

Recommendations for sectoral policies to tackle plant invasions

May 2021



Policy brief for Bosnia and Herzegovina



Towards the effective management of invasive alien species

Invasive alien species have various adverse impacts on biodiversity and ecosystem services, and some also negatively impact the economy, threaten livelihoods or are harmful to human health. With the trends in global trade, also the introductions of new organisms are on the rise. Urgent policy actions are needed to prevent further introductions and the establishment of new alien species. In this policy brief, we put forward recommendations for Bosnia in Herzegovina.

The context

International trade and travel are major drivers of the movement of plants, animals, fungi and microbes to areas outside their native ranges. In the new environments, some alien species become invasive. They spread beyond control and negatively affect biodiversity, the economy and human health. Besides trade, climate change and the degradation of habitats also contribute to the increase of biological invasions. Countries should develop legal and institutional frameworks for the management of alien species.

Rivers often act as corridors for the spread of invasive alien plants and animals, which is also the case in the areas of the Sava River basin. Several invasive alien plants are spreading in the floodplains of the Sava River. They invade riparian habitats and also agricultural land, causing both environmental and economic damage.

Within the Sava TIES Project, a consortium of partners from Slovenia, Croatia, Bosnia and Herzegovina, and Serbia, led by EuroNatur Foundation from Germany, developed various tools for improving the management of invasive alien plants in the Sava River basin. One of the Sava TIES Project outputs was a review of invasive alien species policies in the Sava River basin countries. Based on this review and other project outputs, we developed country-specific recommendations for policymakers, proposing solutions for further developing legal and institutional frameworks on invasive alien species.

The approach

A review of key policies on invasive alien species was conducted as desk research by the project partners under the external consultants' guidance. The review focused on alien plants as they were the main topic of the Sava TIES Project. In the review process, we checked policies of the following sectors: (i) nature conservation, (ii) agriculture, (iii) forestry, (iv) water protection, (v) spatial planning and (vi) waste management.

The reviewers were requested to check whether legal texts contain provisions on any of the following aspects of the IAS management: (i) definitions of alien species, (ii) prevention of introductions, (iii) risk assessments, (iv) early warning and rapid response, (v) control, management and restoration, (vi) financing, (vii) awareness-raising & capacity building, (viii) national or international cooperation. When any policy does not address these aspects, this is a critical gap, and steps should be taken to improve policies.

Results of the policy review in Bosnia and Herzegovina

The legal framework on alien species in Bosnia and Herzegovina (BiH) is quite complex due to the combination of different governmental systems. The two Entities - the Republic of Srpska (RS) and the Federation of Bosnia and Herzegovina (FBiH) each have separate legal systems with each its own Law on Nature Conservation. However, regarding IAS, they are similar. It is prohibited to introduce alien species in both entities unless a special permit is granted after a risk assessment is performed. In FBiH, the risk assessment procedure is formalised in a separate bylaw, while this procedure is not precisely defined in RS. In FBiH the law envisages the adoption of rules to prevent unintentional introductions and take actions to control and eradicate IAS. However, this has not yet been adopted. In RS, the law envisages the adoption of a list of species that are considered invasive and measures for their control or eradication. Also, this bylaw has not yet been adopted.

Some crucial parts of the legal framework for the management of IAS in Bosnia and Herzegovina are not yet adequately developed. There are no specific rules on early warning and rapid response. Also, the planned bylaws on control and management of IAS are not yet adopted.

In the FBiH, management of invasive alien species is mainly the responsibility of the Federal Ministry of Environment and Tourism, while in RS it falls under the Ministry of Spatial Planning, Construction and Ecology. The prohibition of IAS introductions is also stipulated in several laws on the establishment of protected areas; however, there are no further provisions.

IAS are also mentioned in several strategic documents of RS; however, no such documents are adopted in the FBiH. The Nature protection strategy of RS contains several actions to improve the knowledge on IAS and the cooperation between various institutions, but these actions are not yet implemented. In the context of the Sava TIES project, it is important to mention that the Republic of Srpska adopted the Sava River Basin Management Plan (2017–2021), which recognises IAS as a significant issue for water management. Several measures are planned regarding IAS: to carry out an inventory of IAS, to develop databases and prepare maps, as well as to prepare action plans for the management of IAS.

Outside of the nature conservation sector, only some strategic documents on water management and forestry contain actions on IAS.

Policy Recommendations

General policy environment

1. Further develop a legislative framework on IAS, taking into account the measures set out in the Regulation (EU) 1143/2014, which will have to be applied at the time of accession to the EU.
2. In the process of development of the legal framework, involve and tightly cooperate with the main stakeholders who should either be involved in its implementation or they could be impacted by new legal rules.
3. Adopt a legally binding list of invasive alien species of national concern and develop action plans for their management.
4. Aim towards a unitary legislative framework that covers all IAS, all ecosystems, all sectors and all stages of the invasion process: (i) prevention of introduction, (ii) early detection and rapid response, (iii) eradication and control.
5. Establish a clear institutional framework for the management of invasive alien species with one core management agency that is coordinating and supervising the work of other institutions working in all relevant sectors.
6. Provide relevant institutions and agencies with mandates to take necessary measures and ensure that the new tasks are adequately included in their yearly work programmes and duly financed.
7. Develop or update policy documents with specific non-regulatory actions on invasive alien species (e.g. awareness-raising, training and capacity building, cross-sectoral and international cooperation).

