

COMMENTS ON
THE SECOND DRAFT NATIONAL FRESHWATER (INLAND) WILD CAPTURE
FISHERIES POLICY

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1. Introduction

The proposed change in policy that has attracted the most interest from some interested and affected stakeholders and especially among some of the recreational angling fraternity is the use of “new fishing techniques”, and especially the use of gill nets, as harvesting methods for small-scale fishing in South Africa.

2. South African legislation dealing with gill nets

According to some stakeholders, gill netting is illegal in South Africa – this is incorrect.

Most provincial statutes include provisions that deal with the use of nets and more specifically gill nets in our freshwater systems:

According to the Cape Nature Conservation Ordinance 19 of 1974 as amended by the Western Cape Nature Conservation Laws Amendment Act, No. 3 of 2000 the following provisions are applicable:

The definition of a staked net is:

“staked net” means a net (also known as a set net, gillnet or driftnet), with or without weights or floats, which is set upright in water with the intention of causing fish to become caught or entangled therein, whether or not such net drifts or is attached to anything;”

And

“54. Netting licence.—(1) Subject to the provisions of section 61, no person shall for any purpose whatsoever use any fykenet, crabnet, staked net or treknet in any inland waters without a licence in the prescribed form issued to him or her by the Board on payment of the prescribed fee. [Subs. (1) amended by s. 1 of Act No. 3 of 2000.]”

According to the Mpumalanga Nature Conservation Act No. 10 of 1998 the following provisions are applicable:

“55. Possession of nets or traps.—(1) No person shall possess a net or trap with which fish may be caught: Provided that—

- (a) any person may possess a landing-net or keep-net designed for the purpose of landing or keeping fish caught with a line and a fish-hook;
- (b) such a net or trap may be possessed by—
 - (i) the owner or occupier of land surrounding waters;
 - (ii) a trader on the premises on which he or she conducts business;
 - (iii) the holder of a permit issued in terms of section 53 (1) (a).

(2) Any person who contravenes or fails to comply with subsection (1) shall be guilty of an offence and liable on conviction to a fine or to imprisonment for a period not exceeding 2 years or to both a fine and such imprisonment.”

According to the Natal Nature Conservation Ordinance No. 15 of 1974 (relevant provisions of which have still not been repealed) the following provisions are applicable:

“150. Use of nets for certain purposes.—(1) Any person catching fish in terms of any licence issued to him may use a hand net for the purpose of landing fish, and he may also use a scoopnet with a bag not exceeding 300 mm in diameter and 300 mm in depth, for the purpose of capturing bait.

(2) If any person uses or has in his possession when catching fish any net other than such a net as is described in subsection (1), or as may be permitted in terms of the regulations, he shall be guilty of an offence.”

And similarly, according to the old Bophuthatswana and Free State Ordinances the following provisions are applicable:

“FISH

11. Control of catching of fish.—No person shall—

(a) without a permit—

- (i) angle for any species of fish in any waters;
- (ii) catch any species of fish in any waters, otherwise than by means of angling;
- (iii) place in any waters any obstruction of any nature whatsoever; or
- (iv) be in possession of a fish-net (excluding a landing-net or keep-net) or any trap or like device designed for the catching of fish;

(b) kill or injure any fish in any waters unless he has first lawfully caught and taken such fish from the water: Provided that the provisions of this paragraph shall not apply in respect of fish which die or are injured in the course of angling or netting;

(c) angle for any species of fish in any waters—

- (i) by using more than two lines; or
- (ii) by using a line to which more than two single hooks are attached; or
- (iii) by means of a set line.”

