of stem (Y) for calculation of Growing stock | cm         | 7     |                           |
| 3. Minimum diameter of branches included in Growing stock (W)                   | cm         | 7     |                           |
| 4. Minimum diameter at breast height of trees in Commercial growing stock (Z)   | cm         | 7     |                           |
| 5. Volume refers to “Above ground” (AG) or “Above stump” (AS)                   | AG / AS    | AG    |                           |
| 6. Have any of the above thresholds (points 1 to 4) changed since 1990          | Yes/No     | No    |                           |
| 7. If yes, then attach a separate note giving details of the change             | Attachment |       |                           |

## 5.6 Comments to National reporting table T5

There is no such class (commercial growing stock) in Polish management system. GFRA definitions were interpreted and decision, which Polish categories should be included for the needs of this questionnaire, was made.

Commercial growing stock was assumed as the difference between total Growing stock and Growing stock of forests, that are not available for wood supply

As forests not available for wood supply (fnafws), following categories have been counted:

- Forest area of national parks
- Forest areas of nature reserves (outside of national parks)
- National defence forests,
- *Experimental forests,*
- *Seed forests,*
- *Timberline zone forests.*

Approach applied for the evaluation of an area of the fnafws is coherent with this applied for the purpose of assessment of “Total area with function – production” in Table 3)

## 6 Table T6 – Biomass stock

### 6.1 FRA 2005 Categories and definitions

| Category             | Definition  |
|----------------------|---|
| Above-ground biomass | All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.  |
| Below-ground biomass | All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.   |
| Dead wood biomass    | All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country. |

### 6.2 National data

#### 6.2.1 Data sources

| References to sources of information               | Quality (H/M/L) | Variable(s)   | Year(s)   | Additional comments       |
|--|-----------------|---|-----------|---------------------------|
| Forest Health State Inventory 1991                 | L               | Dead-live ratio   | 1990      |                           |
| Forest Health State Inventory 2001                 | L               | Dead-live ratio   | 2000,2002 |                           |
| Central Statistical Office. Yearbook Forestry 1991 | H               | Growing stock, Growing stock for Coniferous and Broadleaved Species | 1990      |                           |
| Forest Report 2001                                 | M               | Growing stock   | 2000      |                           |
| Forest Report 2003                                 | M               | Growing stock   | 2002      |                           |
| Central Statistical Office. Yearbook Forestry 2002 | H               | Growing stock for Coniferous and Broadleaved Species                | 2000      | for State Forests Holding |
| Central Statistical Office. Yearbook Forestry 2004 | H               | Growing stock for Coniferous and Broadleaved Species                | 2002      | for State Forests Holding |

#### 6.2.2 Classification and definitions

| National class              | Definition                |
|-----------------------------|---------------------------|
| FRA 2005 categories applied | FRA 2005 definitions used |

#### 6.2.3 Original data

Shares of the Coniferous and Broadleaved species for the all forests were evaluated basing on data collected for State Forest Holding.

| Species      | Volume (million cubic meters over bark) |               |               |
|--------------|---|---------------|---------------|
|              | Forest                                  |               |               |
|              | 1990                                    | 2000          | 2002          |
| Coniferous   | 1156.0                                  | 1366.2        | 1408.4        |
| Broadleaved  | 328.8                                   | 369.8         | 378.9         |
| <b>TOTAL</b> | <b>1484.8</b>                           | <b>1736.0</b> | <b>1787.3</b> |

### 6.3 Analysis and processing of national data

Growing stock in Poland includes volume over bark of all living trees more than 7 cm in diameter at breast height and branches to a minimum diameter of 7 cm. To obtain the total volume (d.b.h > 0 cm), volume of growing stock (above 7 cm) of coniferous and broadleaved species were multiplied by derived coefficient - 1.26 or 1.17 (respectively).

Biomass was estimated basing on total volume. Default values provided by the IPCC\_GPG (reproduced in Appendix 5, tab. 5.2-5.5) were used to calculate above-ground and below-ground biomass (1990, 2000, 2002): WD – 0.42 (coniferous), WD – 0.57 (broadleaved), BEF – 1.3 (coniferous), BEF – 1.4 (broadleaved), R – 0.32 (coniferous), R – 0.24 (broadleaved).

General formulas given in *Guidelines for country reporting to FRA 2005* were used in calculations.

Dead wood biomass for coniferous species (in 1990) was estimated as a 1.3% (country ratio on the basis of result of forest health state inventory) of total living coniferous biomass. Dead wood biomass for broadleaved species (in 1990) was estimated as a 1.4% (country ratio) of total living broadleaved biomass. Dead wood biomass for coniferous species (in 2000, 2002) was estimated as a 0.72% (country ratio) of total living coniferous biomass. Dead wood biomass for broadleaved species (in 2000, 2002) was estimated as a 0.85% (country ratio) of total living broadleaved biomass.

#### 6.3.1 Calibration

Not needed.

#### 6.3.2 Estimation and forecasting

Estimation is not needed, data is available for current reference years. The forecasting for the year 2005 was made using linear extrapolation (2000-2002).

### 6.4 Reclassification into FRA 2005 classes

Not needed.

### 6.5 Data for National reporting table T6

| FRA 2005 Categories  | Biomass (million metric tonnes oven-dry weight) |               |               |                   |      |      |
|----------------------|---|---------------|---------------|-------------------|------|------|
|                      | Forest  |               |               | Other wooded land |      |      |
|                      | 1990  | 2000          | 2005          | 1990              | 2000 | 2005 |
| Above-ground biomass | 1102.3  | 1285.2        | 1379.0        | -                 | -    | -    |
| Below-ground biomass | 328.2   | 383.6         | 412.1         | -                 | -    | -    |
| Dead wood biomass    | 19.0  | 12.6          | 13.4          | -                 | -    | -    |
| <b>TOTAL</b>         | <b>1449.5</b>                                   | <b>1681.4</b> | <b>1804.5</b> | -                 | -    | -    |

### 6.6 Comments to National reporting table T6

Growing stock in Poland includes volume over bark of all living trees more than 7 cm in diameter at breast height and branches to a minimum diameter of 7 cm. To obtain the total volume (d.b.h > 0 cm), volume of growing stock (above 7 cm) of coniferous and broadleaved species were multiplied by derived coefficient - 1.26 or 1.17 (respectively).

Biomass was estimated basing on total volume. Default values provided by the IPCC\_GPG (reproduced in Appendix 5, tab. 5.2-5.5) were used to calculate above-ground and below-ground biomass (1990, 2000, 2002): WD – 0.42 (coniferous), WD – 0.57 (broadleaved), BEF – 1.3 (coniferous), BEF – 1.4 (broadleaved), R – 0.32 (coniferous), R – 0.24 (broadleaved).