Prevention of introductions

8. Collate information on pathways of introduction on all recorded alien species in the country, identify high-risk pathways and develop effective measures to minimise new introductions.
9. Within the existing nature conservation legislation or within a new dedicated law, establish a legal basis for managing high-risk pathways of unintentional introductions.
10. Perform risk assessments prior to the use of new agricultural plants, which are being promoted in the light of climate change.
11. Make the outcomes of risk assessments to nature in procedures of intentional introduction or breeding of alien species publicly available.

Early warning and rapid response

12. Conduct horizon scanning of alien species which are likely to arrive, establish and affect biodiversity or ecosystem services. Use these data to inform policymaking and narrow the focus of activities for early detection.
13. Establish schemes or regular o active detection of alien species (e.g. at high-risk entry points, areas of nature conservation importance).
14. Promote application » IAS in Europe« among various groups of citizen scientists, ensure expert support, verification of data, risk assessment of new species and the appropriate rapid response measures.
15. Develop rapid response protocols for various groups of species and agree on the chain of command among all organisations that should implement the rapid response measures.
16. Provide sufficient funds for the unforeseen costs of rapid response actions and make sure that the funds can be mobilised without delay (e.g. exempt from the public procurement rules) to allow prompt actions.

Eradication and control

17. Cooperate with science to establish priority species and areas for eradication programmes for the species that are already more spread and have significant impacts on biodiversity, but could be eradicated in the long term.
18. Ensure sustainable and reliable funding for eradication and control programs.

Research and monitoring

19. Develop and regularly update a national catalogue of alien species to serve as baseline information and to monitor trends.
20. Develop a national monitoring scheme of alien species and ensure that it is properly integrated into the legislation and backed with reliable financing sources (not project funding).

21. Ensure sustainable financing of the information systems to collect data on IAS and enable a continuous exchange of data with other national and international biodiversity databases (GBIF, EASIN).
22. Promote and ensure funding for research of impacts of invasive alien species in biodiversity, ecosystem services and economy.
23. Apply the new IUCN standard EICAT (Environmental Impact Classification for Alien Taxa) to systematically address the impacts of IAS and guiding the development of prevention and mitigation measures.

This policy brief highlights conclusions of the review of the policy on IAS in Bosnia and Herzegovina and presents recommendations to policymakers. The whole policy analysis and other outputs of the Sava TIES Project are available on: <http://www.interreg-danube.eu/approved-projects/sava-ties/outputs>

The brief was prepared by Jana Kus Veenvliet (Institute Symbiosis, so. e.), Tara Sukić and Elfrun Lindenthal (EuroNatur Foundation), Haris Hadžihajdarević (Public Company National Park “Una” LLC Bihać), and Aleksandra-Anja Dragomirović and Jugoslav Jevdjić (Center for Environment).

Sava TIES Project (Preserving Sava River Basin Habitats through Transnational Management of Invasive Alien Species) aims at:

- finding an effective solution for permanent eradication of IAS
- reducing habitat fragmentation
- improving the connectivity of the transnational ecological corridor.

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Policy brief for the Republic of Croatia



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The context

International trade and travel are major drivers of the movement of plants, animals, fungi and microbes to areas outside their native ranges. In the new environments, some alien species become invasive. They spread beyond control and negatively affect biodiversity, the economy and human health. Besides trade, climate change and the degradation of habitats also contribute to the increase of biological invasions. Countries should develop legal and institutional frameworks for the management of alien species.

Rivers often act as corridors for the spread of invasive alien plants and animals, which is also the case in the areas of the Sava River basin. Several invasive alien plants are spreading in the floodplains of the Sava River. They invade riparian habitats and also agricultural land, causing both environmental and economic damage.

Within the Sava TIES Project, a consortium of partners from Slovenia, Croatia, Bosnia and Herzegovina, and Serbia, led by EuroNatur Foundation from Germany, developed various tools for improving the management of invasive alien plants in the Sava River basin. One of the Sava TIES Project outputs was a review of invasive alien species policies in the Sava River basin countries. Based on this review and other project outputs, we developed country-specific recommendations for policymakers, proposing solutions for further developing legal and institutional frameworks on invasive alien species.

The approach

A review of key policies on invasive alien species was conducted as desk research by the project partners under the external consultants' guidance. The review focused on alien plants, as they were the main topic of the Sava TIES Project. In the review process, we checked policies of the following sectors: (i) nature conservation, (ii) agriculture, (iii) forestry, (iv) water protection, (v) spatial planning and (vi) waste management.

The reviewers were requested to check whether legal texts contain provisions on any of the following aspects of the IAS management: (i) definitions of alien species, (ii) prevention of introductions, (iii) risk assessments, (iv) early warning and rapid response, (v) control, management and restoration, (vi) financing, (vii) awareness-raising & capacity building, (viii) national or international cooperation. When no policy covers these aspects, this is a critical gap, and steps should be taken to improve policies.

