



LIFE11 INF/AT/902

LIFE Saving Danube Sturgeons

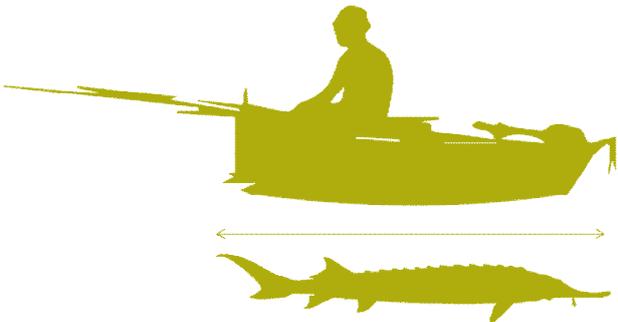
Project summary, recommendations and long-term strategic directions for conservation of sturgeons in the Lower Danube from illegal fishing and trade



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1. Introduction

Originating 200 million years ago, sturgeons are ancient migratory fish species which are today teetering on the brink of extinction. Although they have outlasted the dinosaurs, nowadays sturgeons are the most endangered animals on the IUCN Red List of Threatened Species¹.

The Danube River basin preserves some of the most important sturgeon populations in the world, with Romania and Bulgaria holding the only still viable wild populations in the European Union. Danube sturgeons play an important role as indicators of healthy ecosystems. They live mostly in the Black Sea, migrating up the Danube and other major rivers to spawn. Until the 19th century, giant sturgeons moved upstream as far as Germany and were important mainstays for many fishing communities. But today, five out of the six species native to the Danube are listed as critically endangered, and the population trends for all species are decreasing.

| Species | | Status and population trend (according to IUCN) | |
|----------------------------------|---|--|------------|
| <i>Acipenser gueldenstaedtii</i> | Danube Sturgeon or Russian Sturgeon | Critically Endangered | decreasing |
| <i>Acipenser nudiiventris</i> | Ship Sturgeon or Fringebarbel Sturgeon | Critically Endangered (extinct in Lower Danube) | decreasing |
| <i>Acipenser ruthenus</i> | Sterlet | Vulnerable | decreasing |
| <i>Acipenser stellatus</i> | Stellate Sturgeon | Critically Endangered | decreasing |
| <i>Acipenser sturio</i> | Common Sturgeon, European Sturgeon, Atlantic Sturgeon | Critically Endangered (extinct in Danube River Basin) | decreasing |
| <i>Huso huso</i> | Beluga Sturgeon or Great Sturgeon | Critically Endangered | decreasing |

Illegal fishing is the main direct threat to the survival of Danube sturgeons. Habitat loss and disruption of spawning migration are further critical dangers. Despite national sturgeon fishing bans in Romania and Bulgaria, illegal catches continue to diminish sturgeon populations. Due to their long life cycles and late maturity, they are particularly vulnerable to overexploitation and stocks take many years to recover. Also illegal trade in meat and caviar can be found in the region. Drivers for this are the high economic value of these products, especially caviar, insufficient alternatives to generate satisfactory income in fishing communities, deficiencies in enforcement and political will and a general lack of awareness and information.

The LIFE project "Joint actions to raise awareness on overexploitation of Danube sturgeons in Romania and Bulgaria" aimed to cease overfishing of sturgeons and illegal trade in their products in order to secure the long term survival of these species. Sturgeons have had a high economic value and are even more valuable to the natural ecosystems. The project was conducted from July 2012 to September 2015 with active involvement of many important stakeholders in the region, especially fishermen, law enforcement agencies, decision makers and sturgeon breeders. It provided highly valuable insights into the problems connected with overfishing, illegal trade and shortage of law enforcement and offered a large variety of knowledge that will be used in further conservation work along the Danube and beyond.

¹ IUCN (2010). Sturgeon more critically endangered than any other group of species. International news release, 18 March 2010. <http://www.iucn.org/?4928/Sturgeon-more-critically-endangered-than-any-other-group-of-species>

This document summarizes the activities and results of the project, explains the innovative approaches and presents lessons learnt and conclusions drawn from its implementation. It also gives clear recommendations which were elaborated with the specific target groups and stakeholders and can be replicated in other sturgeon range states or consumer countries.

2. Summary of project activities and results

The project focused on the groups that have highest impact on and responsibility for a successful protection of sturgeons from poaching and illegal trade in Bulgaria and Romania:

- § local fishing communities along the Danube,
- § law enforcement agencies,
- § decision makers, and
- § companies that breed sturgeons or trade/process/export caviar.

In addition, project activities involved scientific experts, important regional and international institutions, other NGOs, media and the interested public.

Fishing communities

The work with fishing communities was especially important for the success of the project but also made it highly challenging. Fishermen, who traditionally relied on the Danube for sustenance, have found themselves outside of the law with regards to sturgeon fishing. Both states have not adequately addressed the existential needs of local communities after the national sturgeon fishing bans were imposed and have not offered any form of compensation or other support to prevent poaching. Consequently, illegal fishing is still happening in communities and many fishermen feel abandoned and mistrustful and have rather negative attitudes to conservation measures.

For these reasons, a very specific and innovative approach was developed for this project: Sturgeon Advocates. These members of the project team acted as personal communicators, who regularly visited villages where sturgeons used to be fished and built up contacts with fishermen. In direct interaction, they informed fishermen about sturgeons, the threats they are facing, the impact of fishing and the legal situation, and they responded to questions from fishermen; on the other hand, they learned about the problems of fishermen, their living and working conditions and their attitudes, experiences and suggestions with regard to sturgeons. The Sturgeon Advocates raised the understanding of sturgeon conservation needs and protection measures in fishing communities but also achieved a far better comprehension of the situation and motives of fishermen and they will incorporate this knowledge in further conservation work. In total, more than 700 personal contacts with fishermen in over 30 villages were made in the course of the project.

