Beech Forest Network of Europe

International Academy for Nature Conservation, Isle of Vilm, Germany

(15th-19th November 2015)

Supported by the Federal Agency for Nature Conservation (BfN), with funds from the Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)

Workshop summary

Content

Appendix

[1] Available at: https://www.dropbox.com/s/lwhkvsotv9t155z/Appendix%203_Presentations.pdf?dl=0

1 Summary

From 15th to 19th November 2015, 30 experts from 13 European countries, who are dedicated to beech forest research and conservation, participated in this first expert workshop in the course of the project “Beech Forest Network of Europe” – which represents an initial meeting for the development of a European Beech Forest Network (EBFN).
The workshop was held with a high level of motivation and commitment to the conservation of beech forests among the participants. It included sessions on the historical and recent development in European beech forest conservation (e.g. the World Heritage (WH) extension nomination process), the situation of beech forests regarding their vulnerability to current threats and (potential) risks as well as discussions about the potential for creating a functional EBFN.

Experts informed about their work and projects and presented latest results of beech forest research in different Beech Forest Regions (BFRs) and further provided insight to the situation of the forests in their countries and regions of expertise.
Additionally, systemic vulnerability and risk assessments were conducted in several group work sessions, which resulted in provisional conceptual models per BFR. The outcome shows that a broad range of (current and potential) risks that differ in occurrence per BFR and intensity, constitute a threat to the European beech forest ecosystem.
Reports on the current loss of old-growth beech forests – particularly in the Carpathian BFR, raised serious concerns and encouraged the group of experts to formulate a joint statement addressed to European governments and the European Union, which is pleading for a logging moratorium in old-growth beech forests.
Based on the presented findings and the outcomes of situation analysis, the group of experts mutually agreed on the need for strengthening the conservation of beech forests in Europe – especially concerning the remaining old-growth stands.
Multiple group work sessions were conducted to answer the questions of how to develop a pan-European initiative, how to institutionalise such an initiative, which targets to be pursued, which actors and entities to be included and finally which obstacles might be ahead and which opportunities could be exploited.
The outcome of the discussions showed a great number of ideas and recommendations as well as specific working steps that have to be followed-up. It became obvious and was jointly agreed that a EBFN could have the potential to promote beech forest conservation (and sustainable use) on different levels, by bringing together a very diverse group of stakeholders, by providing a platform for communication and further exchange and by presenting a common, science- and civil society-based European voice for the beech forests as a continental ecosystem complex. Regarding the possibilities for a suitable institutional structure it was suggested to aim at a registered society with a limited number of members that is supported by a large initiative consisting of a diverse group of partners.
The group of experts felt encouraged to continue their joint efforts for further working towards the implementation of a EBFN.

2 Background and goals of the project

In the framework of the Research & Development project "World Heritage Beech Forests" (May 2012 - November 2014)[2] a large group of experts from all over Europe contributed to collecting data and information about old-growth beech forest areas and further participated in the process of selecting the most suitable areas for a possible extension nomination to the existing WH property "Primeval Beech Forests of the Carpathians (Slovak Republic, Ukraine) and Ancient Beech Forests of Germany".
During this process and even in antecedent workshops it became obvious that just a limited number of the investigated beech forest areas would be suitable to fulfil the criteria for a WH nomination. For this reason the vision of a EBFN came up – a network of beech forest experts and stakeholders, which should consider (old-growth) beech forests in protected areas (PAs), even beyond the component parts of the serial WH property – to enhance cooperation for beech forest conservation, management, research and communication across Europe.

The overall goal of this project is to work towards a functional network of European beech forest experts and practitioners from (protected) areas, which comprise valuable (old-growth) beech forests plus a broad range of further stakeholders.
The network should serve as a platform for:

- Mutual learning and exchange on recent findings/research results about the situation of beech forests in general;
- Discussions about different management approaches regarding the protection and sustainable use of beech forests;
- Developing a joint strategy for old-growth beech forest conservation in Europe.

3 Aims of the workshop and methodological approach

The principal goals of the workshop were:

- Communicating the background of the process, which lead to the inscription of the "Primeval Beech Forests of the Carpathians (Slovak Republic, Ukraine) and Ancient Beech Forests of Germany" to the WH list, the development of the extension nomination on European level and further effects of the latter, which were also leading to the present endeavour.
- Collecting and sharing knowledge about the vulnerability of European beech forest ecosystems and the identification of current and potential threats/risks to (old-growth) beech forests in Europe across all BFRs – within, but also outside of PAs.
- Discussing options for the development of a EBFN with regards to goals, relevant partners, suitable structural approaches, added values as well as potential strengths and weaknesses.