Results of the policy review in Croatia

In 2018, Croatia adopted dedicated national legislation on invasive alien species, the Law on the prevention and management of the introduction and spread of alien and invasive alien species. This Act regulates the prevention of introductions of IAS and their management, aiming at preventing their adverse impacts on biodiversity. The regulation provides a legal framework for implementing the EU regulation 1143/2014 on IAS, covers measures for IAS of Union concern, and for IAS of concern to the Republic of Croatia. The regulation also provides grounds for a solid institutional framework for early warning and rapid response, official controls, inspection, national monitoring, and inter-ministerial cooperation.

Based on this Law, Croatia has already adopted an ordinance, which defines alien species which may be placed on the market without a risk assessment (i.e. the white list). Data on invasive alien species of national concern are being collected, but these species have not yet been legally defined.

In the national biodiversity strategy, several goals and targets for improving the management of IAS are defined, which closely follow the goals of the Strategic Plan for Biodiversity 2011–2020 and relevant Aichi Biodiversity

Targets, adopted by the Parties to the Convention on Biological Diversity. However, the National Strategy for Sustainable Development only addresses IAS in the marine environment and does not cover all aspects of IAS.

Invasive alien plants are mainly not addressed in the law on agriculture. The only exception is the ordinance on the implementation of direct support to agriculture through rural development measures. This ordinance prescribes management requirements for the meadows of high nature-conservation value and for the conservation of Corncrake. It also prescribes an obligation for the landowners to manually remove several invasive alien plants which are unpalatable to livestock.

The Act on Forests does not directly mention invasive alien species. However, it states that forest owners must maintain the natural forest composition, preserve native species and predominantly use native species for planting. Species from elsewhere (alien species, other varieties or proveniences) can only be used after the impacts on ecology, and the genetic integrity of native species has been evaluated, and the negative impacts are avoided or minimised.

The Water Law does not cover any issues regarding IAS, despite that the retention capacity of several extensive floodplains is severely compromised due to the spread of invasive alien plants. Likewise, general legislation on spatial planning in Croatia does not contain any provisions on IAS. However, spatial plans of several spatial units include a general prohibition of the introduction of alien species. Regulations on waste management do not cover IAS, and on the implementation level, there are some difficulties regarding the disposal of the material of invasive alien plants.

Policy Recommendations for Croatia

These recommendations are based on insights of policy review and the discussion with representatives of various sectors who participated at the Policy Meeting. This was held as an online meeting on 20th April 2021 and resulted in developing the final set of recommendations. These are intended to further develop a legal and institutional framework on invasive alien species in the Republic of Croatia.

In the last years, significant progress has been made in Croatia to develop a legal framework for managing invasive alien species. However, to address all aspects of invasive alien species, also those that are not (yet) covered by the EU legislation, we propose some concrete actions that aim to prevent the introduction and spread of new potentially invasive alien species.

Numerous studies have confirmed that when invasive species are tackled in early invasion stages, the costs are much lower than managing them only once they become widespread. As global trade continues to grow and new trade routes are emerging, we should be better prepared for managing pathways of introductions of alien species, with a particular focus on the pathways on unintentional introductions.

General policy environment

1. Continue with implementing the IAS Law and, as soon as possible, adopt the black list of species of national concern and action plans for the management of priority pathways.
2. Develop or update policy documents with specific non-regulatory actions on IAS (e.g. awareness-raising, training and capacity building, cross-sectoral and international cooperation).
3. When updating legislation of other sectors, add the necessary provisions for the management of invasive alien species.
4. Update national policy documents to reflect international and the EU post-2020 targets on invasive alien species.

Prevention of introductions

5. Collate information on pathways of introduction on all recorded alien species in the country, identify priority pathways and develop effective measures to minimise new introductions.
6. Make the outcomes of risk assessments to nature, which are carried out within procedures of intentional introduction or breeding of alien species, publicly available.
7. Conduct horizon scanning of alien species which are likely to arrive, establish and affect biodiversity or ecosystem services. Use these data to inform policy and manage priority pathways.

Early warning and rapid response

8. Establish schemes of regular active detection of alien species (e.g. at high-risk entry points, areas of nature conservation importance).
9. Ensure that findings of potentially harmful new species are followed by rapid response measures regardless of their legal status.
10. Provide sufficient funds for the unforeseen costs of rapid response actions and ensure that the funds can be mobilised without delay (e.g. exempt from public procurement rules).
11. Promote the use of the application »Invazivne vrste u Hrvatskoj« among various groups of experts and citizen scientists, ensure expert support, verification of data, risk assessment of new species and the appropriate rapid response measures.
12. Develop example rapid response protocols for various groups of alien species and agree on the chain of command of all organisations that should be involved in the early detection and rapid response.

Eradication and control

13. Finalise and adopt plans for the management of widely spread IAS of Union and national concern.
14. Based on scientific evidence, determine which alien species threaten the Red List species and enforce long-term eradication and control programs.
15. Cooperate with science to establish priority species and areas for eradication programmes for alien species that have significant negative impacts but can still be eradicated in the long term.
16. Ensure sustainable and reliable funding for eradication and control programs.

17. Seek ways to adapt the management of agricultural land, forests, riverbanks and transport routes to reduce the spread of invasive alien species (e.g. the timing of mowing, grazing, preventing the spread of IAS with machinery). Integrate these solutions into sectoral plans and guidelines for the management of natural resources.

