



FOODINTEGRITY

Ensuring the Integrity of the European food chain

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PP	Restricted to other participants	
RE	Restricted to a group specified by the consortium	
CO	Confidential, only members of the consortium	



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1. Work Package 6 & Deliverable 6.1 introduction

WORK PACKAGE 6: Reduce product misdescription in the seafood sector

WP Leader: Petter Olsen, Nofima



The main goal of WP6 is to combat and reduce misdescription of seafood products. This will be done by documenting the degree of seafood misdescription in Europe through spot checks of selected products, creating a database that will document incidents of product misdescription, as well as creating a list of claims that can be made about a seafood product, and linking said list to methods for analyzing/verifying product claims. Task 6.4 (and deliverable 6.1) are oriented towards the latter part; creating a product claims ontology within the seafood sector.

2. Deliverable 6.1 summary

Claims regarding a products attribute and the testing of said claims have mainly been focused on "analytically verifiable" claims. This is to be understood as claims that can be verified using conventional testing methods, for example nutritional values. The ontology provided here in the annex section seeks to address this issue by putting a strong emphasis on "implicit" claims. These supposed product attributes cannot be easily verified through "laboratory testing". Examples of these claims are area of origin, fishing methods used, vessel information, fish stock sustainability etc.

The ontology has been divided into two sections; one for wild caught and one for farmed fish (table 4.1 and 4.2, respectively. See the annex section). The majority of the claims can be made for both farmed and wild caught, but certain claims (e.g. feed) are only applicable for one category.

The claims listed in this ontology were gathered from various sources. These mainly consisted of product packaging and information extracted from seafood producers webpages, but also ISO 12875 and ISO 12877; international standards for wild caught- and farmed finfish respectively.

The terminology used in this ontology has been selected in order to accommodate existing standards where possible. These standards are based on the terminology found in either AgroVoc, the mentioned ISO-standards or other standardized formats, mainly those related to FAO (for example 3-alpha codes, ISSCAAP, ISSCFV, etc.). In the instances where no related concept or current standard was found, the corresponding columns in either table 4.1 or 4.2 have been left empty.

3. WP6 Deliverable 6.1 future work

The list of claims developed in D6.1 will later be integrated into D6.4; "*develop a toolbox linking seafood claims to analytical and paper trail methods*". The list of seafood product claims in D6.1 will be divided into two main groups; analytically verifiable claims and non-analytically verifiable claims. Paper trail procedures will be developed for the latter group, procedures that will specify "*what records need to be kept in order to support a claim (...)*".

4. Annex: Seafood claims ontology

4.1 Related concepts and standards – Wild caught

Wild caught	Closest related concept in AgroVoc	Related int./FAO standard	Example of claim
Catch Information			
Species			
Common Name	Aquatic organisms→Aquatic animals→ Fishes http://aims.fao.org/skosmos/agrovoc/en/page/c_2943	Common name - FAO 3-alpha Code/ISSCAAP	Cod (Gadus Morhua - COD), Halibut (H. Hippoglossus – HAL), Alaska Pollock (T. Chalcogramma – ALK).
Scientific Name	Eukaryota→Animalia→Chordata http://aims.fao.org/skosmos/agrovoc/en/page/c_1588		
Location/Catch Area	Location→Fishing Areas→Fishing Grounds: http://aims.fao.org/skosmos/agrovoc/en/page/c_2947		
Common Name	Features→Physiographic features→Marine areas http://aims.fao.org/skosmos/agrovoc/en/page/c_4607		Superordinate: <i>NE Atlantic, NW Atlantic.</i> Subordinate: <i>Norwegian Sea, Barents Sea</i>
FAO Map Number		http://www.fao.org/fishery/area/search/en	Superordinate: <i>FAO 27 (NE Atlantic), FAO 21 (NW Atlantic), FAO 31 (Western—central Atlantic)</i> Subordinate: <i>Ila2 (Norwegian Sea), Va2 (Iceland Ground), IVb (North Sea).</i>
Latitude	Measure→Latitude: http://aims.fao.org/skosmos/agrovoc/en/page/c_4222	ISO 6709: <i>Standard representation of geographic point location by coordinates</i>	70°19'33.3"N 13°04'29.4"E 52°54'54.5"N 50°02'29.9"W 43°42'46.2"N 129°59'09.8"W
Longitude			
Landing location			
Landing location		Name, address, national ID/GLN (ISO 12875)	""Fish Producer", 9107 Kvaløya, NOR, T123"
Receiving station name/ID			
Time/Date			

