

Appendix 2 Results of the multiple regression analysis for interactions and outcomes of the social-ecological system framework as response variables. Partial regression coefficients are shown with significance: \*,  $p < 0.05$ , †:  $0.1 < p < 0.05$ .

Explanatory variables	Response variable					
	I2-A:Announcement of the progress	I31-F:Number of meetings held in the LBSAP committee	I32-M:Meeting hours without established committee LBSAP	I33-O:Overtime works of municipal officials	I51-P:Actions reinforced by the LBSAP	I52-B:Actions reinforced by the LBSAP (related to biodiversity and environment)
Intercept	-0.007	0.051	0.126	0.063	0.010	0.020
S1-F Financial strength index	0.113	-0.331	-0.103	-0.112	0.108	-0.318
S2-P Population	<b>0.425 *</b>	-0.002	0.214	0.251	0.029	0.294
RS31-P Area of plantation forest	0.159	0.405	-0.119	0.429	-0.064	0.140
RS32-N Area of natural, secondary, and other forest	-0.078	-0.226	-0.428	-0.457	-0.268	0.317
RS33-C Area of cultivated meadow	-0.323	-0.202	0.034	0.361	-0.125	-0.315
RS34-N Area of natural, secondary, and other grassland	-0.084	0.240	0.394	0.579	0.085	-0.270
RS35-P Area of paddy field	0.071	0.228	0.588	-0.171	0.113	0.561
RS36-C Area of other cultivated land	0.212	-0.168	0.438	-0.502	-0.003	0.355
RS37-M Area of wetland and open water	-0.215	-0.387 †	-0.180	-0.018	-0.217	-0.327
RS38-C Coast	<b>-0.607 *</b>	-0.374 †	<b>-0.651 *</b>	-0.093	-0.177	0.063
RS4-D Densely inhabited district	-0.258	0.074	0.242	0.100	-0.109	0.124
RU41-A Agricultural products	-0.204	-0.254	-0.893	0.227	-0.194	-0.496
RU42-W Woody products	0.277	0.134	0.386	-0.382 †	0.156	-0.018
RU43-F Catch of fish	-0.027	0.032	0.169	0.328	0.172	-0.133
GS2-N NPO participated in the LBSAP committee	-0.198	0.317 †	0.030	-0.061	-0.010	-0.165
GS31-R Number of cooperated national and local governments	-0.013	0.081	0.323	0.174	<b>0.396 *</b>	0.072
GS6-C Presence of an implementation committee of LBSAP	-0.295	0.000	-0.003	-0.249	-0.034	-0.220
GS7-B Bylaw related to biodiversity conservation	<b>0.425 *</b>	0.191	0.035	0.189	0.067	0.109
GS81-M Monitoring of natural environment	-0.116	<b>-0.674 *</b>	-0.149	0.292	0.159	-0.284
GS82-M Monitoring of ecosystem service	-0.026	-0.130	0.154	-0.272	0.017	0.137
GS83-M Monitoring by citizen	0.105	0.369	0.073	-0.073	0.018	-0.054
A11-S Number of municipal officials involved	0.041	0.200	<b>0.456 *</b>	-0.131	0.043	0.011
A12-C Number of LBSAP committee members	-0.096	-0.091	0.433 †	0.017	0.003	-0.244
A21-D Diversity of the LBSAP committee members	0.097	-0.111	0.036	0.225	-0.083	0.499
A22-E Diversity of experts in the LBSAP committee	0.150	0.087	-0.019	0.018	0.064	0.219
A23-O Number of municipal sections involved	<b>-0.382 *</b>	-0.167	0.256	-0.027	0.229 †	0.265
A51-G Number of influential organizations and people	-0.145	0.079	-0.348 †	-0.131	-0.147	0.380 †
A52-L Significant influence of the mayor	-0.274	-0.091	0.142	-0.146	0.263 †	<b>-0.570 *</b>
A71-T Consciousness of traditional knowledge	-0.024	-0.087	-0.342	0.023	<b>0.540 *</b>	-0.005
A72-L Consciousness of local knowledge	0.034	0.377 †	<b>0.701 *</b>	<b>0.438 *</b>	<b>-0.533 *</b>	-0.285
A73-T Diversity of traditional knowledge	<b>-0.654 *</b>	-0.330	-0.027	-0.051	-0.285 †	-0.024
A74-L Diversity of local knowledge	<b>0.683 *</b>	0.221	-0.095	0.093	0.138	-0.282

\*,  $p < 0.05$ †:  $0.1 < p < 0.05$ .