[2] Funded by the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), commissioned by the Federal Agency for Nature Conservation (BfN) and conducted by Centre for Econics and Ecosystem Management (CEEM) at the Eberswalde University for Sustainable Development.

The suggested methodological approach for the vulnerability assessment of European beech forest was based on parts of the MARISCO-method[3], which is an approach to adaptive ecosystem-based management that facilitates the integration of a dynamic risk and vulnerability perspective into the management of conservation projects and sites.
Here, a systemic vulnerability and risk analysis was conducted per BFR in several group work sessions. The goal of this exercise was to reflect on existing knowledge regarding the relationships between various contributing factors, threats and stresses to beech forest ecosystems.
In this context, **stresses** are defined as symptoms of the degradation of key ecological attributes (integral elements of ecological systems that maintain their functionality and provide adaptive capacity and resilience to cope with disturbances). Stresses cause a degradation of these ecological attributes, which then influences the resilience and adaptive capacity of biodiversity elements, such as species or ecosystems. Over time, a system could shift or even collapse.
Threats are considered to be any human-induced (or a-/biotic) forcing factor that is likely to directly or indirectly impact the natural structure and dynamics of an ecosystem.
Contributing factors are human actions or activities that directly or indirectly cause threats, which induce stresses to ecosystems.
The outcome of this exercise presents a conceptual model which shows cause-effect relationships of the identified factors.

Based on the outcomes of this exercise it is foreseen in a further step (possibly to be achieved in the follow-up work on the results of the workshop, in cooperation with relevant experts), to evaluate the identified stresses, threats and contributing factors according to their current and past criticality as well as their current trend of change. Furthermore, future scenarios are developed, which is a prerequisite to assess the future criticality. In the next step the systemic activity and strategic relevance is assessed, and finally the state of knowledge and manageability of each stress, threat and contributing factor is analysed.
As soon as these working steps are accomplished it is possible to start the process of prioritisation and strategy formulation.

4. Results
All expert presentations, which were held during the workshop, are available in Appendix 3.

4.1 Development of beech forest conservation in Europe
The information communicated in the first session of the workshop was related to the history of research on old-growth beech forests in Europe, which was initialising an initiative for the protection of the last remnants of primary and old-growth beech forests in Europe – a still on-going process.
Many years of intense international cooperation resulted the inscription of the "Primeval Beech Forests of the Carpathians (Slovak Republic, Ukraine)" to the

[3] Ibisch, P. L. & P. R. Hobson (eds.) 2014. MARISCO. Adaptive MAnagement of vulnerability and RISk at COnservation sites. A guidebook for risk-robust, adaptive and ecosystem-based conservation of biodiversity. Centre for Econics and Ecosystem Management, Eberswalde (ISBN 978-3-00-043244-6). Accessable at: http://www.marisco.training/

UNESCO WH list in 2007 and the extension of the serial property by the "Ancient Beech Forests of Germany" in 2011.
Together with this extension nomination the WH Committee recommended the three State Parties to increase their efforts to protect European beech forests and to assess the potential for a finite extension nomination in Europe. Following this recommendation a research and development project initiated the already mentioned expert-based Pan-European screening and evaluation process, which helped to identify 46 candidate areas in 20 countries with potential to be considered for a possible extension nomination. On government level, several State Parties confirmed their interest in participating in a serial extension nomination, which is being coordinated by Austria since December 2014.
In early 2015, 11 State Parties[4] submitted their national Tentative Lists with a total number of 64 suggested component parts to the WH Centre in Paris. Presently, the partner countries jointly elaborate a corresponding nomination dossier, which is planned to be submitted in January 2016.

In parallel to the Tentative List submission process, a "Study about the actual management system of the trilateral UNESCO-World Heritage Property „Primeval Beech Forests of the Carpathians and the Ancient Beech Forests of Germany" and about the further development of the joint management regarding the planned extension nomination" has been conducted from December 2014 to March 2015[5]. The main results show that the WH status brought several advantages for concerned PAs in terms of visibility and also strengthened international cooperation, but also poses challenges, especially on component part level, regarding international communication and technical cooperation because of limited capacities. In the study it was recommended to implement a central coordinating body to support the joint management of the potentially multilateral, more complex serial property.

