

1 **Supplementary Material**
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A multidisciplinary approach for restoration ecology of shallow coastal lagoons, a case study in South France

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17 **Keywords:** Restoration ecology, ecological restoration, water quality, WFD, ecosystem
18 trajectories, DPSIR, conservation, ecological indices

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A contribution for:

21 SI Ecosystem Services, Biodiversity and Water Quality in Transitional Ecosystems

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23 hosted by Dr(s) Michele Mistri , Alice Newton , Angel Pérez-Ruzafa , Sofia Reizopoulou in

24 **Frontiers in Ecology and Evolution** - section Conservation.

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27 **Table S1: Modified from Sy et al. (2018). The Q-set composed of the final list of potential**
 28 **ecosystem services supplied by Palavas lagoons. The Ecosystem services (ES) in bold, i.e.**
 29 **Fish farming, is currently not exploited in the Palavas lagoons.**
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ES categories	ES subcategories	ES#	Ecosystem service	General definition
Provisioning services	Food provision	15	Shellfish resources	The provision of biomass for human consumption and the conditions to grow it. It mostly relates to cropping, animal husbandry and fisheries.
		19	Biomass for grazing	
		21	Crops	
		22	Shellfish farming	
		23	Fish resources	
		30	Fish farming	
	Water provision	29	Commercial inland navigation	The provision of water for human consumption and for other uses.
	Biotic materials and biofuels	31	Non-food products	The provision of biomass or biotic elements for non-food purposes.
Regulation and maintenance services	Water purification	14	Purification capacity	Biochemical and physicochemical processes involved in the removal of wastes and pollutants from the aquatic environment.
		20	Wastes decomposition	
	Coastal protection	5	Flooding and other extreme events regulation and protection	Protection against floods, droughts, hurricanes and other extreme events. Also, erosion prevention in the coast.
		13	Banks reinforcement	
	Climate regulation	25	Microclimate regulation	Regulation of greenhouse and climate active gases. The most common proxies are the uptake, storage and sequestration of carbon dioxide.
	Life cycle maintenance	3	Nursery and biodiversity maintenance	Biological and physical support to facilitate the healthy and diverse reproduction of species.
Cultural services	Symbolic and aesthetic values	2	Aesthetic value of landscapes	Exaltation of senses and emotions by landscapes, habitats or species.
		7	Local identity	
		9	Aesthetic value of habitats or species	
		11	Historical sites	
	Recreation and tourism	4	Recreational boat navigation	Opportunities that the natural environment provide for relaxation and amusement.
		8	Non-motorized water sports	
		12	Bird watching	
		16	Cycling	
		17	Horse riding	
		18	Waterfowl hunting	
		24	Sentiment of relaxation	
		26	Camping	
	Cognitive effects	1	Artistic inspiration	Trigger of mental processes like knowing, developing, perceiving, or being aware resulting from natural landscapes or living organisms.
		6	Research opportunity	
		10	Environmental education	

32 **Table S2: Survey and demographic characteristics of local citizens involved in the citizen**
 33 **workshop**

Survey characteristics	
Number	43
Periods	May 2017 May 2018
Data collection method	Workshop
Duration	45 minutes
Demographic characteristics	
Age (mean)	54 years
Gender	
<i>Male</i>	46.5%
<i>Female</i>	53.5%
Education	
<i>High school diploma or lower</i>	25.6%
<i>Bachelor or lower</i>	53.5%
% > Bachelor degree	20.9%

