EduBioMed

CAPACITY BUILDING FOR EDUCATION AND APPLIED RESEARCH IN MEDITERRANEAN UNESCO'S BIOSPHERE RESERVES

REPORT FROM TASK 1.1
Surveys inside Partner Universities

Editors
Editors

Editors

Roser Maneja, Autonomous University of Barcelona
Louis Lemkow, Autonomous University of Barcelona
Antonio Bontempi, Autonomous University of Barcelona
Angela Barthes, Aix-Marseille University
Jean-Marc Lange, Aix-Marseille University
Salma Talhouk, American University of Beirut
Magda Bou Dagher Kharrat, Université Saint Joseph Beirut
Eliane Bou Dagher Kharrat, Université Saint Joseph Beirut
Said Boujrouf, Université Cadi Ayyad Marrakech
Khalid Berrada, Université Cadi Ayyad Marrakech
Yamina el Kirat, Université Mohamed V Rabat

About EduBioMed

The project aims to strengthen, ameliorate and upgrade academic activity at four Moroccan and Lebanese Higher Education Institutions (HEIs) in the context of Mediterranean Biosphere Reserves (BRs), in collaboration and through networking with BRs' stakeholders (citizens, visitors, managers and technicians), public administrations and EU Partners.

Partners:

- Universitat Autònoma de Barcelona, Spain (coordinator)
- Université d'Aix Marseille, France
- American University of Beirut, Lebanon
- Université Saint-Joseph, Lebanon
- Université Cadi Ayyad, Morocco
- Université Mohammed V de Rabat, Morocco
- MAB France, France
- Association for the Protection of Jabal Moussa (APJM), Lebanon
- UNIMED – Mediterranean Universities Union, Italy

More at www.edubiomed.eu

Co-funded by the Erasmus+ Programme of the European Union

The Edu-BioMed project has been funded with support from the European Union. This document reflects the view only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Document information

Project Title	Capacity building for education and applied research on Mediterranean UNESCO's biosphere reserves
Project n.	598924-EPP-1-2018-1-ES-EPPKA2-CBHE-JP
Deliverable	Project Management Plan (Manual)
Workpackage	WP1
Date of Delivery	15-11-19
Status	-
Confidentiality Status	-
Author (Partner Institution)	UAB
Responsible Author(s)	Roser Maneja, Autonomous University of Barcelona Louis Lemkow, Autonomous University of Barcelona Antonio Bontempi, Autonomous University of Barcelona
Contributor(s)	Angela Barthes, Aix-Marseille University Jean-Marc Lange, Aix-Marseille University Salma Talhouk, American University of Beirut Magda Bou Dagher Kharrat, Université Saint Joseph Beirut Eliane Bou Dagher Kharrat, Université Saint Joseph Beirut Said Boujrouf, Université Cadi Ayyad Marrakech Khalid Berrada, Université Cadi Ayyad Marrakech Yamina el Kirat, Université Mohamed V Rabat
Abstract (for dissemination)	The present document reports on activities performed in the frame of Task 1.1 of the EduBioMed project

Document History		
Date	**By**	**Change**
15-04-19	UAB	First version
24-05-19	UAB	Adjustments in the results
15-11-19	UAB, UNIMED	Final layout

Table of contents

1. Introduction

This document is published in the frame of Edu-BioMed, an international cooperation project co-funded by the Erasmus+ Capacity Building in Higher Education programme of the European Union during the period 15 November 2018 - 15 November 2021[1].

The project aims to strengthen, ameliorate and upgrade academic activity at four Moroccan and Lebanese Higher Education Institutions (HEIs) in the context of Mediterranean Biosphere Reserves (BRs), in collaboration and through networking with BRs' stakeholders (citizens, visitors, managers and technicians), public administrations and EU Partners.

'BR' is a UNESCO label for territories composing a mosaic of natural protected areas, cultural heritage, human settlements, and land use designations for small-scale, eco-friendly economic activity. The designation falls under the auspices of UNESCO's "Man and Biosphere" (MaB)[2] program, which aim is to explore solutions for the improvement or relationships between people and their environments on a multidisciplinary scientific basis.

The four beneficiaries of the action are the American University of Beirut (AUB), the Saint Joseph University of Beirut (USJ), the Université Cadi Ayyad of Marrakech (UCA) and the Université Mohammed V of Rabat (UM5). Five other organizations support these HEIs in pursuing such aim: the Universitat Autònoma de Barcelona (UAB, project coordinator), the Aix-Marseille University (AMU), MAB France, UNIMED and the Association for the Protection of Jabal Moussa (APJM).

Please consult the Project Card[3] and the Project Website for more information.

¨Edu-BioMed aim is to strengthen, ameliorate and upgrade academic activity at four Moroccan and Lebanese universities in the context of Mediterranean Biosphere Reserves, in collaboration and through networking with BRs' stakeholders¨

1.1. The Task 1.1 of the Edu-BioMed project

BRs are complex socio-ecological systems and thus require inter/multi-disciplinary perspectives and inter-faculty/inter-institutional collaborations. It is recognized the need to overcome the

[1] Project reference code: 598924-EPP-1-2018-1-ES-EPPKA2-CBHE-JP
[2] http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/
[3] https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/598924-EPP-1-2018-1-ES-EPPKA2-CBHE-JP

mono-disciplinary tradition, the 'sectorialization' of expertise, when working on BRs from academia.

Within the preparatory actions of the project (Work Package 1), Task 1.1 consists in
(a) the measurement of the knowledge fragmentation and gaps inside targeted HEIs, when it comes to the study of a complex socio-ecological system such as BRs;
(b) the assessment of potential interdisciplinary/interfaculty synergies within and between Partner Universities;
(c) the understanding of if and how key concepts related to the UNESCO´s Man and Biosphere program are studied;
(d) the assessment of where (for whom) the Biosphere Research concept is suitable for research and education purposes;
(e) the assessment of potential synergies with previous work and other academic actors outside the Consortium but within/across the universities.
(f) the assessment of interests and needs around socio-ecological studies inside HEIs.

