



Fisheries around Outermost Regions: Canary Islands

Report for the Scientific, Technical and Economic Committee for Fisheries,
European Commission



Chinijo Archipelago, northeastern Canary Islands

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MAIN FISHERIES DESCRIPTION

There are 3 identified fleets with a base port within Canary Islands: Inshore fleet, tuna fish fleet, and African Grounds Fleet (from now on AGF). All of them operate and land at Canary Islands usually, but AGF also operates at African Grounds, traditionally at Sahara Bank, but also at other more southern African grounds, depending on license availability.

In the case of inshore and tuna fish fleet, since there are many boats belonging to both fleets, depending on resources availability and seasonality, in this report, concerning to catch statistics, these two fleets have been considered as only one, called Canary Islands fleet (from now on CIF).

Type of vessels

The great variety of habitats and types of bottom, the marked oceanic nature, and the reduced continental shelf influence in the CIF, in the fishing gears but also in the type of vessels.

Although recent official information is not available, CIF is composed by around 900 units. It is quite old (60% of the vessels are older than 30 years). The fleet is also of small size in general terms. 80% of the CIF is smaller than 10 m in length. A small size standard vessel abounds, with the following average characteristics: 2.9 Gross Tonnage, 25 Steam Horses of power

and a length of 7.5 m. It is a polyvalent fleet to a large extent.



The CIF is composed by three kinds of vessel: ‘barcos de pozo’ (undecked boats), polyvalent boats and ‘traíñas’ (called as the fishing gear it fishes with, see Gears Chapter).

Barcos de pozo: They are undecked, with a length of 5-8 m, fish on shore with varied fishing gears; and currently all of them are motorized, usually inboard.

Polyvalent boats: They are from 7 to 14 m in length, and they fish all kind of resources (demersal and pelagic) with many kinds of gears, even moving to other islands within the archipelago.

Traíñas: Between 10 and 16 m long. They fish exclusively with ‘traíña’, and small pelagic fishes are their unique aim species.



Fishing activity is typically artisanal and of familiar nature. At many places, there is a need to beach boats close to home, existing an enormous amount of beaches acting as docks, therefore many small landing spots, although the control and monitoring of this landings has improved quite much in the last 5 years with the gradual implementation of First Sale Spot System (from now on FSSS).

There is a huge number of boat's placing, between docks, shelters (at small bays, gulfs, etc.) and beaches. As an example, during a study made at Tenerife in 2002, IEO staff identified 14

main docks, 7 secondary docks or shelters, and 20 beaches (González et al. 2002), for an island with a coastline of 342 km.

There is an easily beatable organization level among fishermen, structured in guilds ('Cofradías de pescadores') only for the most basic things (administration of fuel, icing infrastructure (when it exists), paperwork, and now the FSSS. Very few 'Cofradías' take charge, as well, of their landings' marketing.

There is a clear decline of the artisanal fleet coinciding with height of tourism industry.



Barco de pozo



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Polyvalent boat



Traña



Gears and species caught

At Appendix 1 there is a complete description of all the fishing gears used by CIF. Local fishing gears names have been observed, with appropriate translation. Within each gear, list of species caught is made with descending importance from the landing volume point of view (for correspondence of FAO common name and scientific name, see Appendix 2). Each gear elements are listed, besides gear description, deployment or use method, and baits used. Within the method used with the fishing gear, there is a reference to **geographical features** and **seasonality**.

At Appendix 5 there is a picture catalogue of these CIF fishing gears, when available, showing gear elements, method, etc.



'Gueldera' and 'Jamo', La Graciosa



Different CIF fishing gears



CATCH STATISTICS

Information available by this report's author comes from the Report and Sampling Web (from now on RSW) of the IEO at Canary Islands for the gathering of artisanal fisheries information. This part of RSW was set up at first to monitor the effect of Canary Islands Marine Reserves of Fishery Interest on fishery resources. With time, the web was extended to the whole archipelago, with the will to control the totality of important landing sites.

Therefore, the system is not established in all the area of influence at the same time. First information at Marine Reserves surroundings was gathered at 2003, but the whole system, as it works currently, is functioning since 2009 (see

Figure 1 for historical landings, Figure 3 for placement of RSW through Canary Islands).



Figure 1. Landings (kg) registered with IEO's RSW by year and island.

Year	El Hierro	Fuerteventura	Gran Canaria	La Gomera	La Graciosa	La Palma	Lanzarote	Tenerife	Total general
2003	220.810				51.540	9.177			281.526
2004	181.828			199.442	76.921	83.583			541.774
2005	454.207			789.401	102.823	61.329			1.407.760
2006	560.980			528.351	67.043	292.460	9.722		1.458.556
2007	118.077			132.547	53.234	178.117	42.325		524.299
2008	168.241			483.965	52.520	199.502	8.921		913.148
2009	149.133	168.465	1.445.213	270.483	49.453	227.556	111.467	99.364	2.521.132
2010	126.731	247.500	1.367.153	257.675	63.865	268.057	147.052	119.102	2.597.136
2011	108.270	163.590	1.515.739	63.378	38.048	257.531	330.180	683.106	3.159.841



The RSW keeps a daily control of landings made by professional fishers at the overall of Canary Islands landing spots (as an ideal, see reasons below). As well, the RSW staff makes weekly size measurements of individuals caught with different fishing gears from the most important species of fishery interest.

Catch

The information used to present these results is not perfect at all, but it is the only available apart from that gathered

by Canary Islands Fishery Administration (which also has many errors detected by the team of Canary Islands Oceanographic Lab –CIOL– from the IEO in charge to supervise the RSW). Following, main reasons for the defects of the information are listed and explained:

1. Several landing points present systematic reluctances to give the information, being these permanent in some cases, temporal in others.
2. Sampling effort from persons compounding the RSW has not always been the same, in spite of supervision labor from CIOL staff in charge.



3. A section of the fleet which fishes at Canary Islands, compounded by the smaller boats, lands with an undetermined frequency at minor landing spots not covered by RSW.
4. Certain (also undetermined) amount of landings is made after islands transfers that add even more difficulty at registering labor.
5. A small part of many catches is not registered at landing spot, reserved by fishermen for shelf-consumption.
6. A percentage of catches, traditionally elevated in some kinds of fisheries, although better controlled after official FSSS, is sold directly to restaurants and stays out of any kind of landing control.
7. At some places as Tazacorte (La Palma), sale is made by traditional hawking, and hawkers are an added element to the “landing chain”, between fisher and the FSSS, with the consequent added chaos.
8. In spite of CIOL staff supervision, RSW confounds and mixes species. This imperfection is solved to certain extent by CIOL staff applying expert criteria. Anyways, in many cases, several species have to be labeled as a unique taxonomic category due to uncertainty of correct identification or to lack of specific determination (see Appendix 2).

Figure 2 represents landings of both fleets identified, during 2011. In the case of Canary Islands fleet (from now on CIF), species with annual landing below 20 tons are included in “rest” category. In the case of African

Grounds fleet (from now on AGF) this happens with species with landings below 10 tons. 2011 total landing from CIF is 2.740 tons, while that one from AGF is 420 tons. Appendix 3 lists all species landings during 2011, by fleet. See Appendix 2 for FAO common name / scientific name correspondence.



