

DRAFT NATIONAL ACTION PLAN ADDRESSING PRIORITY PATHWAYS TO PREVENT THE UNINTENTIONAL INTRODUCTION AND SPREAD OF INVASIVE ALIEN SPECIES INTO OR WITHIN BELGIUM

2027-2032

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Invasive Alien Species
National Committee

This plan developed by the Agency for Nature and Forest (Flanders), Brussels Environment (Brussels-capital region), Department Nature and Forest (Wallonia) and FPS Health, Food Chain Safety and Environment (Federal authority), with scientific support by the NSSIAS, through the National Committee on Invasive Alien Species.

Summary

This pathway action plan is established in the framework of article 13 of the European Regulation on Invasive Alien Species and covers a 6 year period (2027 - 2032). It builds on the previous pathway action plan adopted in 2022, which covered the period 2022 – 2026 and was structured around three thematic chapters: 1) public or private possession, 2) recreational and commercial/professional use of freshwater, and 3) transportation of habitat and nursery material and machinery.

The current plan addresses 11 priority pathways identified through an updated prioritisation exercise covering the 114 invasive alien species of Union concern included in Lists 1 to 5. In contrast to the previous pathway-based structure, the present plan is organised as a single integrated action plan. Actions are no longer grouped according to individual pathways but according to overarching implementation themes and mechanisms. As such, the plan shifts from a predominantly pathway-centred approach towards a more management-centred approach, structured around four operational pillars: awareness raising and education; stakeholder engagement and training; enhancement of enforcement; and research, data collection and monitoring.

With regard to awareness raising and education, the plan builds upon the experiences, achievements and materials developed under the previous action plan, seeking to maximise the use and dissemination of existing outreach tools. The plan also places a strong emphasis on stakeholder engagement, capacity building and cooperation notably through the further development of sectoral dialogue platforms established in the context of the Codes of Conduct and through the evaluation of their implementation. Additionally, the plan also strengthens the enforcement mechanisms in order to improve compliance with the IAS Regulation and enhance control efforts throughout the Belgian territory and at its external borders. Finally, the plan identifies a number of priority areas where additional research, monitoring and data collection are required to improve the evidence base for prevention and early warning.

In addition, the each action includes dedicated sections on governance, monitoring and evaluation, thereby providing a clearer framework for coordination, accountability and the assessment of progress throughout the implementation period.

While broad agreement was reached on the proposed actions, discussions highlighted several implementation challenges. In particular, the level of ambition of some actions, notably those related to research, monitoring and sustained engagement with the targeted

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1. Introduction

1.1. Context

Article 7 and article 13 of the EU Regulation N° 1143/2014 on the prevention and management of the introduction and spread of invasive alien species outline several obligations and restrictions regarding the invasive alien species of Union Concern, specifically aiming at curbing the pathways of introduction and spread of these species. More concretely, article 7 prohibits so-called "intentional actions" such as keeping, breeding and transportation of all specimens or reproductive material of these species. Additionally, **article 13 of the Regulation** requires all Member States to 1) conduct an analysis to identify and **prioritize pathways of unintentional introduction and spread of invasive alien species (IAS) of Union Concern** and 2) develop one single action plan or a set of **action plans to tackle these prioritized pathways.**

Belgium completed this prioritization exercise of pathways of introduction and spread for the IAS of Union Concern after each update of the list in 2018 (49 species), 2020 (66 species), 2023 (88 species) and 2025 (26 species). For each species of Union concern, pathways of introduction and spread were identified by reviewing pathway information contained in the EU risk assessments, using the definitions of the Convention on Biological Diversity classification framework (CBD 2014) and the interpretation manual of Harrower et al. (2018). A prioritization methodology which considered cumulative species' impact and the frequency of introduction via a certain pathway was applied. The description of the analysis as well as the results are available in the latest prioritization report of the National Scientific Secretariat on IAS (NSSIAS 2026)[1].

Based on the results of the prioritization analysis carried out in 2020, Belgium adopted its first National Action Plan on priority pathways in 2022, covering a four-year period. The plan addressed ten priority pathways and was structured into three thematic chapters: (1) public or private possession, (2) recreational and commercial/professional use of freshwater, and (3) transportation of habitat and nursery material as well as machinery.

In accordance with Article 13(2) of the EU Regulation on Invasive Alien Species, Member States are required to review their action plans and resubmit them to the European Commission every six years. This review was conducted by the National Scientific Secretariat on IAS and validated by the National Committee on IAS. Following this review, it was decided that the action plan for the period 2022 - 2025 should be updated, and a new action plan should be developed for the period 2026 - 2032.

As the National Action Plan is developed within the framework of Regulation (EU) N° 1143/2014 - which falls under the EU's competences on biodiversity - its implementation is the responsibility of the authorities competent for nature conservation. Consequently, the primary actions target these departments, while other relevant departments play a supporting role.

[1] National Scientific Secretariat on Invasive Alien Species, 2026. Pathways of unintentional introduction and spread of 114 invasive alien species of Union concern in Belgium: identification and prioritization. DOI: https://doi.org/10.5281/zenodo.20125641

The plan was developed jointly by the competent regional and federal administrations, with scientific support from the National Scientific Secretariat on Invasive Alien Species, in accordance with the Cooperation Agreement of 30 January between the Federal State, the Communities and the Regions on the prevention and management of the introduction and spread of invasive alien species (Articles 39 and 40).

This document was approved on XXXX by the Interministerial Conference on the Environment and submitted to the European Commission on XXXX in compliance with the obligation set out in Article 13(2) of the EU Regulation on Invasive Alien Species.

1.2. Scope

1.2.1. Species considered

The **primary focus** of the plan is the **list of species of Union concern**, comprising a total of **114 species** (Annex 1). The prioritisation analysis underpinning the identification of pathways to be addressed was conducted across all species of Union concern included up to the fourth update.

In addition, certain measures may contribute to preventing the introduction and spread of species listed under other regional or sectoral frameworks, including:

- Lists of the Walloon decree
- List of the Brussels Nature ordinance
- Code of conduct for horticulture (consensus and warning list)
- Annex list 'Invasieve uitheemse soorten in het vizier' - Province of Antwerp

Finally, while the plan is designed to prevent the introduction and spread of IAS of the Union list, certain actions included in the plan are not species-specific and will address a broad range of invasive alien species. For example, the implementation of biosecurity protocols by freshwater users targets all potential propagules that may adhere to equipment used in aquatic environments, not only those of the Union list. Similarly, strengthened biosecurity requirements for soil transport and excavation activities aim to reduce the risk of inadvertently transferring viable plant fragments, seeds, invertebrates, or soil-associated organisms. Awareness-raising measures targeting pet and plant owners—such as guidance on responsible ownership, the safe disposal of unwanted organisms, and the prevention of releases into the wild—are likewise applicable across multiple taxa and pathways. Furthermore, actions aimed at improving data generation will also capture information on other species encountered along the relevant pathways.

1.2.2. Target pathways

To prioritise action, the National Scientific Secretariat on IAS has carried out a prioritization analysis of the pathways of introduction and spread of the 114 invasive alien species of Union concern (NSSIAS, 2026). This analysis complies with the requirements of Article 13 §1 of Regulation (EU) N° 1143/2014.

This action plan is targeting the following priority pathways identified by the analysis (definitions of the Convention on Biological Diversity classification framework (CBD, 2014) and the interpretation manual of Harrower *et al.* (2018)):

Escape from confinement

- **Pet/aquarium/terrarium species:** plant and animal species (including live food for those species) that have escaped confinement or controlled environments where they were kept by private keepers or hobbyists for recreation, enjoyment, companionship and/or trading.
- **Ornamental purposes other than horticulture:** plant species that have escaped confinement or controlled environments where they were introduced for decorative or ornamental reasons excluding commercial horticulture.
- **Live food and live bait**: Species that have escaped from confinement or controlled environments where they were kept and/or transported as live food or live bait.

