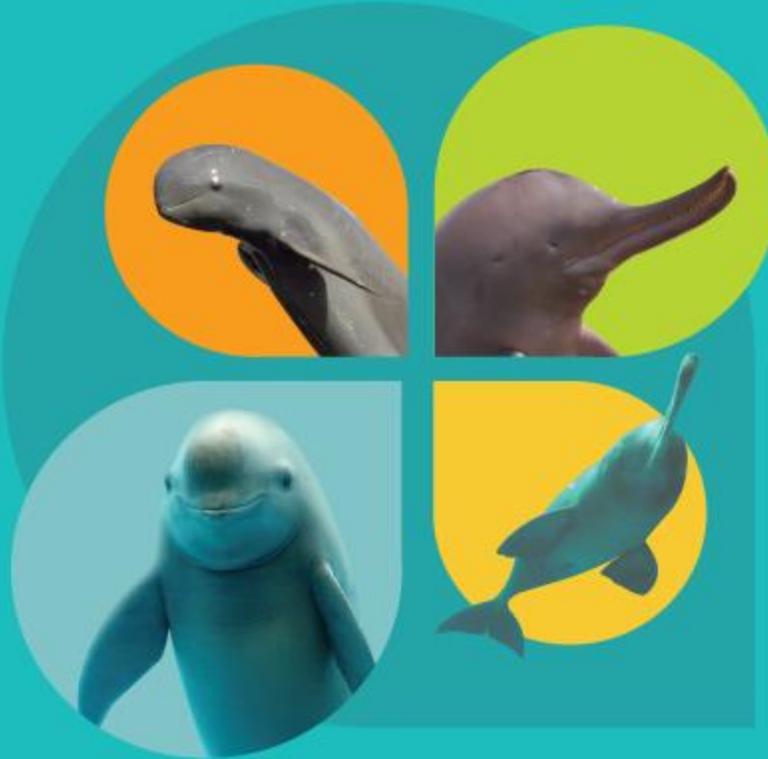




INTERNATIONAL
WHALING COMMISSION



INTERNATIONAL WORKSHOP REPORT

Addressing the threats from fisheries to the freshwater cetaceans of Asia

 5 to 7 October 2022

 Islamabad, Pakistan

EXECUTIVE SUMMARY

Freshwater cetaceans (river dolphins and porpoises) inhabit eight Asian countries: Bangladesh, Cambodia, China, India, Indonesia, Myanmar, Nepal and Pakistan. The four Asian river cetacean species living here face similar challenges from fisheries practices: bycatch is the highest cause of direct river dolphin mortality, besides the effects of water infrastructure, water quality issues and habitat destruction.

During three days in October 2022, government representatives, cetacean experts and fishery experts from all eight Asian river dolphin countries gathered, some joining virtually, with the objective to discuss how to best tackle this threat; reducing river cetacean mortality and seeking more sustainable fishery practices for people and nature.

The details of the discussions are written down in this report. As the final conclusion, all participants agreed to the 'Islamabad Recommendations': develop together a fishery-focused, river dolphin Conservation Management Plan under the International Whaling Commission for Asia. At least five governments actively participate in this development: Bangladesh, Cambodia, Indonesia, Nepal and Pakistan.

Reference: WWF, 2022. International Workshop Report Addressing the threats from fisheries to the freshwater cetaceans of Asia; Islamabad, Pakistan.

Key words: freshwater cetaceans, Asia, sustainable fisheries, IWC, transboundary collaboration



International Workshop Report

Addressing the threats from fisheries to the freshwater cetaceans of Asia

October 5th: Inauguration

The workshop started with a formal inaugural session, attended by high level government representatives from five freshwater cetacean range countries in Asia; Bangladesh, Cambodia, Indonesia, Nepal and Pakistan.

The Government of Pakistan representatives included Inspector General Forests, Ministry of Climate Change and senior officials of the Fisheries and Wildlife departments from the three provinces that have Indus river dolphins. There was a formal welcome to international delegates and other participants by Hammad Naqi Khan, DG of WWF - Pakistan and Ghulam Qadir Shah, Inspector General Forest, Ministry of Climate Change, Government of Pakistan, followed by the brief introduction of the River Dolphin Rivers Initiative by Daphne Willems, WWF Netherlands and reflections on species and fisheries impact situational overview by the government representatives from Bangladesh (Rezaul Chaudhry, Wildlife Management and Nature Conservation Division, Bangladesh Forest Department), Nabraj Padasani (Department of Forest and Soil Conservation, Government of Nepal), Pak Ricky, Indonesia (Ministry of Maritime Affairs and Fisheries, Indonesia) and partners.

His Excellency, Prof. NAO Thuok from Kingdom of Cambodia provided insights in the Mekong population of the Irrawaddy dolphin, focusing on the historical perspectives and conservation efforts while generously offering his support towards the Conservation Management Plan under IWC for the region in his capacity as a member of the IWC.

Prof. Wang Ding from the Chinese Academy of Sciences/IUCN Cetacean Specialist Group discussed the recent legislative reforms in China, banning fishing activities in the entire Yangtze river for the revival of fish and ecological restoration of the river. Danielle Kreb from Yayasan Konservasi RASI shared impacts of different fish gears on the Irrawaddy dolphins. Dr Lindsay Porter and Dr Fernando Trujillo, both co-chairs of the Small Cetaceans Committee of the International Whaling Commission discussed the process of a Conservation Management Plan under IWC and its importance and influence in species conservation.

This event was excellent in setting the stage for subsequent discussions to focus on fisheries threats to freshwater cetaceans in the region and ways to approach this serious, yet ignored threat. It also helped in establishing the fact that fisheries are the threat that connects the Asian countries together and building collaboration, sharing knowledge, experiences and expertise can be an effective approach.