A useful comparison in national legislation dealing with the use of nets along our coastline is the Marine Living Resources Act, No. 18 of 1998 (“MLRA”) Part 4 which has the following provisions:

“Other Nets: Beach-seine net, staked net, set-net, hoop net, shove net, drag net, driftnet, and gillnet

General

19. No person shall, except on the authority of a permit—

(a) have or use any beach-seine net, staked net, set-net, hoop net, shove net, drag net, driftnet or gillnet;”

Furthermore, the MLRA in CHAPTER 9 - OTHER PROVISIONS Part 1 states:

“Provisions relating to the leaving of objects and dispensing of material in the sea

86 Fishing gear and other implements

(1) No person shall, except on the authority of a permit, leave any fishing gear, mooring, or any other implement or object utilised for fishing operations on or in the sea upon termination of any fishing operations.

(2) Where any person has left any fishing gear, mooring, or any other implement or object on or in the sea in contravention of subregulation (1), the Minister may cause such object to be removed.

(3) Any costs incurred by the Minister in connection with the removal of any fishing gear, mooring or other implement or object in terms of subregulation (2), shall be payable by the person by whom the object in question was left on or in the sea, which costs shall constitute a debt owing to the State.”

It is evident from the above that there is provision for the use of gill nets in most provincial legislation for harvesting fish in our freshwater systems and national legislation for coastal areas by means of a netting license or a permit. It is only illegal if gill netting is performed in state areas without such permit. Privately owned inland waters are exempted to some extent from applying for a netting license. Provision is also made in the Marine Living Resources Act. (Act No. 18 of 1998) to prevent pollution with gill nets in our coastal waters. However, there seems to be a lack of provision for the illegal disposal of gill nets or pollution with gill nets in inland waters. This must be catered for.

3. The gill net method

Gill netting is described as an old method of fishing and there is archaeological evidence that it was used by Europeans in the North Sea by the 11th century, it was also recorded in the Middle East, in Japan for over 3000 years, and traditionally also in North America (<http://www.fao.org/3/t0502e/T0502E01.htm> and <http://www.historyoffishing.com/fishing-history/gillnetting-problems/>), but traditionally not in Africa (Bruton, 2016).

There are archaeological records of meshed nets, most likely used as trawl and seine nets, by Egyptians over 6500 years ago (Bruton, 2016) and fragments of net twine made of flax have also been discovered at archaeological sites in Egypt (Bruton, 2016). Net fishing was only recorded from southern Africa since the mid-1800s (Bruton, 2016) and according to Tinley (1964) nets only reached Zululand in South Africa from Mozambique in the 1940s. However, the traditional African plant fibre nets were mainly used as hand and scoop nets, seine nets, lift nets, dip nets, and drop nets (Bruton, 2016).

Other traditional methods used to harvest fish in Africa include methods like fish-barriers, traps and baskets, hand-gathering, spears, gaffs and arrows, and rod-and-line, long line and hand line fishing (Bruton, 2016). These methods are described as sustainable, in contrast to the ruthlessly efficient and unsustainable 'modern' methods that are replacing them, such as monofilament gill nets, poisons and explosives. These 'modern' methods are reputed to cause considerable and sometimes irreversible harm to fish stocks (Bruton, 2016; and WWF: https://wwf.panda.org/our_work/oceans/problems/destructive_fishing/).

It is not clear when gill nets and especially modern nylon gill nets were distributed to Africa, but this probably took place with the global shift to the use of monofilament gill nets between 1970 and 1990 (Collins *et al.*, 1979, and https://www.crc.uri.edu/download/GH2009IFISH014_508.pdf, Appendix A). Prior to the introduction of modern monofilament gill nets, other harmful forms of netting, such as the use of mosquito nets, were recorded in Africa from 1925 (Bruton, 2016). So the use of especially modern monofilament gill nets to harvest fish in Africa is a foreign and fairly recent introduction and can therefore not be described as a historic or customary fishing method in Africa, particularly in relation to local fisheries. Accordingly gill netting should therefore also not be promoted as a historic or customary fishing method in Africa to be used by local small-scale fishing groups/populations.

