RIPA-1 : First International Conference on Riparian Ecosystems Science and Management
6-7 April 2022, Bratislava, Slovakia

Genetic Considerations in European Riparian Ecosystems Management

Experts View on Status and Needs

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Why is genetic diversity important?

Higher levels of genetic diversity:

- provide potential to adapt to environmental change
- reduce negative inbreeding efects
- support ecosystem structure and functions
- constitue basis for many of nature's contribution to people

Loss in genetic diversity

- genetic diversity has declined globally in wild populations
- decreased viability of species
- geographic ranges are shrinking
- lost of geneticaly distinct populations
- remaining genetic diversity is not well safeguarded

Evolutionary Applications

Evolutionary approaches to environmental, biomedical and socio-economic issues

Open Access

REVIEWS AND SYNTHESES | Open Access

Estimated six per cent loss of genetic variation in wild populations since the industrial revolution

Deborah M. Leigh, Andrew P. Hendry, Ella Vázquez-Domínguez, Vicki L. Friesen

First published: 07 May 2019 | https://doi.org/10.1111/eva.12810 | Citations: 63

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Riparian ecosystem management and conservation

- Loss of genetic diversity has been underappreciated
- Genetic aspects need to be taken into consideration in restoration and management projects

Genetic Conservation group

The group was established in 2018 in Selfoss, Iceland

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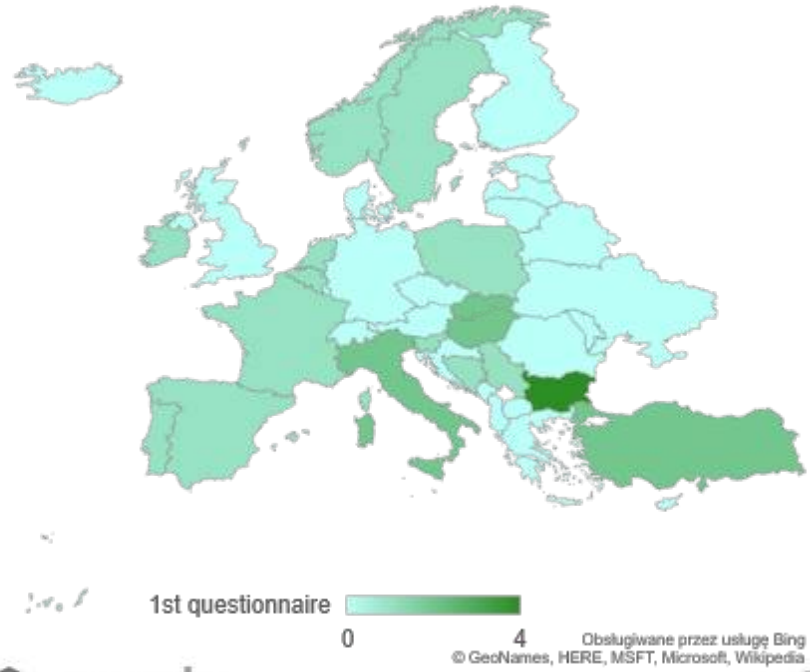
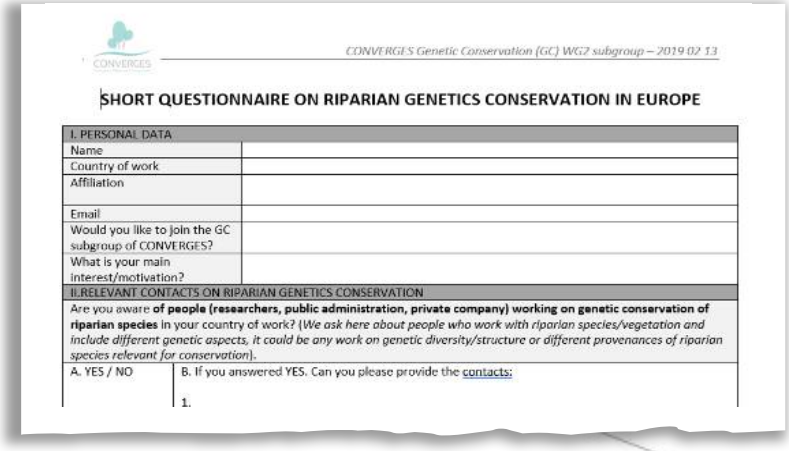
Aims

