

Regional assessment on the status of forest invasive species in Europe and Central Asia

Report



Forest Invasive Species Network for Europe and Central Asia
(REUFIS)
2020

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Information presented in this document are gathered from experts acting as focal point for their countries and represents the opinion of the national expert or a group of experts.

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Acknowledgements

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The REUFIS Secretariat acknowledges the member countries and especially their representatives, the focal points, for their active contribution to network activities. Colleagues in Belarus, Turkey and Hungary provided indispensable assistance and support during the REUFIS meetings (Budapest, HU: 2017; Zdanovichi, BY: 2018 and Bursa, TR: 2019) as well.

Several specialists from the participating countries collected data and gathered information on forest invasive species (FIS) from their jurisdictions to provide information for this report. Their efforts are greatly appreciated.

Thanks to the members of the Executive Committee, especially to Bjørn Økland, who provided valuable inputs and notes for this document and Hubert Inhaizer for the technical implementation of the regional assessment.

Foreword

Our forests are facing new threats from both native pest species with changing biology and behavior and also non-native, sometimes even invasive, pest species; the latter of which are often very difficult to manage. Non-native pathogens, plants, invertebrates and vertebrates present new challenges for forest owners and forest managers and a lack of information on such species hampers efforts to control them.

With this report we aim to address the information gap on forest invasive species (FIS) in Europe and Central Asia. We provide an overview of the current state of FIS and other major factors threatening forest ecosystems in the region. We also present predictions related to forest pests and diseases for the next 10 years.

This report gathers input from numerous specialists in the REUFIS member countries that participated in the assessment. However, the data are far from complete. 'No data' does not mean 'no problem' in a country, rather it highlights the difficulties in gathering reliable information on FIS.

I personally believe that together with other organizations and initiatives we can gather and share useful, timely information to reduce the prevalence and impacts of invasive species in the forests of Europe and Central Asia.

Ferenc Lakatos
Secretary, REUFIS Network

Specialists involved in the regional assessment (focal points in bold)

Country	Specialist(s)	Institution of the focal point
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Belarus	Nikolai Yurevich	Ministry of Forestry
Bosnia and Herzegovina	Stefan Bojić , Mirza Dautbašić, Nenad Čolaković	University of East Sarajevo
Bulgaria	Mariya Belovarska , Emil Popov, Ilian Mutaftchiiski	Executive Forest Agency
Czech Republic	Blanka Trnková , Jiri Bily, Miloš Knížek	Central Institute for Supervising and Testing in Agriculture
Georgia	Giorgi Mamadashvili	National Forest Agency
Hungary	Ferenc Lakatos , Hubert Inhaizer , Gergely Király, György Csóka	University of Sopron REUFIS
Kyrgyzstan	Nurlan Khisainov , Nurstan Chyngozhoyev	State Agency for Environment Protection and Forestry
North Macedonia	Nadica Dzerkovska	Phytosanitary Directorate - Ministry of agriculture, forestry and water economy
Norway	Bjørn Økland , Halvor Solheim, Olga Hilmo, Isabella Børja	Norwegian Institute of Bioeconomy Research (NIBIO)
Romania	Nicolai Olenici , Danut Chira, Alexandru Liviu Ciuvat	National Institute for Research and Development in Forestry
Russian Federation	Yuri Gninenko , Alexander Rakov	Russian Research Institute for Silviculture and Mechanization of Forestry
Serbia	Mara Tabaković-Tošić , Vidosava Jovanović , Miodrag Strnad, Vladan Bjedov	Institute of Forestry Ministry of Agriculture, Forestry and Water Management
Slovakia	Christo Nikolov , Jozef Vakula , Andrej Gubka, Slavomír Rell, Andrej Kunca	National Forest Centre, Forest Research Institute
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Tajikistan	Nurali Hisanov	Tajik Forestry Research Institute
Turkey	Ümit Turhan , Can Asan , Mehmet Rıdvan Çörtü, Kamuran Birinci	General Directorate of Forestry
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I. Background

Invasive species represent a major global threat to forest health and sustainable forest management. Combatting the spread of such species between countries and regions is often hampered by a lack of information and its dissemination. For some species, there is also missing regulation & legislation and joint action is required to address all these threats. Regional information exchange networks and working groups on forest invasive species help to raise awareness, facilitate the collection and exchange of information and the mobilization of resources, and strengthen national and regional institutional capacity. The countries of Europe and Central Asia recognized this issue and identified a need for a common forum where scientists, managers and policy-makers can share information and experiences and coordinate forest invasive species activities and programmes within and between the regions.

