

Online Appendix

Bioeconomic Models for Terrestrial Social–Ecological System Management: A Review Simon Jean and Lauriane Mouysset

1096 7.1. Article selection equation on SCOPUS

1097 In order to select articles, we performed a research on SCOPUS using the following query :

1098

1099

1100 TITLE-ABS-KEY (biodiversity AND (ecological-economic OR bio-economic OR economic)
1101 AND modeling) AND (LIMIT-TO (SUBJAREA , "ENVI") OR LIMIT-TO (SUBJAREA ,
1102 "AGRI") OR LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "EART") OR
1103 LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA , "ENER") OR LIMIT-TO (SUBJAREA ,
1104 "ENGI") OR LIMIT-TO (SUBJAREA , "COMP") OR LIMIT-TO (SUBJAREA ,
1105 "MATH") OR LIMIT-TO (SUBJAREA , "DECI") OR LIMIT-TO (SUBJAREA , "BIOC") OR
1106 LIMIT-TO (SUBJAREA , "MULT") OR LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ARTS"))

1108

1109 TITLE-ABS-KEY (bioeconomic AND modeling) LIMIT-TO (SUBJAREA , "ENVI") OR LIMIT-
1110 TO (SUBJAREA , "AGRI") OR LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUB-
1111 JAREA , "EART") OR LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA ,
1112 "ENER") OR LIMIT-TO (SUBJAREA , "ENGI") OR LIMIT-TO (SUBJAREA , "COMP") OR
1113 LIMIT-TO (SUBJAREA , "MATH") OR LIMIT-TO (SUBJAREA , "DECI") OR LIMIT-TO (SUBJAREA ,
1114 "BIOC") OR LIMIT-TO (SUBJAREA , "MULT") OR LIMIT-TO (SUBJAREA
1115 , "BUSI") OR LIMIT-TO (SUBJAREA , "ARTS"))

1116

1117 TITLE-ABS-KEY (bioeconomic AND model) LIMIT-TO (SUBJAREA , "ENVI") OR LIMIT-TO
1118 (SUBJAREA , "AGRI") OR LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA ,
1119 "EART") OR LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA , "ENER") OR
1120 LIMIT-TO (SUBJAREA , "ENGI") OR LIMIT-TO (SUBJAREA , "COMP") OR LIMIT-TO (SUBJAREA ,
1121 "MATH") OR LIMIT-TO (SUBJAREA , "DECI") OR LIMIT-TO (SUBJAREA
1122 , "BIOC") OR LIMIT-TO (SUBJAREA , "MULT") OR LIMIT-TO (SUBJAREA , "BUSI")
1123 OR LIMIT-TO (SUBJAREA , "ARTS"))

1124 7.2. Lexical groups

1125 **Agriculture :** agriculture, agricultural, crop, rangeland, livestock, forage, fallow, farmland,
1126 grassland, oats, agri, farmers, grazing, crop, livestock, farming, wheat, crops, farm, cropping, range-
1127 land, grazing, stocking, alfalfa, wheat, agro, crofting, pastures, ranchers, range, grasslands

1128

1129 **Forest :** Trees, stand, tree, forest, forestry, basal, spruce, even-aged, uneven-aged, forests, timber,
1130 diameter, wood, pine, faustmann, volume, reforestation, rotation, rotational, acacia,forested, lichen

1131

1132 **Invasive species :** Invasive species, invasive, rabies, invasion, invasivespecies, invader, coevo-
1133 lution, non-endemic, nis, eradication, pest, mountainpinebeetle, weevil, disease, gyps moth, weevil,
1134 oats, weed, herbicide, invader, rabies, pathogens, invasivespecies, indigenous, barrier, infestation,
1135 alien, beaver, calvescens, eradicate, host, resistance, infestations, pesticide, pests, invasions, weed,
1136 weeds , pest, nonindigenous, pathogen, invaders, spartinaalterniflora, spartina, beetle, endemic,
1137 emeraldashborer, beetles, avena, rodent, serratedtussock, tuberculosis, miconiacalvescens, vaccine,