Transport contaminant

- **Contaminant on animals**: Species introduced unintentionally as contaminants on animals transported through human related activities (in the context of this action plan, only through fish stocking activities).
- **Contaminant on plants:** contaminant species that are not currently part or target of the commercial nursery trade, for instance plants being transported for non-commercial reasons or plants originally from the commercial nursery trade that have left the trade and been purchased by and used/planted by an end user.
- **Contaminant nursery material:** Species introduced or released unintentionally as a contaminant on plants or plant material associated with the commercial nursery trade excluding contaminants transported by seeds or contaminants that are parasites.
- **Transportation of habitat material**: Species unintentionally introduced as contaminants of habitat materials such as soil, vegetation, wood chips, mulch and straw, when these products are transported in large quantities and are the commodity in focus of the trade activity (and not associated to plant transport).

Transport stowaway

- **Angling / fishing equipment**: Species introduced unintentionally as stowaways on equipment used by recreational anglers or commercial / professional fishermen. For Belgium, in the context of this action plan, commercial and professional fishermen are not included as this sector is very marginal if not almost non-existent for freshwater.
- **Container**: Species introduced as accidental stowaways on containers, bulk freight, airfreight, rail freight etc. (e.g. shipping containers, other cargo in boxes). While this pathway was not identified as a top priority, its importance has increased greatly compared to the previous prioritization analysis. Therefore, it has been decided to initiate a trajectory on this pathway in the current action plan, but solely limited to ants.
- **Hitchhikers on ship/boats**: Species that have been introduced unintentionally by being a hitchhiker in or on ships, boats or other watercrafts (in this context, only in freshwater).
- **Machinery:** Species that have been introduced unintentionally by being a hitchhiker in or on machinery or equipment being transported between locations.

1.3. Objectives

As defined by article 13 of the IAS Regulation, the action plans serve to address the priority pathways and to prevent the unintentional introduction and spread of invasive alien species into or within the Union. For Belgium, this means:

1. Reduce the risk of introduction and establishment of IAS of the Union list in Belgium;
2. Minimise the risk of further spread of IAS of the Union list that are already present in Belgium;

To achieve these overarching goals, and in line with the measures explicitly set out in Article 13 (including awareness raising, minimisation of contamination, and ensuring appropriate border controls), the following strategic pillars have been identified:

Awareness and education

- **OBJ 1 – Promote adherence to best practices** by informing on IAS, encouraging the uptake of best management practices and biosecurity measures among the general public, key user groups, and public authorities

Strengthen Cooperation and Engagement

- **OBJ. 2 - Facilitate structured stakeholder dialogue** via dedicated platforms – *e.g.* for soil, pet, horticultural, and freshwater sectors – to discuss and develop practical approaches and needed support for addressing IAS in their daily operations.

- **OBJ. 3 - Enhance inter-agency coordination**, cooperation, and information-sharing between relevant governmental agencies involved in IAS management and enforcement.

Strengthen prevention, rapid response and enforcement

- **OBJ. 4 –** Strengthen prevention and enforcement of IAS legislation by ensuring the availability of appropriate legal, administrative and operational frameworks for the **housing or elimination of invasive alien species.**

- **OBJ 5 –** Strengthen **inspections** for enforcement of IAS legislation

Enhance knowledge on pathways of introduction and spread by strengthening detection and monitoring

- **OBJ. 6 - Develop and implement reliable detection and identification methods** for listed IAS.

- **OBJ. 7 - Collect quantitative data on IAS presence along key pathways and at high-risk sites** (harbours, soil depots, nurseries)**.**

1.4. Governance, implementation, timeline and evaluation

The actions set out in this plan are of three types:

- Actions specific to one authority, which unilaterally assumes responsibility for their implementation.
- Actions requiring coordination among authorities and coordinated by the National Committee on IAS (NCIAS), with the support of the National Scientific Secretariat on IAS (NSSIAS).
- Actions requiring coordination through the NSSIAS with the support of the National Scientific council on IAS and the NCIAS.

Each action within the plan will be led by a designated pilot, who will be responsible for coordinating its implementation. The pilot's role includes:

- Ensuring timely and effective execution of the assigned action
- Facilitating active involvement of relevant partner institutions and stakeholders
- Overseeing the collection of implementation data for monitoring and evaluation of the action

For every action, the plan specifies:

- The source of funding
- Defined deliverables and associated indicators where relevant
- Assigned output and effectiveness indicators
- An estimated budget requirement (presented as a proxy)

Low	**Moderate**	**High**
Up to 25 k€	Between 25 k€ and 75 k€	More than 75 k€

The **NCIAS oversees the implementation** of the measures outlined in the national action plan as stipulated in article 40 of the Cooperation agreement between the Federal State, the Communities, and the Regions concerning the prevention and control of the introduction and spread of invasive alien species. To ensure transparency, accountability and collaboration, the NSSIAS will convene at least one coordination meeting per year to review the implementation status of the plan, track progress, and address any challenges.

Note that, unlike in the previous action plan, no specific timelines have been assigned to individual actions, as they are either continuous throughout the implementation period and/or will be implemented in accordance with available resources and staffing capacity. Nevertheless, all actions are to be completed by 31 December 2032. After three years, the **NCIAS will conduct a mid-term review** to evaluate the progress of actions implemented and assess the need for adaptations. In 2032, an **evaluation of the action plan** will be conducted which will feed into an update of the plan for the subsequent six years. An implementation report will be prepared by the NCIAS, with support from the NSSIAS. This report will include a comprehensive evaluation of the action plan's performance.

1.5. Synthesis of actions

Synthesis of the 16 actions of the plan divided among the four strategic priorities of the action plan. * Actions marked with an asterisk (*) are not covered by the regular working budget and will only be completed if additional funding is secured.

Action	Title	Objectives	Budget
Awareness raising and education			
1	Raise awareness of the general public on invasive alien species	OBJ. 1	**Moderate** – Regional, Federal, NSSIAS
Stakeholders' engagement and training			
2	Information on biological invasions for professionals and amateurs	OBJ. 1, OBJ. 2	**Moderate** - Regional, NSSIAS
3	Information on biological invasions for administrative staff and their subcontractors	OBJ. 1, OBJ. 2, OBJ 3	**Moderate** - Regional, Federal, NSSIAS
4	Engage with managerial community	OBJ. 1, OBJ. 2, OBJ 3	**Low** - Regional, NSSIAS
5	Engage with pet sector	OBJ. 1, OBJ. 2	**Low** to **Moderate*** - Regional, NSSIAS
6	Engage with horticultural stakeholders	OBJ. 1, OBJ. 2	**Low** to **Moderate*** - Regional, NSSIAS
7	Engage with stakeholders of freshwater sectors of angling, aquatics sports, aquaculture and boating	OBJ. 1, OBJ. 2	**Low** to **Moderate*** - Regional, NSSIAS
8	Engage with soil sector	OBJ. 1, OBJ. 2	**Low** to **Moderate*** - Regional, NSSIAS
Enhancement of enforcement			
9	Framework for hosting IAS animals	OBJ. 3, OBJ 4	**Low** - Regional
10	Implementation of official border controls	OBJ. 2, OBJ. 3, OBJ 4	**Moderate** - Federal
11	Improve regional inspections	OBJ 3, OBJ 5	**Moderate** - Regional
12	Enhancement of a coordinated national approach on inspection	OBJ 3, OBJ 5	**Moderate** – Regional, Federal, NSSIAS
Research and data collection on pathways & monitoring for early warning			
13	Data generation for the pathway "contaminant of habitat material", with a focus on soil transport	OBJ. 6, OBJ. 7	**Moderate** - NSSIAS
14	Surveillance of plant nurseries and garden centres	OBJ. 6, OBJ. 7	**Moderate** to **High*** – Regional, Federal, NSSIAS
15	Development of a protocol to detect priority IAS contaminants in live fish consignments used for stocking	OBJ. 6, OBJ. 7	**High*** – Regional, NSSIAS
16	Data collection on stowaways on freshwater equipment	OBJ. 6, OBJ. 7	**High*** – Regional, NSSIAS

2. Actions

2.1. Awareness raising and education

2.1.1. ACTION 1: Raise awareness of the general public on invasive alien species

2.1.1.1. State of play

The competent authorities and the National Scientific Secretariat on Invasive Alien Species, have implemented a range of communication initiatives addressing biological invasions in the remits of their competences. Some of these initiatives were part of the first National Action Plan on the introduction and spread of IAS (see table below), while others were developed within the framework of dedicated projects such as LIFE RIPARIAS and LIFE DUNIAS, VespaWatch, Craywatch, FlatwormWatch or as loose initiatives such as printed media on selected species. Additional efforts were carried out at a more local level, for example in response to emerging invasions in the case of *Xenopus laevis* or presence at science events. Additionally, several communication materials were developed in direct collaboration with sectoral organisations and federations. All existing materials remain available for continued use and dissemination under the updated Action Plan. An overview of the different initiatives in the framework of the previous action plan is provided in the table below.

