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SEAFOOD GUIDELINES

APRIL

2015

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Smart Fishing Initiative

TRACEABILITY PRINCIPLES FOR WILD-CAUGHT FISH PRODUCTS

The global trade in fish products, often involving many complex supply chains, makes it difficult to identify the origin and route to market of many fish species. Fish products are often transported very long distances, in and out of multiple ports, changing hands between various brokers, wholesalers, processors, and retailers before finally reaching the consumer. **Traceability is defined as the systematic ability to access any or all information relating to a food under consideration, throughout its entire life cycle, by means of recorded identifications.**[i] Implementing robust traceability systems in supply chains makes it possible to obtain reliable, relevant information about the catch and fisheries origins, about the handling of fish products for health and safety reasons, or about their movements through supply chains – in short, about many of the fundamental characteristics and qualities of seafood products.

With illegal, unreported, and unregulated (IUU) fishing estimated to account for USD $10 to $23 billion annually, representing between 13 - 31% of the global catch,[ii] there is an urgent need to be able to verify the legal origin of fish products and to establish transparency of supply chains. Making fish products traceable from point-of-catch to final point of sale is a necessary pre-condition to achieving sustainable fisheries and healthy fish stocks, securing the future of a viable seafood industry, and safeguarding the livelihoods of fisheries-dependent communities. Appropriate processes and procedures must be in place to prevent IUU, create a financial benefit for those that reveal and identify IUU fish or fishing and create financial disadvantages for IUU fishing and products. In the absence of effective traceability systems, markets cannot reward fishers and seafood companies that seek to conform to international standards for sustainable fishing, consumers cannot make informed choices, and governments cannot successfully combat trade in illegal fish products or properly regulate trade.

There are limited wild-caught fish products today with the traceability processes and systems in place to meet these goals. However, there is now widespread interest on the part of industry, NGOs, and regulators in building systems to ensure the better traceability of all wild-caught fish products to demonstrate legality or sustainability and to improve the transparency of supply chains. A growing interest in the robustness and ability of seafood traceability systems, means that questions as to what such a system should deliver have arisen. While food safety regulations and best practices oblige a degree of traceability for health and safety purposes, there are limited efforts to track products to verifiably legal sources. As a baseline for discussion of these questions, this document presents a set of principles that summarize WWF's view of the essential characteristics of effective wild-caught fish traceability systems.

WWF's traceability principles are intended as goal statements and can be used as a benchmark that is applicable to a variety of existing or upcoming traceability systems. Before setting out WWF's principles, a few preliminary points need to be stated:

First, traceability is only one of several important tools for promoting responsible fishing and securing seafood resources in the long-term (see text box "Tools for Reducing Risk of IUU" for more).

Second, to support well-managed fisheries, to secure fishery resources and healthy ecosystems in the long-term, traceability must support eliminating IUU fishing and IUU products from markets, as well as encourage the distribution and sale of sustainably harvested fish. To effectively discourage poor performance in this regard and to actively encourage responsible behaviour, traceability must provide essential information about the fishery and product transformation, effective tracking of product through supply chains, and also enable transparency and information access by stakeholders.

Third, to function in a complex, dynamic, and global marketplace, the technology employed in traceability systems cannot be uniform in design or application. WWF's traceability principles are thus not meant to prescribe how transparent and effective traceability should be designed; rather, they provide key characteristics that should be present in robust traceability systems. The technical solutions will vary, but it is important that standardization of principles are achieved to ensure full interoperability across geographies and jurisdictions. A variety of steps may need to be taken to fully implement the principles, with improvements resulting from sustained efforts towards the end ideal system.

Tools for Reducing Risk of IUU

Traceability is not the only tool needed to combat IUU fishing. Strong and effective monitoring, control, and surveillance (MCS) systems and their enforcement in the management of fisheries along with traceability systems act as a key deterrent to operators attempting to bring IUU fish into the market. Other important supply chain tools (both voluntary business practices and regulatory mechanisms) include IUU and supply chain risk analyses, purchasing standards, third party certification regimes (including certified chains of custody), port State controls, DNA testing, and legally mandated (and verified) record-keeping and trade documentation.

