Lithuania, Forestry, Project
What, Where and Why...

Nerijus Miskinis
Lithuanian fellow
World Forest Institute
April 9, 2007
I. Lithuania
   1. Lithuania in the World
   2. The Lithuanian Flag
   3. Lithuania’s History
   4. General Information
   5. Economy of the Country
   6. National Dresses
   7. Lithuanian Food

II. Forests in Transition
   1. Forest Resources
   2. Management System
   3. Ownership Structure
   4. Encountered Problems

III. Lithuanian University of Agriculture
    1. Ph.D. Project

IV. World Forest Institute
    1. Current Project

V. Thanks for Your Attention
LITHUANIA Your New Gateway to EUROPE
Vilnius – Capital of Regional State
The Lithuanian Flag

Yellow: the fertile fields of Lithuania, golden with ripe rye, wheat, flax, and other grains.

Green: the symbol of the nation's vitality (as represented in nature also).

Red: the bloodshed in defending the homeland's freedom.
General Information

Geographic coordinates: 56 00 N, 24 00 E

Area: 65,200 sq km

Climate: transitional, between maritime and continental; wet, moderate winters and summers

Elevation extremes: lowest point: Baltic Sea 0 m
highest point: Juozapines Kalnas 293.6 m (957 ft.)

Natural resources: peat, arable land, amber

Land use: arable land: 44.81%, permanent crops: 0.9%
other: 54.29%

Population: 3,585,906 (July 2006 est.)

Population growth rate: -0.3% (2006 est.)
Life expectancy at birth: total population: 74.2 years
male: 69.2 years
female: 79.49 years (2006 est.)

Ethnic groups: Lithuanian 83.4%, Polish 6.7%, Russian 6.3%, other or unspecified 3.6%

Religions: Roman Catholic 79%, Russian Orthodox 4.1%, Protestant (including Lutheran and Evangelical Christian Baptist) 1.9%, other or unspecified 5.5%, none 9.5%

Languages: Lithuanian (official) 82%, Russian 8%, Polish 5.6%, other and unspecified 4.4%

Literacy: definition: age 15 and over can read and write
total population: 99.6%
GDP - real growth rate: 7.2% (2006 est.)
GDP - per capita (PPP): $15,100 (2006 est.)
GDP - composition by sector: agriculture: 5.5%,
industry: 33.3%, services: 61.2% (2006 est.)
Labor force: 1.617 million (2006 est.)
Labor force - by occupation: agriculture: 15.8%,
industry: 28.2%, services: 56%
Population below poverty line: 4%
Agriculture - products: grain, potatoes, sugar beets,
flax, vegetables; beef, milk, eggs; fish
Industries: metal-cutting machine tools, electric motors, television sets, refrigerators and freezers, petroleum refining, shipbuilding (small ships), furniture making, textiles, food processing, fertilizers, agricultural machinery, optical equipment, electronic components, computers, amber jewelry

Exports - partners: Russia 10.4%, Latvia 10.2%, Germany 9.4%, France 7.1%, Estonia 5.9%, Poland 5.5%, Sweden 5%, US 4.7%, UK 4.7%, Denmark 4.3%

Imports - partners: Russia 27.9%, Germany 15.1%, Poland 8.3% (2005)

Currency (code): litas (LTL)

In-between Huge Markets

110 million Scandinavian consumers

470 million EU consumers

250 million consumers of Commonwealth of Independent States (CIS)
Lithuanian Exports by Sector

- Mineral products: 27.4%
- Animals, animal products; Prepared foodstuffs: 5.4%
- Textiles and textile articles: 9.2%
- Machinery and equipment: 12.0%
- Wood and articles of wood: 4.9%
- Metals and articles from metals: 4.0%
- Products of chemical industry: 7.0%
- Transport means: 10.1%
- Other: 20.0%
Rapidly growing Innovative Lithuanian Enterprises
Major US Investors
In Lithuania (mill. Euros)

Philip Morris  87
Mars Inc.       44
Kraft Foods    37
Coca-Cola      36
McDonald's     10
Lithuanian National Dresses
Forests in Transition
Forest Coverage in Lithuania
1938-2004

