

Review

An Analysis of the Worldwide Research on the Socio-cultural Valuation of Forest Ecosystem Services

Juan F. Velasco-Muñoz *, José A. Aznar-Sánchez, Marina Schoenemann and Belén López-Felices

Research Centre on Mediterranean Intensive Agrosystems and Agrifood Biotechnology (CIAIMBITAL), Department of Economy and Business, University of Almería, 04120 Almería, Spain; jaznar@ual.es (J.A.A.-S.); ms665@inlumine.ual.es (M.S.); blopezfelices@ual.es (B.L.-F.)

* Correspondence: jfvelasco@ual.es

Supplementary Material S1

Scopus query 1

(TITLE-ABS-KEY (ecosystem AND services) AND TITLE-ABS-KEY (social AND perceptions) AND TITLE-ABS-KEY (stakeholders) AND TITLE-ABS-KEY (forest)) OR (TITLE-ABS-KEY ("socio-cultural valuation" OR "socio-cultural assess*" OR "social valuation" OR "social perception" OR "social assess*" OR "cultural valuation" OR "cultural assess*") AND TITLE-ABS-KEY (forest*) AND TITLE-ABS-KEY ("ecosystem service*" OR "environmental service*" OR "ecological service*"))

Scopus query 2

(TITLE-ABS-KEY (forest* OR silvicultur*) AND TITLE-ABS-KEY ("ecosystem service*" OR "ecological service*" OR "environmental service*") AND TITLE-ABS-KEY (socio-cultural OR "social preference*" OR "qualitative method" OR "qualitative research" OR "cultural value" OR "cultural valuation" OR "social perception")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re"))

Scopus query 3

(TITLE-ABS-KEY (forest* OR silvicultur*) AND TITLE-ABS-KEY ("ecosystem service*" OR "ecological service*" OR "environmental service*") AND TITLE-ABS-KEY ("participant observation" OR "social media" OR "free list*" OR "discourse analysis" OR "photo elicitation" OR "Q method" OR "participat* mapping" OR delphi)) AND (EXCLUDE (DOCTYPE, "ch"))

Supplementary Material S2

Final sample documents

Title	Authors	Year of Publication	Journal	Citation
Geography of disservices in urban forests: public participation mapping for closing the loop	Baumeister, C.F., Gerstenberg, T., Plieninger, T., Schraml, U.	2022	Ecosystems and People	0
Perceptions of ecosystem services: A comparison between sacred and non-sacred forests in central Benin (West Africa)	Djagoun, C.A.M.S., Zanvo, S., Padonou, E.A., Sogbohossou, E., Sinsin, B.	2022	Forest Ecology and Management	0
Relevance of cultural ecosystem services in nurturing ecological identity values that support restoration and conservation efforts	Lee, H., Youn, Y.-C.	2022	Forest Ecology and Management	0
A decision making approach for assignment of ecosystem services to forest management units: A case study in northwest Turkey	Caglayan, İ., Yeşil, A., Kabak, Ö., Bettinger, P.	2021	Ecological Indicators	3
A novel ecosystem (dis)service cascade model to navigate sustainability problems and its application in a changing agricultural landscape in Brazil	Blanco, J., Bellón, B., Barthelemy, L., (...), Souza, F.L., Renaud, P.-C.	2021	Sustainability Science	1
Assessing and mapping cultural ecosystem services of an urban forest based on narratives from blog posts	Kim, J., Son, Y.	2021	Ecological Indicators	1
Assessing the sustainability of traditional agroforestry practices: A case of mamar agroforestry in kupang-indonesia	Ngaji, A.U.K., Baiquni, M., Suryatmojo, H., Haryono, E.	2021	Forest and Society	0
Beijing resident's preferences of ecosystem services of urban forests	Zhi-Ying, H., Yeo-Chang, Y.	2021	Forests	2
Community-based importance and quantification of ecosystem services, disservices, drivers, and neotropical dry forests in a rural colombian municipality	Tovar Tique, Y.P., Escobedo, F.J., Clerici, N.	2021	Forests	1
Differences in stakeholder perceptions about native forest: implications for developing a restoration program	Castillo, J.A., Smith-Ramírez, C., Claramunt, V.	2021	Restoration Ecology	3
Distribution and utilization of homestead windbreak Fukugi (<i>Garcinia subelliptica</i> Merr.) trees: an ethnobotanical approach	Chen, B., Akamine, H.	2021	Journal of Ethnobiology and Ethnomedicine	0
Economic and Ethical Motivations for Forest Restoration and Incentive Payments	Kreye, M.M., Adams, D.C., Soto, J.R., Tanner, S., Rimsaite, R.	2021	Society and Natural Resources	1

Title	Authors	Year of Publication	Journal	Citation
Ecosystem services and gender in rural areas of Nicaragua: Different perceptions about the landscape	Cifuentes-Espinosa, J.A., Feintrenie, L., Gutiérrez-Montes, I., Sibelet, N.	2021	Ecosystem Services	1
Ethnic homestead forests of North-East India revealed as diverse land-use systems	Reang, D., Sahoo, U.K., Giri, K., Hazarika, A., Nath, A.J.	2021	Agroforestry Systems	2
Exploring plural values of ecosystem services: Local peoples' perceptions and implications for protected area management in the atlantic forest of Brazil	Coelho-Junior, M.G., de Oliveira, A.L., da Silva-Neto, E.C., (...), Perkins, P.E., de Carvalho, A.G.	2021	Sustainability (Switzerland)	1
Exploring the influencing factors of the recreational utilization and evaluation of urban ecological protection green belts for urban renewal: A case study in Shanghai	Zhao, W., Wang, Y., Chen, D., Wang, L., Tang, X.	2021	International Journal of Environmental Research and Public Health	0
Forest-related culture and contribution to sustainable development in the northern mountain region in Vietnam	Ngo, T.T.H., Nguyen, T.P.M., Duong, T.H., Ly, T.H.	2021	Forest and Society	1
High public appreciation for the cultural ecosystem services of urban and peri-urban forests during the COVID-19 pandemic	Beckmann-Wübbelt, A., Fricke, A., Sebesvari, Z., (...), Fröhlich, K., Saha, S.	2021	Sustainable Cities and Society	2
How integrating 'socio-cultural values' into ecosystem services evaluations can give meaning to value indicators	Breyne, J., Dufrêne, M., Maréchal, K.	2021	Ecosystem Services	3
Indigenous practices of ecosystem management in a changing climate: Prospects for ecosystem-based adaptation	Chanza, N., Musakwa, W.	2021	Environmental Science and Policy	0
Landowners' Socio-Cultural Valuation of Ecosystem Services Provided by Trees in Costa Rican Agricultural Landscapes	Leary, J., Grimm, K., Aslan, C., (...), Frey, S., Bath-Rosenfeld, R.	2021	Environmental Management	1
Mapping and assessing ecosystems and their services: a comparative approach to ecosystem service supply in Suriname and French Guiana	Sieber, I.M., Campagne, C.S., Villien, C., Burkhard, B.	2021	Ecosystems and People	1
On the mismatches between the monetary and social values of air purification in the colombian andean region: A case study	Suarez, A., Ruiz-Agudelo, C., Castro-Escobar, E., Flórez-Yepes, G.Y., Vargas-Marín, L.A.	2021	Forests	0
Outdoor recreation and nature's contribution to well-being in a pandemic situation - Case Turku, Finland	Fagerholm, N., Eilola, S., Arki, V.	2021	Urban Forestry and Urban Greening	2