Appendix 2 Results of the multiple regression analysis for interactions  $\epsilon 1 < p \leq 0.05$ .

Explanatory variables	I53-A:Actions reinforced by the LBSAP (related to agriculture, forestry and fishery)	I54-P:Actions with a newly allocated budget	I55-B:Actions with a newly allocated budget (related to biodiversity and environment)	I56-A:Actions with a newly allocated budget (related to agriculture, forestry and fishery)	I57-L:All Actions in LBSAP	I58-N:Inclusion of important ecosystems in the LBSAP	I59-C:Establishment of a biodiversity center
Intercept	-0.005	0.149	0.174	0.339	0.073	-0.069	-0.0351
<b>S1-F</b> Financial strength index	-0.081	-0.243	0.158	-0.040	-0.404 †	0.045	-0.1216
<b>S2-P</b> Population	0.189	0.163	0.034	0.289	0.171	-0.316	0.1614
<b>RS31-P</b> Area of plantation forest	0.440	0.115	-0.353	0.364	-0.101	0.107	0.3323
<b>RS32-N</b> Area of natural, secondary, and other forest	-0.481	-0.443	-0.030	-0.255	-0.340	-0.105	-0.2148
<b>RS33-C</b> Area of cultivated meadow	0.038	-0.061	0.232	0.227	-0.017	0.183	-0.0017
<b>RS34-N</b> Area of natural, secondary, and other grassland	-0.038	0.447	0.478	-0.112	-0.198	0.219	-0.2818
<b>RS35-P</b> Area of paddy field	0.156	0.640	-0.206	-0.238	0.193	-0.437	-0.0763
<b>RS36-C</b> Area of other cultivated land	-0.135	0.039	-0.522	-0.556	0.520	-0.559	-0.3390
<b>RS37-M</b> Area of wetland and open water	-0.347	-0.157	0.139	-0.288	0.027	-0.073	-0.2181
<b>RS38-C</b> Coast	-0.124	0.159	0.313	0.127	-0.121	0.172	-0.2254
<b>RS4-D</b> Densely inhabited district	-0.141	-0.176	0.084	-0.091	-0.126	-0.056	-0.1386
<b>RU41-A</b> Agricultural products	0.212	-0.474	0.555	0.721	-0.472	0.636	0.1758
<b>RU42-W</b> Woody products	-0.237	0.036	0.068	-0.165	0.054	-0.121	-0.0134
<b>RU43-F</b> Catch of fish	0.125	-0.346	-0.058	-0.168	0.182	0.179	-0.1220
<b>GS2-N</b> NPO participated in the LBSAP committee	0.047	-0.173	0.008	0.092	-0.015	-0.057	0.0303
<b>GS31-R</b> Number of cooperated national and local governments	0.083	-0.162	0.212	-0.039	-0.050	0.341 †	0.0121
<b>GS6-C</b> Presence of an implementation committee of LBSAP	0.253	0.254	0.154	0.183	-0.168	0.010	0.1435
<b>GS7-B</b> Bylaw related to biodiversity conservation	-0.107	-0.140	-0.149	0.146	-0.014	0.248	-0.3840 †
<b>GS81-M</b> Monitoring of natural environment	0.009	0.304	0.086	0.080	0.255	0.030	-0.0562
<b>GS82-M</b> Monitoring of ecosystem service	0.231	0.104	-0.073	0.431	0.306	0.178	0.2198
<b>GS83-M</b> Monitoring by citizen	-0.320	-0.393	0.126	-0.444	-0.233	-0.313	0.0669
<b>A11-S</b> Number of municipal officials involved	0.211	-0.096	-0.078	0.158	0.022	0.375 †	0.1453
<b>A12-C</b> Number of LBSAP committee members	-0.014	-0.340	0.076	-0.085	-0.313	0.182	-0.3618
<b>A21-D</b> Diversity of the LBSAP committee members	-0.057	0.233	-0.154	0.037	0.309	-0.384	0.5241 †
<b>A22-E</b> Diversity of experts in the LBSAP committee	-0.173	-0.059	-0.073	-0.057	0.221	-0.075	0.3049
<b>A23-O</b> Number of municipal sections involved	0.231	0.182	0.023	0.248	<b>0.425 *</b>	-0.263	0.1032
<b>A51-G</b> Number of influential organizations and people	-0.125	0.231	0.133	-0.068	-0.060	-0.020	-0.0426
<b>A52-L</b> Significant influence of the mayor	0.278	-0.115	0.068	0.119	-0.138	0.086	-0.1230
<b>A71-T</b> Consciousness of traditional knowledge	0.013	0.237	0.237	-0.032	0.350	0.409 †	-0.2314
<b>A72-L</b> Consciousness of local knowledge	-0.161	-0.363	-0.239	-0.273	-0.121	-0.166	0.0599
<b>A73-T</b> Diversity of traditional knowledge	-0.177	0.064	-0.121	-0.261	0.397	0.062	-0.4942
<b>A74-L</b> Diversity of local knowledge	0.199	-0.097	-0.068	0.367	-0.199	0.128	0.4806