Research and monitoring

18. Regularly update the national catalogue of alien species and use it as baseline information to monitor trends.
19. Develop a national monitoring scheme for alien species and ensure that it is appropriately integrated into the legislation and backed with reliable financing sources (not project funded).
20. Ensure that monitoring provides sufficient information for assessing the effectiveness of measures to achieve the EU Biodiversity 2030 target, to manage established invasive alien species and decrease the number of Red List species they threaten by 50 %.
21. Ensure sustainable financing of the information system to collect data on IAS and enable a continuous exchange of data with other national and international biodiversity databases (GBIF, EASIN).
22. Promote research and provide funding to research impacts of invasive alien species in biodiversity, ecosystem services and economy.
23. Apply the new IUCN standard EICAT (*Environmental Impact Classification for Alien Taxa*) to systematically address the impacts of IAS and use these data to set management priorities.

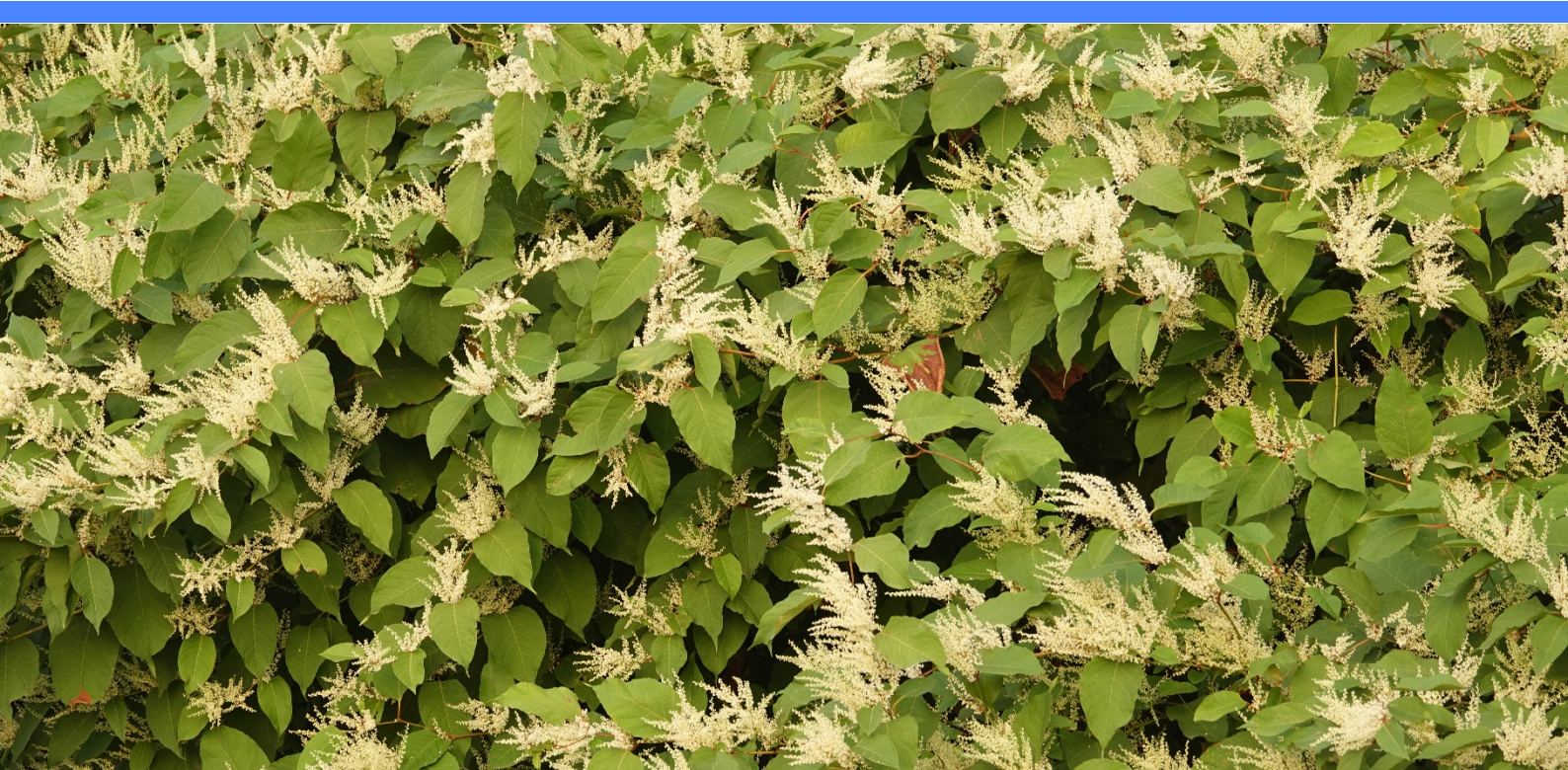
This policy brief draws on the conclusions of the review of the policy on IAS in Croatia and presents recommendations to policymakers. The whole policy analysis and other outputs of the Sava TIES Project are available on <http://www.interreg-danube.eu/approved-projects/sava-ties/outputs>

The brief was prepared by Jana Kus Veenvliet (Institute Symbiosis, so. e.), Tara Sukić and Elfrun Lindenthal (EuroNatur Foundation) and Luka Basrek (Zeleni prsten Public Institution of Zagreb County).