Understanding the Asian river dolphins situation and threats from fisheries; how an IWC regional Conservation Management Plan (CMP) can help

The afternoon session focused on understanding the Asian river dolphins situation and their threats arising from fisheries activities; how an IWC regional Conservation Management Plan (CMP) can support finding solutions to this threat (including a concrete example from South America), and how such CMP relates with other international agreements on river dolphin conservation.

Introduction to all participants: see the participation list in Annex 1.

Asia river dolphins and the threat from fisheries

WWF's Asian coordinator of the River Dolphin Rivers Initiative, Dr. Uzma Khan, shared an overview of the river dolphin populations in Asia, the threats these species face in general and from fisheries activities. She shows that in the Asian countries, direct mortality of river dolphins is for a large percentage due to fisheries practices, especially entanglement in gill nets. But other gear as well can cause problems, as overfishing can, for both the dolphins and the communities depending on these fish. She shared the possible solutions (existing and innovations) to tackle these threats from fisheries to river dolphins, taking into account the livelihood necessities of the fishers. The presentation is included as Annex 2 A

A global approach, mobilizing and supporting all river dolphin governments to take action

WWF's Lead of the River Dolphin Rivers Initiative, Daphne Willems, shared the process on the global level to increase political awareness and commitments to conserve river dolphins in the 14 countries where they live. In South America, a regional Conservation Management Plan under the International Whaling Commission (IWC) was agreed last year (2021), and in Asia, an agreement exists since 2020 for the South Asian river dolphin under the wings of the Convention on Migratory Species (CMS).

An agreement by the represented Asian river dolphin countries to develop a regional CMP with IWC as being discussed during this event, would complete these existing pillars, strengthening our shared river dolphin conservation objective. In addition, a global agreement could be reached by next year, emphasizing the regional commitments on a worldwide platform as was done for other species before (e.g. tigers). At the upcoming Ramsar CoP (5-13 November in China/Switzerland), a Call to Action will be shared during a focussed side-event, to build the momentum towards a global consensus. The full presentation can be found in Annex 2 B

How does the IWC CMP process work, and what support can IWC provide?

Lindsay Porter, Co-chair of the Small Cetacean Committee of the International Whaling Commission (IWC) explained with a lot of detail the background and the process of the Conservation Management Plans: which ones exist, how do they work, what are the experiences with the development and implementation, what are the steps to nominate/develop new ones like for the Asian river dolphins? There are different types of CMP's; the one we are discussing during the Conference is called a Threat-based, Multi-species CMP. The process is very structured, and takes 1,5-2 years in total, from the intention by the countries involved (the place where the Asian river dolphin CMP is now) towards full endorsement by the IWC members. Lindsay Porter is committed to supporting the development of a threat-based (fisheries) CMP for the four Asian river dolphin species. Her introduction presentation to the IWC can be found in Annex 2 C, and the official IWC CMP process and all steps involved Annex 2 D

Experiences from South America: development and implementation of the first river dolphin CMP

Fernando Trujillo, Director of the Omacha Foundation, Colombia and with Lindsay Porter the Co-chair of IWC's Small Cetacean Committee, showed how this IWC CMP development process was done in South America. Where, four countries agreed to work together to conserve their river dolphins - indeed a multi-species CMP, and also a multi-threat CMP, while solution directions to all challenges for river dolphins in Brazil, Colombia, Ecuador and Peru are mentioned in the Action plan of this CMP.

When the CMP was endorsed by the IWC members in 2021, Fernando Trujillo was appointed by the four governments to coordinate its implementation; the IWC is financially supporting this coordination role. The shown powerpoint presentation can be found Annex 2 E, and the IWC South American river dolphin CMP, as a reference for the Asian one can be downloaded from the IWC website [here](#).

After this presentation, there was a one-hour questions and answer session with Fernando Trujillo and Lindsay Porter, for all participants to have clarity on the IWC processes, and learn from the existing experience.

Discussion and Q&A

A rich variety of questions was asked on river dolphin expertise, like eyesight, evolution, translocation possibilities, etc., making use of the (virtual) presence of experts. Lindsey teaches us that all cetaceans originated from the rivers of Pakistan, so it is very adequate that we are having our meeting here!

Below a summary of the answers to the questions asked by the workshop participants:

[Learnings from the South American IWC CMP for the Asian IWC development](#) (Fernando Trujillo):

1. The ideal base of a regional conservation management plan are the National Species Action and Conservation Plans, to build the regional approaches on. It is very helpful to have these national approaches and related prioritization in place, although it is not mandatory.
2. It is important (and difficult) to get different departments and ministries involved and working together inside the governments (ministries of environment, fisheries, energy, mining, etc.): be aware and invest in this national, internal government alignment.
3. The South American CMP-text was first built by NGOs/ experts from the four participating countries, and with a draft document, the governments were brought in, during in-person and virtual meetings, for them to feel a strong ownership. This ownership is crucial, for the governments to embrace river dolphins as an opportunity and a tool for the conservation of the rivers and wetlands.
1. Make sure to have this narrative right. A singular-species-approach can be felt as a challenge (do we need a separate plan for every species?) - but as top predators, river dolphins represent the entire river system health, so it is not about the species alone.
2. For the leading government of the CMP development (in the case of South America: Colombia), it is important to have a good working relation with the other CMP countries, and the support from other stakeholders for example academia, NGOs and experts.
3. The IUCN Red List assessments of the river dolphin species have a lot of information on the species, status, threats, risks etc., to be used to write the texts for the CMP development.
4. On the added value of a CMP over national action plans, Fernando indicates that the CMP is really a vehicle to support governments to implement the national action plans. In addition, there are transnational issues that require international approaches, alignment and governments working together, collaboration. The CMP-coalition is encouraging, to give governments the energy and motivation to tackle these difficult conservation problems.