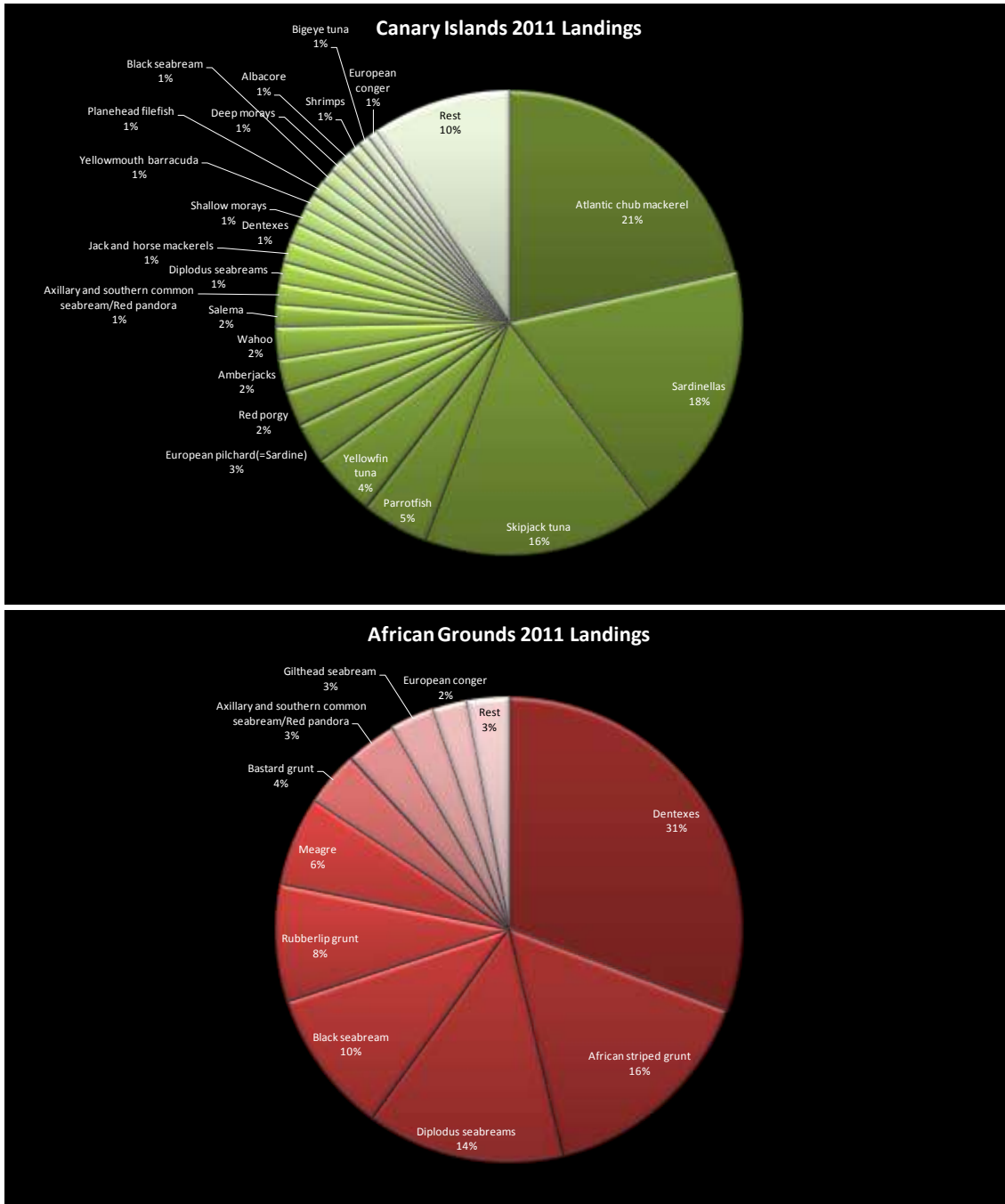
Punta Fariones, Lanzarote

CPUE

RSW does not supply enough reliable information as to calculate CPUE of these fleets' activity. Most of fishing days several gears are combined and catch is mixed before landing. Fishing time is also information with many reluctances to be given, as well as specific fishing zone.



Figure 2. 2011 landings from Canary Islands and African Grounds fleets (species landed below 20 tons in the first case, below 10 tons in the second one, are included in “Rest” category).





Mean sizes

At Appendix 4 there is a list of combinations of Species/Fishing gears with the mean size (total length, in cm) of individuals measured during 2011 in the overall of the archipelago controlled landing spots.

Species/Fishing gears combinations included are only those with number of valid measurements not under 20 along the whole year.

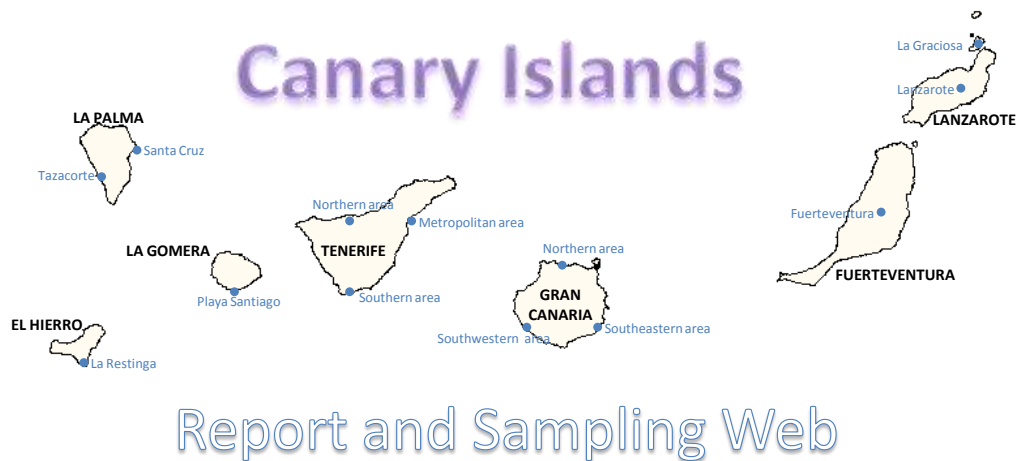


Measuring Red porgy, Tazacorte, La Palma

Value and marketing

RSW does not supply any information about the landings value nor about market movements.

Figure 3. Report and Sampling Web of the IEO to monitor Canary Islands artisanal fisheries.





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APPENDIXES



Appendix 1. List of fishing gears used by Canary Islands fleet, with list of species caught, gear elements, description, method and baits used.

Fishing gear	Elements	Description	Method	Bait
Main species caught				
SURROUNDING NETS				
Traíña¹ European pilchard Bogue Sand smelt Sardinellas Atlantic chub mackerel Salema Saddled seabream Pompano Yellowmouth barracuda	Panel of multifilament netting 130-140 m long, 11-12 m of draught. Purse-line. Weights footrope. Floats headrope.	Single panel purse seine which vertically hangs in the water with its bottom edge held down by weights and its top edge buoyed by floats. The main part of the panel ('copejada' or 'copo') can be flanked by two resistant triangular appendixes with bigger mesh size, named 'cabecero' (the first to come out of boat) and 'rabo' (the last). For fishing Pompano a net with 50 m of draught is used.	The net is casted at shallow water and daylight, shoal is located by eco-sounder, gathered from an skiff ('chalana'), sometimes feeding ('engodar'), using a bottom viewer ('mirafondos' or 'vidrio'), sometimes with men in the water to frighten away and gather the shoal, and to avoid tangling. Made at night at deeper waters gathers fish with light, from main boat or skiff. Main boat encircles shoal and skiff comes out of the circle over the floats line. Purse is used to avoid fish sounding. Seine becomes smaller at main boat side and catch is recollected with a brailer or dip net ('jamo'). Fishing is made all the year except from October to December at places without habit of catching large individuals of European pilchard.	Not always used. Feeding with a mixture of smashed fish (European pilchard, Sardinellas, Atlantic chub mackerel, Bogue) and bread

¹ Also called 'boguera' or 'sardinal', depending on the place and main species caught.



Fishing gear	Elements	Description	Method	Bait
Main species caught				
SEINE NETS				
Chinchorro de aire² Sand smelt Bogue Sardinellas European pilchard	Small mesh size bunt ('copo'). Different material and size wings. Weights footrope. Floats headrope. Long twisted nylon ropes.	Composed of a bunt (bag or lose netting) and long wings ('alas', 'mangas' or 'caseretes') ending in dragging sticks ('calones') tied to long ropes for towing the seine to the beach. Several bigger floats are displaced at bunt's mouth to keep it 'in the air'.	Once shoal is located, with the seine on board, one of the ropes and wings are let out in favor of the current, then bunt is let out, and finally the other wing against the current, with respective dragging stick and rope, trying to encircle the shoal. There are two modalities: one is towed from the beach, the other from the boat. In both cases towing is manual by fishers. Used the whole year depending on weather conditions (difficult to use with swell).	It is not usual. Rarely feeding with a mixture of smashed fish (European pilchard, Sardinellas, Atlantic chub mackerel, Bogue) and bread
Salemera Salema Saddled seabream <i>Diplodus</i> seabreams Bermuda sea chub Black seabream Pompano	Panel of multifilament netting 200-250 m long, 7-8 m of draught. Optional purse-line. Weights footrope. Floats headrope.	Similar to 'traíña', but usually the shape of the net is that one of gillnet. Bag mesh size never under 70 mm.	It is a gillnet used as a seine. Several divers continuously dive to close the weights footrope when purse-line is absent. It is used the whole year but sporadically. Catches are massive but isolated. Fishing takes place at littoral.	

² Means air beach seine. Also called 'boliche', depending on the place.



Fishing gear Main species caught	Elements	Description	Method	Bait
LIFT NETS				
Gueldera³ Sand smelt Bogue Sardinellas	Pole. Metal ring. Mesh net plaited with wire or small mesh size net. Nylon monofilament guys. Twisted nylon rope ('cala').	Metal ring of variable diameter (2-4 m) bearing a metallic or nylon net, joined by a variable number of guys (usually 3) to a twisted nylon rope, and this one to a pole to lift the net.	It's a lift net used to catch life bait for other fishing gears. Fish is gathered by feeding ('engodo'). It's used at shallow waters and localizing fish with bottom viewer ('mirafondo'). Sometimes feeding is not necessary. Fishing season is the whole year, more frequent at summer when tuna fishing is taking place.	Smashed sea urchins or a mixture of smashed fish (European pilchard, Sardinellas, Atlantic chub mackerel, Bogue) and bread
SET GILLNETS				
Paños⁴ Surmullet Parrotfish Sand steenbras Axillary seabream Red Pandora Black seabream Yellowmouth barracuda	Nylon monofilament or plaited multifilament net panel, 100 m long, 2-7 m of draught. No. of panels variable. Weights footrope. Floats headrope. Twisted nylon rope ('cala'). Buoys (1-2). 2 sinkers (3-7 k each one).	Single panel gillnet which vertically stays in the water with its bottom edge set on the sea floor by weights and its top edge buoyed by floats.	Net is deployed or getting dark, or before dawn. In any case, is lifted after dawn. Deployment is usually made by the bow in favor of the stream. Lifting is manual and while lifting tidily arranged on board for next cast, after clearing it from catch. Used in the whole littoral, on rocky or mixed bottom, at shallow waters. For parrotfish, is specially used in summer, for surmullet and seabreams from September to February.	

