Food and Agriculture Organization of the United Nations

THE MARKING AND IDENTIFICATION OF FISHING VESSELS

Why mark fishing vessels?

Fishing vessels need to be marked in such a way that they can be easily identified in accordance with international standards. Correct use of vessel markings enables a fishing vessel to be linked to its identity, as contained in vessel records. Through proper marking the operational and/or historical information related to the vessel can be retrieved, including its fishing and other authorisations.

Marking fishing vessels with suitable identifiers is an important tool for fisheries management. It enables identification of fishing vessels in port or at sea, which allows for monitoring of compliance to rules and regulations applicable to the vessel and its fishing activities. Clearly marked vessel identifiers form the basis for a vessels' inclusion in a vessel register or authorised vessel list. In addition, markings facilitate safety at sea by enabling physical identification and communications between vessels, and can help to deter vessel theft.

The Western Central Atlantic Fishery Commission (WECAFC) is working to increase awareness and build capacity on vessel marking and identification, among WECAFC members, in support of the national and regional fight against illegal, unreported and unregulated (IUU) fishing and the establishment of a regional vessel record. Appropriate vessel identification and linked registries represent the basis for improving fishery management and conservation in the region.

How to identify a fishing vessel?

For information about a fishing vessel to be checked against registers or lists of fishing vessels, identifiers must be assigned to the vessel. These come in two types:

- A Unique Vessel Identifier (UVI) is an identifier that is never re-used and remains with a vessel for its lifetime, throughout name, flag and ownership changes. Currently, the International Maritime Organisation (IMO) number is the only globally recognised UVI for fishing vessels.
- Vessel identifiers that are assigned by the flag State when a vessel is registered. These include International radio call sign (IRCS), Maritime mobile service identity (MMSI) and national registration numbers, and should only be linked to one vessel at a time (if used correctly). However, these identifiers change when a vessel reflags, and can be reused; therefore, they are not true UVIs.

The main systems commonly used to identify fishing vessels are:

International Maritime Organization (IMO) number: a seven-digit number allocated by the IMO, which is the only globally recognised UVI that is specific to one vessel, never reused, and remains with a vessel for its lifetime even if the name, flag or ownership changes. Since its application to fishing vessels in 2013, various regional fisheries management organisations (RFMOs), flag and coastal States have made its use mandatory for all eligible fishing vessels.

International radio call sign (IRCS): allocated by the national telecommunications authority to all vessels with radio equipment on board, as part of the radio licensing process. An IRCS is a commonly used identifier that can change over the lifetime of a vessel, for example when a vessel changes flag, but if correctly applied should never be associated with two vessels at the same time. Each country is allocated a callsign series by the International Telecommunication Union (ITU). Barbados for example, has 8PA-8PZ, so all Barbados registered vessels have an IRCS that begins with 8P followed by a letter and additional letters or numbers – e.g. 8PAK7, 8PBF.

Maritime mobile service identity (MMSI) number: is a nine-digit number, less often used for markings, which is used to identify a vessel in non-voice radio-based communications, including automatic identification system (AIS) and digital selective calling (DSC). The MMSI is issued by the national telecommunications authority and the first three digits designate the vessel's flag State. Each country has one or more three-digit numbers, known as maritime identification digits (MIDs) allocated by the ITU for this purpose. For example, the Bahamas has MIDs 308, 309 and 311, so all MMSIs issued to Bahamas-flagged vessels must start with these digits.

Find a call sign or MMSI

All country callsign series can be found at:
www.itu.int/en/ITU-R/terrestrial/fmd/Pages/call_sign_series.aspx

MID series can be found at:
www.itu.int/en/ITU-R/terrestrial/fmd/Pages/mid.aspx

The ITU maintains an online searchable database of call signs and MMSI numbers issued to vessels, which can be used to retrieve information about a vessel's identity based on its callsign or MMSI. National telecommunications authorities are responsible for updating the ITU with information for the database:
www.itu.int/online/mms/mars/ship_search.sh

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IRCS series issued to WECAFC members[1]