1138 insects, spread, vector-borne, epidemiology, quarantine, trap

1139

1140 **Endangered/remarkable species :** Endangered species, remarkable, trophy, tiger, endangered-
1141 species, warbler, moose, illegal, threatened, threats, endangered, elephants, butterfly, wildlife, game,
1142 poachers, wolf, reindeer, poaching, wolves, elephant, bushmeat, ivory, black, hunt, canislupus,
1143 hunters, bear, serengeti, tigers, deer, rhino, extinction, endangered

1144

1145 **Policy :** Policy, subsidy, tax, tradable, subsidies, instruments, policy, policies, payments, taxes,
1146 market, markets, incentives, payment, permits, taxes, incentive, funding, budget, budgets, conflict,
1147 conflicts, bonus, planner, taxation, property, market-based, contracts, interventions, intervention,
1148 strategy, propertyrights, taxsubsidy

1149

1150 **Risk :** risk, uncertainty, insurance, markov, option, resilience, stochastic, probabilities, uncer-
1151 tain

1152

1153 **Conservation :** conservation, park, reserve, sites, restoration, planning, conservationplanning

1154

1155 **Harvesting :** harvesting, harvests, harvest, hunting

1156 *7.3. Supplementary tables and figures*

Table 2: Journal distributions among disciplines

<i>Economic journals</i>	<i>Count</i>(60%)	<i>Ecology journals</i>	<i>Count</i>(26%)
Ecological Economics	44	Ecological Modelling	15
American Journal of Agricultural Economics	19	Biological Conservation	11
Journal of Environmental Economics and Management	19	Ecological Applications	11
Environmental and Resource Economics	15	Canadian Journal of Forest Research	6
Resource and Energy Economics	15	Journal of Applied Ecology	6
Land Economics	11	Conservation Biology	4
Environment and Development Economics	6	Forest Science	4
Journal of Bioeconomics	6	Diversity and Distributions	3
Journal of Environmental Management	6	Forest Ecology and Management	3
Agricultural Economics	4	Biological Invasions	2
Review of Agricultural Economics	4	Conservation Letters	2
Australian Journal of Agricultural Economics	3	Ecology Letters	2
Journal of Economics	3	Biodiversity and Conservation	1
Journal of Forest Economics	3	Commonwealth Forestry Research	1
Agricultural and Resource Economics Review	2	Ecological Indicators	1
American Economic Review	2	Ecology and Society	1
European Review of Agricultural Economics	2	Environmental Entomology	1
Journal of Economic Theory	2	European Journal of Forest Research	1
Canadian Journal of Economics	1	Journal for Nature Conservation	1
Computational Economics	1	Journal of Economic Entomology	1
Econometrica	1	Journal of Forestry Research	1
Economic Inquiry	1	Journal of Theoretical Biology	1
Economic Theory	1	New Forests	1
Journal of African Economies	1	Silva Fennica	1
Journal of Agricultural and Applied Economics	1	Theoretical Population Biology	1
Journal of Agricultural and Resource Economics	1	Wildlife Biology	1
Journal of Agricultural Economics	1		
Journal of Economic Dynamics & Control	1		
<i>Kiel Working Papers</i>	1	<i>Sustainability science journals</i>	<i>Count</i> (10%)
Management Science	1	Natural Resource Modeling	10
MPRA Papers	1	Agricultural Systems	3
MPRA Working Papers	1	Environmental Modeling and Software	2
Oxford Economic Papers	1	Environmental Modeling and Assessment	2
Review of marketing and Agricultural Economics	1	PNAS	2
RFF Discussion papers	1	Australian Journal of Experimental Agriculture	1
Social Choice and Welfare	1	Central European Journal of Operations Research	1
Socio-Economic Planning Sciences	1	Climatic Change	1
Spatial Economic Analysis	1	EcoHealth	1
The Australian Journal of Agricultural and Resource Economics	1	Ecosystem Services	1
The B.E. Journal of Economic Analysis and Policy	1	Journal of Biological Dynamics	1
The Journal of Political Economy	1	Journal of Environment Management	1
Western Journal of Agricultural Economics	1	Land Use Policy	1
		Nature	1
<i>Applied Mathematics journals</i>	<i>Count</i> (4%)	Non Linear Analysis	1
Journal of Mathematical Analysis and Applications	2	Operations Research	1
Journal of Mathematical Biology	2	PLoS One	1
Applied Mathematics Letters	1	Proceedings of the Royal Society	1
Biometrics	1	Regional Environmental Change	1
Bulletin of Mathematical Biology	1	Science	1
Computers and Mathematics with Applications	1		
Journal of Optimisation Theory and Applications	1		
Mathematical Biosciences	1		
Mathematical Biosciences and Engineering	1		
Mathematical Models and Methods in Applied Science	1		