³ Also called 'pandorga', depending on the place.

⁴ Means cloth. Also called 'trasmallo de una pared' (one panel trammel net)



Fishing gear	Elements	Description	Method	Bait
Main species caught Trasmallo⁵ Surmullet Parrotfish Sand steenbras Axillary seabream Red Pandora Black seabream Yellowmouth barracuda	Nylon twisted multifilament net panels, 65-80 m long, 2 m of draught. Mesh size: inner panel never over 70 mm, outer panels over 400 mm. Weights footrope. Floats headrope. Twisted nylon rope ('cala'). Buoys (1-2). 2 sinkers (3-7 k each one).	Double or triple panel gillnet which vertically stays in the water with its bottom edge set on the sea floor by weights and its top edge buoyed by floats. Fishes entangling fish in bags or pockets of netting when fish swim through one of the outer panels, hit the inner panel, and are carried through to the other outer panel, which creates a bag or pocket, thereby trapping it.	Idem to 'Paños'.	
TRAPS				
Tambor Deep morays Shallow morays	Eel trap. Float. Rope. Pebbles (weights).	It is a metal or PVC cylinder with an entrance in one of the bases. There is a door to facilitate eels extraction. It is usual to fill the trap with small pebbles ('callaos') to make the trap heavier.	It is let out with rope and float. Sometimes bottom viewer is used to place entrance facing rocky hollows (if used at shallow waters). Littoral and unseasonal fishing.	European pilchard, Atlantic chub mackerel, Sardinellas, Bogue, Ornate wrasse.

⁵ Also called 'trasmallo de dos o tres paños' (two-three panels trammel net)



Fishing gear Main species caught	Elements	Description	Method	Bait
Nasa de pescado⁶ Dentexes Parrotfish Amberjacks Island grouper Red porgy White trevally Redbanded seabream Dusky grouper Scorpionfishes Offshore rockfish Blackbelly rosefish Deep morays Shallow morays Common octopus Spiny lobsters	Trap. Float. Twisted nylon rope ('cala').	Passive fishing gear, with a metal structure bearing the shape (squared or circular), covered by wire mesh, with one or two entrances ('mataderos') for the fish to come in, and a door to introduce bait and to extract catch. Entrance shape is elbow-like. Float is tied to the trap by a twisted nylon rope ('cala'). Trap size varies depending on aim species or fisher preferences. Normally they are set individually, although sometimes it is an assembly of several traps (variable number) joined by ropes.	They are normally deployed one to three days, although because of bad weather they can stay on the bottom for weeks. Used at littoral, up to 200 m deep, during the whole year.	European pilchard, Atlantic chub mackerel, Sardinellas, Bogue, bread.
Nasa de camarón⁷ Shrimps Toothed rock crab Deep morays Shallow morays European conger Red porgy Forkbeards Scorpionfishes Offshore rockfish Combers	Trap. Float. Twisted nylon rope ('cala').	Same as fish trap but smaller mesh size and truncated cone-like entrances. Size varies but normally under 2 m of diameter (circular) or side (squared).	Same as fish trap. Used at littoral, up to 200 m deep, during the whole year, but especially at summer.	European pilchard, Atlantic chub mackerel, Sardinellas, Bogue, bread.

⁶ Fish trap.

⁷ Shrimp trap.



Fishing gear	Elements	Description	Method	Bait
Main species caught				
HANDLINES				
Aparejo del alto ⁸ Alfonsinos Dentexes European hake Wreckfish Blackspot seabream Scorpionfishes Offshore rockfish Blackbelly rosefish Black cardinal fish Roudi escolar Swordfish European conger Oilfish Stout beardfish	Plaited nylon multifilament (no. 150-200) ('pisilán') or stainless steel monofilament wire (diameter 0,7-0,8 mm), as towing rope. Swivels. Nylon monofilament (no. 160) mainline ('socala'). Nylon monofilament (no. 120) gangions ('paradas' or 'brazoladas' or 'tanzas'). Hooks. Cement, plumb or stone sinker (0,8-1,5 k). Light sticks (optional).	Tackle composed by towing rope, swivel, monofilament mainline, finishing with a sinker. From mainline hang gangions every 1-1,5 m, joined to mainline by triple swivels. Number of gangions (and hooks) is variable (7-20). Some fishermen add a light stick at the beginning of mainline to attract fish.	Even though it is currently deployed and recovered with electric reel and its size (number of hooks) is similar to a vertical longline, it is never used as it, but as a handline, during fishing time. Fishing is made with the boat hove to, letting the current ('marea' or 'aguaje') to draw it to the fishing spot ('pesquero', 'piedra' or 'puesto'), correcting to initial position after each cast ('remontar'). Fishing depths vary with aim species, but is always over 400 m up to 1000 m. Seasonality also depends on species. Alfonsinos and other aim species are caught the whole year. European hake especially in winter and beginning of spring.	Strips of different squids, shrimps, occasionally filets of Atlantic chub mackerel or European pilchard (this last one is the preferred to look for European hake.
Puyón Parrotfish Barred hogfish White trevally Diplodus seabreams	Float. 22-28 m of nylon monofilament (no. 160). Swivels. 'Plomada' (weight made out of piece of nylon covered by rolled wire and a 20 g plumb in the central section). 1,5 m of nylon monofilament (no. 70). Hook.	Tackle composed by float, swivel, nylon monofilament no. 160, 'plomada', swivel, nylon monofilament no. 70 and one hook. Catch is stored in a 2 m long floating rope of 5 mm of diameter joined to a float. Rope finishes with a piece of 3 mm wide wire.	A fisherman with isothermal suit, mask, flippers, sack ('talega') with bait, 'puyón' and rope, swims on surface locating the fish and placing the hook near the fish's mouth. Once caught, fish is skewered in the storing wire and rope. Very littoral and practiced especially at summer.	Small crabs (<i>Percnon gibbessi</i> , <i>Xantho</i> spp., <i>Pachygrapsus</i> spp.)

⁸ Deep handline, also called 'escalera' (stairs) or 'tren' (assembly)



Fishing gear Main species caught	Elements	Description	Method	Bait
Liña⁹ (and 'caña'¹⁰) con cebo vivo a superficie¹¹ Yellowmouth barracuda Amberjacks Atlantic bonito Yellowfin tuna Wahoo Skipjack tuna White trevally	Twisted nylon rope ('cala') or nylon monofilament (> no. 150). Swivel (optional). 15-20 m of nylon monofilament (no. > 100). Medium-large hook. Rod with manual reel (optional).	Traditional way (still used) is a succession of nylon rope ('cala'), swivel (optional), and a long gangion ('parada') of thinner nylon (but sufficiently resistant), usually reinforced with steel wire in its joint with the hook. Hook size and lines width can vary depending on aim species. Fishing Yellowmouth barracuda and Atlantic bonito, some fishermen use a rod with manual reel.	Fishing is made with the boat hove to, letting the current ('marea' or 'aguaje') to draw it to the fishing spot ('pesquero', 'piedra' or 'puesto'), correcting to initial position once in a while ('remontar'). Fishing spots are usually rocks ('piedras'), cliffs ('veriles') or rock pinnacles ('bajones'). Fishermen throw live bait hooked which keeps swimming close to surface. Casts are short and frequent, changing bait repeatedly. At the same time the spot is fed throwing unhooked live bait to the water. Fishing Yellowmouth barracuda and Atlantic bonito, when fish stops eating, boat moves through fishing ground trolling with live bait. Littoral and unseasonal fishing.	Bogue, European pilchard, Sardinellas, Pompano, Saddled seabream, Sand smelt.
Liña para túnidos¹² Atlantic bluefin tuna Bigeye tuna Yellowfin tuna Albacore Amberjacks	Twisted nylon rope ('cala') or stainless steel wire of 2-8 mm. Different rope ends (see Description). Medium-large hook. Rigid float (optional). Swivel and 2 gangions (optional).	Succession of nylon rope ('cala'), ending in different options: directly to the hook, or with a fragment of diverse material, thinner twisted nylon, nylon monofilament, plaited nylon, or a twisting of several pieces of stainless steel wire ('torcido'). Joint to hook can be covered by steel or copper wire ('entorchado'). Sometimes a rigid float is attached to the line to hold prey's flight. For fishing Amberjacks, at the end of mainline, there is a swivel, with two gangions of nylon monofilament, one with a weight ('chumbo') and the other with the hook.	Fishing is made with the boat maintained against the current ('marea' or 'aguaje'). Lines are tied with thin nylon ('falso') to the side of the boat, to avoid fishermen from directly suffering first strong struggle of the prey. Fishermen throw live bait hooked which keeps swimming close to surface. At the same time the spot is fed throwing unhooked live bait to the water. Littoral or offshore fishing (following the tuna fish shoals), but superficial fishing. Especially practiced at spring and autumn.	Bogue, European pilchard, Sardinellas, Pompano, Saddled seabream, Sand smelt.