¨Task 1.1 consists in the measurement of the knowledge gap, the assessment of interdisciplinary synergies, the understanding of if and how BRs are studied¨

In order to accomplish to such objectives, a set of questionnaires was designed to interview a sample of academic staff and Master students at the four targeted Moroccan and Lebanese HEIs. In order to complement the study, UAB and AMU surveyed a sample of academics and students, too.

Each HEI selected the sample of interviewed according to two criteria: (i) discipline representativeness (i.e. diversity of expertise); (ii) largest sample possible.

2. Methodology

Two semi-structured questionnaires were produced in order to address the above-mentioned objectives and targeted (i) researchers, professors and heads of faculty/department from one side, and (ii) MSc students from one side, and (ii) at the six HEIs composing the Edu-BioMed Consortium. The questionnaires were designed by UAB in agreement with all the other Partner HEIs, and are described in the following.

The two questionnaires were produced in both:

- *.pdf* format, available at the following links:
  - Survey within academic staff
    - English version https://drive.google.com/open?id=1YnkxU6eAa0L-3V_N2wzh8uWBlpHwpBRa
    - French version https://drive.google.com/open?id=1aScG_LxnzkmBHs1dHljiL_SycOgvrfB_
    - Arabic version https://drive.google.com/open?id=1p_R9XArhbe97HR_pC6mNvxPCtxTFu2Y2
  - Survey within students
    - English version https://drive.google.com/open?id=1Dbtm-fs42D5MB9sHM79xDUoTacCKLjVn
    - French version https://drive.google.com/open?id=1uiD1OP5xdcaFGOp8RBLf35o97jgihOZp
    - Arabic version https://drive.google.com/open?id=1C9D7LYg_PEEKuOP1o8WaaXfmpeRJafaN
- Online format (Google Form):
  - Survey within academic staff
    - English version https://goo.gl/forms/N39FzsUXN5RXJcN13
    - French version https://goo.gl/forms/p9chHmqHMq6dSdxE3
  - Survey within students
    - English version https://goo.gl/forms/8RNMo7Mz9b6jnFV52
    - French version https://goo.gl/forms/3sOJ7jV0VZgWV8wE2

After a brief framing about the Edu-BioMed project and the BR concept, the questionnaires formulate a series of closed (a, b, c) and semi-opened (d, e, f) questions:

(a) What [*BR-related*] concepts do you relate to Biosphere Reserve?
(b) What [*BR-related*] concepts are you interested in?
(c) What [*BR-related*] concepts do you work/study?
(d) Do you think the Biosphere Reserve concept is relevant?
(e) Is there work already done?
(f) Are you interested in Edu-BioMed?

Additionally to these versions of the questionnaires, AMU produced another experimental one that was used for surveying students in an alternative way. This version omits the initial explanation about what a BR consist in and openly ask to provide a definition of a BR, heritage and biodiversity by means of 5-10 key words. Please find the questionnaire at issue at the following hyperlink: https://drive.google.com/open?id=1Oina7O84yFGBi2R1v117P9-tfv6FwwJi

Figure 1. Pictures from the surveys performance

UAB designed questionnaires during the months of December 2019 and January 2019 and in agreement with the various HEIs team leaders. A first set of questionnaires were distributed inside the six universities at issue. Results were collected between March and April 2019 and presented at the Consortium's Meeting held in Bzommar (Lebanon) on April 29th Figure 2.

3. Results

3.1. Number and provenience of respondents

Overall, 682 and 90 responses were collected from students and academic staff respectively, from the six universities composing the Edu-BioMed consortium. Surveyed students are almost balanced in gender (52% females vs. 48% males), and are 22 to 25 (mean 23) years old. Surveyed academic staff is unbalanced in gender (75% males vs. 25% females) and ranges from 29 to 65 (mean 45) years old.

Table 1 shows the university and the faculty or department of provenience, respectively.

Figure 2. Presentation of results from Task 1.1 in Bzommar Palace Hotel, Lebanon. From above, left to right: Ms Roser Maneja (UAB), Ms Salma Talhouk (AUB), Ms Eliane Bou Dagher (USJ), Ms Yamina El Kirat (UM5), Mr Khalid Berrada (UCA), Mr Jean-Marc Lange (AMU)

University	students	academic staff
UAB	63 (9%)	5 (6%)
AMU	55 (8%)	-
AUB	61 (9%)	18 (20%)
USJ	55 (8%)	8 (9%)
UCA	185 (27%)	11 (12%)
UM5	263 (39%)	49 (55%)
Total	**682** (100%)	**91** (100%)

Faculty or Department	Students	academic staff
Social Sciences (economy; law; education; history; sociology)	322 (42%)	36 (40%)
Natural Sciences (life & earth sciences; agriculture & food; ecosystem management; landscape design; physics; chemistry)	190 (28%)	44 (49%)
Engineering, Architecture and Maths	128 (19%)	4 (4%)
Medicine, Pharmacy, Health Sciences	42 (6%)	-
Not specified	-	7 (8%)
Total	**682** (100%)	**91** (100%)

Table 1. Distribution of respondents between institutions, faculty or department of provenience

3.2. Data treatment

In order to provide a picture of results at the Edu-BioMed Consortium level, data was treated as aggregated, except for AMU´s, which was treated independently since they used both a different kind of questionnaire and analysis (see following paragraph).
Given the high unbalance in terms of number of respondents per university Table 1, data was then normalized, in order to give the same weight to the answers from each institution.

A multiplicative factor m_i was calculated as:

$$m_i = \frac{N\ /\ 5}{n_i}$$

Where:
m_i is the multiplicative factor for the answers of the university i;
n_i is the total number of respondents of the university i;
N (=682-55[4]=627) is the total amount of respondents from the 5 universities for which data was aggregated;
i ranges between 1 and 5.

