European Workshop on Developing Learning Landscape Partnerships

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Executive Summary

This report describes the discussion and outcomes of a workshop held in Gut Siggen, Germany, from 15th - 18th September 2014, bringing together academics and protected area manager representatives from across Europe. The workshop aimed to share ideas about how to develop learning landscape partnerships to ensure protected area management makes use of research more effectively.

The workshop was organised and funded by the EUROPARC Federation (hereafter 'EUROPARC'), with further support from the Macaulay Development Trust and the Alfred Toepfer Stiftung F.V.S. The contribution of the workshop participants has been acknowledged through co-authorship of this report, as it represents a synthesis of the knowledge that was shared and generated at the workshop. This workshop was the second in a series of three workshops with the aim of 'developing learning landscape partnerships', with the first held in Edinburgh, Scotland on 28th April 2014, and the third due to be held during the EUROPARC annual conference in Killarney, Ireland, between 28th September and 1st October. During the Edinburgh workshop participants revised a model based on the key lessons from academic literature regarding successful partnership working between researchers and protected area managers. This revised model formed the basis for discussion in Siggen.

The Siggen workshop participants opened the two-day workshop with a series of short presentations outlining their experience and case studies of protected area management (PAM) and research partnerships. A set of 'top tips' (see p 12) were derived from the presentations – such as the importance of research based on using comparable methods so the data is universal and can be analysed accordingly. These 'top tips', supported the later revision of the 'developing learning landscapes' process model (see section 6, p 24). Participants also spent time discussing the strengths and weaknesses of different online communication platforms, from their perspectives as either researchers or protected area managers (or in some cases, wearing both hats). The ideal online communication platform is efficient to use, provides access to research findings and researcher profiles, and can be restricted to allow focussed discussion. An interactive 'living graph' illustrated the participants' views on a range of knowledge exchange mechanisms for learning landscape partnerships. This indicated, for example, that developing joint project proposals, is costly in time and money, but is likely to have a significant influence on behaviour change.

Participants also spent the evening identifying knowledge gaps for learning landscape partnerships under climate change, sharing ideas in pairs, small groups and all together. Seven clusters of knowledge gaps were identified, as follows: (i) The impact of climate change on biodiversity; (ii) The socio-economic impact of climate change; (iii) Perceptions and understanding; (iv) Measuring climate change; (v) The impact of climate change on management practice and (vi) Sharing good practice. The workshop participants also noted key knowledge gaps that they considered important in the context of developing research-management partnerships, but that were not explicitly concerned with climate change (cluster vii).

During the Siggen workshop, the 'Edinburgh' process model was revised based on the experiences and perspectives of the European workshop participants. In small groups, the workshop participants refined the 'Edinburgh' process model, according to the 'top tips' and by testing the model with the

application of up to three knowledge gaps, identified the previous evening. In plenary, a collective revised version of the process model was created. The 'Siggen' process model is presented in the report, with accompanying stages and steps providing guidance on how to work through the model.

Final discussions of the workshop tackled the 'big questions' regarding what happens when partnerships between researchers and PAM break down, what difference does the specific context of PAM make to management-research partnerships for climate change, and finally, how do we strategically coordinate and transfer good practice and existing information between us. The latter question considered how to develop the role of EUROPARC as a broker of contacts and scientific results between protected area managers and researchers. The role of different actors and their potential actions in developing a learning landscape partnership were further considered in an entertaining role-play game. The workshop closed with shared reflections on the workshop topic and process from the participants, organiser and facilitators.

The findings from this second workshop were compiled and formed the basis for discussion at the final workshop to be held during the EUROPARC conference in Ireland, 28th September – 1st October. The three workshop reports will form the basis for a report to DG Research and DG Environment, to be written by the Director of EUROPARC, and an academic journal paper, to be submitted by the James Hutton Institute.

Contents

1: Introduction: why do we need learning landscapes?

Carol Ritchie, the director of EUROPARC, welcomed the workshop participants to Siggen, for the 'Developing Learning Landscape Partnerships' workshop, held from 15th – 18th September, 2014. The Alfred Toepfer Stiftung F.V.S. was thanked for its hospitality and support. For participants unfamiliar with the organisation, Carol explained that EUROPARC is a membership organisation with over 400 members from across 38 countries, and that the Federation has been involved with international cooperation for over 40 years. EUROPARC aims to embody the following principles and Carol hoped that this workshop would also aim to be creative, optimistic, determined, forward-thinking and successful in team working. The workshop 'house rules' were detailed and displayed as follows: to have fun, be respectful, to slow down and thank non-English speakers for their patience and efforts; to come and go from the workshop room, but with respect; not to use laptops during the workshop sessions.

Carol explained that the issue of 'learning landscape partnerships' arose on the agenda for EUROPARC during their annual retreat to Siggen during 2013. EUROPARC staff/board discussed climate change and its impacts on protected areas, and realised that they had very little knowledge of research results and how these could be used to support their members' concerns. They also realised that researchers often use protected areas as field sites for research projects and locations for data collection, but do not assist with protected area (PA) management. Increasingly researchers are aware of having to discuss their research with policy makers and the public, but less frequently interact with protected area managers. Hence, there is a need to bring together the worlds of research and protected area management, to which this workshop contributes. Carol noted that the Alfred Toepfer Stiftung F.V.S. was an advocate of bringing people together to explore new ideas. She also thanked the James Hutton Institute and Macaulay Development Trust for funding and

facilitation support for the workshop, as well as the European Commission for funding focussed on combating climate change. Kirsty Blackstock and Annie McKee from the James Hutton Institute were introduced as the workshop facilitators.

Carol explained that the Siggen workshop was the second in a series of three workshops on the topic of developing learning landscape partnerships. The first workshop was held in Edinburgh on 28th April, 2014, with participation from an invited selection of Scottish researchers and protected area managers, as well as European participants. Therefore four participants from Edinburgh were also represented in the Siggen workshop. The third and final workshop will be held as part of the EUROPARC annual conference, to be held in Killarney from 28th September – 1st October. This workshop focussing on 'The Value of Research' will be led by Zsolt Végvári' from the Hortobágy National Park Directorate and the University of Debrecen in Hungary. The final conclusions from all three workshops will be translated into recommendations, to be presented by Carol in a report to DG Research and DG Environment. Kirsty and Annie aim to write a paper on the workshop findings to be submitted to an academic journal by the end of 2014.

For purposes of clarity, Carol adhered to the International Union for Conservation of Nature (IUCN) definition of 'protected areas'[1], as the short hand for the range of regional, natural, national parks, biosphere reserves, and other designated areas that are landscape scale units. Protected area management therefore covers the whole spectrum from sustainable tourism, understanding and managing human behaviour, to implementing policy directives, and managing for biodiversity, therefore requiring knowledge on social and natural science and exchange between researchers (of different disciplines) and managers/practitioners.

2. How might we develop learning landscapes? View from the Literature

This section presents the results of a literature review that assessed what scientific publications suggest makes for effective research-user relationships/partnerships and feedback on this review received from the participants in Edinburgh (with a web link available in Appendix 1).

[1] The IUCN defines protected areas according to their management objectives. Please see: http://www.iucn.org/about/work/programmes/gpap_home/gpap_quality/gpap_pacategories/ (last updated: 15.01.2014; accessed: 01.10.14).

Picture 1: Siggen workshop participants arrange themselves into a 'European map'. Photo: A. McKee

Overall, the literature suggests that there is a problem with the way that researchers' insights and expertise are integrated into protected area management and that research too often fails to tap into managers' scientific, administrative and lay knowledge. The requirement for research to show 'impact' alongside many researchers' desire to make a practical difference is driving increased attention to improving knowledge exchange between these two sets of stakeholders. The literature highlights that accumulation of knowledge is not enough to protect our natural heritage and more attention to how this knowledge is used is required. The Siggen workshop participants highlighted the need for tools to facilitate the use of scientific results in the management of critical issues facing protected areas. This requires effort by researchers as scientific papers are not easily applied to managing specific protected areas, and 'translation' through working with protected area managers.

We can learn from the vast literature on **partnership working**. In brief, the main elements to consider are:

- Shared objectives and vision for final output/outcome
- Recognition of different motivations and reward mechanisms
- Shared understanding of problem and philosophy of solutions
- Trust, equality and acceptance of constructive conflict
- Frequent and two-directional communications
- Willingness to take risks and change
- Willingness to cooperate and not compete
- Resources and time
- Freedom to fail
- Need for strong leadership, humour and passion

We can also learn from the vast literature on **learning and knowledge exchange**. An essential issue to address is whether these learning partnerships should have instrumental objectives (supporting

specific management actions) or normative objectives (supporting wider aspects like capacity building or empowerment); as this choice will determine which processes are most likely to deliver the desired outcomes. Learning has multiple dimensions (individual learning; learning in social groups; and learning that results in institutional change), which makes knowledge exchange a complex social process that deserves more attention. Much of this literature suggests that new modes of research are required - best described as problem focussed research drawing on multiple sources of knowledge. However, there is still a role for 'traditional' science.

Building on these two literatures creates a specific focus on how to ensure **research has 'impact'** - generating impact is more likely when knowledge is generated:

- At the right time and scale for issue at hand (salience)
- Involving individuals who are trusted and respected (credibility)
- In a process that is transparent and rigorous (legitimacy)
- When research outputs are concise, accessible and easy to understand
- When the outputs are actively disseminated to a specific audience

The Siggen participants reiterated that research has impact when research is applied in the day-to-day management of the protected areas where researchers are based. However, research also has additional impact when the results are comparable to other areas.