Table 3: Distribution of journal across fields

Field	Count	Percentage
Economics	190	60%
Ecology	83	26%
Sustainability science	34	10%
Applied Mathematics	12	4%

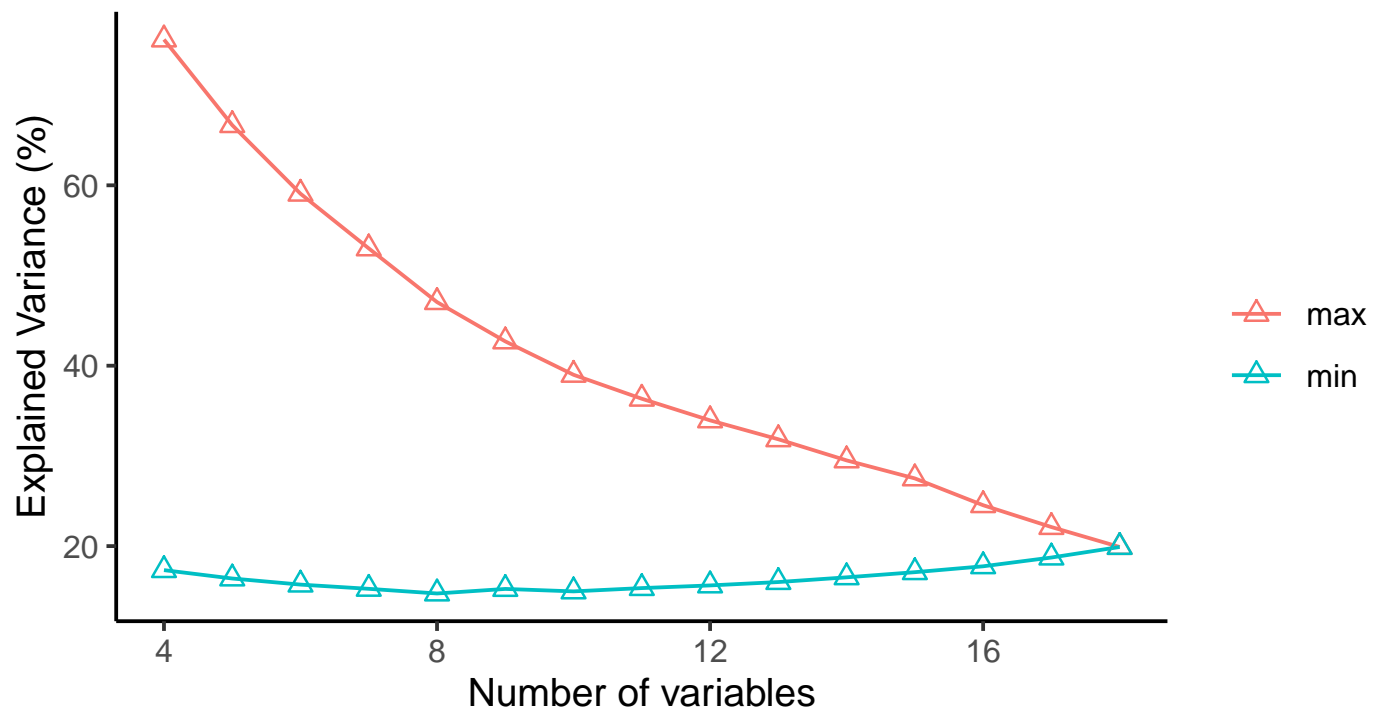


Figure 7: Explained variance function of the number of methodological criteria used in the MCA.

