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*ACTIVITY A3.4: SITE VISITS TO TRANSFER SUCCESSFUL
POLICY MEASURES/PRACTICES ON IAS PREVENTION AND
MANAGEMENT*



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y Sostenibilidad

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1 EXECUTIVE SUMMARY

The [INVALIS project](#) aims to improve EU territorial policies on biodiversity and environmental protection, by promoting and supporting measures on the prevention, early detection, control and eradication of invasive alien species (IAS) in natural ecosystems. To accomplish this goal, INVALIS participating organisations are summoned to share good practices, transfer lessons learnt and exchange experience on various aspects and dimensions of invasive alien species management that can prove particularly useful for their counterparts in the fight against biological invasions.

Study visits can be an effective way to promote the exchange of experience and practical transfer of know-how among regional authorities working together, whilst enhancing cooperation in research and operational measures. In addition, site visits facilitate the discussion with experts and other local authorities for the exchange of knowledge and expertise on how practical measures, technologies and adequate legislation can provide innovative solutions to emerging global problems. By visiting particular sites across different EU partner countries, project's partners aim to understand and replicate practices and measures that have proven successful. In this context, the [INVALIS project](#) includes the organisation of two site visits – one in Lombardy (Italy) and one in Extremadura (Spain) to transfer experience and knowledge on managing the invasion of alien species from a policy perspective by extracting knowledge from established and successful practices.

This input paper is meant to act as the primary source of knowledge for the capacity building and exchange of experience processes to take place during the interregional study visits, addressing organisational issues and providing the information and knowledge needed for fruitful discussions between participants. Section one defines the scope and objectives of the site visits. Following, the report provides some key facts of the host regions that are considered crucial to understand the current state of play along with the policy context underlying IAS management. These include local geography, current biodiversity status trends and threats as well as spread, distribution, main pathways and economic and environmental impact of invasive alien species (IAS).

Section two provides key information on the sites suggested by hosting organisations for the two site visits, alongside with a detailed description of successful IAS related policy measures adopted in these regions. Next, the report presents legal framework governing IAS management in the EU and the host regions, drawing information from Activity A1.1. of the INVALIS project, namely “Comparative analysis of

territorial policies on IAS management” and Activity A1.4 namely “Good practice guide on invasive alien species management tools”. In addition, this section provides information based on secondary research, on IAS management tools and practices.

Finally, the last part of the report outlines organisational aspects of the two study visits, such as participation and recommended types of session formats from which the organizers can choose from to support the practical process of participants’ participation in site visits. In addition, it provides a series of guidelines for the organization of a ‘virtual’ site visit to compensate for any changes required as a result of the recent COVID-19 pandemic and the corresponding restrictions.

2 SCOPE AND OBJECTIVES OF “INVALIDIS” SITE VISITS

The overarching objective of INVALIDIS site visits, to be organized in Lombardy (IT) and Extremadura (ES), is to bring together elected representatives of regional public administrative structure and members of stakeholders group to facilitate the interregional exchange of experience on shaping effective IAS management policies, strategies and action plans.

More specifically, the objectives of the INVALIDIS site visits are to:

- **Highlight successful IAS management policies**, currently applied in hosting regions, on the control and eradication of invasive species threatening native populations in vulnerable and fragile ecosystems.
- **Inform regional authorities** about the effectiveness of the aforementioned policies in terms of mitigating the negative impact on local biodiversity, decreasing the invasive species populations or preventing new introductions.
- **Identify common challenges and needs**, and set forward shareable solutions to be addressed at the action plans implementation phase.
- **Secure the active involvement of key stakeholders** in consultation and decision making processes, as well as in the development and facilitation of regional action plans.
- **Facilitate the creation of networks between authorities**, stakeholders and other third party representatives for the sharing and diffusing the knowledge accumulated.
- **Draw conclusions** on the ways that current management tools and practices could be further enhanced to increase their effectiveness.
- **Promote good practices and conclusions drawn** to facilitate changes at a broader policy level.

3 STUDY VISIT IN LOMBARDY, ITALY

3.1 Geography

Lombardy is one of the twenty administrative regions of Italy, located in the northwest of Italy and covering an area of roughly 23,844 square kilometres (9,206 sq. mi). The population of Lombardy is around 10 million people, accounting for more than one-sixth of Italy's population. In economic terms, Lombardy produces more than a fifth of Italy's GDP, making it the most populous, wealthiest and most productive region in the Italian peninsula.

Lombardy is also one of the wealthiest regions of northern Italy in terms of biodiversity as it contains more than 240 NATURA 2000 sites covering 15% of its total territory. However, it is also the region with the highest number of invasive species in terrestrial and freshwater environments (e.g. 545 out of a total of 3220 spontaneous vascular species are non-native). This is due not only to the considerable geographical size and heterogeneity of the territory's morphology, but also due to human factors such as increased rates of agriculture, urbanization, industrialization, freight traffic, all of which constitute intense activities of the region leading to significantly impact the presence and geographical distribution of Invasive Alien Species (IAS).

In some instances, IAS have been responsible for severe economic damages to productive activities such as farming, agriculture and the use of forestry and pastoral resources. As such, effective IAS management constitutes a top priority for the specific region of Lombardy.

3.2 Biodiversity status, trends and threats

Among all European countries, Italy has the richest biodiversity meaning the highest number of different species. In particular, in this country there are about half of the plant species and about a third of all species that are currently present in Europe. Additionally, Italy has a significant amount of NATURA sites. More specifically, there are over 245 Natura 2000 sites according to the information on biodiversity of Lombardy (more information can be found here: <http://www.naturachevale.it/en/the-project/the-natura-2000-network/>). These sites extend over 15% of the territory of Lombardy and involve 193 Special Areas of Conservation, 3 Sites of Community Importance and 67 Special Protection Areas. Thus, the threat to biodiversity in the area of Lombardy is a particularly pressing issue as any invasive species populations that are left unattended could have catastrophic results not only for Italy but for the Europe as a whole.

To make matters even more difficult, Lombardy is also a densely populated area. Thus, the conservation of habitats and wild species comes under additional pressure by changes in soil use due to the

development of transport infrastructures (roads, highways, railways, artificial channels, and high-speed trains), climate change and presence of invasive alien species.

The main threats to biodiversity can be summarized as follows:

- Loss of soil and change of its intended due to habitat modification and fragmentation.
- Abandonment of traditional agricultural activities in mountain and sub mountain areas and simplification of agro ecosystems in hilly and plain regions.
- Pollution to environmental media (water, air, soil, acoustic and light pollution).
- Climate change resulting from variations of air pollutant concentrations such as CO₂ and others especially in mountain environments.
- Spread of invasive alien species.
- Indirect disturbance related to hunting pressure.
- Construction of infrastructure in areas of biodiversity interest (MV/HV power lines, wind farms, light systems and large-scale photovoltaic plants).

3.3 Legal framework governing the management of invasive species in Lombardy

In regard to the legislative framework of Lombardy, many of the identified threats are related to the failure to implement in a realistic and systematic way the existing laws on the use of natural resources and assessment procedures, as well as to the lack of adequate rules on the sustainable use of the environment aimed at preventing the depletion of species and deterioration of habitats and landscapes. This is also reflected in the specific case of IAS management where the legal framework governing the management of invasive species has been changed to accommodate and ensure that the European Regulation no. 1143/2014 will be expanded from a regional to a national level.

The European Regulation no. 1143/2014, came into force on 1 January 2015 and has set a series of rules to protect biodiversity and ecosystem services against impacts caused by invasive alien species, with particular reference to those species included in the list of invasive species of Union concern. For these species the EU Regulation has introduced a general restriction on trade, possession, transport and introduction into the wild, and imposes an obligation to immediately notify, control or eradicate these species. Additionally, it calls on EU countries to establish a surveillance and monitoring systems of invasive alien species of Union concern, and to identify the main vectors of accidental introduction of invasive species, adopting at least one action plan to prevent the risk of further introductions. Lastly, regulation 1143/2014 introduces a permit system and derogations from the restrictions.

In the case of Lombardy, the Regulation no.1143/2014 was incorporated as part of the **Legislative Decree 230/2017** (DLg 230/2017 hereafter) “Compliance of the national legislation with the provisions of regulation (EU) no. 1143/2014 of the European Parliament and of the Council of October 22th, 2014” and introduced several measures in order to prevent the introduction and limit the spread of IAS in the region according to the European Regulation. The DLg 230/2017 specifically prohibits the following actions:

- Introduction or transit of IAS in the Italian territory
- Detention
- Rearing and cultivation
- Transport
- Selling or marketing
- Use, assignment free of charge or exchange
- Reproduction or spontaneous growth
- Release into the environment

To ensure compliance to these measures, the Legislative Decree 230/2017 has also introduced the key actors of this process to ensure that measures will be implemented both on a national, regional and local level. More specifically, the Legislative Decree 230/2017 proposes the following key actors:

- **The Italian Ministry of Environment and Protection of the Territory and the Sea (MATTM)** as the national competent authority charged with the relations with the European Commission, the coordination of activities and the issue of permits.
- **The Italian Institute for Environmental Protection and Research (ISPRA)** as the scientific technical body supporting the MATTM for carrying out the planned activities.
- **The Regions and the Autonomous Provinces, and the National Parks**, as the responsible local authorities in monitoring and implementing the eradication and management measures, as well as the restoration of damaged ecosystems.