Values 1 and 0 were assigned to each single positive and negative answer, respectively, and then multiplied per the weight factor m_i.

3.3. Surveys within students

Question 1 *students*	*Among the following concepts please:* *a) select 5-10, which in your opinion describe Biosphere Reserves the most;* *b) select those of them that are mainly related to your own academic interests*

Figure 3 and Table 2 show aggregated results for the surveys conducted within students at the various HEIs, ordered from the highest to the lowest values for selected concepts.

[4] 55 is the number of AMU's students

Concept	a) Related to BR	
Biological Diversity	406	65%
Environmental Protection	387	62%
Sustainability	357	57%
Natural Resources	307	49%
Climate Change	302	48%
Landscape	263	42%
Ecosystem Services	247	39%
Forest management	233	37%
Environmental Education	224	36%
Land Use and Cover change	202	32%
Socio-Ecological crisis	197	31%
(eco) Tourism	197	31%
Environmental History	196	31%
Green Technology	172	27%
Ecological Economics	171	27%
Cultural Diversity	170	27%
Human Health	159	25%
Agroecology	159	25%
Global Change	157	25%
Place, Identity	132	21%
Local knowledge	132	21%
Circular Economy	125	20%
Socioecological Heritage	121	19%
Political Ecology	111	18%
Governance	96	15%
Industrial Ecology	95	15%
Geographic Information System	91	15%
Complexity	70	11%
Communication	65	10%
Gender issues	54	9%
Empowerment	44	7%
Commons	35	6%
Total Respondants	**627**	**100%**

Concept	b) Your Interest	
Environmental Protection	274	44%
Sustainability	237	38%
Biological Diversity	216	34%
Environmental Education	204	33%
Climate Change	200	32%
Natural Resources	171	27%
Cultural Diversity	163	26%
Global Change	162	26%
Human Health	158	25%
Green Technology	143	23%
Socio-Ecological crisis	130	21%
Land Use and Cover change	125	20%
(eco) Tourism	124	20%
Forest management	124	20%
Geographic Information System	122	19%
Local knowledge	121	19%
Ecological Economics	118	19%
Landscape	116	19%
Environmental History	115	18%
Ecosystem Services	115	18%
Circular Economy	112	18%
Communication	112	18%
Political Ecology	103	16%
Agroecology	99	16%
Governance	87	14%
Place, Identity	84	13%
Industrial Ecology	78	12%
Gender issues	77	12%
Empowerment	75	12%
Socioecological Heritage	74	12%
Complexity	66	11%
Commons	33	5%
Total Respondants	**627**	**100%**

Table 2. Global results from Question 1 – Survey within students

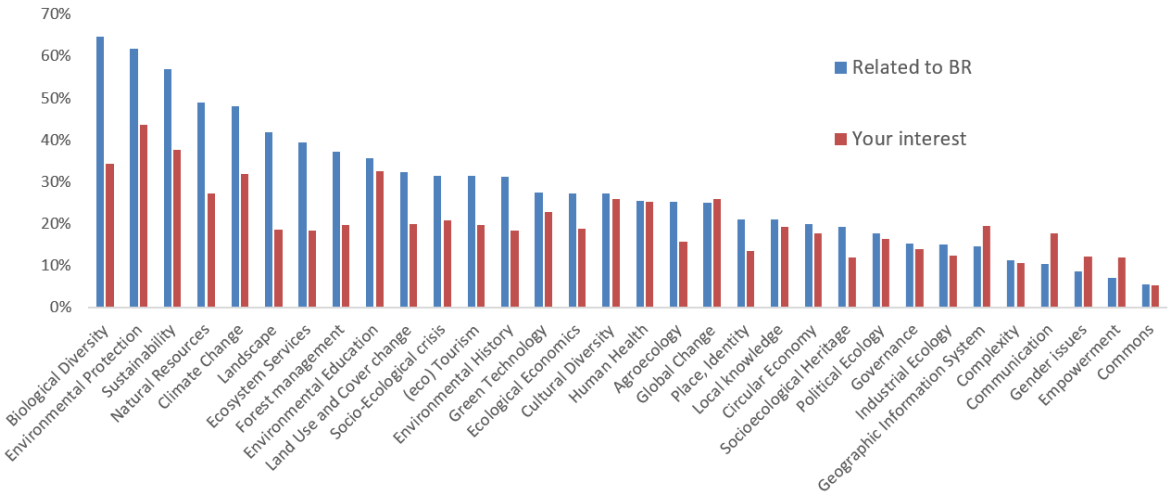

Figure 3. Global results from Question 1 – Survey within students

Question 1b *students*	*Please provide 5-10 words for expressing what you intend for:* - *Biosphere Reserve* - *Heritage in a BR* - *Biodiversity in a BR*

The results at the following hyperlink refer to the experimental analysis that AUM conducted following the 'social representation' methodology, based on data provided by both AUM (n=55) and UAB (n=32) students.
https://drive.google.com/open?id=1fPIIhgTM0J8mx7GPcpNrEclHnp5KRO6f

Question 2 *students*	*Do you think that Biosphere Reserves can affect your future employment (for example, better job opportunities, entrepreneurship…)?* *Please justify your choice*

Figure 4 shows percentages of answers from the 627[5] respondents addressing the question.

