



**INTERNATIONAL CONFERENCE
NON-NATIVE TREE SPECIES FOR
EUROPEAN FORESTS**



**NON-NATIVE TREE SPECIES IN
CROATIA AND SERBIA
STRATEGIC APPROACH**

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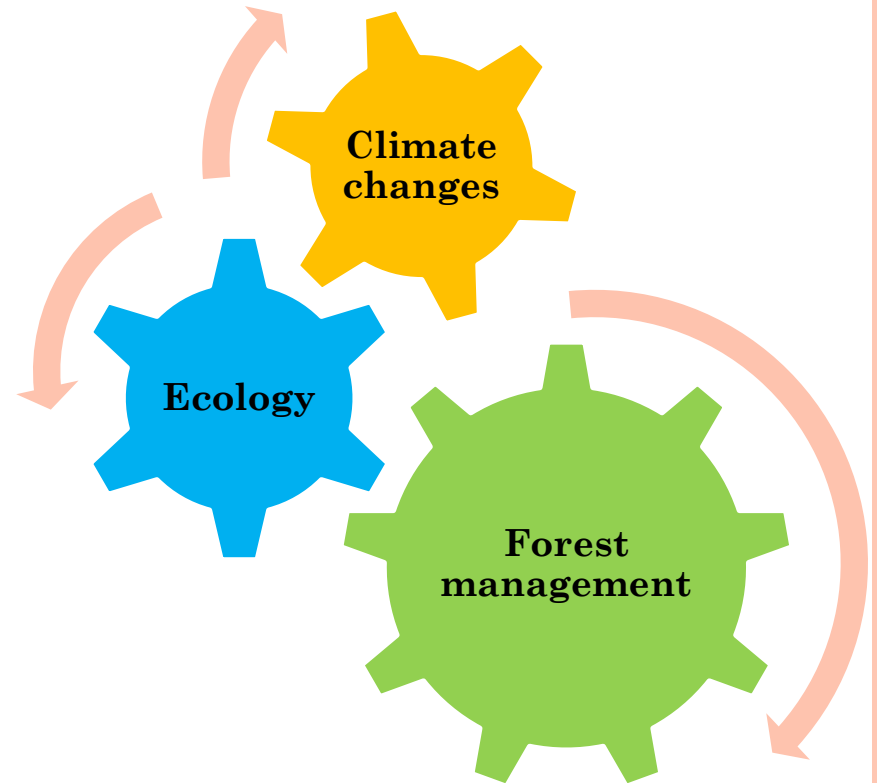
BACKGROUND

- Non-native tree species have a **long history** in South-Eastern countries. In the beginning, the most NNTS in Croatia and Serbia have been introduced in **parks and gardens** to raise decorative value.
- the aim of finding an adequate species and its provenance, **different provenance and comparative trials** of NNTS were established in last 50 years in both countries.



BACKGROUND

- This study aims to review the current situation in CRO and SER, with focus on elements of **strengths, weaknesses, opportunities and threats (SWOT)** in their development.
- The work is based on a broad review of elements that are relevant for development of NNTS, such as: **climate changes, forest management and silviculture, and ecology.**
- Special attention is paid to **key risks** in field of forest protection.



SERBIA

List of the most important exotic tree species in Serbia counts 11,18% of total forest area

| Dominant NNTS | Area (ha) | % of total forest area | Places | Aim/Role | Management systems | Key risks |
|--------------------------------|-----------|------------------------|--------------------------------------|--|--|---|
| <i>Robinia pseudoacacia</i> L. | 156 000 | 6,93 | Plantations. stands | Mixed with birch and aspen afforestation Honey production | clear cutting, mostly natural regeneration by sprout from root, seldom artificial establishment by seedlings | Invasive tree species Phoma pseudoacaciae Phyllonorycter robiniiella, Parectopa robiniiella, Obolodiplosis robiniae |
| <i>Populus deltoides</i> | 48 000 | 2,13 | Intensive plantations | Increasing of biological diversity of the country, increasing of genofond, consuming CO2 | clear cutting, artificial establishment by seedlings with 278-400 seedlings per hectare | low temperature <i>Dothichiza populea</i> Sacc. & Briard, <i>Drepanopeziza punctiformis</i> Gremmen <i>Marssonina brunea</i> (Ellis & Everh.) Magnus]., <i>Melampsora spp.</i> , <i>Melasoma populi</i> (Stephens, 1834), <i>Phylloocta vitellinae</i> L. (Col., Chrysomelidae), <i>Parenthrene tabaniformis</i> Rott., Cryptodiaporthe populea Pemphigus spirothecae, Sciapteron tabaniformis, Cosus cosus |
| <i>Pseudotsuga taxifolia</i> | 2 600 | 0,12 | Mountain forests, small areas | Increasing of biological diversity of the country, increasing of genofond, consuming CO2 | clear cutting, artificial establishment by seedlings with 2500 seedlings per hectare. | Rhabdoclyne pseudotsugae Hylastes ater |
| <i>Pinus strobus</i> | 2 000 | 0,09 | Mountain forests, small areas, parks | Increasing of biological diversity of the country, increasing of genofond, consuming CO2 | clear cutting, artificial establishment by seedlings with 2500 seedlings per hectare. | <i>Cronartium ribicola</i> |

