Evaluación de los Servicios de los Ecosistemas de Euskadi

9. Impulsar estudios en la Reserva de la Biosfera de Urdaibai

Universidad del País Vasco · Euskal Herriko Unibertsitatea

Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura · Hezkuntza, Zientzia eta Kulturarako Nazio Batuen Erakundea

Garapen Iraunkorra eta Ingurumen Hezkuntzari buruzko UPV/EHUko UNESCO Katedra · Cátedra UNESCO sobre Desarrollo Sostenible y Educación Ambiental de la UPV/EHU

9. RESERVA DE LA BIOSFERA DE URDAIBAI

Onaindia, M, Ballesteros, F., Alonso, G., Monge-Ganuzas, M., Peña, L. 2013. **Participatory process to prioritize actions for a sustainable management in a biosphere reserve.** Environmental Science & Policy 33: 283-294.

Table 1 – Development of the full participation and evaluation process for proposed actions for the renewal of the Plan of Management.

Steps	Activities	Actor involved	Time
Preparatory phase	Planning. Definition of the objectives	Biosphere reserve's technicians and university researchers	December 2010
Phase 1	Presentation and discussion of the objectives and protocol	Key stakeholders, politicians	March 2011
Phase 2	Development of workshops and proposals for action	Key stakeholders	April, May, June, July 2011 (6 h each)
Phase 3	Presentation of results to decision makers	Key stakeholders. Politicians	September 2011
Phase 4	Evaluation the potential results of applied proposed actions. Documents	Biosphere reserve's technicians and university researchers	January 2012–June 2012
Follow-up phase	Development of a new rule to renew the Plan of Management	Biosphere reserve's decision makers	End of 2013

Table 2 – Properties of the Biosphere Reserve defined in the Plan of Management (Alonso-Campos, 2003).

Properties	Evaluation criteria
Natural	Presence of species and habitats of scientific interest
Ecological	Maturity and complexity of the ecosystem: biogeochemical balance, risk of erosion, fragility
Scenic	Landscape value: heterogeneity, topographic features, presence of water, and presence of the native landscape
Recreational	Potential for leisure activities and outdoor recreation
Cultural	Historical and artistic heritage, educational and didactic potential of ecosystems, and presence of traditional agrarian cultures
Productive	The potential for food extraction

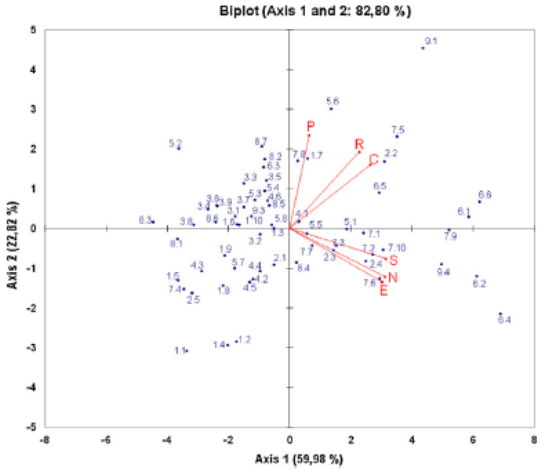


Fig. 1 – Distribution of the actions in the plan along axes 1 and 2 of the PCA, grouped according to the area. ((1) Estuary, coastline and river banks. (2) Green oak woodlands. (3) Archaeological interest. (4) Scenic interest. (5) Agricultural interest. (6) Forestry interest. (7) Rural population. (8) Common rural land. (9) Urban–rural systems). Properties of the area: N = naturalistic, E = ecological, Pa = scenic, R = recreational, C = cultural and P = productive. Proposal codes like appendix A. Proposal 9.5 contributes most positively to axis 1, and proposal 9.2 contributes the most negatively. These two proposals were eliminated from the graph to achieve a better dispersion of variables.

Table 5 – The 10 proposals which most contribute to improving the natural, environmental and scenic properties (axis 1) and those which most contribute to improving the productive, cultural and recreational properties (axis 2).