	IRCS
Antigua and Barbuda	V2A-V2Z
Bahamas	C6A-C6Z
Barbados	8PA-8PZ
Belize	V3A-V3Z
Brazil	15 series*
Colombia	5JA-5JZ, 5KA-5KZ, HJA-HJZ, HKA-HKZ
Costa Rica	TEA-TEZ, TIA-TIZ
Cuba	CLA-CLZ, CMA-CMZ, COA-COZ, T4A-T4Z
Dominica	J7A-J7Z
Dominican Republic	HIA-HIZ
European Union	Various
France	38 series*
Grenada	J3A-J3Z
Guatemala	TDA-TDZ, TGA-TGZ
Guinea	3XA-3XZ
Guyana	8RA-8RZ
Haiti	4VA-4VZ, HHA-HHZ
Honduras	HQA-HQZ, HRA-HRZ
Jamaica	6YA-6YZ
Japan	29 series*
Republic of Korea	6KA-6KZ, 6LA-6LZ, 6MA-6MZ, 6NA-6NZ, D7A-D7Z, D8A-D8Z, D9A-D9Z, DSA-DSZ, DTA-DTZ, HLA-HLZ
Mexico	19 series*
Netherlands	11 series*
Nicaragua	H6A-H6Z, H7A-H7Z, HTA-HTZ, YNA-YNZ
Panama	3EA-3EZ, 3FA-3FZ, H3A-H3Z, H8A-H8Z, H9A-H9Z, HOA-HOZ, HPA-HPZ
Saint Kitts and Nevis	V4A-V4Z
Saint Lucia	J6A-J6Z
Saint Vincent and the Grenadines	J8A-J8Z
Spain	11 series*
Suriname	PZA-PZZ
Trinidad and Tobago	9YA-9YZ, 9ZA-9ZZ
United Kingdom	93 series*
United States of America	90 series*
Bolivarian Republic of Venezuela	4MA-4MZ, YVA-YVZ, YWA-YWZ, YXA-YXZ, YYA-YYZ

* For countries with more than 10 series assigned, please check *www.itu.int/en/ITU-R/terrestrial/fmd/Pages/call_sign_series.aspx* for a full list.

[1] This table contains information taken from the ITU website and was up to date as of 21 July 2017

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Frameworks for marking of fishing vessels

Ensuring that fishing vessels are marked correctly is a flag State responsibility required under international legal and voluntary instruments and RFMO regulations.

The 1989 Food and Agriculture Organization of the United Nations (FAO) Standard Specifications for the Marking and Identification of Fishing Vessels is the most widely applied global standard. This FAO Standard is applicable to all vessels engaged in capture fisheries operations, including fishing vessels, supply vessels and fish carriers. States are requested to apply this Standard to all authorised fishing vessels, but particularly to vessels that operate in foreign waters.

Other standards for marking fishing vessels – flag States, coastal States or RFMOs may also have standards for marking of fishing vessels, outlined in fisheries legislation, regulations, resolutions or conditions of registration and fishing authorisation. These may include:

- **Vessel name** – on the side of the hull, the superstructure and the stern of the vessel
- **Port of registry** – under the vessel name on the stern, and often on the side of the hull for vessels such as trawlers and purse seiners that use the stern for fishing operations
- **IMO number** – on the stern or on the hull or superstructure as well as internally
- **National registration number** – on the hull of the vessel or the superstructure
- **Fishing authorisation numbers** – on the side of the bridge

Where additional markings are included, these should adhere to and be compatible with the principles outlined in the FAO Standard, including being clearly visible, well maintained and not obscured by gear or discolouration.

Small vessel identifiers

There is currently no internationally agreed system for identification of (often small) fishing vessels that do not have a ship radio onboard, so are not eligible to be assigned an IRCS. The FAO Standard states that vessels without an IRCS should be marked with characters to identify the flag State, followed by the vessel's national registration or authorisation number (separated by a hyphen). Clear identification of the flag State is important, as there is no standard system for issuing of national vessel registration numbers and it is possible for two or more vessels under different flags to have the same registration number simultaneously.

For vessels that do not have an IRCS, a simple option to identify the flag State is the system of three letter country codes assigned by the ITU[2].