To prepare the establishment of a suitable forum to develop harmonized actions to combat invasive forest species, the FAO Regional Office for Europe and Central Asia (REU) organized the meeting “Forest Invasive Species in Europe and Central Asia” in Minsk, Belarus on 6-7 September 2016. Representatives from many countries of Europe and Central Asia came together to tackle the shared problem of forest invasive species. Shortly after this event, the Forest Invasive Species Network for Europe and Central Asia (REUFIS) was established and held its Inaugural Meeting in Budapest, Hungary on 17-19 October 2017. As of 31 January 2020, the Network has 28 members (Figure 1; Table 1).



Figure 1. Area covered by the Forest Invasive Species Network for Europe and Central Asia (REUFIS)

Table 1. Member countries¹ of the Forest Invasive Species Network for Europe and Central Asia (REUFIS). Countries in **bold** participated in the assessment.

Austria	Kyrgyzstan	Slovenia
Belarus	Montenegro	Sweden
Bosnia and Herzegovina	Moldova	Switzerland
Bulgaria	North Macedonia	Tajikistan
Croatia	Norway	Turkey
Czech Republic	Portugal	Ukraine
Georgia	Romania	United Kingdom
Germany	Russian Federation	Uzbekistan
Hungary	Serbia	
Kazakhstan	Slovakia	

At the Second Annual Meeting in Zdanovichi, Belarus on 16-18 October 2018, REUFIS member countries endorsed the undertaking of a major initiative to provide a comprehensive assessment of the status of forest invasive species in Europe and Central Asia. The project, *Regional Assessment on the status of forest invasive species in Europe and Central Asia*, was carried out by REUFIS with close coordination by REU.

The regional assessment had two main objectives:

1. Analyze the current state of forest invasive species in Europe and Central Asia.
2. Strengthen the information exchange among REUFIS members and identify areas for joint actions.

This report summarizes the results from this project.

¹ REUFIS member countries as of 31 January 2020.

II. Methodology

Information collection in the participating countries was structured around an enquiry (see in Appendix), which was developed by the REUFIS Secretariat and the Executive Committee. The enquiry covered four thematic areas related to invasive forest species:

1. Pathogens
2. Vertebrates
3. Invertebrates
4. Plants

The REUFIS Focal Points² coordinated a collection of first-hand information about the status of invasive species in the member countries from specialists with diverse areas of expertise. This helped ensure that the assessment was comprised of ample, comprehensive information.

A total of 19 countries participated in the REUFIS Regional Assessment out of the 28 eligible REUFIS member countries and the project involved 55 specialists from the region representing 48 organizations (Figure 2, Figure 3).



Figure 2. Participation of REUFIS member countries in the regional assessment



Figure 3. Contributing specialists from participating countries

² <http://www.reufis.org/focal-points/>

The information received was organized into Microsoft Excel sheets in order to carry out quantitative and qualitative analyses. The analyses allowed for comparisons between countries and identification of common patterns on how invasive forest species affect sustainable forest management.

The experts were asked to indicate their opinion on a scale from 0 (do not know/no opinion) and 1 (not at all) to 9 (to a great extent). In order to allow trends to be displayed in an “easy-to-read” format, the points on the scale were grouped into four classes: great extent (rank 9–7), moderate extent (rank 6–4), minor extent (rank 3–1), and no data/no ranking. The main body of the assessment summarizes the specialists’ opinions of the current impact of forest invasive species on sustainable forest management in their country.

Since giving score values may have an element of subjectivity due the various interpretations of the questions and the strengths of the score values, a qualitative analysis was developed to complement the quantitative assessment. The national correspondents were given the opportunity to formulate their responses for each question not only by numerical scores, but also in words. The qualitative analysis consisted of explanatory questions connected to the current impacts of invasive forest species on sustainable forest management, and also open-ended questions about the emerging issues driving the change of forest invasive species within the next ten years (2020-2030).

III. Assessment results

A. Pathogens

Of the four thematic groups, the specialists provided the highest average ranking (5.56) to pathogens meaning they are generally considered to have the highest impact on both natural and planted forests across the participating countries (Table 2). Seventeen countries provided concrete ranking (1-9) for this question, while two countries provided zero. In many cases it is hard to decide, whether a given pathogen is native to the country (but causing new, emerging problems), invasive, or even a hybrid of both.

Table 2. To what extent do **forest invasive pathogens** affect sustainable management of forests and other land with tree cover in your country?

