

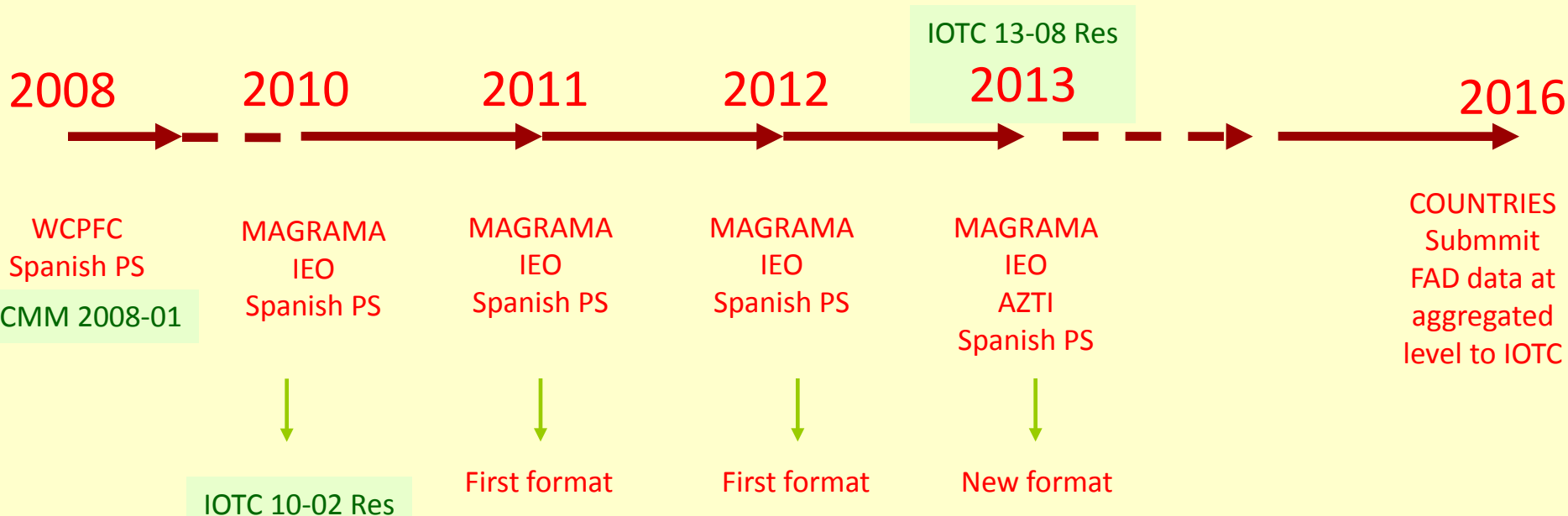
Review of the Spanish FAD Management Plan: implementation, evolution and recommendations

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1. Introduction

EU/SPAIN FAD MANAGEMENT PLAN



IOTC 13-08 Res

Resolution 13/08 Procedures on a fish aggregating devices (FADs) management plan, including more detailed specification of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species

(para. 7) The IOTC Scientific Committee will analyse the information, when available, and provide scientific advice on additional FAD management options for consideration by the Commission in 2016, including recommendations on the use of biodegradable materials in new and improved FADs and the phasing out of FAD designs that do not prevent the entanglement of sharks, marine turtles and other species. When assessing the impact of FADs on the dynamic and distribution of targeted fish stocks and associated species and on the ecosystem, the IOTC Scientific Committee will, where relevant, use all available data on abandoned FADs (i.e. FADs without a beacon).

2. Material and Methods

CURRENT FORMAT: INVENTORY

ANEX I: Inventory											
Vessel			Registration								
FAD			FAD Dimensions			Rabo/Tail			Identification associated buoy	Type of associated buoy	Withdrawal or loss of FAD
Identification	Description	Material	width (m)	length (m)	height (cm)	depth (m)	material				

A	B	C	D	E
	ANEXO I: Inventario			
Buque:				Matricula:
	DCP			
Identificación	Descripción	Material		
	Balsa de cañas y red Balsa (estructura metálica, PVC o plástico) Objeto no amarrante: Cualquier tipo de balsa o parrilla sin recubrimiento Natural (tronco, tocote, palé, hierbas)			

Description
Raft of nets and reeds
Raft (metal, PVC or plastic structure)
Object with no mesh: Any kind of raft or rack with no covering
Natural (tree trunk, rope, pallet, grasses)