- Mapping the status and needs for conservation of genetic resources in riparian vegetation across European countries

1st stage – identification of experts

- List of experts in riparian genetic resources conservation (researchers, managers, practitioners)
- Number of respondents = 22
- Number of countries represented = 15





CONVERGES Genetic Conservation (GC) WG2 subgroup – 2019 02 13

SHORT QUESTIONNAIRE ON RIPARIAN GENETICS CONSERVATION IN EUROPE

I. PERSONAL DATA	
Name	
Country of work	
Affiliation	
Email	
Would you like to join the GC subgroup of CONVERGES?	
What is your main interest/motivation?	
II.RELEVANT CONTACTS ON RIPARIAN GENETICS CONSERVATION	
Are you aware **of people (researchers, public administration, private company) working on genetic conservation of riparian species** in your country of work? (*We ask here about people who work with riparian species/vegetation and include different genetic aspects, it could be any work on genetic diversity/structure or different provenances of riparian species relevant for conservation*).	
A. YES / NO	B. If you answered YES. Can you please provide the contacts: 1.

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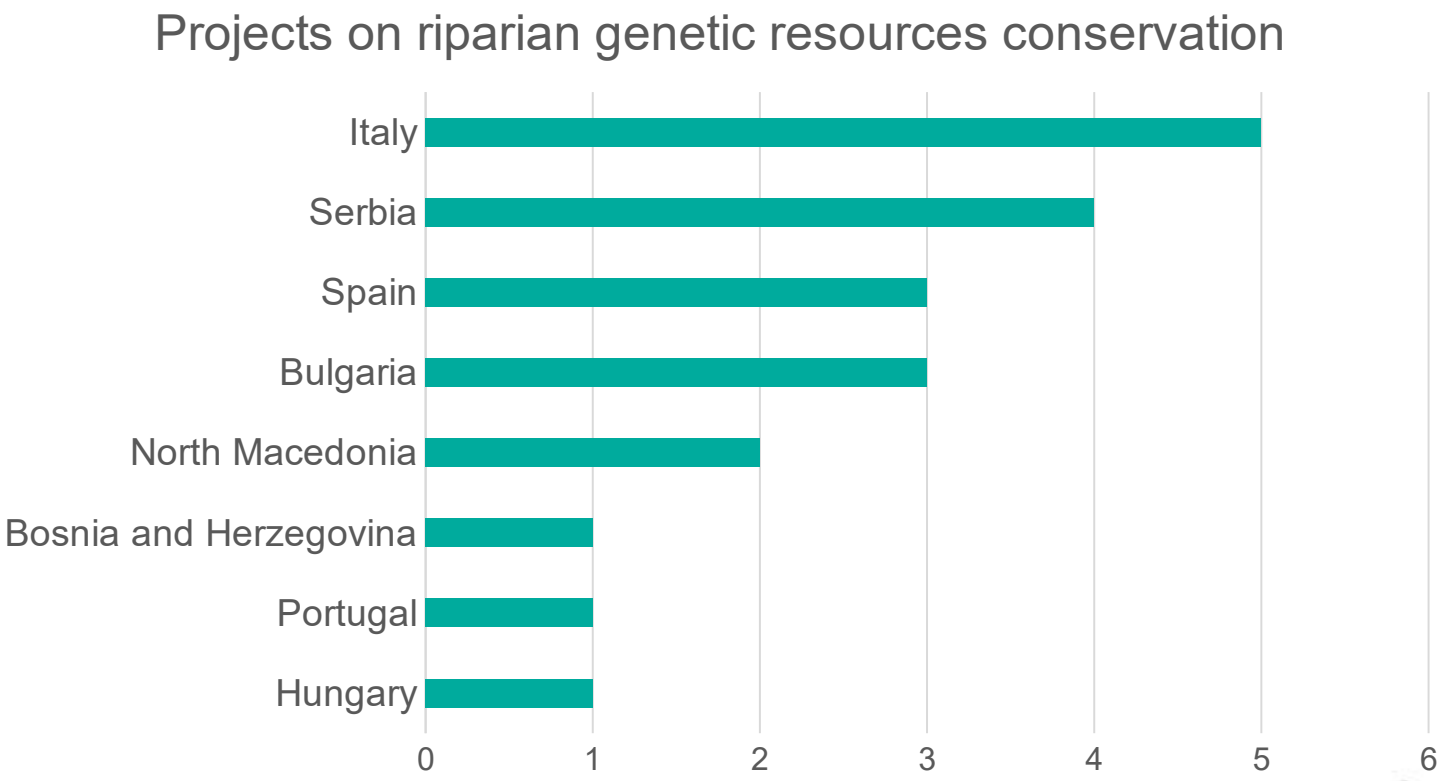
1st questionnaire