The Decree also introduces a framework of permits and authorizations, pursuant to articles 8 and 9 of the EU Regulation, and inspections to ensure that the organizations comply with the conditions set out in permits issued. This new authorization process applies in particular to botanical gardens and zoos, which shall require specific authorization for the holding of invasive alien species of Union concern. Research institutions and other entities may also, in special cases, obtain an authorization for the detention of invasive alien species included in the list for research purposes. Compliance to these measures comes

from inspections and controls by the MATTM are planned, with the support of ISPRA, the Regions and the Autonomous Provinces, in order to ensure that the institutions fulfil the obligations and conditions set out in the authorizations issued. The process followed in the case of IAS is as follows:

Once the detection of an IAS is confirmed (through a surveillance system that monitors the presence and spread of IAS species), the DLg 230/2017 establishes the obligation of a timely eradication of its populations. These eradication activities are ordered by the MATTM (Italian Ministry of Environment and Protection of the Territory and the Sea), with the active support of ISPRA, and establish that eradication must be carried out by the Regions and the Autonomous Provinces concerned, or by the National Parks. On a more local level, mayors are also expected to guarantee access to private land for intervention operators when this is necessary to achieve eradication. In short, the process followed, according to DLg 230/2017 covers all different levels and aspects of the identification and eradication of IAS populations in the area of Lombardy and facilitates a coordinated effort between different actors and institutions.

In order to satisfy the requirements of the EU Regulation 1143/2014 and the Italian Decree 230, Lombardy proposes a few strategies against IAS that mainly focus on the early detection, eradication and management of IAS using the triage approach, which focuses on prioritizing resources and man-power in the regions that the threat of IAS is most prominent. By following this stepwise approach, it is possible to define the order of intervention according to the a) characteristics of the invasive species, b) impact on biodiversity and c) capability to quickly disperse in the regional territory. Furthermore, this approach also considers the level of difficulty in the process of eradication and control of the species. Using this method, it is possible to classify IAS according to their level of invasiveness and, as consequence, decide which type of action should be applied in each of the cases (A more detailed discussion on the legislative framework governing IAS management can be found in section 5 of the present document).

In short, the legislative framework (and the necessary processes that accompany it) are already part of the policy agenda, yet barriers still remain, predominantly in relation to their implementation. In terms of these barriers, Activity A1.1 “Comparative analysis on territorial policies in IAS management” has identified that the most important ones are:

- A general lack of public awareness and basic knowledge about IAS.
- Problems in the organization of the early monitoring and alien species alert, mainly due to insufficient training of the involved staff.
- Lack of common legislation between European countries in terms of airport controls.

- Difficulties in enforcing European policy due to a general lack of funding resources in IAS management.

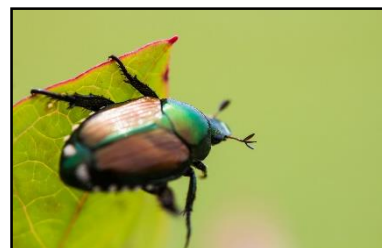
3.4 Biological invasions: Spread, distribution and main pathways

As it was already discussed, Lombardy region has in its territory 36 out of 50 IAS of Union concern, and as such the region is of prime importance for biodiversity. The impact of IAS presence in Lombardy's natural ecosystems has progressively led to the extinction of endemic species and the deterioration of natural habitats. Additionally, IAS have been responsible for severe economic damages to productive activities such as farming, agriculture and the use of forestry and pastoral resources. As a first step towards tackling this issue of IAS, the regional government has drawn up a blacklist of the most damaging invasive alien species detected in Lombardy's natural environments, in an effort to tighten and coordinate controls to prevent the spreading of these species and formulate a coordinated response to the threat. The main threats identified include plant species such as black cherry, red oak, American pokeweed and orange eye butterfly bush, which are a threat for the conservation of protected habitats and for ecosystem services. Other potent threats identified are: *Elodea nuttallii*, *Lagarosiphon major*, *Saururus cernuus*, *Reynoutria spp.*, *Persicaria filiformis*, *Heracleum mantegazzianum*, *Asclepias syriaca* and *Myriophyllum aquaticum*, *Popillia japonica*, *American squirrel*.

For this specific study visit, the focus will be on the strategies and measures developed to combat the presence and dispersion of two specific species: a) *Popillia Japonica* and b) *American grey squirrel*. Both species constitute a high threat for local biodiversity as they can significantly damage the local fauna and flora. In addition, the response in terms of management demonstrates high transferability potential, and can facilitate further diffusion of knowledge on the strategies to combat the increasing threat of IAS.

a) *Popillia Japonica*

The focus of the study visit is on one of the most important threats for the Lombardy region, namely *Popillia japonica*, commonly known as “Japanese beetle”, a species of scarab beetle native to East Asia. The Japanese beetle is an invasive destructive pest that primarily targets turf, landscape, and ornamental plants. It was accidentally introduced to



eastern North America in about 1911, and since then has become invasive in most of the eastern states and in the southern parts of Ontario, Canada. The first incursion in Europe occurred in autumn 2014, when large numbers of adults were detected in Lombardy Region, near Milan, Italy. From 2014 and onwards, the Japanese beetle has become one of the most potent IAS threats in the region of Lombardy, having thus created the need for a coordinated response as it is associated with serious impacts on native biota (especially plants of high environmental value) and destruction of agricultural crops leading to significant impact on both biodiversity and local economy. Part of this response has been the framework developed for monitoring the beetles’ population, devised to counter the rapid reproduction and high dispersal of *Popillia japonica* in the Lombardy region.

The framework comprises of three surveillance strategies and procedures: **a) systems and structures for the detection and monitoring of larval specimens of *Popillia japonica*, b) systems and structures for the detection and monitoring of adult specimens of *Popillia japonica*, and c) risk analysis and vulnerability assessment of surrounding sites currently uninfected by *Popillia japonica*.**

The first site of the study visit (in Lombardy) will focus on the results of these surveillance strategies and procedures in the specific area of Ticino Park, sharing the good practices implemented in this territorial context in an attempt to transfer them to any other regions facing similar challenges due to presence and dispersion of IAS.

b) American grey squirrel

The second IAS that is considered as one of the most important threats of Lombardy's biodiversity is the American grey squirrel. More specifically, during the past years a strong decrease of the red squirrel population has been observed, a native species of central and northern Europe, due to the presence of the American grey squirrel that has invaded the lands previously occupied by the red squirrel.

The grey squirrel is a species with a similar to the European red squirrel biology, and was deliberately introduced in Europe (mainly for economic purposes); it quickly adapted to local conditions, and now represents a serious danger for the local populations of the red squirrel. More specifically, the two species are in a high competition over food resources and space (habitat) as they share a lot of similar characteristics. This essentially means that only the most resilient and strongest one will survive the competition (when co-existing). In addition to the threat for local populations of squirrels, the grey squirrel is also responsible for the extensive damage to trees through bark-stripping, which affects re-growth and natural tree reproduction in commercial plantations and other forest ecosystems.



The second site of the study visit in Lombardy will examine the results of the projects implemented in the Lombardy region and the ways these have contributed to the control of IAS. More specifically, the second site of the study visit, in the context of the INVALIS project, will focus on the economic and environmental impact of the American grey squirrel in the area of Lombardy from the presence of the American grey squirrel.

3.5 Site visit 1: Ticino Park

The Park of the Ticino follows the course of the River Ticino, and covers an area of 91,410 hectares in Lombardy and 6,561 hectares in Piedmont. The Park boasts a striking biodiversity; in terms of variety of its environments, including water courses, conifer, moorland, and wetlands, has permitted a grand total of 4,932 species of fauna, flora and mushrooms to find their habitat within its confines. For instance, Ticino Park includes a wide range of flora comprising many different species of flower – mallow, toothed orchid and violets, to name but a few – and trees such as oak, hazel, hawthorn, mulberry and poplar.



The fauna of the park is equally rich and varied, both in the water and on the land. More specifically, there is an abundance of water birds (e.g. purple heron, white stork, mallard) and birds of prey like the sparrow hawk and the peregrine falcon, as well as nocturnal species like the tawny owl and long-eared owl. Mammals that may be glimpsed include squirrels, wild rabbits, foxes and stone martens. Moths and butterflies are also abundant. Lastly, the River Ticino is home to amphibians like frogs and snakes and fish such as bleak, eel, carp, chub, trout, whitefish and perch. More information can be found here: <https://www.ticino.ch/en/travel-inspirations/parks-gardens.html>

The Lombardy Region in association with the Ticino Park launched in 2012 a surveillance program for identifying the introduction of *Popillia japonica* (Japanese beetle) and monitoring the distribution and spread of already established populations in natural ecosystems. As such, Ticino Park can be considered as a site of prime importance for the present study visit as it will be particularly informative on the successful implemented practices for the monitoring of IAS populations that are present in the region of Lombardy, as well as the ways it can be transferred in other European countries that face similar challenges due to the presence and expansion of IAS.

3.6 Site visit 2: Lake Maggiore

Lake Maggiore, is 64.37 km (40 mi) long, and 3 to 5 km (2 to 3 mi) wide. Lake Maggiore is the longest Italian lake. Its mean height above the sea level is 193 metres; a deep lake, its bottom is almost everywhere below sea-level: at its deepest, 179 metres below. In addition, Lake Maggiore has a diversified geomorphological character as the upper end is completely alpine in character, the middle region lies between hills of gentle slopes, and the lower end advances to the verge of the plain of Lombardy. Lake Maggiore is the most westerly of the three great southern pre-alpine lakes, the others being Lake Como and Lake Garda. More information can be found here: <https://www.ascona-locarno.com/en/>



The study visit in this site will examine the results of the Decision Support System (DSS) for the control and management of the American grey squirrel in northern Italy, implemented from 2010 to 2015 in the context of the LIFE project “EC-SQUARE” (www.rossoscoiattolo.eu).