Title	Authors	Year of Publication	Journal	Citation
Public perception of forest ecosystem services in Taiwan	Lin, J.-C., Chiou, C.-R., Chan, W.-H., Wu, M.-S.	2021	Journal of Forest Research	1
Spatial distribution and perceived drivers of provisioning service values across an East African montane forest landscape	Miller, E.F., Doolittle, A.A., Cerutti, P.O., (...), Ashton, M.S., Mwangi, E.	2021	Landscape and Urban Planning	0
Stakeholders' perception towards ecosystem services provided by forests: Comparison among three Balkans countries	Crivellaro, M., Camin, M., Colle, G., Bezzi, M., Paletto, A.	2021	Annals of Silvicultural Research	0
Using Flickr data and selected environmental characteristics to analyse the temporal and spatial distribution of activities in forest areas	Ciesielski, M., Stereńczak, K.	2021	Forest Policy and Economics	0
Using social media to assess recreation across urban green spaces in times of abrupt change	Grzyb, T., Kulczyk, S., Derek, M., Woźniak, E.	2021	Ecosystem Services	2
Winners and losers in energy transition: Study case of wood biomass power-plants implementation in france	Sansilvestri, R., Cordier, M., Lescuyer, T.	2021	Forests	1
A deliberative research approach to valuing agro-ecosystem services in a worked landscape	Shipley, N.J., Johnson, D.N., van Riper, C.J., (...), Stein, J.A., Shew, J.J.	2020	Ecosystem Services	6
A social assessment of forest resource based on stakeholders' perception: an application in three Balkans rural areas	Marta, C., Maurizio, C., Giacomo, C., Marco, B., Alessandro, P.	2020	Journal of Forest Research	3
Ecosystem services from mountain forests: Local communities' views in Kibira National Park, Burundi	Ndayizeye, G., Imani, G., Nkengurutse, J., (...), Niyongabo, F., Cuni-Sanchez, A.	2020	Ecosystem Services	6
Evidence that cultural food practices of Adi women in Arunachal Pradesh, India, improve social-ecological resilience: insights for Sustainable Development Goals	Singh, R.K., Kumar, A., Singh, A., Singhal, P.	2020	Ecological Processes	5
Exploring cultural ecosystem service hotspots: Linking multiple urban forest features with public participation mapping data	Baumeister, C.F., Gerstenberg, T., Plieninger, T., Schraml, U.	2020	Urban Forestry and Urban Greening	14
Forest protection unifies, silviculture divides: A sociological analysis of local stakeholders' voices after coppicing in the marganai forest (Sardinia, Italy)	Branca, G., Piredda, I., Scotti, R., (...), Schwarz, M., Giadrossich, F.	2020	Forests	1
How farmers feel about trees: Perceptions of ecosystem services and disservices associated with rural forests in southwestern France	Blanco, J., Sourdril, A., Deconchat, M., (...), San Cristobal, M., Andrieu, E.	2020	Ecosystem Services	9

Title	Authors	Year of Publication	Journal	Citation
Integrating preferences and social values for ecosystem services in local ecological management: A framework applied in Xiaojiang Basin Yunnan province, China	Zhang, W., Yu, Y., Wu, X., Pereira, P., Lucas Borja, M.E.	2020	Land Use Policy	12
Mapping cultural ecosystem services enables better informed nature protection and landscape management	Vrbičanová, G., Kaisová, D., Močko, M., Petrovič, F., Mederly, P.	2020	Sustainability (Switzerland)	11
Mapping heritage ecosystem services in ecological restoration areas: A case study from the East Cascades, Washington	Helmer, M., Lipton, J., Snitker, G., (...), Triplett, M., Cervený, L.	2020	Journal of Outdoor Recreation and Tourism	1
Participatory community-based monitoring of water in the southwest periphery of Mexico City [Monitoreo comunitario participativo del agua en la periferia suroeste de la Ciudad de México]	Perevochtchikova, M., Sandoval-Romero, G.E.	2020	Investigaciones Geográficas	1
Participatory mapping of cultural ecosystem services in madrid: Insights for landscape planning	García-Díez, V., García-Llorente, M., González, J.A.	2020	Land	7
Perception of ecosystem services and disservices on a peri-urban communal forest: Are landowners' and visitors' perspectives dissimilar?	Rodríguez-Morales, B., Rocas-Díaz, J.V., Kelemen, E., Pataki, G., Díaz-Varela, E.	2020	Ecosystem Services	8
Phytodiversity and ecosystem services associated with avenue trees planted along managed roadways in the city of grand-popo in Benin [Phytodiversité et services écosystémiques associés aux plantations d'alignement des rues aménagées de la ville de grand-popo au Bénin]	Osseni, A.A., Gbesso, G.H.F., Nansi, K.M., Tente, A.B.H.	2020	Bois et Forêts des Tropiques	0
Preferences for ecosystem services provided by urban forests in South Korea	Jang-Hwan, J., So-Hee, P., JaChoon, K., (...), Lim, E.M., Yeo-Chang, Y.	2020	Forest Science and Technology	3
Restoring the forest revives our culture: Ecosystem services and values for ecological restoration across the rural-urban nexus in South Africa	Constant, N.L., Taylor, P.J.	2020	Forest Policy and Economics	12
Social valuation of mediterranean cultural landscapes: Exploring landscape preferences and ecosystem services perceptions through a visual approach	Bidegain, Í., López-Santiago, C.A., González, J.A., (...), Ravera, F., Cerda, C.	2020	Land	2
Societal Recognition of Ecosystem Service Flows from Red Panda Habitats in Western Nepal	Bhatta, M., Zander, K.K., Austin, B.J., Garnett, S.T.	2020	Mountain Research and Development	2

Title	Authors	Year of Publication	Journal	Citation
Socio-cultural valuation of Polish agricultural landscape components by farmers and its consequences	Włodarczyk-Marciniak, R., Frankiewicz, P., Krauze, K.	2020	Journal of Rural Studies	9
Spatial literacy influences stakeholder's recognition and mapping of peri-urban and urban ecosystem services	Escobedo, F.J., Bottin, M., Cala, D., Sandoval Montoya, D.L.	2020	Urban Ecosystems	3
Spontaneous forest regrowth in South-West Europe: Consequences for nature's contributions to people	Martín-Forés, I., Magro, S., Bravo-Oviedo, A., (...), Hampe, A., Valladares, F.	2020	People and Nature	6
The forest stakeholders' perception towards the NATURA 2000 network in the Czech Republic	Schneider, J., Ruda, A., Kalasová, Z., Paletto, A.	2020	Forests	4
Unsustainable trade-offs: provisioning ecosystem services in rapidly changing Likangala River catchment in southern Malawi	Pullanikkatil, D., Mograbi, P.J., Palamuleni, L., Ruhiiga, T., Shackleton, C.	2020	Environment, Development and Sustainability	5
Urban forest construction based on ecosystem service function improvement in warm temperate semi-humid areas [基于生态系统服务功能提升的暖温带半湿润地区城市森林营建研究]	Ge, Y., Xin, B., Li, X.	2020	Beijing Linze Daxue Xuebao/Journal of Beijing Forestry University	1
Using a combination of Q-methodology and survey-based approach for assessing forest ecosystem services of Five Finger Mountains in Northern Cyprus	Ciftcioglu, G.C.	2020	Sustainability Science	3
Agricultural modernization and socio-cultural valuation of ecosystem services in mayan landscapes of southeastern Mexico [Modernización agrícola y valoración sociocultural de los servicios ecosistémicos en paisajes mayas del sureste de México]	Alpuche-álvarez, Y.A., Ochoa-Gaona, S., Monzón-Alvarado, C.M., Cortina-Villar, S.	2019	Ecologia Austral	0
Big data and evaluation of cultural ecosystem services: An analysis based on geotagged photographs from social media in tuscan forest (Italy)	Bernetti, I., Chirici, G., Sacchelli, S.	2019	IForest	12
Change from agricultural to touristic use: Effects on the aesthetic value of landscapes over the last 150 years	Schirpke, U., Altzinger, A., Leitinger, G., Tasser, E.	2019	Landscape and Urban Planning	28
Combining remote sensing techniques and participatory mapping to understand the relations between forest degradation and ecosystems services in a tropical rainforest	Delgado-Aguilar, M.J., Hinojosa, L., Schmitt, C.B.	2019	Applied Geography	9