⁹ Handline also called 'cordel', 'amaño' or 'aparejo' depending on the place.

¹⁰ Rod.

¹¹ Surface live bait handline.

¹² Tuna fish handline.



Fishing gear Main species caught	Elements	Description	Method	Bait
Liña con cebo vivo a fondo ¹³ Dentexes Amberjacks Island grouper Red porgy Redbanded seabream White trevally Bluefish Wahoo Yellowmouth barracuda	Mainline of nylon (no. 150-200). Swivels. Piece of steel wire 35-50 cm long ('tren de verguilla' or 'ballestilla'). Weight (0,8-1,5 k). Nylon monofilament gangion (no. 100 or less) up to 5 m long depending on the place. Large hook(s).	Thick nylon mainline, joined to a piece of thick stainless steel wire (35-50 cm) to which the weight is attached. Gangion is tied to the wire with a swivel. Its nylon is thinner but sufficiently resistant. Large hook joins to gangion reinforced with a wire or thread cover. At some places, a second hook is added, tied to the same gangion with a slipknot, but used to hook same bait at a different position.	Fishing is made with the boat hove to, letting the current ('marea' or 'aguaje') to draw it to the fishing spot ('pesquero', 'piedra' or 'puesto'), correcting to initial position once in a while ('remontar'). Traditional way to deploy and recover is manual but at some places some fishers use an electric reel rod. At some places this handline is used with dead bait to fish Dusky grouper. At other places is used, also with dead bait, to fish Triggerfishes. Littoral and unseasonal fishing.	Squid (sometimes Cuttlefish, appreciated by its resistance, but scarce) during summer for fishing Dentexes and Amberjacks. Bogue, European pilchard and Pompano are used the whole year.
Liña con cebo muerto a fondo ¹⁴ Red porgy Combers Redbanded seabream Dusty grouper Dentexes Triggerfishes Black seabream Diplodus seabreams Scorpionfishes Red pandora White trevally Barred hogfish Bluefish	Mainline of nylon monofilament (no. 120-150) or plaited multifilament. Swivels. Piece of steel wire 35-50 cm long ('tren de verguilla' or 'ballestilla'). Weight (0,5-1,5 k). Thinner nylon monofilament gangion (no. 70-80) up to 5 m long depending on the place. Medium hooks; large in case of fishing Dusky grouper.	Thick nylon mainline, joined to a piece of thick stainless steel wire (35-50 cm) to which the weight is attached. Two gangions ('paradas') are tied to the wire with a triple swivel. Their nylon is thinner but sufficiently resistant. One larger than the other to avoid tangling. Each gangion with its hook. A more simple version is used occasionally, depending on rush reasons, consisting of placing the weight at the end of the mainline, and gangions (2-5) are joined by swivels, above, to the mainline. A third version is used at some places for fishing Triggerfishes, consisting of mainline and weight joined to the steel by its midpoint, and gangions (one shorter than the other) hanging from both tips of steel.	Fishing is made with two of these methods: 1. The boat hove to, letting the current ('marea' or 'aguaje') to draw it to the fishing spot ('pesquero', 'piedra' or 'puesto'), correcting to initial position once in a while ('remontar'). 2. The boat anchored, in which case there is feeding with smashed European pilchard mixed with oil and 'gofio' ¹⁵ . Traditional way to deploy and recover is manual but currently the use of an electric reel rod is broadly widespread. Anyways, it's used as a handline, never as a longline. As abovementioned (see 'Liña a fondo con cebo vivo'), for fishing Dusky grouper, dead bait is used but the line characteristics are those of the live bait handline. Littoral and unseasonal fishing.	Strips of different squids, shrimps, occasionally filets of Atlantic chub mackerel or European pilchard.

¹³ Bottom live bait handline.

¹⁴ Bottom dead bait handline.

¹⁵ Roasted grains flour.



Fishing gear Main species caught	Elements	Description	Method	Bait
Liña para la ruama ¹⁶ Diplodus seabreams Red pandora Black seabream Combers Red porgy Saddled seabream African striped grunt	Mid width nylon monofilament mainline (no. 70)(called at some localities 'cantora'). Plumb threads ('plomo dulce'). Thinner nylon gangions ('brazoladas' or 'tanzas'). Small hooks. Manual reel rod (optional).	Handline gear, sometimes used with manual reel rod, made of mid width nylon mainline, plumb threads or balls at the end of it, and after a swivel (or not), the gangions (usually 2, one longer) both with hooks.	Fishing is made with two of these methods: 1. The boat hove to, letting the current ('marea' or 'aguaje') to draw it to the fishing spot ('pesquero', 'piedra' or 'puesto'), correcting to initial position once in a while ('remontar'). 2. The boat anchored. It's used at shallow waters and quite close to the coast. Unseasonal.	Strips of different squids, shrimps, little crabs ('cangrejilla'), filets of Atlantic chub mackerel or European pilchard.
Aparejo de conejo ¹⁷ Roudi escolar	Mainline of nylon monofilament (no. 120-150) or plaited multifilament. Swivels. Piece of steel wire 35-50 cm long ('tren de verguilla' or 'ballestilla'). Weight (0,5-1 k). Thinner nylon monofilament gangion (no. 70-80) up to one brace long. Large hooks.	Thick nylon mainline and weight joined to the steel by its midpoint, and gangions (one shorter than the other) hanging from both tips of steel.	Night fishing, usually with boat anchored over the cliff, at 150-170 m of depth, by a stone with a weak nylon ('falso', aimed to be broken, to recover the handline but not the stone). Anchoring permits feeding and staying over the same fishing spot. It also permits to use 2-3 handlines at a time without tangling. Unseasonal.	Filets of Roudi escolar or European pilchard.
Potera ¹⁸ Squids Cuttlefish	Thin nylon mainline. Potera.	Bright (white or reflecting) cylinder or egg like piece, with its inferior end crowned by 1-3 rows of 'hooks' (currently nails without barb), placed at the end of the thin nylon mainline.	This gear is used to do the fishing modality called ' calamareo ' (from 'calamar', squid). Made manually, from any kind of boat, by one or several fishermen, to get live bait for other fishing modalities. Handline is constantly pulled up and down to move the bright 'potera' and attract preys. Fishing is made on sandy shallow bottoms, during the whole year, depending on prey availability.	

¹⁶ Handline for small mixed fish, also called 'liña vana' (vain handline).

¹⁷ Handline for Roudi escolar.

¹⁸ From 'pota' (shortfin squid).



Fishing gear Main species caught	Elements	Description	Method	Bait
POLE AND LINES				
Caña de vieja ¹⁹ Parrotfish Barred hogfish Diplodus seabreams Combers White trevally	An entire (6 m long) bamboo cane. Mid width nylon (~ no. 70). Plumb thread ('plomada'). Hook.	Nylon, as long as cane, is tied to the tip of it. At the end of the nylon, a plumb thread is rolled to it. Nylon ends in a loop for tying another nylon monofilament of similar width with the hook at the end. Hook can be reinforced with steel or copper wire or synthetic materials. Some fishermen have substituted the cane for synthetic rods, lighter and more flexible and resistant than traditional bamboo ones.	Usually two men are needed, one keeps the boat with the oars, directed by his companion with the cane and with a bottom viewer ('vidrio' or 'mirafondos'), used to localize fish and to place baited hook close to the fish mouth. When there's only one fisherman, it's a better option to anchor at a spot of parrotfish path. Littoral fishing made especially at summer.	Preferably 'carnada de vieja' (<i>Xantho</i> spp., also called 'cangrejilla'), but also 'araña' (<i>Percnon gibbesi</i>) and 'juyonas' (<i>Pachygrapsus</i> spp.).
Jigging Amberjacks Dentexes Island grouper Dusty grouper Red porgy Redbanded seabream White trevally Bluefish	Rod with reel (manual or preferably electric). Nylon line or plaited multifilament. Swivel. Stainless steel wire. Jig ('señuelo', 'rapala').	To a rod with reel, the jig (a modern version, or a more traditional one) is joined by a swivel and a nylon line or a plaited multifilament (more extended now). Usually, before the jig a 2-3 plaited pieces of stainless steel wire are placed.	It's a vertical fishing, of recent introduction, where fisherman tries to attract fish with jigs with different colors, shapes and designs. The jig is deployed to the bottom, then is lifted tens of meters (sometimes up to the surface), tugging with the rod with different intensity, velocity and length of tug, even stopping. Once the prey is hooked, it's lifted manually or preferably with an electric reel. It's a littoral and unseasonal fishing.	Modern elongated metal jig or traditional plastic octopus or squid-like ones ('rapalas').
Caña del atún ²⁰ Skipjack tuna Yellowfin tuna Albacore Bigeye tuna Amberjacks	Bamboo cane. Nylon. Hook (with or without feather jig -'pluma' or 'señuelo'-).	Cane with a nylon gangion and a hook of variable size depending on the prey size. It's optional the use of feather jig.	Fishing tuna fish with live bait, with a similar method to 'Liña con cebo vivo a superficie'. Fish is attracted with water jets, apart from feeding. Fishing is littoral, but separated more than half a mile from the shore. It's superficial and very seasonal (almost restricted to summer).	Sand smelt, small individuals of Atlantic chub mackerel ('malla'), Bogue.