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- finding an effective solution for permanent eradication of IAS
- reducing habitat fragmentation
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Policy brief for the Republic of Serbia



Towards the effective management of invasive alien species

Invasive alien species have various adverse impacts on biodiversity and ecosystem services, and some also negatively impact the economy, threaten livelihoods or are harmful to human health. With the trends in global trade, also the introductions of new organisms are on the rise. Urgent policy actions are needed to prevent further introductions and the establishment of new alien species. In this policy brief, we put forward recommendations for the Republic of Serbia.

The context

International trade and travel are major drivers of the movement of plants, animals, fungi and microbes to areas outside their native ranges. In the new environments, some alien species become invasive. They spread beyond control and negatively affect biodiversity, the economy and human health. Besides trade, climate change and the degradation of habitats also contribute to the increase of biological invasions. Countries should develop legal and institutional frameworks for the management of alien species.

Rivers often act as corridors for the spread of invasive alien plants and animals, which is also the case in the areas of the Sava River basin. Several invasive alien plants are spreading in the floodplains of the Sava River. They invade riparian habitats and also agricultural land, causing both environmental and economic damage.

Within the Sava TIES Project, a consortium of partners from Slovenia, Croatia, Bosnia and Herzegovina, and Serbia, led by EuroNatur Foundation from Germany, developed various tools for improving the management of invasive alien plants in the Sava River basin. One of the Sava TIES Project outputs was a review of invasive alien species policies in the Sava River basin countries. Based on this review and other project outputs, we developed country-specific recommendations for policymakers, proposing solutions for further developing legal and institutional frameworks on invasive alien species.

The approach

A review of key policies on invasive alien species was conducted as desk research by the project partners under the external consultants' guidance. The review focused on alien plants, as they were the main topic of the Sava TIES Project. In the review process, we checked policies of the following sectors: (i) nature conservation, (ii) agriculture, (iii) forestry, (iv) water protection, (v) spatial planning and (vi) waste management.

The reviewers were requested to check whether legal texts contain provisions on any of the following aspects of the IAS management: (i) definitions of alien species, (ii) prevention of introductions, (iii) risk assessments, (iv) early warning and rapid response, (v) control, management and restoration, (vi) financing, (vii) awareness-raising & capacity building, (viii) national or international cooperation. When no policy covers these aspects, this is a critical gap, and steps should be taken to improve policies.

Results of the policy review in Serbia

Provisions on alien species are mainly covered by the Law on Nature Protection. The introduction of alien species and their hybrids is prohibited but may be allowed with a permit from the ministry, based on the risk assessment results. The Law on Nature Protection provides the basis for adopting the list of invasive alien species, but this list has not yet been prepared and is preventing setting stricter rules and control regarding the use and management of some alien species within and outside of protected areas. According to the Law on Nature Protection, site managers of protected areas have to ask for permission for the use of herbicides, meaning that rapid response actions may have to be done manually or they are delayed. The Article on the Limitations or Terminations of Use gives a possibility for rapid response if IAS threatens some rare or valuable habitat due to land use practice.

The Decree on the Ecological Network defines protected areas and important habitats of protected and strictly protected species and international ecological corridors. The measures in the core areas of these corridors do not specifically mention IAS but prohibit the destruction and degradation of habitats and set a requirement to manage corridors to maintain their natural and semi-natural elements actively. In the buffer zones, activities

that could cause the spread of IAS into the ecological network are prohibited. This measure is widely used in the Conditions for Nature Protection, which are issued by the Nature Conservation Institute in the process of preparing plans, programs or projects. These measures are sometimes accepted and integrated into the spatial planning documents and sometimes dismissed due to the absence of legally declared invasive alien species.

The Decree on Protection Regime, adopted as a bylaw of the acts on nature conservation, provides protective measures in protected areas. The 1st level of protection provides a possibility to take measures to prevent the spread of diseases, plants or animals. The 2nd level protection regime provided a prohibition to introduce alien species to protected areas. The third-degree regime is limiting the planting of forest monocultures of alien species except for preventing erosion and restoration of devastated and infertile land.

Legal provisions of other sectors in Serbia contain only a few provisions on alien species. In agriculture, there is a dedicated decree on the control and eradication of Common Ragweed, *Ambrosia artemisiifolia*; however, it is not consistently implemented. Law on Forests and Forest Development Strategy do not mention IAS. The same is for the sector of water management as the issues of IAS are not covered by the Law on Waters. IAS are mentioned in the Water Management Strategy as a threat, but no further measures are planned. The legislation on spatial planning does not include specific provisions on IAS; however, they can be included in the implementing spatial planning documents via the Conditions on Nature Protection which are prepared by the Nature Conservation Institute. The Regulations on waste management do not contain any provisions on alien species.

Policy Recommendations for Serbia

These recommendations are based on insights of policy review and the discussion with representatives of various sectors who participated at the Policy Meeting. This was held as an online meeting on 20th April 2021 and resulted in developing the final set of recommendations. These are intended to further develop a legal and institutional framework on invasive alien species in the Republic of Serbia.