Title	Authors	Year of Publication	Journal	Citation
Earth observation and social media: Evaluating the spatiotemporal contribution of non-native trees to cultural ecosystem services	Vaz, A.S., Gonçalves, J.F., Pereira, P., (...), Vicente, J.R., Honrado, J.P.	2019	Remote Sensing of Environment	18
Forest Ecosystem Services and Local Communities: Towards a Possible Solution to Reduce Forest Dependence in Bach Ma National Park, Vietnam	Hong, N.T., Saizen, I.	2019	Human Ecology	3
Local perspectives on ecosystem service trade-offs in a forest frontier landscape in Myanmar	Feurer, M., Heinimann, A., Schneider, F., (...), Myint, W., Zaehring, J.G.	2019	Land	14
Local users and other stakeholders' perceptions of the identification and prioritization of ecosystem services in fragile mountains: A case study of Chure region of Nepal	Acharya, R.P., Maraseni, T.N., Cockfield, G.	2019	Forests	9
Perceived ecosystem services (ES) and ecosystem disservices (EDS) from trees: insights from three case studies in Brazil and France	Teixeira, F.Z., Bachi, L., Blanco, J., (...), Welle, I., Carvalho-Ribeiro, S.M.	2019	Landscape Ecology	16
Perceptions of ecosystem services provided by tropical forests to local populations in Cameroon	Lhoest, S., Dufrene, M., Vermeulen, C., (...), Doucet, J.-L., Fayolle, A.	2019	Ecosystem Services	11
Quantifying cultural ecosystem services: Disentangling the effects of management from landscape features	Tew, E.R., Simmons, B.I., Sutherland, W.J.	2019	People and Nature	13
Social Perceptions of Forest Ecosystem Services in the Democratic Republic of Congo	Cuni-Sanchez, A., Imani, G., Bulonvu, F., (...), Klein, J.A., Marchant, R.	2019	Human Ecology	11
Social valuation of regulating and cultural ecosystem services of Arroceros Forest Park: A man-made forest in the city of Manila, Philippines	Lagbas, A.J.	2019	Journal of Urban Management	7
Socio-cultural values of ecosystem services from Oak Forests in the Eastern Himalaya	Dorji, T., Brookes, J.D., Facelli, J.M., (...), Chhetri, Y.R., Baral, H.	2019	Sustainability (Switzerland)	8
The importance of livelihood strategy and ethnicity in forest ecosystem services' perceptions by local communities in north-western Cameroon	Cuni-Sanchez, A., Ngute, A.S.K., Sonké, B., (...), Klein, J.A., Marchant, R.	2019	Ecosystem Services	12
Understanding citizen perceptions of the Eastern Hills of Bogota: a participatory place-based ecosystem service assessment	Robson, E., van Kerkhoff, L., Cork, S.	2019	Urban Ecosystems	5

Title	Authors	Year of Publication	Journal	Citation
Valuation of ecosystem services by stakeholders operating at different levels: insights from the Portuguese cultural montado landscape	do Rosário, I.T., Rebelo, R., Caser, U., Vasconcelos, L., Santos-Reis, M.	2019	Regional Environmental Change	5
Values held by Swedish primary school students towards forest ecosystems and the relevance for a nature's contributions to people approach	Goodwin, S., Brogaard, S., Krause, T.	2019	Ecosystems and People	3
A framework for integrating systematic stakeholder analysis in ecosystem services research: Stakeholder mapping for forest ecosystem services in the UK	Raum, S.	2018	Ecosystem Services	56
An integrated approach to valuation and tradeoff analysis of ecosystem services for national forest decision-making	Armatas, C.A., Campbell, R.M., Watson, A.E., (...), Christensen, N., Venn, T.J.	2018	Ecosystem Services	18
Applying the Delphi method to assess impacts of forest management on biodiversity and habitat preservation	Filyushkina, A., Strange, N., Löf, M., Ezebilo, E.E., Boman, M.	2018	Forest Ecology and Management	26
Assessing social values of ecosystem services in the Phewa Lake Watershed, Nepal	Paudyal, K., Baral, H., Keenan, R.J.	2018	Forest Policy and Economics	25
Attractiveness of running events in forests of Poland and Czech Republic [Atrakcyjność imprez biegowych w lasach Polski i Czech]	Janeczko, E., Fialova, J., Tomusiak, R., (...), Budnicka-Kosior, J., Kwaśny, Ł.	2018	Sylvan	2
Bringing multiple values to the table: Assessing future land-use and climate change in North Kona, Hawai'i	Bremer, L.L., Mandle, L., Trauernicht, C., (...), Chock, P., Ticktin, T.	2018	Ecology and Society	14
Connecting plant traits and social perceptions in riparian systems: Ecosystem services as indicators of thresholds in social-ecohydrological systems	Hough, M., Pavao-Zuckerman, M.A., Scott, C.A.	2018	Journal of Hydrology	5
Contributions of human behavior study to the research and management of rural ecosystems and landscapes [Aproximaciones al estudio del comportamiento de los productores agropecuarios en el Chaco Seco]	Mastrangelo, M.E.	2018	Ecologia Austral	5
Farmers' perceptions on cultivation and the impacts of climate change on goods and services provided by <i>Garcinia kola</i> in Nigeria	Agwu, O.P., Bakayoko, A., Jimoh, S.O., Stefan, P.	2018	Ecological Processes	4
Local perceptions of tree diversity, resource utilisation and ecosystem services provision at the periphery of Gonarezhou National Park, Zimbabwe	Mero Dowo, G., Kativu, S., de Garine-Wichatitsky, M.	2018	Forests Trees and Livelihoods	3
Mapping recreation of FRIM via social media	Adnan, N.	2018	ASM Science Journal	0

Title	Authors	Year of Publication	Journal	Citation
Perceptions of cultural ecosystem services in urban green spaces: A case study in Gwacheon, Republic of Korea	Ko, H., Son, Y.	2018	Ecological Indicators	37
Public perceptions of ecosystem services and preferences for design scenarios of the flooded bank along the Three Gorges Reservoir: Implications for sustainable management of novel ecosystems	Chen, C., Wang, Y., Jia, J.	2018	Urban Forestry and Urban Greening	7
Qualitative assessment of forest ecosystem services: The stakeholders' point of view in support of landscape planning	De Meo, I., Cantiani, M.G., Ferretti, F., Paletto, A.	2018	Forests	12
Running events in Polish forests in the opinion of their participants	Janeczko, E., Tomusiak, R., Woznicka, M., Janeczko, K.	2018	Folia Forestalia Polonica, Series A	1
Social-ecological innovation in remote mountain areas: Adaptive responses of forest-dependent communities to the challenges of a changing world	Melnykovich, M., Nijnik, M., Soloviy, I., (...), Sarkki, S., Bihun, Y.	2018	Science of the Total Environment	39
Unraveling heterogeneity in the importance of ecosystem services: Individual views of smallholders	Tauro, A., Gómez-Baggethun, E., García-Frapolli, E., Chavero, E.L., Balvanera, P.	2018	Ecology and Society	18
Using remote sensing and traditional ecological knowledge (TEK) to understand mangrove change on the Maroochy River, Queensland, Australia	Brown, M.I., Pearce, T., Leon, J., Sidle, R., Wilson, R.	2018	Applied Geography	20
Community mapping of ecosystem services in tropical rainforest of Ecuador	Delgado-Aguilar, M.J., Konold, W., Schmitt, C.B.	2017	Ecological Indicators	23
Dependence of riparian communities on ecosystem services in Northern Ghana	Mul, M., Pettinotti, L., Amonoo, N.A., Bekoe-Obeng, E., Obuobie, E.	2017	IWMI Working Papers	3
Ecosystem service importance and use vary with socio-environmental factors: A study from household-surveys in local communities of South Africa	Mensah, S., Veldtman, R., Assogbadjo, A.E., (...), Glèlè Ka-kaï, R., Seifert, T.	2017	Ecosystem Services	46
Forest company dependencies and impacts on ecosystem services: Expert perceptions from China	Wan, M., D'Amato, D., Toppinen, A., Rekola, M.	2017	Forests	2
Future impacts of drivers of change on wetland ecosystem services in Colombia	Ricaurte, L.F., Olaya-Rodríguez, M.H., Cepeda-Valencia, J., (...), Max Finlayson, C., Palomo, I.	2017	Global Environmental Change	47
Integrating ecosystem services and human well-being into management practices: Insights from a mountain-basin area, China	Wang, B., Tang, H., Xu, Y.	2017	Ecosystem Services	29