Axis 1	Proponed actions	Axis 2	Proponed actions
9.5	Adopt a holistic approach and integrate environmental factors into urban development	9.1	Consolidate cultural infrastructures and facilities for active tourism
6.4	Avoid timber extraction techniques that use heavy machinery, clearfelling or linear subsoiling on slopes of over 30%; optimize tracks and avoid uncontrolled logging routes	5.6	Promote synergies between the tourist industry and the agricultural sector
6.6	Develop an Agroforestry Plan that lays the groundwork for developing the Territorial Action Plan and the sector-based plan for woodland areas	7.5	Encourage tourist and recreational activities in rural towns or villages with scenic attractions
6.2	Obey the distances established for forest plantations to ensure the protection of river courses	8.7	Use tourism as a means to ensure rural development and bring about the economic diversification of the primary sector
6.1	Ensure that forest plantation profits are compatible with the multiple functions of forest ecosystems	5.2	Develop transport and cultural infrastructures in rural areas
7.9	Facilitate pedestrian transport and the use of bicycles by means of a slow mobility strategy	1.7	Develop an Plan for environmental research and environmental education
9.4	Instead of creating new industrial areas to implement new economic activities, use the space in the Gernika industrial area	8.2	Foster social relations in rural areas and reduce residents' need to travel: care centres for the elderly, leisure activities, country guesthouses, restaurants
9.1	Consolidate cultural infrastructure and facilities for active tourism	7.8	Develop a programme of leisure activities for residents and holiday residents
7.5	Encourage tourist and recreational activities in rural towns or villages with scenic attractions	2.2	Forestry subsidies should prioritize regeneration actions, and payment for environmental services, and compensatory measures for owners
2.2	Forestry subsidies should prioritize regeneration actions, and payment for environmental services, and compensatory measures for owners	6.3	Speed up administrative processes for fostering the use of wood in construction

9. RESERVA DE LA BIOSFERA DE URDAIBAI

Peña, L., Monge-Ganuzas, M., Onaindia, M., Fernández de Manuel, B., Mendia, M., 2017. **A Holistic approach including biological and geological criteria for integrative management in protected areas**. Environmental Management, 59 (2): 325-337.