Numerous studies have confirmed that when invasive species are tackled in early invasion stages, the costs are much lower than managing them only once they become widespread. As global trade continues to grow and new trade routes are emerging, we should be better prepared for managing pathways of introductions of alien species, with a particular focus on the pathways on unintentional introductions.

General policy environment

1. As soon as possible, legally adopt a national list of invasive alien species and develop action plans for their management.
2. Improve the legislative framework on IAS and aim towards a unitary legislative framework covering all IAS, all ecosystems, all sectors and all stages of the invasion process.
3. When updating the legislation of other sectors, add the necessary provisions to manage IAS.

4. Establish a clear institutional framework for the management of IAS with one core management agency that coordinates and supervises other institutions working in all relevant sectors.
5. Develop or update policy documents with specific non-regulatory actions on IAS (e.g. awareness-raising, training and capacity building, cross-sectoral and international cooperation) and adjust the national targets to the international post-2020 targets on IAS.

Prevention of introductions

6. Perform risk assessments before using new agricultural plants that are promoted in the light of climate change.
7. Duly implement risk assessments for intentional introductions of alien species and make the outcomes of these assessments publicly available.
8. Collate information on pathways of introduction on all recorded alien species in the country, identify priority pathways and develop effective measures to minimise new introductions.
9. Conduct horizon scanning of alien species which are likely to arrive, establish and affect biodiversity or ecosystem services. Use these data to inform policy and manage priority pathways.

Early warning and rapid response

10. Establish schemes of regular active detection of alien species (e.g. at high-risk entry points, areas of nature conservation importance).
11. Ensure that findings of potentially invasive new species are followed by rapid response measures regardless of their legal status.
12. Develop example rapid response protocols for various groups of alien species and agree on the chain of command of all organisations that should be involved in the early detection and rapid response.
13. Provide sufficient funds for the unforeseen costs of rapid response actions and ensure that the funds can be mobilised without delay (e.g. are exempt from the public procurement rules).
14. Promote using the EASIN application »IAS in Europe« among various groups of experts and citizen scientists. Ensure expert support, verify data, risk assessment of new species, and the appropriate rapid response measures.

Eradication and control

15. Cooperate with science to establish priority species and areas for eradication programmes for alien species that have significant negative impacts but can still be eradicated in the long term.
16. Ensure sustainable and reliable funding for eradication and control programs.
17. Seek ways to adapt the management of agricultural land, forests, riverbanks and transport routes to reduce the spread of invasive alien species (e.g. the timing of mowing, grazing, preventing the spread of IAS with machinery). Integrate these solutions into the sectoral plans and guidelines for the management of natural resources.

Research and monitoring

18. Update the national list of alien species and use it as baseline information to monitor trends.
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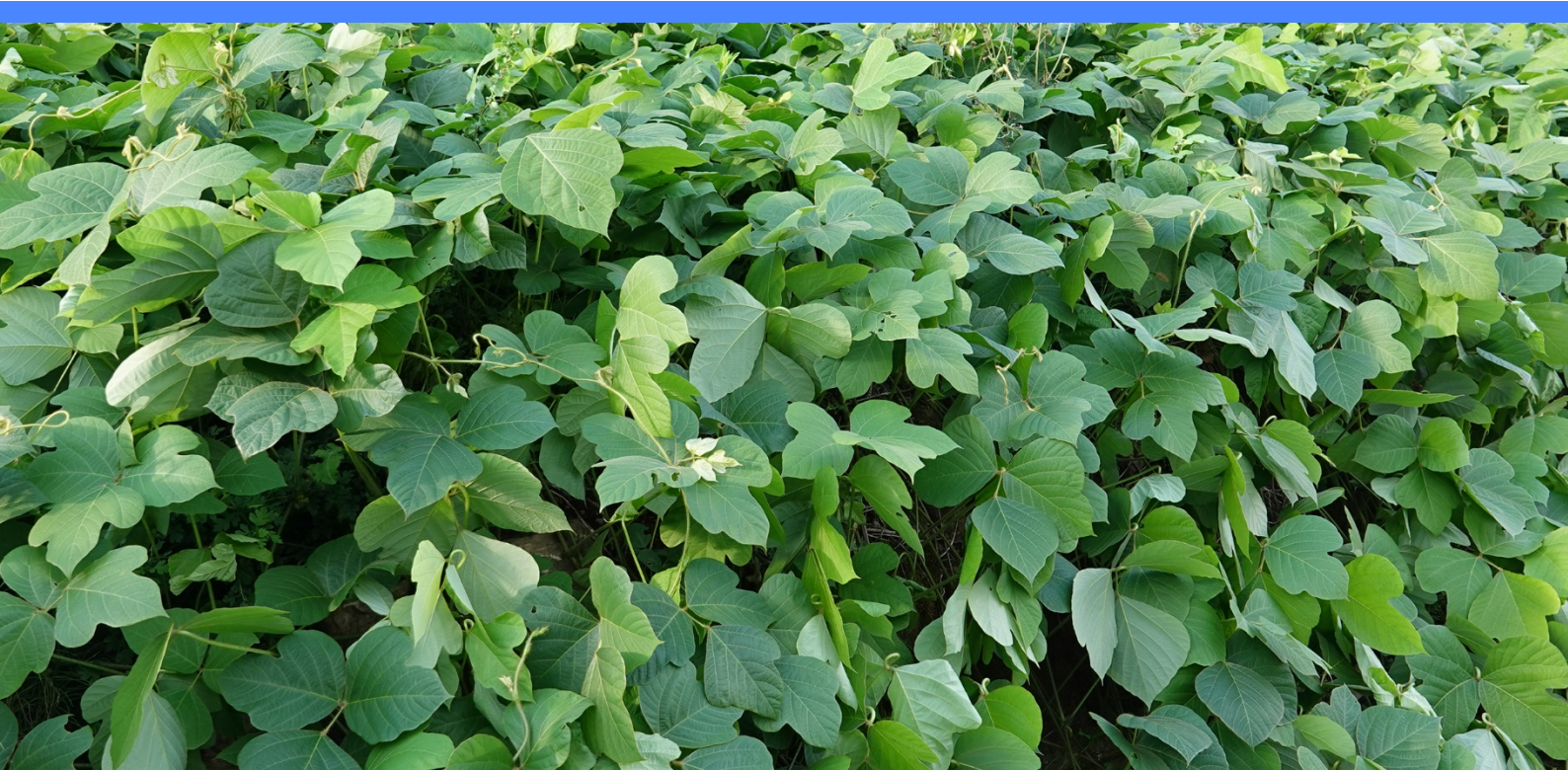
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The brief was prepared by Jana Kus Veenvliet (Institute Symbiosis, so. e.), Tara Sukić and Elfrun Lindenthal (EuroNatur Foundation) and Alen Kiš and Klara Szabados (Institute for Nature Conservation of Vojvodina Province). We also thank the participants of the Policy Meeting for providing valuable comments to the draft of this document.