Responsible	Description	Year
FPS Health, DGEM	Airport campaign 'Home Sweet Home' on invasive alien species	2023
FPS Health, DGEM	Airport campaign on risk of bringing back alien animals and plants, including IAS	2023-2024-2025
SPW ARNE	Walloon communication campaign 'Stop envahissantes'	2025
All competent authorities	National communication campaign on biological invasions	2026
All competent authorities	Information on websites Flemish region: • Invasieve exoten in Vlaanderen | Dienstensite Natuur & Bos • Exoten | Ecopedia Walloon region: • Everything about IAS Brussels capital region • Invasieve uitheemse soorten in Brussel Federal authority • Uitheemse soorten: bedreigingen en oplossingen	Continuous
NSSIAS	Check-clean-Dry for freshwater users	2025
NSSIAS	"Slim kweken" and "Slimme baasjes" for pet keepers and plant enthusiasts	2026
NSSIAS	Posters on IAS	2023-2026

2.1.1.2. Action description

The competent authorities will continue, disseminate, and, where appropriate, revitalize initiatives aimed at raising awareness about biological invasions. Additionally, existing material on the species of the union list will be updated when additional species are added to the list of Union Concern. The objective is to inform the general public, as well as specific target groups such as pet and plant owners, buyers, and recreational users of water bodies.

ACTION 1	Raise awareness of the general public on invasive alien species
Objectives	OBJ. 1
Pathways	All
Description	1. Update of general awareness raising and educational material on biological invasions and the Union list when the list is updated 2. Ensure maintenance and regular updating of the national portal iasregulation.be 3. Each authority will valorise existing communication material on IAS developed at regional, federal or national level so it is accessible, up to date and visible
Pilot	1. NSSIAS 2. NSSIAS 3. FPS Health, BE/LB, ANB, SPW
Partners	
Target audience	General public and specific non-professional stakeholders (e.g. Gardeners, Pet owners, Recreational users of freshwater ecosystems, Travelers)
Deliverables and potential indicators	● Deliverables: ○ Updated outreach material for the general public (e.g. posters) ○ Accessible and updated online information on IAS on federal, regional and national websites ○ Active dissemination of the existing campaigns at regional and federal level ○ Inventory of available material of authorities and NSSIAS/Public events ○ Public events and trainings ● Output indicators: ○ Number of visits on websites ○ Number of posters distributed ○ Number of articles/posts published on the website and social media ○ KP Indicators of digital campaigns ● Efficiency indicators: ○ Monitor trends of visits over the time span of the action plan ○ Posters distributed vs. posters printed / % posters in public spaces
Cost	Moderate – Regular budget of regional and federal authorities and NSSIAS

2.2. Stakeholders' engagement and training

2.2.1. ACTION 2: Information on biological invasions for professionals and amateurs

2.2.1.1. State of play

A substantial body of awareness-raising material, best practice guidelines for various sectors and activities, and educational tools related to invasive alien species already exists. These resources have been developed through the previous Belgian National Action Plan, by other national stakeholders, or by organizations and authorities in other French, Dutch, or German-speaking countries.

However, despite the availability of these materials, they remain fragmented and are often not effectively disseminated to the appropriate target audiences. This is largely due to a lack of coordinated communication strategies, limited visibility, and insufficient support for implementation. Addressing these gaps is essential to ensure that existing resources are effectively leveraged to promote awareness and best practices across all relevant sectors.

2.2.1.2. Action description

The competent authorities will continue their efforts to provide information by supporting relevant training initiatives organized by partner organizations. In addition, existing educational materials and training kits will be actively promoted to local actors and administrations. Furthermore, the competent authorities will engage with the education sector to integrate IAS-related content into relevant study programs, thereby reaching and informing future professionals during their formal education.

ACTION 2	Information on biological invasions for professionals
Objectives	OBJ. 1, OBJ. 2
Pathways	All
Description	1. Initiate trajectory for inclusion of IAS in relevant learning programs of higher education and professional tools (non-exhaustive: animal care, veterinary, horticulture, architecture, garden architecture) 2. Increase promotion of existing tools through the creation and promotion of a thematic repository of existing material on the NSSIAS website 3. Development of stategy of communication for (future) professionals into the communication strategy developed under action 1.
Pilot	1. BE/LB, ANB, SPW 2. NSSIAS 3. BE/LB, ANB, SPW
Partners	1. NSSIAS 2. BE/LB, ANB, SPW, SPF/FOD Health 3. NSSIAS
Target audience	Future professionals of animal care and green sectors

Deliverables and potential indicators	• Deliverables:
	  ○ Roadmap for inclusion of information on IAS in curricula
	  ○ Website repository for awareness raising and educational tools
	  ○ Communication strategy for future professionals
	• Output indicators:
	  ○ Number of meetings with educational entities
	  ○ Number of policy notes drafted/accepted regarding inclusion of IAS subject matter in existing curricula

Cost	Moderate – Regular budget of regional authorities and NSSIAS

2.2.2. ACTION 3: Information on biological invasions for administrative staff and their subcontractors

2.2.2.1. State of play

The **Federal authority** contributes to informing the administrative staff of federal institutions and agencies, as well as federal autonomous public undertaking, in two ways:

a) Through the trilateral protocol between the FASFC, Customs, and the FPS Public Health (2019), and the additional protocol with the FASFC (2025), an information-exchange system is established for species on the Union list to support border controls. This system includes a scientific documentation kit and provides that training activities will be organized in support of the control programme.

b) Through the Biodiversiscape programme, the federal authority aims to integrate biodiversity promotion actions into all aspects of landscape planning and construction. The programme currently focuses on four federal partners (Defence, NMBS/SNCB, Infrabel and the Buildings Agency), covering a total of 25,774 hectares of land. An e-learning training programme (biodiversitelearning.be) and face-to-face training sessions are organized for partners. The training covers various biodiversity-related topics, including invasive alien species. In addition, technical fact sheets are planned to support field managers.

The **Flemish authority** disseminates information through several websites (Dienstensite ANB, Ecopedia,...), differentiated based on the target audience, such as governments, (professional) terrain managers, citizens,... In case of specific management plans for certain species, training programs are divized for this particular purpose (trainings bullfrog, Asian hornet, muskrat). Specific topics within the framework or biological invasion are the subject of several training courses, provided for professional or interested parties, provided by the learning center of the Flemish authority (www.inverde.be). Topical information is disseminated via newsletters. Specific reports can be found in the online repository of the Flemish Research Institute for Nature and Forest.