Date of Catch/Date of Sailing	Time→Harvesting date http://aims.fao.org/skosmos/agrovoc/en/page/c_29464	ISO 8601: <i>Date and time formats</i>	DoS: 21/02/2015 DoC: 22/02/2015
Date of landing		ISO 8601: <i>Date and time formats</i>	DoL: 23/02/2015
Vessel Information			
Vessel Type	Vehicles→Ships→Fishing vessel: http://aims.fao.org/skosmos/agrovoc/en/page/c_2954	ISSCFV (Int. Std. Statistical Classification of Fishery Vessels)	Superordinate: <i>Trawler, coastal vessel, etc.</i> Subordinate: <i>Bottom trawler, jigging vessel, etc.</i>
Vessel Name			
Vessel Unique ID/Call Sign		International Telecommunications Radio Call Sign (IRCS)	O17623
Vessel Flag State		ISO 3166-1 3-Alpha: Country codes	NOR (Norway), GBR (Great Britain), etc.
Gear Information			
Gear Type	Objects→Equipment→Fishing gear: http://aims.fao.org/skosmos/agrovoc/en/page/c_2946	Int. Std. Statistical Classification of Fishing Gear: ISSFCG – FAO 3-Alpha Code	Longline (LL), trawl (OTM), purse seine (PS), Scottish seine (SSC), etc.
Fishing Method	Methods→Fishing method: http://aims.fao.org/skosmos/agrovoc/en/page/c_2950		
Onboard storage			
Onboard storage method	Activities→Storage http://aims.fao.org/skosmos/agrovoc/en/page/c_7427		Coldwater storage, iced, etc.
Production Information			
Producer Information			
Production location	Industrial buildings→Factories→Fish factories http://aims.fao.org/skosmos/agrovoc/en/page/c_28608	Name, address, national ID/GLN (ISO 12875)	" <i>Fish Producer</i> ", 9107 Kvaløya, NOR, T123" " <i>Packing Station</i> " Shetland, SCO, PS001EC"
Business name/ID	Location→Production Location: http://aims.fao.org/skosmos/agrovoc/en/page/c_6205		
Time/Date			
Date of Production		ISO 8601: <i>Date and time formats</i>	DoP: 23/02/2015
Date of durability	Properties→Quality→Keeping quality http://aims.fao.org/skosmos/agrovoc/en/page/c_4082	ISO 8601: <i>Date and time formats</i>	DoD: 30/02/2015
Date of shipment (to wholesaler or other)		ISO 8601: <i>Date and time formats</i>	DoS: 23/02/2015
Product condition			
Processed product (type)	Processed animal products→Fish Products		Fillet, dried fish, salted fish, fish cakes, loins,

of product)	http://aims.fao.org/skosmos/agrovoc/en/page/c_2930		etc.
Preservation/processing method	Activities→Processing http://aims.fao.org/skosmos/agrovoc/en/page/c_6195		Refrigerated, frozen, thawed (and refrozen), CO-treated, etc.
Storage			
Storage method	Activities→Storage http://aims.fao.org/skosmos/agrovoc/en/page/c_7427		Iced, refrigerated, cold water storage, etc.
Unit information			
Weight			450g
Packaging	Activities→Packaging http://aims.fao.org/skosmos/agrovoc/en/page/c_5495		
Method of packaging			Polystyrene box, etc.
Labelling scheme	Labels→Quality Control→Designation of origin http://aims.fao.org/skosmos/agrovoc/en/page/c_34241 Activities→Labelling→Product labelling http://aims.fao.org/skosmos/agrovoc/en/page/c_6199		
Eco-label		ISO 14000-series	MSC, Friend of the Sea, KRAV, etc.

