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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

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File open

Hydro power development within the territory of Mavrovo National Park ("The former Yugoslav Republic of Macedonia")

- GOVERNMENT'S REPORT FOLLOWING THE ON-THE-SPOT APPRAISAL -

(24-25 June 2015)

Document prepared by
the Ministry of Environment and Physical Planning, "The former Yugoslav Republic of Macedonia"

COMMENTS ON THE EXPERT AND OBSERVERS' REPORT ON TWO PROJECTS FOR HYDROPOWER PLANTS DEVELOPMENT WITHIN NP MAVROVO

1. General comments

The Report does not use the constitutional name of the country 0 Republic of Macedonia.

Expert report and observers' reports (documents T-PVS/Files (2015) 36; T-PVS/Files (2015) 41) of the Council of Europe's Mission have been delivered to the Ministry of Environment and Physical Planning (MEPP) with certain delay (9 October 2015), thus leaving very short period for studious analysis of reports in order to formulate comments thereon (deadline for comments being 29 October 2015).

Besides the mentioned projects for construction of two hydropower plants within NP Mavrovo on which the Standing Committee of the Bern Convention (SC/BC) has opened case file, expert report and observers' reports contain data, information and positions beyond the assessment of impacts of the two projects, based on unofficial documents, lacking scientific references that are available in the Republic of Macedonia. Reports refer to requests, positions and statements by non-governmental organizations and natural persons from local communities, although those are not related to the two projects – construction of HPP Lukovo Pole and HPP Boskov Most in NP Mavrovo.

The overall conclusion of the mission regarding the two hydropower projects presented in document T-PVS / Files (2015) 36 refers to management categories classified for IUCN protected areas, failing to take account of the criteria for protected areas incorporated in the national legislation.

The international expert and observers have taken conclusions and recommendations addressed to Macedonian Government that are contrary to the national legislation, as is the suggestion to abandon development projects within NP Mavrovo.

2. Specific comments on parts of expert report and observers' reports

In the section Background of the open case file (p.2-3) of the expert report, it is stated that Government report (of September 2013) did not contain the conclusions of the EIA Study and of the 4-seasons biodiversity monitoring on Boshkov Most project area which is unfounded, given the fact that the two documents are mentioned and relevant data and conclusions of the experts regarding biodiversity monitoring are taken from the EIA Study. Data from the annual (4-seasons) monitoring of biodiversity in the area of the whole HPP Boshkov Most project coverage was presented publicly on workshops organized by AD ELEM and thus available to the general public for comments. All reasonable comments were accepted.

The report fails to note that Mr. Nurhan Izairi, Minister of Environment and Physical Planning, on 24 June 2015, received personally the Mission representatives, namely: Ms Iva Obretonova, Secretariat of the Bern Convention, Mr Pierre Galland engaged by the Council of Europe, as well as observers Mr. András Demeter from DG Environment of the European Commission, Mr. Robert Brunner from WCPA, IUCN, Mr Aleksandar Dutsov from IUCN/BBSG. Furthermore, there is no mention of their meetings with representatives of Nature Department, Environment Department in charge of EIA studies and elaborates, representatives of national committees for biodiversity protection and scientific experts who gave extensive answers and information in relation to the two target projects in NP Mavrovo.

On page 6, under the title "Hydropower in Mavrovo National Park", the author uses geographical term "Drina river". The same term is repeatedly used on pages 7, 8, 11, 17 from geographical point of view. In this regard, we underline that the River Drina belongs to Danube watershed and is in no way related to Mavrovo National Park nor with ELEM's HP project areas.

We do not agree with the conclusion of the report and point out that the Law on Re-designation of NP Mavrovo for protected area in the category of National Park is still in a draft version and

procedure for its re-designation is still underway. IUCN "the 75 % Rule" cannot apply, given the fact that NP Mavrovo occupies large territory and has 37 populated places with more than 8.000 inhabitants. On the other side, the Law on Re-designation of NP Mavrovo for protected area in the category of National Park endeavors to provide protection and conservation of natural values in NP Mavrovo, proposing that the strict protection zone is extended from the current 4166 hectares to 8390.5 hectares.

Study on revaluation of protected area Mavrovo was produced on the basis of expert studies in specific thematic fields in a period of three years. Its development involved project team composed of more than 30 scientific experts. Analysis and valuation of biodiversity in the Study were made on the basis of existing data and intensive field investigations in order to establish the current condition of the area. This assumes that all available data was taken into consideration and supplemented by new findings from field investigations.