As noted earlier, to be effective all these supply chain tools must be supported by reliable MCS systems (that do not, yet, always exist) for regulating and monitoring fishing activities and for documenting catches.

In addition to the Traceability Principles presented in this document, these various tools are presented in a separate WWF paper: *Tools for IUU Risk Reduction in Seafood Supply Chains* (January 2015).

Finally, wild seafood traceability principles must be built on the opportunities and expectations of an increasingly digital world whilst recognizing the challenges some operators may currently have in establishing electronic systems. Electronic traceability is critical for improving the effectiveness of business processes, and while still possible is less susceptible to the fraud that may occur in paper-based systems, and is more reliable and timely in the transfer of information than the inefficiencies that result from paper-based systems most often used to track and trace products. One major advantage of electronic traceability systems is that they no longer require information to be physically passed and accumulated from actor to actor through the supply chain, but allow for information to be gathered and shared over networks that are able to communicate with each other electronically. The potential for the ready

collection, secure storage, and retrieval of digital data allows information to be easily associated with products and shared with authorized stakeholders at various points in the chain from harvester to consumer. Ensuring different electronic and digital systems to be interoperable, will create the possibility of nuanced and layered rules for information access, and still allow separate systems to remain secure and be used at the individual business level.

The Traceability Principles

The six principles set out below are intended to provide a basic framework for the effectiveness and successful implementation of traceability systems and for enabling transparency in wild-caught fish product supply chains. They should guide both private and public sector stakeholders in establishing and improving the performance of such systems, and can be used as a basis to develop auditable benchmark processes. These principles are stated in broad normative terms and provide a basis for the effective functioning of a global seafood traceability system.

The principles have been developed in dialogue with industry actors, and reflect WWF's judgment of what is essential and achievable in a reasonable time and at reasonable cost. Nevertheless, WWF recognizes that even advanced seafood businesses may not be able to meet all of these principles for all of their products in the short term. In such cases, there is need for continuous improvement towards meeting the principles. In addition to pursuing adherence to these principles, WWF strongly recommends the use of IUU and supply chain risk analyses to help set priorities for minimizing and mitigating the risk of IUU fish entering their supply chains. These approaches are complementary and clearly overlap, as reducing IUU risk must aim for assured traceability to legal origin.

WWF also understands that small-scale and artisanal fisheries may face particular challenges in ensuring implementation of some of these principles. A stepwise approach to implementation of the traceability principles should be considered where both technical and financial support is needed to build capacity for implementation.

Additionally, these traceability principles were developed to address concerns related to IUU fishing and the legal origin of wild-caught fish in particular. While the guidance developed below for traceability systems should be the same in theory for aquaculture products, the focus of these principles is on issues relating to wild-caught fish products. Further advancement of traceability principles for aquaculture will need to be developed, particularly for defining the essential information requirements to determine the legal compliance of products originating from aquaculture operations. Where wild-caught fish products are sold into markets as feed or fishmeal for aquaculture products the following principles should apply.

Principle 1 — Essential Information

All wild-caught fish product traceability systems should provide rapid access to reliable information that is sufficient to assess the compliance of the fish product under consideration with all applicable legal requirements.

- The information goal is to ensure that all catches are legal, and ultimately from reported, and regulated fisheries. The information necessary to prove those claims must be recorded.
- The precise information necessary to meet this principle will vary according to the products under consideration, their geographic or jurisdictional origin, the fishing and handling methods employed, time period of fishing, etc.
  - In fisheries with weak management, governance, and oversight – where the risk of IUU products entering supply chains and markets is high - companies and governmental bodies need to ensure that they obtain as much detailed information as possible about the fishery, to assess and minimize the risk of IUU.
- All systems need to collect basic information – on the "who, what, when, where, and how" of fishing operations - to comply with legal requirements. In general, information to be collected and associated with the products during the fishing operation and upon first landing should include:
  - Vessel identity and registration;
  - Identity of vessel owner/operator (including beneficial owner);
  - Location of catch (*e.g.*, GPS coordinates or specific location of fishery);
  - Authorization to fish (permits, licenses, etc.);
  - Species and product name;
  - Fishing method used;