[5] All except AMU´s = 682-55

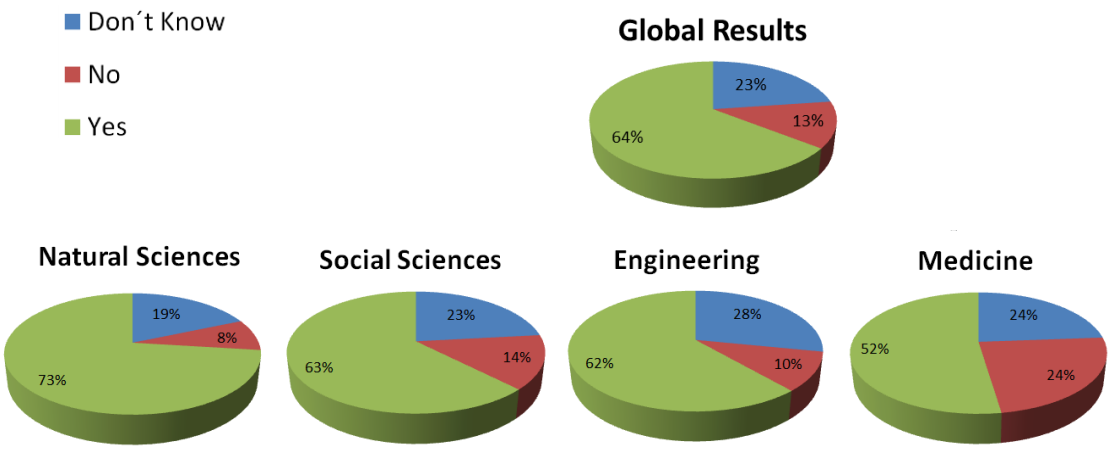

Figure 4. Results from question 2 – Survey within students

For those who answered:

- ¨*don´t know*¨, the main reasons are lack of knowledge about BR, uncertainty about the kind of their future employment and the uncertainty around the effectiveness of BR concept employment-wise
- ¨*NO*¨, the main reason is because they don´t recognize the discussion at issue as related to their field of study or future expertise.
- ¨*YES*¨, the main reason is because they do recognize the discussion at issue as related to their field of study or future expertise. Other frequent responses relate to (i) the relevance of BR in the future employment panorama, after the impact that BR label may have in creating new job opportunities on the territory, or after the eventual increase of protected areas or sustainability-related job opportunities worldwide due the current socio-ecological crisis; or to (ii) the innovative character of the BR itself.

Question 3 *students*	*Which of the tasks [within the project scope] would you like to be engaged in with Edu-BioMed? Please, specify how and provide your contact.*

319 students (51% of the interviewed) expressed their interest in engaging in Edu-BioMed. Among these, 178 provided their contact. Table 3 shows percentages of interested students per Edu-BioMed Task.

Task	interested students
Mobility and training schemes	120 (38%)
Creating a e-learning (MOOC) course;	78 (24%)
Upgrading curricula;	76 (24%)
Working with local communities inside BRs;	61 (19%)
Developing IT tools for Collaborative & Multidisciplinary Research Purposes;	54 (17%)
Counselling public administrations for policy reform;	53 (17%)
Conducting interdisciplinary case-study research;	40 (13%)
Producing and adapting education material;	33 (10%)
Total respondents	**319 (100%)**

Table 3. Interested students per Task of the Edu-BioMed project (Question 3)

3.4. Survey within academic staff

Question 1 *staff*	*Among the following concepts, please select 5 to 10, which relate to BRs the most, in your opinion. Please indicate whether the concepts selected relate more to biodiversity or human activity.*