Another crucial component of the project was support for fishing communities in identifying alternatives to generate income that could fill the gaps caused by the sturgeon fishing bans. In 14 workshops in fishing communities, with 250 participants in total, possible sources of revenue were discussed and concrete information about potential funding options (e.g. availability of related financial instruments of the EU operational programmes for agriculture and for fisheries) and how to obtain them was provided. The workshops were met with large interest. In some villages, fishermen had very clear ideas of investments that could help them increase profits, improve services or set up small local businesses (e.g. in tourism, manufacturing of local products, fish processing and marketing), while in others, no alternative options were yet seen. A further step was already taken in Nikopol (Bulgaria), where the project team assisted in the preparation and registration of a fishermen association, which is a precondition for applications to some funding mechanisms.

A successful showcase activity in establishing alternative livelihood was the training of fishermen in sturgeon monitoring. In the Bulgarian fishing village of Vetren, experts qualified six fishermen of the fishing association "Vetren 396" in techniques applied in scientific monitoring of sturgeon populations. The Bulgarian Ministry of Environment, in charge of implementing systematic monitoring of the fish stocks, already signalled interest in the opportunity to employ the Vetren fishermen in future sturgeon monitoring. Moreover, the personal involvement of fishermen in sturgeon conservation resulted in increased ownership of sturgeon protection, while at the same time, the fishermen acquired practical skills which can be marketed to research and conservation institutions.



Training of fishermen in monitoring techniques



Sterlet (*Acipenser ruthenus*) measured during training

Law enforcement agencies

A very important target group in the project were authorities in charge of controlling all aspects relevant for sturgeon conservation - fishing, aquaculture and trade (Fisheries Agency, Border Police, Police, Customs, Food Inspection, etc.). The interest of relevant agencies in the project was already determined and considered in the project development phase and demonstrated by Letters of Support for the project proposal. Authorities stated a strong need for knowledge consolidation and practical training to enhance their capacities and for better cooperation with other national authorities and with neighbouring countries to achieve more efficient controls.

This interest was then also seen throughout the project activities. The workshops and practical trainings with national and international experts were attended by - in total - 135 participants from 25 different agencies, for the most part from the two project countries, but also from neighbouring Serbia, Moldova, Ukraine and Turkey. In the workshops - one in Bulgaria and one in Romania - information was provided by national and international experts about the status of sturgeons, aquaculture production, caviar trade, legislation, enforcement and interagency cooperation. The training courses took place a day after the corresponding workshops and offered more detailed insight, advice and discussion focussing on caviar trade, enforcement procedures, CITES²

² Convention on International Trade in Endangered Species of Wild Fauna and Flora - www.cites.org

documentation and caviar labelling, fraud and smuggling techniques for one group of officials (mainly Customs, Food Inspection, etc.) and sturgeon species identification, biology, ecology and research for the other (mainly Fisheries Agency, Border Police, etc.). Training sessions were interactive, and participants shared questions and difficulties as well as experiences and practical suggestions with officials from other agencies and countries, getting in contact through team work exercises.

Also targeted information material was produced in Romanian and Bulgarian to support the work of law enforcement agencies. A key element was a comprehensive handbook that compiles all relevant subjects related to sturgeons and caviar (e.g. identification of different sturgeon species, maturation sizes, legal requirements for caviar trade, simple checklists for CITES documents and caviar shipments, etc.) and presents complex issues and practical information in a clear and coherent way. The demand for the 2000 pieces that were produced was large, and it was encouraging to see at visits to enforcement offices that the manuals were present and obviously in use. PDFs of the manual in Romanian and Bulgarian are available here: danube-sturgeons.org/project-materials/print-materials

Decision makers

Decision makers are crucial stakeholders. They are responsible for adopting legislation regarding sturgeon conservation, defining priorities (i.e. poaching of sturgeons and illegal trade in their products as serious crime), determining penalties (to ensure that wildlife criminals receive penalties which are corresponding to seriousness of the crime) and approving budgets (e.g. for protection measures, research, law enforcement and investigations).

National decision makers on all levels - from those responsible for secondary legislation to deputy ministers - were actively involved in different project activities, starting with interviews for the baseline evaluation (to determine levels of knowledge and awareness of target groups at the beginning of the project) and personal consultations, assistance in the work with fishermen or with enforcement agencies, participation in workshops, round table meetings, the Project Steering Group and press conferences. On a regional and EU level, decision makers were informed about the project through meetings, events and media of ICPDR³ and EUSDR⁴, as well as at events of the European Commission.

In addition, information material was distributed and decision makers were also regularly informed about relevant issues in personal communication.

Apart from and in cooperation with this LIFE project, the Danube Sturgeon Task Force⁵ (founded in 2012) and its members were very active in increasing the attention of decision makers to sturgeon conservation.

One activity that was planned as part of the project - a high-level meeting of representatives from Danube range states with a jointly signed declaration - will be embedded in the ICPDR Ministerial Meeting in 2016. This will achieve greater impact than engaging policy-makers to sign a separate document. However, it will happen outside of the timeframe of the project.

³ International Commission for the Protection of the Danube River - www.icpdr.org

⁴ EU Strategy for the Danube Region - www.danube-region.eu

⁵ www.dstf.eu

Sturgeon breeding and caviar trading companies

Enterprises breeding sturgeons or trading, processing or exporting caviar pose a potential threat to sturgeons if not operating fully according to CITES and EU regulations⁶, especially in range states. It must be made sure that sturgeon breeders do not illegally and unsustainably take brood stock from the wild or introduce hybrids, exotic sturgeon species or non-native populations to the wild. Moreover, the companies should refrain from introducing caviar that is illegally obtained from wild sturgeons into the market, e.g. mislabelled as legal, "captive bred" caviar. In addition, these companies are the direct link to consumers and are able to inform about legal regulations and to prevent clients from unknowingly purchasing unlabelled - and thus illegal - caviar.