All of these are easiest to achieve through a process that is a partnership not a transfer. Coproduced knowledge should be scientifically valid; socially robust and policy relevant. Co-produced research is often more accurate and with high impact potential, but risks being seen as regarded as less objective or not innovative by other researchers. Furthermore, co-produced knowledge takes time and requires PAM input – and still might not give 'the' answer!

There are tips on the most appropriate **tools and approaches** within the literature:

- The form and content of each stage of research affects the utility of results
    - These stages include: research design, prediction/modelling, data collection, implementation and commercialisation, networking, training, and dissemination
- Distinguishing whether a project is using either inductive, experiential, learning-by-doing or deductive, scientific experiments or models
- Planning for and funding implementation, monitoring and evaluation of research results
- Both managers and researchers need to build capacity in conflict resolution; collaboration and systems thinking

A specific aspect to consider is **data management and sharing:**

- Awareness of what has been done, why and managing its transferability
- Coordination of multiple sources of knowledge
- Access to data, meta-data and findings
- IPR and copyright issues
- Quality assurance: confidence in data
- Validity & peer review
- Sharing interim findings

- Uncertainty and partial answers

The Siggen workshop participants added that the performance of researchers is often measured as the number and quality of peer-reviewed published articles. Researchers can improve the quantity and quality of scientific productivity through collaboration with protected area managers.

Finally, **institutional support** is required:

- Recognition of different ways of being a 'good' scientist
- Recognition that learning is part of being a 'good' manager
- Willingness to allow risk to reputation
- New knowledge is a foundation for change but the following are also needed:
    - flexible incentives, planning and regulatory regimes that respond to new knowledge and ideas
    - new technologies and markets to implement ideas
- Understanding of the influence of other actors in the system e.g. funders, auditors, board-members

These insights were combined into a draft 'model' for discussion during the workshop in Edinburgh in April. During this workshop, the participants suggested additions and amendments to the model, based on their experience and knowledge of partnership working in the unique context of protected area management. The revised and validated 'Edinburgh model' is presented in Figure 1 below, and formed the basis for discussion during the Siggen workshop (see Section 6).

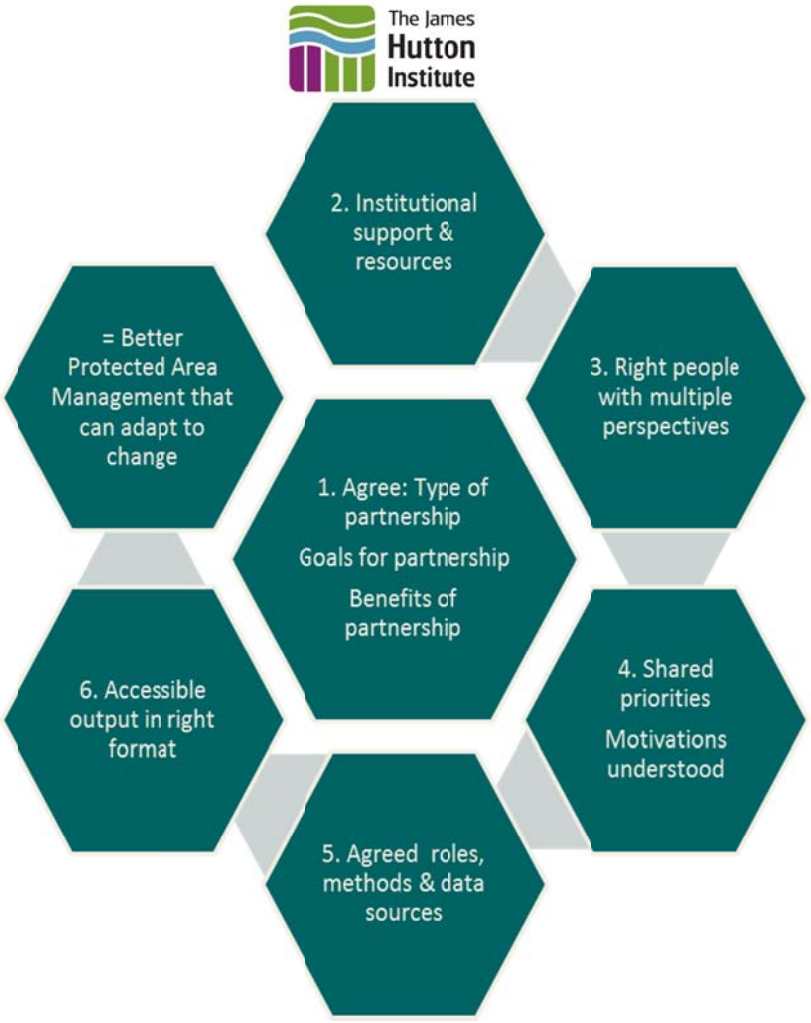

Figure 1: Revised 'Edinburgh' model summarising the factors required for Learning Landscape Partnerships derived from the literature and integrating participant views expressed at the workshop in Edinburgh on 28th April, 2014.

3. Sharing experiences of research-management partnerships

Siggen workshop participants were invited to prepare and present a five minute presentation, briefly outlining their current role and experience in partnership working between research and protected area management. This section summarises the key points arising from the presentations and the subsequent discussion, finally compiling a list of 'top tips' for partnership working (see Table 1).

3.1: Participant experiences

- **Mike Huber** described the formal partnership between his University and a national park, his experience of developing a database of literature on the Park, as well as developing mutual research questions and facilitation of Masters students to address these research questions.
- **Paulo Ciucci** described the case study of a five year project in a national park in Italy, where he joined the committee to talk to hunters about habitat management of large carnivores and birds. Despite the fact there was no professional outcome of this role for him, he gained from having access to the managers and being able to show that research was important and necessary, in turn providing evidence for decision-making in PAM, which was respected by the hunters.
- **Michael Hosek** provided an overview of his role as manager of a trans-boundary national park with an approved research strategy and tradition of long term cooperation with researchers. However, he is struggling as there is no experienced research coordinator at

present, and researchers don't want to undertake monitoring projects without opportunities to publish.

- **Marco Neubert** shared his experience on the 'HABIT-CHANGE' project, funded by INTERREG and provided project-based cooperation (although he highlighted a lack of funding for continuous cooperation). INTERREG is highlighted as a good source of funds for applied projects, and to support cooperation with practical organisations, such as protected area management.
- **José Miguel Barea** described the case study of the Sierra Nevada Global Change Observatory, and the increasing importance to integrate of socio-economic data, as well as the use of an information system to share information and enable coordination between research and government, and linking long-term trend data to the national park strategy.
- **Kathy Velander** reflected on her experience in research and consultancy developing community-based nature tourism, as well as guidance and standardised methodology to measure the social, economic and environmental impacts of nature and activity tourism (TRAM: Tourism Resource Auditing Methodology).
- **Kristian Bjornstad** noted the difference between the Scandinavian situation and the rest of Europe, with regard to protected area management (much less urgent in Norway, for example). He is setting up a national network of regional (rather than national) parks and recognises a willingness by researchers to do action-orientated research, and to develop research questions with local communities and protected area managers, but often a failure to discuss results with the park managers.
- **Zsolt Végvári** explained that his University has established many successful links between Masters/PhD projects and explicit management outcomes, however, a declining number of ecology students and challenging logistics of locating students in the field sites is reducing the capability of this partnership.
- **Hamish Trench** described the challenges facing the UK's largest national park and the recent publication of the Cairngorms National Park Research Strategy. Despite being a 'young' national park, close research links have been established, providing the role of 'critical friend' to the Park Authority, and researchers have been connected through the national park's involvement with the Long-Term Social-Ecological Research (LTSER) platform.
- **Andrej Sovic** explained his role as a park manager, University researcher and EU Chair of IUCN Protected Areas. He believes that if we want to make the connection between science and protected area management we have to 'sell it', through marketing and communication platforms.

3.2: Common themes and discussion points

- Research should meet the needs of protected areas, e.g. through a common research strategy/agenda for coming decade, including coordination and guidance on research questions from national parks (particularly on a regional scale).
- The mutual gains of the researcher and PAM, e.g. researchers gain a work space and access to data. Signing an agreement between the PAM and researcher is essential, e.g. masters student is obliged to provide a popular article from research on PAM for public dissemination. There appears to be little requirement in Europe to produce publicly-accessible summaries as part of research grant agreements.