The project "Beech Forest Network of Europe" can be characterised as nested approach, which targets the entire European beech forest ecosystem – including the component parts of the serial WH property as the core comprising the best remaining examples of strictly protected old-growth and primeval beech forests with the highest level of integrity – but also strives for including further (principally protected) beech forest areas and corresponding practitioners plus further stakeholders from different levels and fields of work (e.g. science, media, tourism, politics, education, civil society, etc.).

4.2 Vulnerability assessment

During an interactive session participants contributed their knowledge and experience about the situation of beech forests in their countries and regions including information on their projects and research results.
The expertise covered (parts of) the Pyrenaic-Iberian, Central-Mediterranean, Moesian-South-Balcanic, Alpic, Pannonic, Carpathian, Atlantic, Baltic and Polonic-Podolic-Moldovan BFRs. The Illyric, Subatlantic-Hercynic and Euxinic BFRs were not subject to further analysis or only discussed to a certain extent, because from these regions no experts were able to attend the workshop.

[4] Albania, Austria, Belgium, Bulgaria, Croatia, Italy, Poland, Romania, Slovenia, Spain, Ukraine
[5] Funded by the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and conducted by Centre for Econics and Ecosystem Management (CEEM) at the Eberswalde University for Sustainable Development.

In addition, rapid vulnerability and risk analysis were conducted in various breakout groups to further assess current and potential risks to old-growth beech forests per BFR. In this context, experts identified stresses to beech forest ecosystems, related threats and contributing factors.
Generally, most of the identified risks to beech forests as well as their intensity are different in the various BFRs, while others are observed across the continent.

Group work sessions: Experts conducting risk and vulnerability assessment per BFR

4.2.1 Stresses

The main stresses identified by experts are related to a **reduction of structural diversity** (horizontal/vertical) and **biomass loss** in the forest ecosystem, which both leads to a **decrease of** the total **ecosystem functionality**. The following stresses were mentioned:

- Loss of old-growth forests with structural diversity in general,
- **Fragmentation/isolation** of old-growth stands (**reduced connectivity**),
- Loss of biomass (including living-/deadwood and other organic matter),
- Partial canopy loss,
- Summer defoliation,
- Increased mortality of trees,
- Reduced tree growth rate/reduced regeneration capacity (decrease of seed quality, disrupted germination),
- Loss of genetic diversity (extinction of key species, general decline of populations (e.g. saproxylic species)),
- Disruption in life cycles,

- Change in species composition,
- Biocoenotic asynchrony,
- Loss of soil structure/soil degradation (erosion, landslides, decrease in cumulative water storage capacity, soil compaction),
- Loss of root functioning, decrease of soil microorganisms, loss of nutrients
- Changed microclimate (e.g. loss in humidity).

As a result the **habitat quality** is **decreased** and the **adaptive capacity of the ecosystem is reduced** (reduced drought resilience, increased vulnerability to pests/pathogens).

4.2.2 Threats

Various threats were identified, which directly or indirectly cause the above-mentioned stresses.

Many threats are induced by **unsustainable silvicultural practices** (e.g. clear-cutting, shortening of rotation cycles, even-aged stands, high forest, coppice, substitution with/introduction of other species) **and harvesting techniques** (use of heavy machinery, soil ripping from skidding, destruction of riverbeds), which were observed to a greater or lesser extent in the majority of analysed BFRs.

Generally, **biomass extraction** was considered as the principal threat. In some BFRs – especially in the Carpathian (Romania, Ukraine) and Moesian-South-Balkanic (Kosovo, Macedonia) regions, **illegal** (industrial) **logging** was mentioned as a severe problem.

Other threats comprise:

- Infrastructure construction (e.g. roads, hydropower, power lines, etc.),
- Groundwater abstraction,
- (Pastoral) fire,
- Input of external (toxic) material,
- Nitrogen input,
- Acid rain.

Disturbances from tourism or **recreational uses** include noise pollution (animal disturbance) or fungal foraging (including semi-commercial extraction of mushrooms).

Furthermore, there are several **biotic threats** to beech forests, which include:

- Invasive species,
- Pest/pathogen outbreaks, e.g. insect infestations (defoliators, e.g. gypsy moth),
- Browsing (high game densities),
- Grazing.