For all these reasons, a Code of Conduct was set up, explaining these threats and listing appropriate measures. Four companies in Romania and four companies in Bulgaria officially signed this Code of Conduct, thus committing to follow these conditions and explicitly declaring compliance with relevant regulations and transparency in their business conduct to avoid any threat to wild sturgeons. This is a first important step to ensure a sustainable regional sturgeon aquaculture industry that will benefit wild sturgeons and regional economy alike.

It is also essential that the caviar industry in consumer countries understands the critical status of sturgeons and the importance of legal requirements for caviar trade, especially the mandatory CITES labelling with a special code to determine the origin of the product and to distinguish legal from illegal caviar. Therefore, brochures were produced in Romanian and Bulgarian, as well as in English, French, Italian and German. This information material was distributed to companies in Romania and Bulgaria as well as to international producers and traders at project information stands at the Global Seafood Expo, the worldwide largest fair for fish and seafood products with more than 25,000 attendees from 150 countries in Brussels. All information material is also available on the project website (danube-sturgeons.org/project-materials/print-materials/) as download.

Further stakeholder groups

In addition to the many project actions targeted on the most significant stakeholders, yearly round table meetings ensured the active involvement of important protagonists such as national scientific institutions or other NGOs. In very engaged discussions, information and experiences were exchanged, project activities and findings shared and feedback and suggestions incorporated into the project.

A dedicated Project Steering Group with representatives from the different national stakeholder groups and one international expert from TRAFFIC⁷ assisted the project team as a very important advisory panel and provided significant support in many project activities, e.g. by setting up contacts, holding lectures at workshops, giving feedback on information material and other documents.

Networking with other national and international projects or institutions - such as ICPDR³, EUSDR⁴, the Danube Sturgeon Task Force⁵ or the World Sturgeon Conservation Society⁸ - provided essential up-to-date information, new findings, discussions of ideas and strategies and development of joint endeavours which were very helpful for the project and its implementation.

⁶ especially Council Regulation (EC) No. 338/97, Commission Regulation (EC) No. 865/2006, and its amendments

⁷ TRAFFIC - the wildlife trade monitoring network; www.traffic.org

⁸ WSCF - www.wscs.info

Media and general public

Since public interest and concern are important support for nature conservation work, media were directly addressed and involved in the issue of sturgeon conservation, e.g. in more than 20 national and international press releases, in five press conferences and three press trips and in numerous conversations with journalists.

At impressive events like the regional Living Danube Tour, B'estfest and Rowmania in Romania or Earth Hour in Bulgaria, the project was presented to the interested public, supported by four life-size inflatable sturgeons that were perfect eye-catchers and triggered a lot of attention for sturgeon conservation.

A very catchy TV spot, broadcasted in many local TV channels and cinemas, displayed "The Invisible Fish" and illustrated how the world for local fishermen would look if we lost sturgeons.

Eight colourful information boards, installed at key locations of the project - in fishing villages, at ferry ports, offices of enforcement agencies, museum sites, etc. in Romania and Bulgaria - offer basic, well-prepared information on sturgeons and the threats they are facing.

A central tool of the project was the project website in English, Romanian and Bulgarian, which has 1000 visits per months and provides regularly updated information on project activities and other relevant news, a lot of information on sturgeons as well as all printing matter that was produced in the project downloadable as pdf. Danube-sturgeons.org will stay active at least until 2020 and continue to be a source of information on sturgeons and WWF's work to protect them.



At B'estfest, Romania, 2013

3. Stakeholders knowledge and attitude with regard to sturgeon conservation

At the beginning of the project and at its end, interviews - based on detailed questionnaires - were conducted with key stakeholders to evaluate their knowledge, awareness and attitude concerning sturgeons, their status and conservation. This was a very good starting point into the project to get in contact with the target groups and gain insight in points of view, difficulties, etc. The interviews at the end enabled an evaluation of changes achieved during the project.

Numbers of representatives of target groups interviewed at beginning and end of the project:

| | in total | 2013 | | 2015 | |
|-------------------------|----------|------------|---------------|------------|-------------|
| | | in Romania | in Bulgaria | in Romania | in Bulgaria |
| Fishermen | 122 | 31 | 28 | 33 | 30 |
| Enforcement authorities | 67 | 22 | 6 (out of 22) | 19 | 20 |
| Decision makers | 14 | 5 | 2 | 5 | 2 |
| Companies | 8 | 3 | 1 | 0 | 4 |

In addition, 1000 individuals of the general public were questioned at the beginning of the project via standardized telephone interviews. 500 pre-selected respondents each in Romania and in Bulgaria constituted a representative sample of the population in the project area. The larger picture of the awareness levels in both countries enabled a better understanding and a respective adjustment of communication activities.

Fishermen

- In 2015, fishing is perceived as a more important source of income among the interviewed fishermen. While a much higher amount of Romanian fishermen responded that they find it difficult to cope than in 2013, more of their Bulgarian colleagues reported that they could manage with their household income than two years before.

- Fishermen's knowledge of sturgeons, their ecology and legal protection is rather good and has still increased, both in terms of regulation measures and sturgeons themselves.

- While more fishermen in Bulgaria believe that sturgeon stocks decreased when asked in 2015, in Romania less assume a decrease than in 2013, and there are actually some who think that a slight increase already took place (however, many of these were from the most important sturgeon breeding areas in the Danube where also restocking programmes took place; it is therefore possible that their perception has been influenced by bycatches).

- The number of fishermen who consider poaching a problem has increased a lot during the project. The prevailing opinion among fishermen is that sturgeons are poached because of the high price of sturgeon caviar and meat, as well as the lack of effective controls.