- A ‘key fight’ is the need for time to be recognised for such partnership-development/maintenance activities, e.g. attending committee meetings, or workshops, (two participants had to take annual leave in order to attend the Siggen workshop).
- Protected area managers often lack capacity to engage with research due to their daily business and may be ‘too focussed’ on the protected area.
- A ‘three year research project is useless for park managers’; instead monitoring results are required to update management plans based on long term data series. Similarly, many historical data sets[2] remain unidentified, unexplored and often undervalued, despite their constituting an opportunity to analyse climate change impacts, long term trends and the repercussions/lessons to be learnt from historical management.
- Protected area managers could encourage researchers not to compete through offering alternative issues/research gaps where multiple projects want to do the same thing.
- The importance of including socio-economic data, especially for spatial planning, predicting impacts (e.g. visitor numbers), and promoting the value of nature (although more data is needed to achieve this). Identifying the role of ecosystems services must be highlighted, as a useful technique to translate the value of protected areas to society, and the threat of climate change.
- There is a need for a template to communicate research findings, and (arguably) standardised methods for monitoring impacts/benchmarking and cross-referencing between methods, permitting comparison.
- ‘Good’ comparative research design generating ‘universal’ data is necessary to allow results to be shared and transferred, to have structured meetings points between researchers, stakeholders and PAM, and to make research results easily available.
- Research on adaptive management should be easily and readily available to PAM; whether this occurs apparently depends on the personality of the researcher. Communication and interpretation skills should be taught to researchers and protected area managers.
- There may be a brokerage role for EUROPARC to exchange information and develop links between researchers and PAM; this depends on the wishes of EUROPARC members, but the organisation is restructuring their website to make resources (e.g. online library) more accessible.
- There is a role for supervisors to ensure that students and researchers do thank key supporters/informants and return summaries to the PAM.
- Protected area managers need help from scientists to support their work, e.g. the enforcement of protection zones for species and habitats.
- Common themes of participation, community involvement, sharing knowledge and ‘impact’ for both researcher and protected area manager arose.
- Communication as a key issue and ‘talking the same language’ matters e.g. academic papers vs. everyday PA manager language.
- The question of an information accessibility gap rather than research gap, where PA managers are not seeking/motivated to find information.

[2] Including out-dated research, PhD theses, data included in appendices of published articles, unpublished data, etc.

Table 1 'Top tips' for research-protected area management partnerships

'Top tips' for research-protected area management partnerships (black - derived from presentations; red = additions from later group discussion):
• Need a P.A.M. research needs strategy; coordinate proposals. • Process – thorough, good; work through monitoring and evaluation. • Identify outputs, e.g. management plan. • Identify and communicate rewards and benefits early in the process; be explicit about what are the rewards and benefits. • Encourage funding for research to be identified and prioritised. • New solutions – private enterprise and pride in local assets. • Benchmarking and comparative research design. • Broker to help collaboration. • Define responsibilities. • Regular meeting points (P.A. manager, researcher and stakeholder), and buy them a coffee! And cake. Build trust. • Take time to understand motivations and cultural difference. • Use a common language – identify and use targeted, appropriate and effective communication and dissemination. • Recognise distinction between communication and dissemination. • Invest time to discuss and use research results in P.A.M. • Pay for cooperation and get into our job descriptions. • Support process voluntarily during periods without funding. • Use students (future P.A.M.) to maintain long term data sets. • Build expectations into M.O.U. or agreements e.g. non-technical summary. • Develop conflict resolution processes included in M.O.U.; protocol to overcome tensions. • Ensure contingency planning and risk assessment.

4. Knowledge Exchange for researchers and PAMs

Having set the scene and shared experiences, the workshop then focussed on some mechanisms by which knowledge could be shared between researchers and PAMs. Given the interest in sharing information between EUROPARC members across Europe, there was a particular focus on online communication platforms (see section 4.1). The list of preferred KE mechanisms developed in Edinburgh was then revised and evaluated by the Siggen participants (see section 4.2).

4.1: Strengths and weaknesses of online communication platforms

This section details the strengths and weaknesses of online communication tools and platforms utilised (or reasons why not) by the researchers and protected area managers. The researchers and protected area managers were separated into two 'professional' groups, to identify whether different online communication platforms were more popular/useful to the different expert groups. A carousel format was followed by the groups, with each swapping to discuss and add their thoughts on the other group's analysis of online communication platforms. This section provides a summary of the compiled results from these group discussions.

(1) Email

Email is used regularly by the researchers, and its benefits include the opportunity to have a focussed relationship with peers, that it is active, selective, professionally rewarding and efficient – there is very little 'garbage'. However, the draw-backs of using email is that researchers might miss

something important or creative, through excluding access to the 'unexpected'. It also takes a lot of time to read and respond to high number of emails arriving each day, which can contribute to procrastination, but different solutions to this issue were suggested, including keeping email 'off' until a defined time. A further drawback is the perceived immediacy of email contact, when it is not possible to be available at all times. Whilst email was not mentioned specifically by the protected area managers, they agreed with the strengths and drawbacks during the carousel feedback.

(2) Professional websites and blogs

The researchers also recognised that they use professional or topic-specific websites, which have unique strengths and weaknesses as online platforms for knowledge exchange. Websites such as the European Eco-tourism Network website or the Ning[3] website of the EcolNet project provide long-term communication potential, link together different relevant organisations, can be free to join and participate in discussion groups, hosted on the website. The park managers reiterate these strengths and note that parts of such a website can be 'closed' to permit internal discussions (e.g. between project collaborators), and that a EUROPARC 'Ning' website could be quickly and easily set-up (and could be integrated with professional websites/websites of associations). The researchers find, however, that their committed participation to such professional websites depends on their time available and interest, and that they tend to use these online platforms to different degrees, in particular to source data (i.e. rather than to maintain a conversation). The protected area managers highlight 'conservationevidence.com' as one of the best information sources, including one page research summaries, but with no space for online discussion.

Further online 'blogs' focussing on specific topics relevant to protected area management were also discussed (e.g. the Italian blog 'Vertebrate'). Whilst participation is open, there are concerns regarding the lack of 'control' of the website, as well as accusations of being snobbish if you do not participate in the online discussion. There is a need for greater moderation. However, such blogs can be popular, well read, and therefore a good way to advertise papers, etc.

(3) Skype

Similar to email, Skype is used by the researchers as a closed platform for conversations and conference calls. The park managers believe that it is best used for conversations between two people rather than conferences. Further advantages recognised by the researchers are the ability to simultaneously send papers and files, and that it is free to make calls to other countries. The researchers add that a clear agenda and facilitator is necessary for a successful Skype meeting of more than two people. Skype is also a useful tool to reduce the carbon footprint of a project, minimising the need to travel by air or road, and simultaneously saving time.

(4) Google Drive/Google Play

Google Drive is noted by the researchers as a helpful collaborative tool, because it is possible to share and work on documents at the same time as other project team members. This online platform also allows team members to see what other team members have accessed and where they made changes to a shared document.

[3] An online platform that allows users to create custom social networks.

(5) ResearchGate

The researchers noted that ResearchGate is very active online platform. Researchers are linked through keyword searches, and subscribers can follow individual researchers, receiving notifications if they publish, for example. Research questions can be posted to seek collaborators and new publications can be advertised. Individuals are scored based on their impact factor plus the score from ResearchGate's network analysis. There is confusion amongst the researchers whether any further accreditation or affiliation is required by the website, but they agree that there is credibility through the scoring process. It is also possible to add your own topics and gain endorsement from others. There could be benefits for practitioners, such as park managers, through the ability to search for researchers based on keywords.

However, weaknesses include the multiple emails received from the website as a subscriber (one park manager explained that this was a reason behind their preference instead for Google Scholar), as well as the challenge to fit into the framework of ResearchGate if you are not a conventional academic (e.g. frequently producing consultancy reports rather than papers). The uploading of pdf files of journal papers to ResearchGate raises issues of copyright, which is of concern to the researchers, although all agree that it is important to make results available online (unless they are confidential or under ownership of the funder, e.g. consultancy reports). The potential to upload relevant research findings as pdfs to National Park websites is suggested.

(6) Scopus

Scopus is a helpful technical tool, used by the researchers to access information about paper authors, including email addresses, which facilitates collaboration. It is a repository rather than an open forum with links, but all abstracts can be accessed. Scopus is similar to Google Scholar, which the park managers highlight as a route for locating information which supports park management. Scopus requires an organisational membership, therefore is likely unavailable to protected area managers.

(7) LinkedIn

LinkedIn is used by the researchers and PAM for making professional contacts and through system-based invitations. It provides a useful mechanism for keeping in touch with former students. However, it is also perceived as 'just another network', which takes time to use and the researcher participants expressed little drive or interest to use it. Whilst ResearchGate provides publicity and endorsement, the comparable aspects of LinkedIn are considered less suitable for research networks, and it is questioned whether it is a useful forum for connecting with protected area managers.

The protected area managers agree that LinkedIn takes time to use, and in one case, the park management has made an organisational decision not to engage with this network because they are understaffed. However, there is the potential to establish special groups within LinkedIn, in order to share details and issues. Nonetheless, it is felt that such information sharing is not 'real' cooperation.

(8) Facebook and Twitter

The researchers noted that many professional websites also have a linked Facebook and/or Twitter pages, which are believed to be more open and to access a wider audience. There may also be links to blogs, discussion lists, etc, displayed on such social media pages. The researchers use these platforms to 'support others' and to keep in touch with volunteers, for example. The volunteers can

use Facebook to upload photos of their experience, or to identify species. The researchers believe that this platform and resulting interaction with the researchers improves participation with/by volunteers. It also creates a group 'bond' and can improve communication within groups. Protected area managers explained that their national park authority used Facebook and Twitter for communication and awareness, and as a portal for citizen science rather than academic research. Facebook is apparently less suitable for contacting researchers, but it is one of the fastest methods for disseminating information to the public and students (as well as dedicated websites). However, social media takes time to use, and requires high levels of activity and commitment in updating regularly, which in turn puts pressure on resources and staff time.

(9) Self-designed/built online platforms

The researchers also had experience of designing, building and using dedicated online platforms, which were typically closed networks that they used to keep in touch with alumni and then later for contacting potential collaborators. There was much discussion amongst the researchers regarding the prerequisites and critical factors necessary for a purpose-built online platform. These critical factors include time availability (and therefore efficiency). However, it is asserted that such online platforms cannot supersede 'being together', talking and being pleasant, in terms of efficiency.

