WISDOM PROJECT IN SERBIA
first experiences and results

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FAO’s activities on wood energy in SEE Countries
WISDOM Serbia-background and first results
Policy framework of renewable energy sources in Serbia
FAO‘s activities on wood energy in SEE Countries

- Enhance the role of forestry services on WE
- Improve the capacities of forestry services
- Develop inter-institutional programs
- Develop WE policies & plans
- Improve knowledge of WE systems
Case studies in SEE Countries

- Serbia, 2009-2010.
Project basics in Serbia

- Title: TCP/YUG/3201 - Wood energy for sustainable rural development
- Duration: 2009 - 2010
- Recipient: Ministry of Agriculture, Forestry and Water Management of Serbia - Directorate of Forests (DF)
- Technical Support Officer: Miguel Angel Trossero (FAO)
- National Project Coordinator: Dusan Jovic (DF)
- Special Project Advisor: Dr. Branko Glavonjic (FF)
- Budget: US$ 350,000
WISDOM - Woodfuels Integrated Supply/Demand Overview Mapping

- WISDOM is main tool to (Trossero M., 2008):
  - DESCRIBE
  - UNDERSTAND
  - PRESENT
  - ANALYSE
  - FORMULATE wood energy policies and
  - PLAN current and future wood energy activities at local, national, regional and global level
The overall objective of the project is to enhance the capabilities of the Directorate of Forests (DF), Ministry of Agricultural, Forestry and Water Management (MAFWM), for:

- formulation,
- evaluation and
- development of sound bioenergy strategies, programs and projects compatible with the sustainable management of the forestry, energy and agricultural sectors.

### Specific Objectives

- Knowledge & understanding on wood energy systems
- Capacity building activities (knowledge dissemination)
- National wood energy action plan plan developed
Establishing Serbian Wood Energy Information System (SWEIS) at the DF (together with National Energy Agency and Faculty of Forestry);

Establishing geo-referenced database with information on wood energy and woodfuels and related aspects regarding users, consumption patterns, production, supply sources, trade and marketing

Carry out vital technical studies & field work for the formulation of a sound woody biomass action plan

1. Knowledge & understanding on wood energy systems
2. Capacity building activities (knowledge dissemination)

- Enhancing national capacities for planning, implementation and monitoring sustainable woodfuel production and utilization (energy) systems through the development of the infrastructure and human resources of the DF and related partners;

3. National wood energy action plan developed

- National wood energy action plan (WEAP) developed for increased wood energy production and utilization as an environmentally friendly source of energy that is integrated within the forestry and energy programs.
Lessons Learned in Serbia

First Results of a FAO TCP Project

- Economic aspects of wood energy systems in Serbia (macrolevel) - study,
- web page of the Project- www.woodybiomass.org,
- Forest maps digitalization,
- National forest inventory was completed in 2008 as complementary project with its most significant results:
First Results of FAO TCP Project in Serbia

- Fores area: 2,252,400 ha (29.1%)
- Standing volume: 362.5 mil m³
- Annual increment: 9.079 mil m³
- Ownership ha %
  - Public: 1,194,000 (53.0%)
  - Private: 1,058,400 (47.0%)
  - TOTAL: 2,252,400 (100.0%)
Based on official forestry data, potential wood harvest in Serbian forests is 4.6 million m³ annually, out of which 2.4 million in state-owned forests and 2.2 million m³ in private forests;

55% of the total amount of the harvested wood in state-owned forests is fuelwood and pulpwood;

About 80% of the total amount of the harvested wood in private forests is fuelwood (estimation);

Amount of 636 thousand m³ (calculated during and immediately after logging and forest assortment production) of forest residues can be reached. Since the stated amount of forest residue cannot be fully used (e.g. stumps), it is estimated that the available amount of forest wood residue is 572 thousand m³ annually;
First Results of FAO TCP Project in Serbia

Possibility of woody biomass for energy from forest and residue from wood processing industry in Serbia

<table>
<thead>
<tr>
<th>TITLE</th>
<th>m³</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firewood (8.002.548 stacked m³ x 0,69)</td>
<td>5 521 758</td>
<td>80.7</td>
</tr>
<tr>
<td>Forest residue</td>
<td>572 000</td>
<td>8.4</td>
</tr>
<tr>
<td>Wood processing industry residue</td>
<td>627 200</td>
<td>9.2</td>
</tr>
<tr>
<td>Wood from trees outside the forest</td>
<td>120 000</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>TOTAL 1</strong></td>
<td><strong>6 840 958</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>Illegal logging</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Post consumer wood</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td><strong>TOTAL 2</strong></td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

Source: TCP/FAO SERBIA, 2009
Consumption of wood based energy generating products in households in Serbia in 2008:

<table>
<thead>
<tr>
<th>Type of energy generating product</th>
<th>Measurement unit</th>
<th>Used amounts</th>
<th>Heating power (toe)/msrmt unit</th>
<th>Total amount of energy in Mtoe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firewood</td>
<td>Stacked m³</td>
<td>8 002 548</td>
<td>0.144</td>
<td>1.15</td>
</tr>
<tr>
<td>Wood briquettes</td>
<td>ton</td>
<td>35 000</td>
<td>0.396</td>
<td>0.014</td>
</tr>
<tr>
<td>Wood pellets</td>
<td>ton</td>
<td>1 500</td>
<td>0.408</td>
<td>0.001</td>
</tr>
<tr>
<td>Charcoal</td>
<td>ton</td>
<td>8 000</td>
<td>0.619</td>
<td>0.005</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td>[highlighted in red]</td>
<td><strong>1.17</strong></td>
</tr>
</tbody>
</table>
Consumption of final energy in Serbia in 2008 was 8.516 Mtoe, the participation of energy obtained from wood based energy-generating products was 13.7%.

Total amount of consumed wood based energy in 2008 was 1.17 Mtoe, the contribution of wood based energy to the decrease of Serbian import dependence only on natural gas was 653.96 million US$.
Consumption of wood based energy in Serbian household

- Firewood and other woody biomass: 27%
- Coal: 7%
- Gas: 7%
- Petroleum derived: 2%
- District heating system: 28%
- Electrical power: 29%
- Consumption of wood based energy-generating products and the consumed amounts of other energy-generating products in households in Serbia from the energy balance for 2008, the participation of certain energy-generating products for heating households in Serbia:
Policy framework of renewable energy sources in Serbia

- Adoption of “feed-in” tariffs is expected as a price mechanism for supporting production and usage of energy from renewable sources, and the deadline for their adoption is October 2009.

- Pursuant to the Government proposal, all producers of electric power from renewable sources will be stimulated with the price of 11.7-13.4 €c/kWh depending on the plant power for 12 years.

- National Action Plan for Renewable Energy Sources is ongoing process in cooperation with the Government of the Netherlands.
  - Deadline - January 2010.
Promotion of woody biomass as fuel in Serbia

- Handbook for woody biomass: classes, characteristic and conveniences for heating
- Issue: 2008
- Language: Serbian
Results from TCP/FAO project so far, show significantly bigger role and importance of woody biomass in energy balance of Serbia than all forecasts and estimations made so far,

Consumption of wood based energy will be determined in other sectors (industry) as well,

Necessity of research the potentials of post consumer wood, as well as the energy obtained from wood originating from illegal logging,

All together will produce the “clear picture” on the significance and role of woody biomass in energy balance of Serbia.
Thank you for your attention!