The **Walloon Administration** ensures the dissemination of best practices for the management of invasive alien species through the website biodiversite.wallonie.be, particularly concerning raccoons, Asian knotweed, and the Asian hornet. Training on the management of invasive aquatic plants and giant hogweed for managers (private actors, municipalities, etc.) is also provided by the river contracts of Wallonia through a cooperation agreement. Subsidies are also granted to associations (Adalia 2.0) for training municipal workers in the management of invasive plants. Internally, we ensure the proper dissemination of best management practices within our departments, for example for public watercourse managers. Training is also offered to DNF officers who wish to learn trapping techniques for raccoons. Finally, videoconferences for municipalities are regularly organized through the Union of Cities and Municipalities of Wallonia (UCVW).

For the **Brussels-Capital Region**, information on invasive alien species is disseminated through the online platform renature.brussels and through the website of Brussels Environment. These platforms provide general information on biological invasions, species-specific factsheets, identification tools, and practical guidance on prevention, monitoring and management measures. Brussels Environment also publishes technical guidance documents and

management recommendations intended for municipalities, land managers, professionals and citizens.
In addition, Brussels Environment regularly organises training courses through its Nature Academy programme, covering topics such as the identification, monitoring and management of invasive alien species, as well as the implementation of good management practices. These trainings are open to professionals, local authorities, environmental practitioners and interested citizens. Thematic information sessions and workshops are also organised on a regular basis for specific target groups and focus on priority species and emerging issues, including the Asian hornet, invasive crayfish, invasive alien plants and other species of regional concern. Furthermore, Brussels Environment promotes knowledge exchange and capacity building through cooperation with municipalities, public land managers and other stakeholders involved in the prevention and management of invasive alien species.

2.2.2.2. Action description

The competent authorities will continue their efforts to provide information on Invasive Alien Species (IAS) through training sessions for their own staff or for staff of other related authorities (as is the case at federal level), as well as by supporting relevant training initiatives organized by partner agencies. In addition, existing educational materials will be actively promoted to other relevant administrations, including at the local level.

ACTION 3	Information on biological invasions for administration staff and their subcontractors
Objectives	OBJ. 1, OBJ. 2, OBJ 3
Pathways	All
Description	1. Identification of relevant administration (employees) and agencies for training 2. Development of content
Pilot	1. BE/LB, ANB, SPW, SPF/FOD 2. BE/LB, ANB, SPW, SPF/FOD
Partners	1. BiodiversiScape 2. NSSIAS, BiodiversiScape, Natuurpunt, Adalia, Inverde, Nature Academy,…
Target audience	Professionals in administrations or governmental agencies at federal, regional, provincial and municipality level (*e.g.* SNCB-NMBS, Infrabel, Defence, the Buildings Agency, VMM, DVW, SPW MI, VVSG, UVCW, Intercommunales, …) that encounter IAS in their work.
Deliverables and potential indicators	● Deliverables: ○ Training content ○ Booklet on the IAS of Union Concern ● Output indicators: ○ Number of people trained ○ Number of additional courses in which information is incorporated at the level of the administrations
Cost	Moderate – regular budget of regional and federal authorities and NSSIAS

2.2.3. ACTION 4: Engage with managerial community

2.2.3.1. State of play

Availability and accessibility of supporting materials

A wide range of supporting materials is already available to assist competent authorities, land managers and other operational services in the prevention, early detection, rapid eradication and management of invasive alien species. These materials include:

- Identification guides and species ID sheets;
- Species-specific best management practices and technical guidance documents;
- Decision-support and prioritisation tools;
- Biosecurity guidelines for the management of specific species;
- Generic biosecurity protocols for routine aquatic and terrestrial management activities (*e.g.* mowing, dredging, soil movement, maintenance works).

In addition, practical guidance has been developed to support the integration of biosecurity measures into public procurement procedures, technical specifications, and management contracts for the management of waterbodies. This contributes to the structural mainstreaming of preventive measures into regular maintenance and infrastructure operations, thereby reducing the risk of unintentional spread.

While the breadth of available material is considerable, access remains fragmented. Guidance documents and tools are currently dispersed across the websites of various projects, research institutions and administrations at federal and regional level. There is no single, centralized and sustainably maintained access point providing an up-to-date overview of all relevant resources. This fragmentation reduces visibility and uptake of existing knowledge, may lead to duplication of efforts, and can limit the consistent application of best practices across regions and sectors.

The further consolidation and visibility of these materials would also contribute to a more effective implementation of obligations arising under EU Regulation 1143/2014, in particular about prevention and management measures.

Knowledge exchange and capacity building

Dealing effectively with biological invasions requires not only technical guidance but also active exchange between practitioners. In Flanders, the ExotenNet community of practice serves as a valuable platform for knowledge exchange and capacity-building. It regularly organizes informative workshops and thematic working groups, disseminates newsletters, and produces podcasts, all aimed at raising awareness and supporting effective IAS management among stakeholders. At present, no comparable structured and permanent initiative exists for Wallonia and the Brussels-Capital Region.

2.2.3.2. Action description

This action aims to improve the accessibility, coherence and practical uptake of existing guidance and to strengthen structured knowledge exchange among all managerial stakeholders across Belgium. It seeks to provide all field managers with targeted guidance and support on

the best practices for prevention and biosecurity during management actions. It also aims to provide IAS managers with best practices and a network for exchange.

ACTION 4	Engage with managerial community
Objectives	OBJ. 1, OBJ. 2, OBJ 3
Pathways	Machinery ; Transportation of habitat material
Description	1. Elaboration of a repository of best practices related to management of IAS 2. Active promotion of repository among managerial stakeholders in terrestrial and freshwater environments 3. Creation of best practices for maintenance along roadsides 4. Support the establishment of a French-speaking community of practice or the evolution towards a bilingual or national network 5. Survey of relevant managerial and policy stakeholders (including regional and local authorities, land managers, water managers and infrastructure managers), in order to identify shortcomings in existing guidance, tools, knowledge and knowledge exchange mechanisms related to invasive alien species (IAS)
Pilot	1, 3, 5: NSSIAS 2: BE/LB, ANB, SPW 4: BE/LB, SPW
Other Partners	Agentschap Wegen en Verkeer, SPW Mobilité et Infrastructures, ExotenNet, Contrats de Rivière de Wallonie, Provinces, Spaque, De Vlaamse Waterweg, VMM, VVSG, UVCW
Target audience	Managerial community including: employees of regional authorities, regional and provincial institutions, municipalities, public land and nature managers (forestry agencies, nature conservation bodies), waterway and river basin managers; infrastructure and transport managers (roads, railways, ports); public works and maintenance contractors; public procurement and facility management services
Deliverables and Potential Indicators	● Deliverables: ○ Online repository for best practices management ○ Short guide on best practices for roadside mowing ○ National workshops on management ○ Analysis report ● Output indicators: ○ The number of consolidated documents, user statistics of the platform, and number of targeted communications towards managerial community, the proportion of public contracts incorporating biosecurity requirements or the number of exchange events.
Cost	Low - Regular budget of regional authorities and NSSIAS

2.2.4. ACTION 5: Engage with pet sector

2.2.4.1. State of play

Legal provisions concerning keeping of pets

In Belgium, the **keeping of certain exotic and non-native animals** as pets is regulated through positive ("white") lists that specify which species may be legally kept without individual authorisation, reflecting mostly animal welfare as well as biodiversity considerations. Historically, Belgium adopted a positive list of permitted mammals (e.g. various small mammals, rodents and a limited set of larger species) at the federal level in 2009, and this framework was carried forward when competence for animal welfare was devolved to the regions; each region now maintains its own list of allowed mammals with slight variations. In

addition, both Flanders and Wallonia have adopted positive lists for reptiles (with Flanders' list covering several hundred reptile species that may be held legally as pets), while authorised species lists in the Brussels-Capital Region are similarly defined under regional animal welfare regulations for mammals and herpetofauna. Animals not on these regional positive lists generally may not be kept without specific authorisation and must have been in private ownership before the list came into force to be retained. In addition, **releasing pets in nature** is forbidden in all three regions.