Advice and remarks from the IWC (Lindsay Porter)

1. Follow the official IWC procedures and CMP development process: IWC has flow-charts in place for all processes, and a designated template to develop a CMP proposal and the final document.
2. There are different cultures and political situations in the region. The IWC stays clear from politics, while it works purely science-based. IWC is well-aligned with IUCN (Cetacean Specialist Group) and the Convention on Migratory Species, CMS. In addition: IWC will never act except on the explicit consent/ request of the government of a country.
3. The IWC actively supports the CMP development, by providing conservation scientists input and funding, e.g. for a CMP coordinator position.
4. Stakeholders; Involve fisheries associations (formal and informal) in an early and active way in the development of the CMP; while this is a fisheries-based CMP, their role is crucial.

5. The countries that agree on a CMP, need to have the frameworks of legislation in place, the mechanisms to implement the CMP agreements and actions. This can be a national river dolphin conservation action plan, but also a national fishery law, for example.
6. It is not necessary to be a IWC-member to be part of a CMP. But in case of interest: It is easy to become a member, by simply writing an application to the IWC secretariat, and paying the (low) annual fee. Lindsay will provide further information on the IWC application process.
7. Bilateral agreements between governments for a CMP is not a requirement of IWC.
8. It is important that activities of a CMP are implementable and practical.

6th October 2022

Session 1: Threats from fisheries and what needs to be done?

→ *Mortality Monitoring Network of cetaceans*

After a brief recap of day 1, the second day started with a presentation on mortality monitoring given by the National Marine Mammal Foundation, San Diego, California. The presentation highlighted the importance of data collection and mortality monitoring of cetaceans in order to enable more reliable determination of the main mortality causes and thereby ultimately allowing for more tailored and efficient conservation measures.

A key factor in collecting comprehensive and reliable mortality data are so called monitoring or stranding networks which can be led by organizations, volunteers or even local communities and act as a first point of contact for all cetaceans stranding incidents within a certain area.

A recent case study from Pakistan showed that if given sufficient capacity and resources these networks can be critical to support local data gathering and dolphin health assessment. They can act as first responders for stranding incidents, provide veterinary and scientific support, can increase local awareness for freshwater cetaceans and the challenges these animals are facing. This presentation is available as Annex 2 F.

→ *Brief reflections from each range country to understand the fisheries impact on dolphins and legal gaps*

The second discussion of the day focused on the impact of fisheries on dolphins and legal gaps in the different range states. Therefore, each country provided some reflecting thoughts:

Myanmar

Conflicts between dolphins and fishermen are frequent. Fishermen often report about dolphins coming close to their boats in order to snatch a part of their catch. Whether this behavior of the dolphins is due to lack of food or out of convenience is unclear.

Furthermore, the current fishery laws seem outdated as they were established in 1991 and not updated since. Fines for violations are comparatively small (10USD) and regulations as well as enforcement differ across the country.

Nepal

Clear legislation on fisheries is in place but implementation and enforcement remain difficult as responsibilities for implementation are fractured across different areas (e.g. forests, national parks) as well as various institutions. Therefore, accountability and ownership of biodiversity conservation presents a key challenge.

As communities near the rivers tend to be poor, fishing often presents the only sort of income for these people. Providing alternative livelihoods (e.g. through eco-tourism) could be an option to support these communities and reduce pressure on the river system.

Pakistan

Sindh:

Illegal to catch dolphins. Violations can result in up to 6 months imprisonment and confiscation of gear. Enforcement is done by Sindh Fisheries conservation force. Unsustainable fishing practices (e.g. certain net types, electrofishing, dynamite fishing) are banned. Contractual fishing is banned and now there are individual licenses issued by the department. Turtles and other endangered species are being protected.

The Sindh Wildlife Department passed a new law in 2022 to enhance the protection of river dolphins.

Punjab:

WWF sensitized the fisheries department on river dolphins. Fisheries department launched various initiatives to encourage conservation among the local population and put contractual fishing agreements in place. The fisheries law allows fix / drag net fisheries and is silent on overnight fishing. Recently the Punjab Forest, Wildlife and Fisheries Department has banned fishing in many areas and this ban overlaps with the habitat of the Indus River dolphin in Punjab. However, further research will be needed to determine effectiveness and sustainability of such measures for the ecosystem as well as for the local communities.

KPK:

Fisheries laws are in place but violations tend to take long to be processed and only lead to minimal fines therefore they have little effect on local fishing practices. To improve the situation provincial collaboration as well as trans-provincial protected area needs with clear regulations and monitoring would be needed.

There is a protected area for the dolphins in KPK province and fishing is allowed in this protected area. The division of responsibilities between the Wildlife and the Fisheries departments, seems to represent a jurisdictional issue making the progression in river dolphin conservation more challenging.

India

Availability of data / studies on river dolphins remains a big challenge in India. To fill these data gaps and get a better overview of the current situation, engaging with local fishermen and communities is a key activity in the country. The recently started project for the testing of pingers is a hopeful development to reduce human wildlife conflicts.

Responsibilities and regulations for fisheries are spread across different departments while water itself is considered a state subject. Fishery laws are often outdated and enforcement across the country remains difficult. There is sufficient data that also shows that dolphins get entangled in the legal nets which clearly shows that this requires updating and more understanding.

Indonesia

See Danielle's presentation in Annex 2 G.