For forest coverage, %

Year

1938: 21.8
1948: 19.7
1956: 22.6
1961: 23.9
1973: 26.4
1983: 27.9
1993: 30.1
1998: 30.3
2000: 30.7
2001: 30.9
2002: 31.3
2003: 31.3
2004: 31.7
# General Characteristics of Lithuanian Forests

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest land area according to Forest Assessment, 1000 ha</td>
<td>2069</td>
</tr>
<tr>
<td>Productive forest area (stands), 1000 ha</td>
<td>1968</td>
</tr>
<tr>
<td>Of which plantations, 1000 ha</td>
<td>459</td>
</tr>
<tr>
<td>Total growing stock volume, mill.m³</td>
<td>387.9</td>
</tr>
<tr>
<td>Mean volume per ha, m³</td>
<td>197</td>
</tr>
<tr>
<td>Total volume of mature stands, mill.m³</td>
<td>79.6</td>
</tr>
<tr>
<td>Mean volume of mature stands per ha, m³</td>
<td>250</td>
</tr>
<tr>
<td>Gross annual increment, mill.m³ o.b.</td>
<td>12.5</td>
</tr>
<tr>
<td>Mean gross annual increment ha / m³</td>
<td>6.4</td>
</tr>
<tr>
<td>Annual increment accumulating in the stand per ha, m³</td>
<td>3.3</td>
</tr>
<tr>
<td>Forest coverage , %</td>
<td>31.7</td>
</tr>
<tr>
<td>Forest area per capita, ha</td>
<td>0.60</td>
</tr>
<tr>
<td>Growing stock per capita, m³</td>
<td>113</td>
</tr>
<tr>
<td>Average forest stand age, years</td>
<td>53</td>
</tr>
</tbody>
</table>
Lithuanian Forest Map

Miškai:  Forests:
- Pušynai — Pinus sylvestris
- Eglynai — Picea abies
- Beržynai — Betula pendula
- Ažuolynai — Quercus robur
- Uosynai — Fraxinus excelsior
- Juodalksnynai — Alnus glutinosa
- Drebulynai — Populus tremula
- Baltalksnynai — Alnus incana
Forest stand area by tree species

- Pine: 36.6%
- Spruce: 22.8%
- Oak: 0.8%
- Ash: 12.4%
- Birch: 2.9%
- Aspen: 20.1%
- Alder: 1.8%
- Other: 2.6%
Felling in Lithuania, 1991-2004

- **State forests**
- **Private forests**

Yearly felling volumes:
- 1991: 3.3 mill. m³
- 1992: 3.3 mill. m³
- 1993: 4.6 mill. m³
- 1994: 4.0 mill. m³
- 1995: 5.3 mill. m³
- 1996: 4.8 mill. m³
- 1997: 4.3 mill. m³
- 1998: 4.1 mill. m³
- 1999: 3.9 mill. m³
- 2000: 3.9 mill. m³
- 2001: 3.7 mill. m³
- 2002: 3.9 mill. m³
- 2003: 3.8 mill. m³
- 2004: 3.6 mill. m³

Yearly felling volumes show a general increase from 1991 to 2004.
Game population in Lithuania

Game is state-owned in the private forests

thou.

Elk: 4,5
Red deer: 11,1
Roe deer: 69,3
Wild boar: 24,1
Market supply of mushrooms

Visitors of private forests can freely gather mushrooms, berries, nuts, fruits, medicinal herbs

<table>
<thead>
<tr>
<th>Year</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>1993</td>
</tr>
<tr>
<td>1996</td>
<td>2649</td>
</tr>
<tr>
<td>1997</td>
<td>3387</td>
</tr>
<tr>
<td>1998</td>
<td>841</td>
</tr>
<tr>
<td>1999</td>
<td>2187</td>
</tr>
<tr>
<td>2000</td>
<td>3869</td>
</tr>
<tr>
<td>2001</td>
<td>450</td>
</tr>
<tr>
<td>2002</td>
<td>450</td>
</tr>
</tbody>
</table>
Location of Wood Based Panels and Sawmilling Industries in Lithuania
More than 1000 companies identify themselves as involved in furniture production, however vast majority of them can be characterized as workshops only, with fragmented production of joinery units and wooden articles, including furniture.