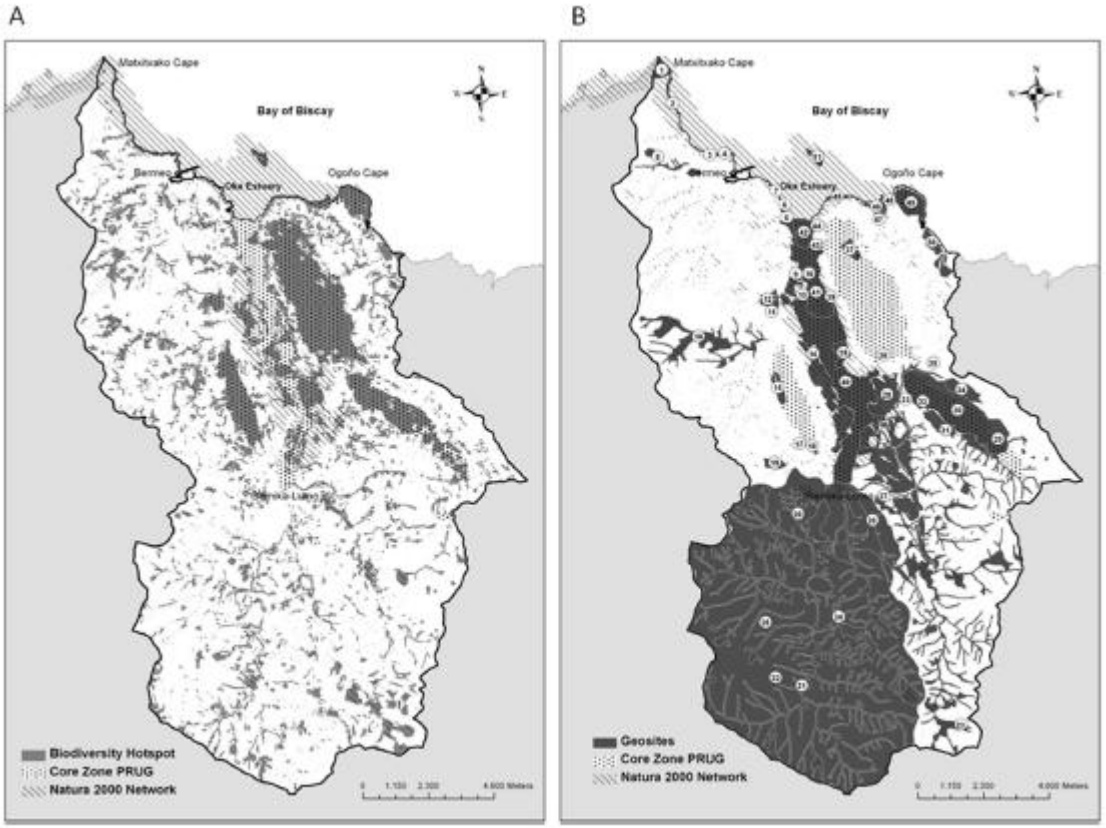
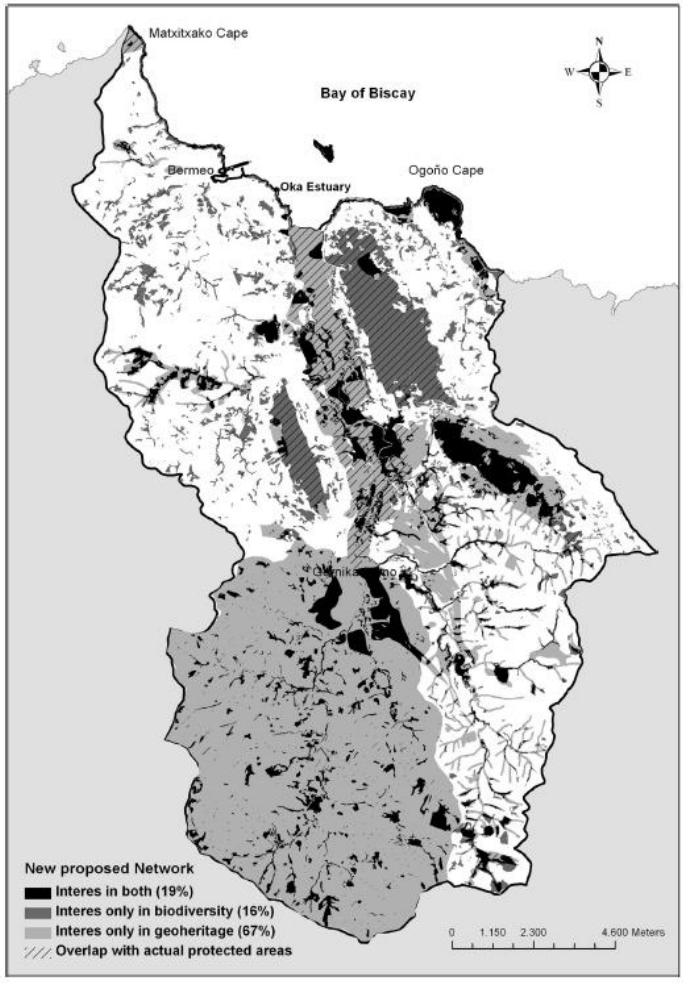


Fig. 2 a Biodiversity hotspots of UBR. b Geosites of UBR (their identification appears in Table 2)