<i>Level of influence</i>	<i>Participating countries</i>
Weakly influenced	Belarus, Czech Republic, Romania, Tajikistan
Moderate impact	Bulgaria, North Macedonia, Norway, Russian Federation, Serbia, Slovakia, Switzerland
Strongly influenced	Austria, Bosnia and Herzegovina, Georgia, Hungary, Slovenia, Ukraine
No information/No ranking	Kyrgyzstan, Turkey

The invasion of forest pathogens in Europe and Central Asia has been noted during the last century. Several tree species experienced major dieback and mortality due to several forest pathogens such as *Cryphonectria parasitica* on chestnut (*Castanea sativa*), and *Ophiostoma ulmi* and *O. novo-ulmi* on elms (*Ulmus* sp.). Several invasive pathogens have been introduced to REUFIS countries in more recent decades as well, most of them unintentionally with the transport of various goods and products (e.g. plants for planting, wood packaging, etc.). Most recently (last 30 years) introduced invasive pathogens that have impacted forests in Europe and Central Asia include: ash dieback (*Hymenoscyphus fraxineus*); *Sphaeropsis sapinea* on *Pinus nigra*; *Phytophthora* species (e.g. *Phytophthora alni*, *P. cinnamomi*) on various tree species; *Dothistroma septospora* (*Micosphaerella pini*) on *Pinus* spp.; *Cryptostroma corticale* and *Eutypella parasitica* on *Acer pseudoplatanus*; and *Cylindrocladium buxicola* (*Calonectria pseudonaviculata*) on box trees.

While International Standards for Phytosanitary Measures (ISPMs) exist, the national enforcement measures and implementation capacities are very diverse across countries in the region. Thus, these measures may not completely halt the introduction and spread of pathogens.

New challenges are expected to arise with projected increases in the international trade in forest products, including plants for planting, wood and non-wood products. This increased activity will put significant pressure on the countries of origin and recipient countries to ensure adequate application of ISPMs.

B. Vertebrates

Invasive forest vertebrates are generally considered to have the lowest impact (average ranking: 3.21) on sustainable forest management across the participating countries (Table 3). However, it is important to note that only 15 countries provided concrete ranking for this question, which is the lowest among the thematic areas. The low importance is likely linked to the very limited information connected to invasive forest vertebrates at national levels. There are few examples of national inventories or assessments, which classify alien species depending on their invasion potential and ecological effects. Sika deer (*Cervus nippon*) and fallow deer (*Dama dama*) are reported to have increased damage in regeneration areas, which impose additional challenges to practitioners to assure suitable conditions for young forest stands. Other species like raccoon dog (*Nyctereutes procyonoides*) and coypu (*Myocastor coypus*) were also reported to have increased pressure on forests. Some countries reported increased populations of previously native species, but these dynamics are often not considered to be harmful or the impacts are not linked to forest management. An example for this is the golden jackal (*Canis aureus*) in Central Europe.

Table 3. To what extent do **forest invasive vertebrates** affect sustainable management of forests and other land with tree cover in your country?

<i>Level of influence</i>	<i>Participating countries</i>
Weakly influenced	Austria, Hungary, North Macedonia, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Switzerland, Tajikistan
Moderate impact	Georgia, Norway, Turkey
Strongly influenced	Czech Republic, Ukraine
No information/No ranking	Belarus, Bosnia and Herzegovina, Bulgaria, Kyrgyzstan

Despite the generally limited available information about forest invasive vertebrates, it is foreseen by many reporting countries that climate change and connected migration will play an important role in the expected increase in population numbers. This is emphasized more by countries whose neighboring countries already have established invasive vertebrate populations, such as raccoon dog (*Nyctereutes procyonoides*) and coypu (*Myocastor coypus*) in southeastern Europe, and wild boar (*Sus scrofa*) in the Nordic countries.

C. Invertebrates

The specialists provided a very high average ranking (5.55) to invertebrates (Table 4). All the participating countries (19) provided concrete ranking (1-9) for this question. There is a very high number of introduced invertebrate species in recent decades and their observed impacts on forests in the REUFIS region are almost as impactful as invasive forest pathogens.

Table 4. To what extent do **forest invasive invertebrates** affect sustainable management of forests and other land with tree cover in your country?