General formulas given in *Guidelines for country reporting to FRA 2005* were used in calculations.

Dead wood biomass for coniferous species (in 1990) was estimated as a 1.3% (country ratio on the basis of result of forest health state inventory) of total living coniferous biomass. Dead wood biomass for broadleaved species (in 1990) was estimated as a 1.4% (country ratio) of total living broadleaved biomass. Dead wood biomass for coniferous species (in 2000, 2002) was estimated as a 0.72% (country ratio) of total living coniferous biomass. Dead wood biomass for broadleaved species (in 2000, 2002) was estimated as a 0.85% (country ratio) of total living broadleaved biomass.

## 7 Table T7 – Carbon stock

### 7.1 FRA 2005 Categories and definitions

| Category                       | Definition  |
|--------------------------------|---|
| Carbon in above-ground biomass | Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.   |
| Carbon in below-ground biomass | Carbon in all living biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.   |
| Carbon in dead wood biomass    | Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country. |
| Carbon in litter               | Carbon in all non-living biomass with a diameter less than a minimum diameter chose by the country for lying dead (for example 10 cm), in various states of decomposition above the mineral or organic soil. This includes the litter, fomic, and humic layers.                     |
| Soil carbon                    | Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.   |

### 7.2 National data

#### 7.2.1 Data sources

| References to sources of information               | Quality (H/M/L) | Variable(s)   | Year(s)   | Additional comments       |
|--|-----------------|---|-----------|---------------------------|
| Forest Health State Inventory 1991                 | L               | Dead-live ratio   | 1990      |                           |
| Forest Health State Inventory 2001                 | L               | Dead-live ratio   | 2000,2002 |                           |
| Central Statistical Office. Yearbook Forestry 1991 | H               | Growing stock, Growing stock for Coniferous and Broadleaved Species | 1990      |                           |
| Forest Report 2001                                 | M               | Growing stock   | 2000      |                           |
| Forest Report 2003                                 | M               | Growing stock   | 2002      |                           |
| Central Statistical Office. Yearbook Forestry 2002 | H               | Growing stock for Coniferous and Broadleaved Species                | 2000      | for State Forests Holding |
| Central Statistical Office. Yearbook Forestry 2004 | H               | Growing stock for Coniferous and Broadleaved Species                | 2002      | for State Forests Holding |

#### 7.2.2 Classification and definitions

| National class              | Definition                |
|-----------------------------|---------------------------|
| FRA 2005 categories applied | FRA 2005 definitions used |

#### 7.2.3 Original data

Forest carbon data were estimated using biomass data (as coming from table 6) multiplied by the default conversion factor of 0.5 (1990, 2000, 2005).

### 7.3 Analysis and processing of national data

#### 7.3.1 Calibration

Not needed.

### 7.3.2 Estimation and forecasting

### 7.4 Reclassification into FRA 2005 classes

Not needed.

### 7.5 Data for National reporting table T7

| FRA 2005 Categories                              | Carbon (Million metric tonnes) |              |              |                   |      |      |
|--|--------------------------------|--------------|--------------|-------------------|------|------|
|  | Forest                         |              |              | Other wooded land |      |      |
|  | 1990                           | 2000         | 2005         | 1990              | 2000 | 2005 |
| Carbon in above-ground biomass                   | 551.1                          | 642.6        | 689.5        | -                 | -    | -    |
| Carbon in below-ground biomass                   | 164.1                          | 191.8        | 206.1        | -                 | -    | -    |
| <b>Sub-total: Carbon in living biomass</b>       | <b>715.2</b>                   | <b>834.4</b> | <b>895.6</b> | -                 | -    | -    |
| Carbon in dead wood                              | 9.5                            | 6.3          | 6.7          | -                 | -    | -    |
| Carbon in litter                                 | NA                             | NA           | NA           | -                 | -    | -    |
| <b>Sub-total: Carbon in dead wood and litter</b> | <b>9.5</b>                     | <b>6.3</b>   | <b>6.7</b>   | -                 | -    | -    |
| Soil carbon to a depth of _____ cm               | NA                             | NA           | NA           | -                 | -    | -    |
| <b>TOTAL CARBON</b>                              | <b>724.7</b>                   | <b>840.7</b> | <b>902.3</b> | -                 | -    | -    |

NA= Not available

### 7.6 Comments to National reporting table T7

Carbon stock was estimated by multiplying the ICPP-GPG default value of carbon content (50%) with above-ground, below-ground and dead wood biomass, respectively. Data on carbon contained in soils and litter are not available.

## 8 Table T8 – Disturbances affecting health and vitality

### 8.1 FRA 2005 Categories and definitions

| Category                | Definition   |
|-------------------------|--|
| Disturbance by fire     | Disturbance caused by wildfire, independently whether it broke out inside or outside the forest/OWL.       |
| Disturbance by insects  | Disturbance caused by insect pests that are detrimental to tree health.                                    |
| Disturbance by diseases | Disturbance caused by diseases attributable to pathogens, such as a bacteria, fungi, phytoplasma or virus. |
| Other disturbance       | Disturbance caused by other factors than fire, insects or diseases.  |

### 8.2 National data

#### 8.2.1 Data sources

| References to sources of information  | Quality (H/M/L) | Variable(s)                             | Year(s)                 | Additional comments   |
|---|-----------------|---|-------------------------|---|
| <b>Central Statistical Office:</b><br><i>Statistical Yearbooks of Forestry 1989-1993, 1999- 2003.</i> | H               | Burnt area                              | 1988-1992,<br>1998-2002 |   |
| <b>Central Statistical Office:</b><br><i>Statistical Yearbooks of Forestry 1989-1993, 2000- 2004.</i> | M               | Stands affected by industry (gas, dust) | 1988-1992,<br>1998-2002 | Since 1992 data has been collected for State Forest Holding only                            |
| <b>Central Statistical Office:</b><br><i>Statistical Yearbooks of Forestry 1989-1993, 1999- 2003.</i> | M               | Insects, diseases                       | 1988-1992,<br>1998-2002 | Area of insects and diseases occurrence, where chemical and mechanical control were applied |