The key distinction throughout the discussion of strengths and weaknesses in terms of online platforms is what the researcher/park manager is hoping to use the platform for. In this workshop, given that the focus is on peer-to-peer (e.g. research-PAM) partnerships, then the critical factors for an online platform are as follows:

- Efficiency.
- Access to research findings.
- Access to researcher profiles
- Closed, or at least closed at the sub-level (those from an open level could be invited/recruited for specific discussions at the sub-level).

The park manager workshop participants raise the potential for a dedicated, common, online platform as a role for EUROPARC. Currently EUROPARC has no research dissemination function, but their website could be used to host guidelines, and information for students/volunteers. The PAM participants also explain that they are over-whelmed with current online resources (as opposed to past times when a book was published and updated the current level of knowledge), and struggle to identify where to find high quality research findings, due to the pressures of time and a lack of capacity to access research. PAMs therefore can't afford to use many online platforms due to resource constraints, and currently use an average of only one or two platforms; however they are aware that there might be other, better, platforms to use. They often ask research institutions to help or contact experts directly (through specific networks, e.g. for references or data), as it is often cheaper to hire their expertise than to use online platforms to source information. It is often most helpful to have papers or certain pages as recommended reading by researchers.

The park managers also describe examples of online platforms that they have set-up, e.g. the 'dating service' for researchers and park management in the Cairngorms National Park. The web portal includes publications and summaries, but there are resource issues regarding its functioning and maintenance. In their ideal scenario a new portal would be developed, which would represent

'basecamp', with documents/papers uploaded and available (overcoming current access/sourcing issues using online searches), the ability to follow discussions, to be used to communicate with other national park managers, and to meet the different needs of 'internal' users (e.g. partnership/project team members), the public, and researchers.

This ideal online platform would also be complemented with a tailored, locally-relevant research programme, facilitated through the development of learning landscape partnerships, and with integrated PAM research priorities, as well as those of the researcher and wider community. It would share information with EUROPARC members and include a 'search' function. Through this partnership, protected area managers would be relieved of the need to engage with the range of online platforms because their research partners/professional bodies would synthesise and review the discussion on their behalf. Nonetheless, blogging and the use of social media and email should be a mandatory component of the jobs of both protected area management and researchers, and should be easily integrated and automated (where possible). There is also a need for a moderator/evaluation mechanism to ensure quality of content.

A key outcome of the discussion regarding online platforms was consideration of the difference between dissemination and communication, and the need for a data/research depository (e.g. as currently held by EUROPARC in Klagenfurt University and within their virtual library). Further discussion regarding establishing a EUROPARC research strategy was also necessary.

4.2 Good Practice in Knowledge Exchanges for Learning Landscapes

During the Siggen workshop, a flip chart sheet was presented that described the knowledge exchange (KE) mechanisms prioritised in Edinburgh. The facilitators added the main online/social media mechanisms discussed during the previous exercise (see Section 4.1) and asked the participants to highlight any further missing knowledge exchange mechanisms (those added in Siggen are underlined). Finally, each participant was asked to pick the one they thought was most important. These provided a 'top 10' list, but please note, these are not ranked according to priority (see list a – j below). The participants were asked to score them on axes referring to time/cost and impact on an individuals' behaviour[4]. The problem arose that time does not always equal money given that many people do KE as a 'volunteer' and not part of their job. Note that publishing journal papers and books and reports was not listed!

a) Walk /Drive and talk
b) Visualisation e.g. maps and diagrams
c) Advisory or Steering Groups
d) Email, <u>phone, skype</u>
e) <u>Citizen science to collect data</u>
f) <u>Joint project applications for funding</u>
g) <u>Written research briefings/educational material</u>
h) <u>Networking receptions, workshops and conferences</u>
i) <u>1:1 meetings, where possible out of the office</u>
j) <u>Stalls at the local events/markets</u>

[4] Originally the exercise was to consider behavioural change, but there was a scale problem as certain knowledge exchange mechanisms can reach lots of people, leading to minor changes per person, rather than one big change in one person.

New mechanisms added at the Siggen workshop but not selected:

- Organisational websites
- Professional online networks
- Virtual repositories or data bases
- FB and twitter (Blogging was already there)
- Joint production of media e.g. DVD or YouTube video clip

Things from Edinburgh not selected by anyone:

- Blogging
- Consultation questionnaires
- Information sharing via data archives
- Lectures to students
- Free advice

The resulting list was much longer than the list in Edinburgh and contained some very different ideas. Group evaluation of the results demonstrated that there was often the need to commit resources to have maximum impact. However, some things are expensive and not very useful. The participants then took part in a 'living graph' when the group collectively agreed where individuals representing their choice of KE mechanism should stand according to the X and Y axes laid out in a room. The facilitators recorded their final positions and the results are illustrated in Figure 2 and Figure 3. Picture 2 illustrates the 'living graph' exercise at Siggen.

Picture 2 'Living Graph' of knowledge exchange mechanisms

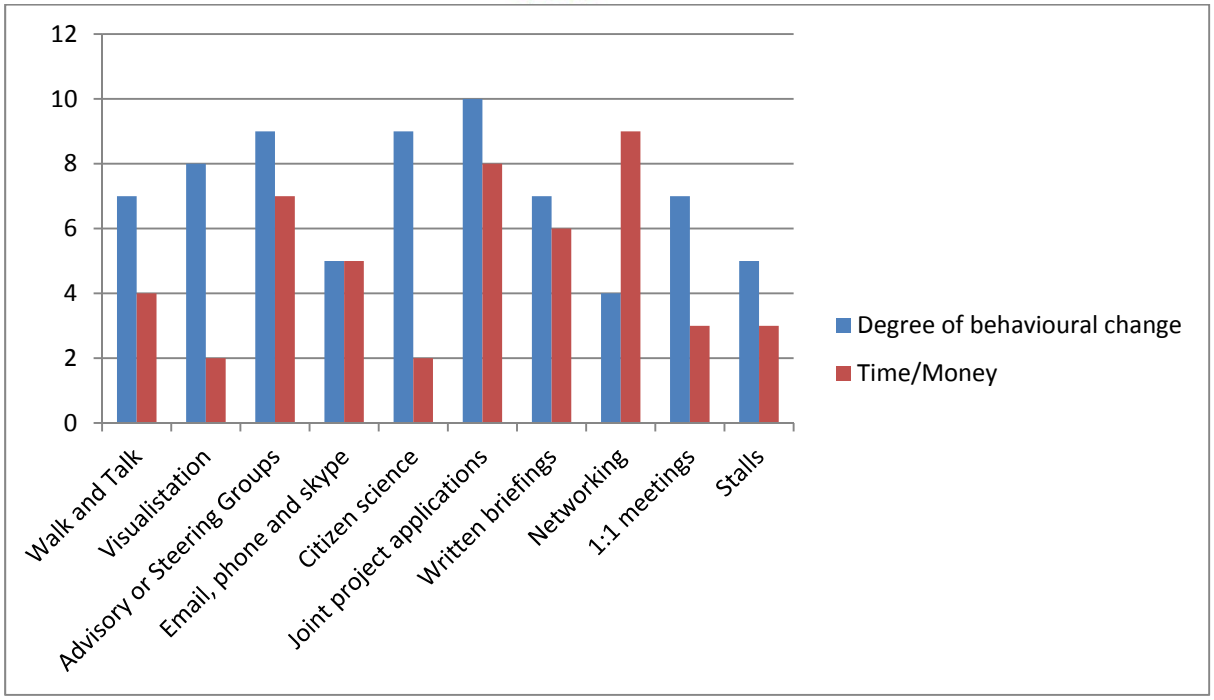

Figure 2: Overall results of 'Living Graph'

