



WORKSHOP 7 - Scientific partnerships

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NUMBER OF PARTICIPANTS: 40

FORMAT OF THE WORKSHOP: 5 presentations and 3 working groups:

- Scientists to scientists: debate
- Citizen sciences: share of experiences, debate
- Scientist managers: world café

INTRODUCTION

In Estonia two years ago, Martin Price animated a workshop on relationships between scientists about biosphere reserves, on biosphere reserves, on biosphere reserves data. We are going to enlarge the subject, from three points of view: partnerships between scientists, partnerships between researchers and managers, and partnerships between researchers and citizens.

Presentation of the three working groups

“Scientists to scientists” working group is the follow up of the workshop held in Estonia in 2015. The group is working on what has been done, what could we do and what are the benefits and opportunities to do it. Where are we, where would we be, how could we do it, what are the problems... Scientists wishing to work with other scientists in or with Biosphere reserves.

Citizen sciences: how Biosphere reserves can be involved in citizen sciences projects? Citizens record what they observe. There are many forms of citizen sciences: how could researchers be involved in standardization, coordination... Biosphere reserves could have their own initiative and design their own projects in a wide variety of areas like knowledge, participatory planning, and controversies.

Scientists/managers: we will try to identifying common thematic and technical interest subjects, to put together needs and skills, to construct a dialogue format between managers, researchers and people from national committees. See what co-construction of research question is.

OBJECTIVES OF THE WORKSHOPS

Science is a very important stake for BRs. All the stakeholders don't always talk the same language. We are facilitators for that. Building large and solid partnerships is a heavy task, so the workshop aims at building conditions for building partnerships and collaborate. We are going to try and identify correspondences between skills and needs, and empower researchers, managers and national committees.

Five presentations

The five presentations are experiences which could be benefit to others, general information and networking tools.

1: Building bridges and partnerships with practitioners and researchers in Canadian Biosphere Reserves

Maureen Reed - School of Environment and Sustainability, University of Saskatchewan, Canada - m.reed@usask.ca

The number of biosphere reserves (BRs) in Canada has grown from 6 to 18 in the past 16 years. Canada's BRs are spread across an enormous physical and cultural geography, making collaboration a major challenge. Involvement from provincial and federal governments has been uneven. The number of researchers conducting research in Canadian biosphere reserves is also quite small and their research efforts are not coordinated. Previous attempts to build the scientific network have languished. How, then, to build bridges among these partners to enhance the capacity of BRs to achieve their mandate? I trace one possible strategy. In Canada, we began with enhancing the capacity of the practitioners to work together first and then identified a single pressing need that has both a "research" and an "action" dimension – inclusion of Indigenous peoples and knowledge in advancing sustainability. We are building a network around this need through focused interventions and individuals. I will describe this journey briefly. Our experience suggests that building bridges requires joining very specific 'end points' along with dedication and common interest. Hence, I recommend that to build the practitioner and scientific network for EuroMAB, we should identify a clear, common and focused agenda, along with committed individuals.

2. Designing a transnational multi-stakeholder project

Martin Price - Centre for Mountain Studies, Perth College, University of the Highlands and Islands, UK - martin.price@perth.uhi.ac.uk

EuroMAB is a network and, as such, it can provide many opportunities to develop projects that are based on partnership – a requirement of many programs funded by the European Commission, including the Interreg programmes. One of these is the Northern Periphery and Arctic Programme (NPA); in the current period, one of its four priority axes is "Protecting, developing and promoting natural and cultural heritage", with the objective of "Increased capacity of remote and sparsely populated communities for sustainable environmental management". This is very closely aligned to the goals of biosphere reserves. Consequently, individuals involved in current and proposed biosphere reserves in Finland, Norway, Scotland and Sweden started work on a proposal in 2015. It was realized that a focus specifically on biosphere reserves might not be acceptable, so the partnership was widened to include regional parks in Iceland and Norway, as they are also 'bottom up' and have similar objectives to biosphere reserves. This presentation will describe the process and challenges of developing the proposal, which led to a project that the NPA approved for funding in March 2015.