<i>Level of influence</i>	<i>Participating countries</i>
Weakly influenced	Belarus, Kyrgyzstan, Slovenia
Moderate impact	Austria, Bulgaria, Hungary, North Macedonia, Norway, Romania, Russian Federation, Serbia, Slovakia, Switzerland, Tajikistan
Strongly influenced	Bosnia and Herzegovina, Czech Republic, Georgia, Turkey, Ukraine

A large proportion of the introduced invertebrate species noted were either linked to an ornamental tree species (e.g. *Cameraria ohridella* on *Aesculus hippocastanum*, *Corythuca ciliata* on *Platanus* spp.), or to an introduced forest tree species (e.g. various phytophagous insects on *Robinia pseudoacacia*). However, there are some emerging issues of invasive insects in forest stands. Most phytophagous species are sapsuckers, but there are a certain number of phloeophagous, wood-living and leaf-feeding species as well. For example, the sapsucker *Corythucha arcuata* is already an emerging issue on various oak trees in southeastern Europe and it is expected to be a major issue across Europe's oak forests. *Ips duplicatus*, together with the native *Ips typographus*, cause great mortality in Central Europe's spruce forests. Pine forests suffered similarly from different native (e.g. *Ips* and *Tomicus* spp.) and introduced bark beetle species. *Xylosandrus germanus*, an ambrosia beetle, is present in almost all European countries causing significant economic loss on high value timber even if the species rarely attack living trees. *Cydalima perspectalis* is one of the main invasive defoliators, affecting ornamental box trees.

Climate change will make most tree species in Europe and Central Asia vulnerable to many invertebrate pests including invasive ones. The transport of wood materials (including wood packaging) infested with various pests from one area to another will lead to further spread. In general, the specialists noted that invertebrate species attacking native tree species with large distribution areas in Europe (e.g. oaks, spruce and pines) will be of major concern for the next 10 years.

D. Plants

Invasive plants were given a low average ranking (4.20) among the four thematic groups (Table 5). Sixteen countries provided concrete ranking (1-9) for this question, while three countries provided zero. In some cases, the invasive character of the given plant species has been overlooked because often they have been intentionally introduced either for ornamental or economic reasons (e.g. *Robinia pseudoacacia*) and then has escaped. Further, there is a large difference among the REUFIS countries regarding invasiveness of plant species. Some species are considered invasive in the north (e.g. *Acer pseudoplatanus*, *Amelanchier spicata*, *Cotoneaster lucidus*, *Picea sitchensis*, *Pinus uncinata*, *Rosa rugosa*), in the south (e.g. *Acer negundo*, *Ailanthus altissima*, *Amorpha fruticosa*, *Fraxinus pennsylvanica*, *Prunus padus*, *Prunus serotina*) or in the east (e.g. *Pinus* sp.). In general, the number of invasive plants increased in the last decades significantly, but their noted impacts to forest ecosystems varies widely.

Table 5. To what extent do **forest invasive plants** affect sustainable management of forests and other land with tree cover in your country?

<i>Level of influence</i>	<i>Participating countries</i>
Weakly influenced	Romania, Serbia, Tajikistan
Moderate impact	Austria, Bosnia and Herzegovina, Bulgaria, Czech Republic, Georgia, Hungary, North Macedonia, Slovenia, Switzerland, Turkey
Strongly influenced	Kyrgyzstan, Norway, Ukraine
No information/No ranking	Belarus, Russian Federation, Slovakia

Increased impacts are expected especially in the barren and riparian forests due to the foreseen further spread of invasive forest plants, such as *Fraxinus pennsylvanica*, *Acer negundo*, *Solidago* spp. and *Aster* spp. Climate change will likely support the spread of thermophilous trees (e.g. *Ailanthus altissima*, *Elaeagnus angustifolia*), and herbs (e.g. *Asclepias syriaca*) into a broader range of habitats.

IV. Conclusions

Forest invasive species are present in Europe and Central Asia with various extents across the region, but almost all participating countries flag their increased pressure to forests and other wooded land. However, both the observed impacts and the composition of the forest invasive species reported varied strongly among REUFIS countries. It has to be noted, that the countries in the REU region represent a great variety of forest ecosystems (from the boreal in the north across the forest steppe until the Mediterranean in the south) including a great variety of forest management applied in the countries.

Forest invasive pathogens and invertebrates are considered by the countries as the most impactful groups, while vertebrates and plants showed lower significance regarding their impact on sustainable forest management. The regional forest types and the various management practices will surely influence the introduction and spread of forest invasive species in the future. Climate change and related changes in environmental conditions may foster further spread of many invasive species. We see the trend, that for most of the maps, the highest severity is found towards south, and somewhat less severity towards north, in the boreal forests.