2st stage – structured interview

We asked country reports on:

- strategies implemented in their countries
- major barriers
- current needs
- potential solutions

2st stage – structured interview

STRUCTURED INTERVIEW
STATUS AND NEEDS ON GENETIC RESOURCES CONSERVATION
ACROSS EUROPEAN RIPARIAN ECOSYSTEMS

I. PROFILE OF THE RESPONDENT	
Name	
Country of work	
Affiliation	
Email	
Which sector are you most involved?	A) University/Research institute B) Public administration C) Private sector D) Civil society E) Other: _____
Which vegetation type/species you focus on?	
How many years have you worked on: (a) Genetic conservation; (b) Genetic conservation of riparian vegetation?	(a) _____ (b) _____
II. GENETIC CONSERVATION OF RIPARIAN VEGETATION	
In your view, which are the main benefits of conserving riparian genetic resources? (rank up to 5 choices)	◯ Economic advantages/benefits ◯ Food security ◯ Fresh water ecosystem conservation ◯ Filtering water polluters ◯ Scientific interest ◯ Social importance ◯ Other
In your view, which is the most effective approach to conserving riparian genetic resources? (choose one option)	A) *In situ* conservation B) *Ex situ* conservation C) *In situ* x *ex situ* combination D) Integrative conservation (conservation that relies on the enhanced participation of local people to achieve sustainable management of natural resources)
In your view, which are the specificities of conserving riparian genetic resources in comparison with other systems/species? (list up to 5 specificities)	
In your opinion, have there been changes in riparian genetic diversity in your country over the past ten years? Please, define the observed changes.	◯ No significant changes ◯ Improving status ◯ Degrading _____ _____ _____
III. STATUS ON RIPARIAN GENETIC RESOURCES CONSERVATION IN YOUR COUNTRY. According to your knowledge, please answer following questions:	
Has the state of diversity of riparian ecosystems in your country been assessed since 2000? If YES, please provide a link to the project or information on the results.	◯ NO ◯ YES _Link for project_____ _Reference on scientific or grey literature_____