Where this system is in use, it is important that registration or authorisation numbers are short enough to enable the identifier to be marked on the vessel using characters that can be read clearly from other vessels and from the air.
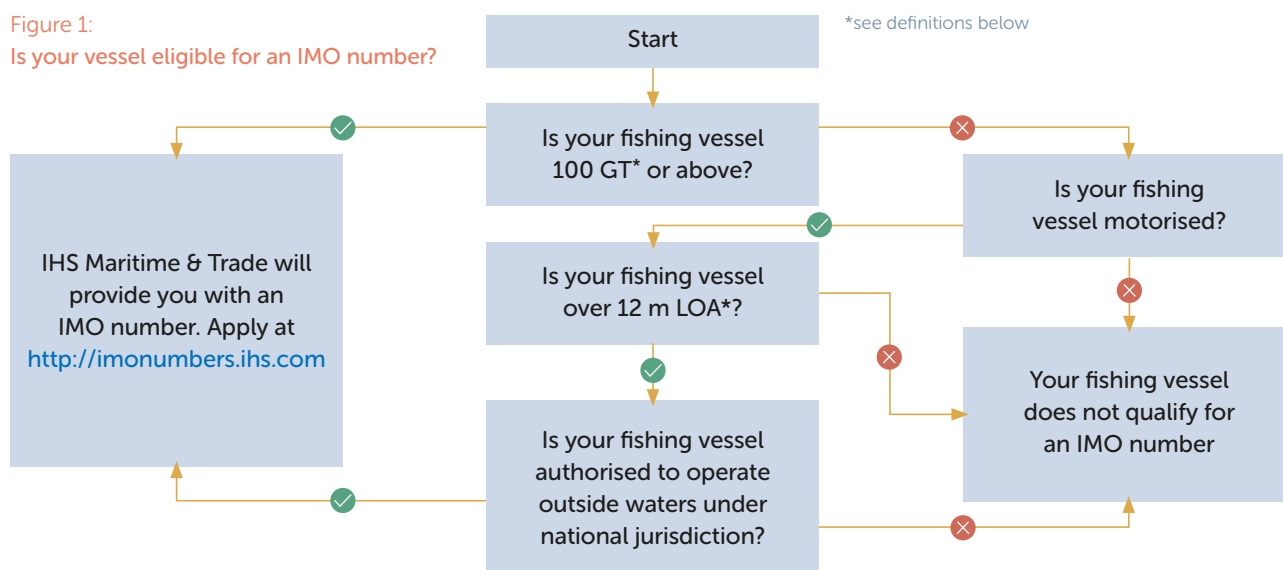
[2] Full list available at *www.itu.int/en/ITU-R/terrestrial/fmd/Pages/geo_area_list.aspx*

How to obtain an IMO number for a fishing vessel

IMO numbers are allocated by IHS Maritime and Trade, and the application process is free of charge. Applications for single vessels can be made online at *http://imonumbers.ihs.com*, while a flag State wishing to apply for multiple IMO numbers should obtain a multiple request form from *ship.imo@ihs.com*.

For an IMO number to be allocated, information to identify the vessel must be provided, including identity and ownership information, build details, physical characteristics and more. For a full check list and explanation of information required see 'The IMO Number for Fishing Vessels', available at: *www.tm-tracking.org/single-post/2017/01/19/Briefing---The-IMO-Number-for-Fishing-Vessels*

Figure 1:
Is your vessel eligible for an IMO number?

*see definitions below

Start

Is your fishing vessel 100 GT* or above?

Is your fishing vessel over 12 m LOA*?

Is your fishing vessel authorised to operate outside waters under national jurisdiction?

IHS Maritime & Trade will provide you with an IMO number. Apply at http://imonumbers.ihs.com

Is your fishing vessel motorised?

Your fishing vessel does not qualify for an IMO number

A Global Record in the making

Today, one of the greatest challenges in fighting IUU fishing is the lack of publicly available information about vessels engaged in fishing operations. The FAO is working to change this. Through cooperation with flag States and RFMOs, FAO is compiling an online record of information about vessels involved in fishing operations, called the 'Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels' or simply the Global Record.