Bangladesh

The country is facing high pressure on the river system through millions of fishermen depending on this form of livelihood. Even though the importance of river dolphins as well as the safe release of bycatch is presented to a lot of fishermen, the situation remains tense as nationwide monitoring is not feasible (e.g. mesh size, release of bycatch, etc.).

From a regulatory perspective, laws (protection act) are in place since 1990 and a river dolphin national action plan since 2021. Monofilament nets are banned and there are nine sanctuaries to protect river dolphins.

→ Expert panel on fisheries: Sustainable fisheries and river dolphins - good and practical practices.

As a last activity within session 1 ("Threats from fisheries and what needs to be done?") an expert panel consisting of **Micheal Akester, Danielle Krebs, and Ian Cowx** discussed the topic of sustainable fisheries practices.

The multiple uses of freshwater including fishing represents the biggest challenge in terms of conservation success for river dolphins globally. Millions of people depend on inland waters as their only form of livelihood, in some countries commercial fishing activities add further pressure to the situation, while legal frameworks are often weak and inconsistent. All these factors eventually contribute to an increased mortality of river dolphins.

To elaborate further on these challenges and discuss opportunities for sustainable fisheries practices all panelists were asked questions regarding their respective field of expertise:

Micheal Akester – World Fish

Q: What in your experience in Asia have been successful, sustainable fishing practices? While aquaculture and fish stocking are common in Asia, what are the best practices to refer to?

A: One of the best practice examples are the Hilsa fisheries in Myanmar, which are built on science-based agreements taking into account different species biology, migration routes, seasonality as well as economic and social aspects. Furthermore, communities are actively involved in the process and help with the collection of data which is then evaluated and utilized within the agreements. Based on these insights a fisheries management plan was developed including closed season and quotas as well as alternative income sources (rice production) for the two months of closed season. Fiscal reform to compensate when fishers aren't fishing are part and parcel of a management plan.

Regarding fish stocking, Michael shared a rather critical perspective as the fish are often bred under ideal conditions and are not fit for survival in the wild at the time of their release.

Q: What problematic gear do you see in fishing practices? How do we address the proliferation of commercially manufactured fishing gear?

A: Any fishing gear used at the wrong time at the wrong place is damaging. No dynamite and no poison fishing. Monofilament nets are highly damaging as well. These practices are illegal in most countries, and clear enforcement as well as strict punishment is needed to control them. Confiscate and destroy illegal gear and also go after the manufacturers to solve the problem from the source.

Danielle Kreb – Yayasan Konservasi RASI

Q: You have worked a lot with fishermen in the Mahakam river, please share what fishing practices have been proven to be least damaging for the Irrawaddy dolphin? How has technology helped your work in Indonesia?

A: In Danielle's experience the least damaging gear can include the following:

- Pots and traps are sustainable fishing gear
- 'lift nets' can be sustainable if right mesh sizes are used
- 4 cm mesh size gillnets are seen as sustainable where Irrawaddy dolphins do not get entangled in the Mahakam river, but bear risks for dolphins as they tend to swallow parts of the nets when snatching fish

On the other hand, most damaging gear include the following:

- Nets that are spanned across the river and trap fish coming from the lakes in dry season are considered highly unsustainable as they block natural migration routes and leave no room for escape for any species

- Fishing with 'traditional poison' which is a natural poison based on a local plant species. This fishing practice is harmful for the entire ecosystem as well as for the humans consuming the fish afterwards

Ian Cowx added that electrofishing represents a problem in certain areas. The fish killed by this method naturally attract dolphins which exposes the mammals to the risk of getting electrocuted themselves. This also leads to the assumption that there are not sufficient fish stocks present in the river which encourages the dolphins to consider the electrocuted fish as the only available food source.

Danielle shared that the technology of acoustic pingers has proven to be successful in Indonesia, deterring the dolphins 10-20 meters from the net, while increasing the income for the fishers (more catch, less gear damage). The success of this technology depends on finding the right loudness and frequency for the specific river dolphin species present in the respective ecosystem. Complete report can be shared upon request.

***Q:** What mesh size/materials do you think helps in safeguarding fish and dolphins?*

A: Larger mesh sizes (>6 cm) are damaging to dolphins: they cannot escape when they get entangled. Small mesh sizes (<4 cm) are damaging for fish stocks as the fish cannot mature and reproduce before they get caught.

Also the material is important. Thinner nylon for example allows the dolphins to break free in case they get entangled and is in some ways a better alternative. Ideally fishermen use alternative gear (e.g. pots) to reduce gillnet use

Ian Cowx - University of Hull

***Q:** What in your view is the best way to balance community resilience, economic interests and dolphins together in a river?*

A: Human made interventions have changed river ecosystems globally, causing a deterioration of natural habitats and a decline in the migratory species (which are often high value species). In consequence, fishermen have adapted their techniques and gear, increasing fishing pressure on these ecosystems dramatically.

The scarcer fish populations in a certain ecosystem are and the higher the fishing pressure is, the more likely are interactions and conflicts between dolphins and humans as they compete for the same source of food.

Clear management plans and ideally community based agreements including closed fishing seasons, restrictions on certain types of gear and responsible law enforcement are therefore key to protecting dolphins.

The only way to achieve this is by working together with the local communities, identifying their needs and ideally providing alternative livelihoods.

Q: What practices in your opinion help in managing the riverine resources in as sustainable a way as possible? If you could also give some examples.

A: You need to understand which incentives both sectors (conservation as well as fishing) have to do what they do. The conservation sector cannot only blame the fishing sector without providing real alternatives. Therefore, working together with these fishermen on a local level, understanding their needs and providing alternative options will be crucial when it comes to the success of conservation efforts.