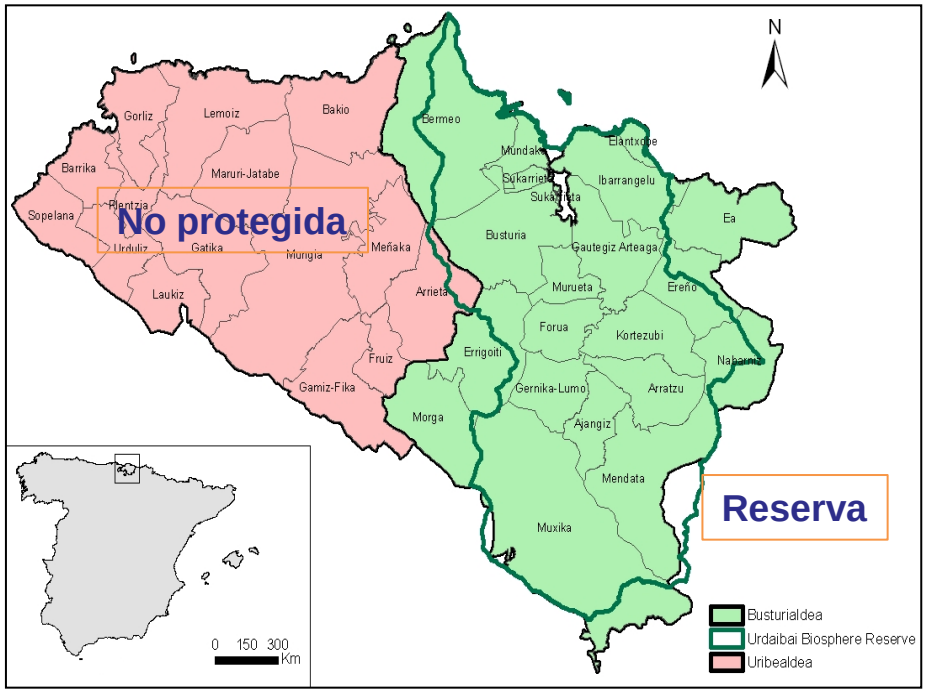


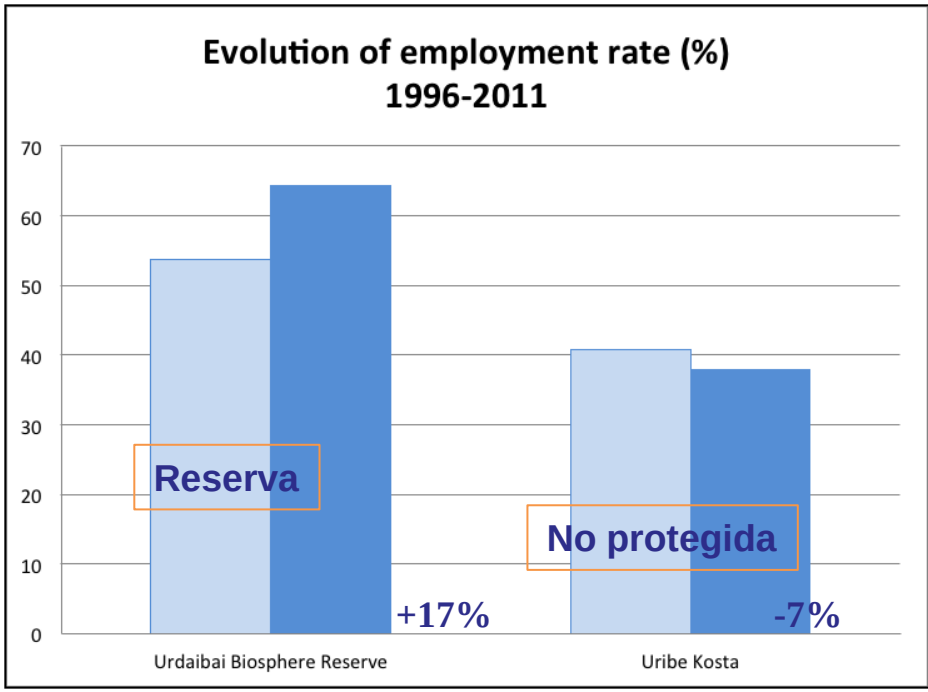
. 3 Proposed network for integrative nature conservation