#### 8.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
|                |            |

#### 8.2.3 Original data

| Year   | Disturbances affecting health and vitality [1000 ha] |          |         |          |
|--|--|----------|---------|----------|
|  | Fire   | Industry | Insects | Diseases |
| 1988   | 3,80   | 28,5     | 261,26  | 4,98     |
| 1989   | 5,00   | 25,4     | 103,42  | 4,99     |
| 1990   | 7,34   | 25,9     | 26,12   | 4,99     |
| 1991   | 2,57   | 25,9     | 171,30  | 1,59     |
| 1992   | 43,76  | 26,5     | 392,66  | 12,68    |
| 1998   | 4,02   | 27,4     | 92,54   | 79,78    |
| 1999   | 8,31   | 18,3     | 90,71   | 83,99    |
| 2000   | 7,01   | 17,7     | 169,56  | 93,53    |
| 2001   | 3,43   | 17,8     | 164,51  | 78,45    |
| 2002   | 5,20   | 17,9     | 80,32   | 37,98    |
| Average annual area affected (1000) hectares |  |          |         |          |
| 1988-1992                                    | 12,49  | 26,4     | 190,95  | 5,84     |
| 1998-2002                                    | 5,59   | 19,8     | 119,53  | 74,75    |

### 8.3 Analysis and processing of national data

#### 8.3.1 Estimation and forecasting

### 8.4 Reclassification into FRA 2005 classes

| FRA Categories          | National classes |          |         |          |
|-------------------------|------------------|----------|---------|----------|
|                         | Fire             | Industry | Insects | Diseases |
| Disturbance by fire     | 100%             |          |         |          |
| Disturbance by insects  |                  |          | 100%    |          |
| Disturbance by diseases |                  |          |         | 100%     |
| Other disturbance       |                  | 100%     |         |          |

### 8.5 Data for National reporting table T8

| FRA-2005 Categories     | Average annual area affected (1 000 hectares) |       |                       |      |
|-------------------------|---|-------|-----------------------|------|
|                         | Forests                                       |       | Other wooded land (1) |      |
|                         | 1990  | 2000  | 1990                  | 2000 |
| Disturbance by fire     | 12.5  | 5.6   | -                     | -    |
| Disturbance by insects  | 190.9   | 119.5 | -                     | -    |
| Disturbance by diseases | 5.8   | 74.4  | -                     | -    |
| Other disturbance       | 26.4  | 19.8  | -                     | -    |

### 8.6 Comments to National reporting table T8

Since 1992 data has been collected for State Forest Holding only.

## 9 Table T9 – Diversity of tree species

### 9.1 FRA 2005 Categories and definitions

| Category                                     | Definition   |
|--|--|
| Number of native tree species                | The total number of native tree species that have been identified within the country.                  |
| Number of critically endangered tree species | The number of native tree species that are classified as “Critically endangered” in the IUCN red list. |
| Number of endangered tree species            | The number of native tree species that are classified as “Endangered” in the IUCN red list.            |
| Number of vulnerable tree species            | The number of native tree species that are classified as “Vulnerable” in the IUCN red list.            |

### 9.2 National data

#### 9.2.1 Data sources

| References to sources of information                                     | Quality (H/M/L) | Variable(s)                                   | Year(s) | Additional comments |
|--|-----------------|---|---------|---------------------|
| <a href="http://www.redlist.org/">http://www.redlist.org/</a>            | H               | Critically endangered, Endangered, Vulnerable | 2000    |                     |
| Seneta W., Dolatowski J.; 2002; „Dendrologia”; PWN                       | H               | Native tree species                           | 2002    |                     |
| „Polska czerwona księga roślin” („Polish Red Book of Plants”); 2001; PAN | H               | Endangered species                            | 2001    |                     |

#### 9.2.2 Classification and definitions

Comply with FRA 2005 definitions.

#### 9.2.3 Original data

|    |                        |  |
|----|------------------------|--|
| 1  | Jodła pospolita        | <i>Abies alba</i>                        |
| 2  | Klon polny             | <i>Acer campestre</i>                    |
| 3  | Klon pospolity         | <i>Acer platanoides</i>                  |
| 4  | Klon jawor             | <i>Acer pseudoplatanus</i>               |
| 5  | Olsza czarna           | <i>Alnus glutinosa</i>                   |
| 6  | Olsza szara            | <i>Alnus incana</i>                      |
| 7  | Brzoza czarna (ciemna) | <i>Betula obscura</i>                    |
| 8  | Brzoza brodawkowata    | <i>Betula pendula</i>                    |
| 9  | Brzoza omszona         | <i>Betula pubescens</i>                  |
| 10 | Brzoza karpacka        | <i>Betula pubescens subsp. carpatica</i> |
| 11 | Brzoza ojcowiska       | <i>Betula x oycoviensis</i> (VU)         |
| 12 | Grab pospolity         | <i>Carpinus betulus</i>                  |
| 13 | Bez czarny             | <i>Cornus sanguinea</i> *                |
| 14 | Dereń świdwa           | <i>Cornus sanguinea</i> *                |
| 15 | Leszczyna pospolita    | <i>Corylus avellana</i>                  |
| 16 | Głóg jednoszyjkowy     | <i>Crataegus monogyna</i>                |
| 17 | Głóg dwuszyjkowy       | <i>Crataegus oxycantha</i>               |
| 18 | Trzmielina pospolita   | <i>Evonymus europaeus</i> *              |
| 19 | Buk pospolity          | <i>Fagus sylvatica</i>                   |
| 20 | Jesion wyniosły        | <i>Fraxinus exelsior</i>                 |
| 21 | Rokitnik pospolity     | <i>Hippophae Rhamnoides</i> *            |
| 22 | Jałowiec pospolity     | <i>Juniperus communis</i> *              |