Supplement to the Comments on projects concerning development of hydro power plants within Mavrovo National Park

With reference to the statement made by the international expert involved in the Mission of the Council of Europe and observers, that the development of the two large hydro power plants within NP Mavrovo will directly affect the survival of the Balkan lynx population, adding that non-governmental organizations from Macedonia consider this to be the main threat, the position of MEPP/Nature Department corresponds with the positions of scientific experts-zoologists in Macedonia that such statement is not based on scientific research. On the contrary, not only in areas where Balkan lynx population has been recorded on the territory of Macedonia, but also in Albania, Greece, Kosovo and Montenegro, the main cause for the rapid decline in the size of the populations of this subspecies of the Eurasian lynx is the poaching, followed by illegal trafficking in lynx parts (hunters' trophies). Of course, certain negative effects on Balkan lynx spread result from abandonment of livestock breeding in mountainous regions and dramatic reduction in livestock in the region, as well as poaching of wild animals included in the food chain of the Balkan lynx (hare, chamois, roe deer). Impacts of the development of communication and electricity production facilities, such as hydro power plants, are much lower on the rank list of the main threats resulting from their operation or use on the reduction of the size of Balkan lynx populations. Therefore, in the EIA Study concerning the implementation of the project HPP Boshkov Most, the developers – team of scientific experts – have proposed set of mitigation measures against such impacts on biodiversity, including Balkan lynx, as well as compensation measures involving provision of appropriate habitats within NP Mavrovo for uninterrupted development of wild species, especially large carnivores (Brown bear, Balkan lynx, Otter).

For the above reasons, we are of the opinion that the recommendation to the Macedonian Government to suspend/abandon the projects for production of clean renewable energy by hydro power plants in Macedonia is unacceptable. Equally unacceptable and tendentious are the appeals to EBRD and WB, as well as to other international financial institutions not to finance the projects for hydro power in the Republic of Macedonia. We believe that the authors of the reports do not mention the documents, scientific publications and answers given by scientific experts and those of the consultants' team of AD ELEM, which is unacceptable for the Macedonian Government and MEPP and contrary to the provisions of the Bern Convention and other multilateral conventions and agreements for nature and biodiversity conservation. They should be exempted both from the reports and recommendations as ill-founded.

3. Comments by AD "ELECTRIC POWER PLANTS OF MACEDONIA" and team of experts

ANSWERS TO THE REPORT ARE PREPARED BY:

M.Sc. Goran Kovacevik - Senior Engineer for environment
M.Sc. Antonio Arsov - Senior Engineer for environment

ELEM Comments on the Report T-PVS/Files (2015) 41

Page 4 – "The observer's report considers the proposed technical interventions versus the regulations, recommendations and guidelines of the IUCN concerning protected areas, categorization of protected areas and zoning."

ELEM Comment 1: ELEM, for development of the two projects, is working according national legislation following operational policies of various financial institutions. According this, the "regulations, recommendations and guidelines of IUCN" are not recognized as official and obligatory document, therefore any "proposed technical intervention" should be compared and weight with national legislation and the EU directives which are transposed in it. Any further reference to IUCN documents used as a reference for the open case file from the experts mission of the Standing Committee of the Bern Convention is not appropriate and tendentious.

Page 4 – "The regulations in the proposed Mavrovo National Park Law sound similar."

ELEM Comment 2: The Law for Re proclamation of Mavrovo National Park is official document that follow EU Directives for birds and habitat protection. It is a document based on extensive 3 year research Programme supported and developed by OXFAM including more than 40 experts specialized in different areas of expertise. Wording „Sound "is neither appropriate nor professional.

Page 4 – "The former Republic of Macedonia" obviously endeavors to increase the proportion of renewable energy in the total energy consumption, and to meet the growing demand for electricity by so-called green power. This follows the EU recommendations for 2020, and contributes to the efforts against global warming. Nevertheless, properly managed protected areas can also provide a contribution to mitigation of climate change."

ELEM Comment 3: Indeed Management of NP Mavrovo, MoEPP and all involved parties with their activities are contributing for proper management of the area reaching various goals where beside the mitigation of climate change are included: conservation of the nature, protection of the biodiversity, social-economic development, etc.

Page 4 – "The aquatic system would be devastated along outstanding river sections. Dry sections can already be seen around previously built technical installations."

ELEM Comment 4: This is a statement without proper elaboration. ELEM has conducted a number of research activities which are summarized in several documents. None of these documents were requested by the observers. There is specific attention of the aquatic biodiversity.