On a higher level it will also be key to resolve transboundary issues between districts, provinces, countries in order to harmonize legislation and create clear rules around the matter.

Session 2:

→ Action plans to tackle fisheries threats

The first activity within session 2 were breakout group discussions. The participants split up in 4 groups to discuss following topics 1) What is the safe fishing net and gear or alternative gear for river dolphins, 2) Fisheries community engagement and alternative livelihoods, 3) Bycatch mitigation measures, their effectiveness and limitations, 4) Protected areas and OECCM's

1) What is the safe fishing net and gear or alternative gear for river dolphins

During the discussion it became clear that legislation on allowed gear is very much dependent on the respective country.

Indonesia is looking into a legislation that allows mesh sizes greater 6cm with a total weight of less than 10kg while the nets need to be set at a certain angle to the bank.

Pakistan has little data available on dolphin mortality. Stricter legislation would be needed to ensure that dolphin deaths are reported. Closer collaboration with local fishermen could be another alternative to collect the necessary data. However, funding for these efforts is limited.

Despite the limited availability of data, some legislation is in place. For example in Sindh, mesh sizes smaller than 1 inch are prohibited. However, it is not clear if this measure is sufficient as the narrow-beaked dolphins present in the river might still be able to get entangled in these nets. Hence, to determine optimal legislation in Pakistan further research will be needed. Also country-wide collaboration across provinces needs to be further enhanced to harmonize legislation throughout Pakistan and increase enforcement efficiency.

Nepal forbids trawling and drag nets while allowing gillnets with a mesh size of 4 to 10 cm. Currently, there are considerations to ban gillnets entirely as a result of their impact on the local fish stock.

Myanmar has no mesh size laws in place and legislation is rather focused on fishery contractors. The country has some dolphin mortality data available but no clear evaluation of the individual causes of death.

2) Fisheries community engagement and alternative livelihoods

The discussion touched upon the knowledge base (what is adequate fishing gear to save river dolphins? see group 1), the height of legal penalties to be applied when rules are being violated, and the need to include safe zones for dolphins in the National river dolphin Action Plans.

The main discussion focused on alternative livelihoods for fishers. Aquaculture for example, although changing the mind of a hunter is a challenge, and it can be quite expensive: if you do not have land, you need to invest quite a lot in integrated fish farming. In addition, people sometimes prefer (the taste of) wild caught fish instead of aquaculture, as was mentioned to be the case in Cambodia.

Good examples of alternative livelihoods and practices were brought in from three countries:

- In Myanmar there is one company interested in river dolphin tourism, Burma Dolphins. They signed an agreement with the government to give loans to improve alternative livelihoods to fishers to reduce the fishing threat to dolphins; fishers not interested in aquaculture/ fish farming, have an alternative in livestock rearing (pigs).
- In Pakistan, Engro Foundation is providing loans for boats, and sustainable fishing gear like long-line hooks, with value additions to improve post-harvest conservation by use of ice, and to record bycatch.
- In Cambodia there are examples of fishing patrols, so fisher folks are paid to do patrols.

The group identified three challenges: the inadequate (fish) monitoring capacity; the need to apply strategic planning including all objectives in a clear manner; and the need to address transboundary management issues in the National Action Plans.

3) Bycatch mitigation measures, their effectiveness and limitations, expert Uzma Khan

The main point of this discussion was around how do we stop river dolphins from being caught in nets as bycatch. Seven key aspects of bycatch mitigation were identified:

a. Understanding bycatch and collecting data

To fully understand different causes of dolphin mortality, the scale of bycatch and net entanglement as well as to measure the effectiveness of interventions, additional data about dolphin areas, populations and movements need to be collected. For this it is important to have a good liaison with local communities and/or mobilisation through citizen science.

b. Understand and interview communities along the rivers

To evaluate the economic impact of bycatch (e.g. loss of catch, damaged nets) and to understand which gear is most harmful to dolphins, community interviews as well as voluntary community reporting of bycatch is a key factor. This will help in understanding and identifying harmful gear with respect to a freshwater cetacean species and developing understanding about the least harm mesh size because a mesh size safe for one species may be harmful to the other.

c. Fishing gear and deployment

Ideally fishermen should only use nets that can be detected by dolphins (e.g. no mono filament gillnets). Different sizes of mesh can target different age classes of dolphins, a smaller mesh size may be unsuitable for calves. Further the size of mesh may vary according to the species of cetacean in question. The rule of thumb is that the rostrum of a dolphin should not be able to pass through the mesh. This can also mean that it may target juvenile fish which isn't appropriate for fish ecology. The thickness of the net is important as a thin nylon net is undetected by the sonar of dolphins. The commercially available monofilament nets should be controlled. In some countries even mosquito nets are used for fishing. There is import of such nets and these are not even listed as banned items in most cases therefore their access is extremely challenging to control by the fisheries or wildlife departments.

It is important to have an understanding of the deployment and only deploy those nets in certain parts of the river where they don't have a vast impact on the pathways of the river dolphins (e.g. not spanning nets across river banks but parallel to the bank).

Another major factor is that unsustainable fishing practices such as overfishing, trawling or electro fishing/poisoning should be specifically mentioned in the law (which is not the case in most cases) as illegal (where not specifically mentioned) and these must be controlled.

Closures and monitoring

Fishing closures (either temporarily or permanently) for areas with high river dolphin densities or during fish spawning seasons can be another option to mitigate bycatch. To identify these closures, sufficient data on dolphin areas and migration routes is critical.

Innovative solutions and technology

Utilizing and emphasizing innovative solutions such as pinger technology can be another successful way to limit bycatch of dolphins.