Each vessel listing in the Global Record includes five compulsory pieces of information:

- Unique Vessel Identifier
- Vessel name
- Country of registration (flag)
- Length overall (LOA) – maximum length of the vessel's hull, measured parallel to the waterline
- Gross tonnage (GT) – a measurement of the vessel's internal volume. GT is calculated by applying a mathematical formula to the vessel's total volume (in m^3)

In addition, the record has been designed to include information such as: historical records of vessel name or flag; IUU listings; fishing authorisations; details about inspections; and denials of port entry.

The first working version of the Global Record was launched in April 2017. It is accessible to authorised users within FAO Member countries, who will be responsible for entering vessel records into the system prior to the launch of a public version. The current version includes vessels of 100 GT and over, and makes use of the IMO number as a UVI. In the future, it is hoped to incrementally include vessels down to 10 GT.

The Global Record will be a valuable tool for authorities to check a vessel's identity, history and operations. Users are expected to include: national and RFMO monitoring, control and surveillance (MCS) officers; port officials; and officials responsible for fishing vessel registration and authorisation. Countries and RFMOs will enter information contained in the Global Record. It will be essential that data is updated systematically and regularly to ensure that it maintains its usefulness in the global fight against IUU fishing.

The WECAFC aims to establish in 2018/2019 a regional fishing vessel record based on the Global Record as a tool to combat illegal, unreported and unregulated fishing in the Western Central Atlantic.

The marking and identification of fishing vessels

Based on the FAO Standard Specifications for the Marking and Identification of Fishing Vessels

AB

MARKING

Fishing vessels shall be marked with their IRCS, called the vessel marking:

- ✓ this vessel marking, the vessel name or identification mark and the port of registry should be the only vessel identifiers consisting of letters and numbers to be painted on the hull or superstructure
- ✓ the numbers 1 and 0 should be avoided in licence or registration numbers to prevent confusion with the letters I and O
- ✓ any fishing craft carried onboard another fishing vessel and used for fishing operations should bear the same markings as the vessel they are carried on
- ✗ too many identifiers on the hull or superstructure make it challenging to identify the vessel clearly at sea
- ✗ vessel is marked with identifiers that do not match details on the vessel registry or authorised vessel list

DISPLAY

The vessel marking should always be prominently displayed on:

- ✓ the port and starboard side of the vessel's hull or superstructure so that the marking can be sighted from another vessel or from the air
- ✓ a deck (any horizontal surface, including the top of the wheelhouse) with the top of the writing pointing towards the bow, or if the vessel is undecked on a board which can be seen clearly from the air
- ✓ the vessel's sail, if one exists
- ✓ if the vessel markings are ever obscured by an awning or vessel cover, this should also carry the vessel markings
- ✗ markings only visible from one angle
- ✗ markings not clearly visible from the air

PLACEMENT

The vessel markings should be placed:

- ✅ on the vessel's side or superstructure, as high as possible above the waterline and avoid areas such as the flare of the bow and stern
- ✅ where they are not obscured by fishing gear, either when stowed or in use
- ✅ away from areas which are prone to damage or discolouration, such as scuppers or outlets
- ❌ markings placed too low and obscured by the waterline

LEGIBILITY

The vessel marking should be:

- ✅ painted using marine paint
- ✅ white on a black background or black on a white background
- ✅ always maintained in good condition
- ✅ block letters and numbers should be used
- ❌ markings not clearly visible due to lack of contrast
- ❌ markings not clearly visible due to small or unclear characters
- ❌ markings not clearly visible due to fading

PROPORTIONALITY

The vessel markings should be:

- proportional in their width to height
- proportional in height to the size of the vessel
- at least 0.3 m in height for all vessels of 5 m length and over for markings on the deck
- placed on the hull/superstructure in the following proportions:

Length overall (LOA):	Height of letters/numbers should be not less than:
25m and over	1.0 m
20 ≥ 25m	0.8 m
15 ≥ 20m	0.6 m
12 ≥ 15m	0.4 m
5 ≥ 12m	0.3 m
< 5m	0.1 m
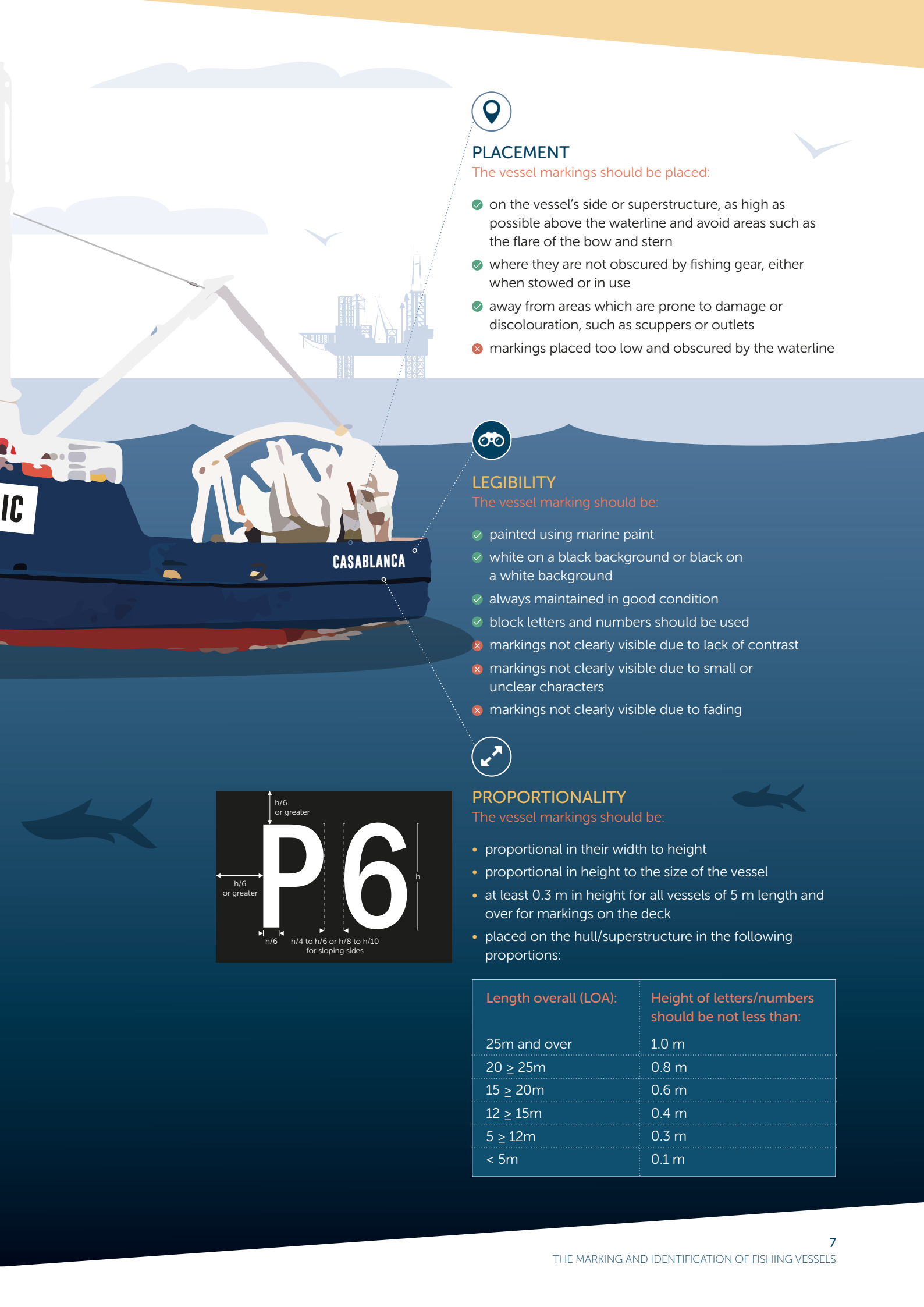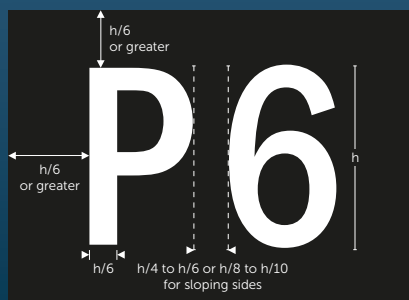
© Laurie Strachan / Alamy Stock Photo