  - Date and time of fishing; quantities of target and non target catch and discards, habitat impacts if relevant (*e.g.,*, bottom trawl fisheries)
  - Location, date, time, and specifics of any at sea transfer;
  - Transformation of fish prior to landing (at-sea processing, co-mingling, segregation, aggregation, etc.);
  - Location, date, and time of landing and volumes landed;
  - Person/enterprise with custody and ownership after transfer;
  - Other compliance data if required by law:
    - Applicable catch documentation;
    - Reporting requirements for species and quantities of non-target catch and discards, habitat impacts, etc.;
    - Monitoring techniques and practices employed (Observers, CCTV, etc.).
- The level and granularity of data required will vary depending on the needs for documenting compliance with all applicable legal requirements (*e.g.,* location of catch may be required in sufficient detail to distinguish separate stocks of a species or to assess whether catch was taken within an area where the vessel was licensed to operate).
- Only relevant data will be required at each step in the supply chain. However, to prove claims of legality, the entire information set must be recorded and available to regulators to ensure compliance of the fishing operation with existing laws and management regulations and to businesses wanting or needing to verify legality.
- Where information required is not applicable (*e.g.,* for "identity of vessel" if fishing was conducted from shore and not a vessel) this too should be noted.

MCS and Governmental Verification

Critical to fulfilling Principle 1, above, are strong "monitoring, control, and surveillance" (MCS) systems and their enforcement. These are the foundation for implementing effective traceability systems. Robust MCS requires coordination between flag States (who fish or who issue licenses under their own flag for others to fish), coastal States and RFMOs (where fishing occurs), port States (where fish are landed) and market States (where fish are processed, sold and consumed) to verify the information claims that are made.

Thus, MCS systems and proper enforcement should be in place to provide reliable information on the fishing operation to be able to validate the legal origin of wild-caught fish products. Monitoring provides the necessary measurement and analysis of information on the fishing activity. Control involves the specification of the terms and conditions under which resources can be harvested. And surveillance is necessary to regulate and supervise the fishing activity to ensure that national/international legislation and terms, conditions of access, and management measures are adhered to.

It is critically important that verification of the accuracy and validity of fishing activity occurs at the port state during first landing of fish products. Port states should be in a position to verify authorizations to fish (both with flag State and coastal States or RFMO waters in which fishing may have occurred) and also be able to check positions of fishing and transshipments recorded in logbooks against VMS or other GPS data sources. Transformations of fish should be checked against standard conversion factors to verify that landed weights correspond to the reported catch (live/green weight).

The competent authorities, whether flag, coastal, or port state thus should be in a position to verify the accuracy and validity of the information claims that are made by a traceability system (*e.g.,* of the fishing activity, the authorizations to fish, transformations of fish prior to landing, etc.). Industry should encourage the responsible competent authorities (whether flag, coastal, or port) to ensure that strong verification systems are in place.

Principle 2 — Full Chain Traceability

All wild-caught fish product traceability systems should be able to provide "full chain" traceability from the point of catch to the point of final sale, and should be able to establish a verifiable and complete chain of custody/ownership of the product as it moves through the supply chain.

- Full chain traceability means that at any point along the supply chain where it is necessary to verify legal origin or commercial acceptability, information sufficient to meet Principle 1 should be associated with and readily available for the fish product under consideration. This requires the information associated with the product to be available electronically (see Principle 4). Traceability systems should provide access to properties of a fish product or ingredient in all its forms, in all links of the chain.
  - Information on the fishing activity should be readily accessible and transparent.
  - This principle does not require that the full chain of custody be accessible to all actors and stakeholders along the supply chain. It does, however, require that relevant information associated with the product under consideration can be accessed when necessary. This entails a combination of adequate recordkeeping and verification systems to allow authorized stakeholders, to know or be able to reconstruct rapidly and readily the full chain of custody, and to trace a fish product back through all stages of handling and ownership to the source fishing activity or set of activities.
- Full chain traceability requires a combination of "external" traceability across multiple custodians and "internal" traceability within the operations of any single custodian, including proper product aggregation and segregation and capacity for mass balancing of product units.
- Where multiple fishing methods are employed in a single fishing trip or where there are at-sea transfers of product, full chain traceability must include transparent "in-fishery" traceability – internal traceability from the time of fishing until the time of transfer or landing.
  - This "in-fishery" traceability, such as catch or product aggregation and segregation as well as tracking prior to first landing or transfer, must be implemented wherever necessary to establish compliance with applicable laws and therefore the legality of catch.
  - In-fishery traceability is also necessary to support commercial claims about sustainability or production methods.