FAD materials	Net or rabo/tail materials	Type of buoy
Bamboo PVC / Plastic Metal Floats, corks, buoys, containers ... Piece of netting Anti-fouling netting	Nylon Piece of netting Tail-like Mesh material Ropes Palm leaves	GPS type SHERPE (ball) Satellite + echo sounder Satellite without echo sounder

2. Material and Methods

CURRENT FORMAT: ACTIVITY

ACTIVITY REGISTER

Vessel		Registration		Activity	Position		Estimation of school (ton)	Estimation of accidental bycatch				Observations
Date	Time	FAD id.	Buoy id.		Lat	Long		Group	In number specimens or weight (t)	N/W	Number specimens released alive	
D/M/Y	H/Min				Degree/Min	Degree/Min						

Activity
Deployment
Verification
Set
Collection
Change of buoy
Natural floating object
Loss

Groups	Bycatch
Turtles	N
Billfish, marlins	W
Swordfish	
Frigate tuna	
Small tunas	
Whale shark	
Marine mammals	

INVENTORY AND ACTIVITY on FADs
Indian Ocean 2013-2014

22 PS Spanish vessels (15 purse seine and 7 supply)	Number of records
Activity	58,154
Object design and characteristics	121,144
Buoy identification	120,798

GENERAL AND ACTIVITY FIELDS

- Buoy ID
 - No universal identifiers unless manufacturer code is used
- Duplicate records
 - Same activity data submitted twice
- FAD ID
 - No universal identifiers, no agreed marking system
- FAD deployment
 - Inconsistent chronology
- Change of buoy
 - Need to record both former and replacement buoy codes
- Estimation of bycatch
 - Data entry inconsistencies (alive>all caught, N/P, bycatch on non-set)
 - Divide Sharks in FAL/OCS/SPN/Others

INVENTORY FIELDS

- FAD description
 - Same FAD with different design descriptions
- FAD materials
 - Materials do not match FAD description
- FAD dimensions
 - Large values outside reasonable ranges
- FAD appendages dimensions
- FAD appendages materials
- Buoy description
 - Same buoy with different type descriptions

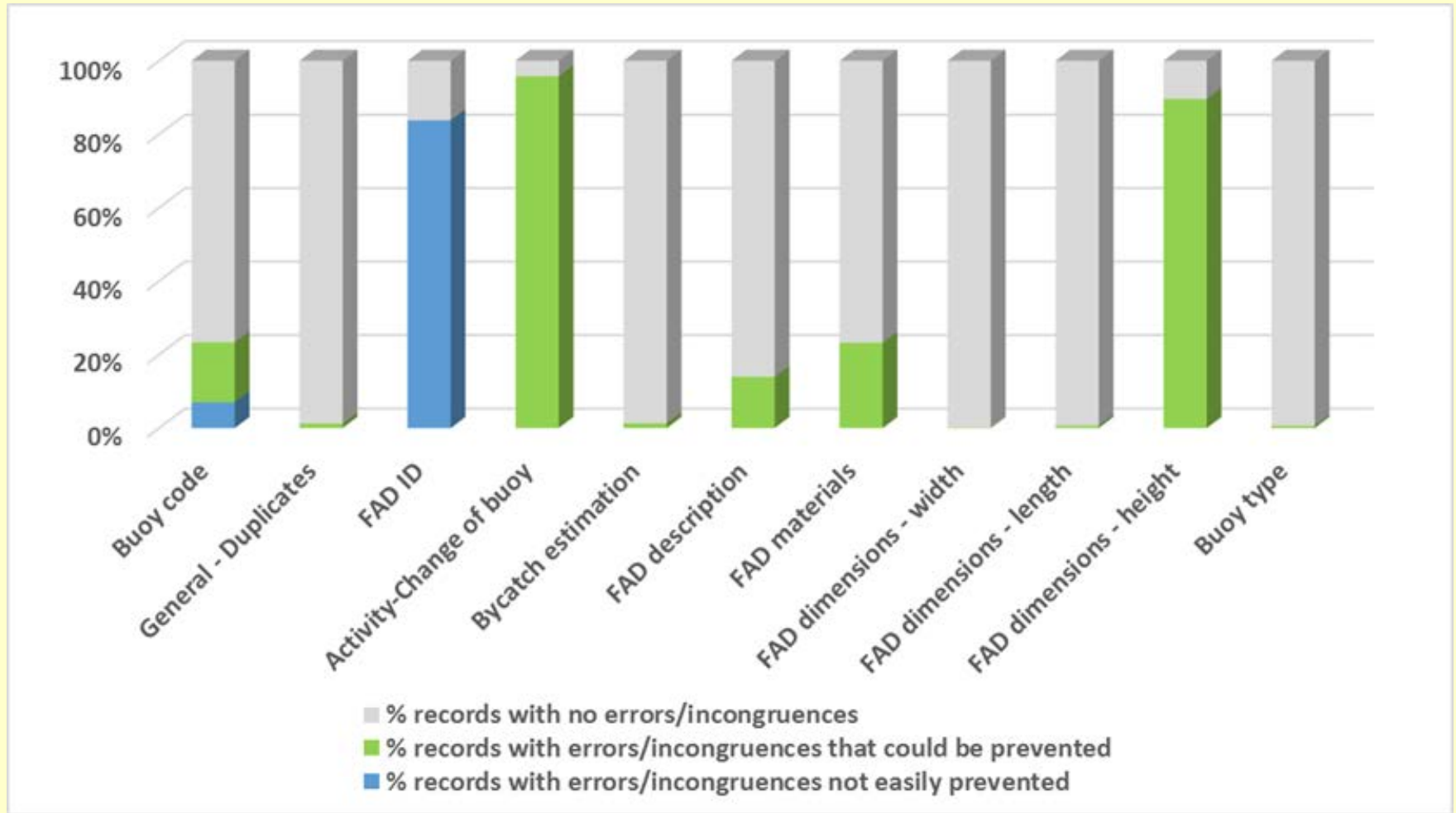
SUMMARY/RECOMMENDATIONS (General and Activity)