The Malaysian standard specification for the marking and identification of vessels

Malaysia implements a vessel marking system for large and small-scale fishing vessels that is compatible with the FAO Standard, while also including visual identification of a vessel's registration status and zone of activity[3]. Information is conveyed using colours and symbols whilst minimising the sometimes confusing use of letters and numbers. All vessels carry:

- **Vessel registration code** – this is a key vessel identifier. The first three letters of the code indicate the region where the vessel is registered and its use (F = Fisheries). The code must be carved on both sides of the hull, towards the bows; painted in white with a black background; vessels >70 GT must also have their code painted on the wheelhouse roof. The size of letters and numbers is specified, in line with the FAO Standard.

- **Colour of wheelhouse** – for vessels with superstructure, the wheelhouse must be painted a specific colour that denotes the region where it is registered. This enables quick identification of vessels that have entered the fishing grounds of another region.

- **Fishing zone** – a single letter A, B, C or D in white on a black background is painted on both sides of the wheelhouse and denotes what fishing zone a vessel can operate in (outside 5 nautical miles (nm), outside 12 nm etc.).

- **Inscribed tin plate** – bearing the vessel's registration code, fisheries department logo and director's signature must be fixed to the inside of the hull. This is more difficult to tamper with than painted identifiers and is intended to reduce identity fraud - it is checked during vessel inspections.

[3] Flewwelling, P.; Cullinan, C.; Balton, D.; Sautter, R.P.; Reynolds, J.E. Recent trends in monitoring, control and surveillance systems for capture fisheries. FAO Fisheries Technical Paper. No. 415. Rome, FAO. 2002. 200p.

Markings and vessel theft

Markings can provide a deterrent to vessel theft. Requiring at least one identifier to be carved or embossed on the hull, in addition to the painting of vessel markings, can make it more challenging for thieves to conceal the identity of a stolen vessel, and provides an additional safeguard against vessel identity fraud. Some national schemes also require that identifiers are marked on a plate attached to the inside of the vessel, or etched inside the vessel, for the same reason.

When do vessel markings indicate a potential risk?

Failure to adequately maintain fishing vessel markings may be a simple oversight. It may however also indicate that an operator is deliberately hiding or confusing the fishing vessel's identity to facilitate IUU fishing activities. The changing, concealing or misreporting of name and/or flag are tactics used by IUU fishing vessel operators to avoid detection by authorities, or to enable a fishing vessel to assume the identity of another 'legal' vessel with false markings and paperwork.

The following bad practices should raise concern about the identify of a fishing vessel and alert MCS officers that it is a potential high-risk vessel requiring priority monitoring and surveillance, such as inspections at sea or in port:

- **Hiding markings by draping fishing gear or awnings over markings** – frequently encountered in crowded fishing grounds, where IUU vessels may be fishing within sight of other operators.
- **Multiple names, callsigns or ports of registry** – displayed on a vessel, could indicate fishing outside the terms of the fishing authorisation, possibly under a false identity.
- **Markings, such as port of registry or IRCS, associated with more than one flag State** – may indicate that a vessel is simultaneously registered with more than one flag State and is thus stateless[4].
- **Easily removable vessel markings** – such as on removable boards or taped-on markings, can be quickly switched to enable a vessel to change identity.
- **Signs of tampering, such as the addition or deletion of numbers** – for example when operating fleets have names in numbered series (e.g. SUNSHINE 12, SUNSHINE 124), vessels may alter their number to match details on an illegally shared fishing authorisation.

- **Markings that do not match the details given in vessel registries or lists** – indications of identity fraud can include misspelling a name, using a different name formatting or an incorrect callsign to that used in documentation or registries.

Taking photos of fishing vessels

Fisheries authorities are recommended to systematically obtain photos of fishing vessels that are registered in their fleet or authorised to fish within their area of jurisdiction. This can be done during inspections or from vessel photographs provided as a pre-requisite for vessel registration and fishing authorisation. Photographs should be taken from all angles if possible, and should show vessel markings.