Broadly speaking, the primary goal of EC-SQUARE project was to elaborate on a decision support system for the identification of the most efficient management strategy in each region, and to elaborate the most appropriate methods and guidelines for the implementation of measures for the grey squirrel’s control and eradication. More specifically the project was designed to:

- Carry out conservation actions aimed to improve and restore natural habitats quality, increase food availability, and prevent forest fragmentation.
- Re-introduce red squirrels on selected sites to establish a minimum viable population, following the removal of grey squirrels.
- Limit or even forbid the trading of grey squirrels in the country.
- Increase public awareness on the threats posed by invasive species to natural ecosystems and biodiversity, and different aspects of our social and economic life.

Examining the results of these actions, developed in the context of the EC-SQUARE project, will facilitate a fruitful discussion on the implementation of the relevant measures for the control and eradication of the IAS population.

4 STUDY VISIT IN EXTREMADURA, SPAIN

4.1 Geography

Extremadura is a semi-autonomous region located in the central west part of the Iberian Peninsula in Spain. The region is an important area for wildlife as it holds a rich natural and cultural heritage with significant levels of biological diversity. More specifically, there are more than 60 nature protected areas, covering almost 30% of the region's total territory. The region plays a significant role in the conservation of some of the most endangered bird species in Europe (e.g. Iberian imperial eagle, black stork) as well as their natural habitats. In addition, Extremadura hosts one of the last refuges for vulnerable species native to Mediterranean woodlands (i.e. Tagus International Nature Reserve).

4.2 Biodiversity status, trends and threats

The presence of IAS has been a growing concern for the region of Extremadura as more than 30% of its area has been declared as Natura 2000 sites (Mutafoğlu et al., 2017). In this context, biological invasions constitute an important threat to biodiversity along with local community's major concerns on the damages they have caused to key economic sectors such as agriculture and fisheries.

As far as the economy is concerned, the approval of RD 630/2013 has diminished the negative impact caused by bio-invasions. This has allowed a significant reduction in the cost of control and eradication work, the damages caused by hydroelectric and agricultural production, irrigation infrastructures and/or water purification, significantly contributing to the reduction of IAS impact on ecosystem services. Yet, the attempts to effectively control all the IAS present in the region are still on a pre-mature level as these lack the necessary legislative framework, commitment from authorities, and funding from European sources. Taking these factors into account, the presence and dispersion of IAS constitutes the most important threat to biodiversity in the area of Extremadura.

4.3 Legal framework governing the management of invasive species in Extremadura

As discussed earlier, the EU Regulation no. 1143/2014 has introduced a general restriction on the trade, possession, transport and introduction of IAS into the wild, and imposes an obligation to immediately notify, control or eradicate these species. Additionally, it calls on EU countries to establish a surveillance system for the monitoring of invasive alien species of Union concern, and to identify the main vectors of accidental introduction of invasive species, adopting at least one action plan to prevent the risk of further introductions. Regulation 1143/2014 also introduces a permit system and derogations from the restrictions in particular cases. However, the general European policy framework is still not completely unified and remains spread across many similar yet disjointed pieces of legislation. This creates confusion about which species and pathways should be addressed by which instrument, and ultimately means that many invasive species and pathways are not addressed (Shine, 2010). In response, several programs have been established to identify gaps in the current framework and to suggest solutions. One example is the IMPASSE program that has reviewed the risks of introduction of invasive fish species and fish diseases through aquaculture. A more detailed discussion on the legislative framework governing IAS management can be found in section 5 of the present document and the link here:

http://ec.europa.eu/research/fp6/ssp/impasse_en.htm

The problems faced in the level of European policy are also reflected on the national level. More specifically, in the case of Spain, the regulatory framework consists of the Royal Decree 1628/2011, its update (RD 630/2013), and its implementation, all of which have served as the foundational regulations for the subsequent drafting of European Regulation 1143/2014. The Royal Decree 630/2013 essentially regulates the Spanish Catalogue of Invasive Alien Species, in an attempt to establish a unitary framework that addresses:

- The characteristics, contents, criteria and procedures for the inclusion or exclusion of species in the Catalogue of IAS.
- The necessary measures to prevent the introduction of IAS and for their control and possible eradication.
- The characteristics and content of management, control and possible eradication strategies, against invasive alien species.
- According to Article 61.3 of Law 42/2007 of December 13, it also involves the general prohibition of possession, transportation, traffic and trade of live or dead, their remains or propagules, including foreign trade.

The application of Royal Decree 630/2013 in Extremadura has produced significant results in term of avoiding new IAS introductions and further establishment of existing ones. The most prominent of these were the reduction by more than 60% of the number of ads of IAS illegal sale on the internet, the installation of systems for boats cleaning by the Hydrographic Confederations of Guadiana and Tajo in Extremadura, and the establishment of early detection systems against zebra mussels in several are of high risk.

4.4 Biological invasions: Spread, distribution and main pathways

As already discussed, the region of Extremadura is particularly important for biodiversity, since it contains a large amount of territory that has been declared as Natura 2000 sites. With the current level of implementation of the legislative frameworks and directives mentioned in the previous section, the most important threats in biodiversity were identified and included in the List of IAS



in the Autonomous Community of Extremadura (and are also presented in the Spanish Catalogue of Invasive Alien Species). These species are the following: *Eichhornia crassipes*, *Ludwigia peploides*, *Myriophyllum aquaticum*, *Pacifastacus leniusculus*, *Procambarus clarkii*, *Pseudorasbora parva*, *Trachemys scripta*, *Vespa velutina sub. nigrithorax*, *Alopochen aegyptiaca* and *Dreissena polymorpha* (image on the top right).

For this particular report, the study visit will focus on one of the most potent biological dangers in the region, namely the **zebra mussel**. More specifically, the zebra mussel (*Dreissena polymorpha*) is an invasive species that has proliferated in rivers and lakes in Spain in recent decades. It firstly arrived from the basins of the Black and Caspian seas, and is a serious environmental and socioeconomic threat for the local communities, since it significantly contributes to the extinction of the local mussel populations that were one of the main revenues of income for the region.

The reason for this proliferation is that, originally, zebra mussels have been introduced to local rivers and lakes to increase water clarity in some aquatic environments that generated income as tourist attractions. To increase this clarity of water, thus make the tourist site more attractive, the local population decided to introduce zebra mussels in the local ecosystem to act as filter feeders.

To survive, zebra mussels attach themselves to rocks, logs, and the hulls of ships. The threat to native populations is extensive with many native mollusk species being at risk of becoming extinct or endangered due to the presence and antagonism of zebra mussels. In particular, even slow-moving crayfish have been found covered with zebra mussels.

In terms of biodiversity, zebra mussels also alter substantially the light and nutrient environment of marine ecosystems by filtering contaminants out of the water. Still, the dangerous substances they filter out of the water are concentrated on their bodies and passed on their predators (both fish and birds) and subsequently transferred to consumers as the result of the food chain. Finally, zebra mussels affect the local infrastructure as they clog water intake pipes. As such, they constitute a multifaceted threat that have to be holistically addressed through diversified action such as legislative frameworks and implemented actions. An example of such action takes place in the Guadiana Basin one of the recommended sites for the present study visit, where it demonstrates how multiple aspects have to be simultaneously addressed in order to combat the growing presence of IAS populations.

4.5 Site visit 1: Guadiana Basin

Guadiana Basin is located in the southwestern quadrant of the Iberian Peninsula, occupying a total area of 60,256 covering both regions of Portugal and Spain. Guadiana Basin is a major claimant of irrigation water, which accentuates the weaknesses of a highly irregular flow regime. In particular, the watershed affects three autonomous territories: Lamanche Castilla, Andalusia, and Extremadura.

One of the key issues identified in this region is the contamination of the water irrigation system by zebra mussels. As it was already discussed in the previous section (Section 4.4), zebra mussels were introduced to irrigation systems as they act as a natural water filter. However, it quickly became apparent that such a benefit is also accompanied by a loss in biodiversity. To halt this loss, caused by invasive



zebra mussels, the Guadiana Hydrographic Confederation and Tagus Hydrographic Confederation, in association with the General Directorate for the environment, designated a risk assessment and surveillance framework to prevent the proliferation of IAS population. To this end, a framework, developed in the context of the LIFE project “INVASEP”, aimed to achieve the following goals:

- Determine risk areas for the introduction of zebra mussels in the Guadiana and Tagus basins.
- Deploy cleaning and disinfection systems to prevent the introduction and spread of zebra mussels.
- Develop an early detection system.
- Inform and change the perception of local societies on the problem of biological invasions.
- Achieve effective cooperation among all bodies directly or indirectly affected by invasive species.

The framework consists of 4 components: risk assessment, eradication and control measures, early detection system and awareness raising. These activities have substantially contributed to **a) maintaining zebra mussel-free basins, b) causing an attitude change among recreational fisheries and water sport clubs, and c) raising public awareness on the impact of zebra mussels and other invasive species reported in the area.** To conclude, given that zebra mussels is an invasive species that have been only witnessed in rivers and lakes in Spain, the framework's potential to be directly replicated in other EU regions might not be very high, as all disinfection and monitoring systems are species specific. However, the philosophy behind setting up a risk assessment and surveillance framework for preventing the introduction and spread of an invasive species can work for all species and ecosystems. This means that the example drawn from this site can provide a series of guidelines that could be applicable in other regions that face similar challenges. Thus, visiting this specific site will facilitate a fruitful discussion between partners and other third party representatives on the ways similar frameworks can be developed and/or applied in other European regions.