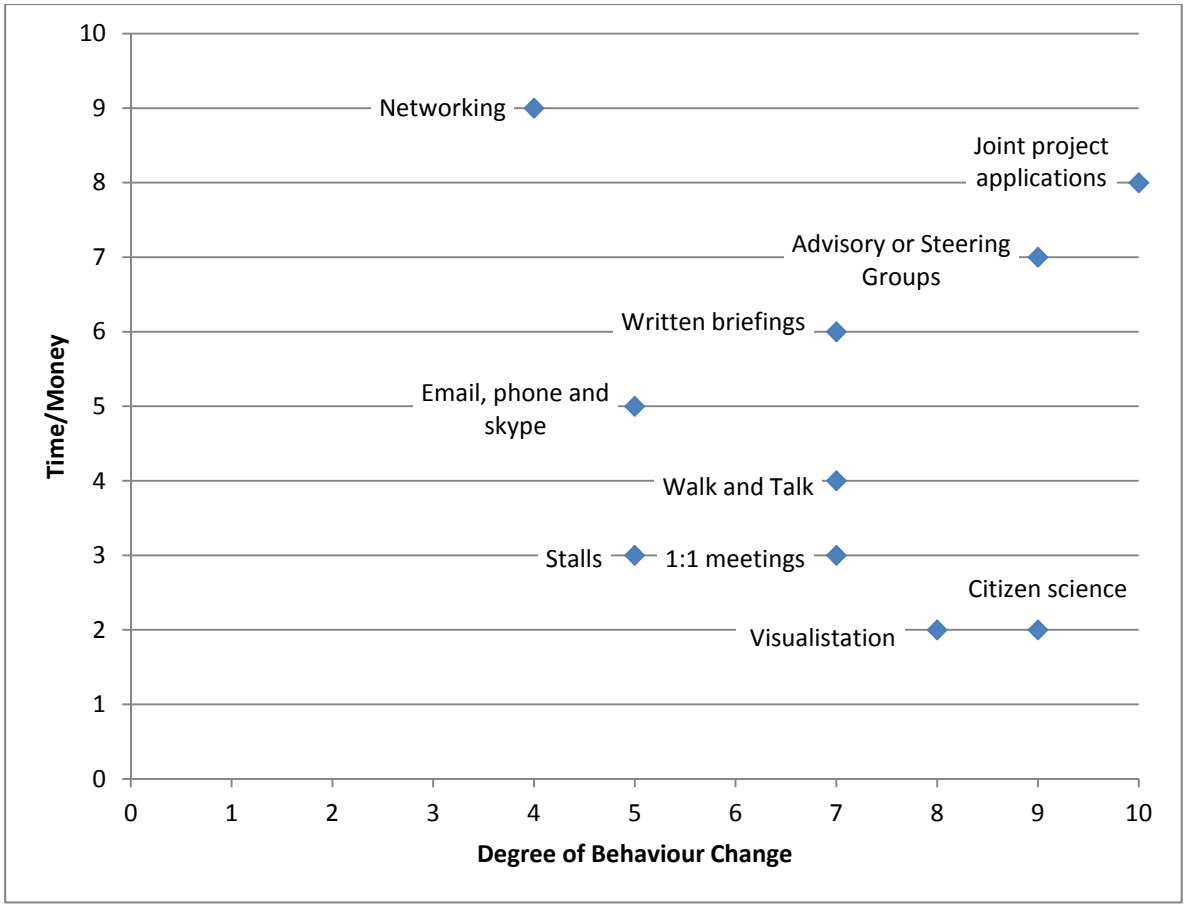

Figure 3: Overall Results from Living Graph

On this basis, the workshop participants suggest that joint project applications can be the most effective but are resource intensive, whereas citizen science is almost as effective but requires less

time and money. Networking events come out as expensive in comparison to the degree of behavioural change expected, although they could still be of use for information provision. Having addressed how to exchange knowledge, the workshop participants then considered where there were gaps in knowledge about protecting areas under conditions of climate change.

5. Knowledge Gaps for Learning Landscapes under Climate Change

Adaptive management is required in protected areas due to the potential impacts and opportunities offered by climate change and climate variability. Therefore, EUROPARC was interested in identifying the main knowledge gaps that improved relationships between PAM and researchers could address. The exercise was introduced as an individual brain-storming process "In the context of protected area management under climate change in Europe what are the top 5 knowledge gaps that need to be filled?" Participants then clustered their 63 post-it notes into common themes (in pairs, small groups and finally in plenary), providing a narrative as they went.

Cluster 1: Impact of climate change on biodiversity

This cluster was built up around how climate change may influence biodiversity, in terms of species types, interactions and range, and therefore the impact on protected area management. Specific topics were:

- The colonisation by non-native and dealing with invasive species.
- The effect of climate change on river flow levels, and the quantity and quality of water in freshwater ecosystems.
- Effects on non-native species risks.
- Changes in forest species disease risk.
- The impact on biodiversity particularly alpine, coastal and arctic species.
- The effect on spring chick survival/productivity, especially in Capercaillie.
- Functional responses of keynote species to changes in quality and the availability of critical resources (food, cover, habitat, etc).
- Habitat and species requirements with regard to climate adaptation and adaptation measures.
- Phenological mis-matches.
- The impacts of climate change on the protected area (i.e. in terms of habitats, species, natural risks, etc.) and the role of protected areas as biodiversity refuges under scenarios of climate change.
- The impacts on species interactions under climate change.
- Functional links between the natural history of keystone species and long-term trends in climate and habitat.
- Rarefaction or extinction of cryptic species (or even undescribed species).

The workshop participants also asked for the compilation and dissemination of 'climate change case studies', in particular, case studies demonstrating the measurement of climate change impacts, and illustrating adaptive management in practice.

Cluster 2: Socio-economic impact of climate change

This cluster represented knowledge gaps around the socio-economic impacts of climate change, including the implications for land use, recreation, tourism, local economies, ecosystem services and natural resource provision. Specific topics were:

- The implications [of climate change] for land use choices especially agriculture.
- The socio-economic impact of climate change in and around protected areas, and with regard to biodiversity.
- The impact of climate change on recreational use in protected areas (adaptations of visitor management).
- Infrastructure needs (especially for the very young or old under changing weather patterns – wind and rain in relation to tourism destination choice).
- The impact on local economies from income change relating to climate change, considering local industries, farming, livestock, fishing.
- The environmental impact of a shift in tourism to more northern areas.
- The impacts of climate change on ecosystem services.
- The impacts of climate change on natural resources.
- The effects of differing management systems on natural and cultural resources [in climate change].
- The collective effects of global vs. anthropogenic changes in climate on ecosystems.

Cluster 3: Perceptions and understanding

This cluster represented knowledge gaps around the need to better understand changes to public perceptions of protected areas as a result of climate change and the role of the media. Specific topics were:

- Changing perceptions resulting from climate change and [protected] area use.
- Public perceptions of protected areas and their role in climate change.
- Role of media in shaping social perceptions of climate change in protected areas.
- Media magnification of hazards, e.g. tsunami, heat waves, droughts, forest decay, and changes in the demography of tourists in relation to perception of impacts of climate change on [protected] areas.

However, some participants felt that the role of the media was not a research gap as the knowledge exists, but this knowledge is not currently well utilised in protected area management.

Cluster 4: How to measure impact of climate change

This cluster represented knowledge gaps around how climate change and its impacts are measured, such as with the use of scenarios and projections, standardised benchmarking, knowledge exchange, interdisciplinary approaches and tools for management, as well as suitable monitoring systems. Specific topics were:

- Climate change scenarios and trends in climate change projections.
- (Comparative) European approaches towards climate change effects in parks.

- Interdisciplinary approaches and tools for management (mainly practice); overcoming a lack of coordination and identifying common understandings of 'success' [in climate change context].
- A long-term socio-economic monitoring system [in climate change context].
- The monitoring climate change [i.e. changes to climatic patterns and their influence].
- The position of taxonomy [and whether it is losing significance/utilisation].

The workshop participants also noted 'data accessibility' as a key issue influencing knowledge gaps with regard to measuring the impact of climate change.

Cluster 5: Impact of climate change on management practice

This cluster considered knowledge gaps regarding the impact of climate change on management practice, including long-term development, protection aims, efficient mitigation, species prioritisation, as well as adaptive management and management planning. Specific topics were:

- Long-term (park) development, local partnerships and climate change measures.
- To what extent will changes [due to climate change] be acceptable? Dynamic protection aims [might be needed].
- What is possible to mitigate and what is not (efficient), with regard to biodiversity and climate change?
- Local, regional, national and international [mechanisms for] species monitoring: which biodiversity components are local priorities worthy of special protection and which are the most vulnerable to climate change [and therefore worthy of protection using international mechanisms]?
- How to adapt management or management plans, including stakeholder involvement and the exchange of good practice.
- Overcoming a lack of standardisation and generating comparative benchmarking standards for PA management [under climate change], in addition to models of PA management.
- Knowledge sharing and exchange mechanisms, and overcoming a lack of motivation to read reports.
- Climate-adapted measures to tackle effects, as well as a database/pool of measures for specific processes.

Finally, the workshop participants noted key knowledge gaps that they considered important in the context of developing research-management partnerships, but that were not explicitly concerned with climate change. These knowledge gaps are detailed in Clusters 6 and 7.

Cluster 6: Sharing good practice

This cluster represented knowledge gaps around innovation practices, cultural heritage management and comparing national park governance structures across Europe. Specific topics were:

- Local and regional innovation practices in European parks.
- Parks and participation in cultural heritage management.
- (Comparative) European governance structures of regional (nature) parks.

Cluster 7: Non-climate change knowledge gaps

This cluster represented broader knowledge gap, of concern to protected area management but with no explicit link to climate change. Specific topics were:

- Understanding human behaviour and choices.
- Where there are research gaps to verify management practices and vice versa.
- Biodiversity loss NOW + Biodiversity 2020 targets.
- Strengthen existing role/measures for protected areas.
- Using ecosystem service framework.
- Connecting people to nature.
- Tourism market trends and impacts.
- Good practice community engagement in protected areas; comparative research.
- Using "assets" to stimulate local innovation in protected area.

During the discussion, many felt that protected area management should pay more attention to research regarding how to 'sell' ideas and 'market' the message about nature conservation under conditions of a changing climate, with protected area managers needing skills in media relations and effective communication rather than natural science per se. There was also a discussion of benefits and risks of using an ecosystem service framework to 'sell' the benefits of nature conservation, with some arguing that it is a good way to get protected areas to matter to the wider population, but others arguing that the concepts do not capture the fundamentals of biodiversity properly and so may undermine the main aim of most protected areas.

6. Revising the 'Model' for Developing Learning Landscape Partnerships

Insights from the literature and workshop held in Edinburgh in April[5] led to the drafting of a process model summarising the factors required for 'Learning Landscape Partnerships' between research and protected area managers. The 'Edinburgh' process model is presented in Figure 1, (see page 8).