|    |                                     |                               |
|----|-------------------------------------|-------------------------------|
| 23 | Modrzew europejski                  | <i>Larix decidua</i>          |
| 24 | Modrzew polski                      | <i>Larix polonica</i>         |
| 25 | Jabłoń dzika (płonka)               | <i>Malus sylvestris</i> *     |
| 26 | Świerk pospolity                    | <i>Picea excelsa</i>          |
| 27 | Sosna limba                         | <i>Pinus cembra</i>           |
| 28 | Sosna zwyczajna                     | <i>Pinus sylvestris</i>       |
| 29 | Sosna błotna                        | <i>Pinus x rhaetica</i>       |
| 30 | Topola biała                        | <i>Populus alba</i>           |
| 31 | Topola szara                        | <i>Populus canescens</i>      |
| 32 | Topola czarna                       | <i>Populus nigra</i>          |
| 33 | Topola osika                        | <i>Populus tremula</i>        |
| 34 | Wiśnia ptasia (czereśnia, trześnia) | <i>Prunus avium</i>           |
| 35 | Czeremcha pospolita                 | <i>Prunus padus</i>           |
| 36 | Grusza pospolita                    | <i>Pyrus communis</i>         |
| 37 | Dąb bezszypułkowy                   | <i>Quercus petraea</i>        |
| 38 | Dąb omszony                         | <i>Quercus pubescens</i> (EN) |
| 39 | Dąb szypułkowy                      | <i>Quercus robur</i>          |
| 40 | Szalkak pospolity                   | <i>Rhamnus catharticus</i> *  |
| 41 | Wierzba biała                       | <i>Salix alba</i>             |
| 42 | Wierzba iwa                         | <i>Salix caprea</i> *         |
| 43 | Wierzba wawrzynkowa                 | <i>Salix daphnoides</i> *     |
| 44 | Wierzba siwa                        | <i>Salix eleagnos</i> *       |
| 45 | Wierzba krucha                      | <i>Salix fragilis</i> *       |
| 46 | Wierzba laurowa                     | <i>Salix pentandra</i> *      |
| 47 | Wierzba trójpręcikowa               | <i>Salix triandria</i> *      |
| 48 | Jarząb mączny                       | <i>Sorbus aria</i>            |
| 49 | Jarząb pospolity                    | <i>Sorbus aucuparia</i>       |
| 50 | Jarząb szwedzki                     | <i>Sorbus intermedia</i> (EN) |
| 51 | Jarząb brekinia (brzęk)             | <i>Sorbus torminalis</i>      |
| 52 | Cis pospolity                       | <i>Taxus baccata</i>          |
| 53 | Lipa drobnolistna                   | <i>Tilia cordata</i>          |
| 54 | Lipa szerokolistna                  | <i>Tilia platyphyllos</i>     |
| 55 | Wiąz górski (brzost)                | <i>Ulmus glabra</i>           |
| 56 | Wiąz szypułkowy (limak)             | <i>Ulmus laevis</i>           |
| 57 | Wiąz polny                          | <i>Ulmus minor</i>            |

\* – seldom occur as a tree form

VU – vulnerable according to Polish Red Book of Plants

EN – endangered according to Polish Red Book of Plants

### 9.3 Data for National reporting table T9

| FRA 2005 Categories                | Number of species<br>(year 2000) |
|------------------------------------|----------------------------------|
| Native tree species                | 57                               |
| Critically endangered tree species | 0                                |
| Endangered tree species            | 0                                |
| Vulnerable tree species            | 1                                |

### 9.4 Comments to National reporting table T9

The vulnerable species according to IUCN list is *Betula oycoviensis*.

According to the "Polish red book of plants" there are 2 Endangered species and 1 Vulnerable species: *Sorbus intermedia* (EN), *Quercus pubescens* (EN), *Betula x oycoviensis* (VU). 13 of species seldom occur as a tree form

## 10 Table T10 – Growing stock composition

### 10.1 FRA 2005 Categories and definitions

List of species names (scientific and common names) of the ten most common species.

| Scientific name   | Common name                                   |
|---|---|
| Pinus silvestris, Larix decidua   | Pine, Larch                                   |
| Picea abies   | Spruce  |
| Quercus L., Fraxinus excelsior, Acer platanoides, Acer pseudoplatanus, Ulmus L. | Oak, Ash, Maple, Sycamore Maple, Elm          |
| Fagus sylvatica   | European beech                                |
| Betula L., Robinia pseudoacacia   | Birch, Robinia                                |
| Alnus L.  | Alder   |
| Abies alba, Pseudotsuga menziesii   | Fir, Douglas fir                              |
| Populus tremula, Tilia L., Salix L., Populus alba                               | Poplar, Linden, Willow, European white poplar |
| Carpinus betulus  | Hornbeam                                      |

### 10.2 National data

#### 10.2.1 Data sources

| References to sources of information               | Quality (H/M/L) | Variable(s)   | Year(s) | Additional comments   |
|--|-----------------|---------------|---------|---|
| Central Statistical Office. Yearbook Forestry 1991 | H               | Growing stock | 1990    | Growing stock distribution according to tree species                              |
| Central Statistical Office. Yearbook Forestry 2002 | H               | Growing stock | 2000    | Growing stock distribution in the State Forests Holding according to tree species |

#### 10.2.2 Original data

| FRA 2005 Categories / Species name (Scientific name and common name)   | Growing Stock in Forests (million cubic meters) | Growing Stock in State Forests Holding (million cubic meters) |
|--|---|---|
|  | 1990  | 2000  |
| Pinus silvestris, Larix decidua –Pine, Larch   | 973.1   | 1025.9  |
| Picea abies - Spruce   | 129.7   | 103.4   |
| Quercus L., Fraxinus excelsior, Acer platanoides, Acer pseudoplatanus, Ulmus L. - Oak, Ash, Maple, Sycamore Maple, Elm | 91.2  | 96.9  |
| Fagus sylvatica - European beech   | 86.3  | 85.2  |
| Betula L., Robinia pseudoacacia - Birch, Robinia   | 71.1  | 65.4  |
| Alnus L. - Alder   | 67.0  | 57.1  |
| Abies alba, Pseudotsuga menziesii – Fir, Douglas fir   | 53.2  | 35.8  |
| Populus tremula, Tilia L., Salix L., Populus alba - Poplar, Linden, Willow, European white poplar                      | 7.5   | 6.0   |
| Carpinus betulus - Hornbeam  | 5.7   | 4.4   |
| <b>TOTAL</b>   | <b>1484.8</b>                                   | <b>1480.1</b>   |

### 10.3 Analysis and processing of national data

#### 10.3.1 Calibration

Not needed.

### 10.3.2 Estimation and forecasting

Not needed.

### 10.4 Data for National reporting table T10

| FRA 2005 Categories / Species name      |  | Growing Stock in Forests<br>(million cubic meters) |               |
|---|--|--|---------------|
| Common name                             | Scientific name  | 1990   | 2000          |
| Pine, Larch                             | <i>Pinus silvestris</i> , <i>Larix decidua</i>   | 973.1  | 1203.2        |
| Spruce                                  | <i>Picea abies</i>   | 129.7  | 121.3         |
| Oak, Ash, Maple,<br>Sycamore Maple, Elm | <i>Quercus L.</i> , <i>Fraxinus excelsior</i> , <i>Acer<br/>platanoides</i> , <i>Acer pseudoplatanus</i> , <i>Ulmus L.</i> | 91.2   | 113.5         |
| Beech                                   | <i>Fagus sylvatica</i>   | 86.3   | 100.0         |
| Birch, Robinia                          | <i>Betula L.</i> , <i>Robinia pseudoacacia</i>   | 71.1   | 76.7          |
| Alder                                   | <i>Alnus L.</i>  | 67.0   | 67.1          |
| Fir, Douglas fir                        | <i>Abies alba</i> , <i>Pseudotsuga menziesii</i>   | 53.2   | 41.9          |
| Aspen, Linden Willow,<br>Poplar         | <i>Populus tremula</i> , <i>Tilia L.</i> , <i>Salix L.</i> , <i>Populus<br/>alba</i>                                       | 7.5  | 7.0           |
| Hornbeam                                | <i>Carpinus betulus</i>  | 5.7  | 5.2           |
| Remaining                               | <i>Remaining species</i>   | -  | -             |
| <b>TOTAL</b>                            |  | <b>1484.8</b>                                      | <b>1735.6</b> |

\* The bolded names mean the most important genus in given groups.