Modern monofilament gill nets last much longer than the older materials that were previously used to construct gill nets (such as cotton and hemp) and these nylon nets cause considerable harm to the environment when they are abandoned or lost in the water. Such nets continue to catch and trap fish and other animals that

consequently die without being harvested (Bruton, 2016; and WWF: https://wwf.panda.org/our_work/oceans/problems/destructive_fishing/). This is known as 'ghost fishing', a well-recognised term used by the World Wildlife Foundation (WWF) and described as one of the most 'destructive fishing' methods alongside bottom trawling, cyanide fishing and dynamite fishing:

“Ghost fishing occurs when fishing gear is lost or abandoned at sea. The gear can continue to catch fish, dolphins, whales, turtles, and other creatures as it drifts through the water and after it becomes snagged on the seabed. When driftnets (another term for gill nets) were used on the High Seas, an estimated 1,000km of ghost nets were released each year into the North Pacific Ocean alone.

Although the current contribution of ghost fishing to bycatch is unknown, it is likely to have a large impact. One survey estimated that a quarter of the rubbish on the bottom of the North Sea is fishing nets, while fishers speak of a dolphin and turtle graveyard among the nets that drape the cliffs of Cape Wessell, Northern Australia.” (https://wwf.panda.org/our_work/oceans/problems/destructive_fishing/).

There is sufficient scientific evidence that indicates that fish stocks have decreased significantly in the Zambezi River between Zambia and Namibia over the last two decades. Overfishing, the lack of management/policing and the use of monofilament gill nets and especially small-mesh size gill nets were the reasons given to substantiate the biological data (Van der Waal *et al.*, 2011, Appendix B). It was noted in surveys conducted by the Namibian government in 2002 and 2011 that there was especially an increase in the use of cheap, imported gill nets in that area (Van der Waal *et al.*, 2011) – this statement and findings further substantiate the fact that especially monofilament gill nets were not traditionally used to harvest fish in the Zambezi River and are likely to cause considerable harm to local fisheries.

A drop in optimism from younger to older fisherman formed a trend in Namibia, indicating that the older generation had experienced better fishing. The fisherman mostly agreed (approx. 90% of the fisherman interviewed in Namibia and Zambia) that regulation was required by government to protect the fishery. It was mentioned in the report that the Namibian government project to evaluate and restore the fishery would consider specially protected fish reserves and more relevant fishing regulations.

Furthermore, the Marine Stewardship Council (MSC) describes gill nets with a large mesh size, preventing the catch of juvenile fish, as favourable and a more environmentally friendly way of harvesting marine fish. However, it is mentioned that although a particular species of fish can be targeted in an area with a gill net of specific mesh size, bycatch of unwanted species or other animals cannot be avoided (<https://www.msc.org/what-we-are-doing/our-approach/fishing-methods-and-gear-types/gillnets>).

To certify an area where gill netting is allowed, the MSC insists on increased monitoring and independent observer coverage in the fishery. For instance, in the Netherlands, an MSC gill net management plan is in place to monitor the gill netting of sole (Appendix C); part of the objectives of the management plan is to minimise the effect of gill nets on the ecosystem.

However, even though gill netting is permitted with management plans in some countries, South Africa lacks the resources and capacity to enforce compliance mechanisms as part of such management plans. This will render such legislation dealing with the sustainable use of gill nets ineffectual.

It is therefore argued that the use of gill nets should not be permitted as the potential risks and harm outweigh the benefits.

Summary of gill netting as a tool for fish harvest (with emphasis on African fisheries):