Title	Authors	Year of Publication	Journal	Citation
Methodological considerations & their application for evaluation of benefits from the conversion of even-Age secondary Norway spruce stands into mixed uneven-Aged woodlands with a focus on the Ukrainian Carpathians	Zahvoyska, L., Pelyukh, O., Maksymiv, L.	2017	Austrian Journal of Forest Science	7
Neglected ecosystem services: Highlighting the socio-cultural perception of mangroves in decision-making processes	Queiroz, L.D.S., Rossi, S., Calvet-Mir, L., (...), Salvà-Prat, J., Meireles, A.J.D.A.	2017	Ecosystem Services	62
Social Perceptions of Biodiversity and Ecosystem Services in the Ecuadorian Amazon	Caballero-Serrano, V., Alday, J.G., Amigo, J., (...), McLaren, B., Onaindia, M.	2017	Human Ecology	15
Species richness alone does not predict cultural ecosystem service value	Graves, R.A., Pearson, S.M., Turner, M.G.	2017	Proceedings of the National Academy of Sciences of the United States of America	46
Stakeholder perspectives of wood-pasture ecosystem services: A case study from Iberian dehesas	Garrido, P., Elbakidze, M., Angelstam, P., (...), Pulido, F., Moreno, G.	2017	Land Use Policy	56
Testing socio-cultural valuation methods of ecosystem services to explain land use preferences	Schmidt, K., Walz, A., Martín-López, B., Sachse, R.	2017	Ecosystem Services	39
Tourism, landscapes and cultural ecosystem services: a new research tool	Smith, M., Ram, Y.	2017	Tourism Recreation Research	20
Assessing linkages between ecosystem services, land-use and well-being in an agroforestry landscape using public participation GIS	Fagerholm, N., Oteros-Rozas, E., Raymond, C.M., (...), Moreno, G., Plieninger, T.	2016	Applied Geography	71
Assessing the recreation value of urban woodland using the ecosystem service approach in two forests in the munich metropolitan region	Lupp, G., Förster, B., Kantelberg, V., (...), Koch, M., Pauleit, S.	2016	Sustainability (Switzerland)	19
Cultural valuation and biodiversity conservation in the Upper Guinea forest, West Africa	Fraser, J.A., Diabaté, M., Narmah, W., (...), de Foresta, H., Junqueira, A.B.	2016	Ecology and Society	12
Ethnic and locational differences in ecosystem service values: Insights from the communities in forest islands in the desert	Cuni-Sanchez, A., Pfeifer, M., Marchant, R., Burgess, N.D.	2016	Ecosystem Services	40

Title	Authors	Year of Publication	Journal	Citation
Exploring socio-cultural values of ecosystem service categories in the Central Alps: the influence of socio-demographic factors and landscape type	Zoderer, B.M., Lupo Stanghellini, P.S., Tasser, E., (...), Wieser, H., Tappeiner, U.	2016	Regional Environmental Change	47
Exploring the linkages between multifunctional forestry goals and the legacy of spruce plantations in Scotland	Nijnik, M., Nijnik, A., Brown, I.	2016	Canadian Journal of Forest Research	14
Factors influencing the perception of ecosystem services in Ecuadorian tropical dry forests [Factores que influyen en la percepción de servicios de los ecosistemas de los bosques secos del sur del Ecuador]	Briceño, J., Iñiguez-Gallardo, V., Ravera, F.	2016	Ecosistemas	10
In the eye of the stakeholder: The challenges of governing social forest values	Sténs, A., Bjärstig, T., Nordström, E.-M., (...), Fries, C., Johansson, J.	2016	Ambio	30
Management of vegetation under electric distribution lines will affect the supply of multiple ecosystem services	Dupras, J., Patry, C., Tittler, R., (...), Alam, M., Messier, C.	2016	Land Use Policy	13
Mapping social values of ecosystem services: What is behind the map?	Nahuelhual, L., Benra Ochoa, F., Rojas, F., Ignacio Díaz, G., Carmona, A.	2016	Ecology and Society	22
Participatory mapping to identify indigenous community use zones: Implications for conservation planning in southern Suriname	Ramirez-Gomez, S.O.I., Brown, G., Verweij, P.A., Boot, R.	2016	Journal for Nature Conservation	36
Social perception of forest multifunctionality in southern Italy: The case of Calabria Region	Pastorella, F., Giacobelli, G., Maesano, M., (...), Pellicone, G., Mugnozza, G.S.	2016	Journal of Forest Science	10
Sociocultural valuation of ecosystem services to improve protected area management: a multi-method approach applied to Catalonia, Spain	Maestre-Andrés, S., Calvet-Mir, L., van den Bergh, J.C.J.M.	2016	Regional Environmental Change	24
Spatial and temporal dynamics and value of nature-based recreation, estimated via social media	Sonter, L.J., Watson, K.B., Wood, S.A., Ricketts, T.H.	2016	PLoS ONE	94
Spatial patterns of cultural ecosystem services provision in Southern Patagonia	Martínez Pastur, G., Peri, P.L., Lencinas, M.V., García-Llorente, M., Martín-López, B.	2016	Landscape Ecology	122
The forest gives us health: Relationships between environmental health and human health in Maroon communities of Santa Catarina [Compreendendo a	Zank, S., Ávila, J.V.C., Hanazaki, N.	2016	Revista Brasileira de Plantas Medicinais	8

Title	Authors	Year of Publication	Journal	Citation
relação entre saúde do ambiente e saúde humana em comunidades Quilombolas de Santa Catarina]				
Assessing community values to support mapping of ecosystem services in the Koshi river basin, Nepal	van Oort, B., Bhatta, L.D., Baral, H., (...), Rucevska, I., Adhikari, R.	2015	Ecosystem Services	43
Energy wood from forests—stakeholder perceptions in five European countries	Peters, D.M., Wirth, K., Böhr, B., (...), Solberg, B., Zadnik Stirn, L.	2015	Energy, Sustainability and Society	13
Felling ficus: The cultural status of fig trees in a rural assamese community, India	Cotee-Jones, H.E.W., Whitaker, R.J.	2015	Ethnobiology Letters	3
Historical and contemporary cultural ecosystem service values in the rapidly urbanizing city state of Singapore	Thiagarajah, J., Wong, S.K.M., Richards, D.R., Friess, D.A.	2015	Ambio	70
Local assessment of changes in water-related ecosystem services and their management: DPASER conceptual model and its application in Taita Hills, Kenya	Hohenthal, J., Owidi, E., Minoia, P., Pellikka, P.	2015	International Journal of Biodiversity Science, Ecosystem Services and Management	18
Local health practices and the knowledge of medicinal plants in a Brazilian semi-arid region: Environmental benefits to human health	Zank, S., Peroni, N., de Araújo, E.L., Hanazaki, N.	2015	Journal of Ethnobiology and Ethnomedicine	8
Local perception of the ecological services and well-being of the Maya Zone's rainforest from Quintana Roo, Mexico [Percepción local de los servicios ecológicos y de bienestar de la selva de la zona maya en Quintana Roo, México]	Ramírez, K.D.I., Ibarra, A.M.A.	2015	Investigaciones Geográficas	7
Participatory assessment and mapping of ecosystem services in a data-poor region: Case study of community-managed forests in central Nepal	Paudyal, K., Baral, H., Burkhard, B., Bhandari, S.P., Keenan, R.J.	2015	Ecosystem Services	100
The immersive visualization theater: A new tool for ecosystem assessment and landscape planning	Orenstein, D.E., Zimroni, H., Eizenberg, E.	2015	Computers, Environment and Urban Systems	24
A multi-criteria model for mapping ecosystem services in forested watersheds, southern Chile [Modelo de análisis espacial multicriterio (AEMC) para el mapeo de servicios ecosistémicos en cuencas forestales del sur de Chile]	Esse, C., Valdivia, P., Encina-Montoya, F., (...), Guerrero, M., Figueroa, D.	2014	Bosque	4