Voluntary code of conduct

As part of the previous National Action Plan (ended in 2026), a **National Code of Conduct on Invasive Alien Species and the Pet Sector** was developed through a participatory process involving representatives of the pet trade, breeders, hobbyists, competent authorities and scientific experts. The Code sets out practical biosecurity measures covering, inter alia, the management of live feed, animal husbandry practices and the safe disposal of waste. It also provides specific guidance for fair and market organisers. Signatories commit to actively informing their customers about the risks associated with biological invasions and promoting the "no release into the wild" principle as a core preventive message. The Code of Conduct is publicly available online via this link.

In parallel with the development of the Code, a range of supporting awareness-raising materials was produced to assist both professional and amateur breeders and keepers. These include information leaflets aimed at promoting responsible ownership, preventing accidental or intentional releases, and encouraging compliance with biosecurity best practices. These materials are accessible online via this link.

2.2.4.2. Action description

This action aims to strengthen engagement with the pet sector by building on the existing code of conduct and ensuring its wide dissemination among professionals and hobbyists. Through active outreach and regular dialogue, it seeks to embed the code into everyday practices and encourage broader uptake. The action also provides a framework to periodically update the code so it remains relevant and effective.

ACTION 5	Engage with pet sector
Objectives	OBJ. 1, OBJ. 2
Pathways	Pet/aquarium/terrarium species ; Contaminant on animals ; Contaminants on plants
Description	1. Dissemination and follow-up of the code through active communication 2. Review of the codes of conducts with the pet sector every 3 years
Pilot	1. BE/LB, ANB, SPW 2. NSSIAS
Partners	Animal welfare departments; Federations and organizations of pet sector
Target audience	Federations and organizations of pet sector; Pet owners and hobbyists
Deliverables and potential Indicators	● Deliverables ○ At least three meetings with the sector ○ Updated code and/or renewed pledges ● Output indicators: ○ Number of (new) organisations/federations subscribing to the code, number of fairs visited
Cost	Dependent on level of ambition and staff associated to project – either low on the regular regional and NSSIAS budget or moderate with extra budget required for NSSIAS

2.2.5. ACTION 6: Engage with horticultural stakeholders

2.2.5.1. State of play

Legal provisions concerning ornamental plants

In Wallonia, regional legislation includes specific measures targeting invasive alien plant species, prohibiting the planting and disposal of plant waste for certain species throughout the territory, and restricting these activities within 50 metres of watercourses and protected or high-value natural areas for others. In the Brussels-Capital Region, regional regulations similarly restrict the commercialization of designated invasive plant species, ensuring that both planting and trade are managed to prevent the introduction and spread of species that threaten local biodiversity. Dumping of green waste of any plant in nature is forbidden in the whole of Belgium.

Voluntary code of conduct

Under the previous National Action Plan, a National Code of Conduct for the Horticultural Sector was developed through a participatory process involving key stakeholders, including nurseries, horticultural associations, researchers, and relevant authorities. The Code provides a framework of voluntary yet practical commitments designed to reduce the introduction and spread of IAS within the sector.

It sets out measures covering biosecurity, reporting, product management, customer information, and outreach - among customers and member organizations. Nurseries commit to responsible disposal of plant waste, the reporting of potentially invasive contaminant species and plants exhibiting invasive characteristics, and the exclusion of a consensus list of high-risk species from sale. A labelling system for an additional set of species was introduced to inform customers about measures preventing their spread into nature.

In parallel with the development of the Code, a range of supporting awareness-raising materials was produced, as well as a guide on species that could be used as a potential alternatives to IAS species.

2.2.5.2. Action description

This action focuses on promoting and operationalising the existing Code of Conduct for the Horticultural Sector by ensuring its uptake among nurseries, garden centres, landscapers, and gardeners. Through targeted outreach, training opportunities, and regular dialogue with professional networks, the action seeks to embed the measures of these codes into everyday practices. It also establishes a mechanism to periodically update the code so it remains aligned with the scientific knowledge on species and cultivars with potential invasiveness.

ACTION 6	Engage with horticultural stakeholders
Objectives	OBJ. 1, OBJ. 2
Pathways	Contaminant nursery material, Ornamental purposes other than horticulture, Horticulture, Contaminants on plants
Description	1. Dissemination and follow-up of the code among federations of producers and sellers

	2. Active outreach to local public authorities and other developers of green spaces (professional end users of horticultural plants) 3. Review of the codes of conduct with plant sector every 3 years 4. Outreach on contaminants and measures for elimination
Pilot	1. NSSIAS 2. BE/LB, ANB, SPW 3. NSSIAS 4. NSSIAS
Partners	Federations and organizations of horticultural sector
Target audience	Federations and organizations of horticultural sector; Green Space managers; Landscapers; Plant producers and sellers; Gardeners
Deliverables and potential Indicators	● Deliverables ○ At least three meetings with the sector ○ Updated code and/or renewed pledges ○ Production of guidance on flatworm elimination and surveillance for retailers or breeders ● Output indicators: ○ Number of (new) organisations/federations subscribing to the code ○ Number of shops not selling the species anymore
Cost	Dependent on level of ambition and staff associated to project – either moderate on the regular regional and NSSIAS budget or high with extra budget required for NSSIAS

2.2.6. ACTION 7: Engage with stakeholders of freshwater sectors of angling, aquatics sports, aquaculture and boating

2.2.6.1. State of play

Legal provisions concerning freshwater sectors

While each region has some provisions in its legislation aimed at reducing the introduction and spread of IAS in Belgian freshwater systems - such as the limitations on the use of life bait - these provisions do not address all the risks associated with different freshwater activities. A comprehensive review of all legislation related to IAS falls outside the scope of this document. An overview of regional legislation and identified gaps is provided in the various Codes of Conduct referenced below.

Voluntary codes of conduct

Under the previous action plan, sector-specific **Codes of Conduct** were developed for key freshwater user groups, including angling, aquatic sports, aquaculture, and recreational and professional boating. These Codes were created through a participatory stakeholder process and provide practical guidance to prevent the introduction and spread of IAS.

The Codes address equipment biosecurity, the biosecure organization of events and competitions, commitments to support IAS monitoring, and the dissemination of awareness materials to members and participants. To support adoption, tailored educational kits were produced for each sector, including videos, posters, boards, flyers, stickers, and infographics.

For the angling sector, a national survey established baseline awareness and the uptake of biosecurity practices, providing a benchmark to measure progress and guide future actions.

2.2.6.2. Action description

This action aims to strengthen engagement with key freshwater sectors—including angling, aquatic sports, aquaculture, and boating—by promoting and monitoring the uptake of the existing Codes of Conduct. Through targeted communication, sector-specific meetings, and dedicated training on biosecurity practices, it seeks to embed preventive measures into routine activities and events. The action also provides for a periodic review of the Codes to ensure their continued relevance and alignment with the field practice and sector needs. Overall, it supports stronger collaboration with federations and organizations to reduce the introduction and spread of IAS in freshwater systems.

ACTION 7	Engage with freshwater sectors
Objectives	OBJ. 1, OBJ. 2
Pathways	Angling / fishing equipment; Live food and live bait; Hitchhikers on ship/boats; Contaminant on animals
Description	1. Dissemination and follow-up of the codes through active communication 2. Review of the codes of conducts with freshwater 3. Train relevant actors and federations on biosecurity behaviour 4. Flag relevant issues that cannot be solved on national level with European Commission
Pilot	NSSIAS
Partners	BE/LB, ANB, SPW
Target audience	Federations and organizations of freshwater sectors (angling, fish stocking, aquatic sports, recreational boating, professional boating)
Deliverables and potential Indicators	● Deliverables ○ At least two meetings with recreational users of aquatic systems (sport and angling) ○ Meeting with European Commission ○ Renewed pledges ● Output indicators: ○ Number of (new) organisations/federations subscribing to the code ○ Number of events organised according to biosecurity guidelines ○ Number of events where biosecurity was advertised
Cost	Dependent on level of ambition and staff associated to project – either low on the regular budget of NSSIAS or moderate with extra budget required for NSSIAS

2.2.7. ACTION 8: Engage with soil sector

2.2.7.1. State of play

Legal provisions for the soil sector

There is no specific legislation in Belgium regarding biosecurity in soil transports in the context of IAS. However, regional legislation in Belgium already provides a framework that can be used to manage the spread and introduction of IAS via soil transport: soil traceability, obligatory technical soil reports prepared by qualified experts with codes indicating contaminated soil and restrictions limiting recovery and revalorisation methods. IAS are sometimes partially included in best practice documents concerning the transport of excavated soil, their remediation and recovery, such as the Guide de référence relatif à la gestion des terres (GRGT) for Wallonia.