9. RESERVA DE LA BIOSFERA DE URDAIBAI

Castillo-Eguskitza, N., Rescia, A . J., Onaindia , M. 2017. ***Urdaibai Biosphere Reserve (Biscay, Spain): Conservation against development?*** *Science of the Total Environment 592. p. 124–133*

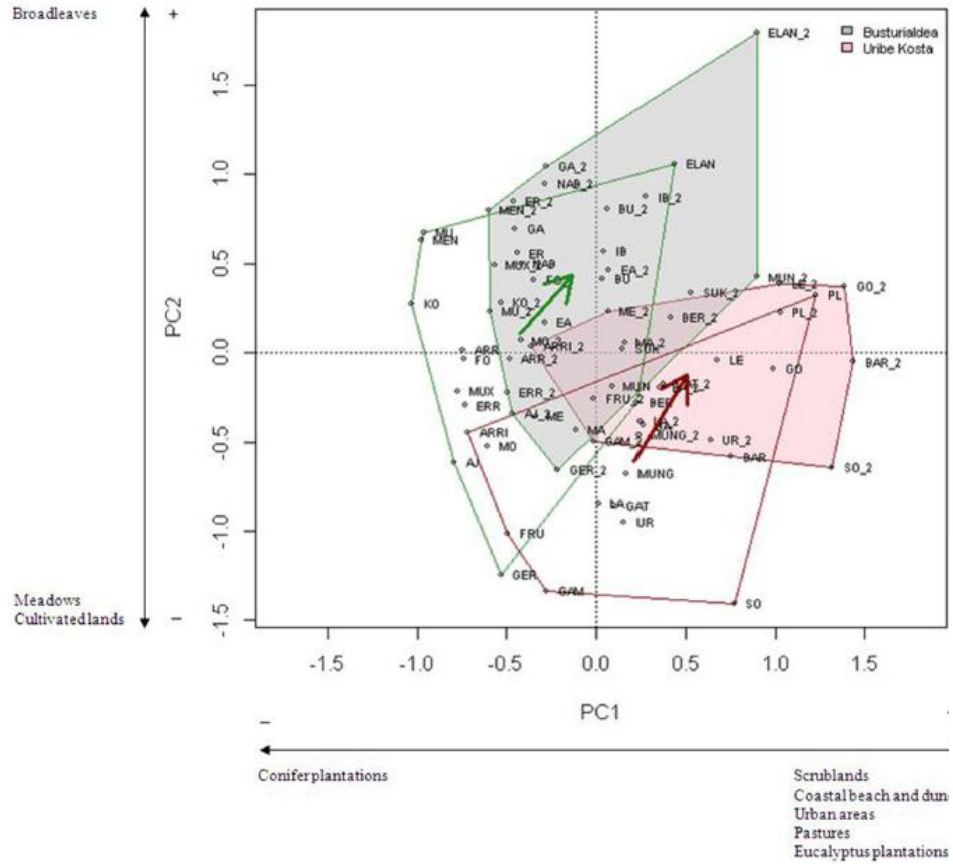
Comparación de dos socio-ecosistemas similares: protegido y no protegido