4.6 Site visit 2: SEPRONA regional offices



The second site visit in the EXTRAMADURA region will be to the regional offices of the Nature Protection Service (SEPRONA). SEPRONA, in association with regional authorities, is the body responsible for controlling the occurrence and trading of invasive alien species. As such, SEPRONA has been charged with the regular online monitoring, particularly from 2014 onwards, of online shops and e-commerce platforms based on Extremadura Region, to explore illegal online trade of invasive alien species. SEPRONA's role has been to detect advertisements for illegal alien species on the web, contact with online retailers to let them know about restrictions on trading these species, and ask them to withdraw such advertisements from all platforms used. Unless retailers comply with warnings, SEPRONA in conjunction with competent regional authorities undertake to remove/delete such advertisements, and impose sanctions on offenders. In addition, SEPRONA proceeded with blocking code words used to describe illegal species and related products. Overall, SEPRONA's research into the online retail community reveals that the trading of wildlife and alien species has shifted away from online retailers to social media platforms.

The contribution of SEPRONA expands well beyond digital space. In fact, SEPRONA successfully established a surveillance framework to prevent the introduction of non-indigenous species, primarily focusing on monitoring and regulating the trade market. To increase the likelihood of reaching the goal of limiting illegal trade, SEPRONA and regional authorities involved different key stakeholders in surveillance activities including pet retailers (pet stores, tree plant nurseries, plant shops), environmental agencies, civil society, police and trading authorities.

The surveillance system implemented is made up of three functions: **a) informing retailers, b) inspections on physical shops, and c) monitoring online trade**. The results of this system appear promising. More specifically, from 2014 till 2018, regional authorities inspected 72 pet stores and 57 tree plant nurseries and garden centres across the Extremadura Region. No evidence for illegal trading of alien species were recorded during on-site investigations. However, the following alien species were collected from public green areas:

- 165 Florida Turtles (*Trachemy scripta*)
- 1 Monk parakeet (*Myiopsitta monachus*)
- 12 Common waxbill (*Estrilda astrild*)
- 3 Chipmunks (*Tamias sibiricus*)

Finally, the involvement of SEPRONA had also an impact on the number of online advertisements for illegal alien species, as their numbers fell dramatically following regular inspections and the blocking of code words that could be used to track and trade illegal species online.

To conclude, the practices implemented by SEPRONA present high transferability potential and effectiveness, as the illegal trading of exotic pet species is a common source of alien species' presence in Europe and a growing threat to native biodiversity. Establishing a surveillance framework for monitoring trade activity does not incur substantial investment costs, but requires commitment, cooperation and active involvement of all relevant bodies. In addition, a visit in their offices will facilitate an exchange of knowledge and experience regarding the problems SEPRONA faces in effective IAS management. As such, a visit in the regional offices of SEPRONA will provide with valuable insights on how a coordinated surveillance network can assist in the decrease of illegal trading of exotic species and will also shed light on the problems and barriers they face in their mission.

5 THEMATIC BACKGROUND

5.1 Enabling regulatory and policy measures for IAS management

The core framework that enables regulatory and policy measures for IAS management is the EU Regulation 1143/2014 on Invasive Alien Species, a European set of policy measures that aims to assess and address the presence and dispersion of IAS in Europe. Regulation (EU) 1143/2014 on invasive alien species (the IAS Regulation) entered into force on 1 January 2015, fulfilling Action 16 of Target 5 of the EU 2020 Biodiversity Strategy, as well as Aichi Target 9 of the Strategic Plan for Biodiversity 2011-2020 under the Convention of Biological Diversity.

The core tool of the IAS Regulation is the list of Invasive Alien Species of Union concern (also known as the Union list). For information about the species currently included on this list, click [here](#). The IAS Regulation also provides for a set of measures to be taken across the EU in relation to invasive alien species included on the Union list. The hierarchical approach to combatting IAS and the commission is assisted by a number of bodies in the implementation of the IAS Regulation. These bodies are:

- The **Committee on IAS** that assists the Commission in the preparation of implementing acts foreseen by the IAS Regulation, mainly the adoption and updates of the list of invasive alien species of Union concern. More information on its activities can be found [here](#).
- The **Invasive Alien Species Expert Group (IASEG)** that supports the implementation of the IAS Regulation beyond the Commission's implementing powers. It consists of representatives of all Member States. More information on its activities can be found [here](#).
- The **Scientific Forum on IAS** that provides advice on scientific questions related to the implementation of the IAS Regulation. It consists of representatives of the scientific community appointed by the Member States. More information on its activities can be found [here](#).
- The **Working Group on IAS** assists the Commission and facilitates coordination. It consists of interested stakeholders and Member States representatives. More information on its activities can be found [here](#).

Activity A1.1 "Comparative analysis of territorial policies on IAS management" of the INVALIDIS project examined the territorial policies of partners countries in order to ensure that the European legislation discussed above is enforced, policies, protocols and procedures are in place and operations towards the

effective management of IAS are sufficiently implemented by Project Partners. More specifically, Activity A1.1 examined cases of each partner's country to facilitate:

- **The identification and prioritization of areas needing action within each country's jurisdiction.**
- **Designation of a tailor made IAS strategy and adequate planning programme, based on the already existing legislative principles and regulatory frameworks of IAS.**
- **Determination of how to actively coordinate with other countries and regional organizations and benefit from shared experiences and assistance.**

The results of activity A1.1 highlighted that the management of IAS requires a diversified response with many different entities involved in the battle against such species. In particular, Activity A1.1 postulated that adequate consistent legislation, agreed protocols, general compliance, effective enforcement and access to funding are all vital components of harmonized, operational and holistic action. According to the conclusions of the report, the key components for further stimulating successful IAS management activities are divided in four thematic area. These are:

- Conducive environmental laws and regulations
- Cross-departmental collaborations and synergies with local community
- Awareness raising campaigns
- Effective IAS management and tools

5.1.1 Conducive environmental laws and regulations

In terms of the legislative framework that currently governs IAS management, Activity A1.1 suggests to:

- **Review** environmental, fisheries, agricultural, aqua-cultural, forestry, horticultural and bio-security **legislation** in each Member State's territory to determine their capability and competence for protecting biodiversity, economies and health against invasive species, identifying gaps, inconsistencies and conflicts. It also suggests reviewing existing national and regional policies and procedures on a more regular basis to manage more effectively the trade, movement, holding, release into the environment, establishment and management of invasive species.
- **Improve, disseminate and adopt** practical legislative guidelines covering all activities affecting IAS management. The latter may address export-import, trade, transport, construction, military activities, emergency reflexes, scientific research, aquaculture, horticulture, agriculture, tourism, surveillance, risk analysis, biocontrol, eradication, declaration of noxious pests etc.

- **Ensure the full participation by all stakeholders**, including local communities, in the development and implementation of legislation, so as to co-develop a framework that will be beneficial in all aspects and for all interested parties.
- **Develop mechanisms** to improve compliance with and enforcement of IAS legislation and endorse the establishment of criminal/administrative sanctions and appropriate penalties, consistent with national policy or legislation, for cases where illegal IAS introductions are identified, or movement or holding of IAS is recorded.
- **Implement policies** to establish surveillance, monitoring and information exchange networks. Promote standardized collection of data on the distribution and abundance of IAS (Pyšek et al. 2014). This includes the active involvement of citizens to significantly improve the efficacy of surveillance and monitoring of IAS, as well as other databases and online mobile applications.

5.1.2 Cross-departmental collaboration and synergies with local community

Activity A1.1 also provides with a series of recommendations on how to increase the impact of measures for the IAS management by creating cross-departmental collaborations and synergies with the local community. In particular, the report makes the following suggestions. These involve:

- **Lobbying** with institutions and decision-makers to support stringent policies.
- **Encouraging** the establishment of a national authority, or a similar mechanism (e.g. network, specialist group) in order to coordinate the efforts of agencies and governments responsible for the policies regulating the management of IAS.
- **Intensifying** the collaboration with equivalent national focal points for relevant instruments and organizations in order to further develop, advance and implement national and regional IAS strategies and strengthen the responsiveness systems. Examples of such instruments and organizations include CBD, GISP, Ramsar, CMS, UNESCO Man and the Biosphere Programme, IMO, IPPC / EPPO etc.

5.1.3 Awareness raising campaigns

The report of Activity A1.1 also highlights the importance of engaging with the public in an attempt to raise awareness and promote, encourage and motivate audiences as concerns the importance of efficient IAS management. In particular, the report highlights the pivotal role of relevant awareness raising campaigns and the need for support for businesses, local and regional organizations to engage the public into actions

that could contribute significantly to decreasing the threat of IAS. According to the research in the context of activity A1.1, the necessary steps required are as follows:

- Development of public awareness campaigns to support IAS management, including information sharing and coordination so as to circumvent ambiguity and maximize efficiency.
- Utilization of adequate pilot projects on IAS with high priority or disturbing main native species, as a basis for raising public awareness, investment in rapid response, management systems and building capacity through practice.
- Engagement of key stakeholders, communities and neighbors in creating solutions to the problem, by linking IAS strategies wherever possible to integrated development programs (e.g. programs focusing on poverty alleviation measures or sustainable housing).
- Capacity building of local communities and groups to build competence and local practices of IAS management measures in their territories.
- Diffusion of knowledge with other entities via documentation, staff exchanges, social media campaigns, public hearings.

5.2 Categories of effective IAS management practices and tools

The report from Activity A1.4 “Good practice guide on invasive alien species management tools” presented the main categories of management practices and tools typically employed by invasive species practitioners and policy makers in the battle against biological invasions. The focal point of these practices and tools was mainly on information systems and registries that can be used to increase awareness on biological invasions and foster effective IAS management policies. Such practices and tools can essentially:

1. Improve the ability to track areas’ invasion history (**species databases and inventories**)
2. Assess the risks and impacts of incursions (**risk assessment frameworks**)
3. Improve the detection of new arrivals and take prevention measures at source (**surveillance systems**)
4. Report sightings and track spatial distribution (**reporting and monitoring tools**)
5. Coordinate management and prevention efforts (**expert networks**)

Activity A1.4 “Good practice guide on invasive alien species management tools” identified such 15 cases that practices and tools were successfully implemented; an overview of the cases can be found in table 1.