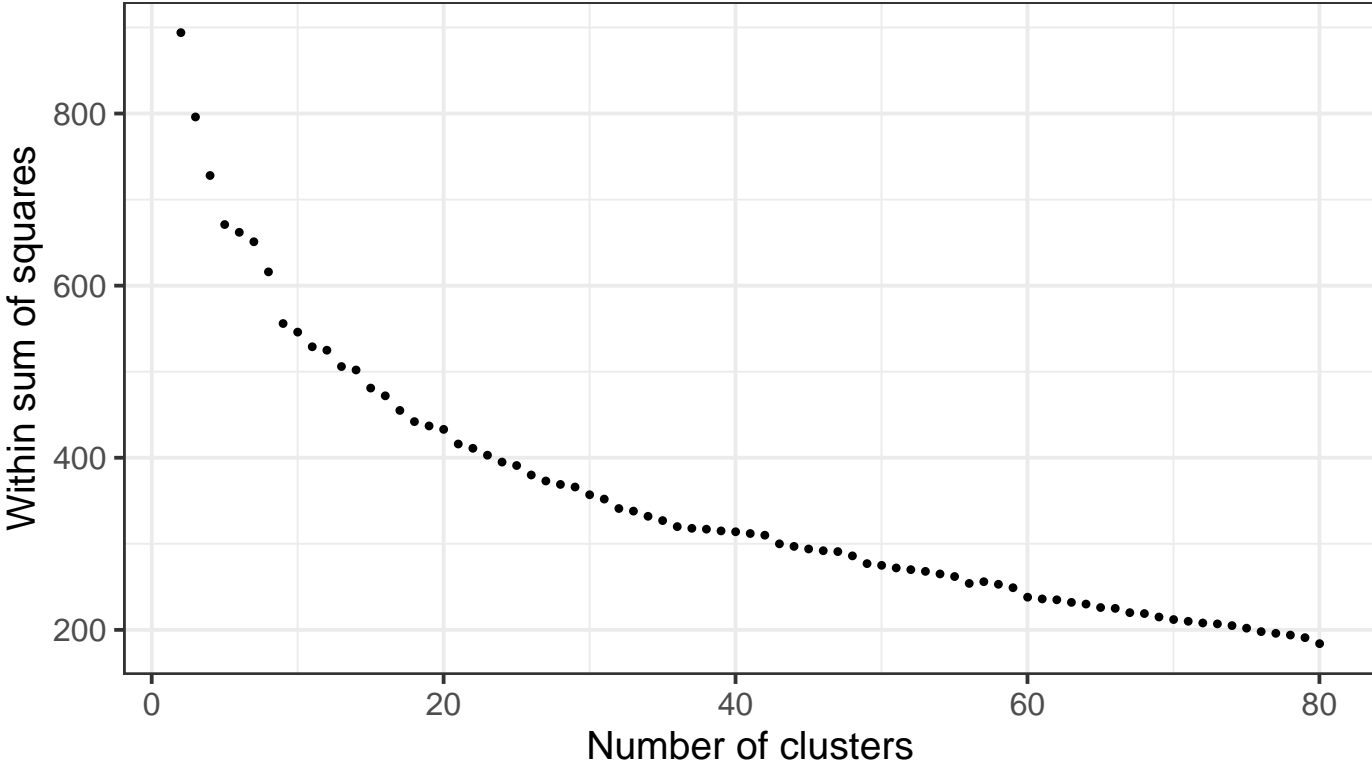


Figure 8: Cost function of the K-modes.