Capacity building

Sufficient capacity for rapid entanglement response teams as well as for patrol and law enforcement teams will be key to manage protected areas and mitigate bycatch effectively. This capacity should also include monitoring mortality, rapid response so necropsies should understand the cause of mortality and carefully look for telltale signs of gillnet entanglements. This database needs to be maintained.

Legal reforms

Legal reforms to ban destructive fishing techniques, restrict types and deployment of gear, create protected areas or temporary closures and harmonize legislation on a regional as well as transboundary level are highly needed in order to effectively reduce river dolphin bycatch in the future.

Indigenous knowledge

It is also important to use the indigenous knowledge of fishers to mitigate bycatch, there are certain practices such as using a thicker rope on the water surface once a gillnet is stretched across the river which apparently cause vibrations hence dolphins are seen not to come close the fishing net (used in Pakistan).

4) Protected areas and OECMs (Other Effective areas-based Conservation Measures)

This discussion focused on challenges and opportunities related to protected areas and Other Effective areas-based Conservation Measures, OECMs. Particularly, topics around transboundary collaboration, policy reviews, and integration of alternative livelihoods were discussed.

It got clear that there are various key challenges which need to be tackled in order to increase the effectiveness of PA's and OECMs:

- Legal status of respective area is decisive, therefore it is important to expand PA's and OECMs to cover more relevant habitats
- Implementation and enforcement is not effective in all places, build up of sufficient capacity as well as clear management plans are needed
- Coordination between different government entities (e.g. wildlife and fisheries) as well as transboundary coordination often creates difficulties and limits establishment of new and effectiveness of existing PA's and OECMs
- Especially for OECMs also the coordination and distribution of information among the various stakeholders often presents a challenge
- Incentive based conservation and providing alternative livelihoods could be measures to increase willingness of local communities to support such areas and to obey the respective laws

After the group discussions, every group reported back to the broader audience about the key insights they discussed and the actions needed to address the threats of fisheries for river dolphins in Asia.

→ Reflect back on countries' alignment of fisheries challenges and opportunities

As a last agenda point of the day, Daphne Willems and Uzma Khan reflected back on countries' alignment of fisheries challenges and opportunities.

During this reflection session following main challenges and opportunities were identified:

1. Close collaboration between the range states is dearly needed to ensure sufficient alignment and allow for good river ecosystem management even across borders. Alignment of departments/ ministries working on river dolphins and fisheries, including different fishing allowance systems (contract/ open access/individual), protected areas, OECMs and transboundary coordination. The transboundary collaboration does not only mean across the countries but also across the provinces and districts.
2. Legal reforms will be necessary in most countries as river, biodiversity, and fishery laws are often outdated or non-existent. Updating and harmonizing these laws will be crucial to allow for effective enforcement and thus for successful protection of freshwater cetaceans. To subsequently enable efficient implementation of these laws adequate resources either through law enforcement or community engagement will be crucial. In the fisheries context it is crucial to exclude the allowance of unsustainable fishing practices (such as monofilament nets, dragnets, fixed nets across the river, overnight fishing); and strengthening law enforcement of existing laws and regulations, e.g. on electrofishing, poisoning, deliberate killing, dynamite fishing and also adding legal provisions for community managed reserve where not allowed.

It was also discussed that removal of gillnets is very challenging, however, it is important to look into the source of these gillnets and crack down the markets of these commercially available mostly illegal nets.

3. Data collection, monitoring and better documentation will be essential to understand and ultimately conserve river ecosystems including fish populations, and freshwater cetaceans. To enable sufficient and successful monitoring and collection of data involving river based communities will be key. This can include but limited to the value of fisheries and fish stock; on fisheries production according to gear/area; on dolphin mortality causes incl. Bycatch and with respect to the net type (mesh size and material); tackling ineffective fish stocking practices; developing, testing and implementing sustainable solutions to fishing gear and bycatch
4. Mitigating bycatch and promoting sustainable fishing techniques will be critical to protect remaining freshwater cetaceans and allow for the species' recovery.
5. Clear KPIs need to be in place to allow for transparent measurement of results and progress.
6. Including community fishery agreements and alternative livelihoods; river stretch ownership mechanisms; community based monitoring and controls by community river guards, all based on participatory principles. Can be through '**exclusive fishing rights**', where communities have more ownership and enforce the way they want, making them the custodians of a river section. The compensation mechanism for communities for sharing information on fish catches, bycatch can also be in exchange for a reduction in the fishing license fee.

7. **Seasonal fish refuge** and protection, in dry season fish come to small ponds where it needs to be protected and no fishing should be allowed for them to grow and then in the wet season these disperse and can be fished. This is challenging however with community participation this has been seen as a successful intervention in fish revival.
8. Addressing, when and where appropriate, the various challenges that threaten healthy river systems, and therefore river dolphins and fisheries, e.g. water infrastructure, pollution, sand and gravel mining, lack of awareness