Pathogens have complicated life cycles, in many cases hidden development, which makes their detection and identification difficult. Efforts are needed to improve the effectiveness and timeliness of identification of forest invasive pathogens. National capacities should also be improved to follow and implement International Standards for Phytosanitary Measures (ISPMs).

Information about existing and projected impacts of invasive forest vertebrates are limited across the regions. Targeted monitoring programs are lacking or are not implemented with the forest sector. Experiences with specific species are exchanged among neighboring countries, however this information exchange is often not regular or structured. Increased pressure by invasive forest vertebrates in the forests of Europe and Central Asia as a result of climate change and connected migration is expected. Therefore, targeted regional projects should be considered to address this issue.

A very high number of forest invasive invertebrates have been introduced to the REUFIS region recently. Due to their various feeding behavior they can utilize various parts of their host plants, which makes their detection and control difficult. The adaptation of local natural enemies to forest invasive invertebrates takes a long time; therefore the ecological and economic impacts may last for a long time. Early detection is crucial to allow timely management response in affected forest stands in order to minimize damage and prevent further spread.

Information about invasive woody plants is well developed and available across the region, but information about herbs is more limited. For example, it is observed that some invasive herb species may spread quickly and become a dominant part of the vegetation, which may influence the succession of the vegetation communities. The long-term impacts of herbs, and especially new invasive herbs, on the forest and vegetation communities are not well explored

and could become the topic for new research across the regions. This topic is of particular interest at the xeric limit of the forest cover. There is also large variation between countries regarding attitude towards invasive plants, and to what extent the plants are affecting pristine vegetation communities. In pristine forest vegetation, newly coming plant species are more visible, while in countries already affected by new plant species and urban/agricultural influences, newly coming plant species could be less noticed.

The influence of introduced herbs and tree species could also be added to the agenda in future REUFIS meetings and initiatives to share information about the lessons learned from various cases in the countries of Europe and Central Asia.

Several country specialists highlighted that the capacities should be strengthened at national levels through regional trainings to support the timely detection of infected stands and develop guidelines for early warning systems. Monitoring programs, or even citizen science, should be encouraged and supported at regional and sub-regional levels, because these often provide valuable information about the spread of pest species.

While improving the capacities we have to take into account the diversity of national capacities to manage invasive species and how relevant institutions are organized across the regions. Thus, the results of the assessment as presented in the report provide an impression of the degree of importance, but they do not represent a unified position of the participating countries or FAO.

V. Appendix

Cover letter



Sopron, 1st February 2019.

Dear REUFIS Focal Point,

We are writing to inform you about the project on *“Regional Assessment on the status of forest invasive species in Europe and Central Asia”*. This project is a contribution to the Forest Invasive Species Network for Europe and Central Asia (REUFIS) and closely coordinated with the FAO Regional Office for Europe and Central Asia.

Forest invasive species (FIS) are merging threat to sustainable forest management across the region and joint action is required to address these threats. Sharing information is key to develop harmonized action to combat invasive forest species in the region. In order to facilitate this process the country representatives of the 2nd Annual Meeting of the REUFIS Network endorsed a regional assessment to reveal the status of forest invasive species in the REUFIS member countries and in the regional as a whole.

The regional assessment has two main objectives:

1. Analyze the current state of forest invasive species in Europe and Central Asia and
2. Strengthen the information exchange among REUFIS members and identify fields for joint actions

To meet these objectives, we would request that you, or your organization, supply the information specified in the attached enquiry. It is essential to collect first hand information from the REUFIS members in order to assess the status of FIS national level. Please note, that the submitted enquiries are used for the regional analysis, but they will not be annexed to the report.

If you have any question about the assessment or other activities related to the project please contact the REUFIS Secretariat, we will be pleased to help.

As considerable analytical work will be necessary to present the results on the 3rd Annual Meeting of the REUFIS Network, we would be grateful if you respect the deadlines suggested in the form.

Yours sincerely,

Ferenc Lakatos
Secretary of the REUFIS Network

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Enquiry



Enquiry on the Status of Forest Invasive Species in Europe and Central Asia

Invasive species represent an increasing challenge for sustainable forest management¹ globally. Since the most significant effects are seen for species that are exchanged between regions, it is of fundamental importance to facilitate communication between scientists, managers and policy-makers from the various regions.

The enquiry is part of the project on *"Regional Assessment on the status of forest invasive species in Europe and Central Asia"*. This project is a contribution to the Forest Invasive Species Network for Europe and Central Asia (REUFIS) and closely coordinated with the FAO Regional Office for Europe and Central Asia.