	Buoy code	ACTIVITY				
		General - Duplicates	FAD ID	Activity-deployment*	Activity-Change of buoy	Bycatch estimation
Total number records analyzed	42972	58154	121144	--	3049	5714
Number records with errors/incongruences	10029	728	101515	--	2921	76
Number records with errors/incongruences that could be prevented	7013	728	?	--	2921	76
% Records with errors/ incongruences	23%	1%	84%	--	96%	1%
% records with errors/incongruences that could be prevented	16%	1%	?	--	96%	1%
Recommendation	Length > 6 char	User cannot enter data already submitted	Use 1st buoy manufacturer ID or another unique ID. FAD marking.	- Add extra dropdown option "Deployment + set" - Clearer guidance to fill out form - No need to identify "external" FADs/buoys	Add column for old buoy when activity = change of buoy	- Released alive must be greater than total caught - No decimal values if "Number" - Bycatch only if act = "set"
*Difficult to quantify records with incongruences related to deployments/ other activities						

SUMMARY/RECOMMENDATIONS (Inventory)

	INVENTORY							
	FAD description	FAD materials	FAD dimensions - width	FAD dimensions - length	FAD dimensions - height	FAD append. Dimensions	FAD append. Materials	Buoy type
Total number records analyzed	45776	149381	121144	121144	121144	--	--	120798
Number records with errors/incongruences	6383	34709	206	826	108565	--	--	773
Number records with errors/incongruences that could be prevented	6383	34709	206	826	108565	--	--	773
% Records with errors/ incongruences	14%	23%	0.2%	1%	90%	--	--	1%
% records with errors/incongruences that could be prevented	14%	23%	0.2%	1%	90%	--	--	1%
Recommendation	Warning message if user tries to enter different FAD type for a FAD code already registered	User cannot enter FAD materials that do not match the FAD description	Do not accept values > 3m	Do not accept values > 3m	Do not accept values > 1m	Apply reasonable range restrictions	--	User cannot enter different buoy type for a buoy code already registered

SUMMARY/RECOMMENDATIONS (Inventory)



1. Excel template modifications

Prevention of data input errors

2. FAD and buoy ID codes

Need for harmonization and technical agreements

3. Clear guidance for completing Excel template

Visual guidance drafted by scientists to facilitate filling template

4. Consolidated Access Database

For better data exchange/ cross-check and analysis

5. Cross-check with CE logbooks and observer data at set level

THANK YOU