Table 1. Summary of good practices

#	COUNTRY	TITLE	AIMS
1	North and Central Europe	European Network on Invasive Alien Species	The network was to provide an array of tools for implementing and making a precautionary approach.
2	EU	European Alien Species Information Network	The network aimed at the recognition of the increasing serious threats posed by biological invasions for natural ecosystems and local communities' social and economic fabric.
3	International	Invasive Species Specialist Group	The Group's strategic mission was to minimise the threats posed by biological invasions to natural ecosystems and native biodiversity by increasing public awareness on invasive alien species,
4	Mediterranean	MedMIS platform	The MedMIS platform is an online information system for keeping track of invasive alien species in Marine Protected Areas (MPAs) across the Mediterranean Sea.
5	Italy	Decision Support System for American grey squirrel	The project arose from the need to preserve the European red squirrel, an endangered native species in North and Central European countries.
6	Greece	Ellenic Network on Aquatic Invasive Species	ELNAIS has developed an online information system to collect and report spatial information on the distribution of Aquatic Alien Species in Greek waters.
7	France	Corsica Alien Network	The purpose of this network is to detect as early as possible any new arrival of alien invasive species along the coasts of Corsica, and monitor their establishment and distribution.
8	Romania	IAS early detection and monitoring system in Constanta	The mission was to establish a system to facilitate the early detection and monitoring of invasive alien species in the County of Constanta.
9	Portugal	"Invasoras" platform	Its mission is to raise awareness on the problem of biological invasions in Portugal, educating citizens, managers, practitioners and scientific personnel.
10	Spain	Risk assessment & surveillance system for zebra mussel	The framework consists of 4 components risk assessment, eradication and control measures, early detection system and awareness raising.
11	Italy	Surveillance Framework for <i>Popillia japonica</i>	A surveillance program for identifying the introduction of <i>Popillia japonica</i> (Japanese beetle) and monitoring the distribution and spread of already established populations in natural ecosystems.
12	Greece	"Is it alien to you? Share it"	Recording of the presence and distribution of alien species in the Greek seas, as well as to inform public opinion on the consequences of biological invasions to native biodiversity and sea-based economic activities (fisheries, aquaculture).
13	Spain	Surveillance System for IAS trade in Extremadura	The surveillance system seeks to a) to inform and monitor economic operators (e.g. pet stores, tree plant nurseries, plant shops) who may act as vectors of exotic species' incursions.
14	EU	"Invasive Alien Species in Europe" mobile application	A smartphone application that acts as a database of Invasive Alien Species.

15	Latvia	Volunteering network “Do for Nature”	The initiative seeks to create synergies between public authorities, environmental organisations, volunteers and local communities and set forward a participatory and coordinated approach to IAS management.
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In addition to these 15 best practices, the present report also presents below three additional cases of successful IAS management from Italy, which were implemented in the context of other projects. These are:

- Eradication of invasive alien flora and fauna components and protection of species and habitats in the Tuscan Archipelago (Eradicazione di componenti floro-faunistiche aliene invasive e tutela di specie e habitat nell’Arcipelago Toscano).
- LIFE STOPVESPA - Spatial containment of Vespa velutina in Italy and establishment of an early warning and Rapid Response System. More informa
- LAMPROPELTIS - Control of the invasive alien species Lampropeltis getula californiae on the island of Gran Canaria.

1) Eradication of invasive alien flora and fauna components and protection of species and habitats in the Tuscan Archipelago (Eradicazione di componenti floro-faunistiche aliene invasive e tutela di specie e habitat nell’Arcipelago Toscano)

Target species Rattus rattus, Ailanthus altissima, Carpobrotus spp., Acacia saligna, Acacia pycnantha, Senecio angulatus.

Background and aims: The project focused on the eradication in two specific islands of the Tuscan Archipelago: Montecristo and Pianosa. On Montecristo the black rat was present, being a threat to many species of birds and other vertebrates: Puffinus yelkouan, Caprimulgus europaeus, Euleptes europaea. Ailanthus trees, introduced in the 19th century and had also a negative impact on many other habitats even some bird species. The island, inhabited only by its wardens, is a nature reserve far from the mainland and it is only rarely visited by excursionists. In Pianosa, the various invasive plant species, introduced when the island was a prison and their expansion over the years started to become threatening.

Results and Lessons Learnt: On Montecristo, the operation involved the eradication of more than a single species at the same time: R. rattus and A. altissima as both were a threat to the animal stocks. The rat

operation was marked by a high level of technical innovation for the European continent, due to the use of specific software and equipment for the aerial distribution of the baits. In addition, the lessons learnt from the execution of this operation were useful for planning the eradication of *R. rattus* in Tavolara Island (Sardinia, Italy).

Further information on the project can be found [here](#).

2) *LIFE STOPVESPA - Spatial containment of Vespa velutina in Italy and establishment of an early warning and Rapid Response System*

Target species: *Vespa velutina nigrithorax*.

Background and aims: The yellow-legged hornet *Vespa velutina* is an invasive alien species (IAS) introduced in France in 2004 from Asia. The hornet has colonized many European countries and is still present in Italy (Bertolino, 2016, Milanesio, 2014). *V. velutina* preys on honeybees and wild bees, so the species is a threat to biodiversity and pollination services, produces economic damages on beekeeping and generates concern among citizens, due to the nests of great size often built in urban areas. As a result of these dangers and threats, *V. velutina* is classified as an IAS of union concern (Regulation EU 1143/2014).

Results and Lessons learnt: The strategy allowed to sample 480 nests in Liguria region in 2016, 84% of these nests have been removed by LIFE STOPVESPA. Moreover, this activity has prevented the predation towards many honeybee and wild bees' species. A specific tool of this operation was the harmonic radar, able to track the hornets for at least 150 m and detect their nests. However, the most important results were not in terms of technological tools but in relation to the involvement of local actors. More specifically, the beekeepers were the primary actors and subjects directly concerned by the spread of *V. velutina*, widespread in the territory and able to early detect this species. Therefore, they actively contributed to the project through their knowledge and expertise. Furthermore it facilitated a change in the policy level by highlighting the need collaboration between authorities and local actors in order to maintain acceptable the level of costs-benefits.

Further information on the project can be found [here](#).

3) *LAMPROPELTIS - Control of the invasive alien species *Lampropeltis getula californiae* on the island of Gran Canaria*

Target species: *Lampropeltis californiae*. Sinonim: *Lampropeltis getula californiae*.

Background and Aims: The project targeted the island of Gran Canaria and aimed to eradicate a species of snakes that were not part of the native fauna. More specifically, the main objective was to reduce the density and abundance of the California kingsnake, *Lampropeltis californiae*, and minimize their impact on the island's biodiversity, particularly on the species they mainly prey on, such as *Gallotia stehlini*, *Chalcides sexlineatus*, both exclusive species of Gran Canaria, and *Tarentola boetgeri*. The project's impact has been reflected on over 110 news articles, over 15 radio and TV interviews, both regional and nation-wide. By the end of the LIFE project, a team of 28 professional was established with participating countries from all over the world (i.e. United States, Sweden, Hungary, Australia, Denmark, Portugal, Italia, etc.) Lastly, information on the project was also requested from Spain, particularly for regions who have similar problems or concerns such as Ibiza, Valencia and Extremadura.

Results and Lessons learnt: The project concluded that the creation of an Early Warning System for invasive species should be a priority for the public administrations, as the best strategy to avoid, prevent and act quickly in IAS introductions. Additionally, the project highlighted the participation, awareness and implication of the local population as essential for the success of the system and the fight against invasive species. Lastly, the synergy between technology and citizens involvement was also highlighted as the inclusion of smartphones applications and 1-1-2 emergency phone number could significantly increase effectiveness.

In conclusion, the cases presented as part of Activity A1.1 and other exemplary cases from Spain and Italy highlight the need for improvements in relation to practices and tools for the effective management of IAS populations. These are presented in the form of recommendations and include:

- The development of model technical protocols and procedures, enabling countries to use best practice in further developing or modifying their internal procedures.
- Implementation and prioritization of site-based prevention actions. In particular, responsible attitude by private individuals and industries should be encouraged. Furthermore IAS management could comprise the on-going assessment of site-specific activities and vectors responsible of IAS entries, and developing policies and measures to lessen the risk of potential future invasions.

- Staff capacity development for all aspects of IAS management. In particular the report (A1.4) highlights that acknowledged and well trained staff is vital for effective IAS management. Therefore providing training could assist in maximizing adequate personnel that will further contribute in the communication of IAS issues to the public.
- Set up rapid detection and prompt response framework to enable more effective early detection and rapid response system (by including species identification, risk assessment, information sharing, and selection and enforcement of actions).
- Contingency plans, including training on management alternatives, and possibly the establishment of dedicated task forces (created either in protected areas or regionally).

Development and introduction of procedures to deliver any available information on a species' invasive behaviour (or the invasive potential of a species) to neighbouring countries, trading associates and countries with analogous ecosystems and information regarding histories of invasion.

Further information on the project can be found [here](#).