Title	Authors	Year of Publication	Journal	Citation
Analysis of governance systems applied in multifunctional forest management in selected European mountain regions	Sarvašová, Z., Cienciala, E., Beranová, J., (...), Ficko, A., Pardos, M.	2014	Forestry Journal	7
Engaging with peri-urban woodlands in england: The contribution to people's health and well-being and implications for future management	O'Brien, L., Morris, J., Stewart, A.	2014	International Journal of Environmental Research and Public Health	26
Ethno-ecological importance of plant biodiversity in mountain ecosystems with special emphasis on indicator species of a Himalayan Valley in the northern Pakistan	Khan, S.M., Page, S., Ahmad, H., Harper, D.	2014	Ecological Indicators	35
Identifying forest ecosystem services through socio-ecological bundles: A case study from northern Jordan	Al-Assaf, A., Nawash, O., Omari, M.	2014	International Journal of Sustainable Development and World Ecology	20
Incorporating cultural ecosystem services into forest management strategies for private landowners: An Illinois case study	Hendee, J.T., Flint, C.G.	2014	Forest Science	12
Landscape capacity for ecosystem services provision based on expert knowledge and public Perception (case study from the north-west Slovakia)	Bezák, P., Bezáková, M.	2014	Ekologia Bratislava	9
Linkages between landscapes and human well-being: An empirical exploration with short interviews	Bieling, C., Plieninger, T., Pirker, H., Vogl, C.R.	2014	Ecological Economics	96
Living close to forests enhances people's perception of ecosystem services in a forest-agricultural landscape of West Java, Indonesia	Muhamad, D., Okubo, S., Harashina, K., (...), Gunawan, B., Takeuchi, K.	2014	Ecosystem Services	84
Local ecosystem service use and assessment vary with socio-ecological conditions: A case of native coffee-forests in southwestern Ethiopia	Tadesse, G., Zavaleta, E., Shennan, C., Fitzsimmons, M.	2014	Human Ecology	26
Mapping and assessing multiple ecosystem services in an alpine region: A study in Trentino, Italy	Ferrari, M., Geneletti, D.	2014	Annali di Botanica	5
Prospects for forest-based ecosystem services in forest-coffee mosaics as forest loss continues in southwestern Ethiopia	Tadesse, G., Zavaleta, E., Shennan, C., FitzSimmons, M.	2014	Applied Geography	29

Title	Authors	Year of Publication	Journal	Citation
Using visual stimuli to explore the social perceptions of ecosystem services in cultural landscapes: The case of transhumance in Mediterranean Spain	López-Santiago, C.A., Oteros-Rozas, E., Martín-López, B., (...), Martín, E.G., González, J.A.	2014	Ecology and Society	74
A national approach for mapping and quantifying habitat-based biodiversity metrics across multiple spatial scales	Boykin, K.G., Kepner, W.G., Bradford, D.F., (...), Neale, A.C., Gergely, K.J.	2013	Ecological Indicators	26
Environmental Cognitions, Land Change and Social-Ecological Feedbacks: Local Case Studies of Forest Transition in Vietnam	Meyfroidt, P.	2013	Human Ecology	43
Human influence, regeneration, and conservation of the Gotjawal forests in Jeju Island, Korea	Kang, H.-G., Kim, C.-S., Kim, E.-S.	2013	Journal of Marine and Island Cultures	19
Perception and attitudes of local people concerning ecosystem services of culturally protected forests	Gao, H., Ouyang, Z., Zheng, H., Bluemling, B.	2013	Shengtai Xuebao/ Acta Ecologica Sinica	6
The socio-cultural importance of <i>Mauritia flexuosa</i> palm swamps (aguajales) and implications for multi-use management in two Maijuna communities of the Peruvian Amazon	Gilmore, M.P., Endress, B.A., Horn, C.M.	2013	Journal of Ethnobiology and Ethnomedicine	34
An analysis of the relationships between multiple values and physical landscapes at a regional scale using public participation GIS and landscape character classification	Brown, G., Brabyn, L.	2012	Landscape and Urban Planning	103
Compliance with sustainable forest management guidelines in three timber concessions in the Venezuelan Guayana: Analysis and implications	Vilanova, E., Ramírez-Angulo, H., Ramírez, G., Torres-Lezama, A.	2012	Forest Policy and Economics	6
A study of stakeholders' perspectives on multi-functional forests in Europe	Nijnik, M., Nijnik, A., Lundin, L., Staszewski, T., Postolache, C.	2010	Forests Trees and Livelihoods	15
Public participation GIS: A new method for use in national forest planning	Brown, G.G., Reed, P.	2009	Forest Science	133
A participatory investigation into multifunctional benefits of indigenous trees in West African savanna farmland	Stoate, C., Jarju, A.K.	2008	International Journal of Agricultural Sustainability	5
Social-ecological hotspots mapping: A spatial approach for identifying coupled social-ecological space	Alessa, L.(N.), Kliskey, A.(A.), Brown, G.	2008	Landscape and Urban Planning	259

Title	Authors	Year of Publication	Journal	Citation
The relationship between place attachment and landscape values: Toward mapping place attachment	Brown, G., Raymond, C.	2007	Applied Geography	448
The return of ecosystem goods and services in replanted mangrove forests: Perspectives from local communities in Kenya	Rönnbäck, P., Crona, B., Ingwall, L.	2007	Environmental Conservation	107
Understanding the interaction of rural people with ecosystems: A case study in a tropical dry forest of Mexico	Castillo, A., Magaña, A., Pujadas, A., Martínez, L., Godínez, C.	2005	Ecosystems	79
Validation of a forest values typology for use in national forest planning	Brown, G., Reed, P.	2000	Forest Science	174

Supplementary Material S3

Socio-cultural assessment methodology used in each study

[illegible]

Documents	Inter-views	Focus Group	Participatory Mapping	Survey	Online Survey	Participant Observation	Q Method	Photo Elicitation	Discourse Analysis	Free Listing	Social Media	Delphi	Workshop
Fagerholm et al., 2021			X										
Lin et al., 2021					X								
Miller et al., 2021	X		X										
Crivellaro et al., 2021	X			X									
Ciesielski and Stereńczak, 2021											X		
Grzyb et al., 2021											X		
Sansilvestri et al., 2021	X					X							X
Shipley et al., 2020		X										X	
Marta et al., 2020				X									
Ndayizeye et al., 2020		X											
Singh et al., 2020	X	X				X							
Baumeister et al., 2020			X										
Branca et al., 2020	X												
Blanco et al., 2020	X												
Zhang et al., 2020			X										
Vrbičanová et al., 2020			X										
Helmer et al., 2020			X										
Perevochtchikova and Sandoval-Romero, 2020			X	X									
García-Díez et al., 2020			X										
Rodríguez-Morales et al., 2020	X		X	X	X								
Osseni et al., 2020	X			X									
Jang-Hwan et al., 2020												X	
Constant and Taylor, 2020	X					X							
Bidegain et al., 2020	X			X				X					

[illegible]

[illegible]

[illegible]

[illegible]

Documents	Inter-views	Focus Group	Participatory Mapping	Survey	Online Survey	Participant Observation	Q Method	Photo Elicitation	Discourse Analysis	Free Listing	Social Media	Delphi	Workshop
Brown and Brabyn, 2012			X	X								X	
Vilanova et al., 2012				X									
Nijnik et al., 2010							X						
Brown and Reed, 2009			X										
Stoate and Jarju, 2008	X												
Alessa et al., 2008			X		X								
Brown and Raymond, 2007			X		X								
Rönnbäck et al., 2007	X												
Castillo et al., 2005	X					X							
Brown and Reed, 2000				X	X								