1. Gill nets are not traditional or customary to Africa (Bruton, 2016);
2. Monofilament gill nets were introduced to Africa fairly recently (late 1900s) and have since already caused harm to African fisheries (Bruton, 2016; Collins *et al.*, 1979; Van der Waal *et al.*, 2011);
3. Gill nets are associated with ghost fishing whereby lost and/or abandoned nets continue to catch and kill fish and many other animals and it is listed as one of the most destructive fishing methods internationally (Bruton, 2016; and WWF: https://wwf.panda.org/our_work/oceans/problems/destructive_fishing/);
4. Nylon gill nets have a long life and/or lost and abandoned nets continue to catch fish and other animals over long periods and can cause considerable damage to fish stocks and pollute the environment (Bruton, 2016; Collins *et al.*, 1979; Van der Waal *et al.*, 2011);
5. Gill nets with a large mesh size can be used to efficiently target fish of a larger size, avoiding the juvenile stock (MSC: <https://www.msc.org/what-we-are-doing/our-approach/fishing-methods-and-gear-types/gillnets>);
6. The depletion of large stock with gill nets typically leads to progressive reduction in mesh size placing pressure on juvenile fish stocks (Tweddle *et al.*, 2015);
7. By-catch of other or unwanted fish species and other animals with gill nets is unavoidable. This can cause considerable damage to such species;
8. A gill net management plan is strongly recommended in areas where gill nets seems to be an appropriate or favourable method to target specific and commercially viable fish species (MSC: <https://www.msc.org/what-we-are-doing/our-approach/fishing-methods-and-gear-types/gillnets>).

4. Other relevant study material related to small-scale fishing and gill netting in Southern Africa

Interestingly, fishing for and consumption of freshwater fish has not necessarily been traditionally practiced by all our indigenous people; for instance, there is sufficient evidence that freshwater fishing did not form part of the history of Xhosa people in the Eastern Cape (Andrew *et al.*, 2000). However, once freshwater fish and fishing were introduced to people living in the Fish River Valley, they saw small-scale fishing as a viable alternative to more common forms of food procurement and natural resource use in that area (Andrew *et al.*, 2000). This history should not be seen as condoning or legitimatising any previous exclusion of people from fisheries resources due to discriminatory practices of the past. FOSAF supports the need for equitable access to South Africa's freshwater fisheries resources.

In a scientific fisheries survey performed at Gariep Dam, upstream of Vanderkloof Dam, in the Free State, Ellender *et al.* (2010) (Appendix D) found that the local small-scale fisherman preferred alien carp as angling target (also see: Rhodes University Report on fisheries management issues for the Oviston Nature Reserve, Appendix E). Ellender *et al.* (2009) (Appendix F) found that the subsistence/small-scale fisherman at Gariep Dam mainly used artisanal type gear (handlines) to catch carp and other fish, and were reliant on the resource mainly for food and then also as a primary or supplementary source of income. It was noted that carp only contributed 1-4 % to the experimental gill net catches (depending on the net mesh size) in the scientific surveys (Appendix E), which indicated that gill netting was not a very effective method to catch carp in the Gariep Dam. This would be true of other venues and especially other dams in the Orange and Vaal River basins.

What was concerning about the findings of this study, was that the gill net survey displayed a high catch rate of indigenous cyprinids, varying from 92 - 97% depending on net mesh size used (Appendix E, Fig. 1), which included the largemouth yellowfish (*Labeobarbus kimberleyensis*) that is currently listed as 'near threatened' according to the 2017 evaluation in the IUCN Red list (<https://www.iucnredlist.org/species/63292/100166441>).

In contrast, carp made up the majority of hook and line catches, varying from 65 – 80% of total catches, and very few (0.4%) or no largemouth yellowfish were caught with hook and line. The explanations suggested for the poor catches of carp with gill nets included, that these fish are in fact attracted in numbers to ground bait used by hook and line fisherman (Appendix E), which contributes to the efficacy of using hook and line fishing methods for this fish.

In the meeting minutes (dated 23 April 2019, Appendix G) of a similar project currently taking place on Vanderkloof Dam (Final Experimental Fishery Management Plan for The Development And Management Of An Experimental Research Fishery

On Vanderkloof Dam, Appendix H) it was noted that the experimental fishing methods, including gill nets, fyke nets and trek/seine nets failed to catch carp, which was also indicated as the desired species by the local kraal fisherman. Gill nets effectively caught the indigenous yellowfishes (of which only the largemouth yellowfish has a sensitive conservation status, as noted above), which were less desired species compared to carp as also previously noted (Ellender *et al.*, 2010).