- Concentration of Lithuanian furniture market is rather high: 15 largest producers make about 51% of total sales.

The main export countries for Lithuanian furniture producers:

- Germany - 27%
- France - 20%
- Sweden - 12%
- Denmark - 9%
- UK - 9%
Part of Forest Sector in Gross Domestic Product, 2005

- Forestry: 0.6%
- Woodworking industry: 1.7%
- Pulp and paper industry: 1.2%
- Furniture industry: 0.3%

Total: 3.8%
Protected areas map (Lithuania)

- One third of forest area is under restricted forestry activity
- Private forest owners don’t receive compensation due to the restrictions of forest utilization in protected areas

Protected area - 786 thous. ha
Forest - 450 %
Distribution of Forest Area by Forest Management Regime (forest groups)

- I Strict reserves forests: 71.0%
- II Special - purpose forests: 11.9%
- III Protective forests: 15.9%
- IV Commercial forests: 1.2%
Lithuanian Forestry Policy

**Forest Law** (law was passed by the Parliament in 2001):

- Forest policy trends are set up in the Forest Law. Basic principles of sustainable forest management and biodiversity conservation were introduced in a broader scale.

**Lithuanian Forestry Policy Priorities:**

- Increase forest coverage through afforestation of abandoned agricultural lands;
- Strengthening of private forestry sector through development of forestry extension;
- Emphasis on social and ecological forest functions.
Current Status

SHARE OF FOREST LAND IN LITHUANIA, 2005

<table>
<thead>
<tr>
<th>68.3%</th>
<th>31.7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>forest land</td>
<td>other land</td>
</tr>
</tbody>
</table>

Support from EU funds

~ 500 thou. ha of abandoned agricultural land suitable for afforestation

Increase of Forest Coverage

Increase of forest coverage by 3%

Current Status

Share of forest land: 68.3%
Share of other land: 31.7%

Support from EU funds

~500 thou. ha of abandoned agricultural land suitable for afforestation
State Forest Enterprises

These state-owned forest businesses act within State and Municipal Laws

Enterprises perform complex forestry activities in state forests, sell raw material forest products, standing timber, and provide forestry services established by the Government or the Ministry of Environment authorized by the Government.
Forest ownership map (Lithuania)

State forests

Private and reserved for restitution forests

Boundaries of State Forest Enterprises and National parks
Forest Land Distribution by Ownership
2005

- Private forests: 32.8%
- State forests: 49.3%
- Other state forests (reserved for restitution): 17.9%

Total area of private forests - 684.5 thousand ha
Total number of private forest owners - 231.9 thousand ha
Average area of private forest holding - 4.6 ha
Forest restitution in Lithuania

<table>
<thead>
<tr>
<th>Year</th>
<th>thou.ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>20,0</td>
</tr>
<tr>
<td>1995</td>
<td>88,0</td>
</tr>
<tr>
<td>1997</td>
<td>160,2</td>
</tr>
<tr>
<td>1999</td>
<td>194,6</td>
</tr>
<tr>
<td>2001</td>
<td>218,6</td>
</tr>
<tr>
<td>2003</td>
<td>281,6</td>
</tr>
<tr>
<td></td>
<td>373,9</td>
</tr>
<tr>
<td></td>
<td>458,3</td>
</tr>
<tr>
<td></td>
<td>520,9</td>
</tr>
<tr>
<td></td>
<td>586,0</td>
</tr>
<tr>
<td></td>
<td>641,9</td>
</tr>
</tbody>
</table>
Number of private forest owners