### 10.5 Comments to National reporting table T10

For 2000 y. data on tree species distribution in the State Forests Holding are available only. These data were used to calculate growing stock composition in other state forests. Data is not available to present data for each species, for this reason Poland is reporting on the 9 most common genus groups.

## 11 Table T11 – Wood removal

### 11.1 FRA 2005 Categories and definitions

| Category                | Definition   |
|-------------------------|--|
| Industrial wood removal | The wood removed (volume of roundwood over bark) for production of goods and services other than energy production (woodfuel). |
| Woodfuel removal        | The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.                |

### 11.2 National data

#### 11.2.1 Data sources

| References to sources of information  | Quality (H/M/L) | Variable(s)                            | Year(s)   | Additional comments |
|---|-----------------|--|-----------|---------------------|
| Central Statistical Office, From Yearbook “Forestry in 1990” to „Forestry 2004” | H               | Harvest of timber by assortment groups | 1988-2004 |                     |

#### 11.2.2 Classification and definitions

#### 11.2.3 Original data

| FRA 2005 Categories      | Volume in 1000 cubic meters of round wood under bark |              |              |              |              |              |              |              |              |              |              |
|--------------------------|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                          | 1988   | 1989         | 1990         | 1991         | 1992         | 1998         | 1999         | 2000         | 2001         | 2002         | 2003         |
| Industrial roundwood     | 19728  | 18980        | 15549        | 14334        | 17580        | 21793        | 22842        | 24489        | 23376        | 24996        | 26397        |
| Woodfuel                 | 2967   | 2274         | 2068         | 2692         | 3058         | 1314         | 1426         | 1536         | 1641         | 2141         | 2340         |
| <b>TOTAL for Country</b> | <b>22695</b>   | <b>21254</b> | <b>17617</b> | <b>17026</b> | <b>20638</b> | <b>23107</b> | <b>24268</b> | <b>26025</b> | <b>25017</b> | <b>27137</b> | <b>28737</b> |

### 11.3 Analysis and processing of national data

Conversion factor used to convert volume of wood under bark to volume of wood over bark = 1.19

#### 11.3.1 Estimation and forecasting

The forecasting of timber harvesting for 2005 is based on 1990-2000 period.

### 11.4 Reclassification into FRA 2005 classes

#### 11.5 Data for National reporting table T11

| FRA 2005 Categories      | Volume in 1000 cubic meters of round wood over bark |              |              |                   |                |                |
|--------------------------|---|--------------|--------------|-------------------|----------------|----------------|
|                          | Forest  |              |              | Other wooded land |                |                |
|                          | 1990  | 2000         | 2005         | 1990              | 2000           | 2005           |
| Industrial roundwood     | 20509   | 27964        | 31692        |                   |                |                |
| Woodfuel                 | 3108  | 1918         | 1323         |                   |                |                |
| <b>TOTAL for Country</b> | <b>23617</b>  | <b>29882</b> | <b>33015</b> | <b>No data</b>    | <b>No data</b> | <b>No data</b> |

#### 11.6 Comments to National reporting table T11

## 12 Table T12 – Value of wood removal

### 12.1 FRA 2005 Categories and definitions

| Category                         | Definition   |
|----------------------------------|--|
| Value of industrial wood removal | Value of the wood removed for production of goods and services other than energy production (woodfuel).                  |
| Value of woodfuel removal        | Value of the wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use. |

### 12.2 National data

#### 12.2.1 Data sources

| References to sources of information  | Quality (H/M/L) | Variable(s)  | Year(s)   | Additional comments |
|---|-----------------|--|-----------|---------------------|
| Central Statistical Office, From Yearbook “Forestry in 1990” to „Forestry 2004” | H               | Sales of wood in the State Forests Holding by quality-dimension groups | 1988-2003 |                     |

#### 12.2.2 Classification and definitions

#### 12.2.3 Original data

| FRA 2005 Categories  | Value of round wood removal (PLN/m <sup>3</sup> ) |       |        |        |        |       |       |       |       |       |       |
|----------------------|---|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
|                      | 1988  | 1989  | 1990   | 1991   | 1992   | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  |
| Industrial roundwood | 8274  | 35480 | 262392 | 317871 | 319473 | 118,7 | 125,4 | 130,1 | 126,2 | 113,2 | 112,7 |
| Woodfuel             | n.d.  | n.d.  | n.d.   | n.d.   | n.d.   | 50,1  | 52,55 | 54,23 | 56,06 | 53,34 | 52,36 |

### 12.3 Analysis and processing of national data

To set the value of woodfuel in 1988-1992, the average factor assessed as 44% of roundwood value, calculated for the 1998-2002 period, was accepted.

#### 12.3.1 Estimation and forecasting

The forecasting of timber value for 2005 is based on estimated volume data presented in tab. 11.2.3. A mean value of a cubic meter and the exchange rate in 2003 was accepted as a value for year 2005.

The exchange of Polish currency, done in 1995 /new 1 PLN = old 10000 PLN/ was also taken into account in the final table (T12).

### 12.4 Reclassification into FRA 2005 classes

Not needed

### 12.5 Data for National reporting table T12

| FRA 2005 Categories      | Value of roundwood removal (1000 USD) |               |               |                   |      |      |
|--------------------------|---------------------------------------|---------------|---------------|-------------------|------|------|
|                          | Forest                                |               |               | Other wooded land |      |      |
|                          | 1990                                  | 2000          | 2005          | 1990              | 2000 | 2005 |
| Industrial roundwood     | 325841                                | 735140        | 833344        | -                 | -    | -    |
| Woodfuel                 | 22726                                 | 21956         | 29957         | -                 | -    | -    |
| <b>TOTAL for Country</b> | <b>348568</b>                         | <b>757097</b> | <b>863302</b> | -                 | -    | -    |

**12.6 Comments to National reporting table T12**

The large differences in values between the different reporting years (National reporting table T12) is mainly explained by the fact that all values have been converted to US dollars and the exchange rates over the reporting years varied, also due to the transition of Polish economy into market based one.