BACKGROUND



BACKGROUND

CROATIA

List of the most important exotic tree species in Croatia: NNTS counts 1,26% of total forest area

| Dominant NNTS | Area (ha) | % of total forest area | Places | Aim/Role | Management systems | Key risks |
|--|--------------|------------------------|-------------------------|---------------|---|--|
| <i>Populus deltoides</i> , <i>Populus canadensis</i> | 13 219 | 0,49 | Plantations | Afforestation | FSC, preserve natural structure and biodiversity, clear cutting | Unappropriate afforestation areas |
| <i>Robinia pseudoacacia</i> L. | 12 004 | 0,45 | Forests, parks, gardens | Reforestation | Selective thinning, clear felling | Phyllonorycter robiniiella, Perectopa Robiniella, Obolodiplosis robiniae, Platygaster robiniae, |
| <i>Pinus strobus</i> | 3 219 | 0,12 | | | | <i>Pinus strobi</i> , Tends to suffer when sited in wet soils. Intolerant of salt and air pollution; sensitive to soil compaction. |
| Other: <i>Juglans nigra</i> <i>Pinus pinaster</i> | 2377 1314 | 0,088 0,05 | | | | |



MATERIAL AND METHODS



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Belgrade, October 09th, 2015

BACKGROUND

When examining the potential for a new business or product (in our case **non-native tree species potential - NNTSP**), a SWOT analysis can help determine the likely risks and rewards. SWOT, which stands for **Strengths, Weaknesses, Opportunities and Threats**, is an analytical framework that can help your issue face its greatest challenges and find its most promising new markets (**solutions**).

The ideal outcome of a SWOT is accurate data that can be utilized to create a solid action plan for addressing a weakness and threats, and highlighting or positively exploiting your strengths and opportunities.

Conducting a SWOT analysis means listing your **NNTS** strengths, weaknesses, opportunities and threats to evaluate your current environment on the issue and how it may change for better or worse, and then develop a response strategy. When you evaluate those four things against one another, you can see where potential problems lie as well as potential gaps that you can position your issue to fill.

In a business context, the SWOT analysis enables organizations to identify both internal and external influences. Outside of business, other organizations have found much use in the method's guiding principles. Community health and development, education & science, and other groups have used the analysis. SWOT's primary objective is to help organizations develop a full awareness of all the factors, positive and negative, that may affect **strategic planning and decision-making in our research regarding NNTS**.

The first two letters in the acronym, S (Strengths) and W (Weaknesses), refer to **internal factors**, which mean the **resources and experience readily available to you**. When listing strengths and weaknesses, individuals shouldn't try to sugarcoat or glaze over inherent weaknesses or strengths. Identifying factors both good and bad is important in creating a thorough SWOT analysis.

External forces influence and affect every company, organization and individual. Whether these factors are connected directly or indirectly to an opportunity or threat, it is important to take note of and document each one. External factors typically reference things you or your company (**issue on NNTS**) **do not control** O (opportunities) and T (Threats).

WHAT IS IMPORTANT IN OUR RESEARCH?

1. **Base your work on real data, not guesswork!** So, it is important to **include** your colleagues, who are **REALLY** engaged in a problem as experts (from other WGs of the Action or from your country/institution) of **NNTS ecology, silviculture/forest management and climate changes**, because it is **necessary to evaluate the issues in a range (1-5)**. The "1" is the lowest grade/influence on the NNTS issue in the field of **ecology/silviculture (forest management)/climate changes**. The "5" is the highest importance of the component.
2. **Include broad input** - Gathering that broad input can provide an important reality check for the work done by the team of each country and, especially with other researches, can generate support and buy-in for the plan.
3. **Prioritize and focus on the "big rocks ☺"** - Prioritize your lists using some type of group rating process to identify **the most important items under each category**. Those items can then provide the basis for the development of strategies.
4. **Deadline for completing the matrix/questionnaire is December, 01st 2015.**

DO YOU NEED A HELP? ☺ (Attached is SWOT Analysis Worksheet) Some answers you need to answer in a framework of **each category** is:

| | |
|---|---|
| Strengths WHAT DO YOU DO WELL? WHAT UNIQUE RESOURCES CAN YOU DRAW ON? WHAT DO OTHERS SEE AS YOUR STRENGTHS?... | Weaknesses WHAT COULD YOU IMPROVE? WHERE DO YOU HAVE FEWER RESOURCES THAN OTHERS? WHAT ARE OTHERS LIKELY TO SEE AS WEAKNESSES?... |
| Opportunities WHAT OPPORTUNITIES ARE OPEN TO YOU? WHAT TRENDS COULD YOU TAKE ADVANTAGE OF? HOW CAN YOU TURN YOUR STRENGTHS INTO OPPORTUNITIES?... | Threats WHAT THREATS COULD HARM YOU? WHAT IS YOUR COMPETITION DOING? WHAT THREATS DO YOUR WEAKNESSES EXPOSE YOU TO?... |

○ SWOT is a tool designed to be used in the preliminary stages of decision-making as a precursor to strategic management. The result of SWOT analysis is a list of factors that can be used for further analysis (AHP) and selecting decision criteria for NNTS in SER&CRO.

○ The mixed SWOT–AHP method helps to define NNTS adoption decision process in a **hierarchical structure** of factors, to evaluate factors in pairs, and to **quantify the relative importance** of each factor to the adoption decision.