- Far more fishermen now strongly agree that fishing with karmaci (illegal hook-lines to catch sturgeons) and targeted sturgeon fishing are threats to sturgeons, far less believe that fishing in general is not a threat.

- Knowledge of the sturgeon catch ban increased slightly and attitudes to the ban became clearly more positive in both countries, also in Romania where they were highly negative at the beginning of the project.

- At the end of the project, fishermen expressed much greater willingness to protect sturgeons in various concrete ways and to reduce the negative impact of fishing activities.
- The majority of fishermen want to get involved in conservation activities and would try different sources of income.
- There is an increase in the number of fishermen who express distrust in institutions, but more fishermen say they would assist the authorities if they are convinced control agencies also comply with the law.
- The majority of fishermen feel better informed after the project, rate it highly and would like similar activities to continue.

Enforcement authorities

- Most interviewed officials responsible for enforcing the law on fisheries, aquaculture and wildlife trade have good theoretical knowledge of the legislative framework, and this even improved further during the project. There are still some uncertainties regarding specific details, though much less than in 2013.
- The results from the study show that the employees from the surveyed agencies are experienced and familiar with the peculiarities of sturgeons, as well as with the problems of their protection.
- Nearly all enforcement officials agree that sturgeons must be protected and most see the ban as a useful instrument to protect sturgeons and want it to continue. Also a growing majority considers the trade in caviar or meat a problem.
- Furthermore, there is a clear increase in the share of agencies that demonstrate a high level of engagement in the issue of sturgeon preservation compared to 2013. A larger number of law-enforcement agencies prioritise the need for effective controls of sturgeon fishing and caviar trade, with the trend more pronounced in Bulgaria where three times as many thought it was of great importance. In 2015, there was 100% agreement to the statement "In my work, I can contribute to the protection of sturgeons", which was not so pronounced at the beginning of the project.
- A main conclusion of the study is that institutions have a greater interest to work together and more intensely for sturgeon protection, both among each other and with the non-governmental sector.
- According to the enforcement bodies, one of the main issues that hinder sturgeon protection and caviar trade control is the insufficient institutional capacity and the lack of funding for more frequent inspections. Agency representatives believe that better funding would help better deal with the problem.
- All respondents assessed the information provided in the project as very useful and an important source of information. All Bulgarian and 85% of Romanian respondents said they felt better informed. This is why 95% in Bulgaria and 90% in Romania said they wanted project activities to continue. Most of them recommended a continuation of the seminars and the exchanges between the different institutions, as well as an ongoing media campaign to inform the general public. Some of the respondents also explicitly indicated the need to inform students about sturgeon conservation.

Decision makers

- Interviewed decision makers in both countries were relatively well aware of sturgeons and sturgeon conservation measures, with some gaps in the knowledge of legislation.
- In both countries, respondents thought the ban had to continue, but mentioned the need for further scientific studies to assess sturgeon populations as well as for compensations for fishermen. They saw restocking as an important sturgeon protection measure beyond 2016 as well as limiting the quantity and size of sturgeons that can be caught once the ban is lifted.
- All respondents acknowledged the importance of sturgeons and were willing to help ensure their protection.
- All respondents evaluated LIFE project activities highly and wanted to see them continue. They appreciated their personal meetings with the project team, the manuals and project website most highly.

Companies

- Awareness of companies in both countries regarding sturgeons and legal sturgeon protection was rather well developed. In both countries, they thought the ban had to continue, but mentioned the need for further scientific studies to assess sturgeon populations.
- The key problems of sturgeon protection the companies identified were corruption, poaching, poor legal enforcement, and lack of state support for aquaculture.
- Except for one, all companies considered illegal fishing and trade a severe problem.
- When asked what needs to be done to achieve better sturgeon protection, they also listed regular restocking and finding alternative economic opportunities for local populations in the areas where poaching goes on.
- Half of the respondents recognized the responsibility of aquaculture operations to protect sturgeons and agreed that aquaculture can help wild species. All were willing to take steps to improve sturgeon protection, including advocacy, cooperating with the authorities on poaching control, participating in restocking and providing ethical products on the market.

General public

- In both project target countries, 59% of interviewed citizens are aware what a sturgeon is. Nearly all of these identify it as a fish, much less know that it is the source of caviar, and even fewer answered that it lives in the Danube and is endangered.
- More than half of Romanians and Bulgarians would like to eat sturgeon meat and caviar if they had the opportunity. Far more people have never eaten caviar/meat in Bulgaria than in Romania, however, 15% of Bulgarians and even 32% of Romanians had eaten caviar in the preceding year.
- The public in Bulgaria seems more informed about the difference between legal and illegal caviar, especially about the legal labelling requirements. In general, the knowledge still should be improved, and the majority of potential consumers responded that they could not tell the difference between legal and illegal caviar.

4. Important lessons learned

Fishing communities

§ Involvement of fishermen is very important for enduring success in sturgeon conservation. Fishermen are closest to the subject of protection, the sturgeons. Many of them have life-long experience with sturgeons, their life cycle and habitat use, and they are in the field and know what is going on with regards to threats. It is crucial to win their interest and understanding and create ownership for sturgeon protection. This should be further developed by actively involving fishermen in sturgeon research and conservation measures.

In Bulgaria, WWF conducted a sturgeon monitoring project in addition to this LIFE project (financed by Operational Programme Environment), which created great attention in local fishing communities. A significant synergy was that - out of interest for the applied scientific methods - local fishermen were far more open for discussions with Sturgeon Advocates and for sturgeon conservation.