CONVERGES GenCon WG2 subgroup STRUCTURED INTERVIEW 2019-06-15

Does your country have plans/programs to assess the state of genetic diversity of riparian ecosystems? If YES, please specify existing documents.	◯ NO ◯ YES Link for project_____ _Reference on scientific or grey literature _____ _____ _____
Does your country have procedures in place to monitor or measure genetic erosion in riparian ecosystems? If YES, which institutions are in charge of implementing these procedures?	◯ NO ◯ YES _____ _____
Which entity is in charge of riparian genetic resources conservation in your country? Whether it is a separate entity or its scope includes genetic conservation in a wider sense? Put the name, link and briefly describe its profile.	Name of institution _____ Link of institution:_____ Profile description_____ _____
Is there a coordinated Strategy/National Program for the conservation of riparian plant genetic resources in your country? Whether it is a separate document or its scope includes genetic conservation in a wider sense? Put the name, link and briefly describe it.	Name of Strategy/Program_____ Link:_____ Description_____ _____
Please, list and briefly describe examples of riparian genetic resources conservation good practices (projects) in your country (national, regional and/or local level) for: • *In situ* approach • *Ex situ* approach • Combined approach • Integrative conservation (local people participation) Please, in your descriptions emphasize examples with visible connection between conservation methods and nature protection and/or sustainable development.	Example 1 Example 2 Example 3 Example 4
IV. NEEDS ON RIPARIAN GENETIC RESOURCES RESEARCH AND CONSERVATION MANAGEMENT IN YOUR COUNTRY	
Indicate and rank strengths of riparian genetic resources conservation in your country.	◯ Diversity status/inventories of species ◯ Environmental conditions/accessibility ◯ Scientific knowledge level ◯ Policy priority ◯ Legislation framework ◯ Institutional/organisational framework ◯ Community awareness ◯ Financial support ◯ Other: _____
In your opinion, how above ranked strengths can be used to achieve effective riparian genetic resources conservation in your country? Describe further development of recognized strengths.	
Indicate and rank weaknesses of riparian genetic resources conservation in your country.	◯ Diversity status/inventories of species ◯ Environmental barriers ◯ Scientific knowledge level ◯ Lack of policy priority ◯ Legislation framework ◯ Institutional/organisational framework ◯ Community awareness

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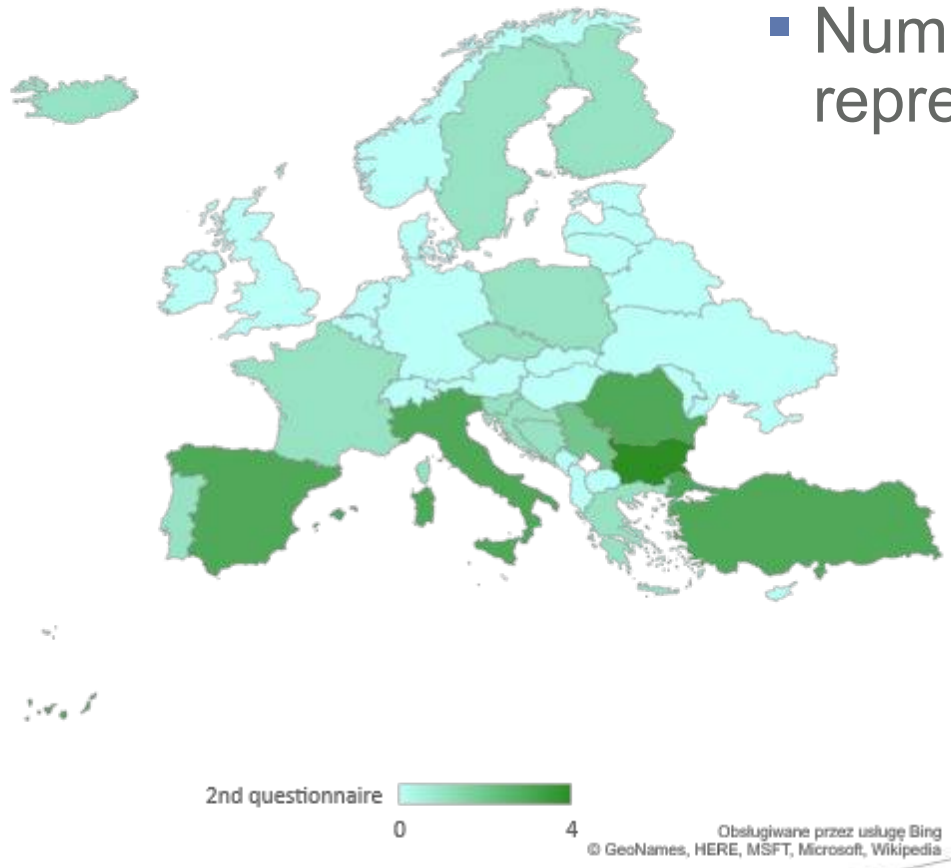
COST is supported by the EU Framework Programme Horizon 2020