Evolución positiva de indicadores socio-económicos en la RBU

9. RESERVA DE LA BIOSFERA DE URDAIBAI



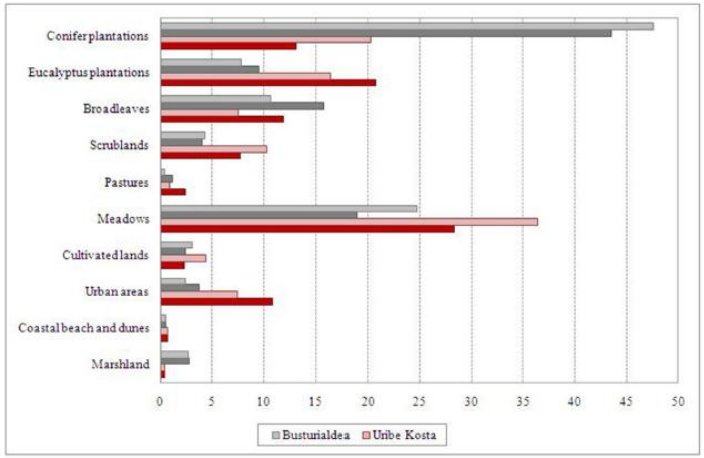
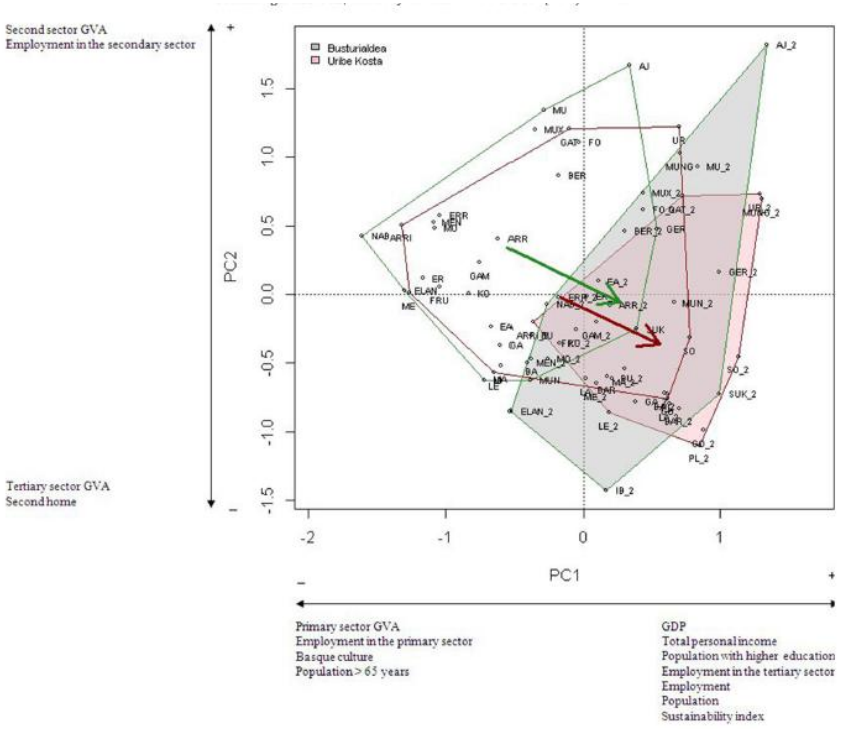
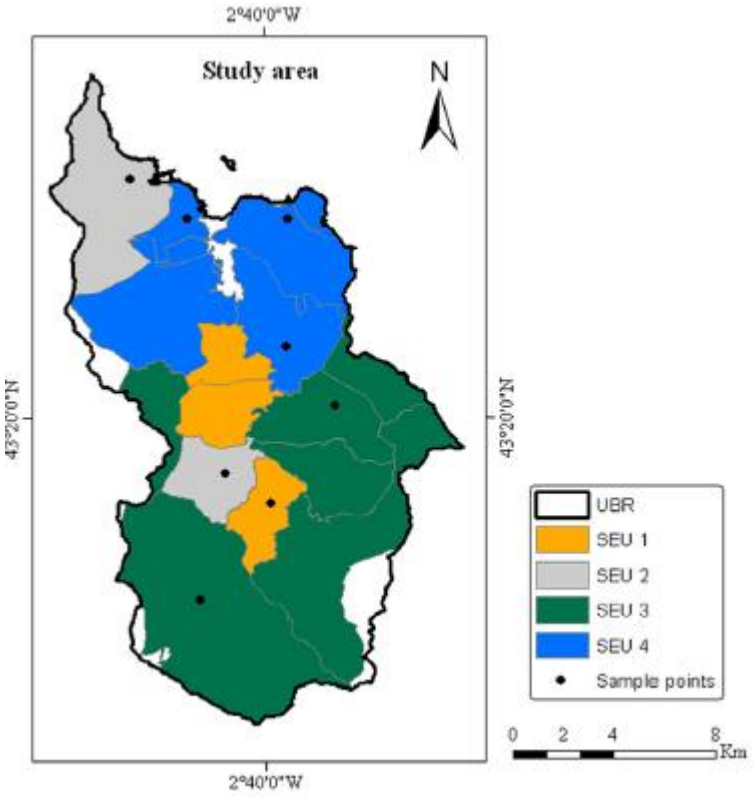