As a small demonstration activity within the LIFE project, fishermen in Vetren (Bulgaria) were trained in sturgeon research methodology to show the potential benefits that fishermen can obtain from sturgeon research instead of sturgeon fishing. By gaining these skills they will be able to generate income through contributing their services to future monitoring projects. In addition, fishermen who participated in sturgeon conservation activities showed more conscientiousness and stronger personal involvement with sturgeons; they do not only just see them as a still depletable resource but understand the need for regeneration of stocks and are more willing to release sturgeon bycatch and allow the populations to recover.

In Romania, the LIFE project worked closely with a sturgeon restocking and monitoring project (conducted by University of Galati and financed by Operational Programme Fishery) and e.g. facilitated in setting up contacts with fishermen to engage them in the project.

Clearly, involving fishermen in research activities should be done under close supervision, also to make sure that scientific activities could not be used to cover poaching.

§ Work with fishermen should be based on long-term commitment

Especially at the beginning of the project, it was often difficult to overcome suspicion and refusal and to establish connections in fishing communities. It required a lot of effort, time and patience from the Sturgeon Advocates to reach fishermen. Sometimes, more than two or three visits were necessary to obtain a willingness to talk. It is clearly not sufficient to go to a fishing village for one day once in a while, but regular and longer stays over the course of a few years are necessary to build trust and be accepted as dialogue partner.

§ Work with fishermen must build on open and trusting relationships and two-way communication

To overcome difficulties at the beginning, various ways were applied. In some cases, direct approach was successful, in others, heads of associations acted as "door openers" into communities and important opinion leaders, or local enforcement agencies (especially Fisheries Agency) set up contacts. Trust was the most essential thing for the work of Sturgeon Advocates but often it was not easy to obtain. In some situations, after the establishment of an initial communication channel, the link with the communities became lost for unknown reasons. The most closed communities were the ones in the Danube Delta in Romania, where the communication was very difficult. As sturgeons aggregate there, local fishermen have the perception that stocks are still sufficient and do not need strict protection (while further up the Danube the severe situation is far more apparent to fishermen). Moreover, the communities in the delta lost the most after the moratorium was established, both in livelihood and in pride, many of them being transformed, quasi overnight, from the most respected fishermen, catching these big and intelligent fish, into poachers.

In most cases, Sturgeon Advocates were able to set up good to excellent working relationships and became accepted discussion partners and sources of information. Fishermen appreciated the two-

way communication of getting information and answers to specific questions but also being taken serious in their opinions and complaints. It is important to show that the interest is not just for sturgeons but for their problems, too. Therefore, concrete supportive actions should be taken as much as possible (facilitating dialog with authorities, offering assistance for project proposals or other forms to enhance the livelihood in fishing communities, etc.).

§ Sturgeon Advocates can bridge the gap between fishermen and institutions
Sturgeon Advocates can be an important link between different stakeholder groups and facilitate mutual understanding and acceptance. They comprehend the situation of fishermen, but also the necessities of control and protection measures. This role could also be actively used e.g. by bringing representatives of enforcement authorities or sturgeon experts to meetings with fishermen, which should result in higher acceptance of enforcement procedures, research results (i.e. on the critical status of sturgeons) and conservation needs among fishing communities. Vice versa, agencies could better address difficulties with fishing communities in control processes, and scientists could benefit from the practical knowledge of fishermen.

§ Fishing communities need more practical support to develop alternative income sources
Poor livelihood and lack of paid jobs are a general problem in many fishing areas along the Danube. This difficult economic situation is a major driver for legal and illegal overexploitation of fish stocks. It is therefore an urgent requirement to actively support fishing communities in increasing the profits for their products or in opening opportunities for alternative income, thus reducing the dependence on sturgeon fishing. This assistance must cater to the specific situation and knowledge levels of fishermen and explain options in a simple and clear way, trying to use the same language. Due to complex and rather technical funding guidelines and legislative and economic issues that need to be considered, fishermen are often unable to successfully apply for funds. Guidance and active support must therefore be provided on all stages - from screening opportunities and selecting possible funding options to checking eligibility criteria, developing business and marketing plans, filling in forms, etc.

§ Alternative income in fishing communities needs to be developed based on local availability and situation
Availability of natural resources and traditional activities need to be evaluated before trying to start alternative and sustainable businesses. Potential options are very different in different areas and can reach from international eco-tourism (e.g. in the Danube delta) to local tourism and gastronomy, direct merchandising of fish or fisheries products to achieve added value, as well as production and selling of traditional goods like honey, jam, reed or leather products. Opportunities, financial criteria and consequences need to be analysed and be the base for the development of ecologically and economically sound and viable business plans.

§ Socio-economic circumstances must be considered
In assisting fishing communities to build up alternative income sources, local socio-economic circumstances must be taken into consideration to achieve a long-term positive impact both for the communities but also for the sturgeons. Fishing for sturgeons was not plainly a source of revenue but also of pride and an occupation. All this should - at best - be replaced by other means. Newly developed job opportunities should be interesting for the fishermen and provide them with income, activity and social respect.

§ Special support for young members of fishing communities is important
In the work with fishermen within the LIFE project, it was noticeable that young people in fishing villages are having serious difficulties in seeing alternatives for their livings. According to unconfirmed information received by the project team, young community members in the Romanian Danube delta apply illicit tools for poaching sturgeons (such as electric devices). While older

fishermen seem to be more open towards developing other sources of income, the younger generation (often lesser educated) appears to have less inclination to do something else but fishing. For these reasons, special interest should be directed to young adults in fishing communities. In Bulgaria it was seen that young people take a great interest in sturgeon conservation and there were requests for expertise and information from several schools along the Danube.