MATERIAL AND METHODS

| ECOLOGY OF NNTS | | | |
|--|-------------|------------|-------------|
| Strengths | *Mark (1-5) | Weaknesses | *Mark (1-5) |
| | | | |
| | | | |
| | | | |
| Opportunities | *Mark (1-5) | Threats | *Mark (1-5) |
| | | | |
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| | | | |
| | | | |
| SILVICULTURE AND FOREST MANAGEMENT OF NNTS | | | |
| Strengths | *Mark (1-5) | Weaknesses | *Mark (1-5) |
| | | | |
| | | | |
| | | | |
| Opportunities | *Mark (1-5) | Threats | *Mark (1-5) |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| CLIMATE CHANGES ON NNTS | | | |
| Strengths | *Mark (1-5) | Weaknesses | *Mark (1-5) |
| | | | |
| | | | |
| | | | |
| Opportunities | *Mark (1-5) | Threats | *Mark (1-5) |
| | | | |
| | | | |
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| | | | |

| ECOLOGY OF NNTS | | | |
|---|-------------|--|-------------|
| Strengths | *Mark (1-5) | Weaknesses | *Mark (1-5) |
| High ecological characteristics in the | 4 | Lack of scientific knowledge and practical experience on suitability of NNTS to local site conditions | 5 |
| Improvement of soil fertility/soil melioration | 5 | Lack of knowledge on adaptability of NNTS to local pests/diseases | 4 |
| Adaptation to changing ecological conditions | 5 | Lack of knowledge on resilience to local extremes (e. g. high/low temperatures) | 4 |
| General stability of the stands (against drought, windthrow, ice loads, diseases infestation, etc.) | 4 | Lack of knowledge on resistance and resilience to local conditions in general | 4 |
| Potentialities for phytoremediation | 2 | Possibility of degradation of soil and lack of knowledge on their impacts on soil in local conditions | 3 |
| Restoration of highly degraded land (karst eroded areas, quarries, landfills,...) | 3 | Uncontrolled spread of NNTS | 5 |
| Melioration of non-forest land | 3 | Invasiveness and possible disappearance of native tree species | 5 |
| Opportunities | *Mark (1-5) | Threats | *Mark (1-5) |
| Implementation of horticultural/arboricultural | 3 | Possible negative impact on natural tree species in terms of competitiveness | 5 |
| Using carbon sequestration | 3 | Could NNTS hinder regeneration of natural tree species (if invasive) | 4 |
| Reducing risks for carbon pools | 3 | | |
| Filling the gaps in the forest with NNTS after fires | 4 | | |
| SILVICULTURE AND FOREST MANAGEMENT OF NNTS | | | |
| Strengths | *Mark (1-5) | Weaknesses | *Mark (1-5) |
| Filling the gaps in forest ecosystems after disappearance of native tree species (e. g. <i>Fraxinus</i>) | 5 | Unknown impact on regeneration on native tree species and possible trade offs | 5 |
| Potentiality for enhanced wood production | 4 | Possible negative influence on lowering biodiversity (e. g., uncontrolled spread on pastures, meadows) | 4 |
| Potentiality for increase of added value of | 3 | Unknown impact on productivity and general stability of stands when admixing NNTS | 3 |
| Opportunities for SME | 4 | Lack of availability of adequate FRM of NNTS (provenances) | 3 |
| Prevention of decrease of silvicultural treatments favourable biological features | 3 | Lack of adequate SME policy | 3 |

We kindly ask you to give us the following personal information:

1. Gender: 1 - Female 2 - Male
2. Age _____
3. Years of experience in forest sector _____
4. Please, circle the type of institution where you are currently working:
- Public forest enterprise
 - Educational-research institution (High school, Faculty, Institute etc.)
 - Public forest administration (Forest directorate, Ministry, Inspectorate, Extension service etc.)
 - Contractors
 - Other (please specify) _____
5. Please, indicate the names and positions of the colleagues who are engaged to answer on above matrix
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
6. Please rate the current situation of forestry sector in your country by circling one of the given answers:
- 1 - Very bad
- 2 - Bad
- 3 - Neither bad nor good
- 4 - Good
- 5 - Very good
- 99 - I do not know

In case you want to get feedback in a form of results of this research, please specify your personal data. All answers and

annotations will not be connected with your personal data in any way. You may stay anonymous if you want.

Name and surname: _____

Phone number: _____

E-mail address: _____

For any additional question and explanations we are at your disposal:

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Thank you for your cooperation.

MATERIAL AND METHODS



SOCIO INTRODUCTORY PART

- Focal points.
- Identified three groups of opinion leaders in each country: researchers, practitioners and decision-makers.
- After preparing the preliminary list of decision factors, they were categorized into 12 major factors, which were placed in each SWOT group. Input from the focus group discussions helped us in aggregating factors into major groups.
- We worked with different number of key factors in each SWOT category.
- The questionnaire included a rating scale to weigh each factor relative to the other.

| | |
|-----------------------|------|
| Total respondents | n=10 |
| Average age | 47 |
| Work experience (age) | 22 |