Supplementary Material S4

Type and number of stakeholders involved

Document	Stakeholders	Number of Participants
Baumeister et al., 2022	Local residents	755
Djagoun et al., 2022	Local residents	203
Lee and Youn, 2022	Village leaders'	38
Caglayan et al., 2021	University employees, General Directorate of Forestry, Non-governmental organizations (NGOs), Forestry research institutes, Media, Changers of agriculture, forest and landscape architects, Urban people, Municipalities	19
Blanco et al., 2021	Farmers	45
Kim and Son, 2021	Bloggers	1625
Ngaji et al., 2021	Community leaders and experts	50
Zhi-Ying and Yeo-Chang, 2021	Experts	30
Tovar-Tique et al., 2021	Community leaders, public officials and general local residents	369
Castillo et al., 2021	Local community, experts and government administrators	61
Chen and Akamine, 2021	Community leaders and knowledgeable senior residents	38
Kreye et al., 2021	Forest owners	14
Cifuentes-Espinosa et al., 2021	Community leaders, farmers	152
Reang et al., 2021	Farm owners	42
Coelho-Junior et al., 2021	Local population	75
Zhao et al., 2021	Users	3,019,644*
Ngo et al., 2021	Local people, healers and local government officers	25
Beckmann-Wübbelt et al., 2021	Locals	501
Breyne et al., 2021	General public	1516
Chanza and Musakwa, 2021	Indigenous	57
Leary et al., 2021	Farmers	29
Sieber et al., 2021	Governmental sector; private sector; non-governmental sector; academia	39

Document	Stakeholders	Number of Participants
Suarez et al., 2021	Local population (laypeople, academics, civil servants)	37
Fagerholm et al., 2021	Residents	730
Lin et al., 2021	Local residents	410
Miller et al., 2021	Forest-dependent communities	55
Crivellaro et al., 2021	Public administrations; environmental NGOs, tourism promoters, and private actors of forest-wood chain	47
Ciesielski and Stereńczak, 2021	Users	8821*
Grzyb et al., 2021	Users	17,118*
Sansilvestri et al., 2021	Industries/companies (economic actors), institutions/associations (political actors), and private forest owners (private/citizen actors)	52
Shipley et al., 2020	Leaders from key agricultural and conservation organizations across the Kaskaskia River Watershed, including tourism, economic development, and planning. Professions: Farming, Conservation, Tourism, Economic Development, Biology, Academia, Engineering, Media, Teacher	38
Marta et al., 2020	Public administrations (municipalities, forestry, and protected area offices and agencies); environmental NGOs; tourism sector (tourism offices, guides, and guesthouse owners); private forest-wood chain actors (forest owners' associations, sawmills, and carpentries)	47
Ndayizeye et al., 2020	Indigenous rural population	187
Singh et al., 2020	Women of tribal communities	75
Baumeister et al., 2020	Locals	3354
Branca et al., 2020	Policy-makers, managers, sociocultural groups (cultural, environmental, leisure and recreational associations)	23
Blanco et al., 2020	Farmers	19
Zhang et al., 2020	Local stakeholders' (farmers, government managers/experts, and company employees)	105
Vrbičanová et al., 2020	Municipal mayors and their deputies, scientists working in national parks and the directors of regional tourism organizations	49
Helmer et al., 2020	Individuals that were familiar with the landscape, utilized the region for recreation, had a connection to the area, or had an interest in forest and range-lands management	612
Perevochtchikova and Sandoval-Romero, 2020	Local population	23
García-Díez et al., 2020	General public living in the Madrid region	580
Rodríguez-Morales et al., 2020	(i) "Locals": inhabitants of the parishes owning the FCs, i.e. owners of the FCs; (ii) "neighbours": neighbours of the municipalities surrounding the SEU except the densely populated municipality of A Coruña, whose inhabitants were qualified as (iii) "urban"; and (iv) "others": visitors from elsewhere.	244

Document	Stakeholders	Number of Participants
Osseni et al., 2020	Local residents	164
Jang-Hwan et al., 2020	Professionals and government officials in the fields of forestry, landscape architecture, and urban planning	15
Constant and Taylor, 2020	Indigenous rural population	30
Bidegain et al., 2020	Local population (farmer, fisherman, public servant, private sector, self-employed, retired, student, housewife)	422
Bhatta et al., 2020	District Forest Officer of Jumla district, the rangers of Rara National Park, members of the Rara National Park buffer zone management committee and community forest user groups, the customary village chief (Mukhiya) of each of the study villages, representatives from the mothers' groups (Ama Samuha), school teachers, senior citizens, and herders	69
Włodarczyk-Marciniak et al., 2020	Farmers	540
Escobedo et al., 2020	Local residents	51
Martín-Forés et al., 2020	Conservation, agriculture, forestry, tourism, government agencies, local populations and other stakeholders.	40
Schneider et al., 2020	Foresters (municipal administration with forestry expertise and professional forest managers), representatives of nature conservation authorities (NCAs) and members of environmental NGOs AND 'others', which includes academic and research institutions, landscape engineers (environmental planners) and local municipal administration (i.e. municipalities)	53
Pullanikkatil et al., 2020	Forest/woodland, urban, peri-urban, agricultural farms, subsistence farms and lakeshore residents	154
Ge et al., 2020	Experts	30
Ciftcioglu, 2020	Local population	96
Alpuche-Álvarez et al., 2019	Locals	60
Berneti et al., 2019	Users	65,418*
Schirpke et al., 2019	Local people, visitors	967
Delgado-Aguilar et al., 2019	Members of local communities	208
Vaz et al., 2019	Users	1748*
Hong and Saizen, 2019	Locals, experts	190
Feurer et al., 2019	Local population	43
Acharya et al., 2019	Local population, regional managers, national experts	165
Teixeira et al., 2019	Farmers; residents and tourists	1645

Document	Stakeholders	Number of Participants
Lhoest et al., 2019	Indigenous rural population	225
Tew et al., 2019	Local residents, people with specialist interests or hobbies (such as natural history, walking, mountain biking), forest visitors, and people who work in the forest	172
Cuni-Sanchez et al., 2019a	Indigenous rural population	150
Lagbas, 2019	University students	684
Dorji et al., 2019	Local communities, farmers and village heads; and forest experts, local foresters and senior forestry officials of the forest department who deal with conservation ecology and the management of old-growth oak forests	84
Cuni-Sanchez et al., 2019b	Indigenous rural population	120
Robson et al., 2019	Local residents	571
do Rosário et al., 2019	Associations, Policy makers, Academia, Other entities, Owners/managers, Enterprises, Rural workers, Environmental NGO's	67
Goodwin et al., 2019	Primary school students	403
Raum, 2018	Governmental organisations; membership organisations (production)/membership organisations (conservation); corporates/businesses; private forest owners; local people/the public	-
Armatas et al., 2018	Natural resource managers, planners, and scientists, ranchers, nature-based tourist operators, non-governmental organization representatives	96
Filyushkina et al., 2018	Researchers	6
Paudyal et al., 2018	Farmers, local business owners, job holders and social workers	60
Janeczko et al., 2018	Runners	640
Bremer et al., 2018	Local community	13
Hough et al., 2018	Representatives from governmental agencies (such as the US Geological Survey, the Bureau of Land Management, and Arizona State Land Department), non-governmental organizations (such as The Nature Conservancy and the Audubon Society), Fort Huachuca (a nearby military base), and local towns (such as Sierra Vista, Bisbee, and Tombstone)	27
Mastrangelo, 2018	Farmers	36
Agwu et al., 2018	Farmers	60
Mero-Dowo et al., 2018	Communal areas residents and farmers	280
Adnan, 2018	Users	-
Ko and Son, 2018	Local residents	240