Bulgarian fishermen

Law enforcement agencies

§ Profound and transparent controls by law enforcement agencies are essential. In order to implement legal requirements effectively, law enforcement agencies need to control fishery, sturgeon aquaculture operations and trade in sturgeon products regularly and thoroughly. Furthermore, they should not only rely on apparently correct documentation (e.g. CITES caviar labels; reporting of aquaculture production) but take fraud and falsification into consideration and apply appropriate methods to verify them in case of suspicion as well as at random (e.g. genetic or isotope analysis of caviar to determine its origin; species and age determination of broodstock in aquaculture facilities to see if reported production volumes are feasible). Very important are also transparent procedures that guarantee accurate processing of all cases and enhance acceptance of and confidence in law enforcement.

§ Adequate resources and efficient procedures must be assured. Law enforcement agencies must be able to apply the most effective procedures and methodologies for controls and investigations. A precondition for this is sufficient resourcing in man power, equipment and financial means, which is often a problem according to some officials. Regular monitoring of applied protocols and procedures is necessary and should be followed by adequate adaptations of current processes (and include feedback from affected stakeholders to improve acceptance of control measures) and the elimination of gaps or deficits as well as of overlaps or conflicts with other authorities.

§ Further and more regular capacity building is needed. As a frequent feedback to the information activities in this project, from Steering Group members and in the final evaluation, enforcement officials underlined the need for more workshops or training sessions of the kind provided in the LIFE project. More regular seminars are necessary to expand and

consolidate knowledge and abilities, to keep track with latest developments in illegal activities and in enforcement and investigation methods, and to reach more and new officials. There is rather little staff development and training activity within agencies, and specific issues like in the current project could not be covered internally.

§ More targeted capacity building is required

Another statement from authorities is the strong need for more targeted information work. Different agencies have very different responsibilities and officers must therefore obtain specific information and competencies. Training and information work must be customized to the requirements of each individual agency and respond to their specific expertise, field of activity, working conditions and processes.

§ Coordination and cooperation between national agencies must be increased

Both in Romania and in Bulgaria, a rather high number of different authorities are responsible for implementing legislation concerning sturgeons or caviar. Representatives of enforcement agencies stated that there is considerable lack of collaboration between individual authorities and that many of them are not clearly aware of the competences of other institutions. Overlaps or gaps between responsibilities are a rather common problem. Even official requests to other national authorities are sometimes neglected or refused. This lack of coordinated enforcement is a serious obstacle for effective control and protection measures, and increased synchronization and cooperation - including with prosecution and judiciary - should be a priority for all agencies concerned.

§ Cross-border and international coordination and cooperation are crucial

Poaching and wildlife trafficking are offences that are often not limited to national territories. Sturgeons live in the international waters of the Danube and Black Sea and are illegally caught in most range states; illegal caviar trade commonly involves transfer across borders. Therefore, regular information exchange (on successful procedures, seizures, smuggling methods or routes, etc.) and close collaboration of neighbouring countries (incl. joint transborder controls and investigations) are essential to successfully fight these criminal activities in the dimension they appear.

Decision makers

§ High turnover makes work with decision makers difficult

Working with decision makers on national level is problematic because public executives in the two target countries are replaced rather often and positions are filled with new people. This means that information work and involvement has to start all over again, and informed stakeholders are shifted to completely different departments and duties. Therefore, awareness and information work on this level should be continued collectively with well-connected stakeholders such as the Danube Sturgeon Task Force or ICPDR.

§ Committed media and public could encourage decision makers

An indirect method to win interest and support of decision makers for sturgeon conservation can be the involvement of public and media. Higher-level policy makers are usually very interested in the opinion of these groups which can be used to the benefit of sturgeons by in-depth and broad media work and public awareness raising, highlighting the critical status and the strong need for actions.

§ Support for sturgeons should be gained from decision makers on EU level and international institutions

It is important to call attention of decision makers on EU and international level to the conservation of the last viable sturgeon populations within the European Union. First of all, many legal matters - such as the caviar labelling system - are decided on EU level (e.g. EU Wildlife Trade Regulations) and are effective in Member States (i.e. Romania and Bulgaria), with many also applied by candidate

countries (e.g. Serbia) and priority countries within the European Neighbourhood Policy (Ukraine). In addition, EU and international institutions have important panels, working groups and meetings (e.g. EU Enforcement Group, meetings of EUSDR or ICPDR) where decision makers exchange information and experiences and are part of various planning processes (e.g. of the Danube River Basin Management Plan). Thus, representatives of EU and international bodies can positively influence and reinforce national policy makers of the project region.

Sturgeon breeding and caviar trading companies

§ The caviar industry should improve reliability of their products and protection against forgery

Many companies producing and/or selling caviar are complaining about the unfair competition from vendors of illegal caviar, which is still offered to much cheaper prices in the region, or about forgery of their labels. It should therefore be in the greatest interest of the aquaculture industry to take on stricter policies for their labelling/traceability measures than those required by law (e.g. to ensure that they have fraud resistant security features on their labels). This would make discrimination of illegal products far easier - both for law enforcement and for retailers or consumers - and consequently impede their entry into the market and strengthen the legal trade.

§ Information and awareness of retailers must be increased

While producers and international traders are found to be usually well informed about legal requirements regarding trade in sturgeons and caviar (though not so much about the situation of Danube sturgeons), retailers are often remarkably unaware of these and unfamiliar with the mandatory CITES labels or codes. Since they are purchasers as well as resellers and main contact points for consumers, they need to know how to distinguish legal from illegal caviar, in order not to buy or sell illegal products, and to pass this knowledge on to their clients. It is therefore very important that staff in shops, restaurants, catering businesses, etc. has increased awareness and knowledge.

§ Information outreach to potential consumers of meat and caviar is needed

In telephone surveys among the general public in Romania and Bulgaria, more than half of the respondents said that they would eat sturgeon meat or caviar if they had the opportunity, but a majority indicated that they could not tell the difference between legal and illegal sturgeon caviar. This demonstrates the large amount of potential consumers in the project countries and the clear need to inform them about the impact of illegal trade in sturgeon products and how to avoid it. Obviously, if more consumers request information from retailers, vendors would have to improve awareness and knowledge of their staff. Most importantly, consumers strongly influence the demand for endangered species.