\*:  $p < 0.05$ †:  $0.1 < p \leq 0.05$ .

Appendix 2 Results of the multiple regression analysis for interactions :

Explanatory variables	18-G: Establishment	110-A: Activeness in	01-C: Extent of
	of new organizations or new participation of existing organizations	evaluating actions of the LBSAP	awareness change among citizens
Intercept	0.144	-0.006	0.086
<b>S1-F</b> Financial strength index	0.051	0.194	-0.022
<b>S2-P</b> Population	0.154	0.070	0.138
<b>RS31-P</b> Area of plantation forest	0.522	-0.191	0.102
<b>RS32-N</b> Area of natural, secondary, and other forest	0.357	0.168	-0.487
<b>RS33-C</b> Area of cultivated meadow	0.226	-0.039	-0.012
<b>RS34-N</b> Area of natural, secondary, and other grassland	-0.287	-0.534	0.486
<b>RS35-P</b> Area of paddy field	-0.758	0.615	0.735
<b>RS36-C</b> Area of other cultivated land	-0.931	0.671	0.079
<b>RS37-M</b> Area of wetland and open water	0.097	0.004	-0.174
<b>RS38-C</b> Coast	-0.002	0.050	-0.296
<b>RS4-D</b> Densely inhabited district	-0.100	0.085	0.190
<b>RU41-A</b> Agricultural products	0.955	-0.707	-0.798
<b>RU42-W</b> Woody products	-0.053	-0.285	0.013
<b>RU43-F</b> Catch of fish	-0.014	0.037	0.008
<b>GS2-N</b> NPO participated in the LBSAP committee	-0.042	-0.070	0.181
<b>GS31-R</b> Number of cooperated national and local governments	0.026	0.014	-0.024
<b>GS6-C</b> Presence of an implementation committee of LBSAP	0.209	0.068	0.089
<b>GS7-B</b> Bylaw related to biodiversity conservation	-0.234	0.188	-0.034
<b>GS81-M</b> Monitoring of natural environment	0.049	-0.021	0.010
<b>GS82-M</b> Monitoring of ecosystem service	0.028	-0.057	0.040
<b>GS83-M</b> Monitoring by citizen	-0.046	-0.037	-0.137
<b>A11-S</b> Number of municipal officials involved	-0.074	-0.014	-0.024
<b>A12-C</b> Number of LBSAP committee members	0.052	0.053	-0.085
<b>A21-D</b> Diversity of the LBSAP committee members	-0.007	-0.130	0.345
<b>A22-E</b> Diversity of experts in the LBSAP committee	0.011	-0.193	0.136
<b>A23-O</b> Number of municipal sections involved	-0.039	-0.127	0.248
<b>A51-G</b> Number of influential organizations and people	0.006	<b>-0.370 *</b>	-0.007
<b>A52-L</b> Significant influence of the mayor	0.211	0.059	0.163
<b>A71-T</b> Consciousness of traditional knowledge	-0.175	<b>0.451 *</b>	0.138
<b>A72-L</b> Consciousness of local knowledge	0.076	-0.216	<b>0.429 *</b>
<b>A73-T</b> Diversity of traditional knowledge	0.252	0.062	<b>0.371 *</b>
<b>A74-L</b> Diversity of local knowledge	-0.287	0.020	-0.080

\*,  $p < 0.05$

†  $0.1 < p \leq 0.05$ .