¹⁹ Pole for Parrotfish.

²⁰ Pole for tuna fish.



Fishing gear	Elements	Description	Method	Bait
Main species caught				
SET LONGLINES				
Palangre horizontal de fondo ²¹ Alfonsinos European hake Scorpionfishes Offshore rockfish Blackbelly rosefish Red porgy Forkbeards Common mora Dentexes Deep morays Wreckfish European conger	High-flyer buoys ('gallos'). Twisted multifilament ropes ('calas'). Nylon mainline (no. 125-250). Cement or stone sinkers ('potalas'). Thin nylon gangions 1-1,5 m long. Mid size hooks. Small floats. Small weights (stones).	Bottom horizontal longline made out of a mainline, from which 100-500 gangions hang every 3 m, joined to mainline by swivels, and ending with a hook. Mainline is provided, every 10-20 gangions with alternate weights ('pandullos') and floats to keep horizontal structure. Sinking is made with big stone or cement sinkers or small grapnels or grappling hooks at mainline ends, joined with buoys by 4-5 mm wide twisted multifilament ropes.	Deployment is made with the boat at low speed. When boat is equipped with a longline boxes system, deployment speed can reach 6-7 knots. Lifting can be made by two systems: lifting the longline from one of the ends and recovering all the mainline till the other end; or lifting one end, tying the mainline end to a buoy, and lifting the other end, and then, recovering all the mainline till the floating end. Lifting can be made manually or with an electric longline winch, depending on the place. As it's lifted, longline is placed at boxes or baskets to be ready for next cast. It's a littoral and somewhat offshore fishing, depending on the depth (and aim species), that can vary from 30 to 1000 m. Used all the year. Some species as European hake entails seasonality.	Fish filets, squid strips, etc.

²¹ Bottom horizontal longline.



Fishing gear	Elements	Description	Method	Bait
Main species caught				
DRIFTING LONGLINES				
Palangre horizontal de media agua²² Black scabbardfish	High-flyer buoys ('gallos'). Twisted multifilament ropes ('calas'). Nylon mainline (no. 125-250). Cement or stone sinkers ('potalas'). Thin nylon gangions 1-1,5 m long. Mid size hooks. Small weights (stones).	Bottom horizontal longline deployed over bottom 1500-1600 m deep, and mainline placed at 850-1000 m deep. It's made out of a mainline, with 500 gangions hanging every 3-4 m, joined to mainline by swivels, and ending with a hook. Mainline is provided, every 125 gangions with weights ('pandullos'), and at the middle of the mainline another lifting rope (with buoy and sinker) is placed, so longline forms a 'W', going from 850 to 1000 m deep. Sinking is made with big stone or cement sinkers or small grapnels or grappling hooks at mainline ends, joined with buoys by 4-5 mm wide twisted multifilament ropes.	Deployment is made beginning the evening with the boat at certain speed (6-7 knots). It stays drifting in the water the rest of the evening and the whole night and is lifted the following morning. Longline is lift from one of the ends, fixing this to the boat, going to lift rope in the middle, and lifting mainline by both tips at the same time; this process is repeated with the other half. Lifting can be made manually or with an electric longline winch. Unseasonal.	Shortfin squid strips.
TROLLING LINES				
Currica Wahoo Yellowmouth barracuda Amberjacks Atlantic bonito Yellowfin tuna Skipjack tuna	Thick monofilament nylon (> no. 150) or twisted multifilament rope ('cala'). Swivels (optional). At least 15 m (up to 100 m, depending on the place) of wire, thick nylon or plaited multifilament. Steel, plaited nylon or wire gangion. Hook with jig ('señuelo', 'rapala') or bait. Manual reel rod (optional).	Succession of nylon rope ('cala'), swivel (optional), several meters of wire, thick nylon or plaited multifilament, another swivel (optional) and a steel, plaited nylon or wire gangion, with a hook with jig ('señuelo', 'rapala') or a small pelagic fish bait. Sometimes a manual reel rod is used to troll the line. Hook and jig sizes depend on aim species.	Boat moves doing long transects trolling the line (1 or 2) by the stern or sides. Whole year fishing, especially during summer, usually littoral, but can be made offshore.	Atlantic chub mackerel, Sardinellas or other small pelagic, in the case jig is not used.

²² Mid-water horizontal longline.



Fishing gear Main species caught	Elements	Description	Method	Bait
GRAPPLING AND WOUNDING GEARS				
Vara ²³ Wahoo Blue marlin	Solid 'riga' pinetree lance, 3-6 m long. Harpoon (depending on the place, it can be like a huge hook, or fork-like, with four prongs, with double barb each one). Plaited nylon multifilament rope. Thread ('hilaza').	Harpoon is tied to the tip of the lance with thread. Harpoon also is joined to a plaited rope used to recover prey.	Boat is hove to or at low speed, while localizing the prey swimming on the surface. Lance is thrown and harpoon detaching from the lance as it fixes to the fish, which is recovered manually with the rope. To attract fish a scale model of a Wahoo is maintained floating close to the side of the boat. Feeding is seldom used. Whole year fishing, especially during summer, usually littoral, but can be made offshore.	When feeding, European pilchard or other small pelagic.
Lapero ²⁴ Limpets	Lapero. Bag ('talega') or bucket ('balde').	Metal cutting edge tool with a variable design which permits to use it with one hand. It can be substituted by a knife.	Limpets are detached from the rock with the 'lapero' and stored in the 'talega'. Shell-fishing is made on foot at intertidal zone. There where is permitted, subtidal shell-fishing (with mask and flippers) is practiced. Unseasonal.	
Fija ²⁵ Sea urchin	'Fija' (spear). Bag ('saco').	Sharpened straight metal stick, can be barbed or not, also with handle.	Sea urchins are speared and recollected in the bag while fisherman swims at shallow waters. Urchins are used as bait for 'Gueldera' fishing. Unseasonal.	

²³ Lance, pike. It bears a harpoon.

²⁴ From 'lapa' (Limpet). Also called 'mariscador' (shellfish gatherer).

²⁵ Spear.



Fishing gear Main species caught	Elements	Description	Method	Bait
Fija y bichero ²⁶ Common octopus	'Fija' (spear). 'Bichero' (harpoon). Bag ('saco').	'Fija' is a non-barbed straight metal spear, while 'bichero' is barbed straight metal harpoon.	For fishing Common octopus mainly walking at intertidal puddles during low tide. Method consists in skewering prey with 'bichero' once it's been localized, with the help of rummaging with the 'fija'. Prohibited at some places. Unseasonal.	
RECOLECTION				
Marisqueo ²⁷ Osilinus Small crabs	Bag ('Talega') or bucket ('balde'). Subtidal: Isothermal suit, mask and flippers. Intertidal: Knife-like tool (optional).	See elements.	Subtidal version is to gather small crabs by hand to use as bait for other fishing activities. Osilinus recollection is made at intertidal zone. <i>Grapsus grapsus</i> is recollected also at intertidal but at night, using torches. Also at intertidal zone 'cangrejilla' (<i>Xontho</i> spp.) and 'juyonas' (<i>Pachygrapsus</i> spp.) are gathered turning stones over. Unseasonal.	

²⁶ From 'bicho' (animal).

²⁷ Shellfish gathering.



Appendix 2. *List of common and scientific names used in the present report.*

FAO Common Name	Scientific Name / Landing Reference
African striped grunt	<i>Parapristipoma octolineatum</i>
Albacore	<i>Thunnus alalunga</i>
Alfonsinos	<i>Beryx decadactylus</i> <i>Beryx splendens</i>
Amberjacks	<i>Seriola carpenteri</i> <i>Seriola dumerili</i> <i>Seriola fasciata</i> <i>Seriola rivoliana</i> <i>Seriola</i> spp.
Angelshark	<i>Squatina squatina</i>
Angler	<i>Lophius piscatorius</i>
Atlantic bluefin tuna	<i>Thunnus thynnus</i>
Atlantic bonito	<i>Sarda sarda</i>
Atlantic chub mackerel	<i>Scomber colias</i>
Atlantic white marlin	<i>Tetrapturus albidus</i>
Axillary and southern common seabream /Red pandora	<i>Pagellus acarne</i> <i>Pagellus bellottii bellottii</i> <i>Pagellus erythrinus</i> <i>Pagrus africanus</i>
Azores chromis	<i>Chromis limbata</i>
Ballan wrasse	<i>Labrus bergylta</i>
Barred hogfish	<i>Bodianus scrofa</i>
Bastard grunt	<i>Pomadasys incisus</i>
Bermuda sea chub	<i>Kyphosus sectatrix</i>
Bigeye tuna	<i>Thunnus obesus</i>
Black cardinal fish	<i>Epigonus telescopus</i>
Black jack	<i>Caranx lugubris</i>
Black scabbardfish	<i>Aphanopus carbo</i>
Black seabream	Pescado negro ²⁸ <i>Spondyliosoma cantharus</i>
Blackbelly rosefish	<i>Helicolenus dactylopterus dactylopterus</i>
Blackmouth catshark	<i>Galeus melastomus</i>
Blackspot(=red) seabream	<i>Pagellus bogaraveo</i>
Blue shark	<i>Prionace glauca</i>
Bluefish	<i>Pomatomus saltator</i>
Blunthead puffer	<i>Sphoeroides pachygaster</i>

²⁸ *Black fish*, in English, landing term used at La graciosa, north of Lanzarote, to name landings mainly composed by black sea bream, but also with unknown low percentages of several *Diplodus* seabreams (especially *D. vulgaris*), white trevally, salema and African striped grunt.