§ Certification of sturgeon products will allow for responsible consumer choices and drive the industry to sustainability

Currently, no easy way of distinguishing between legal and illegal sturgeon products exists for the consumer, as decoding CITES labels is often difficult. Moreover, even if legal, production of sturgeon products can be unsustainable. Certification, such as exists for other aquaculture, allows for the consumer to drive the market towards sustainability and the industry to self-regulate. Several traders and companies expressed interest in such certification, especially in view of distinguishing themselves from the shadier competitors.

5. Recommendations for application in sturgeon range states and consumer countries

The situation and the problems found in Romania and Bulgaria are largely comparable to those in other sturgeon range states. Illegal fishing and trade are a problem in most of them and a main threat to many sturgeon populations.

The earnest inclusion of fishermen in sturgeon conservation is a precondition for the success of any effort to stop overfishing - both legal and illegal. Even with tight control systems in place, wild sturgeons can hardly be saved without the support from fishermen. Based on the positive experiences from this project, it can be strongly recommended to use adequate personal communicators such as local "Sturgeon Advocates" to gain interest and trust from fishermen and to raise their acceptance of protection measures.

Perhaps apart from in North America, an important driver for illegal sturgeon fishing and trade is poverty and shortage of other sources of income. In order to achieve a better protection of wild sturgeons, fishing communities need to get support in finding satisfactory livelihood from legal sources, through active technical assistance as well as through adequate financial backing. The form of support must be adapted to the regional situation and local possibilities. Compensation schemes must take care not to trigger further fishing of sturgeons (e.g. by paying rewards for released by-catch). With this in mind, successful approaches could be applied in many range states, and it would be important to exchange experiences and best practice cases.

In many countries - both range states and consumer countries - the effectiveness of enforcement is not sufficient. Poachers, illegal traders and smugglers are very inventive and adapt their methods and routes quickly according to possibilities that appear most promising and least risky, and they are often well-connected across countries. Therefore, law enforcement agencies need to keep track with emerging strategies of illegal fishing and trade as well as with techniques to enhance controls and prosecution - not only on national levels but from other range and consumer states as well. This requires close cooperation and regular exchange of experiences between agencies and between countries. At least within the EU, existing options like the EU Enforcement Group or the EU TWIX email list (www.eutwix.org) should be used as much as possible; on an international level, Interpol and its targeted wildlife trafficking programs could be a very good way to join efforts.

In general, lack of awareness is a fundamental problem for sturgeon conservation, and consciousness and knowledge need to be increased in all relevant stakeholder groups. This is especially important among those potentially catching sturgeons, among all responsible enforcement agencies along the whole trade chain, among prosecutors and judiciary, among decision makers, and among industry and consumers.

Increased awareness is of major significance in source countries but also essential in consumer countries, where illegal activities are to be prevented by law enforcement, but information has to reach retailers and clients, too, in order to tackle the problem from the demand side as well.

6. Long-term strategic requirements for a better protection of Danube sturgeons from poaching and illegal trade

Based on suggestions from relevant stakeholders, especially the members of the Project Steering Group, and on important findings from the current project, and building on the “Action Plan for the conservation of sturgeons (*Acipenseridae*) in the Danube River Basin” (2006)⁹ and “Sturgeon 2020” of the Danube Sturgeon Task Force (2013)¹⁰, the following strategic requirements were formulated as guiding principles that should be met as much as possible, in order to achieve significantly reduced poaching and increasing populations of Danube sturgeons (at least Beluga - *Huso huso*, Russian sturgeon - *Acipenser gueldenstaedtii*, Stellate sturgeon - *Acipenser stellatus*, Sterlet - *Acipenser ruthenus*) in the Lower Danube region by 2020:

Appropriate legislation and sufficient political support for sturgeon conservation are in place

- § Relevant national, EU and international (e.g. CITES labelling requirements for caviar) policy requirements regarding conservation, fishing, aquaculture and trade are suitable and concerted to effectively protect wild sturgeons, including regular monitoring and amendments as necessary; this must involve primary and also secondary legislation, as the latter determines the details of national law enforcement
- § Representatives of key stakeholders (not only from agencies but also fishermen, caviar industry, scientific institutions) are involved in preparation or revision of legal instruments on national, EU and international level to warrant best operability, acceptance and commitment
- § National policies in the Danube River basin are harmonised between all range states, including along the Black Sea (e.g. catch bans or fishery restrictions can only be effective if applied by all countries sharing fish stocks)
- § Sturgeon fishing bans are only lifted if sound scientific evidence proves a satisfactory recovery of sturgeon stocks (taking into consideration all species) and only in a sustainable way on a level that allows continuing stabilisation, and under close control of fishing and monitoring of affected stocks
- § Adequate resourcing for law enforcement and basic research are ensured by decision making bodies so that enough staff, equipment, fuel, office costs, etc. as well as costs for capacity building and cross-border cooperation are guaranteed and successful measures for sturgeon conservation and monitoring can be taken
- § Sanctions against those who are involved in illegally capturing or trading sturgeons are high enough (including imprisonment in severe cases) to have a deterring effect
- § The conservation of Danube sturgeons has a high priority on the political agenda on local, national, EU and international (e.g. ICPDR, CITES) level and there is significant commitment by decision makers
- § Future economic developments along the Danube, in the Danube delta and in the Black Sea - concerning navigation, dredging, tourism, etc. - do not compromise conservation measures

Legislation regarding sturgeon fishing and trade is effectively implemented and enforced

- § Gaps, obstacles and conflicts with regard to law enforcement are addressed and eliminated, uncertainties or overlaps (e.g. in fields of responsibilities between different enforcement agencies) are concordantly clarified