For more information on taking, storing and analysing photos of fishing vessels see the 'Photo Manual for Fisheries Enforcement', available at *www.tm-tracking.org/single-post/2017/02/08/Photo-Manual-for-Fisheries-Enforcement*

This vessel is displaying callsigns associated with two different flag States.   © FISH-i Africa
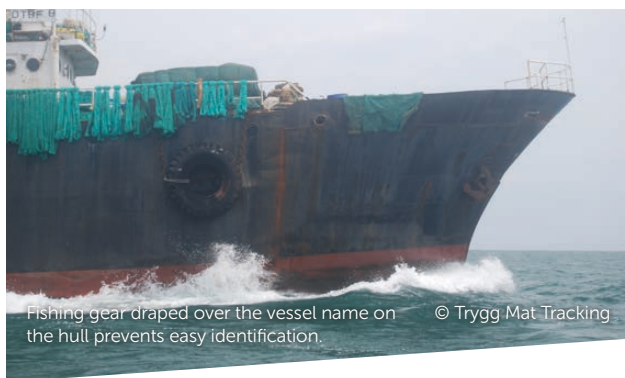
Fishing gear draped over the vessel name on the hull prevents easy identification.   © Trygg Mat Tracking

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[4] UNCLOS Article 92 states that a ship which sails under the flags of two or more States, using them according to convenience, may not claim any of the nationalities in question with respect to any other State, and may be assimilated to a ship without nationality.

How to confirm vessel identity fraud

If vessel identity fraud is suspected, analysis of vessel photographs and documents can help to confirm this. Photo analysis can only take place if earlier photographs are available for comparison with images of the suspect vessel. It is therefore important that vessel records and registries include photos of the vessels. Document analysis can detect if forged or altered vessel documents are being used or if documents contain fraudulent details about the vessel. A vessel survey can confirm physical characteristics, such as length, tonnage and fish hold capacity, to assess whether these match the details given on the vessel's various documents.

Key things to look out for when analysing photographs and documents for indications of identity fraud, include:

Vessel markings – do the name, port of registry, IRCS and other identifiers (found on the hull, bridge, life-rafts, life-rings, tenders, vessel documents, and fishing gear) match those included in any vessel registers? Do they match those shown in earlier photos? Are the spelling and formatting the same, such as SUNSHINE 7 versus SUNSHINE NO. 7?

Previous vessel markings – are any previous names or identifiers visible under paint on the hull or on gear on board the vessel? Do these match the historic names and numbers associated with the claimed vessel identity?

Shape and size of the vessel – does the shape of the hull and any superstructure look the same as in earlier photographs and figures recorded in vessel documents?

Fixed features – are features such as ports, masts, stairways, openings in the hull, scuppers, outlets, railings and funnels the same as in previous photographs?

Changeable features – removable items such as antennas and cranes are easily modified, and rust stains, discharge marks and dents can be removed, so these are not a strong basis for vessel identification. Nevertheless, they can provide a useful first indicator that two images might show the same vessel.
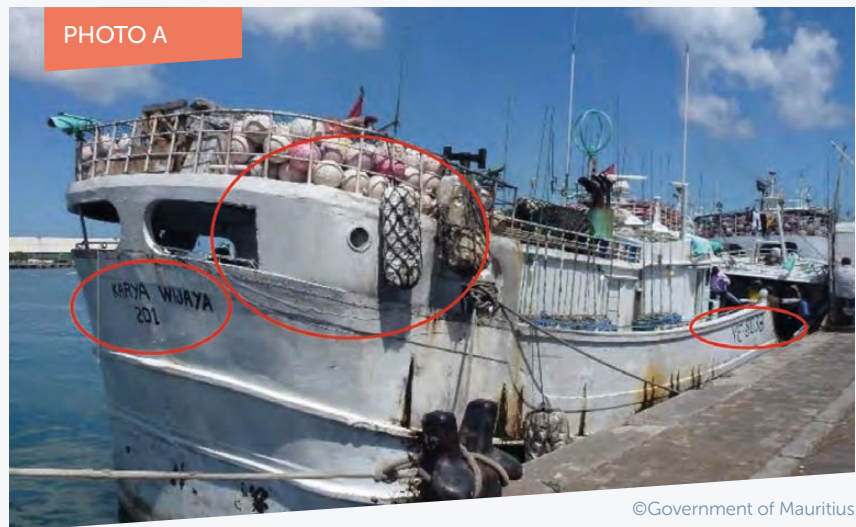