5.2.1 Species databases and inventories

Broadly speaking, a database is a collection of data/information that is organised so that users can easily access, manipulate and update content. Invasive Alien Species databases are searchable sources of information about species that are non-native in natural environments and adversely impact biodiversity. The scope of these databases differ; for example, some of these databases may cover specific taxonomic groups (group specific) or have a more comprehensive scope addressing different taxonomic groups from micro-organisms to flora and fauna. Other invasive species databases may be site specific covering a given natural ecosystem (e.g. a forest or a marine protected area) or have a broader geographical focus to cover an entire country or continent (INVALIDIS, A1.4). Examples of successful IAS databases include:

- **MedMIS** (More information [here](#))
- **Is it alien to you? Share it!** (More information [here](#))

The overarching purpose of such databases is to track and keep record of the introduction and spread of invasive species in natural ecosystems so as to facilitate effective prevention and management activities deriving from scientific knowledge and validated data. The use of such a system is of paramount importance as it guides the capacity to respond to the biological invasions. This is because the capacity to respond to the prospect of biological invasions largely depends on the availability of accurate and updated information, easily accessible at the appropriate scale that can provide with a sufficient amount of information on IAS leading to a coordinated response.

Another useful function of this database is that it can track the history of the invasive species. More specifically, species databases provide users (that may be policy makers, managing authorities, scientists) with the opportunity to see if a particular organism has any records of invasiveness, the scientific names and characteristics of alien species that have been introduced and established in a given geographical area, their documented or expected impact on biodiversity and ecosystem services, and possibly the different points, pathways and vectors through which they entered in natural ecosystems.

As a whole, these databases contain invaluable information that can facilitate the implementation of appropriate measures and practices for the management of IAS populations and is considered as a crucial tool to the fight against biological invasions.

5.2.2 Risk assessment frameworks

An additional measure for addressing the problem of biological invasions is to analyse the factors that affect the introduction, establishment and spread of invasive species, identify potential risks at an early stage, and suggest technically and financially justified measures to mitigate these risks. This is what a risk assessment is particularly useful for, namely to estimate the probability and severity of an undesired event or hazard (e.g. biological invasions) based on an analysis on the influential factors, whilst considering measures to mitigate the risk. Risk assessment for invasive species is generally carried out to a) evaluate the likelihood of introduction of invasive species in natural ecosystems, b) gain insights on the main pathways and conveyances prior to establishment to guide decisions on prevention measures, and c) support decision making concerning the allocation of resources for the control or/and eradication of established populations including actions to alleviate impact on environment or human health.

A risk assessment framework can be particularly useful in a number of different ways. For example, one way to predict and prevent the introduction of unwanted alien species is to study invasiveness records of these species somewhere else (more especially in neighbouring areas) and assess the risk to enter new lands or environments (since biological invasions is a phenomenon that is not limited to specified geographical borders and spread rapidly). An example of such a framework is:

- **Risk assessment & surveillance system for zebra mussel** (More information [here](#))

5.2.3 Surveillance systems

A surveillance system for invasive species is a system for detecting the arrival of new non-indigenous species and monitoring the dispersal of already established populations in a particular geographical area (e.g. protected area, country, macro-region, EU). Surveillance activities are usually carried out at high risk pathways and entry areas to prevent introduction at source such as:

- Entry points for tourist and commercial arrivals (e.g. airports, ports, and stations).
- Areas with economic activities or adjacent to facilities where alien species may escape or/and intentionally get released (e.g. aquaculture, zoo, pet shops, farms).
- Corridors for spontaneous spread (e.g. marine transportation corridors, canals, roads, coasts).
- Highly disturbed and ecologically sensitive areas.

These activities may take the form of field research (e.g. underwater visual surveys), official border controls, and quarantine measures (usually a combination of different surveillance activities) and are aimed at preventing and minimising the risk of introducing alien species that could become invasive and most importantly protecting particularly vulnerable areas with fragile natural ecosystems and native species under threat. Indicative examples include:

- **Surveillance System for IAS trade in Extremadura** (More information [here](#))
- **Surveillance Framework for *Popilla japonica*** (More information [here](#))

5.2.4 Reporting and monitoring tools

IAS reporting and monitoring tools have a key role in supporting effective invasive species management as they provide functionalities such as:

- **Reporting sightings of known or potentially invasive species**
- **Monitoring the abundance and distribution patterns of invasive species, incl. population changes.**

IAS reporting and monitoring tools allow the organisation, management and visualisation of information related to invasive species. In addition, these tools compile and present large amounts of data in a format that is easy to understand and analyse. All information on IAS sightings is represented spatially on maps, so that decision makers and competent authorities can pinpoint patterns and trends. Geographical presentation is realised thanks to Geographical Information Systems (GIS).

In terms of the scope of IAS reporting and monitoring tools, these usually have a different scope. More specifically, they can be deployed for specific regions and types of natural ecosystems (aquatic or terrestrial) or cover specific taxonomic groups species (e.g. marine species). An indicative example of such a tool is MEDMIS, an online information system, created by IUCN for reporting and monitoring marine invasive species in Marine Protected Areas (MPAs) across the Mediterranean Basin. Other examples are:

- **IAS early detection and monitoring system in Constanta** (More information [here](#))
- **Corsica Alien Network** (More information [here](#))

5.2.5 Expert networks

Beyond the use of the aforementioned technological tools, dealing effectively with the problem of biological invasions requires multidisciplinary and cross-regional collaboration in research activities, scientific information exchanges, and the management of alien species. In particular, scientists, researchers and other professionals with experience in environmental management (particularly with expertise on invasive species issues) need to combine efforts to provide practical solutions to an issue that is not restricted by national borders, nor is not site specific. In this category, it is pertinent to include scientists and researchers that might not have a specific expertise on invasive species but possess capacities and skills that can be utilised to halt biological invasions across the different stages of IAS management chain (i.e. prevention, detection, monitoring, control, eradication). These professionals may have managerial or technical skills that may be useful for purposes related to the design of communication and management protocols, the prioritisation of control and eradication actions, as well as the allocation of resources towards areas with more fragile natural ecosystems and communities largely dependent on natural resources.

The main issue with Invasive species management programmes is that these are usually fragmented and infrequent, and are mostly implemented at national or sub-national level. This implies that the experience and knowledge acquired throughout research activities is already distributed across different organisations and institutions yet the expansion of these networks beyond sub/national levels remains elusive. Dedicated networks on invasive species seek to link this expertise (even from different disciplines) in order to deal with biological invasions in a more collective and coordinated approach. Such networks facilitate the exploration of alien species information from a variety of distributed information sources, promote the exchange of experience among participants, provide guidance to competent authorities to draw up action plans to tackle biological invasions, and support the implementation of projects to increase resilience of natural ecosystems across neighbouring countries. An example of such networks on invasive alien species is:

- **Invasive species specialist group** (More information [here](#))

5.3 Proposed topics for discussion

As it was already mentioned, study visits can be an effective way to promote the exchange of experience and practical transfer of know-how among regional authorities working together. To this end, the present report provides a series of topics, expected to facilitate the discussion among partners and stakeholders interested in IAS management. More specifically, the indicative (yet not exhaustive) list of topics that could be discussed during the study visits in Italy and Spain are:

- **Building of synergies, triangulation and overlapping** between different technologies to maximize the area covered **by technological innovations** and establish a more holistic approach to IAS management.
- **Standardization and further expansion of existing information databases** to create an “ark” containing all knowledge on existing IAS in Europe.
- **Identification, monitoring and extensive reporting** of existing illegal routes and networks of IAS **to establish coordinated responses** to the problem of illegal trade.
- **Coordination and collaboration** across different institutions and organizations **to exchange knowledge and experience** on the issues related to IAS management.
- **Further research** on the impact of IAS **to propose solutions** to the issues created by the presence and expansion of IAS in local economies and populations (i.e. finding alternative sources of revenue).
- **Deployment and standardization of a “task force”**, namely a team consisting of permanent members (i.e. field experts, local authorities, environmental agents and other local actors) **to identify** the specific parameters pertaining each instance of IAS, **and propose** a course of action tailored to each specific occasion.
- **Coordinated-EU wide, efforts to increase participation** to IAS-related events by fostering the creation and expansion of relevant initiatives and networks currently active in the field of IAS management.

6 ORGANISATIONAL DETAILS

6.1 Date and Duration

The Fondazione Lombardy Agency (FLA) will host the two day study visit in Lombardy. On the first day, the host will present the following discussions topics: a) Current developments in legislative frameworks of IAS managements: achievements and shortcomings, and b) IAS tools and collaborations that increase IAS management effectiveness. The study visit will take place during the second day (TBD), during which participants will visit the relevant sites (Ticino Park and Lake Maggiore).

EXTREMADURA will host the two days study visit in Spain. On the first day, the host will present the following discussion topics: a) Threats and impact to biodiversity by the presence of IAS, and b) Co-ordinated responses and synergies to IAS management. The study visit will take place during the second day where participants will visit the relevant sites (Guadiana basin and the regional offices of SEPRONA).

6.2 Participation

The host organisation will assume the following responsibilities during the study visit:

- State the objectives of the visit, and explain the logic and structure of the schedule to the group.
- Accompany the group during the entire visit.
- Provide opportunities for all partners to participate in discussions and share views and opinions.
- Try to accommodate participants' interests and needs into the content of the exchange of experience visit, adapt the schedule throughout the visit, to ensure that all participants' concerns are addressed
- Moderate roundtable discussions and interactive exercises.
- Invite participants to provide individual feedback on the visit.

Participants (partners and stakeholders) on their side respectively need to a) get prepared for the exchange of experience visit by reviewing the present input paper provided by the host of the study visit in order to develop a solid understanding of the themes addressed, b) contribute to the proceedings by presenting and sharing the experience of their country or region in dealing with the challenges of IAS, c) have assume an active role in all activities and discussions scheduled in the schedule of the study visit, and d) disseminate the knowledge and information acquired during the visit in their country, promoting through story- telling within their own organisation and affiliated bodies. Upon the completion of all scheduled activities, participants will be asked to fill in a feedback form, assessing their experience.