Angling with hook and line was found to be the preferred method for carp in the Gariep Dam project (Appendix E) and the local hook and line small-scale fishing industry around Gariep, South Africa's largest reservoir (upstream of Vanderkloof Dam), was sustainable and a low-revenue activity, mostly used for food security due to the low value of the fish meat.

Ellender *et al.* (2010) elaborated that a commercial fishery at Gariep selling fish to shore-based communities would compete with the market currently utilised by the existing small-scale fisherman. A word of caution was expressed that such a commercial fishery would create economic empowerment for a few people while endangering the livelihood of many small-scale fishermen in the area.

5. Comments and recommendations (highlighted in red) on the 2nd draft National Freshwater Inland Wild Capture Fisheries Policy

5.1. Introduction

South Africa is a developing country and the RSA government should strive to meet international standards for responsible fisheries development. Therefore, as also stipulated in the 2nd draft National Freshwater Inland Wild Capture Fisheries Policy, the National Freshwater Inland Wild Capture Fisheries Policy should use the Food and Agriculture Organization of the United Nations (FAO) Technical Guidelines for Responsible Fisheries and FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries as guidelines and as benchmark criteria to ensure that South Africa complies with international standards and to establish a policy that is based on sound and sustainable principles.

Furthermore, existing scientific literature on small-scale fisheries in South Africa and other African countries, i.e., Ellender *et al.*, (2009), Ellender *et al.* (2010), and Appendix E should be used in combination with the FAO standards as guidance to identify viable target areas, viable inland wild target fish species and viable/effective and sustainable fishing methods for such inland wild fish species to be sustainably harvested. It is also very important to ensure that a national or international fish consumer market is available for our inland wild fish species before commercial harvest is promoted and that any new commercial inland wild fisheries harvesting

venture will not have a negative impact on the existing small-scale fisher populations or the indigenous fishes with a sensitive conservation status in those areas.

5.2. Comments

A 1. Introduction

“the lack a national policy to guide their sustainable utilization and development has hampered the development of the sector”

And

A 4.1 Small-scale fisheries

“Some communities experience conflicts with recreational anglers around gill netting, which is usually unregulated and presently regarded as illegal.”

Comment:

Gill netting may be unregulated, but it is not illegal if a netting license or a permit is acquired in the provinces that provide for such permits in legislation.

However, sustainable fishing methods should be supported and implemented; modern nylon gill nets are not associated with traditional/customary, sustainable and/or environmental friendly fishing methods as explained above and it would not be considered as a good practice to implement this method where it will indiscriminately kill target species as well as unwanted species or indigenous fishes with a sensitive conservation status, such as at Gariep Dam, Vanderkloof Dam and elsewhere.

Moreover, besides the near threatened largemouth yellowfish that occurs, among other places, in the Gariep Dam and Vanderkloof Dam, many of our indigenous cyprinids living in rivers and dams across South Africa have a sensitive conservation status, i.e., Berg-Breede River whitefish (endangered), Clanwilliam sandfish (endangered), Clanwilliam sawfin (near threatened), Clanwilliam yellowfish (near threatened), Incomati chiselmouth (near threatened), and Tugela Labeo (vulnerable) – as currently listed in the IUCN Red list. Thus the use of gill nets, whether used legally with a permit or not, would certainly impact and kill these larger cyprinids if other species are targeted in the same waterways. This would in all probability place more pressure on these vulnerable fish populations.

Therefore, careful consideration should be given to permitting the use of gill nets and the issuing of gill net permits to any form of fish harvest for consumption or commercial use in our inland fisheries.

Furthermore and to substantiate this, according to the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (<http://www.fao.org/voluntary-guidelines-small-scale-fisheries/en/>):

“Strengthening the science policy interface - This component focuses on the need for a strengthened knowledge base that informs a policy reform leading to increased integration of sustainable resource management with social and economic development within a human rights context. Good practices need to be identified and shared. Improved collaboration and exchange of experiences between relevant research initiatives will be needed. Case studies, technical support and assistance for reviews and revisions of policy and legal frameworks creating enabling environment for SSF Guidelines implementation may also be required.”