3. Protecting Biospheres by Preventing the Spread of Aquatic Nuisance Species via the largest vector source: ship ballast

Phyllis Green - USDI National Park Service Isle Royale National Park MAB, USA - Phyllis_green@nps.gov

A unique coalition of local, state federal and international shipping industry owners have joined together to support to research and develop prevention methods for aquatic nuisance species (ANS) transfers into the US Great Lakes and saltwater ports. The coalition, convened and facilitated by

MAB/National Park Service Superintendent Green, has garnered over \$3M US in support to tackle the issue of emergency and contingency treatment for ANS containment and prevention. The rapid response process can be duplicated and implemented worldwide when ANS risk from the ballast/shipping vector is determined and generate documented efficacy risk reduction results. This research coalition has lessons learned for developing complex research projects, as well as working through international agencies such as the International Maritime Organization for broad applications of the results. Current partners include: the National Park Service, Saint Louis County Minnesota, the State of Minnesota, US Geological Survey scientists, an international marine engineering firm, and Canadian and US ship owners.

4. The International Centre for Sustainable Rural Communities

Andrew Bell - North Devon's Biosphere, UK; Euro MAB Working Group for International Centre for Sustainable Rural Communities - andybell33@hotmail.com

The presentation will update participants on the progress of the development of the centre based on the advice from the EuroMAB meeting in Estonia and previously in Canada. The centre proposes several functions following that advice, which includes facilitating networking for scientists in sustainable rural development, interdisciplinary approaches, and providing a knowledge base platform. The centre will also embrace the philosophy of sharing traditional, scientific and indigenous knowledge systems (which we hope to address in that workshop). The working group seeks feedback from the participants on the proposal to date, how Biosphere Reserves would take advantage of the science partnerships and the functions they would like to see from the knowledge base platform. The centre will be one node for networking scientific partnerships, and on the ground research therefore needs to best fit in with other initiatives, also seeking to address the Lima Action Plan. The centre is designed to work across EuroMab as a whole. A business plan has been prepared, however a 6-page summary document and small brochure can be circulated to participants along with a discussion paper on the knowledge base platform.

5. The International Journal of UNESCO Biosphere Reserves

Pamela Shaw - Mount Arrowsmith Biosphere Region Research Institute, Canada - Pam.Shaw@viu.ca

The new International Journal of UNESCO Biosphere Reserves was launched in January 2017 (see biospherejournal.org for the first issue). The publication of scientific research in journals is the primary means of disseminating scholarly ideas, concepts, theories, and findings. For researchers interested in the 669 UNESCO Biosphere Reserves, an in-depth review initiated by Prof. Martin Price in 2013 and continued by Dr. Pamela Shaw in 2015 revealed that a wealth of information across a wide range of disciplines was being published, but materials were not always available to individuals involved in the network. In addition, obtaining articles at no cost was not easy for staff and volunteers that were un-affiliated with academic institutions. Beyond this, a mechanism for pulling together information on the range of activities currently undertaken by many biosphere reserves was simply not available. This new journal is fully interdisciplinary and is, in perpetuity, a digital, Open Access, subscription-free publication and is organized to accept a range of formats: Research Papers, Research Notes, Case Studies, and all Digital Formats. This presentation will focus on the relevance of the Journal to the biosphere community and how we might improve on the dissemination of information among all biosphere reserves.

Scientists to scientists

The key issue is information management. There is a huge amount of material from BRs and the question is how to get at it. In Canada, they are developing a GIS with access to databases and they are willing other people to test this. Cliff is responsible for that. The Mab secretariat has a lot of

information in nomination documents and application files. The secretariat is not making all files available. Biosphere Smart, developed by Spain, is meant to do that. We have to see what already exist and use it instead of inventing something else.

Another point is that we don't know what's going on, what researches are being developed. Pamela Shaw wants to open a part of her journal to ongoing projects. Students and researchers may have the opportunity to connect and find other people doing similar things.

Third, we have to be more strategic with national funding agencies. Each national agency should know what Biosphere reserves are doing. The next step is EU, we need to lobby to make EU recognize the BRs in strategic documents, not only for research, but for the framework 9, after Horizon 2020, rural development and Environment. BRs have been invisible until now in Brussels.

Scientists working in BRs should have a special conference or have a special session at other conferences.

Epilogue: Key outcomes of working group on networking of scientists

1) Management of data and information relating to individual BRs

Opportunities:

- **Southwest Nova BR project: GIS with embedded website access can be made available to other BRs to use**
- **Proposal from ILTER to host data from BRs should be explored further**

Needs:

- **To get online access to information held by MAB Secretariat, including application and periodic review forms**
 - o **Open access policy was agreed by ICC in 2015(?), but has still not been implemented for online access**
 - o **Ongoing issue with non-digital data/information**
 - **Suggested that this could be digitized with support from librarians (funds needed)**

2) Need for better awareness of ongoing research, solutions, etc.