2st stage – structured interview

- Number of respondents = 30
- Number of countries represented = 19



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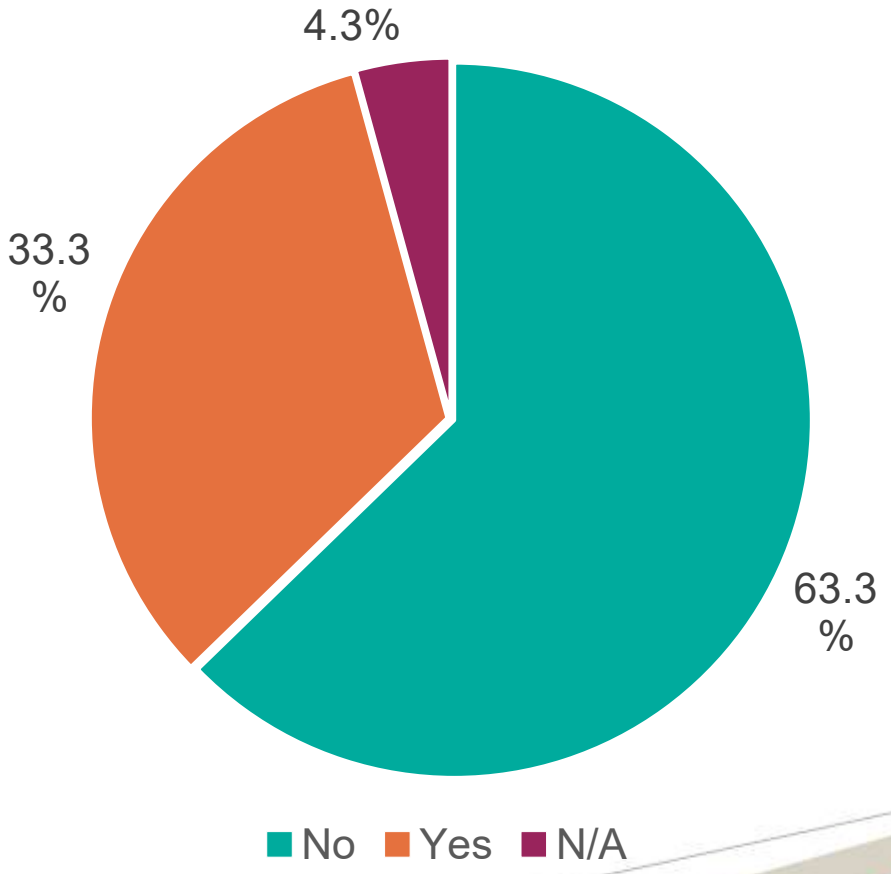
Results

Does your country have plans/programs to assess the state of genetic diversity of riparian ecosystems?