There is sufficient documentation and scientific literature available in Africa that prove the detrimental effect of gill netting in freshwater fisheries and that this method of fish harvesting is in part responsible for the collapse of some fisheries; it would be considered poor practice and negligence in people’s best interest, negligence in the protection of the environment and our natural resources if gill nets are approved for fish harvesting in our inland waters without prior environmental risk and/or benefit assessments being conducted and without adequate and effective monitoring and compliance being in place.

Furthermore the FAO technical guidelines for responsible fisheries states:

“Article 7 – Fisheries management

7.1 Recognizing that long-term sustainable use of fisheries resources is the overriding objective of conservation and management. States and subregional or regional fisheries management organizations and arrangements should, *inter alia*, adopt appropriate measures, based on the best scientific evidence available, which are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing countries.

7.1.1 States and all those engaged in fisheries management should, through an appropriate policy, legal and institutional framework, adopt measures for the long-term conservation and sustainable use of fisheries resources. Conservation and management measures, whether at local, national, subregional or regional levels, should be based on the best scientific evidence available and be designed to ensure the long-term sustainability of fishery resources at levels which promote the objective of their optimum utilization and maintain their availability for present and future generations; short term considerations should not compromise these objectives.

7.1.2 Within areas under national jurisdiction, States should seek to identify relevant domestic parties having a legitimate interest in the use and management of fisheries resources and establish arrangements for consulting them to gain their collaboration in achieving responsible fisheries.

7.2.2 Such measures should provide inter alia that:

- d. biodiversity of aquatic habitats and ecosystems is conserved and endangered species are protected;
- f. adverse environmental impacts on the resources from human activities are assessed and, where appropriate, corrected;

7.5.1 States should apply the precautionary approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.”

These FAO guidelines reflect in part Section 24 of the Constitution of South Africa:

“Everyone has the right- ...

- (a) to an environment that is not harmful to their health or well-being; and
- (b) to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that-
 - (i) prevent pollution and ecological degradation;
 - (ii) promote conservation; and
 - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”

It is thus in this context that the concern about the use of gill nets in our inland waters for fish harvest is emphasised. The fact that their use will in all probability kill our indigenous fishes with a sensitive/vulnerable conservation status and pollute our waterways, will effectively undermine conservation efforts, defeat the sustainable use efforts and thereby potentially cause harm to the environment and human wellbeing. In this context there is no win-win for people (sustainable livelihoods) or biodiversity conservation. This means better sustainable alternatives must be found and used to achieve better outcomes. The policy must reflect this conundrum.

B 6.3 Resource Sustainability

“When a new fishery development or fishing technique is proposed which will increase harvest levels in a natural system (such as a river or wetland), the precautionary approach will be used to ensure sustainable harvest levels are maintained. This may include experimental pilot fishing to obtain data to determine

optimal sustainable yields and to develop fishery management plans and reference points which fulfill the desired ecological, social and economic objectives.

Where the ecological risk is low, for example, fishing that targets alien species or in altered environments such as dams which do contains species of biodiversity concern, social and economic criteria will primarily determine the recommended level of fishing effort as well as suitable gear type to be used.”

Comment:

The nature of the fishery present and its sustainability are key determinants. This needs to take account of social and economic factors as well. Thus, allowing unsustainable methods simply because of low ecological risk due to the presence of alien fish species fails to take account of the socio-economic impact and benefits that accrue. The fishery despite being premised on alien species still has social and economic value and this must be considered and managed on a sustainable basis for the benefit of citizens. The policy must amended to take this into account.