<table>
<thead>
<tr>
<th>Year</th>
<th>Number (thou.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>51.6</td>
</tr>
<tr>
<td>1997</td>
<td>62.4</td>
</tr>
<tr>
<td>1998</td>
<td>85.5</td>
</tr>
<tr>
<td>1999</td>
<td>117.5</td>
</tr>
<tr>
<td>2000</td>
<td>142.8</td>
</tr>
<tr>
<td>2001</td>
<td>156.3</td>
</tr>
<tr>
<td>2002</td>
<td>180.5</td>
</tr>
<tr>
<td>2003</td>
<td>209.0</td>
</tr>
</tbody>
</table>
Private forest holdings by size

- < 1 ha: 30,402
- 1-5: 65,572
- 5-10: 21,112
- 10-20: 9,487
- 20-50: 3,396
- > 50 ha: 443

World Forest Institute
Private forest owners by age

- < 30 years: 10.8%
- 30-40: 6.9%
- 40-50: 20.9%
- 50-60: 2.9%
- > 60 years: 58.5%
Problems Encountered by State Forest Managers in Lithuania:

Unfinished land reform;

Absence of clearly expressed visions of the future of state forests by the political parties;

Increased capacity of wood processing industry enterprises and thermal boiler is not related with felling volumes;

Lack of workers.
Problems in private forests sector of Lithuania

- Slow restitution process
- Small-scale forest holdings
- Lack of knowledge and experience in forestry
- Strict state regulation
- Absence of compensation system
- Limited domestic wood market, especially on small-sized wood
- Law part associated forest owners
Forest owner’s needs and problems survey

Question: What are you going to do with your forest property?

Answers:
- I am willing to sell the forest property
- I am willing to buy more forests area
- I don't want to change anything
- I do not know

<table>
<thead>
<tr>
<th></th>
<th>Villages</th>
<th>Towns</th>
<th>All Forest Owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am willing to sell the forest property</td>
<td>9.5%</td>
<td>14.1%</td>
<td>12.5%</td>
</tr>
<tr>
<td>I am willing to buy more forests area</td>
<td>8.0%</td>
<td>2.7%</td>
<td>5.9%</td>
</tr>
<tr>
<td>I don't want to change anything</td>
<td>73%</td>
<td>57.8%</td>
<td>66.4%</td>
</tr>
<tr>
<td>I do not know</td>
<td>9.5%</td>
<td>25.4%</td>
<td>15.2%</td>
</tr>
</tbody>
</table>
Source of KE Potential - Strong Study and Research Infrastructure

KAUNAS
University of Technology
Lithuanian University of Agriculture
Vytautas Magnus University
Kaunas University of Medicine
Academy of Physical Education
Lithuanian Veterinary Academy

Šiauliai University

VILNIUS
Vilnius University
Gediminas Technical University
Vilnius University of Pedagogic Law
University of Lithuania
Vilnius Academy of Fine Arts
Academia Musicae Lituaniae
Lithuanian Military Academy
A GIS-based Decision Support System for Risk Assessment of Wind Damage in Forest Management

Aims of the decision support system:

♦ Assess current and long-term risk of wind damage.
♦ Identify the most vulnerable forest edges on maps.
♦ Evaluate the influence of forest management regimes.

Supervisor Prof. habil. Dr. Romualdas Deltuvas
Head of Department assoc. Prof. Dr. Juozapas Mazeika
Tutor Dr. Gintautas Mozgeris
Learning from the Pacific Northwest: Successful Business Models in Forest and Wood Companies

- **Project’s objective:** explore the “secrets” of running successful forest-based businesses in the PNW.

- **Project’s process:** to interview representatives from different forest companies.

- **Project’s output:** presentation and poster on research results.

**SUPERVISORS**

Sara Wu  
World Forest Institute  
Director

Angie DiSalvo  
International Fellowship  
Program Manager
How do you define success for your company?
What have been your biggest successes?
How would you describe your company’s guiding values and how do you communicate this to your employees?
How do you think the public views your company?
How does your company manage its public image?
How important is this?
What makes your products or services special or different?
How do you reach a new market and sell a new product?
What do you look for in a good employee?
Are you optimistic about the future of the forestry business in the US?
Where do you see your company in the next ten years?
Did you enjoy my job?
I tried to do my best...
Proud being Lithuanian
Thank you for your attention!