Results

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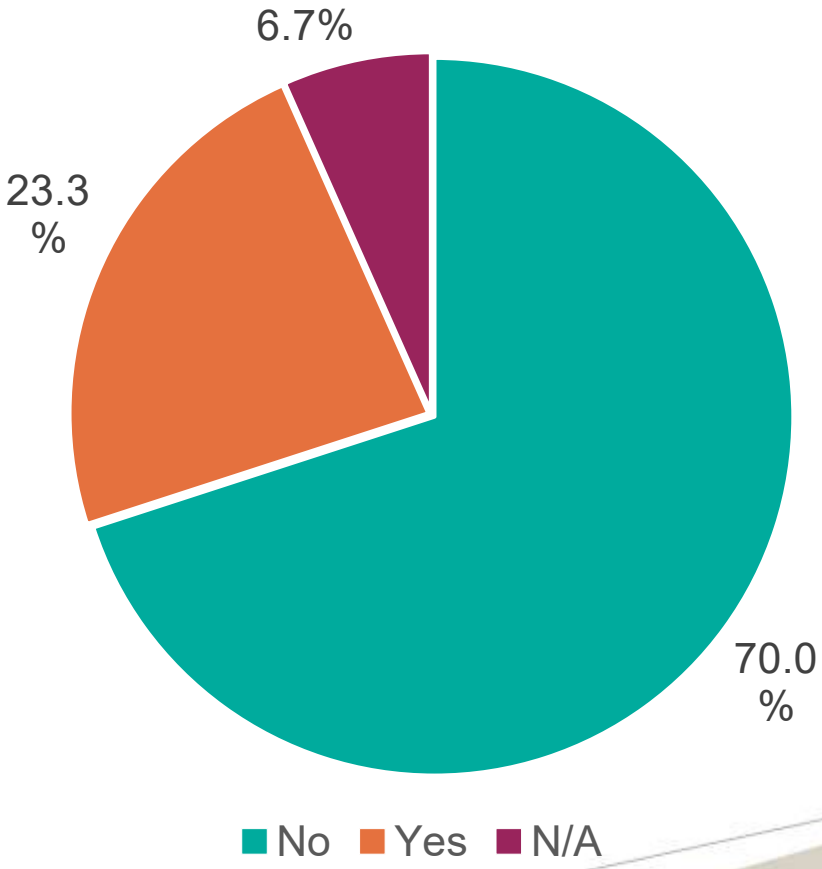
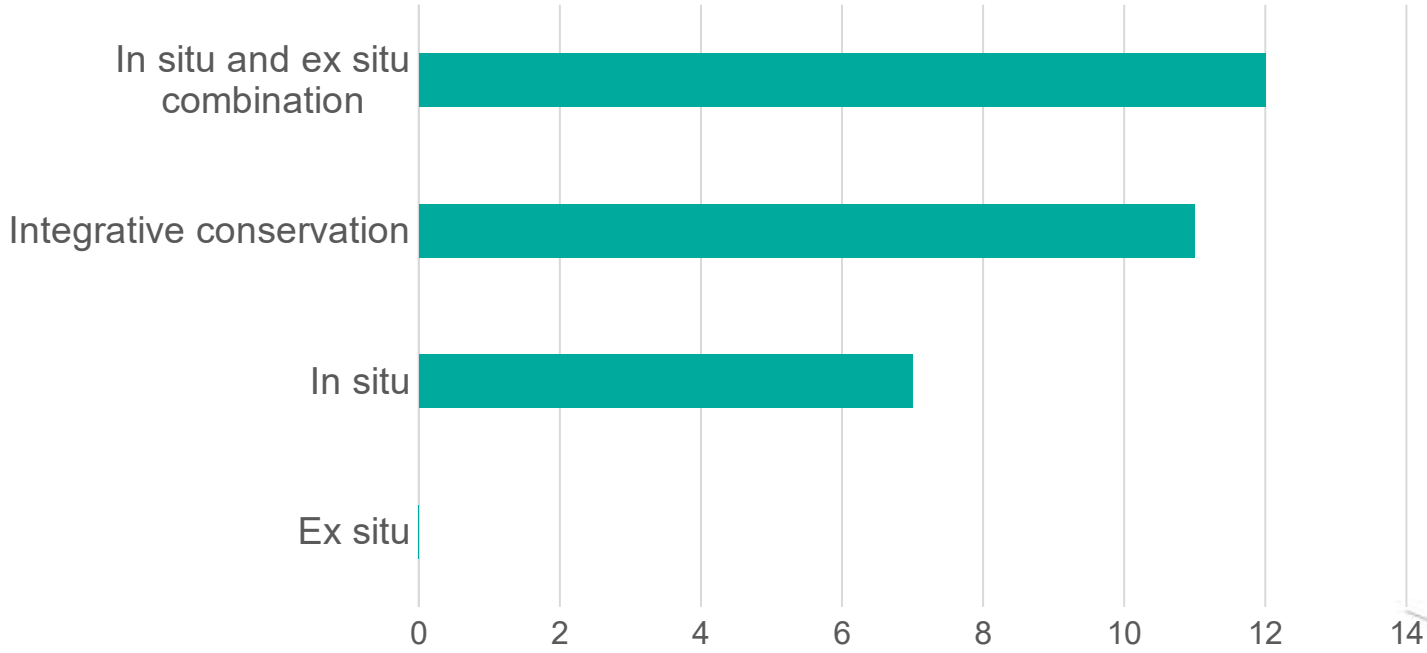