Abiotic threats, which are related to changing climate conditions, are observed across all Europe:

- Higher frequency of extreme weather events: severe (summer) drought, windstorms, ice, temperature rise/extremes.

4.2.3 Contributing factors

A great range of factors that are forcing threats to beech forests was collected.

The principal biophysical/natural factor that is causing new or exacerbating existing threats is **global climate change**, which applies for all BFRs.

Socio-economic factors in the first place include an **increasing (inter-)national demand** for renewable products (e.g. **timber for construction material, energy wood**) – intensified through an increasing world population of humans and archaic business models. This comes along with an **intensified commercial use of forests** combined with the fact that in some cases timber extraction can enter areas where it was not allowed before.

In some regions (e.g. Carpathian BFR) the **economic situation of the local population (e.g. poverty, unemployment)** was mentioned as contributing factor (e.g. in the context of local illegal logging activities). In the Moesian-South-Balcanic BFR **organised crime** was named as factor that is causing threats to old-growth forests.

Another economic factor that was mentioned was EU investments in tourism infrastructure within NPs

A general **lack of interest in conservation** and lacking **awareness for** the **importance of old-growth forests** (e.g. the value of **ecosystem services** apart from timber) was determined. Ecological ignorance
These factors are combined with a general **lack of information** about conservation and – in the context of practitioners in forestry and conservation – with a **lack of knowledge/education** regarding **management practices** and **understanding of climate impacts and forest dynamics**.
Such factors were also associated with the factor of **low acceptance of Natura2000** among different stakeholders.

Furthermore a broad range of political and governance-related factors was shown. Generally, there seems to be a **lack of political will to protect old-growth** forests, which is reflected in legislation:

- **Old-growth forests** are **not recognised by legislation** as forests of high natural value.
- Legal regulation for forest management is too narrow/not sustainable (e.g. continuous cover forestry regulation) or laws are benevolent for forest management (practices).

Another factor in the legal context is the existence of **common rights** in some countries, which allows access to/usage of (old-growth) forests (e.g in the Pyrenaic-Iberian, Central Mediterranean and Atlantic BFRs).
Lobbying of timber processing companies (on different levels) was also specified as contributing factor.
In a structural sense the following factors were mentioned:

- Conflicts between conservation and forestry;
- Missing collaboration between central and local level;
- Corruption.

Another important factor is **unclear land tenure**. In the case of Romania the restitution process leads to a **fragmented forest ownership**, in some cases by restitution to illegitimate owners or by sale of forest to logging companies.

The **lack of an integrated land-scape planning strategy** was referred to as one of the major institutional factors – e.g. in connection with implementing Natura 2000:

- Insufficient definition of favourable conservation status under Habitat Directive,
- Lack of tools to evaluate habitat quality,

- Non-participatory establishment of Natura2000 sites,
- Low effectiveness of Natura 2000 management plans.

Generally, a **lack of ecosystem based management** (management systems are not suitable for protecting ecological processes) was identified:

- Lack of (conservation) management plans, zonation, borders in PAs,
- Forest and conservation management plans are not harmonised or focus on timber production (e.g. multiple use forestry in NPs),
- Lack of staff/financial means for PAs/forest administration in PAs,
- Lack of enforcement of forest standards,
- Lack of monitoring systems and efficient control,
- Lack of compensation of forest owners in PAs,
- Wildlife management is impeded by politics (e.g. trophy hunting),
- Low involvement of stakeholders in management planning.

Finally, the following spatial factors were spatial factors were named:

- Present forest structure/composition resulting from land use/-management history,
- Effectively and strictly protected forests are small and scattered,
- Difficult priority setting due to overlapping of different PA categories.

The outcome presented a preliminary overall conceptual model, which gives an idea of the current situation of beech forests in Europe.

Lena Strixner presenting the preliminary overall conceptual model to the audience

This rapid assessment will be the basis for deeper analysis of the vulnerability of (old-growth) beech forests in Europe (to be conducted throughout 2016).

Pierre Ibisch explaining the foreseen next steps of further analysis in the MARISCO-method

4.3 Vilm resolution

Inspired by the outcomes of the regional vulnerability and risk analysis, the group of experts decided to formulate an official statement (Vilm resolution, see Appendix 4) urging European governments as well as the European Union to implement, amongst other things, a logging moratorium within old-growth (beech) forests.