6.3 Format

To facilitate knowledge sharing, capacity building, and exchange of experience processes, the study visits in Spain and Italy need to include a combination of field visit(s), oral presentations and roundtable discussions. This format will enable study visit participants to obtain a comprehensive and realistic picture of the ways that IAS management systems can be further implemented or applied in other EU countries.

1. Field visits: During the visits organized by FLA (in Ticino park and lake Maggiore) and EXTREMADURA (in Guadiana Basin and the regional offices of Seprona), participants will have the opportunity to visit exemplary cases of IAS practices and tools, which exhibit noteworthy performance and can essentially act as inspiration for similar entities from across the EU. Participants will be also informed about the problems and difficulties encountered during the implementation of measures and the benefits generated.

2. Oral presentations. The exchange of experience visit(s) in Lombardy and Spain will feature a series of presentations delivered by partners, field experts or other third party representatives to impart knowledge and stimulate debate on the different challenges and difficulties in IAS management, as well as the practices they can engage to increase their effectiveness.

3. Roundtable discussions represent a flexible form of discussion employed at workshops and conferences to facilitate participants' interaction and exchange of ideas. A small number of participants is seated around a table to discuss in-depth a particular topic of interest (e.g. effectiveness of current legislative frameworks in relation to IAS management), seeking to resolve issues of disagreement; extract useful conclusions and decide and plan future actions. Roundtables are considered an excellent format for providing and receiving targeted feedback, engaging in in-depth discussions, and meeting individuals/partners with similar interests. As such, they will be included as part of the agenda of the present study visits.

6.4 Guidelines for virtual organization

Virtual events, including meetings, webinars, workshops and conferences, are gaining ground as a variety of software and tools are increasingly user friendly and widely available and holding an event online offers numerous benefits. At the same time, online events may offer a viable alternative in cases where physical attendance is not an option, such as the current Covid-19 outbreak. This sub-section provides guidelines for the organisation of virtual workshops, as a viable alternative, seeking to assure project's seamless implementation and continuity.

6.4.1 Scheduling

Given the limitations associated with virtual communication and web conferencing, as compared with physical communication and live events, virtual site visits are expected to have a decreased duration, **not exceeding 4 hours**, to keep them productive and efficient.



Maintaining schedule is vital for virtual events, as delays can be much more irritating than during face-to-face events. Thus, the organisers should make sure that the virtual site visits will start and end on time. In addition, breaks should be scheduled every 45-60 minutes, in order to maintain participants' attention.

6.4.2 Selection of a suitable 'venue'

There is a wide selection of virtual conferencing tools available, both free and paid, offering the technical possibilities to support the purposes of the INVALIDIS field site visit. The following table presents a comparison between two very popular options, Google Meet and Zoom.

Based on the free plan features of Google Meet, combined with its ease of access and use, the platform was considered the best option for hosting upcoming meetings and site visits until travel and gathering restrictions that impose organisation on site are lifted.

Table 3: Google Meet vs Zoom

	 Google Meet	
FREE PLAN AVAILABLE	Yes	Yes
MAXIMUM NUMBER OF PARTICIPANTS	100 (free plan)	100 (free plan)
MAXIMUM DURATION	24 hours (free plan through 30/09/20)	40 mins limit on group meetings (free plan)
JOIN FROM A BROWSER	Yes	Yes (with limited features)
SHARE SCREEN/PRESENTATION	Yes	Yes
ADJUSTABLE LAYOUTS	Yes	Yes

6.4.3 Tips for organisers, speakers and moderators

The virtual workshops' organisers, with the participation of the event's speakers and moderators, should conduct a short 'rehearsal' a few days before the workshop, making sure that all software and hardware

(desktops, laptops, cameras, microphones) function properly. In addition, they need to make sure that the event speakers and moderators will participate from a suitable location (i.e. a quiet room with 'good lighting').

At least one staff member of the hosting organization should be responsible for the technical aspects of the workshop and deal with any issue that may occur. This person should also receive all the presentations to be projected during the site visit fifteen days in advance, in order to identify any technical issues and resolve them prior to the site visit. Lastly, the organisers should make sure that the site visit runs according to schedule and are thus encouraged to open the meeting room a few minutes ahead of schedule.

The speakers should be well prepared and rehearse their presentations mainly with regards to timing, as time-slots will be tight and very specific. In addition, they need to make sure that their hardware and software run properly. Finally, they need to make sure that they participate from a suitable location and that there is no risk of any interruption during their presentations.

The role of moderators is quite critical in virtual events, as they are responsible for maintaining the schedule as well as adjusting the discussion flow. Therefore, moderators should be encouraged to politely interrupt the speakers when they exceed their time limit. In addition, moderators should encourage participants to use the 'chat' functionalities of the platform for submitting any questions or interventions 'real time', and make sure all questions and issues are addressed during the session.

6.4.4 Virtual site visit

Virtual tour: As a result of the recent coronavirus crisis and the restrictions that it imposed in areas and sites of mass gatherings (e.g. museums, theatres etc.), NGOs, cultural foundations and a range of tourist-related activities are being implemented online via virtual tours. An example of such a case can be found here, concerning the virtual tour in the archaeological site of Acropolis in Athens, Greece: <https://www.acropolisvirtualtour.gr/>. In the present study visit, the sites recommended are parks that have a rich cultural and natural heritage, as they are included in Natura 2000; as such, a virtual tour could be arranged in coordination with local guides, employing live and/or recorded material to inform and facilitate a fruitful discussion between partners.

Online discussions with third party representatives: A last method to compensate for the lack of physical presence in the field sites could be through interviews and online discussions with key agents of the sites and organizations of the study visit. For example, in the visit in SEPRONA regional offices in Extremadura,

Spain, an online panel could be arranged with representative agents from the organization that could provide in-depth information (regarding IAS illegal trade) or/and clarifications to the attendees.

7 AGENDA (On-site and Virtual)

7.1 On-site agenda: FLA

 <p>European Union European Regional Development Fund</p>	<p>STUDY VISIT IN LOMBARDY</p> <p>Day one Agenda</p> <p>Date: (To be added by the host)</p>	 <p>INVALIS terreg Europe</p>
Time	Activity	Description / Partner responsible
10:00-10:30	Arrivals and Registrations	<p>Registration and signatures of the attendees</p> <p>Facilitated by FLA</p>
10:30-11:00	Introductions	<p>Welcome speech</p> <p>Delivered by FLA</p>
11:00- 11:30	Thematic Session 1: Current developments in the legislative framework of IAS. Achievements and shortcomings	<p>Presentation</p> <p>Delivered by FLA</p>
11:30-12:00	Q & A	<p>Open discussion between partners</p> <p>Facilitated by FLA</p>
12:00-12:30	Coffee Break	Networking with colleagues
12:30-13:00	Thematic Session 2: IAS tools and collaborations that increase effectiveness	<p>Presentation</p> <p>Delivered by FLA</p>
13:00-13:30	Q & A	<p>Open discussions between partners</p> <p>Facilitated by FLA</p>
13:30-15:30	Lunch	
15:30-16:00	Concluding remarks and preparation for study visit	<p>Roundtable discussion</p> <p>Facilitated by FLA</p>
16:30-18:00	Dinner and Networking	



 <p>European Union European Regional Development Fund</p>	<p>STUDY VISIT IN LOMBARDY</p> <p>Day Two Agenda</p> <p>Date(To be added by the host)</p>	 <p>INVALIS terreg Europe</p>
Time	Activity	Description /Partner responsible
09:00-10:00	Registration and Coffee	<p>Signatures of the attendees and planning of day's activities</p> <p>Facilitated by FLA</p>
10:00-10:30	Study Visit 1: Ticino Park	<p>On-site visit and quick tour</p> <p>Delivered by FLA</p>
10:30 -11:30	Coffee Break	
11:30- 12:30	Study visit 2: Lake Maggiore	<p>On-site visit and quick tour</p> <p>Delivered by FLA</p>
12:30-15:00	Lunch and Coffee break	
15:00-16:00	Lessons learnt from the use and development of innovative technologies	<p>Roundtable discussion</p> <p>Facilitated by FLA</p>
16:00- 17:00	Sum-up decisions, any other comments and concluding remarks	<p>Roundtable discussion</p> <p>Facilitated by FLA</p>
17:00-18:00	Dinner and Networking	

7.2 Virtual agenda: FLA



 <p>European Union European Regional Development Fund</p>	<p>VIRTUAL SITE VISIT IN LOMBARDY</p> <p>Agenda</p> <p>Date: (To be added by the host)</p>	 <p>INVALIDIS Interreg Europe</p>
Time	Activity	Description/Partner responsible
10:00-10:10	Introductions	Welcome speech Delivered by FLA
10:10-10:40	Thematic Session 1: Current developments in the legislative framework of IAS. Achievements and shortcomings	Presentation and open discussion from partners Delivered by FLA
10:40- 11:00	Video presentation from site	Roundtable discussion Delivered by FLA
11:00-11:30	Coffee Break	
11:30-12:00	Thematic Session 2: IAS tools and collaborations that increase effectiveness	Presentation and open discussion from partners Delivered by FLA
12:00-12:20	Video presentation from site	Roundtable discussion Delivered by FLA
12:20-13:00	Sum-up decisions, any other comments and concluding remarks	Closure of the meeting Delivered by FLA