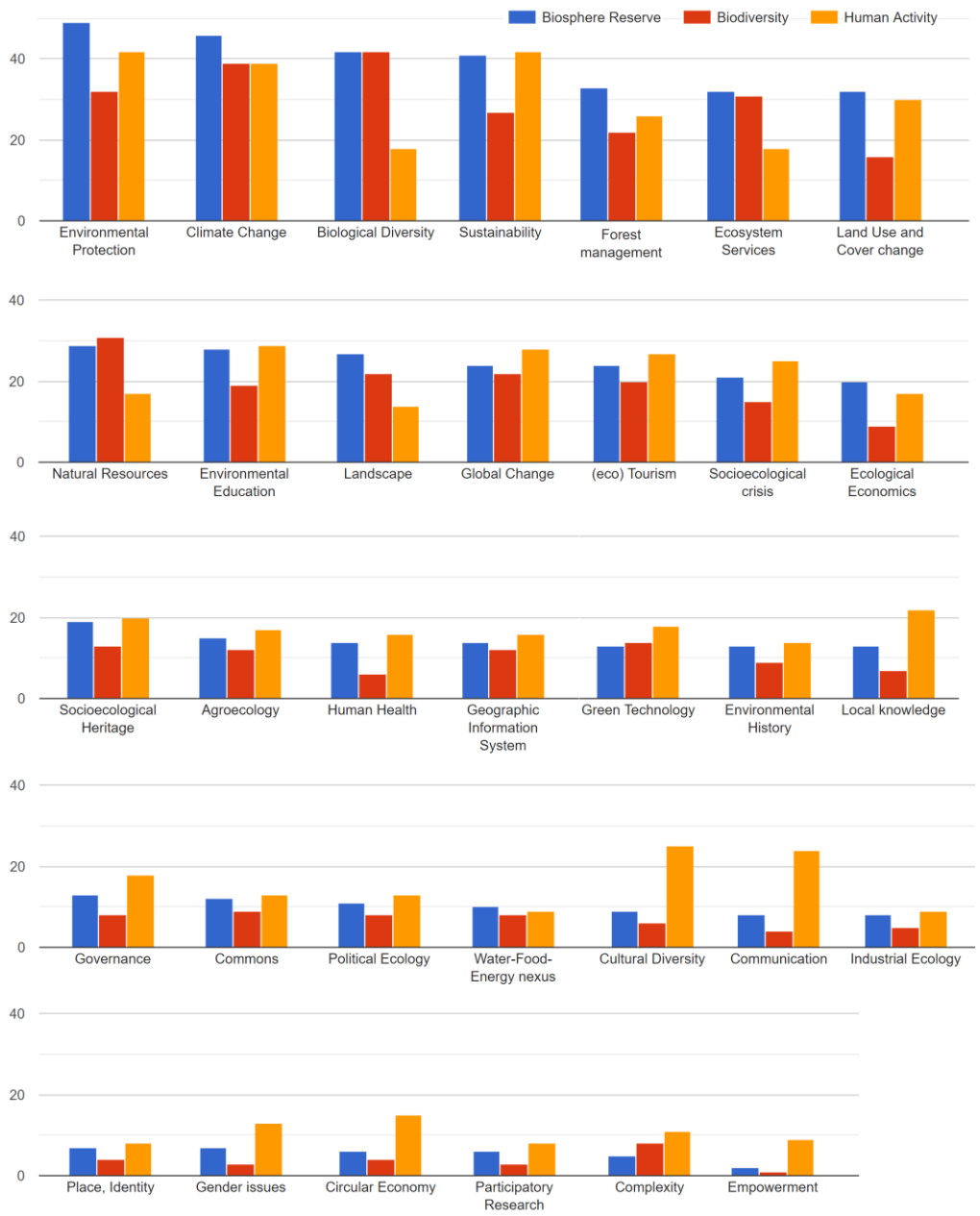

Figure 5. Results for question 1 – Survey within academic staff

Question 2 *staff*	*Among the following concepts, select the ones that are closely related to your own work in the University and specify how.*

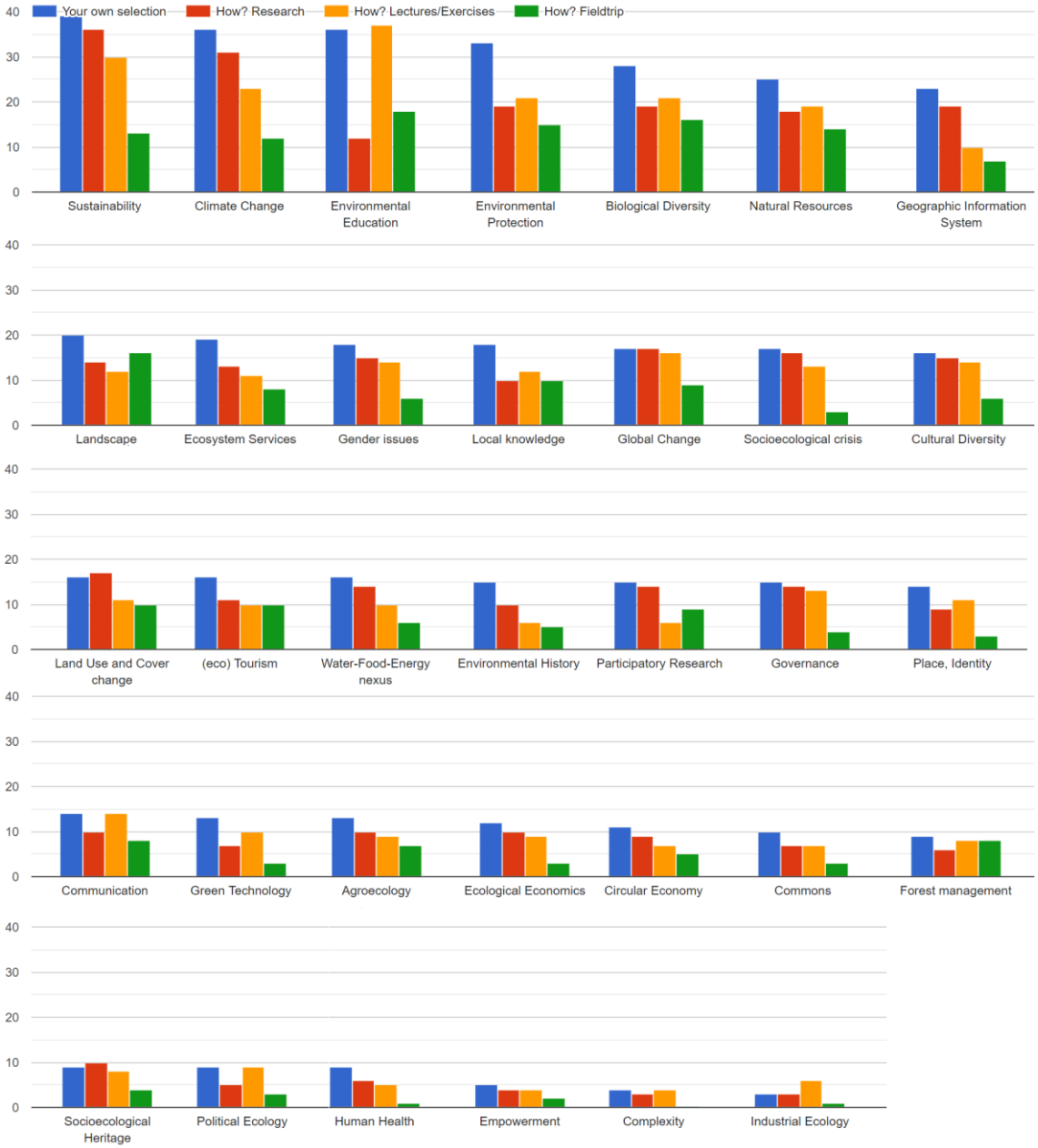

Figure 6. Results for question 2 – Survey within academic staff

Question 3.1 *staff*	*To what extent is Biosphere Reserve relevant in terms of innovative research, education and outreach purposes or joint projects? Please, justify your choice*

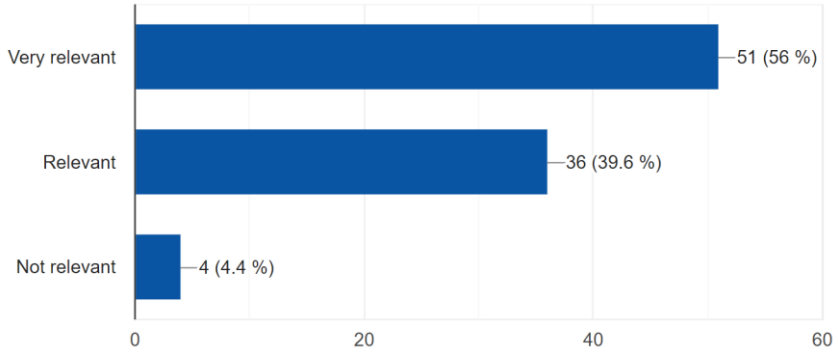

Figure 7. Results for question 3.1 – survey within academic staff

Figure 7 tells us that according to the 96% of the interviewed, the Biosphere Reserve concept is either relevant or very relevant in terms of education or research purposes. Among those who justified their choice:

- The majority of who selected "*relevant*" or "*very relevant*", did it mostly because they consider BRs as an useful(/or)innovative(/or)interdisciplinary(/or)holistic tool to be exploited in research and higher education. They consider BRs as an appropriate conception from which to understand the link between humans and the environment that serves the purpose of connecting pedagogy and research. Fewer (but recurring) answers relate to the fact that teaching around socio-ecological issues today is relevant per se for future generations' wellbeing.
- The few who selected "*not relevant*" did not specify the reason.

Question 3.2 *staff*	*Are there already any scientific activities, (e.g. work/research/projects) that relate to Biosphere Reserves inside your institution/university? Please, justify your choice*

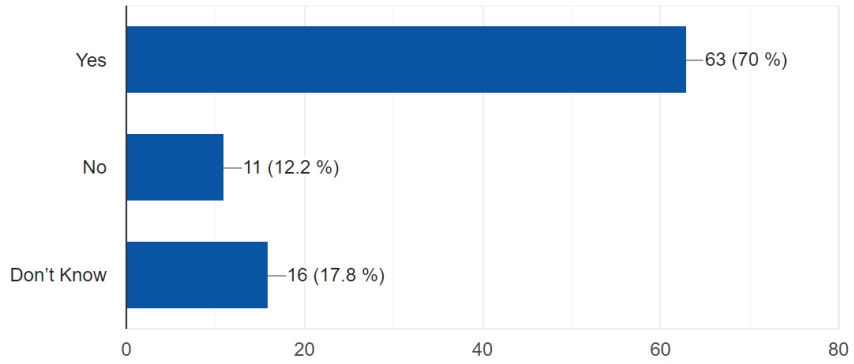

Figure 8. Results for question 3.2 – survey within academic staff

Among those who answered "*yes*", only 29 addressed the open question. Table 4 in Annex I reports such answers.

Question 3.3 *staff*	*Can you think of any department or colleague of yours who may be interested in opening up for their work on such context?* *Please, justify your choice*

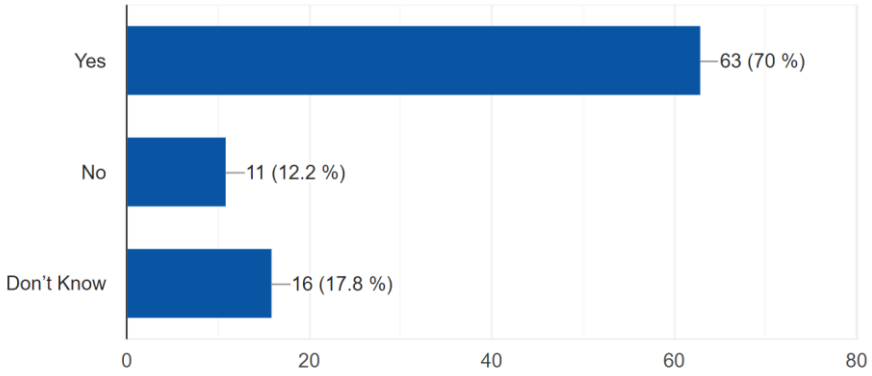

Figure 9. Results for question 3.3 – survey within academic staff

Among those who answered "yes", only 44 addressed the open question.

Table 5 in Annex II reports such answers.

Question 4 *staff*	*Would you like to be engaged in Edu-BioMed?* *If yes, please specify how and provide your contact.*

64 (70%) of the interviewed positively answer the question. Among these, just 25 provided their contact.

4. Discussion

4.1. Remarks on surveys within students

Table 2 shows that the concepts that students easily relate to a BR (column ´a´) are strongly associated to the conservation function of a BR[6], where geo-biological diversity protection is promoted. We refer to concepts like *biological diversity* and *environmental protection*, selected by more than 60% of respondents. There is a strong intuition of the ecological function of a BR. In other words, students associate a BR to the traditional way of understanding a natural protected area: i.e. places where only environmental protection is promoted.

There is instead a more poor understanding of BRs as places where human presence is tolerated and sustainable development promoted. Concepts like *circular economy, local knowledge, agroecology, governance, socio-ecological heritage* were selected by less than 25% of respondents. Looking at the issue from another perspective: concepts that are usually studied from the realm of natural or technical sciences were more selected by students than the ones that are generally studied in social sciences. This fact reinforces the statement that students not so easily associate BRs as places where human presence is an important factor.

Fewer students addressed the column (b) of the questionnaire (*´what concepts are you interested in?´*), compared to the ones who filled out the first one (*´what concepts do you relate with BR´?)*. Figure 3 and Table 2 highlight that: *environmental protection, sustainability, climate change, biological diversity* are the topics in which students are more interested (more than 34% of respondents). These concepts are among those that students associate to BR the most. In a sense, this legitimize to state that students are interested in studying BRs and its related topics. *Environmental education* gains positions in the ranking, as another concept of interest (33% of preferences). This latter, together with the concepts of cultural diversity, human health, global change, political ecology and governance are those with the lowest level of discrepancy between column (a) and (b) values, i.e. where a similar amount of respondents selected the single concept both relating it to BRs and as of interest. It implies that these are key concepts where curricula developments should focus particular attention in the frame of Edu-BioMed.
The net separation between the ´natural´ vs. ´social´ concepts that we recognized in column (a) is more nuanced in column (b), and it reflects the variety of departments of provenience of interviewed in the sample, and the related diversity of interests.