4.2 Related concepts and standards – Farmed

Farmed	Closest related concept in AgroVoc	Related int./FAO standard	Example of claim
Farm Information	Agriculture→Animal husbandry→Aquaculture http://aims.fao.org/skosmos/agrovoc/en/page/c_550		
Species			
Common name	Aquatic organisms→Aquatic animals→ Fishes http://aims.fao.org/skosmos/agrovoc/en/page/c_2943	Common name - FAO 3-alpha Code/ISSCAAP	Cod (Gadus Morhua - COD), Halibut (H. Hippoglossus – HAL), Alaska Pollock (T. Chalcogramma – ALK).
Scientific name	Eukaryota→Animalia→Chordata http://aims.fao.org/skosmos/agrovoc/en/page/c_1588		
Farm business Information	Enterprises→Farms→Fish farms http://aims.fao.org/skosmos/agrovoc/en/page/c_36678		
Location		Name, address, national ID/GLN (ISO 12875)	""Fish Farm" 9657 Hammerfest, NOR, F123""
Farm business name/ID			

Recorded illnesses and treatment			
Use of vaccine/medicine			Treated with; antibiotics, hydrogen peroxide, chitin inhibitors, etc.
Date/time of last vaccination/medication	Time→Timing→Treatment date http://aims.fao.org/skosmos/agrovoc/en/page/c_27921	ISO 8601: <i>Date and time formats</i>	24/03/2015
Feed information			
Feed type			
Production Information			
Producer information	Industrial buildings→Factories→Fish factories http://aims.fao.org/skosmos/agrovoc/en/page/c_28608		
Location	Location→Production Location: http://aims.fao.org/skosmos/agrovoc/en/page/c_6205	Name, address, national ID/GLN (ISO 12875)	"Fish Producer", 9107 Kvaløya, NOR; T123" ""Packing Station" Shetland, NOR, PS001EC"
Business name/ID			
Time/Date			
Date of Production		ISO 8601: <i>Date and time formats</i>	DoP: 23/02/2015
Date of durability	Properties→Quality→Keeping quality http://aims.fao.org/skosmos/agrovoc/en/page/c_4082		DoD: 30/02/2015
Date of shipment (to wholesaler or other)			DoS: 23/02/2015
Product condition			
Processed product	Processed animal products→Fish Products http://aims.fao.org/skosmos/agrovoc/en/page/c_2930		Fillet, dried fish, salted fish, fish cakes, loins, etc.
Preservation method	Activities→Processing http://aims.fao.org/skosmos/agrovoc/en/page/c_6195		Refrigerated, frozen, thawed (and refrozen), CO-treated, etc.
Storage			
Storage method	Activities→Storage http://aims.fao.org/skosmos/agrovoc/en/page/c_7427		Iced, refrigerated, cold water storage, etc.
Packaging	Activities→Packaging http://aims.fao.org/skosmos/agrovoc/en/page/c_5495		

Method of packaging			Polystyrene box, etc.
Labelling scheme	Labels→Quality Control→Designation of origin http://aims.fao.org/skosmos/agrovoc/en/page/c_34241 Activities→Labelling→Product labelling http://aims.fao.org/skosmos/agrovoc/en/page/c_6199		
Eco-label/organic certification scheme		ISO 14000-series	MSC, Friend of the Sea, KRAV, Debio, etc.

4.3 Verification and fraud – Wild caught

- Full links at the bottom of the document (see corresponding footnotes).