## 13 Table T13 – Non-wood forest product removal

### 13.1 FRA 2005 Categories and definitions

The following categories of non-wood forest products have been defined:

| <b>Category</b>  |
|--|
| <u>Plant products / raw material</u>                     |
| 1. Food  |
| 2. Fodder  |
| 3. Raw material for medicine and aromatic products       |
| 4. Raw material for colorants and dyes                   |
| 5. Raw material for utensils, handicrafts & construction |
| 6. Ornamental plants                                     |
| 7. Exudates  |
| 8. Other plant products                                  |
| <u>Animal products / raw material</u>                    |
| 9. Living animals  |
| 10. Hides, skins and trophies                            |
| 11. Wild honey and bee-wax                               |
| 12. Bush meat  |
| 13. Raw material for medicine                            |
| 14. Raw material for colorants                           |
| 15. Other edible animal products                         |
| 16. Other non-edible animal products                     |

### 13.2 National data

#### 13.2.1 Data sources

| <b>References to sources of information</b>             | <b>Quality (H/M/L)</b> | <b>Variable(s)</b>  | <b>Year(s)</b>  | <b>Additional comments</b> |
|---|------------------------|---|-----------------|----------------------------|
| Central Statistical Office, Yearbook "Forestry 2004"    | M/L                    | Food , Ornamental plants, Other plant products, Living animals, Hunted animals            | 1990, 1998-2004 |                            |
| Central Statistical Office, Yearbook "Forestry 2001"    | M/L                    | Food , Ornamental plants, Other plant products, Living animals, Hunted animals, Bush meat | 1990-2001       |                            |
| Central Statistical Office, Yearbook "Forestry in 1992" | M/L                    | Food , Ornamental plants, Other plant products, Living animals, Hunted animals, Bush meat | 1991, 1992      |                            |
| Central Statistical Office, Yearbook "Forestry in 1991" | M/L                    | Food , Ornamental plants, Other plant products, Living animals, Hunted animals, Bush meat | 1988-1991       |                            |
| Central Statistical Office, Yearbook "Forestry in 1990" | M/L                    | Food , Ornamental plants, Other plant products, Living animals, Hunted animals, Bush meat | 1988, 1989      |                            |
| Central Statistical Office, Yearbook "Forestry in 1989" | M                      | Hunted animals, Bush meat   | 1985-1988       |                            |

#### 13.2.2 Classification and definitions

Comply with FRA 2005 definitions.

#### 13.2.3 Original data

| <b>Food* [tons]</b> |         |               |           |
|---------------------|---------|---------------|-----------|
|                     | berries | forest fruits | mashrooms |
| 1988                | 5848    | 3464          |           |

|                               |         |      |      |
|-------------------------------|---------|------|------|
| 1989                          | 4038    | 879  |      |
| 1990                          | 3006    | 4709 |      |
| 1991                          | 1974    | 1328 |      |
| 1992                          | 1258    | 879  |      |
| 1998                          | n.d.    | n.d. | n.d. |
| 1999                          | 8296    | 2984 | 1484 |
| 2000                          | 6832    | 3295 | 1705 |
| 2001                          | 6106    | 2639 | 3276 |
| 2002                          | 9723    | 5339 | 2379 |
| Averages for reference years  |         |      |      |
| 1990                          | 5476,6  |      |      |
| 2000                          | 13514,5 |      |      |
| 2005                          | 15088,3 |      |      |
| * data from collecting places |         |      |      |

| Ornamental plants            |                 |      |      |      |      |                 |      |      |      |      |         |
|------------------------------|-----------------|------|------|------|------|-----------------|------|------|------|------|---------|
|                              | 1988            | 1989 | 1990 | 1991 | 1992 | 1998            | 1999 | 2000 | 2001 | 2002 | 2003    |
|                              | Christmas trees |      |      |      |      | Christmas trees |      |      |      |      | Chr.tr. |
| x1000 pieces                 | 535             | 379  | 336  | 339  | 330  | 259             | 224  | 188  | 162  | 146  | 111     |
| Averages for reference years |                 |      |      |      |      |                 |      |      |      |      |         |
| 1990                         | 383,8           |      |      |      |      |                 |      |      |      |      |         |
| 2000                         | 195,8           |      |      |      |      |                 |      |      |      |      |         |
| 2005*                        | 84,34           |      |      |      |      |                 |      |      |      |      |         |

\* forecasting included year 2003

| Other plant products [tons]  |                |
|------------------------------|----------------|
| seeds                        |                |
| 1988                         | 2500           |
| 1989                         | 1037           |
| 1990                         | 2209           |
| 1991                         | 477            |
| 1992                         | 2290           |
| 1995                         | 1569           |
| 1996                         | 794            |
| 1997                         | 2704           |
| 1998                         | 1276           |
| 1999                         | 452            |
| 2000                         | 2241           |
| 2001                         | 1489           |
| 2002                         | 431            |
| 2003                         | 1178           |
| Averages for reference years |                |
| 1990                         | 1702,6         |
| 2000                         | 1177,8         |
| 2005*                        | more than 1000 |

| Living animals    |             |      |       |           |
|-------------------|-------------|------|-------|-----------|
| number of animals |             |      |       |           |
|                   | fallow deer | boar | hare  | partridge |
| 1988              | n.d.        | n.d. | n.d.  | n.d.      |
| 1989              | n.d.        | n.d. | n.d.  | n.d.      |
| 1990/91           | n.d.        | 204  | 35000 | 1727      |
| 1991/92           | n.d.        | 234  | 36000 | 13952     |
| 1992/93           | 64          | 40   | 33000 | 958       |
| 1998/99           | 49          | n.d. | 17000 | 52        |
| 1999/2000         | 4           | n.d. | 8000  | 125       |



|                              |      |      |       |      |
|------------------------------|------|------|-------|------|
| 2000/01                      | n.d. | n.d. | 6000  | 282  |
| 2001/02                      | 45   | 150  | 2000  | 59   |
| 2002/03                      | 34   | n.d. | 3000  | 763  |
| 2003/04                      | 10   | n.d. | 4000  | 45   |
| Averages for reference years |      |      |       |      |
| 1990/91                      | 64   | 159  | 34667 | 5546 |
| 2000/2001                    | 33   | 150  | 7200  | 256  |