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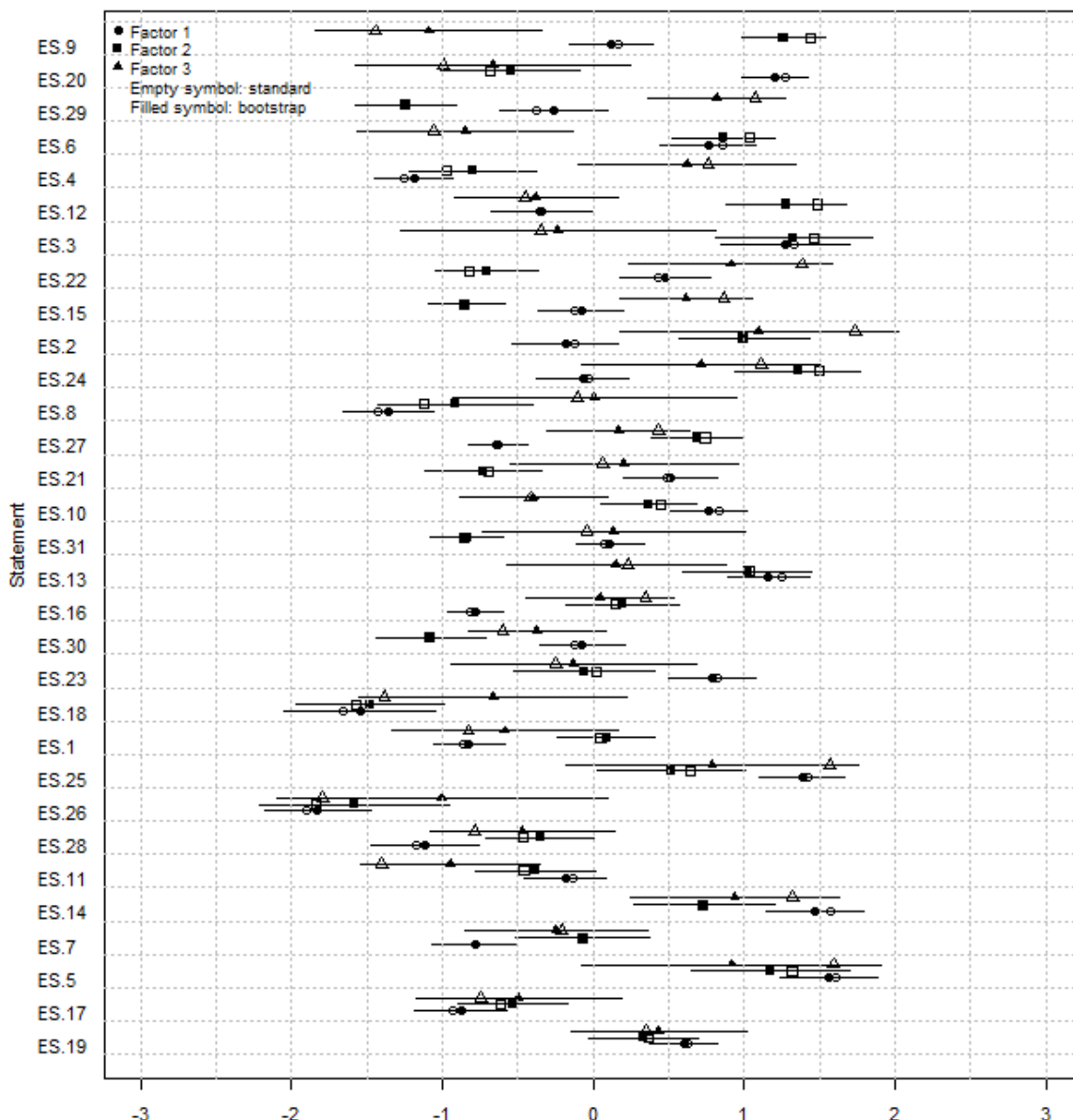
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36 **Table S.3 Pairwise comparisons between groups to identify consensus and distinguishing ESs**
 37 **among the three stakeholder groups created from the 43 participants (local residents) based on**
 38 **the three factors extracted (i.e., an extracted factor allows to create a group of respondents with**
 39 **rather similar response profiles, cf. Sy et al., 2018). Differences in bootstrapped z-scores with P-**
 40 **values.**
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ES categories	#	Statement	G1 vs. G2	G1 vs. G3	G2 vs. G3
Provisioning services	15	Shellfish resources	-0.92*	-0.24	0.68
	19	Biomass for grazing	-1.19**	-1.27*	-0.08
	21	Crops	-0.04	1.52*	1.56*
	22	Shellfish farming	-0.39	-1.80**	-1.41*
	23	Fish resources	0.40	0.66	0.26
	30	Fish farming	-0.10	1.62**	1.72**
	29*	Commercial inland navigation or Hydrological regulation	-0.71	-0.54	0.16
	31	Non-food products	-0.44	-1.36*	-0.92
Regulation and maintenance services	14	Purification capacity	-1.14**	1.20*	2.34**
	20	Wastes decomposition	0.41	1.19*	0.78
	5	Flooding and other extreme events regulation and protection	0.20	0.74	0.55
	13	Banks reinforcement	-1.62**	0.07	1.69**
	25	Microclimate regulation	0.16	1.01	0.85
	3	Nursery and biodiversity maintenance	0.74*	0.53	-0.21
Cultural services	2	Aesthetic value of landscapes	0.75*	-0.70	-1.45*
	7	Local identity	-0.98**	-0.82	0.16
	9	Aesthetic value of habitats or species	-0.35	-0.38	-0.03
	11	Historical sites	-0.07	-0.88	-0.81
	4	Recreational boat navigation	0.27	0.17	-0.09
	8	Non-motorized water sports	1.76**	1.85**	0.09
	12	Bird watching	1.24**	0.29	-0.95
	16	Cycling	1.17**	-0.44	-1.62**
	17	Horse riding	0.84*	0.92	0.08
	18	Waterfowl hunting	-1.43**	-0.76	0.66
	24	Sentiment of relaxation	0.86**	0.57	-0.29
	26	Camping	-0.25	-0.84	-0.59
	27	Recreational hiking and walking	-1.32**	-0.79	0.53
	28	Recreational fishing	-0.76*	-0.65	0.11
1	Artistic inspiration	0.98**	-1.10	-2.07**	
6	Research opportunity	1.00**	0.29	-0.71	
10	Environmental education	0.95*	-0.04	-0.98	