Wild caught	Example of fraud/claim
Catch Information	
Species	
Common Name	Product mislabeled as being off a different species: <ul style="list-style-type: none"> - Escolar sold as "white tuna" (Triple Pundit)¹ Product labeled with a non-specific/ambiguous/vernacular name: <ul style="list-style-type: none"> - Products sold only as "grouper" (64 different species can be labeled as "grouper") (Huffington Post)²
Scientific Name	Product marketed with a false name: <ul style="list-style-type: none"> - Brazilian catfish fraudulently labeled as "douradinha" (New Scientist)³
Location/Catch Area	
Common Name	Not disclosed whether imported or local <ul style="list-style-type: none"> - Consumers kept in the dark on seafood origins after senate vote (Sydney Morning Herald)⁴ Misleading country of origin <ul style="list-style-type: none"> - When what you eat in an Italian restaurant may never have been near Italy (Herald Scotland)⁵
FAO Map Number	
Latitude	Not normally disclosed, but might be linked to a unique trace code, which in turn might be falsified.
Longitude	
Landing location	
Landing location	Not normally disclosed, but might be linked to a unique trace code, which in turn might be falsified.

Receiving station name/ID	
Time/Date	
Date of Catch/Date of Sailing	Changing production/expiration dates - Food fraud a criminal activity (Food Quality and Safety) ⁶ Not normally disclosed, but might be linked to a unique trace code, which in turn might be falsified.
Date of landing	
Vessel Information	
Vessel Type	Not normally disclosed, but might be linked to a unique trace code, which in turn might be falsified.
Vessel Name	
Vessel Unique ID/Call Sign	
Vessel Flag State	
Gear Information	
Gear Type	Not normally disclosed, but might be linked to a unique trace code, which in turn might be falsified.
Fishing Method	
Onboard storage	
Onboard storage method	
Production Information	
Producer Information	
Production location	Not disclosed whether imported or local - Consumers kept in the dark on seafood origins after senate vote (Sydney Morning Herald) ⁴ Misleading country of origin
Business name/ID	- When what you eat in an Italian restaurant may never have been near Italy (Herald Scotland) ⁵
Time/Date	
Date of Production	Changing production/expiration dates - Food fraud a criminal activity (Food Quality and Safety) ⁶
Date of durability	Not normally disclosed (except for expiration), but might be linked to a unique trace code, which in turn might be falsified.
Date of shipment (to wholesaler or other)	
Product condition	

Processed product (type of product)	
Preservation/processing method	Thawed products marketed as fresh - 2500 tons of the food we it is fake (Time) ⁷
Other treatment method	Use of illegal/undisclosed chemicals (hydrogen peroxide, citric acid) to fake freshness - 2500 tons of the food we eat is fake (Time) ⁷
Storage	
Storage method	
Unit information	
Weight	Water injection/overglazing - <i>Oceana Study Reveals Seafood Fraud Nation Wide 2013:42</i> - Don't be hooked by seafood fraud (Restaurant) ⁸
Packaging	
Method of packaging	
Labelling scheme	
Eco-label	Fish from unsustainable fisheries passed off as sustainable - Bait and switch seafood fraud (Santa Barbara Independent) ⁹ - Seafood fraud protection through new traceability tool (Food Manufacture) ¹⁰
Other	
Type of fishery (farmed/wild caught)	Farmed seafood products mislabeled as wild caught - NC seafood company sentenced for mislabeling imported shrimp as wild caught (Food Safety News) ¹¹

4.4 Verification and fraud - Farmed

Farmed	Example of fraud/claim
Farm Information	
Species	
Common name	Product mislabeled as being off a different species: - Escolar sold as "white tuna" (Triple Pundit) ¹ Product labeled with a non-specific/ambiguous/vernacular name:

Scientific name	<ul style="list-style-type: none"> - Products sold only as "grouper" (64 different species can be labeled as "grouper" (Huffington Post)² Product marketed by a false name: <ul style="list-style-type: none"> - Brazilian catfish fraudulently labeled as "douradinha" (New Scientist)³
Farm business Information	
Location	Not disclosed whether imported or local <ul style="list-style-type: none"> - Consumers kept in the dark on seafood origins after senate vote (Sydney Morning Herald)⁴ Misleading country of origin <ul style="list-style-type: none"> - When what you eat in an Italian restaurant may never have been near Italy (Herald Scotland)⁵
Farm business name/ID	
Recorded illnesses and treatment	
Use of vaccine/medicine	Use of unauthorized antibiotics/other drugs or too high quantities: <ul style="list-style-type: none"> - USFDA, Industry Efforts Reduce Use of Unapproved Drugs (Global Aquaculture Advocate) ¹²
Date/time of last vaccination/medication	
Feed information	
Feed type	
Production Information	
Producer information	
Location	Not disclosed whether imported or local <ul style="list-style-type: none"> - Consumers kept in the dark on seafood origins after senate vote (Sydney Morning Herald)⁴ Misleading country of origin <ul style="list-style-type: none"> - When what you eat in an Italian restaurant may never have been near Italy (Herald Scotland)⁵
Business name/ID	
Time/Date	

Date of Production	Changing production/expiration dates - Food fraud a criminal activity (Food Quality and Safety) ⁶ Not normally disclosed (except for expiration), but might be linked to a unique trace code, which in turn might be falsified.
Date of durability	
Date of shipment (to wholesaler or other)	
Product condition	
Processed product	
Preservation method	Thawed products marketed as fresh - 2500 tons of the food we it is fake (Time) ⁷
Other treatment method	Use of illegal/undisclosed chemicals (hydrogen peroxide, citric acid) to fake freshness - 2500 tons of the food we eat is fake (Time) ⁷
Storage	
Storage method	
Unit information	
Weight	Water injection/overglazing - Oceana study reveals seafood fraud nation wide 2013:42 (Oceana) ¹³ - Don't be hooked by seafood fraud (Restaurant) ⁸
Packaging	
Method of packaging	
Labelling scheme	
Eco-label/organic certification scheme	Fish from unsustainable fisheries passed off as sustainable - Bait and switch seafood fraud (Santa Barbara Independent) ⁹ - Seafood fraud protection through new traceability tool (Food Manufacture) ¹⁰
Other	
Type of fishery (farmed/wild caught)	Farmed seafood products mislabeled as wild caught - NC seafood company sentenced for mislabeling imported shrimp as wild caught (Food Safety News) ¹¹

- ¹ <http://www.triplepundit.com/2015/08/grouper-plate-seafood-fraud-hits-diners-hard/>
- ² http://www.huffingtonpost.com/andrew-sharpless/a-fish-by-any-other-name_b_7879466.html
- ³ <https://www.newscientist.com/article/dn28006-pink-river-dolphin-becomes-key-ingredient-in-catfish-fraud/>
- ⁴ <http://www.smh.com.au/federal-politics/political-news/consumers-kept-in-the-dark-on-seafood-origins-after-senate-vote-20150827-gj9nbj.html>
- ⁵ http://www.heraldscotland.com/opinion/13415872.When_what_you_eat_in_an_Italian_restaurant_may_never_have_been_near_Italy/
- ⁶ <http://www.foodqualityandsafety.com/article/food-fraud-a-criminal-activity/?singlepage=1>
- ⁷ <http://time.com/3711938/food-fraud-interpol/>
- ⁸ <http://www.restaurant.org/Manage-My-Restaurant/Operations/Back-of-House/Dont-be-hooked-by-seafood-fraud>
- ⁹ <http://www.independent.com/news/2014/jul/09/bait-and-switch-seafood-fraud/>
- ¹⁰ <http://www.foodmanufacture.co.uk/Ingredients/Seafood-fraud-protection-through-new-traceability-tool>
- ¹¹ <http://www.foodsafetynews.com/2015/08/nc-seafood-company-sentenced-for-mislabeling-imported-shrimp-as-wild-caught/#.Vhzhb03osdW>
- ¹² <http://pdf.gaalliance.org/pdf/GAA-Collette-July06.pdf>
- ¹³ http://oceana.org/sites/default/files/reports/National_Seafood_Fraud_Testing_Results_FINAL.pdf