[6] http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/

4.2. Remarks on surveys within academic staff

University professors and researchers associate BRs the most to the same set of concepts as for students: *climate change, environmental protection, sustainability, biological diversity, forest management, environmental education, landscape, natural resources* and *ecosystem services*.

When it comes to select whether a concept relates more to biodiversity or to human activity, every concept has at least some answer in both sides, even in those cases where it sounds more strictly related to natural-technical rather than to social sciences. This is a signal that there is the understanding of each concept as a mixture of complex dynamics comprising both human and non-human factors.

Results from Figure 6 show then that inside Edu-BioMed HEIs there is the necessary expertise around the concepts of interest, both at the levels of teaching and research. In fact, the majority of interviewed associated *sustainability, climate change, biological diversity, environmental protection, natural resources and environmental education* to their work. Furthermore, the histograms in Figure 6 show that experiential learning (fieldtrips) is poorly exploited as tool for academic activity: the percentages of selected concepts for this aspect are very limited. There is a need to develop expertise in some poorly worked concepts: *industrial ecology, complexity, empowerment, political ecology, forest management, commons, socio-ecological heritage, human health*. Maybe it is due the fact that some of such concepts are recent in terms of applied research.

4.3. General remarks

Both students and academic staff consider BR as a relevant concept (Figure 4, Figure 7), mainly because of its innovative character; or because of its potential of bringing out new employment opportunities or pedagogical/research tools; or simply because of the importance that socio-ecological issues hold in the contemporary era.

- A relevant percentage of students (47%) and academic staff (70%) are willing to engage in Edu-BioMed activities. However, approximatively half of them provided their contact. These ones will be ´kept in the loop´ for the future project developments.

- One could make use of the answers reported in Annex I and II in the scope of the project development.

Finally, the alternative approach proposed by AMU opens up windows of opportunities for future developments of the present research. The *social representation* they propose

demonstrates that an alternative way to collect and analyse data is applicable to the scope of the Edu-BioMed Task 1.1.

5. Conclusions

The present document reports on the survey that has been conducted in the six universities that partner the Edu-BioMed project, in the frame of Task 1.1. Aggregated data shows that BR is predominantly considered a place for nature conservation, while it lacks its interpretation as space where sustainable human development should be promoted. While respondents consider some macro-areas of study - such as *environmental protection, sustainability and biological diversity* – as relevant in the context of BRs, they discard many other BR-related fields as not relevant, and these are the one where future efforts for curricula development should be invested. There is the recognition that inside the targeted HEIs there is the necessary expertise to develop higher education and applied research in the various areas of interest. Many of the interviewed manifested their interest in engage in Edu-BioMed, and some provided their contact so to be updated on the future project developments.

ANNEX I

Table 4. Open answers to question 3.2 - Survey within academic staff: "Are there already any scientific activities, (e.g. work/research/projects) that relate to Biosphere Reserves inside your institution/university? Please, justify your choice"

University	Faculty	Department	Answer
AUB	FAS	CMPS	*Test the water project and detecting invasive species underwater*
AUB	FAFS	LDEM	*Nature Conservation Center*
AUB			*We are studying the impact of BRs on local development (ASDU)*
AUB	FAFS	LDEM	*Design studios; efforts at the Nature Conservation Center; activism*
AUB	FAFS	LDEM	*NCC*
AUB	FAFS	AGRI	*Research projects I am supervising ESDU and NCC projects*
AUB	FAS	Biology	*There are people that work in or with reserves that have designation as BR*
AUB	FAS	Biology	*I know that there are research projects related tpo this point but I'm not aware of their details*
AUB	MSFEA	ARD	*However, one studio I gave a few years back dealth with potential of converting valleys in Lebanon (particularly Nahr Beirut Valley at Beit Mery) into a natural reserve with eco-programs.*
AUB	FAS	SOAM	*In the anthropology program, we're developing classes in environmental anthropology, the anthropocene, multispecies ethnography etc.*
ENFI	ENFI	Sol-Eau-Biodiversité (SEB)	*Reserve de biosphère de l'arganeraie*
UAB	Sciences	Departament de Química	*Researchers form the UAB are the coordinators of the Edu-BioMed Erasmus+ project*
UAB	Philosophy and Arts	Geography	*There are several ongoing and past research projects and field trips with students.*
UAB	Economy	Economia i Historia Economica	*Environmental conflicts studies where BR are involved*
UCA	Sciences	Biology	*Ecologie de l'arganier dans la RBA*
UCA	Sciences	Biology	*Recherches au niveau de la réserve de biosphère des oasis, de l'Arganerie et de la réserve de biosphère transatlantique*
UCA	Sciences	Biology	*Arganeraie, oasis du Sud*
UCA	Sciences Semlalia, Marrakech	Biologie	*Ecologie de l'arganier dans la RBA*

University	Faculty	Department	Answer
UCA	Sciences Semlalia	Biologie	*Recherches au niveau de la réserve de biosphère des oasis, de l'Arganerie et de la réserve de biosphère transatlantique*
UCA	Faculté des Sciences Semlalia	Biologie	*Arganeraie, oasis du Sud*
UCA	FLSH	Géographie	*Les mémoires de Master*
UCA	FLSH	Géographie	*FLSH-Département Géographie*
UCA	FLSH	Arabe	*Au sein des structures de recherche de département de la géographie*
UCA	FLSH	Géographie	*Dans les départements de la géographie(FLSH)de biologie et de geologie(FSSM)des projets réalisés ou en cours sur la biodiversité et les services éco-systémiques.*
UCA	FSSM	Biologie	*Plusieurs sujets de recherche sur l'environnement, la préservation des écosystèmes, des études sur des phénomènes naturels etc...*
UCA	FST	Sciences de la terre.	*Etude sur le lac d'ifni, Reserver parc national de Toubkal.*
UM5	Faculty of Science	Biology	*Conserving biological diversity.*
UM5	Scientific Institute	Biology	*researches of master's degrees, bachelors and PHDs*
UM5	Faculty of Science	Chemistry	*Department of Geography*
UM5	Scientific Institute	Geology	*All researches that are being done in the Scientific Institute (geology and biology) are directly related to biosphere reserves.*
UM5	Scientific Institute	Geology	*Researches related to natural spaces in mountains of Morocco.*
UM5	Faculty of Science	Scientific Institute	*Researches related to environment and climate change.*
UM5	Ecole Nationale Forestière d'Ingénieurs de Salé (ENFI)	Sol-Eau-Biodiversité (SEB)	*Reserve de biosphère de l'arganeraie*
UM5	Faculty of Arts	English Language	*There are research groups interested in humanities (women, language and society).*
UM5	Faculty of Law, Economics and Social Sciences	Management	*There is a specialty in master's degrees about this field.*
UM5	Faculty of Law, Economics and Social Science	Special Law	*In the Department of Sustainable Development and Environment Protection.*
UM5	Faculty of Law	Special Law	*There is a research group.*
UM5	Faculty of Law, Economics and Social Science	Special Law	*There is a Master's degree specialized in environment coordinated by a colleague.*