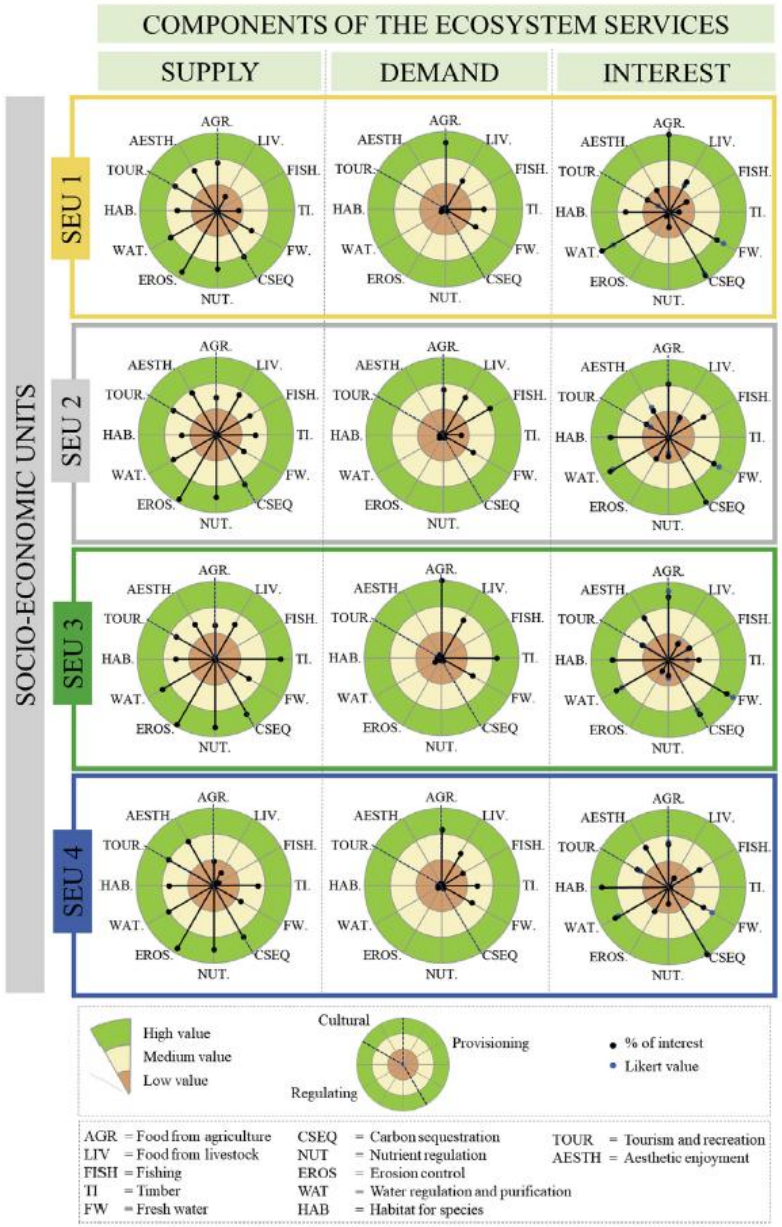
Fig. 3. Total area (%) of the land uses of Busturialdea and Uribe Kosta from the past to the present (higher colour intensities refers to the area of land uses in the present).



9. RESERVA DE LA BIOSFERA DE URDAIBAI

Nekane Castillo-Eguskitza, Berta Martín-López, Miren Onaindia. 2018. ***A comprehensive assessment of ecosystem services: Integrating supply, demand and interest in the Urdaibai Biosphere Rserve.*** Ecological Indicators 93, 1176-1189.