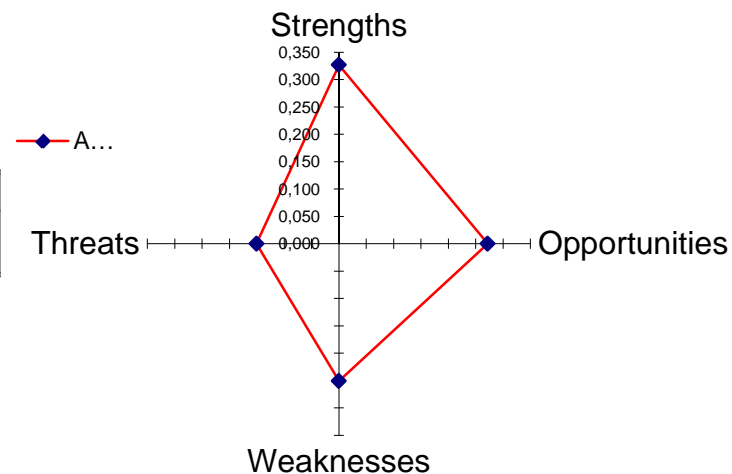


RESULTS

CROATIA

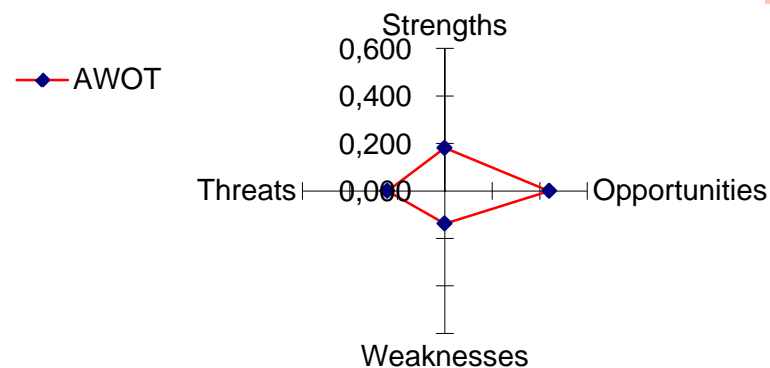
| ECOLOGY | | | |
|---|------|---|------|
| Strengths | Mark | Weaknesses | Mark |
| Cover all ecological characteristics in the country | 4 | Lack of scientific knowledge and practical experience on suitability of NNTS to local site conditions | 5 |
| Enhancement of soil fertility/soil melioration | 5 | Lack of knowledge on adaptability of NNTS to local pests/diseases | 4 |
| Faster adaptation to changing ecological conditions | 5 | Lack of knowledge on resilience to local extremes (e. g. high/low temperatures) | 4 |
| Better general stability of the stands (against windbreakage, windthrow, iceloads, pest/diseases infestation, etc.) | 4 | Lack of knowledge on resistance and resilience to local conditions in general | 4 |
| Possibilities for phytoremediation | 2 | Possibility of degradation of soil and lack of knowledge on their impacts on soil in local conditions | 3 |
| Revitalization of highly degraded land (karst areas, burned areas, queries, landfills,...) | 3 | Uncontrolled spread of NNTS | 5 |
| Faster melioration of non-forest land | 3 | Invasiveness and possible disappearance of native tree species | 5 |
| Opportunities | Mark | Threats | |
| Enhancement of horticultural/arboricultural options | 3 | Possible negative impact on natural tree species in terms of competitiveness | 5 |
| Enhancing carbon sequestration | 3 | Could NNTS hinder regeneration of natural tree species (if invasive) | 4 |
| Lowering risks for carbon pools | 3 | | |
| Filling the gaps in the forest with NNTS after calamities | 4 | | |

| Strengths | Opportunities | Weaknesses | Threats |
|-----------|---------------|------------|---------|
| 0,326 | 0,272 | 0,251 | 0,151 |