Voluntary Code of conduct

A Code of Conduct on soil transport and IAS is currently under development and will be finalized in 2026. This voluntary tool aims to prevent the introduction and spread of IAS through soil movement by promoting preventive measures and raising awareness among professionals. Developed within the previous national action plan and in collaboration with stakeholders of soil related sectors across all regions, including competent authorities (nature and waste), agencies responsible for soil certification and traceability, soil experts, construction firms, earthworks contractors and waste management companies. The Code outlines five key commitments: harmonising data and protocols, applying biosecurity measures, including priority species in soil quality reports, contributing to IAS monitoring and research, and supporting awareness initiatives.

2.2.7.2. Action description

This action aims first to finalise, adopt, and operationalise the Code of Conduct for soil transport, ensuring its coordinated uptake across construction actors, soil transport companies, soil experts, and competent authorities. By promoting targeted communication, sector-specific exchanges, and training on biosecurity measures for soil handling, it seeks to embed practical prevention guidelines into routine activities—particularly those addressing the unintentional spread of terrestrial invasive plants through soil movement. The action also establishes a process for regularly reviewing and updating the Code so it remains aligned with field practices and evolving scientific knowledge. Overall, it enhances collaboration with professional federations and authorities to minimise the introduction and spread of invasive alien species via soil transport and management.

ACTION 8	Engage with soil sector
Objectives	OBJ. 1, OBJ. 2
Pathways	Transportation of habitat material; Machinery
Description	1. Collaborative elaboration of a voluntary code of conduct 2. Continued animation of the working group and follow-up of the code of conduct 3. Providing training material to experts in the soil sector on IAS
Pilot	1-2: BE/LB, ANB, SPW, NSSIAS 3: NSSIAS
Partners	Grondbank, OVAM, Grondwijzer, Walterre, SPW ARNE-DSD, ISSep
Target audience	Professionals of soil sector - Public authorities, construction firms, earthworks contractors, waste management companies, and soil consultancy firms (Grondbank, Grondwijzer, Walterre, SPW, ANB, OVAM, Fedexsol, Bouwunie, Embuild, Ensoil, Tractebel, Engie, Vobas, Leefmilieu Brussel, Talboom, Rskgroup, Aplus, Vlawebo)
Deliverables and potential Indicators	● Deliverables ○ Code of conduct / sectorial agreement ○ At least two meetings with the core group ○ Fiches to supporting soil sector in identification of relevant IAS ● Output indicator: ○ Number tools distributed / downloaded? ○ Number of technical reports of excavated soil in which information on IAS is included?
Cost	Dependent on level of ambition and staff associated to project – either low on the regular regional budget or moderate with extra budget required for NSSIAS

2.3. Enhancement of enforcement

2.3.1. ACTION 9: Framework for hosting IAS animals

2.3.1.1. State of play

Effective implementation of IAS regulations requires the establishment of appropriate infrastructure and formal agreements with rescue centres and specialized facilities. These are essential to ensure that: (1) certain IAS specimens confiscated by regional and federal inspectors can be temporarily housed in a safe environment; (2) IAS pets, which might otherwise be abandoned by their owners, are provided with an alternative to release into the wild—thereby preventing new introductions; and (3) animals removed from the wild during specific management actions, where a lethal endpoint is not considered appropriate or acceptable, can be safely taken out of nature and accommodated. Without such infrastructure, authorities and managers may lack humane and legally compliant options, undermining the effectiveness and societal acceptance of IAS policy implementation.

In **Flanders,** the legal hosting of IAS is accomodated by providing a legal base for this specific purpose, thereby allowing any animals sanctuary the possibility to legally house these species, whether in the framework of confiscation, management or (re)housing. Entities making use of this possibility are also made aware of biosecurity and zoonotic risks and need to adhere to strict protocols.

Wallonia is currently considering a principle similar to the one implemented in Flanders to allow zoological parks to house seized animals, in accordance with a strict protocol.

In the **Brussels-Capital Region**, no dedicated facility currently exists for the long-term captive holding of invasive alien species. The regional wildlife rescue centre is operated by the Ligue Royale Belge pour la Protection des Oiseaux (LRBPO), which receives injured, sick or confiscated wild animals. However, due to limited staffing and capacity, the centre is not equipped to keep invasive alien species in permanent captivity. Consequently, when invasive alien animals cannot be released and no alternative legal housing solution is available, euthanasia is generally applied in accordance with the applicable legal and animal welfare requirements. At present, the Brussels-Capital Region does not have a dedicated zoo, sanctuary or holding facility for invasive alien species confiscated by the authorities, surrendered by private owners, or removed from the wild through management actions. This situation highlights the challenges associated with the implementation of invasive alien species legislation in a highly urbanised region with limited available infrastructure and capacity for long-term animal accommodation.

The FPS Health is the competent authority responsible for deciding on the destination of animals seized at **the borders** or which are transported as hitchhikers, notably via maritime vessels. Depending on the case, and in coordination with the region concerned, it may be decided to entrust the animal to a specialised wildlife rehabilitation centre for exotic fauna or to another appropriate type of facility.

2.3.1.2. Action description

ACTION 9	Framework for hosting IAS animals
Objectives	OBJ 3., OBJ. 4

Pathways	Mainly poet/aquarium/terrarium species, but it will also assist in determining solutions for (vertebrate) hitchikers across several pathways
Description	1. For Brussels and Wallonia, feasibility and scope of a potential action should be assessed with the relevant departments. 2. Harmonise the rules concerning housing by zoos between the relevant regions
Pilot	1. Flemish, Brussels capital and Walloon region 2. Flemish and Walloon region
Partners	FOD Health
Target audience	Zoo sector, rehabilitation centres, inspection services
Deliverables and Indicators	Deliverables: • Legal framework and permitting process • output indicators • Number of permits issued
Cost	Low - Regular budget of regional authorities

2.3.2. ACTION 10: Implementation of official border controls

2.3.2.1. State of play

The **federal authority** is responsible for implementing article 15 on border control (EU regulation) under its nature conservation competence relating to the import, export, and transit of non-native species. To ensure efficient official controls at border control posts and in accordance with the EU regulation, implementation requires to put in place procedures with customs and the Federal Agency for the Safety of the Food Chain (FASFC) which perform first-line controls. To this end, a 2018 trilateral administrative protocol between the FPS Health, customs and the FASCFC establishes the exchange of information and the organisation of effective coordination and cooperation. It fixes:

a) The procedures to be applied at borders to avoid the introduction of IAS (i.e. steps to follow upon suspicion of IAS, contact points, sampling procedure and responsibility);
b) The management of border risks and risk analysis;
c) The technical scientific support.

A specific protocol with the FASFC has been added in 2025 which adds more details specific for the FASFC (e.g. on procedures and sampling), including through a manual.

As set out in the 2019 cooperation agreement and its work programme, the NSSIAS is mandated to provide the FPS Health with the necessary scientific support to ensure that border agencies can effectively perform their frontline tasks, more particularly for the development of the risks analysis and the technical scientific support, including the participation in training sessions for border control agents organized by the FPS Health.