4.4 Discussion about a potential EBFN

In the context of the potential for the development of a EBFN experts discussed the following questions in several breakout groups:

4.4.1 Aims and potential activities

- The focus is laid on the conservation of old-growth beech forests without intervention. Additionally, the enhancement of the conservation status of other managed and unmanaged beech forests is addressed.
  - → Identification of further (old-growth) beech forest areas and to further complementation of the list of potential EBFN-candidate areas.
  - → Increasing the overall area of protected beech forests by enlargement of existing PAs and creation of new ones.
  - → Development of a large-scale strategy for the conservation of old-growth beech forests in Europe.
- The knowledge in ecology and management of (old-growth) beech forests as well as related legislation is increased.
  - → Development and distribution of best-practice guidelines and recommendations (non-intervention-, sustainable/close to nature forestry, tourism/visitor management, good administration, common monitoring system).
  - → Exchange/sharing of knowledge/research results (e.g. on natural processes, restoration processes) and implementation of joint research programmes (e.g. identification of common threats (under changing environmental conditions)).
  - → Increasing (inter-) national and regional cooperation in beech forest conservation.
  - → Promotion of further personal exchange and contacts.
  - → Facilitation of further involvement of stakeholders around EBFN-areas.
- The (public) awareness for the importance of old-growth forests is raised.
  - → Launching of EBFN-Webpage, including newsletter, social media, Wikipedia, etc.
  - → Internal and external marketing and securing of transparency.
  - → Certification of “wisely watched” beech forests.
- In an organisational context, the long-term financial sustainability has to be secured.
  - → A “European Beech Forest Fund” is implemented (e.g. to finance joint projects.)
- The EBFN needs a corporate identity.
  - → Identification of cooperate language and design.
  - → Development of a joint EBFN logo.

4.4.2 Potential members and partners

In general, a EBFN should be open for different entities and stakeholders from different levels (diverse/trans-disciplinary). Potential members could be:

- PAs with valuable (strictly) protected old-growth beech forests (WH component parts as flagships and best-practice examples),
- (Inter-) national NGOs,
- State & regional forest administrations,
- Scientists/researchers, research institutes,
- Government representatives/politicians/MPs, majors (promotion),
- Schools and universities,
- Media,
- Communities,
- Associations,
- Broad public, citizens, private forest owners,
- Foresters,
- (State-) forestry enterprises (future cooperation).

In general, the EBFN should be connected to other networks (e.g. Pro Silva, IUFRO, etc.).

4.4.3 Added value for members of the network

During the discussions on potential added values for members of a EBFN participants mentioned the following elements:

- Better access to information and knowledge,
- Enhanced availability of personal contacts (e.g. for specific questions, technical exchange, etc.),
- Higher visibility of single PAs,
- Increased responsibility for and protection of concerned forests (pressure/commitment),
- Possibility to participate in harmonised/joint research programmes and projects,
- Social value (to feel not alone),
- Possibilities for mutual support in fund raising,
- Increased potential for lobbying.

4.4.4 Structure of EBFN

Several discussion groups focused on possibilities for the structure of a EBFN and came to the following results:

The most favourable institutional structure would be a registered society (civil society-based) with a limited number of members (mainly the board). The registered society could be the core of a European initiative, which would be an open network with the potential to include a great variety of partners (see 4.4.2).

- A registered society (ideally supported by a secretariat, which should be running a website, is involved in project management and in charge of fundraising for the initiative) with a long-term strategic vision for the conservation of Europe´s beech forests.
- The initiative provides an advisory board and a scientific panel and further supports administration, marketing and project management.

- Furthermore, as the EBFN should be site-based it is essential, that related PAs (including WH component parts) are part of the initiative – similar to the organisation of EUROPARC.
- The initiative could comprise regional (BFR) divisions and working groups.

To secure the financial sustainability of the EBFN it was suggested to implement a Beech Forest Fund. The possibility of membership fees or donations from members of the initiative has also been discussed.

Bohdan Prots presents group work results regarding aims, potential partners and added values of a EBFN

4.4.5 SWOT analysis

To determine possible constraints for the functionality of EBFN and factors for its successful work, a rapid analysis of strengths, weaknesses, threats and opportunities (SWOT) was performed.