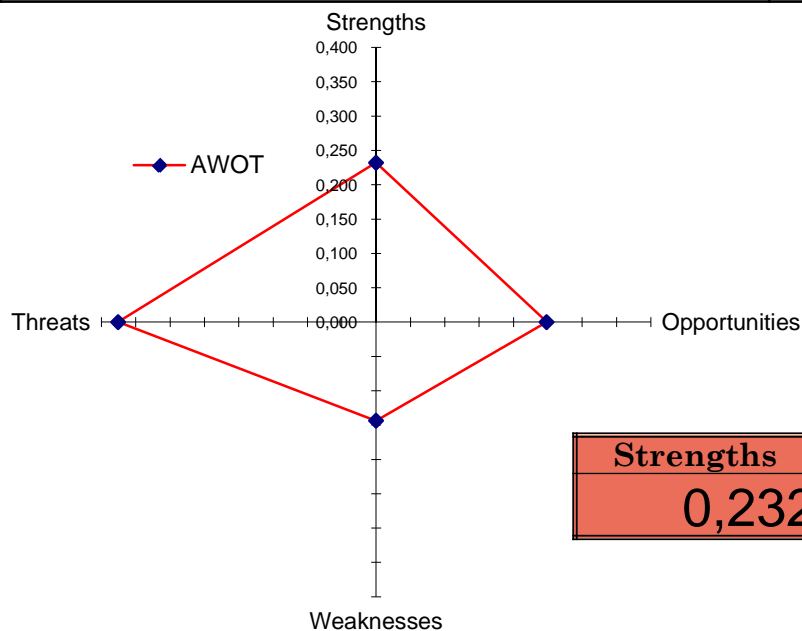
CROATIA

| SILVICULTURE | | | |
|--|------|---|------|
| Strengths | Mark | Weaknesses | Mark |
| Filling the gaps in forest ecosystems after disappearance of native tree species (e. g. <i>Ulmus leavis</i>) | 5 | Unknown impact on regeneration on native tree species and possible trade offs | 5 |
| Possibility for enhanced wood production | 4 | Possible negative influence on lowering biodiversity (e. g., uncontrolled spread on pastures, meadows) | 4 |
| Possibility for increase of added value of stands | 3 | Unknown impact on productivity and general stability of stands when admixing NNTS | 3 |
| Better opportunities for SME | 4 | Lack of availability of adequate FRM of NNTS (provenances) | 3 |
| Possible decrease of silvicultural treatments due to favorable biological features | 3 | Lack of adequate SME policy | 3 |
| Lower site preparation activities when afforestating | 3 | Lack of experience of silvicultural treatments during rotation period | 4 |
| | | Lack of knowledge on natural regeneration options in local conditions | 3 |
| Opportunities | Mark | Threats | Mark |
| Higher wood production | 4 | Lack of understanding of forest managers/forest owners in traditional forestry (possible conflicts with close-to-nature silviculture) | 4 |
| Enhancement of quality and diversity of products | 4 | Lack of knowledge of forest managers | 3 |
| Expansion on or creation of new local market | 4 | High uncertainty during prediction of risks due to lack of general knowledge on specific NNTS | 3 |
| Enhancement of capacity utilization (available/uncovered land) | 3 | NNTS not recognized in state strategies or programs | 4 |
| Enhancement of options for bioenergy production | 5 | Possible conflicts with nature conservation | 3 |
| Introduction of new forest products and production technologies | 3 | Lack of legislative support | 5 |
| Creating better options for stability on landscape level (combination of stands consisted of native tree species and those of NNTS) , i. e. lowering connectivity of pests/diseases/burning material | 4 | | |
| Enhancement of ecosystem services | 3 | | |
| NNTS create needs for education provided by forest exstation service | 2 | | |



| Strengths | Opportunities | Weaknesses | Threats |
|-----------|---------------|------------|---------|
| 0,181 | 0,440 | 0,137 | 0,242 |

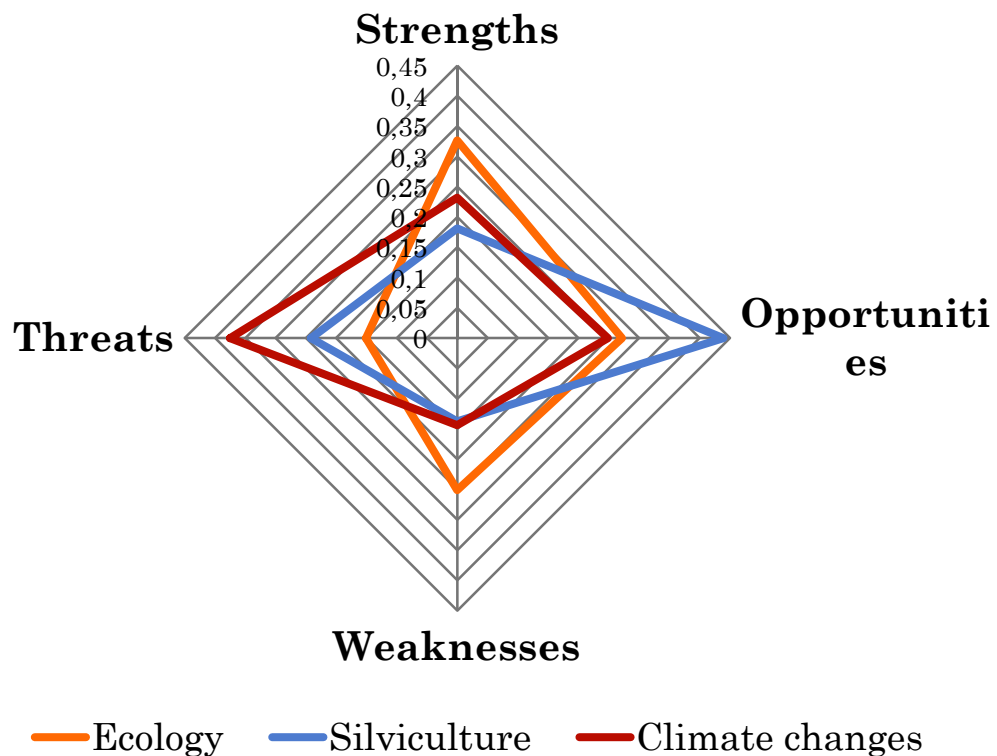
| CLIMATE CHANGES ON NNTS | | | |
|--|------|--|------|
| Strengths | Mark | Weaknesses | Mark |
| Help to natural regeneration in case of shifting limits (temperature, moisture, etc.) | 3 | Lack of knowledge on NNTS' impacts on soil in changing climatic conditions | 3 |
| Possibility for better adapted mixtures to climatic changes | 4 | Lack of knowledge on resistance/resilience to climatic disturbances (e. g. droughts, storms) | 4 |
| Enhancement of horizontal spatial pattern | 3 | Lack of knowledge on resistance/resilience to pest biology/dynamics (e. g. insect outbreak) | 4 |
| Replacement (on restricted areas, e. g. belts on stand edges) or admixtures in natural stands of more resistant tree species to forest fires or storms | 4 | Generally, lack of knowledge on changes in pest dynamics due to change in climatic conditions | 2 |
| Opportunities | Mark | Threats | Mark |
| Help in sustainability of forest stands, soils, and ecosystem services | 5 | Without long term experiments hard to predict impacts of climate changes on NNTS (high uncertainty of dynamics of changes) | 4 |
| Help in sustainability of carbon sink | 4 | High uncertainty of predictions of climate changes | 4 |
| | | Limitation in legislation | 5 |
| | | Lack of understanding in praxis | 4 |



| Strengths | Opportunities | Weaknesses | Threats |
|-----------|---------------|------------|---------|
| 0,232 | 0,249 | 0,144 | 0,376 |