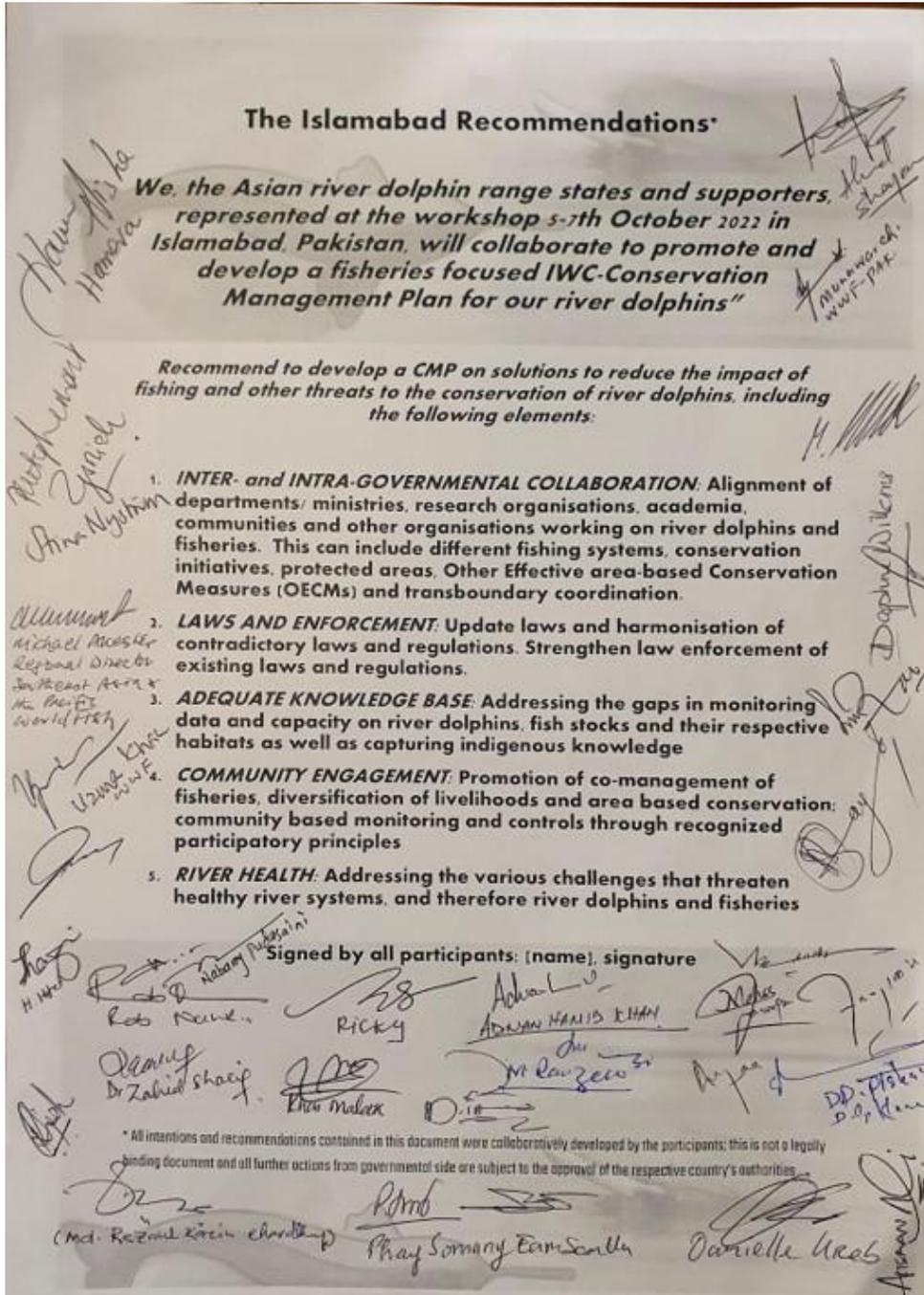
7th October 2022

The recommendations and ideas were summarised into five broad recommendations with the agreement of all the workshop participants, '**The Islamabad Recommendations**', please see under this section, and this document was also signed by all the participants reflecting their solidarity and support. The participants agreed to proceed with the threat-based CMP under IWC focusing on fisheries for the Asian freshwater cetaceans. So far the governments of **Bangladesh, Cambodia, Indonesia, Nepal and Pakistan** are interested in joining hands with partners like Yayasan Rasi, WorldFish, WWF, academia etc.

Next Steps

- All participants bring the Islamabad Recommendations under the attention of their organization /department / ministry to start building internal support for the CMP development process (November/December 2022).
- River Dolphin Rivers Initiative team (Uzma & Daphne) discuss the role of India and China with the respective WWF Offices to clarify the role of the respective governments (December 2022).
- River Dolphin Rivers Initiative team (Uzma & Daphne) will elaborate the timeline to prepare a IWC CMP and share with all participants (December 2022)
- Lindsay Porter (IWC) will share information on how countries can join IWC along with fee structure and responsibilities/obligations (December 2022).
- River Dolphin Rivers Initiative team (Uzma & Daphne) will put together a nomination for the Scientific Committee of IWC on the required template available on the link (https://iwc.int/private/downloads/JV1xGjGRf4TrTf1shPtWDQ/IWC_Conservation_Management_Plans_Templates.pdf) to be shared with the participants, discussed and finally submitted. This nomination has to be submitted at least one month prior to the IWC meeting in April/May 2023.
- WWF teams/focal points will work with the respective government departments to help prioritising actions relevant to the respective country to address the threats of fisheries to the freshwater cetaceans. See the [CMP handbook \(https://www.riverdolphins.org/wp-content/uploads/2021/07/IWC-Conservation-Management-Plan-Cetaceans-RS18587_CC_68A_08.3_02.pdf\)](https://www.riverdolphins.org/wp-content/uploads/2021/07/IWC-Conservation-Management-Plan-Cetaceans-RS18587_CC_68A_08.3_02.pdf) for further details.

- Once all participating countries have drafted the priority actions, a meeting of the countries will be organised to finalise the action prior to the submission on the CMP template.
- Put together proposals to raise resources to bring forward this CMP process and engage a coordinator in collaboration with the IWC.