Principle 3 — Effective Tracking of Product Transformations

All wild-caught fish product traceability systems should record tracking of product transformations and information on the location of product sufficiently to ensure that the legal origin of products can be readily established at the final point of sale, and that claims related to sustainability or fishing methods are readily verifiable.

- Product transformation identification and traceability should be at a sufficient level of specificity to support claims of legality and sustainability. Traceability systems should provide access to all properties of the fish product, not just those verifiable by analysis.
  - This includes not just properties of the fish product itself, but also lot codes, packaging dates. etc.
  - At a minimum, product segregation and tracking techniques should meet minimum industry standards (*e.g.*, those set forth by the International Organization for Standardization's (ISO) specifications for the traceability of finfish (ISO 12877:2011) or other recognized authorities).
- Where a fish product or a unit or batch of fish products originate from multiple source fishing activities or fisheries, traceability requires sufficient identification and tracking of inputs to allow products at final sale to be traceable to a limited set of possible sources and activities. The fish product or batch identification needs to be grouped or associated in ways to allow verification of legal compliance and of claims related to sustainability or fishing methods.

- Unique unit identifiers should be present at each level of the packaging hierarchy – from a pallet, to a case or consumer item and at a granularity that is commercially feasible.
  - Sales between companies in the supply chain should be accompanied and traced by unit or batch numbers on or accompanying invoices, and able to be matched between buyer and supplier.
  - When a product is combined with others, processed, reconfigured, or re-packaged, the new product should have its own unique product identifier. The linkage (auditable function) must be maintained between this new product and its original inputs to maintain traceability. This means that a label, for example, linked to the lot identification of the traceable input item should remain on the packaging until that entire traceable unit has reached the final point of sale.

Principle 4 — Digital Information and Standardized Data Formats

Wild-caught fish product traceability systems should employ electronic recording of data, labelling, and tracking in standard data formats from point of capture to point of final sale.

- WWF recognizes that fully electronic monitoring of fishing and of catch and landing documentation is still far from being a universal practice. However, this principle infers that fully electronic systems are within the potential reach of commercial fisheries, even at very small scales. The drive towards fully electronic documentation must be a high priority for all traceability systems. While the ideal is to have both paper-based and electronic documentation of information, paper-based catch documentation and traceability systems alone can no longer be considered adequate or acceptable except in the short term.
  - This principle is valid for all supply chains, the only interim exception being the most localized and short supply chains (*e.g.* where the small-scale and artisanal nature of the source fishery selling into a local market makes the tracking of product challenging).
- WWF recognizes the need for industry-led establishment of minimum international practices and requirements (commercial and/or regulatory) to allow for harmonization and inter-operability of systems that can manage the tracking of seafood products through the entire supply chain. Wherever possible, and especially as more harmonized international requirements emerge, traceability systems should be built in compliance to such requirements.
  - Companies, to the extent possible, should participate in international and national consultative processes aimed to establish global frameworks for harmonized traceability requirements.
- Disparate systems that are used to manage information at the individual business level should be able to comply and integrate with agreed-upon common standard of a globally applicable traceability system.
  - WWF does not intend to prescribe the detailed technical standards that may ultimately be needed if proprietary systems are to be made globally inter-operable; however, the goal is for different systems to be able to work together functionally, able to exchange a standard set of traceability information in accordance with information access agreements with the information owners.
- A standardized list of wild-caught fish product names that includes the scientific Latin genus and species name should be used for commercial sales, including at retail packaging level. Where not yet established, companies and governments should work towards establishing such lists. The FAO, for example, employs existing codes and references for each commercial species within the Aquatic Sciences and Fisheries Information System (ASFIS) (http://www.fao.org/fishery/collection/asfis/en). (In the EU, the scientific name is required to be on the label for consumers and member countries have National "commercial designation lists" to be associated with the scientific name.)
- WWF also recognizes the need for assistance and technology transfer to be made available to fisheries, producers, processors, and merchants in less developed countries and developing countries. Knowledge transfer programs, such as the EU's Gap2 Project, should be encouraged between countries with the technology and those who need it.