⁹ Bloesch et al. (2006): Action Plan for the conservation of sturgeons (*Acipenseridae*) in the Danube River Basin. Nature and environment No. 144, 112pp
http://danube-sturgeons.org/wp-content/uploads/2013/01/Action_Plan_for_the_Conservation_of_the_Sturgeons_in_the_Danube_River_Basin.pdf

¹⁰ http://www.dstf.eu/assets/Uploads/documents/Sturgeon-2020edited_2.pdf

- § Best-practice control and administration procedures are developed and applied, involving regular monitoring and enhancements, where necessary and possible (taking into account feedback from key stakeholders to remediate potential drawbacks), as well as international experiences
- § Conservation of sturgeons is of importance for law enforcement agencies and sufficient human, technical and financial resources are allocated
- § Regular capacity building measures (training courses, updated training material, etc.) in all relevant agencies ensure high up-to-date competence and motivation of officials
- § Authorities are aware of and able to apply state-of-the-art technology in controlling and investigating (e.g. genetic or isotope analysis for sturgeon products)
- § Law enforcement agencies respond adequately to reported cases of infringements, collect all relevant data regarding potential violations of law, and work transparently
- § Coordination, cooperation and exchange of data and experiences between all relevant national bodies administering and controlling sturgeon fishing, aquaculture and trade (Fisheries Agencies, Customs, Police, CITES Management Authority, etc.) are effective
- § National agencies cooperate closely with respective offices in neighbouring countries and with organisations and tools on EU and international level (EU Enforcement Group, EUROPOL, EU TWIX, Interpol, WCO¹¹, UNODC¹²)
- § Fraud in CITES documentation or caviar labelling is eliminated through more forgery-resistant documents and labels and enhanced verification systems

Best-practice research provides for optimized enforcement, prosecution as well as further conservation measures, including monitoring of their effect

- § Relevant data e.g. on by-catch or trends in stocks of all sturgeon species (to see if or where protection interventions are successful or need to be increased) from the Danube River basin and the Black Sea are investigated comprehensively and with standardized methodology and collected results are available for more targeted and effective enforcement and conservation; this includes research of other factors influencing sturgeon stocks, especially regarding connectivity of migration routes and key habitats
- § Scientific identification systems for sturgeons and their products in trade allow clear distinction of illegal from legal activities and products (e.g. caviar of wild origin from farmed), forming the basis of successful prosecution

Further ex-situ and in-situ measures reduce the pressure on Danube sturgeons and enhance their recovery

- § Restocking with appropriate captive material and state-of-the-art methodology, under close supervision of authorities, supports wild sturgeon populations
- § Other measures to reduce threats and foster sturgeon populations - especially safeguarding or restoring key habitats and migration routes for whole life cycles of all sturgeon species - complement the fight against poaching and illegal trade

Socio-economic conditions for local communities have improved satisfactorily and make fishermen less oriented towards illegal fishing

- § As long as fishing of Danube sturgeons poses an intolerable threat for wild stocks and needs to stay banned, local communities are provided with incentives and are supported in developing alternative income sources and setting up successful businesses or services that compensate the missing income from sturgeon fishing and, in addition, provide occupation and self-esteem

¹¹ World Customs Organization - www.wcoomd.org

¹² United Nations Office on Drugs and Crime - www.unodc.org

- § Improved local infrastructure, education opportunities, market structures and social services support this development
- § Fishing communities are involved in sturgeon research, conservation and - in the future - sustainable management

Illegal domestic and international trade in sturgeon products is eliminated

- § The enhanced traceability of sturgeon commodities (incl. caviar and meat but also fertilized eggs, fingerlings and other life sturgeons) along the whole chain of custody ensures that illegal products - especially those originating from wild caught sturgeons - are eliminated from domestic and international markets
- § The CITES universal caviar labelling system is enhanced (higher fraud-resistance, security elements, CITES code prominently placed and clear to read) and applied for all caviar on sale; improvement measures should be set by CITES and EU Wildlife Trade Regulations or developed and employed by the caviar industry in its own interest
- § Domestic market, import and export of sturgeon commodities is regularly monitored, covering all potential points of sale (street vendors, shops, restaurants, catering, etc.), and findings are utilized by enforcement agencies
- § National sturgeon/caviar producing, processing and exporting companies are registered in compliance with CITES provisions and are regularly controlled by the appropriate agencies to which they provide transparently all necessary information
- § National and international caviar traders, retailers and clients in consumer countries are informed about sturgeon conservation needs and necessary measures (esp. CITES caviar labelling) and committed to support it by selling and buying only products that are correctly labelled

Public awareness raising has led to long-term support for sturgeon conservation

- § Informed and committed citizens in range states of Danube sturgeons take strong interest in and actively request conservation measures
- § Media, NGOs and networks of volunteers actively support conservation activities
- § The strong influence of public opinion on key stakeholders has led to better financing and consequently enhanced protection and research
- § A change of attitude within the broad public results in a significantly reduced negative impact on sturgeons

7. Closing comments

It is in the interest of nature conservation worldwide that efforts to protect Danube sturgeons are significantly increased. This cannot be left to Romania, Bulgaria and other range countries - some of which are in economically or politically difficult situations - but should be supported by competent EU and international bodies, including with financial means.

In the light of the planned EU Wildlife Trade Action Plan, the successful protection of the last viable sturgeon stocks in the EU from poaching and illegal trade can be a perfect showcase, demonstrating that the EU leads by example and takes strong measures to preserve its own biodiversity. Combating illicit trafficking in protected flora and fauna - a declared priority of the EC - is not only a main threat to tigers in Asia or elephants in Africa but also for sturgeons within the EU.

8. Contact points for further information on the project

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