During the Siggen workshop, the 'Edinburgh' process model was presented to participants, points of clarification were discussed and participants were asked to revise and improve this model based on their experiences in Europe. A list of 'top tips' for research-protected area management partnerships were derived from individual short talks provided by each participant (see Table 1). Subsequently, in three break-out groups, the participants improved and amended the 'Edinburgh' process model, according to the 'top tips'. Therefore three revised process models were created. The groups continued to refine their models based on presentations of each group's version and through testing the model with the application of up to three knowledge gaps, previously identified (see Section 5). In plenary, a collective revised version of the process model was created, incorporating the shared elements of each group's improved model, with accompanying narrative. The 'Siggen' process model is presented in Figure 4.

Key points to consider in conjunction with the multi-dimensional process model included:

[5] Blackstock, K. *et al.* (2014) Scottish Workshop on Developing Learning Landscape Partnerships, 28th April, 2014. Available at: http://www.hutton.ac.uk/research/projects/Learning-Landscape-Partnerships

- Depending on the previous history and context, you may be able to enter the model at different stages.
- We have to bear in mind with whom, and how, we are communicating with those within the partnership and wider 'stakeholders' or 'key supporters' throughout the process.
- The question remains whether the 'Siggen' process model represents the ideal or what has happened in the past.
- This is a model for developing a particular partnership, but how do we link up between partnerships, in order to make them more strategic and ensure that they have an enduring legacy?

The following stages and steps provide guidance on how to work through the 'Siggen' process model (Figure 4).

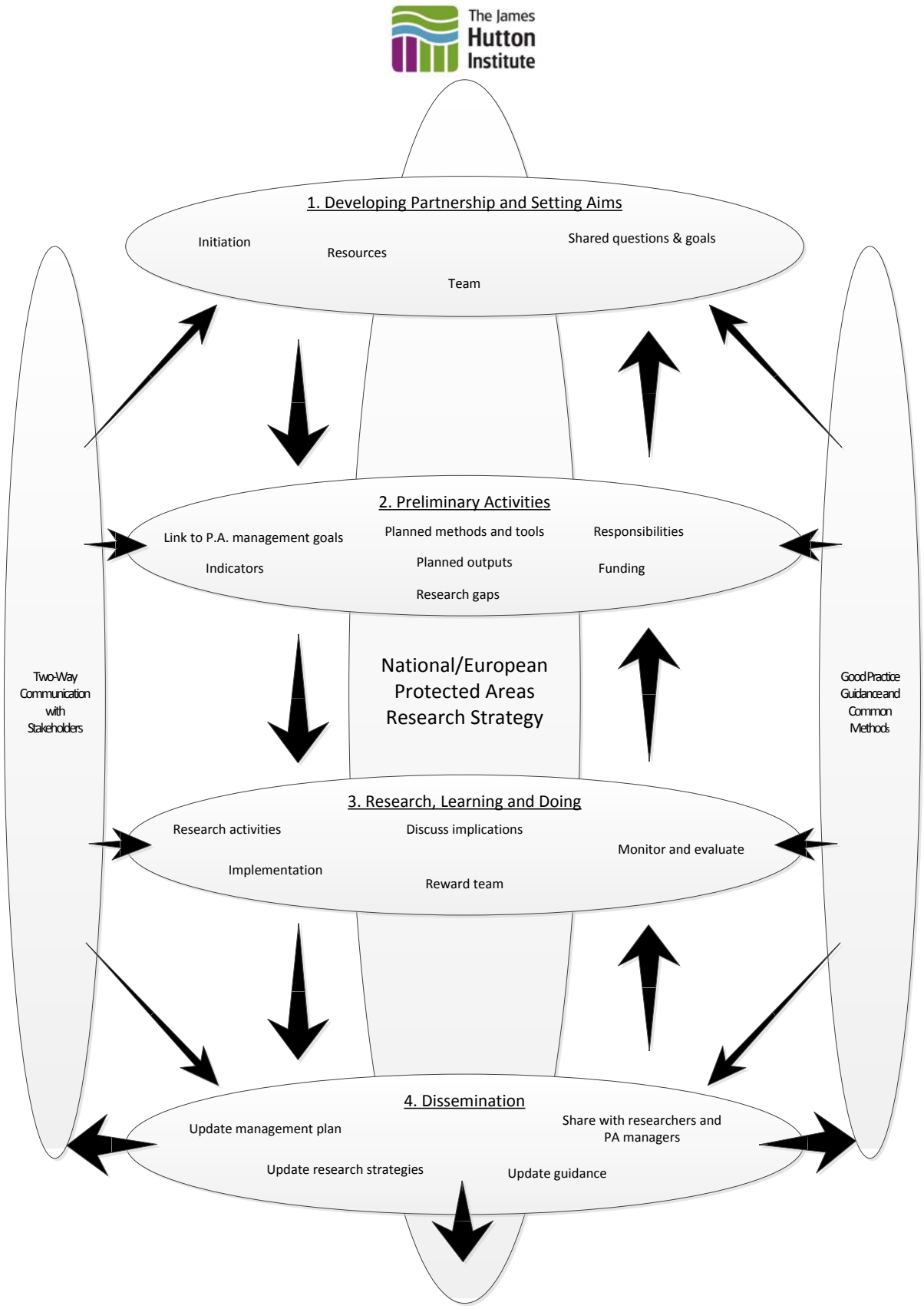

Figure 4: Model v3.0: the 'Siggen model', illustrating the process of developing learning landscapes.

Stage 1: Developing the partnership and agreeing the aims

1.1 In the context of the current protected area management plan(s), something initiates the need for a partnership – could be a goal, a problem, or a question. Someone or some people start the process.

1.2 Sufficient resources and support from the organisations involved (e.g. Park Management organisation and University) to get up to Stage 3 are found; and sources of funding to complete stage 3 located.

1.3 A team is assembled of PAM and researchers; this might also include other stakeholders. Their motivations are considered including the benefits for them and the rewards they seek. The roles that they are going to play in the project are agreed.

1.4 A set of shared questions and goals for the project (prioritised where necessary) are developed and agreed. As part of this, a shared philosophy about the process by which the project will run is discussed. Possibly a formal agreement or MOU is drawn up for the partnership.

1.5 The questions and goals should be checked against a wider national or international Protected Area Research Strategy such that research is coordinated and not duplicating existing work.

1.6 Wider stakeholders need to be informed that a partnership has been set up and consulted about what it plans to do, how it plans to do it and why it is needed. Opportunities to actively engage important supporters (e.g. businesses, policy makers, politicians), who will have an impact on whether the project succeeds, should be developed, such as an advisory group.

1.7 Steps 1.2-1.6 often require skilled facilitation and the use of guidance (e.g. on how to select the team, how to engage stakeholders, how to write an MOU, etc).

Please note, however, that steps 1.1 – 1.7 don't always happen in this order, but remain connected. The order may be dictated by the prior existence of a research strategy (see Step 1.5) that prompts a team already doing something else (see Step 1.3) to initiate a partnership, or available funding might be offered (Step 1.2), which triggers the consideration of partnership development, and so on.

Stage 2: Preliminary activities to develop project proposal

2.1 Develop the detail of what the partnership is going to do in terms of methods and activities including identifying the research gaps that need filling and where they can learn from transferring existing data or methods.

2.2 The project should adopt common good practice methods and processes such that their results will also be transferrable to other areas.

2.3 The specific responsibilities of individuals in the partnerships should be agreed so that they can work these into their job planning processes.

2.4 The project proposal should be clearly linked to PAM goals and activities.

2.5 Indicators by which change can be measured should be identified and these should include bio-physical and socio-economic indicators to help with adaptive management, but also 'process' indicators to judge how well the partnership has worked. The data required for the baseline and the indicators should be included as part of the project design.

2.6 The expected outputs and how they will be used should be discussed (this often relates back to rewards and benefits for the researchers).

2.7 Wider stakeholders need to be consulted about what the partnership plans to do and those who might be needed to help supply data should be actively involved in finalising the project proposal.

2.8 Locate funding to undertake research and implement results (many partnerships might get stuck here but it is still useful in building common understandings to get to this point. The partnership might then be dormant until a new funding opportunity arises).

Stage 3: Active research and learning

3.1 Undertake research as agreed. This may be to update the management plan or to fill a knowledge gap.

3.2 Then implement the results of the research! This may lead to additional research on the effects of the management intervention.

3.3 Monitor and evaluate the process using the indicators agreed in step 2.5, to see if the project is achieving its goals and aims.

3.4 Fine tune the process – may have to repeat steps 3.1 & 3.2 as a result of 3.3.

3.5 Ongoing communication within the project team to interpret results; but also ongoing communication with wider stakeholders and key supporters to keep them informed of progress and also to use them to discuss results and explore the implications.

3.6 Ensure rewards and benefits for PAM and researchers are realised (see step 1.3).

Stage 4: Dissemination

4.1 Share information and learning with others in other Protected Areas and other research organisations.

4.2 Use information and learning to update management plans and activities.

4.3 Use insights to update national/European research strategies and guidance.

7. Developing guidance for partnerships: answering the big questions

What happens when partnerships break down?

A small group of workshop participants discussed and described their practical experiences of partnership working that have run into difficulties, the options available to resolve differences between partners and how or when to end partnerships.

There was a clear theme regarding the role of formal institutions, in conjunction with informal 'good behaviour', such as maintaining clear communication, and to continue to 'check in' with research and protected area manager partners, as well as key supporters or stakeholders. Such formal institutions may be in the form of Memorandums of Understanding (MOU) or even formal contracts. All partners and stakeholders must sign up to these documents or agreements at the beginning of a partnership. Communication used to implement them must be clear and positive. Such legal tools were highlighted as options to be used with 'organised' stakeholders, such as community councils, tourism providers, etc. such that if a contract is breached, there is scope for partners to take action.