FAO Common Name	Scientific Name / Landing Reference
Bluntnose sixgill shark	<i>Hexanchus griseus</i>
Boarfish	<i>Capros aper</i>
Bogue	<i>Boops boops</i>
Brown meagre	<i>Sciaena umbra</i>
Bullet tuna	<i>Auxis rochei rochei</i>
Canary damsel	<i>Abudefduf luridus</i>
Cardinal fish	<i>Apogon imberbis</i>
Combers	<i>Serranus atricauda</i> <i>Serranus cabrilla</i> <i>Serranus scriba</i>
Common mora	<i>Mora moro</i>
Common octopus	<i>Octopus vulgaris</i>
Common sole	<i>Solea solea</i>
Common stingray	<i>Dasyatis pastinaca</i>
Cuttlefishes	<i>Sepia bertheloti</i> <i>Sepia officinalis</i>
Darwin's slimehead	<i>Gephyroberyx darwinii</i>
Deep morays	<i>Gymnothorax maderensis</i> <i>Gymnothorax polygonius</i> Morenas ²⁹ <i>Muraena helena</i>
Deep-sea red crab	<i>Chaceon affinis</i>
Dentexes	<i>Dentex angolensis</i> <i>Dentex canariensis</i> <i>Dentex dentex</i> <i>Dentex gibbosus</i> <i>Dentex macrophthalmus</i> <i>Dentex maroccanus</i> <i>Dentex</i> spp.
Devil fish	<i>Mobula mobular</i>
Diplodus seabreams	<i>Diplodus annularis</i> <i>Diplodus cervinus cervinus</i> <i>Diplodus puntazzo</i> <i>Diplodus sargus cadenati</i> <i>Diplodus</i> spp. <i>Diplodus vulgaris</i>

²⁹ *Morays* in English, is a landing category used in La Graciosa to classify catches made with “tambores” (moray traps, in English), composed mainly by Mediterranean moray (*Muraena Helena*).



FAO Common Name	Scientific Name / Landing Reference
Dolphinfishes	<i>Coryphaena equiselis</i> <i>Coryphaena hippurus</i> <i>Coryphaena</i> spp.
Drums	<i>Umbrina canariensis</i> <i>Umbrina cirrosa</i> <i>Umbrina ronchus</i>
Dusky grouper	<i>Epinephelus marginatus</i>
Emerald wrasse	<i>Centrolabrus trutta</i>
Escolar	<i>Lepidocybium flavobrunneum</i>
European anchovy	<i>Engraulis encrasicolus</i>
European Common Squid	<i>Alloteuthis subulata</i>
European conger	<i>Conger conger</i>
European hake	<i>Merluccius merluccius</i>
European pilchard(=Sardine)	<i>Sardina pilchardus</i>
European seabass	<i>Dicentrarchus labrax</i>
Forkbeards	<i>Phycis blennoides</i> <i>Phycis phycis</i>
Garfish / Agujon Needlefish	<i>Belone belone gracilis</i> <i>Tylosurus acus</i>
Giant red shrimp	<i>Aristaeomorpha foliacea</i>
Gilthead seabream	<i>Sparus auratus</i>
Glasseye	<i>Heteropriacanthus cruentatus</i>
Grey mullets	<i>Chelon labrosus</i> <i>Liza aurata</i> <i>Mugil cephalus</i>
Gurnards	<i>Chelidonichthys cuculus</i> <i>Chelidonichthys lastoviza lastoviza</i>
Imperial blackfish	<i>Schedophilus ovalis</i>
Island grouper	<i>Mycteroperca fusca</i>
Jack and horse mackerels	<i>Trachurus mediterraneus mediterraneus</i> <i>Trachurus picturatus</i> <i>Trachurus</i> spp. <i>Trachurus trachurus</i>
John dory	<i>Zeus faber</i>
Kitefin shark	<i>Dalatias licha</i>
Limpets	<i>Patella aspera</i> <i>Patella candei crenata</i> <i>Patella</i> spp. <i>Patella ulyssiponensis aspera</i>
Lizardfishes	<i>Synodus saurus</i> <i>Synodus synodus</i>
Longbill spearfish	<i>Tetrapturus pfluegeri</i>



FAO Common Name	Scientific Name / Landing Reference
Mackerel scad	<i>Decapterus macarellus</i>
Marlins and spearfishes	<i>Makaira nigricans</i>
Meagre	<i>Argyrosomus regius</i>
Mediterranean flyingfish	<i>Cheilopogon heterurus</i>
Mediterranean slipper lobster	<i>Scyllarides latus</i>
Microchirus azevia	<i>Microchirus azevia</i>
Ocean sunfish	<i>Mola mola</i>
Offshore rockfish	<i>Pontinus kuhlii</i>
Oilfish	<i>Ruvettus pretiosus</i>
Ornate wrasse	<i>Thalassoma pavo</i>
Osilinus	<i>Osilinus</i> spp.
Paromola	<i>Paromola cuvieri</i>
Parrotfish	<i>Sparisoma cretense</i>
Pearly razorfish	<i>Xyrichtys novacula</i>
Pilotfish	<i>Naucrates ductor</i>
Planehead filefish	<i>Stephanolepis hispidus</i>
Pomfrets	<i>Brama brama</i> <i>Taractichthys longipinnis</i>
Pompano	<i>Trachinotus ovatus</i>
Rainbow wrasse	<i>Coris julis</i>
Rays	<i>Raja brachyura</i>
Red porgy	<i>Pagrus pagrus</i> Pescado blanco ³⁰
Redbanded seabream	<i>Pagrus auriga</i>
Roudi escolar	<i>Promethichthys prometheus</i>
Royal flagfin	<i>Aulopus filamentosus</i>
Rubberlip grunt	<i>Plectorhinchus mediterraneus</i>
Saddled seabream	<i>Oblada melanura</i>
Salema	<i>Sarpa salpa</i>
Sand smelt	<i>Atherina presbyter</i>
Sand steenbras	<i>Lithognathus mormyrus</i>
Sardinellas	<i>Sardinella aurita</i> <i>Sardinella maderensis</i>
Scale-rayed wrasse	<i>Acantholabrus palloni</i>
Scorpionfishes	<i>Scorpaena canariensis</i> <i>Scorpaena elongata</i> <i>Scorpaena maderensis</i> <i>Scorpaena notata</i> <i>Scorpaena porcus</i> <i>Scorpaena scrofa</i>

³⁰ *White fish*, in English, landing term used at La graciosa, north of Lanzarote, and at La Palma, to name landings mainly composed by red porgy, but also with unknown low percentages of several dentexes, combers, common pandora and red banded seabream.



FAO Common Name	Scientific Name / Landing Reference
Sea urchin	<i>Paracentrotus lividus</i>
Shallow morays	<i>Enchelycore anatina</i> <i>Gymnothorax unicolor</i> <i>Muraena augusti</i>
Sharpnose sevengill shark	<i>Heptranchias perlo</i>
Shortfin and flying squids	<i>Illex coindetii</i> <i>Ommastrephes bartrami</i> <i>Ommastrephes pteropus</i> <i>Todarodes sagittatus angolensis</i> <i>Todaropsis eblanae</i>
Shortfin mako	<i>Isurus oxyrinchus</i>
Shrimps	<i>Heterocarpus ensifer</i> <i>Heterocarpus grimaldii</i> <i>Heterocarpus laevigatus</i> <i>Parapenaeus longirostris</i> <i>Plesionika acanthonotus</i> <i>Plesionika edwardsii</i> <i>Plesionika holthuisi</i> <i>Plesionika narval</i> <i>Plesionika sp.</i> <i>Plesionika spp.</i> <i>Plesionika williamsi</i> <i>Plesiopenaeus edwardsianus</i>
Silver scabbardfish	<i>Lepidopus caudatus</i>
Silvery John dory	<i>Zenopsis conchifer</i>
Skipjack tuna	<i>Katsuwonus pelamis</i>
Softhead grenadier	<i>Malacocephalus laevis</i>
Spinous spider crab	<i>Maja squinado</i>
Spiny lobsters	<i>Palinurus elephas</i> <i>Palinurus mauritanicus</i> <i>Panulirus echinathus</i>
Squids	<i>Loligo forbesi</i> <i>Loligo vulgaris</i>
Stout beardfish	<i>Polymixia nobilis</i>
Surmullet	<i>Mullus surmuletus</i>
Swallowtail seaperch	<i>Anthias anthias</i>
Swordfish	<i>Xiphias gladius</i>
Toothed rock crab	<i>Cancer bellianus</i>
Tope shark/Smooth hounds/Dogfishes	<i>Galeorhinus galeus</i> <i>Mustelus asterias</i> <i>Mustelus mustelus</i> <i>Squalus megalops</i>