Furthermore, any new form of fishing technique considered or accepted for small-scale fisheries should be defined and categorised internationally as a sustainable, environmental friendly method as per the FAO guidelines/standards. The FAO guidelines also state that the absence of “adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures”. Monofilament gill netting, for instance, is listed as one of the most destructive forms of fishing and it may cause harm to our freshwater ecosystems and especially indigenous fish populations (as described above) and compromises our natural resources for future generations.

It is thus recommended that the use of gill nets for fish harvest on inland waters in such cases be avoided, especially due to the lack of adequate and effective monitoring and compliance capability, resources and action by the state that makes the use of gill nets even more undesirable and problematic.

A 6.3 Commercial Fisheries

“No large-scale, mechanised commercial fishing equivalent to South Africa’s marine fisheries exist on South African inland waters as the productivity of inland waters is too low to support such operations. The few existing permitted ‘commercial’ fishing operations are in reality small-scale artisanal fisheries employing simple, manually operated gears such as trek- or gill-nets.”

Comment:

Activities that may negatively affect or compete with small-scale fishers' access to the fisheries resource and their livelihoods should be discouraged. In reality there is little prospect for sustainable commercially viable fisheries and thus the establishment of commercial inland fisheries intending to sell the desired fish directly in those local areas particularly if premised on the use of gill nets is not recommended and as per the background on the gill net method described above. If this is to be allowed despite our recommendation, very careful consideration and appropriate risk and benefit assessment must precede any issuing of netting licenses and permits for this method in South African inland waterways.

5.3. Summary

In summary, according to the available scientific literature in South Africa and the FAO guidelines mentioned above, the development of small-scale fisheries should only go ahead in South Africa with the appropriate safeguards aimed at minimising any adverse impact on the vulnerable resource with a view to ensuring equitable access to sustainable fishing for future generations. This can in our respectful view be achieved:

1. By identifying and selecting preferred/favoured and viable fish species, i.e., carp in Gariep Dam and Vanderkloof Dam and other species elsewhere, rather than indigenous fishes with a sensitive conservation status (near threatened, vulnerable, endangered, and critically endangered species - <https://www.iucnredlist.org>);
2. By identifying those areas where sustainable fishing for favoured and viable fish species can be practised by small-scale fishers;
3. By using the most effective and sustainable fishing methods and ideally supporting traditional fish harvesting methods for the target species, such as fish traps and/or hook and line for carp as well as other sustainable fishing modalities;
4. By avoiding unsustainable and/or harmful fishing methods, such as monofilament gill nets, blast fishing, and poisoning (Bruton, 2016; and WWF: https://wwf.panda.org/our_work/oceans/problems/destructive_fishing/).
5. By avoiding the unsustainable commercial harvest of indigenous fish with a sensitive conservation status and the use of harvesting methods that may have a negative impact on our indigenous fishes with a sensitive conservation status (as listed in the IUCN Red List - <https://www.iucnredlist.org>).

6. By establishing a cost effective viable national or provincial fishing permit or licensing system, including the control of fishing gear, catch limits and quotas, applicable to small-scale and recreational anglers. It would be important that this system be both cost effective and that the funds generated be ring fenced/earmarked for training and the development of appropriate sustainable opportunities for transformation and improving equitable access to the freshwater fisheries resource and the related value chain in South Africa;
7. By ensuring that an effective and efficient monitoring and compliance framework is established, resourced and implemented at all relevant spheres of government. In addition to enforcement mechanisms, consideration should be given to appropriate incentives to encourage compliance;
8. By subsidising money for education and training programmes/projects for small-scale fishers to make optimal and sustainable use of their favoured target species in the areas where they fish;
9. By using public recreational angling groups or organizations (such as FOSAF and others) to participate and help in the training programmes/projects and capacity building interventions to develop sustainable small-scale fisheries in South Africa;
10. By developing appropriate fisheries value chain related ventures (including eco-tourism) to ensure the benefits flowing from the fisheries resource are equitably spread and shared by all local communities;
11. By performing appropriate risk/impact and benefit assessments and socio-economic assessments in areas where commercial inland wild fishing ventures are planned.

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