The group also agreed that using formal institutional mechanisms also provides benefits during 'peace time'. Such agreements can be reviewed on a frequent basis, to allow natural break points for partners to leave, if they wish, and also to provide opportunities for reflection and future planning. Such agreements do not have to be project dependent, and can support the initiation of a project, or be maintained between periods of research project activity, therefore reducing the burden on individuals to maintain relationships (often undertaken as a voluntary effort).

What difference does the specific context of Protected Area Management make to management-research partnerships for climate change?

This group believed that there is a particularly urgent need for evidence/science-based management to help overcome social conflict regarding resource use in protected areas. Protected areas can have multiple uses and users, and can be owned privately, making conflict more likely. Partnerships between research and protected area management may be used for policy development or in political processes, with very real risks and opportunities involved. Thinking about current *and* future generations is often neglected in PAM yet protected areas are designated for national and international conservation reasons to ensure that these species and habitats will be viable in the future. This is why measures and programmes do not always benefit or meet the needs of local people and businesses; as they might be focussed on the benefit to species and habitats instead.

Protected areas may be considered "laboratories of good practice". There are often strong stakeholder networks in protected areas that provide a way of connecting or 'networking' habitats. Nonetheless, it is difficult to distinguish protected areas within wider complex contexts and systems in which they sit, and therefore it can be challenging to extract transferable results from very specific findings. However, some aspects of PAM processes can be considered generic. The people and character of protected areas, even in adjacent locations, can also be completely different from each other, making generalisation problematic.

Protected areas contain very valuable and important assets. However, a key challenge is to promote interest in assets that are difficult to value economically. Nonetheless, the emotional investment in protected areas must not be underestimated, providing identity, values and attachment for human populations. PAM must therefore be effective and efficient at sustaining these assets. This may involve extra 'cost' to the individuals but there are also normative motivations – with some arguing that there is, or should be, a 'moral' commitment or the responsibility of protected area managers to protect these assets. However, PAM is often less accountable to society than other sectors (e.g. hospitals), and the mismanagement of protected areas is often invisible and difficult to communicate. There is a need to make PAM more visible and highlight why mismanagement matters. There is also the need to be aware of plans and goals that may prevent adaptation in PAM. Clear goals are necessary, for example, defining what is 'better' PAM? In the opinion of this group, 'better' means an improvement to the status quo, providing support for research (with a protected area partnership), that led to a direct benefit for protected areas.

How do we work strategically to coordinate and transfer good practice and existing information at a 'higher level'?

This group agreed that there is a need to find examples of good practice in PAM-research partnerships, and to identify how these partnerships function. Advisory boards and scientific councils should also be explored as examples of collaboration. It is believed that EUROPARC is the right organisation to steer this example-finding work, and to develop a set of guidance on developing the framework for PAM-research partnerships. EUROPARC have experience of gathering such information and maintaining their library, which is well-sorted and categorised. The group agreed that in this case the actual projects and abstracts should be send to EUROPARC (which could be a condition of funding for members), as well as a description of the process/relationship between protected areas and research.

The question was raised regarding how to structure an online resource hosted by EUROPARC, and whether certain sections should be restricted to access only by EUROPARC members. There was a consensus that such information should be made publically available to further the cause of protected area management. There is a need to initiate the gathering of case studies, and to use existing channels, e.g. through the 'Conservation Evidence' website, providing a link and explanation to EUROPARC members.

The group also discussed the wider research agenda of EUROPARC, including networks outside of protected areas, and how to decide and designated old/new protected areas. Can EUROPARC strongly recommend/persuade protected areas to adopt PAM-research partnerships? There is a need to identify and demonstrate a pilot project (i.e. a PAM-research partnership in action), as well as to identify and employ professional facilitators (EUROPARC Consulting?). The EUROPARC conference is recognised as a vehicle to bring together protected areas, and publications are likely to arise from that event.

8. Making the partnerships happen: the role of different actors and their actions

In order to consider the role of different actors in developing 'learning landscape partnerships', the participants played a game that required them to role-play different actors in the researcher-PAM partnerships, and to suggest actions that they would take. Initially this was presented as positive actions to support the partnership and reflected what participants felt should happen but in later rounds, it was changed it to include negative (or more realistic) responses. This was a humorous and entertaining exercise, but helped to check that the main factors/enablers/barriers for these partnerships had been captured throughout the workshop. The participants' characters and their comments are displayed in Table 2.

Table 2 Results of the 'ladder game': the role of different actors in research-PAM partnerships

Round	Role	Comment
1	Protected Area Manager	Contact EUROPARC to get assistance with new guidance so their National Park could act as a pilot project.
	Local resident	As a user of the park area, they would like to become a member of stakeholder group.
	Researcher	Get together a team who want to understand and work on protected area challenges.
	Nature agency	A convincing proposal is presented; possible co-funding if meets requirements.
	Policy maker	Form a government policy and develop a strategy on research in protected areas.
	NGO	Develop partnership framework.
	Journalist	Communicate the main findings of the research in the PA.
	Funder	Launch a special programme focussed on nature conservation, especially in protected areas.
2	Protected Area Manager	Ask social scientists to identify stakeholders for the partnership.
	Protected Area Manager	According to agreed research questions, write a new proposal.
	Researcher	Win funding to research important questions for PAM.

	Nature agency	Provide official statistical data, beyond protected area, providing regional context.
	Policy maker	Provide credibility to the partnership by providing governmental approval.
	NGO	Advise on and review inputs and outputs.
	Researcher	Meet with park staff to discuss joint proposal.
	Funder	Ready to give money to see quality proposal, especially if written by a PAM-researcher partnership and willing to offer incentives.
3	Protected Area Manager	Once right type of PAM, Researcher and NGO form a team, schedule regular meetings where researchers 'buy the team a coffee' with their research funds.
	Protected Area Manager	Within partnership, to make clear the roles of each partner.
	Researcher	Provide neutral expertise for conflict management problems.
	Nature agency	Access to policy makers, so results can enter new regulations, going beyond the Protected Area and into the wider region.
	Policy maker	Try to influence a culture change within national government to support implementation of research findings.
	NGO	Based on outputs and results would advise including policy makers and policy development/legislation on new viewpoints on PAMs.
	Researcher	Arrange a symposium to identify research needs and gaps for PAM and NPs.
	Funder	Continue to make money available to support a platform on scientific research in protected areas.
4	Protected Area Manager	Host a mega public event to announce project so that all were held personally accountable for success.
	Protected Area Manager	Would like to establish evaluation and monitoring steps for each partnership.
	Researcher	Admit they have loads of really useful data that they can't share with PAM due to legal constraints.
	Nature agency	Ignore or not participate in project; as it is not in scope of work, doesn't follow administrative hierarchy that agency is used to; and seems useless for me.
	Policy maker	Pass a new policy putting solar panels and wind turbines all over the PA's as economic growth is more important than biodiversity.
	NGO	In case of projects not cooperating – get rid of them; initiate international control of their proposals; with financial and other consequences.
	Researcher	Provide a comprehensive report on indicators to monitor Ecosystem Services at an international scale.
	Funder	Not satisfied with results; all projects now co-funded 50-50.
5	Protected Area Manager	6 months down the line – have a walk and talk event to present the results to the public.
	Researcher	We had a bad experience cooperating with national parks; have decided to leave partnership; abandoning project.
	Researcher	Be too busy writing scientific papers to share and explain the results with the PAM.
	Protected Area Manager	Quite impressed with the results; will present and spread the results with other PA colleagues.

	Policy maker	Host a conference on international best and worst practice to illustrate the important of PAM and research.
	NGO	Try to extend activities [within PAM] out to physical boundaries of Europe.
	Journalist	Write an article on the benefits of National Parks to society.
	Funder	Unfortunately haven't delivered the tasks in project; make the researchers and PAM give money back that was given a year ago.

A list of potential actions for different actors within a research-PAM partnership can therefore be derived (see Table 3; note that those in red are potential negative actions). An understanding of these actions may help partners to develop a common agenda and progress effectively through the process model (Figure 4).

Table 3 Potential actions of different actors in partnership development

Actor	Potential actions in partnership development (negative actions in red)
Researcher	• Get together a team who want to understand and work on protected area challenges. • Win funding to research important questions for PAM. • Meet with park staff to discuss joint proposal. • Provide neutral expertise for conflict management problems. • Arrange a symposium to identify research needs and gaps for PAM and NPs. • Provide a comprehensive report on indicators to monitor Ecosystem Services at an international scale. • Admit having loads of really useful data that they can't share with PAM due to legal constraints. • Based on a bad experience with cooperative with national parks, decide to leave partnership, abandoning project. • Be too busy writing scientific papers to share and explain the results with the PAM.
Protected area manager (PAM)	• Contact EUROPARC to get assistance with new guidance so their NP could act as a pilot project. • Ask social scientists to identify stakeholders for the partnership. • According to agreed research questions, write a new proposal. • Once right type of PAM, Researcher and NGO form a team, schedule regular meetings where researchers 'buy the team a coffee' with their research funds. • Within partnership to make clear the roles of each partner. • Host a mega public event to announce project so that all were held personally accountable for success. • Establish evaluation and monitoring step of each partnership. • 6 months down the line – have a walk and talk event to present the results to the public. • If impressed with the results; will present and spread the results with other PA colleagues.
Nature agency	• If a convincing proposal is presented, provide possible co-funding if meets requirements. • Provide official statistic data, beyond protected area and providing

	regional context. • Provide access to policy makers, so results can enter new regulations, going beyond the Protected Area and wider region. • Ignore or not participate in project because it is not in their scope of work, doesn't follow administrative hierarchy that agency is used to, or consider that it is useless to the agency.
Local resident	• National park users to become members of partnership stakeholder group.
Policy maker	• Form a government policy and develop a strategy on research in protected areas. • Provide credibility to the partnership by providing governmental approval. • Try to influence a culture change within national government to support implementation of research findings. • Host a conference on international best and worst practice to illustrate the important of PAM and research. • Pass a new policy putting solar panels and wind turbines all over the PA's as economic growth is more important than biodiversity.
NGO	• Develop partnership framework. • Advise on and review inputs and outputs. • Based on outputs and results would advise including policy makers and policy development/legislation on new viewpoints on PAMs. • Try to extend activities to physical boundaries of Europe. • In case of projects not cooperating – get rid of them; initiate international control of their proposals, with financial and other consequences.
Journalist	• Communicate the main findings of the research in the PA. • Write an article on the benefits of National Parks to society.
Funder	• Launch a special programme focussed on nature conservation, especially in protected areas. • Be ready to give money if a quality proposal is presented, especially from a group and willing to offer incentives. • Continue to make money available to support a platform on scientific research in protected areas. • If not satisfied with results, co-fund projects 50-50. • If tasks are not reached in project, request money is returned (e.g. even if provided a year ago).