Document	Stakeholders	Number of Participants
Chen et al., 2018	Local residents	1003
De Meo et al., 2018	(a) Key stakeholders: the main actors in terms of social role and power, and who actively participate in the decision-making process; (b) Primary stakeholders: the beneficiaries of the FLMP, who are only partially involved in the decision-making process	362
Janeczko et al., 2018	Local runners	346
Melnikovych et al., 2018	i) Forest related business representatives; ii) forestry specialists; and iii) local community representatives	450
Tauro et al., 2018	Cattle ranchers	27
Brown et al., 2018	Local land owners	7
Delgado-Aguilar et al., 2017	Members of local communities	208
Mul et al., 2017	Local community	105
Mensah et al., 2017	Local population - heads of households	86
Wan et al., 2017	Forest companies' external experts	20
Ricaurte et al., 2017	Experts	58
Wang et al., 2017	Locals	712
Zahvoyska et al., 2017	Scientists and forestry enterprise employees	-
Queiroz et al., 2017	Fishermen	80
Caballero-Serrano et al., 2017	Local population -parishioners and municipal decision-makers, farmers, homemakers, educators, and local people in general	142
Graves et al., 2017	Public forest visitors	293
Garrido et al., 2017	Stake holders local and regional level; Civilian (Naturalist, Environmental NGO); Private (Landowners, Farm managers, Butcher, Beekeeper, Chief hunter, Nature guide, Farmers association, Forestry company); Public (Municipal Officials, Road Information Centre driven, Official CAP, Wildlife Care Centre, National Park Officer, Regional Officials); Public (Municipal Officials, National Park Officer, Regional Officials)	34
Schmidt et al., 2017	visitors and local population (Pre-identification of services - Consultative Forum including members of regional park management, Councils, private landowners and other stakeholders)	563
Smith and Ram, 2017	Visitors	876
Fagerholm et al., 2016	Local residents	219
Lupp et al., 2016	Visitors	102
Fraser et al., 2016	Locals	64

Document	Stakeholders	Number of Participants
Cuni-Sanchez et al., 2016	Local population	270
Zoderer et al., 2016	Tourists	470
Nijnik et al., 2016	i) Forestry-related decision-makers, first of all the Forestry Commission, and forest owners and managers; (ii) local people such as the primary forest users; (iii) forest and environmental NGOs; (iv) forest-based industries, and (v) scientific experts in forestry and in ecosystem services of trees	182
Briceño et al., 2016	Researchers and relevant social actors in the use, conservation and management of the REA (representing local governments, central government, neighbourhood and communal presidents, presidents of agricultural and artisan associations, and school teachers) and local people	112
Sténs et al., 2016	Conservation; Hunting and fishing; Tourism and recreation; Sami livelihoods; Biomass and bio-energy; Rural development; Cultural heritage	25
Dupras et al., 2016	Quebec-based experts in ES science familiar with forests and trees located in the urban and rural areas	16
Nahuelhual et al., 2016	planners from CONAF, the regional office of the National Tourism Service (SERNATUR), the municipality tourism office, the Regional Government of Los Ríos Region, and Panguipulli Model Forest; researchers from the Center for Transdisciplinary Environmental Studies and Sustainable Human Development (CEAM) of University Austral de Chile; community representatives from the Panguipulli Environmental Coalition, the Coz-Coz Indigenous Parliament, Puhuincul Community Tourism Association, and the Liquiñe's Association of Ecotourism and Guides	14
Ramirez-Gomez et al., 2016	Community members from the five indigenous villages	119
Pastorella et al., 2016	Public administrations, non-governmental associations-organisations, academia and research institutes, professional associations of the forestry-wood-energy chain	71
Maestre-Andrés et al., 2016	Visitors	200
Sonter et al., 2016	In-state and out-of-state visitors	-
Martínez-Pastur et al., 2016	Local people and visitors	-
Zank et al., 2016	Local residents	181
van Oort et al., 2015	Managers and local decision makers'; locals; researchers	607
Peters et al., 2015	Nature conservation associations; timber industries and associations, timber users, energy wood users; ministries (including forest administration); associations of forest owners, forest enterprises, foresters; scientific institutions, researchers; tourism enterprises and associations	103
Cotee-Jones and Whitaker, 2015	Villagers	12
Thiagarajah et al., 2015	General public and visitors	283
Hohenthal et al., 2015	Experts from agriculture; conservation; fish farming; forests; tree nurseries; water; government departments and agencies; provincial administration; community-based organizations (CBOs); non-governmental organizations (NGOs); companies; scientific expert	99

Document	Stakeholders	Number of Participants
Zank et al., 2015	Local health experts	66
Ramírez and Ibarra, 2015	Locals	195
Paudyal et al., 2015	Local community members and experts	110
Orenstein et al., 2015	University students, researchers and practitioners from the fields of landscape architecture, architecture, urban planning, ecology, and archeology, land use managers, high school students (including a group from a scouting organization), and residents of the communities in and around the Carmel Foest, including jewish and druze participants	74
Esse et al., 2014	Ministry of Environment (MMA), National Forestry Corporation (CONAF), National Fishing Service (SERNAPESCA), Ministry of Health (SEREMI SALUD), Non-Governmental Organisations (NGOs), Municipal Offices, Tourism Organisations	25
Sarvašová et al., 2014	Forest managers; land and/or forest owners; representatives of forest authorities; other type of stakeholders	27
O'Brien et al., 2014	Nordic walkers group; deaf group; green gym group (environmental volunteering); morning mixed age and gender group; afternoon mixed age and gender group; jeskyns wood volunteer group. The visit took place at shorne woods not jeskyns wood.	49
Khan et al., 2014	Indigenous people	120
Al-Assaf et al., 2014	Locals	300
Hendee and Flint, 2014	Private forest landowners	32
Bezák and Bezáková, 2014	Expertos y de los residentes locales	131
Bieling et al., 2014	Residents of the study sites, visitors, and farmers	262
Muhamad et al., 2014	Rural people	138
Tadesse et al., 2014	Major indigenous groups and recent settlers	230
Ferrari and Geneletti, 2014	Experts from local administrative offices and research institutes	51
Tadesse et al., 2014	Local residents	105
López-Santiago et al., 2014	Locals and non-locals	314
Boykin et al., 2013	Federal and state agencies and nongovernmental organization	-
Meyfroidt, 2013	Locals	37
Kang et al., 2013	Residents	-
Gao et al., 2013	Local residents	152
Gilmore et al., 2013	Community leaders and cultural specialists	36

Document	Stakeholders	Number of Participants
Brown and Brabyn, 2012	General public	608
Vilanova et al., 2012	Local communities (both indigenous and native groups) living within the area and workers and managers of the timber companies	44
Nijnik et al., 2010	Forestry, land use, nature conservation, and environmental issues (both academics and practitioners)	66
Brown and Reed, 2009	Visitors	579
Stoate and Jarju, 2008	Farmers	29
Alessa et al., 2008	Residents	531
Brown and Raymond, 2007	Locals and visitors	2100
Rönnbäck et al., 2007	Resource users (PLUS two licensees, one ranger, two researchers and the Kwale District Forestry Officer)	48
Castillo et al., 2005	Local people	150
Brown and Reed, 2000	General public	2766

*resources extracted from online media (photos, posts, keywords, etc.)

Supplementary Material S5

Ecosystem service category valuated by document

Documents	Provisioning	Regulating	Cultural	Supporting
Baumeister et al., 2022			X	
Djagoun et al., 2022	X	X	X	X
Lee and Youn, 2022	X	X	X	
Caglayan et al., 2021	X	X	X	
Blanco et al., 2021	X	X	X	
Kim and Son, 2021			X	
Ngaji et al., 2021		X	X	
Zhi-Ying and Yeo-Chang, 2021	X	X	X	
Tovar-Tique et al., 2021	X	X	X	
Castillo et al., 2021	X	X	X	
Chen and Akamine, 2021	X	X	X	X
Kreye et al., 2021	X	X		
Cifuentes-Espinosa et al., 2021	X	X	X	X
Reang et al., 2021	X	X	X	X
Coelho-Junior et al., 2021	X	X	X	X
Zhao et al., 2021			X	
Ngo et al., 2021			X	
Beckmann-Wübbelt et al., 2021			X	
Breyne et al., 2021			X	
Chanza and Musakwa, 2021	X	X	X	
Leary et al., 2021	X	X	X	X
Sieber et al., 2021	X	X	X	
Suarez et al., 2021		X		
Fagerholm et al., 2021			X	
Lin et al., 2021	X	X	X	
Miller et al., 2021	X			
Crivellaro et al., 2021	X	X	X	X
Ciesielski and Stereńczak, 2021			X	
Grzyb et al., 2021			X	
Sansilvestri et al., 2021	X	X	X	X
Shipley et al., 2020	X		X	X
Marta et al., 2020	X	X	X	X
Ndayizeye et al., 2020	X	X	X	X
Singh et al., 2020	X		X	
Baumeister et al., 2020			X	
Branca et al., 2020			X	
Blanco et al., 2020	X	X	X	
Zhang et al., 2020	X	X	X	
Vrbičanová et al., 2020			X	