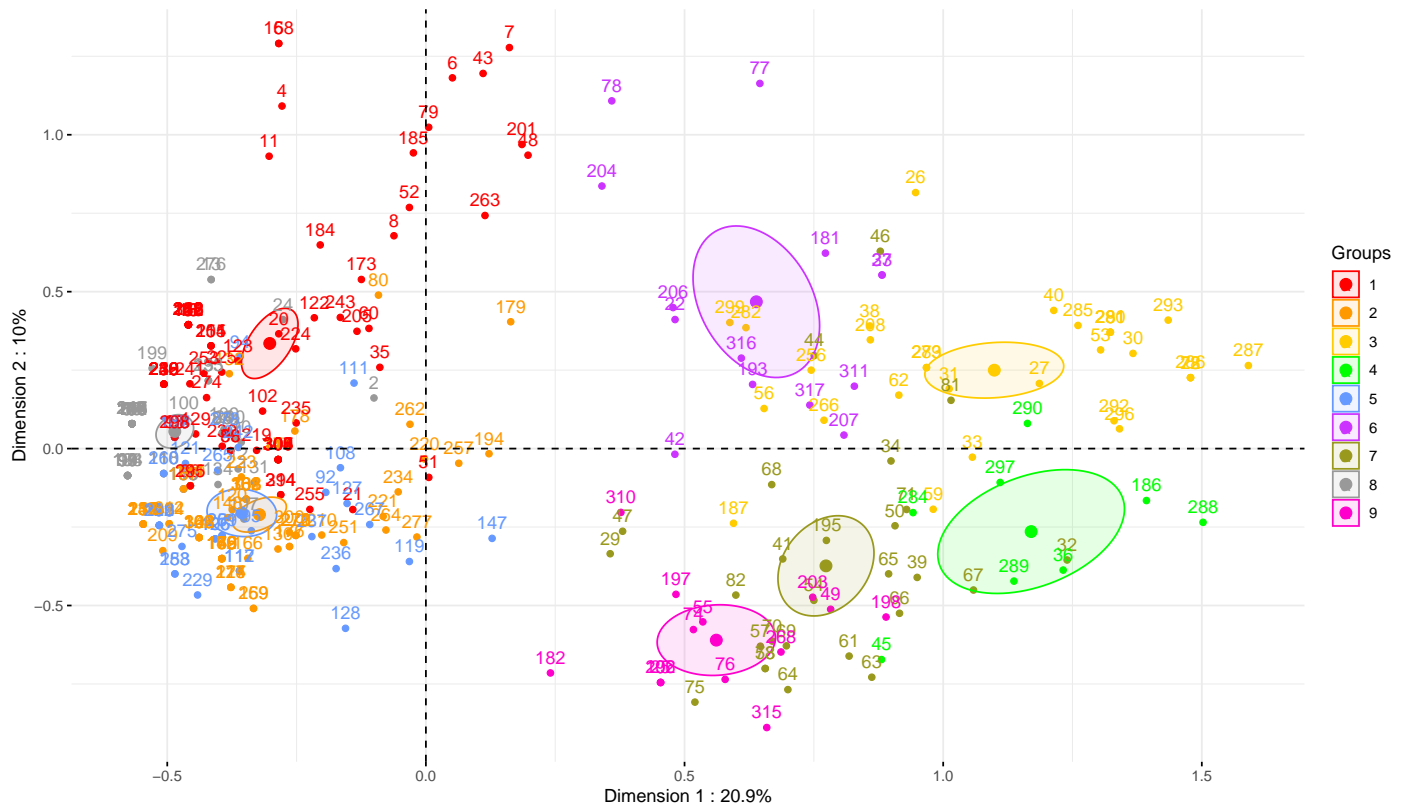


Figure 9: Multiple Correspondence Analysis (MCA) running on 12 methodological criteria and 9 groups.