ANNEX 1: List of participants (Alphabetical order)

Name	Designation	Institutions
Abdul Qadir, PhD	Associate Professor	University of the Punjab
Adnan Hamid Khan	Deputy Conservator Wildlife	Sindh Wildlife Department , Govt of Pakistan
Altaaf Hussain	Director	Zoological Survey of Pakistan
Arfa Batool	Deputy Director	Punjab Wildlife and Parks Department, Govt. of Pakistan
Ahsaan Ali	Indus River Dolphin Team	WWF-Pakistan
Ahmed Shayan	Focal Person	Engro Foundation
Ashley Barratclough	Veterinarian	National Marine Mammal Foundation, USA (Virtual)
Daphne Willems	Global River Dolphin Initiative Lead	WWF Netherlands
Danielle Kreb, PhD	Scientific Program Leader	Yayasan RASI, Indonesia
Fahad Haider Buzdar	Additional Secretary South Punjab	Punjab- Fisheries Department, Govt. of Pakistan
Forrest Gomez	Cetaceans Veterinarian	National Marine Mammal Foundation, USA (Virtual)
Favad Somro	President	Engro Foundation
Fernando Trujilo, PhD	Scientific Director	Omacha Foundation, Colombia (virtual)
Ghulam Qadir Shah	IGF	Ministry of Climate Change, Govt. of Pakistan
Hammad Naqi Khan	Director General/CEO	WWF-Pakistan
Hamera Aisha	Indus River Dolphin Team	WWF-Pakistan
Htet Htet Thazin	Junior Freshwater Officer	WWF Myanmar
Ian Cox	Professor	University of Hull (Virtual)
Imran Khalid, PhD	Director Policy and Governance	WWF-Pakistan
Imran Malik	Indus River Dolphin Team	WWF-Pakistan
Jamshed Iqbal	Senior Manager Research and Conservation	WWF-Pakistan
Khan Malook	DFO South	KP Wildlife Department, Govt. of Pakistan
Lindsay Jane Porter, PhD	Chair Small Cetaceans Sub-Committee	IWC (Virtual)
Rajesh Sada	Head Freshwater Programme	WWF Nepal
Mats Henning Ewald	Practice Initiative Support (Consultant)	WWF International

Michael Joseph Akester	MC Member and Regional Director of South East Asia and Pacific (SEAP) (WorldFish)	World Fish
Nabaraj Pudasaini	Deputy Director General	Ministry of Forest and Environment, Nepal
Masood Arshad, PhD	Senior Director	WWF-Pakistan
Maha Amin	Advisor	ENGRO Foundation
Md. Rezaul Karim Chowdhury	Divisional Forest Officer	Bangladesh Forest Department
Mohd Shahnawaz Khan	Associate Coordinator	WWF-India (Virtual)
Mohsin Farooq, PhD	Chief Conservator	KP Wildlife Department, Govt. of Pakistan
Mir Allah Dad Talpur	Director General	Sindh Fisheries Department, Govt. of Pakistan
Muhammad Ilyas	Director Fisheries	KP Fisheries Department, Govt. of Pakistan
Malik M. Ramzan	Director Fisheries Planning	Punjab- Fisheries Department, Govt. of Pakistan
Muhammad Shaheen	Deputy Director	Punjab- Fisheries Department, Govt. of Pakistan
Munawar Iqbal	Indus River Dolphin Team	WWF-Pakistan
Prof Nao Thouk	Secretary of State, Commissioner to IWC /Chairman CITES	Fisheries, Rural Development Management and Social Work, Ministry of Agriculture, Forestry and Fisheries (Virtual)
Neshmiya Khan	Coordinator Safeguards	WWF-Pakistan
Philip Sidney Leonard	Deputy Leader Global Freshwater Practice	WWF International
Ricky	Coordinator of Working Region East Kalimantan of the Center for Coastal and Marine Resources Management Pontianak	Ministry of Maritime Affairs and Fisheries, Indonesia
Rab Nawaz	Senior Director	WWF-Pakistan
Sikandar Hayat, PhD	Director General	Punjab- Fisheries Department
SAM UN EAM	Biodiversity Research and Monitoring Manager	WWF Cambodia
Stina Linnea Nystrom	Programme manager Marine & Freshwater cetaceans	WWF Sweden
Somany Phay	Deputy Director of the Fisheries Conservation Department of the Fisheries Administration	Department of the Fisheries Administration, Govt of Cambodia
Sana Maqsood	Senior Designer	WWF-Pakistan

Shehryar Khan	Coordinator Comms	WWF-Pakistan
Sana Roger	Pro Pakistan	Journalist
Sohail Ali Naqvi	Director Freshwater	WWF-Pakistan
Saleha Abbasi	Head	Pak Env. Trust
Suresh Babu	Director- Water Policy and River Basins	WWF-India (Virtual)
Tahir Rasheed, PhD	Director Wildlife	WWF-Pakistan
Tahir Ehsan	Coordinator ILES	WWF-Pakistan
Uzma Khan, PhD	Global River Dolphin Initiative - Asia	WWF Pakistan
Wang Ding, PhD	Professor	Chinese Academy of Sciences
Xinquio Zhang, PhD	Yangtze Finless Porpoise Conservation Programme	WWF China
Zahid Sharif, PhD	Director Fisheries South Punjab	Punjab- Fisheries Department, Govt. of Pakistan
Zarish Yaqoob	Indus River Dolphin Team	WWF-Pakistan

Annex 2

- A. River Dolphin Rivers Initiative and impact of fisheries – Uzma Khan
- B. River Dolphins Rivers Initiative, Ramsar and advocacy – Daphne Willems
- C. CMP Introduction - Lindsay Porter
- D. CMP Process – Lindsay Porter
- E. South American River Dolphin CMP – Fernando Trujillo
- F. Cetacean Mortality Monitoring – National Marine Mammal Foundation
- G. Irrawaddy Dolphin mortality Indonesia – Danielle Krebs