9. Outcome of the workshop

The final part of the workshop reflected on what the group had learnt during the two days at Siggen and what should happen next. The objectives of the workshop were revisited:

- to discuss and improve the list of knowledge exchange mechanisms;
- to discuss and improve the knowledge gaps for PAM under climate change;
- to discuss and improve the process model for PA – researcher partnerships and 'top tips' for guidance; and
- to establish the role of different actors in developing and maintaining 'learning landscape partnerships'.

One theme that emerged during the workshop was the need to distinguish between the project-level partnerships and developing a strategic network. Furthermore, the workshop discussions verified the need to fill a large gap for long-term and large-scale PAM and research partnerships, on the EU level. Participants appreciated the opportunity to make new contacts and share ideas. They were struck by the commonalities arising from the interesting multiple perspectives represented, as the biggest issue for PAM is singing from the 'same hymn sheet'. It was agreed that research could be a 'social service' and should support PAM; indeed, it is likely that many researchers would be willing to do so for conservation purposes.

The next stage of the 'Developing Learning Landscape Partnerships' project is the final workshop to be held during the EUROPARC conference in Killarney, Ireland, from 28th September – 1st October. The draft Siggen workshop report will be circulated to the participants for their peer-review before making it publicly available through the webpage: http://www.hutton.ac.uk/research/projects/Learning-Landscape-Partnerships. Based on this workshop report, Kirsty and Annie (JHI facilitators) aim to write and submit a paper to an academic journal by the end of 2014.

Carol, the workshop organiser and director of EUROPARC, will write a report and guidance based on the workshop series, targeted at DG Research and DG Environment within the European Commission. This report will be circulated to all workshop participants in 2015. Ideally this project will continue with a real-time pilot in a protected area and EUROPARC will consider their role as a vehicle to support PA-research partnerships.

The workshop ended with thanks to Carol for her efforts in bringing the group together and to all participants for their time and thoughtful input. Kirsty explained that she had been interested to note the similarities with the discussion during the Edinburgh workshop, despite the European scale and context of this workshop. She thanked the participants for their knowledge and commitment, which made the workshop a productive and enjoyable experience. Compiled results of a workshop evaluation questionnaire completed by the participants are presented in Appendix 4.

Appendix One: Developing Learning Landscapes: our Scottish Workshop findings [Presentation by Kirsty Blackstock, James Hutton Institute]

A copy of the Powerpoint presentation slides will be available to view and download from the designated webpage on The James Hutton Institute website after this workshop report has been validated by the participants and finalised. In due course, please find the slides here: http://www.hutton.ac.uk/research/projects/Learning-Landscape-Partnerships

Appendix Two: Workshop agenda

Monday 15th September	
	Participants arrive
18:30	**Dinner**
19:30	Evening 'ice-breaker' activity
Tuesday 16th September	
08:30	**Breakfast**
9.15 – 9.45	Welcome to the workshop Purpose of workshop & How it fits with Scottish workshop (April 2014) and EUROPARC workshop (Oct 2014) Outline of agenda House Rules
09:45 – 10.15	What did we learn about developing learning landscape partnerships in Scotland?
10:15 – 10:45	Learning about each other
10:45 – 11:00	*Comfort break*
11:00 – 13:00	Sharing experiences – '5 minutes lightening talks on their personal top tips for collaborative research-management partnerships' 3 presentations then general questions, comments and discussion about each one.
13:00 – 14:15	**Lunch**
14:15 -15:15	Online communication platforms for sharing research and maintaining partnerships: analysing their strength and weaknesses.
15:15– 15:30	Comfort break
15:30 – 16:30	Discussing Other Knowledge Exchange Mechanisms
16:30 – 18:15	Free time to enjoy setting in daylight
18:30	**Dinner**
19:30 – 20:45	Why do we need learning landscape partnerships – what are the main gaps in our knowledge required to manage protected areas under conditions of climate change?
20:45 – 21:00	Recap what we've learnt Look ahead to tomorrow
Wednesday 17th September	
08:30	**Breakfast**
09:15 – 10:45	Improving the model of partnership working
10:45 – 11:00	*Comfort break*

11:00 – 13:00	How does our model help fill the knowledge gaps?
13:00 – 14:15	**Lunch**
14:15 – 15:15	Revising 'Top Tips'
15:15– 16:30	Answering the final 'big questions'
16:30 – 17:00	Making these partnerships happen: the role of different actors
17:00 – 18:30	Free time to enjoy setting in daylight
18:30	**Dinner**
	Reflection on what we've learnt
	Wrap up and what happens next

Appendix Three: List of Participants

	Name	Country	Institution	Park or Research
1	Hamish Trench	Scotland	Cairngorms National Park Authority	P
2	Zsolt Végvári	Hungary	Hortobágy National Park/University of Debrecen	P/R
3	Paulo Ciucci	Italy	University of Rome 'La Sapienza'	R
4	Andrej Sovic	Slovenia	WCPA/Secovlje Salina Nature Park	P
5	Michael Hosek	Czech Republic	Krkonose National Park	P
6	Kathy Velander	Scotland	Edinburgh Napier University	R
7	Kristian Bjornstad	Norway	Norske Parker/ Norwegian Parks Association	P
8	Michael Huber	Austria	E.C.O. Institute of Ecology	R
9	Marco Neubert	Germany	Leibniz Institute of Ecological Urban and Regional Development (IOER)	R
10	José Miguel Barea	Spain	Global Change Observatory of Sierra	R

			Nevada (Observatorio Cambio Global Sierra Nevada).	
Workshop Organisers				
	Carol Ritchie	Europe	EUROPARC Federation	P
	Kirsty Blackstock	Scotland	James Hutton Institute	R
	Annie McKee	Scotland	James Hutton Institute	R

Annex Four: Participant Feedback

We received nine feedback forms. Overall, the majority of participants found the workshop very useful (n=8), with one further finding it useful and all respondents would like to participate in further workshops on this topic.

Participants rated all aspects of the workshop either good or very good (see Table A). However, there were various suggestions to improve future meetings, including:

- To have had some basic information on the first workshop prior to attending the Siggen workshop (e.g. a copy of the first workshop report).
- To hold such workshops more frequently, ideally, at least once a year.
- 'We did so much at times I felt I was lost in the process. Although I am sure the aims were up somewhere, a list of my own might have helped – even a flow chart…'
- It was a great idea to shift sessions to make use of the afternoon and leave room for informal exchange.

Table A Workshop Aspect Participant Rating

Workshop aspect	**Participant rating (number of respondents)**	
	Very good	***Good***
Pre-meeting communication	2	7
Workshop structure	9	-
Facilitation on the day	9	-
Accommodation/catering	9	-
Materials provided	2	7
Quality of the interaction	9	-

The main lessons and outcomes of the workshop for participants included that:

- The process was interesting and the interpretation of it thought-provoking.
- It is always worth investing the time to discuss particularly if well facilitated.

- Creativity and determination are real virtues and resolution can be achieved.
- To structure a project to fit the established goals, and to improve appropriate management/research interaction.
- Good practical ways to develop our partnerships further and longer-term ideas.
- The workshop gave me insights on open research questions (gaps) that are valuable for further research projects as well as insights on PAM's interests regarding research needs. I enjoyed the multiple and multi-cultural point of view.
- European experiences in park management and research.
- Group knowledge is significantly larger than individual knowledge.
- To [engage/bring together] people with no relations prior to the meeting.

A number of participants explained that they hoped to do the following as a result of the workshop:

- Things are changing in the relationships between researchers and managers (at least). We now have the knowledge to improve the participation of researchers in managing processes (and of managers in science). This improvement will lead to a better conservation in practice.
- Further development of our research partnerships and share with some other UK national parks.
- New models of work and management.

Finally, the participants had further recommendations in order to best use the information and energy generated by the workshop, including:

- For the dates to be made available when the draft workshop report will be distributed to participants, to ensure a 'concrete' participation in drafting the report.
- To edit a manual with comprehensive methodologies standardised across Europe for monitoring indicators (social and ecological) in protected areas.
- To put into practise a 'European Charter for Research in Protected Areas' (or similar).