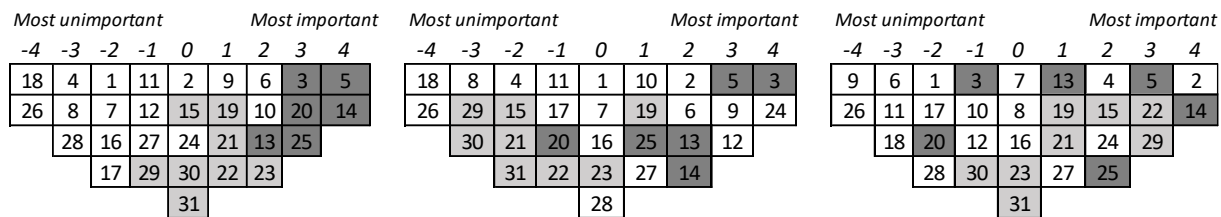
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 43 Note: Ecosystem services (ESs) #30 is currently unused in Palavas lagoons.
 44 Significance of distinctiveness of an ES (see Brown, 1980; Zabala and Pascual, 2016) is indicated for p-
 45 values: **p≤0.01; *p≤0.05. ESs which are not distinguishing for any of the groups are consensus ESs
 46 (see also Sy et al., 2018).
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50 **Figures**



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52 **Figure 15:** Graph illustrating consensus and distinguishing ESs among the three stakeholder groups created from
53 the 43 participants (local residents) based on the three factors extracted (i.e., an extracted factor allows
54 to create a group of respondents with rather similar response profiles, cf. Sy et al., 2018). Please refer
55 to Table S1 to find the correspondence between the ES number and its description. The bootstrapped
56 scores of an ES are indicated by filled circles, squares and triangles for stakeholders' group 1, 2 and 3,
57 respectively (see Table S1 for the list of Ecosystem services, ES, see Table S2 for representative Q-sorts
58 for each group and Table 3 in the main text for an interpretation of the main features of each group).
59 The bars characterize the variability of the estimates in the bootstrap. An ES is consensual among the
60 groups of stakeholders when the corresponding error bars overlap. ESs at the bottom are the most
61 consensual ones while ESs with diverging appreciations are depicted at the top of the graph. (For
62 general information on methodology see Zabala (2014) and Sy et al. (2018), for detailed information on
63 the bootstrapping analysis see Zabala et al. (2016).
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69 **Group 1** **Group 2** **Group 3**
 70 **Figure 2S:** Q sorts of Ecosystem services that are representative for the different groups of respondents (43 local
 71 residents that participated in citizens’ workshops). See Table S1 for the correspondence between the
 72 ESs-numbers used and ESs descriptions, with background colors indicating ESs category: i) light grey =
 73 provisioning services, ii) dark grey = regulation and maintenance services, and iii) white = cultural
 74 services.
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