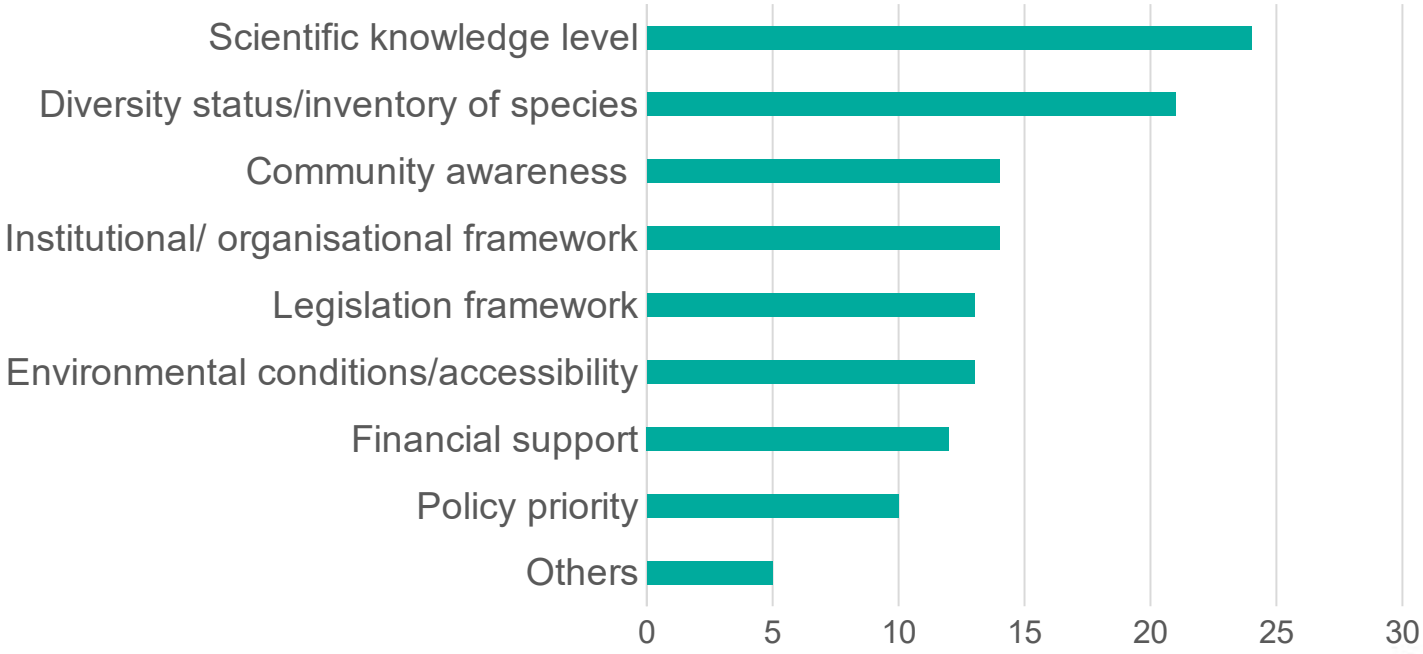
Results

Which is the most effective approach to conserving riparian genetic resources?