FAO Common Name	Scientific Name / Landing Reference
Triggerfishes	<i>Aluterus scriptus</i> <i>Balistes capriscus</i> <i>Canthidermis sufflamen</i>
Wahoo	<i>Acanthocybium solandri</i>
Weevers	<i>Trachinus araneus</i> <i>Trachinus draco</i>
White trevally	<i>Pseudocaranx dentex</i>
Wide-eyed flounder	<i>Bothus podas</i>
Wreckfish	<i>Epinephelus caninus</i> <i>Polyprion americanus</i>
Yellow round crab	<i>Eriphia verrucosa</i>
Yellowfin tuna	<i>Thunnus albacares</i> <i>Thunnus spp.</i>
Yellowmouth barracuda	<i>Sphyraena viridensis</i>



Appendix 3. 2011 landings (k), by species and fleet. Species alphabetically ordered.

Species Name	CIF	AGF	Total
African striped grunt	4.199	65.071	69.270
Albacore	22.285		22.285
Alfonsinos	13.280		13.280
Amberjacks	61.697	18	61.715
Angelshark	252		252
Atlantic bluefin tuna	169		169
Atlantic bonito	16.657		16.657
Atlantic chub mackerel	588.759	150	588.909
Axillary and southern common seabream/Red pandora	40.370	14.640	55.010
Azores chromis	2.877		2.877
Barred hogfish	2.849		2.849
Bastard grunt	2.041	16.029	18.070
Bermuda sea chub	1.470		1.470
Bigeye tuna	21.510		21.510
Black cardinal fish	186		186
Black jack	8		8
Black scabbardfish	909		909
Black seabream	28.353	41.952	70.305
Blackbelly rosefish	1.426	114	1.540
Blackspot(=red) seabream	1.395		1.395
Bluefish	3.138		3.138
Blunthead puffer	8		8
Bogue	4.630		4.630
Bullet tuna	14.363		14.363
Canary damsel	137		137
Combers	19.484	96	19.580
Common mora	653		653
Common octopus	14.488		14.488
Common sole	692		692
Common stingray	102		102
Cuttlefishes	574		574
Deep morays	26.168	3.815	29.983
Deep-sea red crab	521		521
Dentexes	36.771	128.781	165.552
Diplodus seabreams	40.134	57.617	97.752
Dolphinfishes	1.072		1.072
Drums	884	1.044	1.928



Species Name	CIF	AGF	Total
Dusky grouper	13.752	367	14.119
Escolar	604		604
European anchovy	207		207
European conger	20.375	10.097	30.472
European hake	8.283		8.283
European pilchard(=Sardine)	77.625		77.625
European seabass	1.501		1.501
Forkbeards	6.560		6.560
Garfish / Agujon Needlefish	134		134
Giant red shrimp	35		35
Gilthead seabream	585	12.935	13.520
Glasseye	1.668		1.668
Grey mullets	4.476		4.476
Gurnards	3		3
Imperial blackfish	1.797	771	2.568
Island grouper	10.977	738	11.715
Jack and horse mackerels	39.015		39.015
John dory	20		20
Limpets	8.347		8.347
Lizardfishes	4		4
Marlins and spearfishes	67		67
Meagre	161	25.959	26.120
Mediterranean slipper lobster	4		4
Offshore rockfish	543		543
Oilfish	3.519		3.519
Ornate wrasse	42		42
Paromola	8		8
Parrotfish	127.914		127.914
Planehead filefish	28.454		28.454
Pomfrets	453		453
Pompano	5.074	324	5.398
Rainbow wrasse	8		8
Red porgy	67.782	11	67.793
Redbanded seabream	5.902		5.902
Roudi escolar	2.302		2.302
Rubberlip grunt	78	34.269	34.347
Saddled seabream	7.866		7.866
Salema	41.698		41.698
Sand smelt	11		11
Sand steenbras	2.181		2.181
Sardinellas	501.512		501.512



Species Name	CIF	AGF	Total
Scale-rayed wrasse	15		15
Scorpionfishes	3.845		3.845
Shallow morays	32.997		32.997
Shortfin and flying squids	536		536
Shortfin mako	63		63
Shrimps	22.223		22.223
Silvery John dory	3.817		3.817
Skipjack tuna	438.545	155	438.700
Squids	511		511
Stout beardfish	878		878
Surmullet	12.315		12.315
Swallowtail seaperch	46		46
Swordfish	350		350
Toothed rock crab	201		201
Tope shark/Smooth hounds/Dogfishes	3.286		3.286
Triggerfishes	15.816		15.816
Wahoo	61.281		61.281
Weevers	1		1
White trevally	18.905		18.905
Wreckfish	5.971	3.807	9.778
Yellowfin tuna	122.276	600	122.876
Yellowmouth barracuda	30.550		30.550
Total general	2.740.481	419.360	3.159.841

Appendix 4. Mean sizes of most important species within Canary Islands Fleet landings during 2011.

Measurements are made at every main dock of the archipelago.

Combinations of Species/Gear included are only those not inferior to 20 measurements 2011 overall.

SCIENTIFIC NAME	FAO COMMON NAME	FISHING GEAR	TOTAL SIZE (CM)
<i>Balistes caprisus</i>	Grey triggerfish	Liña con cebo muerto a fondo	34,0
		Nasa de pescado	37,3
<i>Beryx decadactylus</i>	Alfonsino	Aparejo del alto	42,5
<i>Beryx splendens</i>	Splendid alfonsino	Aparejo del alto	33,9
<i>Bodianus scrofa</i>	Barred hogfish	Liña con cebo muerto a fondo	36,3
		Nasa de camarón	29,6
		Nasa de pescado	33,9
		Palangre horizontal de fondo	43,4
<i>Dentex gibbosus</i>	Pink dentex	Nasa de pescado	47,8
<i>Diplodus sargus cadenati</i>	Moroccan white seabream	Nasa de pescado	26,0
		Salemera	24,9
<i>Epigonus telescopus</i>	Black cardinal fish	Aparejo del alto	49,3
<i>Gymnothorax polygonius</i>	Polygon moray	Liña con cebo muerto a fondo	56,8
		Nasa de camarón	61,6
		Nasa de pescado	60,7
		Tambor	60,9
<i>Gymnothorax unicolor</i>	Brown moray	Tambor	61,0
<i>Helicolenus dactylopterus dactylopterus</i>	Blackbelly rosefish	Aparejo del alto	32,5
<i>Merluccius merluccius</i>	European hake	Aparejo del alto	70,8
<i>Mora moro</i>	Common mora	Aparejo del alto	60,8
<i>Mullus surmuletus</i>	Surmullet	Nasa de pescado	22,6
		Trasmallo	22,9
<i>Muraena augusti</i>	Not available	Tambor	63,3
<i>Mycteroperca fusca</i>	Island grouper	Liña con cebo vivo a fondo	54,5
		Nasa de pescado	47,5
<i>Oblada melanura</i>	Saddled seabream	Salemera	26,4
<i>Pagellus acarne</i>	Axillary seabream	Nasa de pescado	20,1
		Trasmallo	21,3
<i>Pagellus erythrinus</i>	Red pandora	Nasa de pescado	24,9
		Trasmallo	26,9



SCIENTIFIC NAME	FAO COMMON NAME	FISHING GEAR	TOTAL SIZE (CM)
<i>Pagrus pagrus</i>	Red pogy	Liña con cebo muerto a fondo	35,4
		Nasa de pescado	31,6
		Palangre horizontal de fondo	27,4
<i>Parapristipoma octolineatum</i>	African striped grunt	Liña para la ruama	30,0
		Nasa de pescado	30,9
<i>Phycis phycis</i>	Forkbeard	Nasa de camarón	31,9
<i>Polymixia nobilis</i>	Stout beardfish	Aparejo del alto	32,0
<i>Promethichthys prometheus</i>	Roudi escolar	Aparejo del alto	60,7
		Nasa de pescado	45,6
<i>Pseudocaranx dentex</i>	White trevally	Nasa de pescado	45,6
<i>Sarda sarda</i>	Atlantic bonito	Liña con cebo vivo a superficie	58,1
<i>Sarpa salpa</i>	Salema	Nasa de pescado	28,2
		Salemera	28,9
<i>Serranus atricauda</i>	Blacktail comber	Liña con cebo muerto a fondo	25,0
		Nasa de camarón	23,0
		Nasa de pescado	23,4
		Puyón	26,5
<i>Serranus cabrilla</i>	Comber	Liña con cebo muerto a fondo	23,0
		Nasa de camarón	17,5
		Nasa de pescado	22,1
<i>Sparisoma cretense</i>	Parrotfish	Caña de vieja	30,3
		Paños	30,8
		Liña con cebo muerto a fondo	31,4
		Nasa de pescado	25,8
		Palangre horizontal de fondo	27,2
		Gueldera	27,5
		Puyón	27,6
		Trasmallo	28,9
<i>Sphyræna viridensis</i>	Yellowmouth barracuda	Liña con cebo vivo a superficie	73,3
<i>Spondyliosoma cantharus</i>	Black seabream	Nasa de pescado	24,0
		Trasmallo	24,7
<i>Stephanolepis hispidus</i>	Planehead filefish	Nasa de pescado	18,2
<i>Thunnus albacares</i>	Yellowfin tuna	Liña para túnidos	160,5

Appendix 5. Pictures catalogue of fishing gears used by Canary Islands Fleet.