2.3.2.2. Action description

ACTION 10	Prevention of non-intentional introduction of invasive alien ants (as stowaway)
Objectives	OBJ. 2, OBJ. 3, OBJ 4

Pathways	Container stowaways
Description	1. Improve knowledge of the risks linked to the introduction of invasive alien ants as contaminant through air transport 2. Assess the need for more action with the Air transport Industry and the Import sector
Pilot	SPF/FOD Health
Partners	NSSIAS, Saniport, DGAPF, FASFC
Target audience	Customs, FASFC, FED inspection, Import sector, Air Transport Industry
Deliverables and Indicators	● Deliverables: ○ Meetings with FAFSC, the Air Transport Industry and import sector.
Cost	Moderate – Regular budget of SPF/FOD Health

2.3.3. ACTION 11: Improve regional inspections

2.3.3.1. State of play

In **Flanders**, policy and inspection services agree on certain priorities regarding species and pathways, within the competences of the local authorities. Support can be provided by IAS experts from the policy or research departments if necessary.

In **Wallonia,** internal work is needed to clarify the roles and objectives of the various departments responsible for carrying out inspections and enforcement (Department of Police and Controls, Department of Nature and Forests). Inspections or penalties generally result from reports by citizens or observations made by collaborators external to the Administration. A clarification of the framework and objectives for inspections is required, along with clear protocols in the event of the seizure of animals or plants.

In the **Brussels-Capital Region**, the inspection services of Brussels Environment are responsible for enforcing environmental legislation, including provisions related to invasive alien species. However, the current legal framework does not yet provide inspectors with a clear legal basis for the confiscation of invasive alien animals or plants encountered during inspection activities. As a result, enforcement actions involving the seizure and subsequent handling of specimens remain limited.
A new regional ordinance on invasive alien species is currently under development and is expected to strengthen the legal framework for inspections and enforcement. Once adopted and implemented, this legislation will provide greater legal certainty regarding inspection powers, confiscation procedures and follow-up measures. Brussels Environment will subsequently further develop and deploy its inspection activities in the field of invasive alien species, including the establishment of operational procedures and enforcement priorities to ensure effective implementation of the legislation.

2.3.3.2. Action description

ACTION 11	Improve regional inspections
Objectives	OBJ 3, OBJ 5
Pathways	Contaminant of habitat material, Pet/aquarium/terrarium species; Ornamental purposes other than horticulture; Horticulture

Description	• Clarify the responsibilities and opportunities in the inspection missions to enhance the effectiveness of controls in shops, events and private properties
Pilot	BE/LB, ANB, SPW
Partners	NSSIAS, INBO, DEMNA
Target audience	/
Deliverables and Indicators	• Number of controls in regards to IAS • Number of species encountered • Documented outcome (convictions, fines, dismissals)
Cost	Moderate – regular regional budget

2.3.4. ACTION 12: Enhancement of a coordinated national approach on inspection

2.3.4.1. State of play

To support enforcement in shops, a coordinated approach for 2025 – 2026 was elaborated in the framework of the previous action plan between the regional inspection services. This included regular exchanges and a joint and coordinated effort on aquatic taxa across the Belgian territory and at it's borders.

2.3.4.2. Action description

ACTION 12	Enhancement of a coordinated national approach on inspection
Objectives	OBJ 3, OBJ 5
Pathways	Contaminant of habitat material, Pet/aquarium/terrarium species; Ornamental purposes other than horticulture; contaminants on plants, contaminants on animals
Description	1. Investigate relevant tools for information flow 2. Investigate relevant tools for identification and update of supporting tools a. List of morphological experts and discriminating characteristics b. Provide trainings c. Initiate a trajectory towards facilitating an accessible specimen library d. Investigate other relevant tools for identification and information flow 3. Joint inspection of federal and regional services at the BCP for plants.
Pilot	1. BE/LB, ANB, SPW, SPF/FOD Health 2. NSSIAS 3. BE/LB, ANB, SPW, SPF/FOD Health
Partners	FAVV
Target audience	/
Deliverables and Potential Indicators	Deliverables: • Strategy for information flow • Updated list of experts and characteristics • Training powerpoints on 3 relevant taxa • Report of joint inspection Indicator: • number of species in specimen library or number of times it was accessed
Cost	Moderate – regular budget of regional and federal administration and NSSIAS

2.4. Research and data collection on pathways & monitoring for early warning

To support effective policymaking, an analysis of research needs related to the implementation of the EU IAS Regulation was initiated by the NSSIAS in 2025. The analysis examines both cross-cutting issues and thematic priorities, as well as research needs related to individual IAS species. Although the report has not yet been finalised, its preliminary findings have informed the development of this chapter, particularly with regard to research needs supporting effective prevention and early warning.

Understanding the pathways of introduction and spread is essential for the effective prevention of new IAS incursions and their further spread. Pathway data provides insight into how, when, and where species are most likely to enter the country, enabling authorities to identify high-risk activities, sectors, and entry points.

There is a critical need for high-quality, up-to-date data on pathways to support risk-based decision-making, prioritizing the development and/or implementation of preventative actions such as the development of targeted biosecurity measures and inspection protocols, and targeting awareness-raising efforts. Additionally, the identification and systematic monitoring of strategic sites—such as ports, transport hubs, trade centers, and recreational hotspots—associated with these pathways is necessary to detect new introductions early and to assess the effectiveness of existing biosecurity measures. This will not only contribute to improved national IAS management but also support reporting obligations under the EU IAS Regulation and enhance cross-border cooperation.

2.4.1. ACTION 13: Data generation for the pathway “contaminant of habitat material”, with a focus on soil transport

2.4.1.1. State of play

At present, no specific legislation in Belgium addresses biosecurity requirements for soil transport in relation to invasive alien species (IAS). As a result, there is limited information on the extent to which IAS may be spread through the movement of excavated soil, as there is no legal obligation to report their presence in transported materials. This gap is further compounded by the absence of systematic training for relevant personnel in identifying IAS that can be transported via soil, which restricts both detection and data collection. However, even with the non-existent reporting obligation, analysis of the data indicates that the movement and storage of contaminated soils is widespread.

A trajectory to include the presence of Japanese knotweed in technical site soil reports and soil certificates has been initiated, and will be elaborated to other species.

As outlined under the Action 8, one of the objectives of the future code of conduct for soil transport and IAS will be to improve the traceability of soil contaminated with invasive alien plants.

2.4.1.2. Action description

ACTION 13	Data generation for pathway contaminants of habitat material, with a focus on soil transport
Objectives	OBJ 6, OBJ. 7
Pathways	Contaminant of habitat material
Description	• Initiate trajectory towards the implementation of a surveillance program at soil storage facilities to monitor the presence of propagules of invasive alien plants.
Pilot	NSSIAS
Partners	SPW (DNF, DEMNA, DSD), ISSeP, ANB, OVAM, Brussels Environment
Target audience	/
Deliverables and potential Indicators	• Deliverables: ○ Proposal for monitoring of soil storage facilities for IAS ○ Identification sheets of priority species, aimed at soil sector employees • Output indicator: ○ Increase in the number of technical reports including information on IAS in the soil
Cost	Moderate – Regular budget of NSSIAS

2.4.2. ACTION 14: Surveillance of plant nurseries and garden centres

2.4.2.1. State of play

Garden centres and plant nurseries play a significant role in the horticultural trade, a well-documented pathway for the introduction and spread of invasive alien species. Monitoring these sites is particularly important for 1) improving our understanding of the unintentional introduction of IAS as contaminants of the horticultural trade - such as invasive flatworms or small weeds present in soil or plant substrates and 2) to identify potentially invasive plant species before they spread into natural habitats and become invasive. Regular surveillance can also serve as a real-life horizon scan, helping to forecast emerging IAS risks. By systematically monitoring traded plants in garden centres and nurseries or by monitoring their surroundings, incursions can be detected at an early stage, risk mitigation measures can be implemented, and awareness can be raised among retailers and consumers, all of which are key to preventing the establishment and spread of new IAS in Belgium.