4.4.5.1 Strengths

Strengths are related to personal, structural and qualitative factors:

- A very high level of motivation and dedication to contribute to the conservation of remaining old-growth beech forests in Europe.
- A common experience related to networking (e.g. from the World Heritage process) and training in working together, shared values (collective mind), trust, personal contacts plus networks in the background.
- The diverse group structure (similar to an old-growth forest) and the balance between old and young, male and female members from different countries and organisations create a huge potential for new ideas.
- An open structure, which allows all kinds of entities to be a part of an initiative, contributes to a high level of flexibility and a presents a democratic approach.
- A science- and civil society based, independent PAN-European bottom-up approach.
- A high level of scientific quality, diverse knowledge/expertise and institutional affiliation among potential partners.
- The existing GIS platform from the previous project (European World Heritage Beech Forests) can be used as basis for further identifying and mapping of additional beech forest areas.

4.4.5.2 Weaknesses

- Limited capacities among potential EBFN members with regards to financial, personnel and temporal resources,
- The coordination of such a large initiative is a challenge,
- It is a challenge to take influence on groups outside the initiative (e.g. media),
- A general lack of defined common standards, aims and joint strategy,
- The high diversity of interests and conditions on national level,
- The absence of key actors inside the initiative group.

4.4.5.3 Opportunities

- There are still remnants of old-growth beech forests existing in Europe.
- The current BfN project "Beech Forest Network of Europe" itself, as it presents the current framework for a EBFN initiative.
- The present extension process of the serial WH property could bring important synergies.
- Implementing a EBFN would be a chance to create a single strong voice for (old-growth) beech forest towards the EU.
- There are various possibilities to apply for funding (INTERREG, LIFE+, ERASMUS, COST, etc.).
- The mere fact that funds have to be found was regarded as motivating factor to start working.
- Members of the EBFN could contribute with a fee (depending on the quality of added value from membership).
- The diversity of stakeholders with a broad range of skills and knowledge creates the potential for fulfilling different tasks.
- High potential for mutual support in a partnership with a large group of partners (NGOs,...);
- Involvement of citizens/civil society;
- Availability of (free) web tools (e.g. for monitoring).

4.4.5.4 Threats

The overall outcome shows that the main threats for a EBFN can be grouped in financial, political, socio-economic and institutional constraints:

- One main threat identified was the general lack of funding – especially to be expected in the initial phase of the initiative.
- Funding priorities might not be in line with goals of the EBFN.
- If funds are available, the challenge of future funding distribution remains.
- The independence of the EBFN might be threatened by external funding.
- The need for action in old-growth forest conservation is very urgent. The growth of bio-economy might be too rapid to preserve the remnants of those old-growth forests in Europe, which are not adequately protected.
- On the political level some goals of a EBFN could be controversial to current policies (e.g. expanding the area of protected old-growth beech forests – in the context of the expansion of the serial World Heritage property it could be argued that this already is enough).
- Possible partners might not see an advantage in being part of the EBFN.
- Institutionally, the main threats were seen in wrong implementation, which mainly refers to the level of openness. An open network was seen essential for the initiative.

Max Rossberg presenting suggestions for the structure of a EBFN

4.3.6 Overall results

The preliminary vulnerability and risk analysis shows that (old-growth) beech forests in Europe are threatened by various risks, which are caused by a broad range of contributing factors that are different or show different levels of intensity in the various BFRs and countries.

Especially in the Carpathian (e.g. Romania, Ukraine) and Moesian-South-Balkanic (e.g. Kosovo, Macedonia) BFRs the intensity of primeval and old-growth beech forest loss caused by large-scale (partly illegal) logging activities gives reason for serious concerns and need for action.

The discussions on the potential development of a EBFN revealed a huge diversity and richness of ideas plus concrete suggestions for its realisation. The need for the implementation of a EBFN was jointly agreed for many reasons:

- A EBFN could be the basis for a continental network of permanent (old-growth) beech forest research plots and a harmonised monitoring system.
- The network could contribute to enhancing the state of conservation of the remaining old-growth beech forests in Europe by promoting an enlargement of the area of strictly protected forests.
- In the context of an enlargement of the overall area of strictly protected beech forests, degraded forest areas have to be included, as after a certain time without use forests (re-)gain complexity/increase the degree of naturalness and therefore enhance their resilience to risks.
- The EBFN could also support the establishment of corridors between strictly protected beech forests (e.g. World Heritage component parts) by contracts with private forest owners (“Vertragsnaturschutz”).
- The network could influence the integration of “integrity” in forest management planning.
- The EBFN would contribute to increasing the (public) awareness for the value of old-growth and strictly protected (beech) forest areas by enhancing internal and external communication and by addressing/including stakeholders from the broad public.