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Policy brief for the Republic of Slovenia



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The context

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Results of the policy review in Slovenia

As Slovenia is a member of the European Union, the EU Regulation 1143/2014 is directly applicable. However, the current national legislation does not provide sufficient grounds for the implementation of the EU Regulation. The process of amending national laws are still underway. These measures are also included in the National Environment Protection Programme which was adopted in March 2020.

In Slovenia, alien species are primarily included in the Nature Conservation Act¹. This Act defines alien species (but not the term invasive alien species) and contains provisions on rules and requirements regarding the intentional introduction of alien species and breeding of alien animals. The introduction of alien species is not allowed. However, a derogation from this prohibition is possible if, after a positive assessment of risk to nature, a special permit for the introduction of alien species is granted by the competent ministry. The rules on the assessments are specified in a bylaw - Rules on the carrying-out of the assessment of risk to nature and on the obtaining of

¹ National Gazette No. 96/04 – official amended text, 61/06 – ZDru-1, 8/10 – ZSKZ-B, 46/14, 21/18 – ZNOrg, 31/18 and 82/20

authorisation². This framework provides a mechanism to control intentional introductions of alien species but does not address control of unintentional introductions. The legislation does not include any measures to prevent unintentional introductions of alien species through common pathways and also the rules on early warning and rapid response are lacking. Overall there is a lack of appropriate institutional framework which would devolve specific tasks to the appropriate national institutions.

The national blacklist of invasive alien species has not yet been adopted. An alert list of invasive alien species in forests was prepared in 2017 and amended in 2019, but that does not have legal validity. Under the legislation on agriculture, land holders are obliged to prevent the spread of the alien plants of the genus *Ambrosia* (of which only *Ambrosia artemisiifolia* is so far widespread in Slovenia).

Some scattered rules on alien species are also in other laws and bylaws. The bylaw setting the rules on Natura 2000 network includes guidance that animals and plants of alien species and genetically modified organisms shall not be introduced to Natura 2000 areas. Some management measures for IAS are included in the Operational program for the management of Natura 2000 areas 2015–2020. Many decrees on the establishment of protected areas contain a general prohibition of the introduction of alien species within protected areas.

Laws on agriculture contain little reference to alien species, however, under the rules on cross-compliance farmers, receiving subsidies are obliged to prevent the spread of five invasive plants (*Solidago canadensis*, *Solidago gigantea*, *Erigeron annuus*, *Rudbeckia laciniata* and *Ambrosia artemisiifolia*). In accordance with rules on plant health, users of all parcels are obliged to eradicate plants from genus *Ambrosia*, of which so far only Common Ragweed (*Ambrosia artemisiifolia*) is widespread in Slovenia. The Act on forests does not mention alien species. However, the Rules on the protection of forest contain provisions for the maintenance of the natural balance of forest ecosystems. However, regarding alien species, the Rules refer to the nature conservation regulations. The rules contain some provisions regarding the pests of trees, but they do not cover alien plants which may when forming dense stands prevent rejuvenation of forests.

Policy Recommendations for Slovenia

These recommendations are based on insights of policy review and the discussion at the Policy Meeting with decision-makers which was held on 20th May 2021 and resulted in developing the final recommendations. These are intended to further develop a legal and institutional framework on invasive alien species in the Republic of Slovenia.