| Hunted animals [psc]         |      |       |             |        |       |       |        |          |           |
|------------------------------|------|-------|-------------|--------|-------|-------|--------|----------|-----------|
| number of animals x 1000     |      |       |             |        |       |       |        |          |           |
|                              | elk  | hart  | fallow deer | roe    | boar  | fox   | hare   | pheasant | partridge |
| 1985                         | 1,29 | 39,18 | 1,07        | 128,48 | 76,80 | 26,16 | 252,79 | 80,49    | 103,43    |
| 1986                         | 1,4  | 43,40 | 1,27        | 123,69 | 76,64 | 26,94 | 233,08 | 83,82    | 119,33    |
| 1987                         | 1,23 | 38,79 | 1,22        | 99,63  | 78,43 | 31,57 | 170,96 | 68,55    | 77,07     |
| 1988*                        | 1,29 | 38,16 | 1,10        | 108,87 | 74,83 | 31,16 | 223,72 | 95,78    | 120,31    |
| 1989*                        | 1,67 | 44,51 | 1,41        | 134,55 | 92,10 | 29,28 | 232,06 | 100,08   | 162,39    |
| 1990/91                      | 1,5  | 54    | 1,7         | 166    | 122   | 29    | 232    | 124      | 221       |
| 1991/92                      | 1,65 | 63,5  | 2,27        | 202,8  | 112,2 | 22    | 221    | 110      | 240       |
| 1992/93                      | n.d. | 66,85 | 2,95        | 221,96 | 96,77 | 24,73 | 235,88 | 127,94   | 298,85    |
| 1998/99                      | 0,3  | 40    | 2,3         | 144    | 81    | 85    | 104    | 88       | 30        |
| 1999/2000                    | 0,2  | 41    | 2,3         | 155    | 92    | 92    | 94     | 94       | 28        |
| 2000/01                      | 0,3  | 41    | 2,5         | 158    | 93    | 101   | 65     | 95       | 23        |
| 2001/02                      | 0    | 39    | 2,6         | 149    | 105   | 107   | 91     | 96       | 22        |
| 2002/03                      | 0    | 39    | 2,8         | 146    | 130   | 133   | 67     | 110      | 23        |
| 2003/04                      | 0    | 38    | 3           | 149    | 122   | 129   | 39     | 101      | 20        |
| Averages for reference years |      |       |             |        |       |       |        |          |           |
| 1990/91                      | 1,53 | 53,4  | 1,89        | 166,8  | 99,58 | 27,23 | 228,9  | 111,6    | 208,5     |
| 2000/2001                    | 0,16 | 40    | 2,5         | 150,4  | 100,2 | 103,6 | 84,2   | 96,6     | 25,2      |

| Bush meat [tons] |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|
|                  | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
| elk              |      |      |      |      |      |      |      |      |
| hart             | 3285 | 3553 | 3297 | 3437 | n.d. | n.d. | n.d. | n.d. |
| fallow deer      |      |      |      |      |      |      |      |      |
| roe              | 1850 | 1842 | 1350 | 1464 | n.d. | n.d. | n.d. | n.d. |
| boar             | 3391 | 3149 | 3064 | 3204 | n.d. | n.d. | n.d. | n.d. |
| hare             | 245  | 238  | 103  | 160  | n.d. | n.d. | n.d. | n.d. |
| pheasant         | 20   | 14   | 9    | 10   | n.d. | n.d. | n.d. | n.d. |
| partridge        | 10   | 11   | 6    | 10   | n.d. | n.d. | n.d. | n.d. |
| other            | 144  | 132  | 31   | 28   | n.d. | n.d. | n.d. | n.d. |
| Total            | 8945 | 8939 | 7860 | 8313 | 9104 | 9809 | 6885 | 5722 |

### 13.3 Analysis and processing of national data

#### 13.3.1 Estimation and forecasting

Forecasting for year 2005 relating to such categories as “Food”, “Ornamental plants” and “Other plant productions - seeds” was made through a linear extrapolation. For every above subcategory of NWFP categories the trend equation was derived. Then, proper data were inserted and subcategories were summed up to calculate the value for NWFP category.

National data on Christmas trees is available in terms of items only, for the need of recalculation to the GFRA format, approximate coefficient (1 item – 10 kg), recommended by FAO, was applied.

Regarding to category “Bush meat”, value for year 2000 was estimated basing on particular data for years 1985-1988, as follows:

|      | <i>hunted animals<br/>in thou. per year<br/>average for 1985-1988</i> | <i>Bush meat<br/>in tons per year<br/>average for 1985-1988</i> | <i>Factor</i>   | <i>hunted animals<br/>in thou. per year<br/>average for 2000</i> | <i>Bush meat in tons<br/>estimation for<br/>2000</i> |
|------|---|---|-----------------|--|--|
|      | (1)   | (2)   | (3) = (2) / (1) | (4)  | (4) x (3)  |
| elk  |   | 42,3  | 3393,0          | 42,7   | 3418,2   |
| hart |   |   |                 |  |  |

|             |       |        |       |       |        |  |
|-------------|-------|--------|-------|-------|--------|--|
| fallow deer |       |        |       |       |        |  |
| roe         | 115,2 | 1626,5 | 14,12 | 150,4 | 2124,1 |  |
| boar        | 76,7  | 3202,0 | 41,76 | 100,2 | 4184,3 |  |
| hare        | 220,1 | 186,5  | 0,85  | 84,2  | 71,3   |  |
| pheasant    | 82,2  | 13,3   | 0,16  | 96,6  | 15,6   |  |
| partridge   | 105,0 | 9,3    | 0,09  | 25,2  | 2,2    |  |

The value of category - “Living animals” for year 2005 was estimated basing on data from last three years (2001-2003). The same period of time was used to evaluate number of hunted animals for year 2005. The value of “Bush meat” for year 2005 was estimated with using the same method (factors) as for year 2000.

#### **13.4 Reclassification into FRA 2005 classes**

Not needed.

**13.5 Data for National reporting table T13**

| FRA 2005 Categories                                      | Scale factor | Unit | NWFP removal |         |         |
|--|--------------|------|--------------|---------|---------|
|  |              |      | 1990         | 2000    | 2005    |
| <u>Plant products / raw material</u>                     |              |      |              |         |         |
| 1. Food  | 1            | mt   | 5476.6       | 13514.5 | 15088.3 |
| 2. Fodder  |              |      |              |         |         |
| 3. Raw material for medicine and aromatic products       |              |      |              |         |         |
| 4. Raw material for colorants and dyes                   |              |      |              |         |         |
| 5. Raw material for utensils, handicrafts & construction |              |      |              |         |         |
| 6. Ornamental plants                                     | 1            | mt   | 3838         | 1958    | 843     |
| 7. Exudates  |              |      |              |         |         |
| 8. Other plant products                                  | 1            | mt   | 1702.6       | 1177.8  | >1000   |
|  |              |      |              |         |         |
| <u>Animal products / raw material</u>                    |              |      |              |         |         |
| 9. Living animals  | 1            | pcs  | 40436        | 7639    | 3469    |
| 10. Hides, skins and trophies                            |              |      | n.d.         | n.d.    | n.d.    |
| 11. Wild honey and bee-wax                               |              |      |              |         |         |
| 12. Bush meat  | 1            | tons | 7967         | 9816    | 10456   |
| 13. Raw material for medicine                            |              |      |              |         |         |
| 14. Raw material for colorants                           |              |      |              |         |         |
| 15. Other edible animal products                         |              |      |              |         |         |
| 16. Other non-edible animal products                     |              |      |              |         |         |