The regional assessment has two main objectives:

1. Analyze the current state of forest invasive species (FIS) in Europe and Central Asia and
2. Strengthen the information exchange among REUFIS members and identify fields for joint actions

To meet these objectives, we would kindly ask you, or your organization, to supply the information specified in *this enquiry*. It is essential to collect comparable, first hand information from the REUFIS members in order to assess the status of FIS national level. Some of the questions might require the involvement of additional departments, institutes or organizations at national level, therefore we kindly ask the REUFIS Focal Points to coordinate the required inputs for these sources at national level. This enquiry may be complemented by interviews with REUFIS Focal Points.

The collected information will be analyzed and process into a regional report, which will be published and presented on the 3rd Annual Meeting of the REUFIS Network, which is expected in October 2019.

¹ Sustainable forest management is defined in the [Terms and Definitions for FAO Global Forest Resource Assessment 2020](#): *A dynamic and evolving concept, [that] is intended to maintain and enhance the economic, social and environmental value of all types of forests, for the benefit of present and future generations.*



This enquiry is structured in three parts:

1. Background information and general questions
2. Thematic questions
 - a. Pathogens
 - b. Invertebrates
 - c. Vertebrates
 - d. Plants
3. Concluding questions

For answering the questions, please use the text fields and the drop-down lists [Click to Choose]. Please return the questionnaire to the REUFIS Secretariat (info@reufis.org). We kindly ask you to submit your response no later than **30th March 2019**. However, please feel free to contact us, if you would like to propose alternate deadline. We hope this arrangement will facilitate your feedback. After receiving your submission we may contact you by telephone to go through the response and collect additional information when necessary.

For more information, please contact the REUFIS Secretariat, we will be please to provide additional details.

Thank you in advance for your participation and cooperation!



I. Background information and general questions

1. Country	
2. REUFIS Focal Point (or contact person for this enquiry)	
3. Position	
4. Organization	
5. Address	
6. Telephone	
7. E-mail	
8. Other respondents involved in compiling the response (please indicate which person contributed to which thematic part, if applicable)	
9. Please list the departments, institutes or organizations responsible for FIS in your country. Please provide information about their responsibilities	



II. Thematic questions – Pathogens

10. To what extent do **forest invasive pathogens** affect sustainable management of forests and other land with tree cover in your country?

Please set ranking [between 1 (not at all) – 9 (to a great extent), 0 (do not know/no opinion)] and explain your ranking

Ranking: Click to choose

Please explain your ranking:

11. What emerging issues are driving the change (increase or decrease) of **forest invasive pathogens** in the next ten years (between 2020-2030) in your country?
Please provide examples



III. Thematic questions – Vertebrates

12. To what extent do **forest invasive vertebrates** affect sustainable management of forests and other land with tree cover in your country?

Please set ranking [between 1 (not at all) – 9 (to a great extent), 0 (do not know/no opinion)] and explain your ranking

Ranking: Click to choose

Please explain your ranking:

13. What emerging issues are driving the change (increase or decrease) of **forest invasive vertebrates** in the next ten years (between 2020-2030) in your country?
Please provide examples



IV. Thematic questions – Invertebrates

14. To what extent do **forest invasive invertebrates** affect sustainable management of forests and other land with tree cover in your country?

Please set ranking [between 1 (not at all) – 9 (to a great extent), 0 (do not know/no opinion)] and explain your ranking

Ranking: Click to choose

Please explain your ranking:

15. What emerging issues are driving the change (increase or decrease) of **forest invasive invertebrates** in the next ten years (between 2020-2030) in your country? Please provide examples



V. Thematic questions – Plants

16. To what extent do **forest invasive plants** affect sustainable management of forests and other land with tree cover in your country?

Please set ranking [between 1 (not at all) – 9 (to a great extent), 0 (do not know/no opinion)] and explain your ranking

Ranking: Click to choose

Please explain your ranking:

17. What emerging issues are driving the change (increase or decrease) of **forest invasive plants** in the next ten years (between 2020-2030) in your country?
Please provide examples



VI. Concluding questions

18. To what extent does the **REUFIS network** support the regional information sharing about FIS?

Please set ranking [between 1 (not at all) – 9 (to a great extent), 0 (do not know/no opinion)] and explain your ranking

Ranking: Click to choose

Please explain your ranking:

19. Please provide suggestions for joint action to combat FIS at **regional and/or subregional level**.