Principle 5 — Verification

All wild-caught fish product traceability systems, and all claims based on them, must be subject to credible and transparent external verification mechanisms and regular independent audits, including effective governmental oversight and enforcement as well as, where applicable, credible third-party verification.

- Supply chain actors should adopt and publicize clear standards and policies for their transparency and traceability practices, should communicate these standards to their suppliers, should undertake regular audits of compliance and whenever possible make such audits publically available.
- Companies should conduct their own internal audits, such as trace-backs, to assess the security of their supply chains in delivering fish products of legal origin. Where regulatory systems are not yet in place, claims of traceability and legality of wild-caught fish should be subject to verification by independent third party auditors and/or certifiers.
- All traceability systems—and especially those not subject to credible, independent, and verifiable third-party certification—should be subject to active and effective regulatory oversight and verification by relevant authorities employing effective enforcement mechanisms.

Third Party Traceability Certifications

Third party certification schemes with secure chain-of-custody requirements may serve as adequate proxies for WWF's Traceability Principles. However, many of these schemes do not collect sufficient catch and landing information from source vessels, making claims of legality difficult to verify. Such schemes should meet the principles detailed in this document to be adequate traceability systems for deterring IUU fish from entering supply chains.

Principle 6 — Transparency and Public Access to Information

All wild-caught fish product traceability systems should be as transparent as possible and should provide consumers and other stakeholders the information needed to inform responsible choices.

- Traceability systems should be as transparent as possible and allow stakeholders along the entire supply chain – up to and including the final consumer – access to the information they need to be assured of the legal origin of fish products and, where applicable, to make responsible and informed choices with respect to sustainability and sustainability claims regarding the wild-caught fish products they purchase.
- Traceability systems should enable a company the ability to make information collected by a system (including information about fishing practices) publicly available. While legitimate commercial secrecy (and, of course, personal privacy) should be protected, the emphasis should be to maximize transparency wherever possible.
  - Retailers should at least be able to provide public access to the information about the species (common and scientific name), location of catch, dates of fishing, fishing method used, and confirmation of compliance with all relevant laws and regulations as well as specific commitments to responsible and/or sustainable sourcing of the suppliers or retailer.
  - Where public disclosure would infringe on legitimate confidential commercial information or personal privacy, non-disclosed information should be reported or otherwise readily accessible to regulators and to public or private verification bodies.
- Where business-confidential proprietary information is not disclosed publicly, information collected by traceability systems should still be accessible (subject to non-disclosure protections) to government regulators and enforcement agents as necessary to ensure compliance with prevailing laws.
- Commercial transparency can be achieved by multiple methods, including but not limited to consumer product labelling. Adequate information about the purchasing policies and sources used by a company can be made available through a variety of techniques. However, maximum public accessibility to detailed information associated with specific products at point of sale or based on product packaging (*e.g.*, comprehensive product labelling or QR codes, global trade item number/GTIN identifications) should be considered a preferred method.

ENDNOTES:

[i] Olsen P. and Borit M. 2013. How to define traceability. Trends in Food Science and Technology. Vol. 29, Issue 2. P. 142-150

[ii] Agnew, et al. 2009. Estimating the Worldwide Extent of Illegal Fishing. PLoS ONE 4(2): e4570. doi:10.1371/journal.pone.0004570

Our Smart Fishing Vision and Goals:

Vision: The world's oceans are healthy, well-managed and full of life, providing valuable resources for the welfare of humanity.

2020 Goals: The responsible management and trade of four key fishery populations results in recovering and resilient marine eco-systems, improved livelihoods for coastal communities and strengthened food security for the Planet.

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Why we are here
To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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