Specifically for flatworms –known contaminants in the horticultural trade– identification and reporting tools were produced in the framework of the citizen science project "FlatwormWatch", which aims to increase observations of flatworms in Belgium. Additionally, an e-DNA based method to detect flatworms is under construction in UHasselt and a pilot project with ecological detection dogs is being led in Odisee Hogeschool which will both aid in the detection of such contaminants.

2.4.2.2. Action description

ACTION 14	Surveillance of and by plant nurseries
Objectives	OBJ. 6, OBJ. 7
Pathways	Contaminant on plants, ornamental (other than horticulture), Contaminant nursery material

Description	1. Production of supporting material for increased surveillance (ID sheets for known plant contaminant, guidance on flatworm elimination and surveillance for retailers and breeders, reporting of escapes (cfr action 6)) 2. Investigation into feasibility of an online portal where retailers and/or importers can indicate mislabeling and/or contaminants 3. Promotion of the material to relevant stakeholders (internal and external)
Pilot	1: NSSIAS 2-3: NCIAS (BE/LB, ANB, SPW, SPF/FOD)
Partners	Federations and organizations of horticultural sector
Target audience	/
Deliverables and Indicators	Deliverables: ● Guidance document on flatworm elimination from potted plants ● Document on the need of observations of escapees in the horticultural context, targeted to naturalists ● Strategy for increased surveillance in horticulture (e.g. online portal, survey, bell ringer policy) Output indicators: ● Number of submissions of mislabeling or contaminants ● Materials downloaded ● Number of observations linked to nurseries, garden centers
Cost	Moderate to High – regular budget of the regional and federal administrations and NSSIAS

2.4.3. ACTION 15: Development of a protocol to detect priority IAS contaminants in live fish consignments used for stocking

2.4.3.1. State of play

Under the previous action plan, a Code of Conduct for the angling sector and a Code of Conduct on aquaculture and invasive alien species were developed and adopted. These Codes provide sector-specific guidance aimed at preventing the introduction and spread of IAS associated with recreative angling and professional aquaculture activities.

Amongst others, these codes specifically address the risk of introducing IAS contaminants—such as aquatic plants, invertebrates, pathogens, and non-native fish species through fish stocking activities in nature and professional establishments. While a wide range of potential contaminants may be associated with these activities, their swift detection is not straightforward. In practice, not all contaminants can be systematically screened. A prioritization of the most relevant or high-risk species would therefore be a pragmatic step, enabling the development of targeted detection tools or assays to support more effective biosecurity controls.

If these tools or assays are produced, a coordinated pilot is to be worked out by the regional administrations to implement a protocol to identify contaminants, in cooperation with the sector.

2.4.3.2. Action description

ACTION 15	Development of a protocol for detection of priority IAS contaminants in live fish consignments
Objectives	OBJ 6, OBJ. 7
Pathways	Contaminant on animals

Description	Working group on the development of methods for detection of contaminants where legislation, methods and implementation will be discussed
Pilot	NCIAS, NSSIAS
Partners	Aquaculture and angling sector ; FASFC
Target audience	/
Deliverables and potential Indicators	Deliverables: • Priority list of contaminants of fishstocking • Protocol for identification of prioritised contaminants in live fish consignments (used for stocking) e.g. by using e-DNA assays or visual checks • Pilot project on the use of these protocols • Contingency plan or guidelines for when contaminant is detected Efficiency indicators: • Number of checks where a contamination is found / total number of checks
Cost	High – additional budget required

2.4.4. ACTION 16: Data collection on stowaways on freshwater equipment

2.4.4.1. State of play

In the framework of the previous action plan, code of conducts have been elaborated for various freshwater activities – both professional and recreational. These codes of conduct include a pledge for attention to the transport of IAS through watertanks, hulls or other equipment that comes into contact with the water such as ropes. Additionally, it contains a pledge to contribute to research projects to better understand these pathways. At this point in time, no information on these pathways is available within Belgium and international literature is scant.

2.4.4.2. Action description

ACTION 16	Data collection on stowaways on freshwater equipment
Objectives	OBJ. 6, OBJ. 7
Pathways	Hitchhikers on ship/boats
Description	Generate data on stowaways on boat and equipment
Pilot	NSSIAS
Partners	INBO, BE/LB, ANB, SPW, SPF/FOD, NSSIAS, subscribers to CoC's freshwater
Target audience	/
Deliverables and Indicators	Deliverables: ● Strategy for data generation on freshwater pathways related to stowaways ● Scientific report
Cost	High - additional budget required

3. Annexes

3.1. Annex 1 – List of species of Union Concern

PLANTS	
Acacia mearnsii	*Koenigia polystachya*
Acacia saligna	*Lagarosiphon major*
Ailanthus alissima	*Lespedeza cuneata*
Alternanthera philoxeroides	*Ludwigia grandiflora*
Andropogon virginicus	*Ludwigia peploides*
Asclepias syriaca	*Lygodium japonicum*
Baccharis halimifolia	*Lysichiton americanus*
Brousonettia papyrifera	*Microstegium vimineum*
Cabomba caroliniana	*Myriophyllum aquaticum*
Cardiospermum grandiflorum	*Myriophyllum heterophyllum*
Celastrus orbiculatus	*Nanozostera japonica*
Cortaderia jubata	*Parthenium hysterophorus*
Crassula helmsii	*Pennisetum setaceum*
Delairea odorata	*Persicaria perfoliata*
Ehrharta calycina	*Pistia stratiotes*
Elodea nuttallii	*Pontederia crassipes*
Gunnera tinctoria	*Prosopis juliflora*
Gymnocoronis spilanthoides	*Pueraria montana (var lobata)*
Hakea sericea	*Reynoutria × bohemica*
Heracleum mantegazzianum	*Reynoutria japonica*
Heracleum persicum	*Reynoutria sachalinensis*
Heracleum sosnowskyi	*Rugulopterix okamurae*
Humulus scandens	*Salvinia molesta*
Hydrocotyle ranunculoides	*Triadica sebifera*
Impatiens glandulifera	
ANIMALS	
Acridotheres cristatellus	*Morone americana*
Acridotheres tristis	*Mulinia lateralis*
Alopochen aegyptiacus	*Muntiacus reevesi*
Ameiurus melas	*Myocastor coypus*
Arthurdendyus triangulatus	*Nasua nasua*
Asterias amurensis	*Neogale vison*
Axis axis	*Nyctereutes procyonoides*
Bipalium kewense	*Obama nungara*
Brachyponera chinensis	*Ondatra zibethicus*
Callosciurus erythraeus	*Oxyura jamaicensis*
Callosciurus finlaysonii	*Pacifastacus leniusculus*

Castor canadensis	*Perccottus glenii*
Cervus nipon	*Platydemus manokwari*
Channa argus	*Plotosus lineatus*
Cherax destructor	*Procambarus clarkii*
Cipangopaludina chinensis	*Procambarus virginalis*
Corvus splendens	*Procyon lotor*
Eriocheir sinensis	*Pseudorasbora parva*
Faxonius immunis	*Pycnonotus cafer*
Faxonius limosus	*Pycnonotus jocosus*
Faxonius rusticus	*Sciurus carolinensis*
Faxonius virilis	*Sciurus niger*
Fundulus heteroclitus	*Solenopsis geminata*
Gambusia affinis	*Solenopsis invicta*
Gambusia holbrooki	*Solenopsis richteri*
Herpestes javanicus	*Tamias sibiricus*
Lampropeltis getula	*Threskiornis aethiopicus*
Lepomis gibbosus	*Trachemys scripta*
Limnoperna fortunei	*Vespa mandarinia*
Lithobates catesbeianus	*Vespa velutina nigrithorax*
Marisa cornuarietis	*Wasmannia auropunctata*
Misgurnus anguillicaudatus	*Xenopus laevis*
Misgurnus bipartitus	