© WECAFC

A case of vessel identity fraud: Karya Wijaya 201

In 2014, fisheries authorities in Mauritius used photographs to determine that a vessel was using a fraudulent identity during a port call in Port Louis. Further photo analysis, verified by analysis of AIS signals, was able to confirm the vessel's 'real' identity. The following photos show the 'real' KARYA WIJAYA 201 in Port Louis (photo A), the vessel that called in to Port Louis several months later falsely claiming the name KARYA WIJAYA 201 (photo B) and that same vessel documented earlier in the year using its 'real' identity (photo C). Key differences (red) and similarities (green) are highlighted.

In pictures A and B the shapes of the hull and the stern are different in the two vessels shown. These are obvious features that can vary significantly between vessels. The vessel markings also vary – in photo B the vessel name KARYA WIJAYA NO. 201 differs from the version of the name recorded in authorised vessel lists and shown in photo A (KARYA WIJAYA 201). The vessel in photo B also did not have an IRCS marking.

By contrast, in photos B and C the shape of the stern matches, the number and placement of lights in the gangway is the same, and the stern railing has the same number of uprights (5 on each side of the central divide). There are distinctive markings on the hull of the vessel in both images, caused either by rust or effluent, a further indication of a match.

This analysis was possible because fisheries authorities had taken photographs of vessels in port and shared them to assist with the investigation. This shows the importance of taking good photographs logging, saving and sharing them, to ensure the best outcome for investigations into illegal fishing.

PHOTO A

©Government of Mauritius

PHOTO B

©Government of Mauritius

PHOTO C

©Government of Kenya

Improving the marking and identification of fishing vessels in the WECAFC region

The Western Central Atlantic (FAO area 31) is an area of great marine biodiversity. The fisheries in this area contribute approximately 2.5 billion USD annually to the economies of the 34 WECAFC member countries. In particular, the many Small Island Developing States (SIDS) among the WECAFC members tend to be highly reliant upon fisheries resources to support their economies, employment, export earnings and food security. The WECAFC area is in the top five most overexploited fisheries areas worldwide. Fisheries production decreased from 2.5 million tonnes annually in the 1980s to 1.3 million tonnes in recent years. It is estimated that IUU fishing in the WECAFC area accounts for between 20 and 30% of total reported harvests, representing a value of 450 to 750 million USD annually with dire implications for millions of peoples' livelihoods.

Fifty-one percent of the WECAFC area is high seas, where currently there is no regional fisheries management regime for most fisheries.

The Caribbean Sea is characterized by Small Island Developing States with large exclusive economic zones (EEZs) compared to their land areas. The proximity of many States harvesting a diverse range of stocks within and beyond their national jurisdictions presents a great challenge for fisheries enforcement. Ineffective enforcement undermines responsible resource ownership among stakeholders, reduces the impact of efforts made to rebuild and conserve fish stocks, and enables illegal practices to continue at the expense of legitimate fisheries.

In 2014, WECAFC and regional partners, such as the Caribbean Regional Fisheries Mechanism (CRFM) and the Central American Fisheries and Aquaculture Organization (OSPESCA), established a Regional Working Group on IUU fishing. Currently WECAFC is supporting members to tackle IUU fishing nationally and regionally by: building capacity for the use of Vessel Monitoring Systems (VMS); supporting fisheries legislation and policy framework modernization in member countries; and developing a regional vessel record, databases and IUU vessel list.

WECAFC is working to increase awareness and to build capacity on vessel marking and identification, among its members, in support of the fight against IUU fishing and the establishment of a regional vessel record. Correct vessel identification and well managed vessel registries are key for improving fishery management and conservation in the region.

For more information visit:
www.fao.org/fishery/rfb/wecafc/en

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