University	Faculty	Department	Answer
UM5	Institute of Arabization Studies		*Scientific institutes.*
UM5	Institute of Arabization Studies		*Faculty of Science in Rabat*
USJ	Engineering	ESIAM	*Caracterisation des terroirs agricoles*
USJ	Science	Science de la vie et de la terre	*CEPF project*
USJ	Faculté d'ingénierie	ESIAM	*Caracterisation des terroirs agricoles*

ANNEX II

Table 5. Open answers to question 3.3 - Survey within academic staff: "Can you think of any department or colleague of yours who may be interested in opening up for their work on such context? Please, justify your choice"

University:	Faculty:	Department:	Answer
AUB	FAFS	Food Security Programme	Yasser Abunnaser and Jad Chabaan
AUB	FAS	CMPS	Wassim El-Hajj, Shady ElBassuoni, Mohamad Jaber, Fatima Abu Salem
AUB	FAFS	AGRI	Salma Talhouk
AUB			Rural community development programme
AUB	FAFS	LDEM	NCC; Salma; GreenTech; organic farming; agroecology people
AUB			Forestry at FAFS, Ecosystem management Landscape.
AUB	FAS	Department of Computer Science	Fatima Abu Salem, Biology department
AUB	FAFS	LDEM	Environment related research, city planning approaches will include them, ecologusts may use for fieldwork, social entrepreneurs may also benefit from them as sites to further study.
AUB	FAS	Biology	Dr. Riyad Sadek; Dr. Khousama Knio; Mr. Mohammad Al Zein; Biology department
AUB	FAS	Biology	Department of Agriculture and Biology
AUB	FAS	SOAM	Blake Atwood in Media Studies, developing class and reseach on media and the environment
AUB	FAFS	LDEM	All departments at AUV: Urban planning and design; public health; Environmental Health; Biology/Plant Sciences; Agriculture (grazing practices)
AUB	MSFEA	ARD	(Aram Yeretzian) + potential joint studio with University of Toronto with Carol Mokheiber (potential Spring studio)
UAB	Philosophy and Arts	Geography	Different departments and specific courses. For example, the Postgraduate course in Ecotourism and Nature Guide (School of Tourism)
UAB	Facultat Economia	Economia i Historia Economica	In our practices about Economia Ambiental Recursos Naturals we are studying some conflicts related to BR
UCA	Sciences	Biology	Muséum d'histoire naturelle de Marrakech
UCA	FLSH	Géographie	Mohamad EL HOURMI
UCA	FLSH	Géographie	LERMA
UCA	FLSH	Arabe	Le département de la Biologie.

University:	Faculty:	Department:	Answer
UCA	FLSH	Géographie	Lamya Kacem.
UCA	FLSH	Géographie	Je suis en collaboration avec des équipes du de Marrakech sur la
UCA	FSJES	Economie	Etudes des plantes médicinales
UCA	FSSM	Biologie	Département de la géographie
UM5	Faculty of Science	Chemistry	Ministry of Environment
UM5	Faculty of Law	General Law	Depending on laboratories and research teams
UM5	Faculty of Arts	Islamic Studies	Department of Geography
UM5	Faculty of Law, Economics and Social Science	Special Law	Coordinator of research group in the Department of Sustainable Development and Environment Protection.
UM5	Scientific Institute	Geology	All researchers of the Scientific Institute.
UM5	Scientific Institute	Geology	All professors of the departments Geology and Biology specially the Departments of Animal and plant Biology are interested in the matter.
UM5	Scientific Institute	Geology	All professors in the Department of Biology specially animal and plant biology are interested in the matter.
UM5	Faculty of Law, Economics and Social Sciences	Management	Afif Morad and Zakareya Ghrand.
UM5	Faculty of Science	Biology	A group of colleagues working on research.
UM5	Faculty of Law, Economics and Social Science	Special Law	There is a Master's Degree specialized in the subject and a laboratory for research in environment and sustainability.
UM5	Institute of Arabization Studies		The research team in the Faculty of Science.
UM5	Faculty of Law, Economics and Social Science	General Law	Some special law professors.
UM5	Faculty of Science	Scientific Institute	Scientific Institute belonging to Mohamed V University.
UM5	Scientific Institute	Biology	Scientific Institute
UM5	Institute of Arabization Studies		Scientific departments.

University:	Faculty:	Department:	Answer
UM5	Ecole Nationale Forestière d'Ingénieurs de Salé (ENFI)	Sol-Eau-Biodiversité (SEB)	Les diférents départements de l'ENFI
USJ	Engineering	ESIAM	Oui : caracterisation des sols pour optimiser leurs utilisations
USJ	Sciences	Earth and Life Sciences	Mme Jocelyne Adjizian Gerard- département de géographie à l'USJ
USJ	Science	Science de la vie et de la terre	Economist
USJ	Sciences	Earth and Life Sciences	Economics