**13.6 Comments to National reporting table T13**

## 14 Table T14 – Value of non-wood forest product removal

### 14.1 FRA 2005 Categories and definitions

The following categories of non-wood forest products have been defined:

| Category   |
|--|
| <u>Plant products / raw material</u>                     |
| 1. Food  |
| 2. Fodder  |
| 3. Raw material for medicine and aromatic products       |
| 4. Raw material for colorants and dyes                   |
| 5. Raw material for utensils, handicrafts & construction |
| 6. Ornamental plants                                     |
| 7. Exudates  |
| 8. Other plant products                                  |
| <u>Animal products / raw material</u>                    |
| 9. Living animals  |
| 10. Hides, skins and trophies                            |
| 11. Wild honey and bee-wax                               |
| 12. Bush meat  |
| 13. Raw material for medicine                            |
| 14. Raw material for colorants                           |
| 15. Other edible animal products                         |
| 16. Other non-edible animal products                     |

### 14.2 National data

#### 14.2.1 Data sources

| References to sources of information                 | Quality (H/M/L) | Variable(s) | Year(s)   | Additional comments |
|--|-----------------|-------------|-----------|---------------------|
| Central Statistical Office, Yearbook "Forestry 2004" |                 | Food        | 1999-2003 |                     |

#### 14.2.2 Classification and definitions

#### 14.2.3 Original data

| Food *   |        |               |           |         |               |           |                                  |
|--|--------|---------------|-----------|---------|---------------|-----------|----------------------------------|
|  | 1990   |               |           | 2000    |               |           | 2005**                           |
|  | berrys | forest fruits | mushrooms | berrys  | forest fruits | mushrooms | berrys, forest fruits, mushrooms |
| 1000 pln                                       | n.d    |               |           | 37816,7 | 2901,65       | 23614,25  | mushrooms                        |
| 1000 pln                                       | n.d    |               |           | 64332,6 |               |           | 81304,1                          |
| * data from collecting places                  |        |               |           |         |               |           |                                  |
| ** forecasting was based on data for 1999-2003 |        |               |           |         |               |           |                                  |

### 14.3 Analysis and processing of national data

#### 14.3.1 Estimation and forecasting

Estimation and forecasting for year 2005 was made through a linear extrapolation.

To calculate the value in year 2000 and 2005 in USD the exchange rate from Appendix 4 from year 2000 (1 USD = 4,14 ) and 2003 (1 USD = 3.74 ) was taken respectively.

### 14.4 Reclassification into FRA 2005 classes

Not needed.

**14.5 Data for National reporting table T14**

| FRA 2005 Categories                                      | Value of the of NWFP removed<br>(1000 USD) |         |         |
|--|--|---------|---------|
|  | 1990                                       | 2000    | 2005    |
| <u>Plant products / raw material</u>                     |  |         |         |
| 1. Food  | n.d.                                       | 15539.3 | 21739.1 |
| 2. Fodder  |  |         |         |
| 3. Raw material for medicine and aromatic products       |  |         |         |
| 4. Raw material for colorants and dyes                   |  |         |         |
| 5. Raw material for utensils, handicrafts & construction |  |         |         |
| 6. Ornamental plants                                     | n.d.                                       | n.d.    | n.d.    |
| 7. Exudates  |  |         |         |
| 8. Other plant products                                  | n.d.                                       | n.d.    | n.d.    |
|  |  |         |         |
| <u>Animal products / raw material</u>                    |  |         |         |
| 9. Living animals  | n.d.                                       | n.d.    | n.d.    |
| 10. Hides, skins and trophies                            | n.d.                                       | n.d.    | n.d.    |
| 11. Wild honey and bee-wax                               |  |         |         |
| 12. Bush meat  | n.d.                                       | n.d.    | n.d.    |
| 13. Raw material for medicine                            |  |         |         |
| 14. Raw material for colorants                           |  |         |         |
| 15. Other edible animal products                         |  |         |         |
| 16. Other non-edible animal products                     |  |         |         |
| <b>TOTAL</b>   | n.d.                                       | ID      | ID      |

**14.6 Comments to National reporting table T14**

Information is only available for berries, fruit and mushrooms which have a total value of 15.5 million USD in 2000 and 21.7 million USD in 2005.

## 15 Table T15 – Employment in forestry

### 15.1 FRA 2005 Categories and definitions

| Category                        | Definition   |
|---------------------------------|--|
| Primary production of goods     | Employment in activities related to primary production of goods, like industrial roundwood, woodfuel and non-wood forest products. |
| Provision of services           | Employment in activities directly related to services from forests and woodlands.  |
| Unspecified forestry activities | Employment in unspecified forestry activities.   |

### 15.2 National data

#### 15.2.1 Data sources

| References to sources of information  | Quality (H/M/L) | Variable(s)                            | Year(s)       | Additional comments |
|---|-----------------|--|---------------|---------------------|
| Central Statistical Office: <i>Statistical Yearbook of Forestry 1991, 2001.</i> | H               | Number of people employed by forestry. | 1990 and 2000 |                     |

#### 15.2.2 Classification and definitions

#### 15.2.3 Original data

| FRA 2005 Categories | Employment (1000 person-years) |      |
|---------------------|--------------------------------|------|
|                     | 1990                           | 2000 |
| Total               | 134.0                          | 60.3 |

### 15.3 Analysis and processing of national data

#### 15.3.1 Estimation and forecasting

### 15.4 Reclassification into FRA 2005 classes

### 15.5 Data for National reporting table T15

| FRA 2005 Categories             | Employment (1000 person-years) |      |
|---------------------------------|--------------------------------|------|
|                                 | 1990                           | 2000 |
| Primary production of goods     | -                              | -    |
| Provision of services           | -                              | -    |
| Unspecified forestry activities | 134                            | 60   |
| Total                           | 134                            | 60   |

### 15.6 Comments to National reporting table T15

There is no available data on employment in forestry separated into demanded subcategories (primary production of goods, provision of services and unspecified). In significant extent such a separation is not feasible for the complex character of many forest related activities.