- In the mid- and long-term the network could drive the creation of additional jobs/income opportunities on the local level (e.g. through project implementation, tourism, etc.).
- A EBFN would be a unique entity taking care of a continental ecosystem complex and would further contribute to promote the European idea.
- The already existing network of experts comprises a great diversity of actors with further networks in their background and further includes a high level of scientific quality and long-term experience in beech forest research and management.

Regarding the proposed structure of the EBFN it was agreed that it is too early to come to a final decision. The question of the institutional structure should be answered during the project. However the possibilities for launching a registered society should be checked and further discussed.

During the workshop additional beech forest areas and potential candidate sites for a EBFN were suggested, which were not yet mapped (e.g. in Spain: Montseny Natural Park; in Hungary: Kekes Eszak Forest Reserve; in Poland: Wollin NP; in Germany: Heilige Hallen). It was agreed to continue the identification of further beech forests to be included in the network and to steadily complete the list of potential EBFN areas throughout the project.

In this context it was recommended to create a joint (online) database for the collection and exchange of data and information (and to possibly create an online GIS-application).

5. Resulting further steps and activities

To increase the awareness for old-growth (beech) forest loss in the Carpathian BFR it was agreed to communicate the Vilm resolution via various channels to colleagues in other countries and to further distribute it to concerned Ministries as well as to the European Union.

Regarding the preliminary vulnerability assessment it was strongly suggested:

- To finalise the conceptual models and to underpin each of the identified factors, threats and stresses with scientifically based data/evidence (mainly by identifying related scientific publications).
- To complement the process of knowledge mapping in cooperation with experts, especially regarding those BFRs and countries, which were not represented in the meeting and to further increase the expert network and continuously work on deriving additional information on risks to beech forests in their countries and BFRs.
- To rate the identified contributing factors, threats and stresses by assessing their criticality, potential future dynamics, systemic activity, strategic relevance and manageability in order to facilitate prioritisation and strategy formulation (which is foreseen to be accomplished in the third expert workshop).

To achieve these goals CEEM will (within the first half of 2016) conduct the following activities:

- Continuation of contacting experts and asking for additional contacts to enlarge the group of involved experts in the network (Appendix 6).
- Provision of the list of PAs (Appendix 5), which already have been identified, to the expert network to continuously identify additional suitable beech forest areas to be included in the EBFN and to constantly up-date and complement corresponding data and information.
- Development of digitised conceptual models (based on the preliminary vulnerability assessments) plus rating of factors for each BFR and further accomplishing these models by expert consultation and mutual cooperation. (CEEM will assess the potential to apply for additional resources to properly implement related activities). Based on these results an overall conceptual model will be elaborated to present the situation of (old-growth) beech forests in Europe, which will be discussed in the framework of the up-coming workshop.
- Assessment of possibilities for creating a preliminary EBFN website, which should serve as platform for collecting, storing and distributing relevant data and information.

It was communicated by *Susanne Winter* that a new book[6] on practical beech forest conservation will be published in 2016 (in German language). The content could be distributed among experts to support the development of harmonised management strategies. CEEM will inform the expert network accordingly.

Furthermore *Hans-Dieter Knapp* suggested producing a joint book about beech forests of Europe. More concrete details would be communicated within the next months.

Pierre Ibisch supported the idea and said that it is a great opportunity to make use of all the knowledge, experience, data and material, which has been collected so far and jointly accomplish a further book on European beech forests. This could be a joint effort of the experts of this EBFN to be published in 2017.

The next workshop in the framework of this project will again take place on the Isle of Vilm from 1st to 5th December 2016 – the invitations will be sent in the beginning of the second quarter.

[6] Winter et al. 2015. Praxishandbuch – Naturschutz im Buchenwald: Naturschutzziele und Bewirtschaftungsempfehlungen für reife Buchenwälder Nordostdeutschlands. Ministerium für Ländliche Entwicklung, Umwelt und Landschaft (Hrsg.); (engl. “Practical handbook – Conservation in the beech forest: Conservation objectives and management recommendations for old-growth beech forests in North-eastern Germany”)