7.3 On-site agenda: EXTREMADURA

 <p>European Union European Regional Development Fund</p>	<p>STUDY VISIT IN EXTREMADURA</p> <p>Day One Agenda</p> <p>Date: (To be added by the host)</p>	 <p>INVALIS terreg Europe</p>
Time	Activity	Description /Partner responsible
10:00-10:30	Arrivals and Registrations	<p>Registration and signatures of the attendees</p> <p>Facilitated by EXTREMADURA</p>
10:30-11:00	Introductions	<p>Welcome speech</p> <p>Delivered by EXTREMADURA</p>
11:00- 11:30	Thematic Session 1: Threats and impact to biodiversity by the presence of IAS	<p>Presentation</p> <p>Delivered by EXTREMADURA</p>
11:30-12:00	Q & A	<p>Open discussion between partners</p> <p>Facilitated by EXTREMADURA</p>
12:00-12:30	Coffee Break	Networking with colleagues
12:30-13:00	Thematic Session 2: Coordinated responses and synergies to IAS management	<p>Presentation</p> <p>Delivered by EXTREMADURA</p>
13:00-13:30	Q & A	<p>Open discussions between partners</p> <p>Facilitated by EXTREMADURA</p>
13:30-16:00	Lunch and Coffee break	
16:00- 17:00	Sum-up decisions, any other comments and concluding remarks	<p>Roundtable discussions</p> <p>Facilitated by EXTREMADURA</p>
17:00- 18:00	Dinner and Networking	

 <p>European Union European Regional Development Fund</p>	<p>STUDY VISIT IN EXTREMADURA</p> <p>Day Two Agenda</p> <p>Date: (To be added by the host)</p>	 <p>NVALIS terreg Europe</p>
Time	Activity	Description/ Partner responsible
09:00-10:00	Registration and Coffee	<p>Signatures of the attendees and planning of day's activities</p> <p>Facilitated by EXTREMADURA</p>
10:00-10:30	Study Visit 1: Guadiana Basin	<p>On-site visit and quick tour</p> <p>Delivered by EXTREMADURA</p>
10:30 -11:30	Coffee Break	
11:30- 12:30	Study visit 2: SEPRONA regional offices	<p>On site visit and quick tour</p> <p>Delivered by EXTREMADURA</p>
12:30-15:00	Lunch and Coffee break	
15:00-16:00	Lessons learnt on the formulation of strategic alliances and synergies	<p>Roundtable discussion</p> <p>Facilitated by EXTREMADURA</p>
16:00- 17:00	Recommendations and conclusions	<p>Oral presentation</p> <p>Delivered by EXTREMADURA</p>
17:00-18:00	Sum-up decisions, any other comments and concluding remarks	<p>Roundtable discussion</p> <p>Facilitated by EXTREMADURA</p>
18:00-19:00	Dinner and Networking	

7.4 Virtual agenda: EXTREMADURA

 <p>European Union European Regional Development Fund</p>	<p>VIRTUAL SITE VISIT IN EXTREMADURA</p> <p>Agenda</p> <p>Date: (To be added by the host)</p>	 <p>INVALIDIS terreg Europe</p>
Time	Activity	Description/Partner responsible
10:00-10:10	Introductions	Welcome speech Delivered by EXTREMADURA
10:10-10:40	Thematic Session 1: Threats and impact to biodiversity by the presence of IAS.	Oral Presentation and roundtable discussion Delivered by EXTREMADURA
10:40- 11:00	Video presentation from site	Video presentation and Roundtable discussion Delivered by EXTREMADURA
11:00-11:30	Coffee Break	
11:30-12:00	Thematic Session 2: Formulation of strategic alliances and synergies to foster knowledge exchange and increase awareness on IAS management	Oral Presentation and roundtable discussion Delivered by EXTREMADURA
12:00-12:20	Video presentation from site	Roundtable discussion Delivered by EXTREMADURA
12:20-13:00	Sum-up, any other comments and concluding remarks	Roundtable discussion Delivered by EXTREMADURA

8 GUIDELINES ON HOW TO DRAFT THE SUMMARY REPORT

The final stage of activity A3.4 includes the preparation of a summary report. The report will present the final outcomes and conclusions derived from the study visit. These will be used by project partners as the main input for diffusing the lessons learned within their organisations, and to promote storytelling. Summary reports are short written communication documents which aim to convey information related to the discussions and activities that took place during an event. The summary report should include the following aspects:

- Draw conclusions from site visits, oral presentations and roundtable discussions.
- Briefly present policy recommendations for the development of action plans based on the conclusions drawn from the discussion.
- Present an evaluation of the exchange of experience visit based on the comments and feedback from participants.

The following guidelines are intended to provide assistance and guidance to the host organisations (FLA and EXTREMADURA) on how to summarise and present the main conclusions drawn from the exchange of experience visit (in the format of a summary paper). In particular, the summary report should be prepared as follows.

Step 1: Develop short summaries for each session/activity of the exchange of experience visit. The summaries should include a) the context and objectives of the session, b) the main points derived from oral presentations c) key argumentation from the interventions of participants and d) conclusions and findings extracted from the overall discussion.

Step 2: Review the feedback forms. The author should summarise the main conclusions and key ideas (as drawn from the forms completed by the participants of the exchange of experience visit), with regards to the themes / topics of the visit.

Step 3: Present the main conclusions with regards to the following themes:

- Use and development of innovative technologies to assist in the effective IAS management as obtained from the study visit in Italy.

- Formulation of strategic alliances and synergies to foster knowledge exchange and increase awareness on IAS management as obtained from the study visit in Spain.

Step 4: Juxtapose the key arguments / conclusions drawn from the exchange of experience visit with any relevant results and findings from other INVALIDIS activities. Identify convergences and divergences between findings and conclusions.

Step 5: Provide guidelines (in the form of policy recommendations) on how to utilise the key conclusions drawn from the exchange of experience visit to promote transferability of IAS measures and policies. The guidelines on how to integrate the lessons learnt from the visit in Lombardy and Spain as well as any advice or suggestion that may be derived from the analysis of feedback forms, should be described in a way that is simple, brief, and easy to follow.

Step 6: Draft the summary report. The exchange of experience visit summary report should be drafted in a clear and concise way, focusing on the conclusions drawn from knowledge sharing and the discussions that took place during the site visits.

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ANNEX A: FEEDBACK FORM

 <p>European Union European Regional Development Fund</p>	<p>STUDY VISIT IN LOMBARDY</p> <p>FEEDBACK FORM</p>	 <p>INVALIDIS Interreg Europe</p>
Name:		
Organisation:		
Country:		
Region:		
I. FINDINGS		
<p>1. One of the aims of the study visit was to exchange knowledge on current developments in the legislative framework governing IAS management. Could you please very briefly describe what aspects make these projects/programs successful, worth further exploring, and integrating in own region's initiatives and policies?</p>		
<p>2. The study visit also aimed to support policy developments in relation to collaborations and tools for the effective management of IAS. Please summarize what you learnt about such policies and their implementation during the visit (barriers and challenges faced, measures taken, results achieved).</p>		



3. What is the most interesting/useful information and findings that you are going to communicate within your own organization and to competent authorities in your country?

4. Are there any issues related to the themes of the study visit that have not been adequately covered during the event and may bring added value to the discussion for relevant policy improvements?

II. ORGANISATION OF THE STUDY VISIT

5. Considering your experience, how much do you agree/disagree with the following statements?

	Strongly disagree	Disagree	Nor agree or disagree	Agree	Strongly agree
5.1. The study visit was properly structured and organized.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2. The agenda was comprehensive and conclusive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3 The background documentation (i.e. input paper) helped to prepare for the visit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.4. Field visits and presentations were relevant to the thematic focus of the workshop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.5. Field visits were useful and informative.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.6. The group comprised a good mixture of participants with diverse backgrounds who brought different perspectives in the discussion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.7. There was enough time for discussions and exchange of ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.8. Participation in interactive activities enhanced capacity building & mutual learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

III. SUMMARY

6. Considering your overall experience, how satisfied you are with your participation in the study visit?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Dissatisfied
- ☐ Very dissatisfied



7. Do you agree that the study visit will lead to improvements in relevant policy making?

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

8. Will you support the integration of key findings and conclusions drawn from the study visit into regional policy measures?

- ☐ Extensively
- ☐ Considerably
- ☐ At some extent
- ☐ Marginally
- ☐ Not at all

9. Other comments

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3. What is the most interesting/useful information and findings that you are going to communicate within your own organization and to competent authorities in your country?

4. Are there any issues related to the themes of the study visit that have not been adequately covered during the event and may bring added value to the discussion for relevant policy improvements?

II. ORGANISATION OF THE STUDY VISIT

5. Considering your experience, how much do you agree/disagree with the following statements?

	Strongly disagree	Disagree	Nor agree or disagree	Agree	Strongly agree
5.1. The study visit was properly structured and organized.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2. The agenda was comprehensive and conclusive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3 The background documentation (i.e. input paper) helped to prepare for the visit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.4. Field visits and presentations were relevant to the thematic focus of the workshop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.5. Field visits were useful and informative.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.6. The group comprised a good mixture of participants with diverse backgrounds who brought different perspectives in the discussion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.7. There was enough time for discussions and exchange of ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.8. Participation in interactive activities enhanced capacity building & mutual learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

III. SUMMARY

6. Considering your overall experience, how satisfied you are with your participation in the study visit?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Dissatisfied
- ☐ Very dissatisfied

7. Do you agree that the study visit will lead to improvements in relevant policy making?

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

8. Will you support the integration of key findings and conclusions drawn from the study visit into regional policy measures?

- ☐ Extensively
- ☐ Considerably
- ☐ At some extent
- ☐ Marginally
- ☐ Not at all

9. Other comments