CROATIA



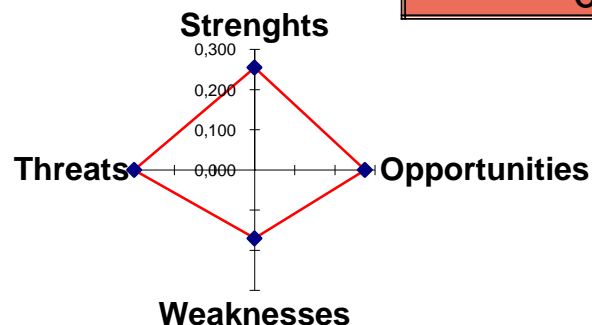
| Element of analysis | Strengths | Opportunities | Weaknesses | Threats | Dominant strategy |
|---------------------|---------------|---------------|------------|---------------|-------------------|
| Ecology | 0.3263 | 0.2719 | 0.2510 | 0.1506 | SO |
| Silviculture | 0.1813 | 0.4395 | 0.1373 | 0.2417 | SO |
| Climate changes | 0.2320 | 0.2486 | 0.1436 | 0.3756 | ST |



SERBIA

| ECOLOGY OF NNTS | | | |
|---|------|--|------|
| Strengths | Mark | Weaknesses | Mark |
| Faster adaptation to changing ecological conditions | 5 | Invasiveness and possible disappearance of native tree species | 5 |
| Possibilities for phytoremediation | 3 | Lack of knowledge on NNTS | 4 |
| Enhancement of soil melioration | 4 | Uncontrolled spread of NNTS | 3 |
| Cover wide range of ecological characteristics in the country | 2 | Incompatibility with climate conditions | 2 |
| High growth rate | 3 | Lack of dissemination about the benefit of NNTS | 3 |
| Opportunities | Mark | Threats | Mark |
| Replacement for native species that are decreasing in their health conditions (for example <i>Fraxinus</i> sp.) | 4 | Possible negative impact on natural tree species in terms of competitiveness | 4 |
| Potential use as pioneer species on degraded sites | 3 | Lack of experience of silvicultural treatments during rotation | 5 |
| Better carbon sink | 2 | NNTS change habitat type characteristics | 3 |
| Fulfilling empty ecological niches | 2 | NNTS change native plant species composition | 2 |
| | | Vulnerable in case of environmental changes | 1 |

◆ AWOT



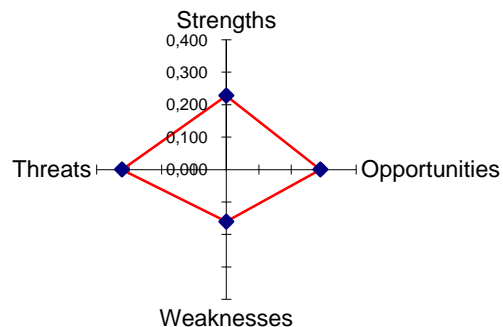
| Strengths | Opportunities | Weaknesses | Threats |
|-----------|---------------|------------|---------|
| 0,255 | 0,275 | 0,170 | 0,300 |



SERBIA

| SILVICULTURE | | | |
|--|------|--|------|
| Strengths | Mark | Weaknesses | Mark |
| Well-adapted to the local climate | 5 | Lack of adequate forest policy regarding NNTS | 5 |
| Filling the gaps in forest ecosystems after disappearance of native tree species | 4 | Insufficient integration of biodiversity in the management plans | 4 |
| Lower site preparation activities when afforestating | 3 | Insufficiently stable clones have been used in afforestations | 3 |
| Economic value of timber from stands of NNTS | 2 | Big areas afforested with monocultures | 2 |
| Acceptance by forest owners | 3 | Lack of yield and sorting table | 4 |
| Opportunities | Mark | Threats | Mark |
| Enhancement of quality and diversity of products | 4 | NNTS not recognized in state strategies or programs | 5 |
| Broaden use in establishment of energy plantations | 3 | Invasiveness issues in lack of control | 3 |
| Application of intensive technologies for soil preparation and shortening rotation | 3 | Less tolerant compared to the native species | 4 |
| Introduction of new clones and provenances | 2 | Increasing problems with subsequent generations of coppice | 2 |
| Great opportunities for adaptation | 1 | Perseverance to close-to-nature silviculture | 4 |

—◆— A...



| Strengths | Opportunities | Weaknesses | Threats |
|-----------|---------------|------------|---------|
| 0,228 | 0,290 | 0,161 | 0,321 |

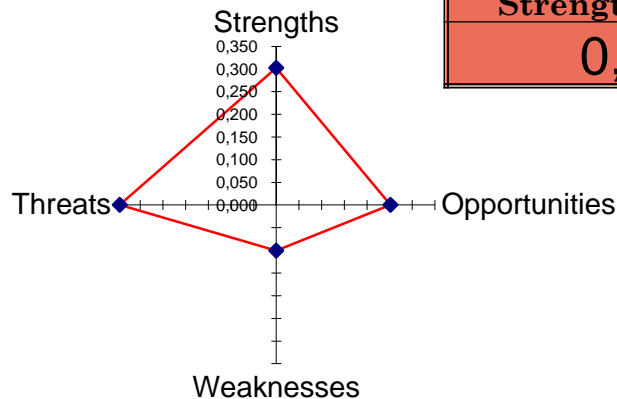


SERBIA

CLIMATE CHANGES

| Strengths | Mark | Weaknesses | Mark |
|--|------|---|------|
| Biodiversity richness | 5 | Unknown long-term risks of NNTS regarding NNTS | 4 |
| Possibility for better adapted mixtures to climatic changes | 4 | Increased competition with native trees | 3 |
| NNTS better adapted to local condition compare with NTS | 3 | | |
| Successful reproduction | 2 | | |
| Opportunities | Mark | Threats | Mark |
| Gaining additional ecological and tree-physiological knowledge | 4 | Changes in wildlife habitat | 4 |
| Include climate variables in growth and yield models. | 3 | High uncertainty of predictions of climate changes | 3 |
| | | Reduction of the trees' physiological status and increase of susceptibility to pathogens. | 5 |