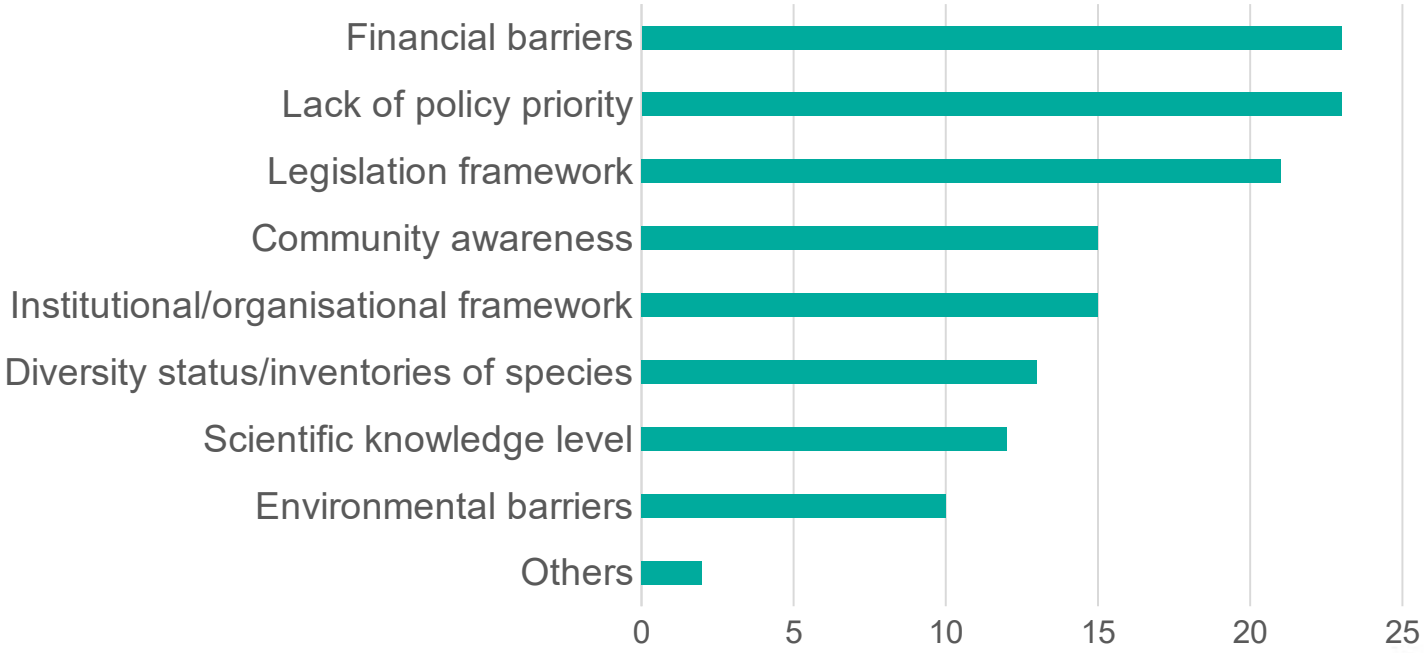
Results

Indicate and rank strengths of riparian genetic resources conservation in your country.



Results

Indicate and rank weaknesses of riparian genetic resources conservation in your country.



Outcome

- Alimpić et al. *The status and role of genetic diversity of trees for the conservation and management of riparian ecosystems: a European experts perspective*

- Paper submitted do Journal of Applied Ecology – *Practitioner's Perspective* section

Thank you for your attention!

Acknowledgements

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