9. RESERVA DE LA BIOSFERA DE URDAIBAI

PLAN PARA LA INTERPRETACIÓN, INVESTIGACIÓN, CAPACITACIÓN Y EDUCACIÓN PARA EL DESARROLLO SOSTENIBLE EN LA RESERVA DE LA BIOSFERA DE URDAIBAI (PICE)

Urdaibai MaB
Biosfera Erreserba
Reserva de la Biosfera

PICE
IGHP

Congreso de investigación de Urdaibai

13-15 de noviembre del 2019

Base de datos de investigaciones científicas

- Bases de datos consultadas: Web of Knowledge, Dialnet, Scopus, Google, etc.
- Campos :Título, revista, fecha de publicación, etc.
- Actualización periódica: **472 referencias** (1920-2017) recopiladas en Mendeley
- Integración en la base de datos del GV

Mapa de la ubicación de los agentes investigadores en Urdaibai

9. RESERVA DE LA BIOSFERA DE URDAIBAI

PROYECTO EUROPEO ERASMUS+ : CITIZEN SCIENCE FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT (CS4ESD). CIENCIA CIUDADANA PARA LA EDUCACIÓN PARA EL DESARROLLO SOSTENIBLE

Objetivos:

- Desarrollar materiales para la educación relacionada con la sostenibilidad y los ODS
- Herramienta de difusión basada en las TIC (Tecnologías de la Información y Comunicación). Se pretende proporcionar formas innovadoras de educar sobre los ODS que utilizan tecnologías basadas en la utilización de aplicaciones, principalmente para páginas web y teléfonos móviles.

Duración: 2018-2021 (3 años)

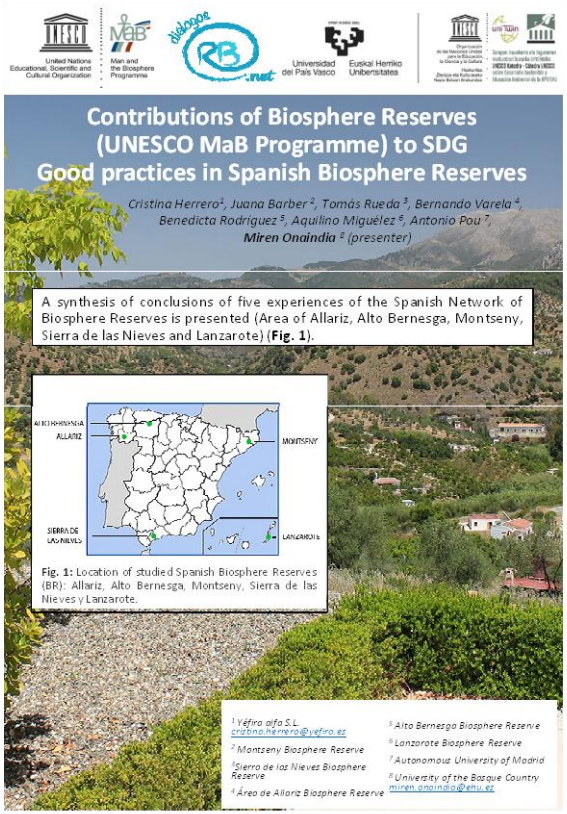
Participantes:

- County council of the city and county of Cardiff
- Universidad del País Vasco (UPV/EHU)
- Panepisitmio Patron- University of Patras

9. RESERVA DE LA BIOSFERA DE URDAIBAI

LA APORTACIÓN DE LAS RESERVAS DE BIOSFERA A LOS ODS

Desde OAPN se ha encargado al Consejo Científico (CC) de MaB la elaboración de un informe sobre "*La aportación de las Reservas de Biosfera a los ODS*", que será coordinado por la Cátedra (Miren Onaindia como miembro del CC) y se desarrollará durante 2019:



Montseny, Ordesa-Viñamala, Urdaibai, Mariñas Coruñesas, Allariz, Alto Bernesga, Bárdenas, El Rincón, Sierra de las Nieves, Menorca, Lanzarote.