Documents	Provisioning	Regulating	Cultural	Supporting
Helmer et al., 2020			X	
Perevochtchikova and Sandoval-Romero, 2020		X		
García-Díez et al., 2020			X	
Rodríguez-Morales et al., 2020	X	X	X	
Osseni et al., 2020	X	X	X	
Jang-Hwan et al., 2020	X	X	X	
Constant and Taylor, 2020	X	X	X	
Bidegain et al., 2020	X	X	X	
Bhatta et al., 2020	X		X	
Włodarczyk-Marciniak et al., 2020	X	X	X	
Escobedo et al., 2020		X	X	
Martín-Forés et al., 2020			X	
Schneider et al., 2020	X		X	X
Pullanikkatil et al., 2020	X			
Ge et al., 2020		X	X	X
Ciftcioglu, 2020	X	X	X	
Alpuche-Álvarez et al., 2019	X	X	X	
Bernetti et al., 2019			X	
Schirpke et al., 2019			X	
Delgado-Aguilar et al., 2019	X		X	
Vaz et al., 2019			X	
Hong and Saizen, 2019	X		X	
Feurer et al., 2019	X	X	X	
Acharya et al., 2019	X	X	X	
Teixeira et al., 2019	X	X	X	
Lhoest et al., 2019	X	X	X	
Tew et al., 2019			X	
Cuni-Sanchez et al., 2019a	X	X	X	X
Lagbas, 2019		X	X	
Dorji et al., 2019	X	X	X	X
Cuni-Sanchez et al., 2019b	X	X	X	
Robson et al., 2019	X	X	X	
do Rosário et al., 2019	X	X	X	
Goodwin et al., 2019			X	
Raum, 2018	X	X	X	
Armatas et al., 2018	X	X	X	
Filyushkina et al., 2018				X
Paudyal et al., 2018	X	X	X	X

Documents	Provisioning	Regulating	Cultural	Supporting
Janeczko et al., 2018			X	
Bremer et al., 2018			X	
Hough et al., 2018		X	X	X
Mastrangelo, 2018	X	X		
Agwu et al., 2018	X		X	
Mero-Dowo et al., 2018	X			
Adnan, 2018			X	
Ko and Son, 2018			X	
Chen et al., 2018		X	X	
De Meo et al., 2018	X	X	X	
Janeczko et al., 2018			X	
Melnykovich et al., 2018	X	X	X	X
Tauro et al., 2018	X	X	X	X
Brown et al., 2018		X	X	
Delgado-Aguilar et al., 2017	X		X	
Mul et al., 2017	X			X
Mensah et al., 2017	X	X	X	X
Wan et al., 2017	X	X		
Ricaurte et al., 2017	X	X	X	
Wang et al., 2017	X	X	X	
Zahvoyska et al., 2017	X	X	X	
Queiroz et al., 2017	X	X	X	X
Caballero-Serrano et al., 2017	X	X	X	
Graves et al., 2017			X	
Garrido et al., 2017	X	X	X	X
Schmidt et al., 2017	X	X	X	
Smith and Ram, 2017			X	
Fagerholm et al., 2016	X	X	X	X
Lupp et al., 2016			X	
Fraser et al., 2016		X		
Cuni-Sanchez et al., 2016	X	X	X	X
Zoderer et al., 2016	X	X	X	
Nijnik et al., 2016	X	X	X	X
Briceño et al., 2016	X	X	X	
Sténs et al., 2016	X	X	X	
Dupras et al., 2016	X	X	X	X
Nahuelhual et al., 2016			X	
Ramirez-Gomez et al., 2016	X		X	
Pastorella et al., 2016	X	X	X	X
Maestre-Andrés et al., 2016	X	X	X	X

Documents	Provisioning	Regulating	Cultural	Supporting
Sonter et al., 2016			X	
Martínez-Pastur et al., 2016			X	
Zank et al., 2016	X	X	X	
van Oort et al., 2015	X			
Peters et al., 2015	X	X	X	X
Cotee-Jones and Whitaker, 2015	X	X	X	
Thiagarajah et al., 2015			X	
Hohenthal et al., 2015	X	X		
Zank et al., 2015	X		X	
Ramírez and Ibarra, 2015	X	X	X	X
Paudyal et al., 2015	X	X	X	X
Orenstein et al., 2015			X	
Esse et al., 2014	X	X	X	
Sarvašová et al., 2014	X	X	X	
O'Brien et al., 2014			X	
Khan et al., 2014	X	X	X	
Al-Assaf et al., 2014	X	X	X	
Hendee and Flint, 2014			X	
Bezák and Bezáková, 2014	X	X	X	X
Bieling et al., 2014	X	X	X	
Muhamad et al., 2014	X	X	X	X
Tadesse et al., 2014	X	X	X	X
Ferrari and Geneletti, 2014	X	X	X	
Tadesse et al., 2014	X	X	X	
López-Santiago et al., 2014	X	X	X	
Boykin et al., 2013		X		
Meyfroidt, 2013	X	X	X	
Kang et al., 2013	X	X	X	
Gao et al., 2013	X	X	X	
Gilmore et al., 2013	X			
Brown and Brabyn, 2012			X	
Vilanova et al., 2012	X	X	X	
Nijnik et al., 2010	X	X	X	
Brown and Reed, 2009			X	
Stoate and Jarju, 2008	X		X	
Alessa et al., 2008			X	
Brown and Raymond, 2007			X	
Rönnbäck et al., 2007	X	X	X	
Castillo et al., 2005	X	X	X	
Brown and Reed, 2000			X	

Supplementary Material S6

Ecosystem service valuated by category

Service Category	Services Valuated
PROVISIONING	Food Production; Means Of Livelihood; Place to Live; Genetic Materials/Pool; Grazing; Livestock/Aquaculture; Honey; Seed Provisioning; Materials (NWFP); Wild Plants/Animals; Shade; Timber; Fruit; Energy; Firewood/Fuelwood; Fodder; Medicinal Plants; Thermal (Medicinal) Waters; Feed and Habitat for Domestic Animals; Shelter; Water Provision; Mascot Provision and Maintenance.
REGULATING	Water Protection/Purification/Regulation/Quality; Climate Change Mitigation; Hazard Protection; Disease Control; Erosion Control/Protection; Air Purification/Quality; Shelter Effect for Farmed Animals; Climate Regulation (Micro-Global); Pollination; Seed Dispersal; Carbon Storage/Sequestration; Soil Protection; Soil Fertility; Soil Moisture Maintenance; Physical Soil Decomposition; Habitat for Biodiversity; Decomposition of Plant Residues; Biodiversity/Maintenance of Local Flora and Fauna; Bioremediation; Biological Control.
CULTURAL	Recreation/Ecotourism; Economic Support/Income Generation; Rural Development; Spiritual/Religious; Hunting/Fishing; Cultural Identity/Cultural Heritage; Local Knowledge; Existence; Landscape Conservation; Aesthetic; Self Knowledge/Identity; Health; Relax; Hiking, Walking, Sporting; Sense Of Place; Silence; Education/Inspiration; Harvesting; Scientific; Social Relationship; Symbolic/Mythical; Experimental; Body, Mind and Spirit Connection; Subsistence Values; Legacy/Bequest; Enhancing Natural Capital; Happiness/Enjoyment; Ecological Values
SUPPORTING	Habitat Provisioning/Protection; Lifecycle Maintenance; Soil Formation; Biodiversity; Maintenance Of Nursery Population And Habitat; Primary Production; Photosynthesis; Nutrients Cycling; Disease Control; Conectivity; Rain Flow/Interaction