- **New International Journal of BRs can add elements to its website:**
 - o **Students working in BRs**
 - o **Recently published theses**
 - o **Ongoing projects (with contact details)**
 - **National MAB Committees should inform BRs and relevant universities/research institutions of this facility and ask them to contribute information**
- **Organise specific conference on research in/with BRs and/or sessions at other relevant conferences**
- **The emerging International Centre in Canada could play various roles**

3) Resources for research

- **Research themes should be developed in collaboration with BR coordinators, and should also link to national/EU funding priorities**
- **Opportunities for students to work in BRs, student exchanges etc. should be explored**
- **National MAB Commissions should work with national funding agencies to identify BRs as key locations for research that corresponds to these agencies' priorities**
- **National MAB Commissions and UNESCO Brussels office should develop strategic initiative to ensure that BRs are specifically identified in post-2020 EU agendas, especially in relation to rural development, environment, research**

What would be the aim for BRs and for citizens?

We shared our experiences. The first aim to implement citizen sciences on the BRs is to connect and to involve citizens to the BR. The words associated to that are engagement, education, and connection to science or BR. The common tool for that is the bioblitz where scientists and citizens collect together data on biodiversity. It's a tool for education and for people who don't meet each other and a start of capacity building.

Another tool is more data collection oriented and standardized protocols for monitoring. When well established and coordinated, it has the same virtue for engaging people, reconnection with the reserve, the feeling of belonging because there is a purpose.

We see that there is a gradient in citizen sciences and BRs need these data as well as connection of people: it's a win-win project.

Around the table, most of the projects are implemented in North America, so there is a likely transfer or exploring between BRs.

Networking is possible, to make a wider community. How to involve school and teachers? What are the places for these projects, to build the tool, to analyse the data and to make sure that the data are used?

Another point is how to get people around the table like hunters, farmers, fishermen, all these people which are not used to participate but who can come into conflict by their uses. Engaging them could help solving these conflicts.

Epilogue: towards a typology of Citizen Science projects in BRs

- **Level 1: educational, outreach, main objective is connecting people to BRs. E.g., bioblitz (mixing skilled amateurs, scientists, lay people)**
- **Level 2: collecting scientific data by using existing protocols for monitoring/research purpose. Develop participant sense of belonging because data are used**
- **Level 3 (not operational yet!): engaging (land)users (e.g., hunters, farmers, inhabitants...) as such. May help addressing local environmental conflicts/controversies**

Transversal questions: place of researchers in CS projects ; networking among BRs (exchange of experience, innovative CS, meta community of BR participants)

Scientists-managers

The participants are invited to write down the challenges that BRs face (managers, national committees) and the research themes that are being developed (researchers).

The moderators and the participants try to relate challenges and research themes. Then researchers and managers join in small groups to discuss what would be a project and the opportunities for a project.

The main converging issues are:

- **Governance:** Actors-interaction-networking, governance issues, how to make local stakeholders participate to the BR research. Dialogue, networking, coordination.

5 issues were discussed:

- A BR manager is a mediator between the research community and local communities to allocate research based on specific needs of the area and to emphasize the added value of the research? How to translate local issues into research questions and find disciplines to address the question?

- Problem of data and findings with no feedback and benefit for the local area: how to promote research results (problem of protected data, make sure that data remain anonymous)?

- Governance: how to organize participation and to insure that you associate more people than always the same in consultation processes? People are over-consultated and are tired.

- For the researchers: pressure to publish, their research is not always very useful for local purposes

- How to match global agendas to local contexts?

- **Local issues:** marine resources, die back forest etc.: how to interest researchers?
Science expertise of water for water based BRs: discussions on the issues that we are facing without finding to actions to implement. The question is to know how much data you have in your BR to begin with: at regional level, find researchers that are able to find and give you the information. We also could use children at schools to observe pollution for example.
Project: protecting small water based BRs from local and residual pollution.
Actions to implement: water quality data is available for core zone, no research on wildlife fauna changes. Have more data and some proposal solution. Engage school children in local monitoring; Find science partners for identifying
- **Ecosystem services** and biodiversity monitoring
Project: "Evaluation of the conditions of monitoring the biodiversity".
Actions: Provide or improve methodologies, to get data for monitoring or evaluation. Explore and find new methodologies. Exchange skills and professional experiences.
- **Socio-ecological systems** and managers interactions, cultural representation. Measure of sustainability: dynamic vision of roads, metabolism of the territory
- **Transversal** issues: resources, funds, communication of the results of research

Epilogue: What is a co-construction of a project between researchers and BR coordinators? It takes time for one to explain to the other his research themes or his BR challenges. Then we have to see if these two dimensions can match. Several projects appeared during the work.