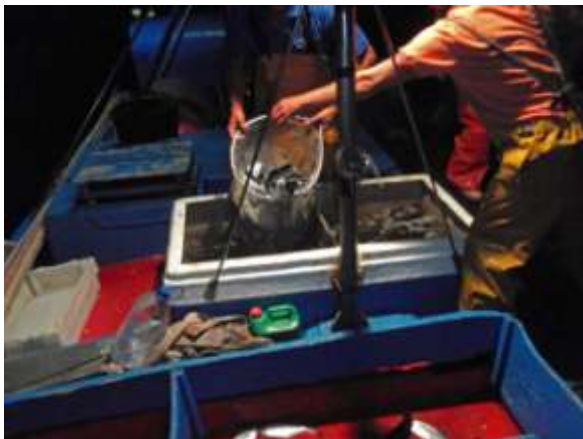
Traíña



Bag just closed



Recovering catch with 'jamo'



Filling tanks with live bait



Catch (Pompano)

Salemera



Skiff with 'salemera' on board



Grapple



Diver preparing grappling hook



Diver tying 'cabecero' of 'salemera' to the shore



Deploying maneuver





Closing and recovering of seine (divers release net from the bottom with the help of grappling hooks)



Catch transfer to main boat with 'jamo'

Chinchorro de aire

No pictures available. Maneuver very similar to 'salemera'.

Gueldera



Use of bottom viewer to localize fish while bearing
'gueldera'



'Gueldera' lifting and catch recovering with 'jamo'

Paños



Deploying 'paños'



Catch



Lifting 'paños'



Clearing net from entangled fish

Trasmallo

Not available pictures. Similar to 'Paños'.

Tambor



'Tambores', rope and float (detail of moray entrance)



Baiting 'tambores' (bait detail)



Tambor fishing in the bottom



Recovering catch after lifting of 'tambores'



Nasas ('de pescado' and 'de camarón')



'Nasa de pescado' getting ready to be deployed



Deploying the 'Nasa'



'Nasa de camarón'



Lifting the 'Nasa'

Aparejo del alto



Hook and bait



'Cajetín' (Box) to place line



Boat fishing 'al alto'



Electric reel lifting the handline



Lifting handline with electric reel and recovering catch



'Al alto' with electric reel catches

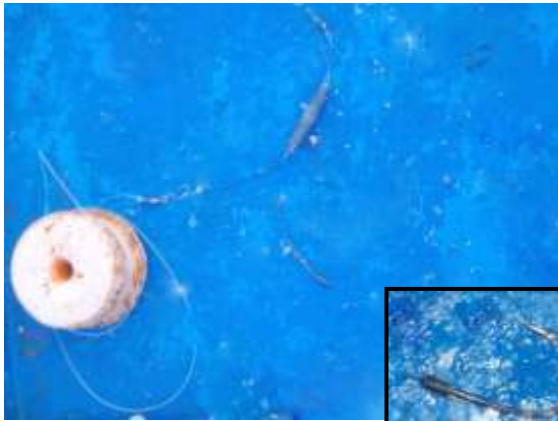
Puyón



Spider crab (*Percnon gibbesi*): bait used to fish parrotfish



'Marisqueo' of spider crab diving in apnea



Handline (float, line with swivels, weight and hook) and tackle for fishing with 'puyón'



Fisherman ready for fishing with 'puyón'



Floating rope to store fish and fisherman searching for fish.



Moments during 'puyón' fishing



'Puyón' catches

Liña (y caña) con cebo vivo a superficie



Moments of the fishing, with catch of Yellowmouth barracuda, Amberjack and Atlantic bonito



Catch of Yellowmouth barracuda

Liña para túnidos

Not available pictures. Similar to 'Liña con cebo vivo a superficie'.

Liña con cebo vivo a fondo



'Verguilla', weight and hook used with 'liña a fondo'
(both 'con cebo vivo' and 'con cebo muerto')



Live Shortfin squid hooked with 2 hooks



Fishermen use rubber fingerstalls to protect hands



Live Cuttlefish hooked



Moments of the fishing

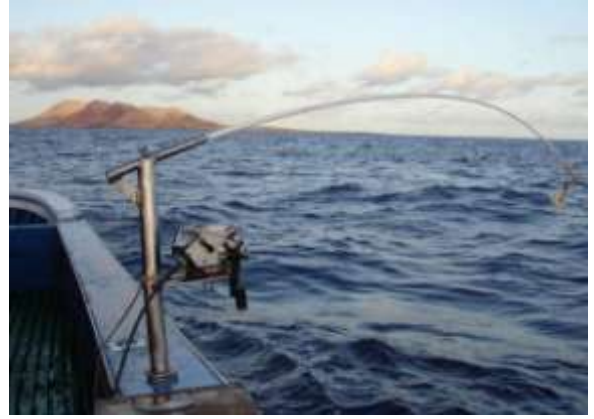


Catches

Liña con cebo muerto a fondo



Preparing bait with the help of 'macana' (truncheon)



Fishing moment



Dentex catch



Small individuals of Red porgy catch

Liña para la ruama

No pictures available, very similar to 'Liña con cebo muerto a fondo'.

Aparejo de conejo

No pictures available, very similar to 'Liña con cebo muerto a fondo'.

Potera



Fishing moments



Squids are kept alive in tanks to use them as live bait for other fishing activities

Caña de vieja



Moments of fishing



Catch

Jigging



Jig



Moments of fishing. Rod supporting belt

Caña del atún



'Traña' fishing to get live bait for tuna fishing



Different tuna fishing moments



Landing catch

Palangre horizontal ('de fondo' and 'de media agua')



Baiting hooks



Deploying longline



Lifting longline



Storing mainline and hooks while lifting



Alfonsino just caught



'Palangre horizontal de media agua' catch

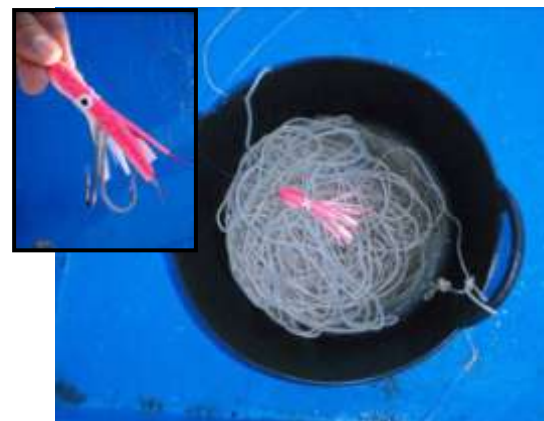
Currica



Reel, line and hook with bait



Baited hooks



Jigs



Moments of fishing



Fishing with rod



Rod for 'currica' ready with jig

Vara



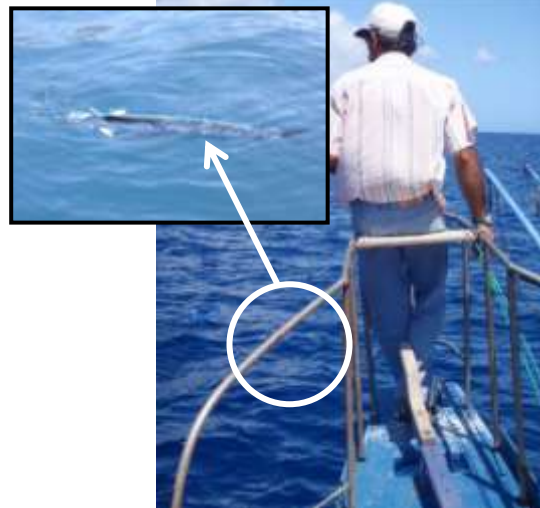
Bow board and armed pikes



Different types of hooks for the pikes,
armed and not armed



Wahoo scale model



Scale model floating and sighting



Sighting from bow board



Throwing the 'vara'

Lapero and Marisqueo



Some moments of 'Marisqueo', in this case with supporting boat; and detail of 'Lapero'



Limpets catch. In the right, 'talega' (bag) used to store the catch.

Fija and Fija and bichero

Not available pictures.



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