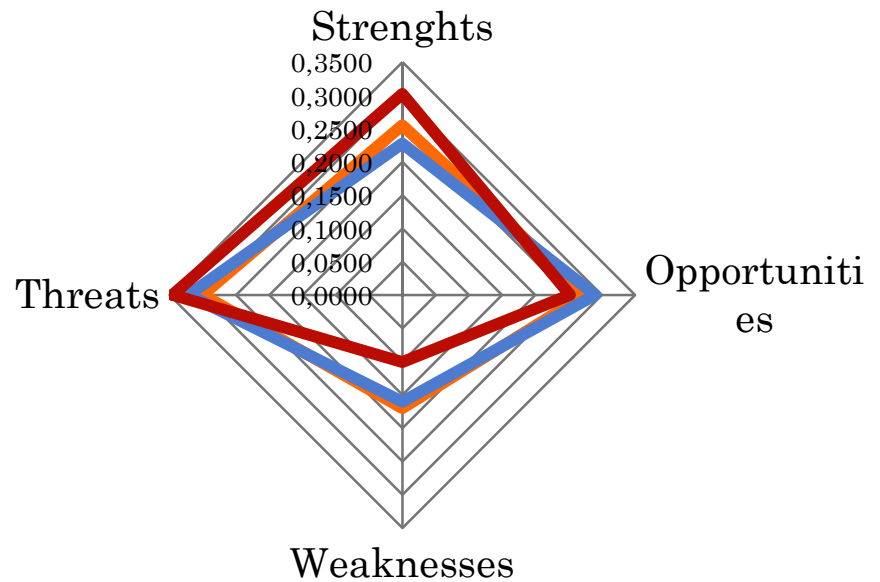
◆ AW...



| Strengths | Opportunities | Weaknesses | Threats |
|-----------|---------------|------------|---------|
| 0,302 | 0,252 | 0,101 | 0,345 |



SERBIA



— Ecology — Silviculture — Climate changes

| Element of analysis | Strengths | Opportunities | Weaknesses | Threats | Dominant strategy |
|---------------------|---------------|---------------|------------|---------------|-------------------|
| Ecology | 0.2550 | 0.2750 | 0.1700 | 0.3000 | ST |
| Silviculture | 0.2277 | 0.2902 | 0.1607 | 0.3214 | ST |
| Climate changes | 0.3022 | 0.2518 | 0.1007 | 0.3453 | ST |