Slovenia is a Member State of the European Union and is obliged to apply EU law. Regarding invasive alien species, EU made a big step forwards towards transnational management of invasive alien species in 2014 with adopting a dedicated Regulation on the prevention and management of the introduction and spread of invasive alien species. This regulation is automatically binding in all member states since the date of entering into force on 1st January 2015. The regulation became more operational by adopting bylaws, especially with the list of invasive alien species

² National Gazette, No. 43/02

of Union concern in 2016 (extended in 2017 and 2019). Despite the EU regulations do not have to be transposed to the national law, a sufficient legal background is needed for its implementation. Despite that there is more attention of IAS in the last years, issues are often still tackled on case-by-case basis. Slovenia, should as soon as possible adopt a comprehensive legal and institutional framework which will allow full implementation of the EU Regulation.

Numerous studies have confirmed that when invasive species are tackled in early invasion stages, the costs are much lower than managing them only once they become widespread. As the global trade continues to grow and new trade routes are emerging, we should be better prepared for managing pathways of introductions of alien species, with a particular focus on the pathways on unintentional introductions.

General policy environment

1. As soon as possible adopt a national regulation which will provide sufficient basis for the implementation of the EU Regulation 1143/2014. Besides the legal rules, this should also define institutional framework for the management of IAS.
2. Step up the implementation of the EU 1143/2014 and as soon as possible adopt and implement the action plans on the management of priority pathways and on the management of widely spread IAS of Union concern.
3. Define the core management authority which is coordinating all management activities on IAS, including early warning and rapid response, and issue mandates to other institutions which should play role in the IAS management.
4. Develop a national black list of invasive alien species and define rules for their management.
5. Aim towards development of a unitary legislative framework which will cover all alien species in all stages of invasion, all ecosystems and all sectors. This regulation should have a wider scope than the EU Regulation and provide solid background for co-operation of various sectors.
6. When updating legislation of all sectors, add the necessary provisions for the management of invasive alien species.
7. Update the national policy documents to reflect international and the EU post-2020 targets on invasive alien species.
8. In the relevant national action plans, operational programmes or management plans of protected areas include activities for awareness raising on alien species, in particularly regarding the prevention of unintentional introduction and spread.

Prevention of introductions

9. Duly implement risk assessments for intentional introductions of alien species and make the outcomes of these assessments publicly available.
10. Perform risk assessments before using new agricultural plants that are promoted in the light of climate change.
11. Collate information on pathways of introduction on all recorded alien species in the country, identify priority pathways and develop effective measures to minimise new introductions.

12. Conduct horizon scanning of alien species which are likely to arrive, establish and affect biodiversity or ecosystem services. Use these data to inform policy and manage priority pathways.

Early warning and rapid response

13. Establish schemes of regular active detection of alien species (e.g. at high-risk entry points, areas of nature conservation importance).
14. Ensure that findings of potentially harmful new species are followed by rapid response measures regardless of their legal status.
15. Provide sufficient funds for the unforeseen costs of rapid response actions and ensure that the funds can be mobilised without delay (e.g. are exempt from the public procurement rules).
16. Continue to promote the use of the application »Invazivke« among various groups of experts and citizen scientists, ensure expert support, verification of data, risk assessment of new species and the appropriate rapid response measures.

Eradication and control

17. Based on scientific evidence, determine which alien species threaten the Red List species and enforce long-term eradication and control programs.
18. Cooperate with science to establish priority species and areas for eradication programmes for alien species that have significant negative impacts but can still be eradicated in the long term.
19. Ensure sustainable and reliable funding for eradication and control programs.
20. Seek ways to adapt the management of agricultural land, forests, riverbanks, transport routes and other linear facilities to reduce the spread of invasive alien species (e.g. the timing of mowing, grazing, preventing the spread of IAS with machinery). Integrate these solutions into the sectoral plans and guidelines for the management of natural resources and maintenance of infrastructure.

Research and monitoring

21. Regularly update the national catalogue of alien species and use it as baseline information to monitor trends.
22. Develop a national monitoring scheme for alien species and ensure that it is appropriately integrated into the legislation and backed with reliable financing sources (not project funded).
23. Ensure that monitoring provides sufficient information for assessing the effectiveness of measures to achieve the EU Biodiversity 2030 target, to manage established invasive alien species and decrease the number of Red List species they threaten by 50 %.
24. Ensure sustainable financing of the information system to collect data on IAS and enable a continuous exchange of data with other national and international biodiversity databases (GBIF, EASIN).
25. Promote research and provide funding to research impacts of invasive alien species in biodiversity, ecosystem services and economy.
26. Apply the new IUCN standard EICAT (*Environmental Impact Classification for Alien Taxa*) to systematically address the impacts of IAS and use these data to set management priorities.

This policy brief draws on the conclusions of the review of the policy on IAS in Slovenia and presents recommendations to policymakers. The whole policy analysis and other outputs of the Sava TIES Project are available on <http://www.interreg-danube.eu/approved-projects/sava-ties/outputs>

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Sava TIES Project (Preserving Sava River Basin Habitats through Transnational Management of Invasive Alien Species) aims at:

- finding an effective solution for permanent eradication of IAS
- reducing habitat fragmentation
- improving the connectivity of the transnational ecological corridor.

Opinions stated in this brief, and the paper it draws from, are those of authors and do not necessarily reflect the co-financers' views.