CONCLUSIONS

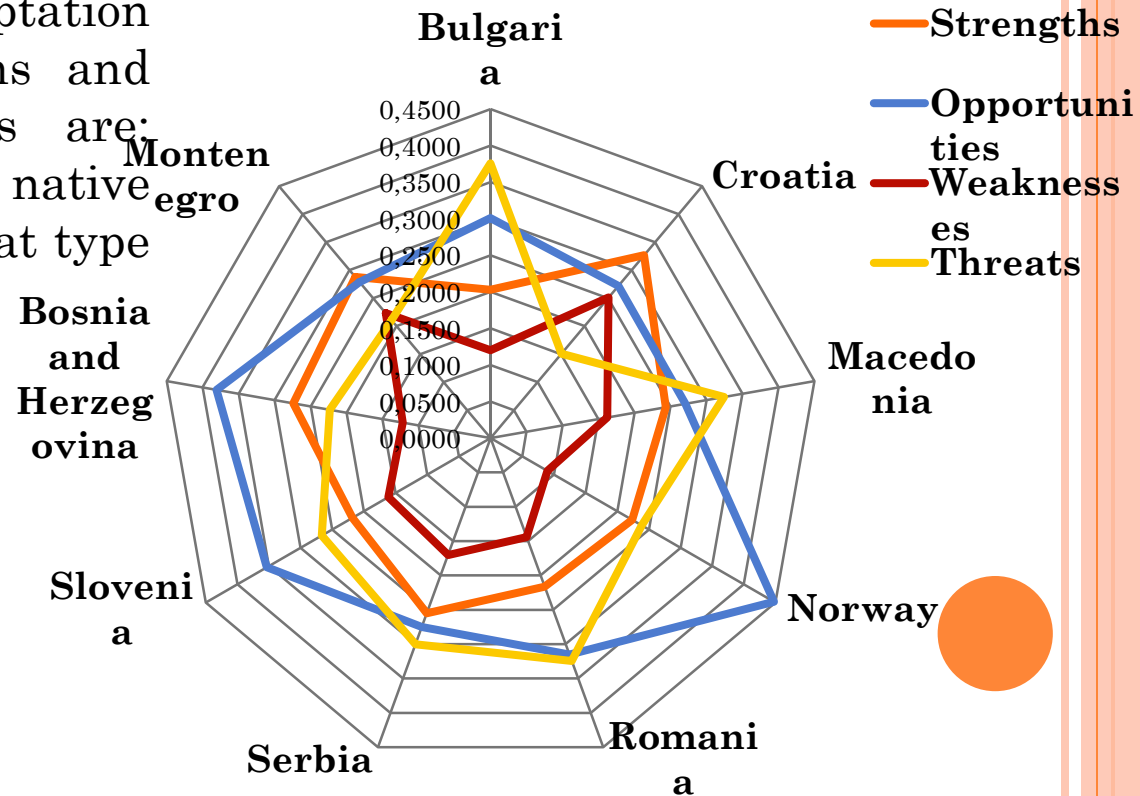
STRATEGIES

-ECOLOGY-

| ECOLOGY | |
|---------|--------|
| SO | ST |
| Croatia | Serbia |

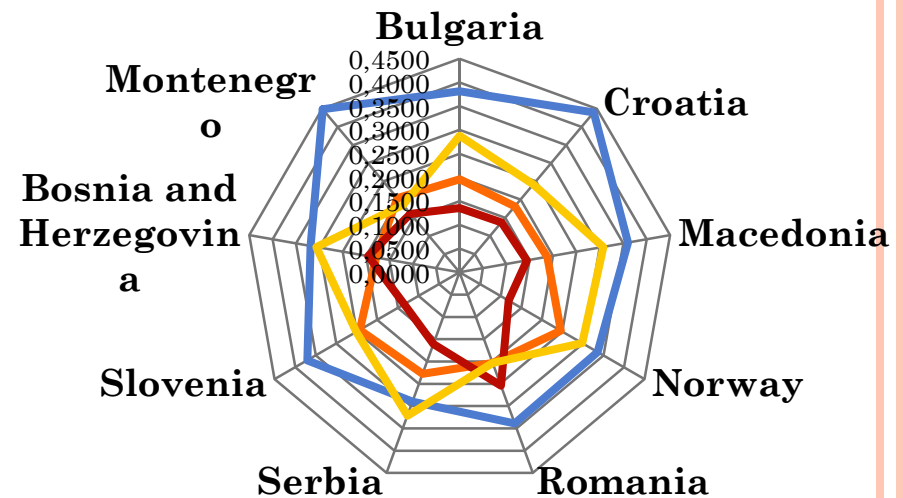
CRO: Dominant strengths in the Ecology analysis are: quicker adaptation of NNTS to changing ecological conditions and enhancement of soil fertility/soil improvement. Opportunities that are dominant are: filling the forest gaps with NNTS after disturbances and reducing risks for carbon pools.

SER: Dominant strengths in the Ecology segment are: quicker adaptation to changing ecological conditions and soil improvement. The threats are: negative competitive impact on native tree species and changes in habitat type characteristics.



STRATEGIES -SILVICULTURE-

| SILVICULTURE | |
|--------------|--------|
| SO | ST |
| Croatia | Serbia |



— Strengths — Opportunities
— Weaknesses — Threats

CRO: In the Silviculture analysis, prevailing strengths are filling the gaps in forest ecosystems after the loss of native tree species (e. g. *Ulmus laevis*) and enhanced wood production. Opportunities are: enhancement of options for bioenergy production and creation of better options for stability at landscape level (e.g., combination of stands with both native and non-native tree species).

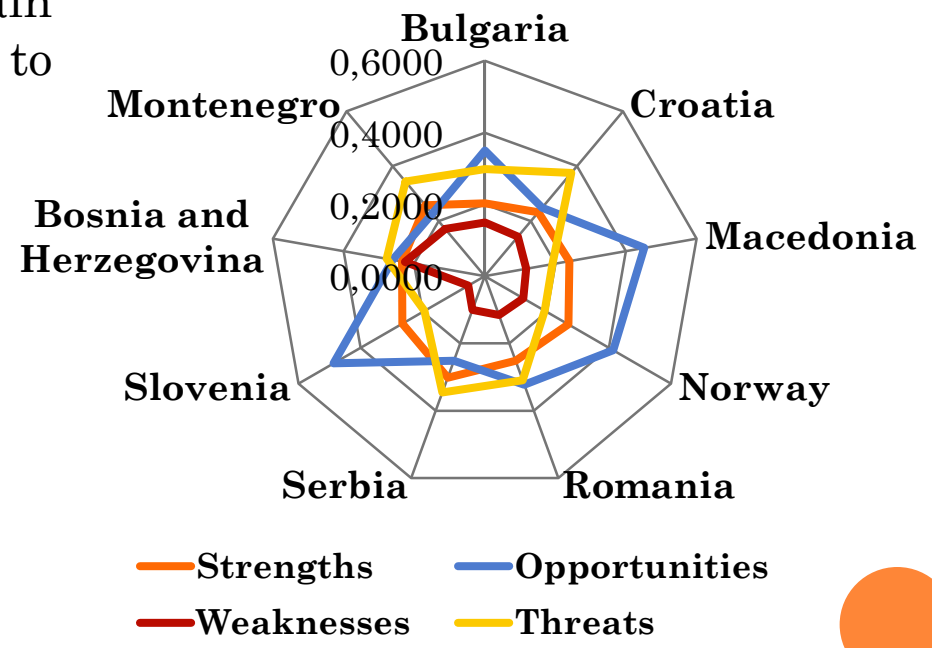
SER: The silvicultural analysis shows that the dominant strengths are good adaptation to local conditions and gap filling in forest ecosystems after the loss of native tree species. The main threat is the fact that NNTS are not recognized in state strategies or programs.

CRO: In Climate changes analysis the main strength is the possibility for mixtures better adapted to climate changes. The main threats are: enforced legislation and uncertainty of predictions of climate changes.

SER: In the field of Climate changes analysis the main strength is the better adaptation of NNTS to climate changes particularly in mixed forests. The main threat is the increase of susceptibility to biotic risks.

STRATEGIES -CLIMATE CHANGES-

| CLIMATE CHANGES |
|-------------------|
| ST |
| Croatia Serbia |





THANK YOU FOR ATTENTION!

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