Page 4 – "Considering the IUCN guidelines and recommendations and bearing in mind the regulations of the Bern Convention."

ELEM Comment 5: R.Macedonia has transposed all relevant EU Directives for protection of nature and environment and they are the bases of the Bern Convention. Therefore the observer report should be based on regulation from the Bern Convention taking into consideration IUCN guidelines and recommendations, not vice versa as stated in the sentence.

Page 4 & 5 – "The negative impacts in the protected area, primarily on the watercourses, but also on ecosystems and wildlife, are unacceptable and cannot be justified by the reduction of use of fossil energy."

ELEM Comment 6: Reduction of use of fossil fuel for electricity production it's only one of many justification for going ahead with such kind of projects (HPP). Economic, Financial and Social aspects are also included in the justification process of development of HPP.

Page 5 – "It is also recommended that the EBRD and the WB should abstain from both projects and from potential funding of small HPPs in the National Park Mavrovo. Undisturbed rivers and brooks

are becoming rare in Europe. Many watercourses in the Balkans are still in natural condition. The construction of these dams would irrecoverably destroy aquatic habitats in a protected area."

ELEM Comment 7: There is no proper elaboration neither a reference to documents who can justify „Recommendation that WB and EBRD should abstain from both projects". Who proposed and when this "Recommendations"?. For the last sentence see **ELEM Comment 4**

Page 6 – "Two larger HPP projects depend on loans from the EBRD (Boskov Most) and the WB (Lukovo Pole)."

ELEM Comment 8: These two projects do not depend on loans from WB and EBRD instead EBRD and WB are co-financing eventual realization of this two projects.

Page 6 – "It included observers from the IUCN and the European Commission, and took place on 24 and 25 June 2015. During the visit, the experts agreed to elaborate a joint report, designed by the Bern Convention expert with the observers' statements as annexes."

ELEM Comment 9: It's not clear who is „Bern Convention expert".

Page 7 – "The proposed construction of two large and more than 20 smaller HPPs could cause major changes in the ecological structure through the change of the water regime and the water discharges."

ELEM Comment 10: See **ELEM Comment 4.** This do not include "more than 20 smaller HPP".

Page 7 to 9 – Section "Zoning"

ELEM Comment 11: The writer of the section do not elaboration of weather the proposed new zoning leads toward increasing or decreasing of the total area under different type of zones (strict protection, active management and sustainable use)

Page 9– "As interventions in the river with a significant change of the hydrological regime cannot be considered sustainable,"

ELEM Comment 12: "Interventions in the river" might be considered sustainable if there are analyses where besides environmental aspects, also economic, social and financial aspects are taken into consideration and support or do not support them.

Page 9 – "The zoning also does not consider specific interests of villages and settlements within the park boundaries."

ELEM Comment 13: This statement is not based on real knowledge and analysis.

Page 10 – "It should be noted that according to the project layout four or five intakes are situated in the zone of active management."

ELEM Comment 14: This is incorrect statement. None of the intakes are in the zone of active management.

Page 12 – "The ecological flow in the Mala River (minimum water flow) is envisaged through a small HPP placed at the bottom of the outlet gate chamber in the planned Tresonce dam. The nominal discharge will be 211 l/s compared to the average annual discharge of 5.7 m3/sec"

ELEM Comment 15: The writer of this comment manipulated with data for project Boshkov Most. "The nominal discharge will be 211 l/s" is the minimum environmental outcome predicted for Tresonce Dam and it should be compared with the annual discharged of 1,76 m3/sec. "The average annual discharge of 5.7 m3/sec." refer to Mala Reka river, where besides of outcome for Tresonce Dam includes additional six intakes.

Page 12 – "It could not be verified whether the intakes outside the National Park Mavrovo and other related measures will have a negative impact on the water supply of the various villages located in the area where the intakes are to be built. However strong concerns were expressed by representatives of villages located outside the park."

ELEM Comment 16: It's not clear from where this statement is concluded, nor who're the representatives and form which villages are and what concerns they expressed?

Page 12 – "As could be seen from an example close to the proposed Tresonce HPP Lake, even small HPPs cause negative impacts. This specific small HPP is supplied via a two km penstock. On two km of river length, the water discharge is significantly reduced."

ELEM Comment 17: The level of water discharged during the mission is low due to the natural condition – June-dry season. Anyhow minimum environmental flow is obligatory.

Page 13 – "Even a minimal water flow (10 % to 12 % of the average water flow) cannot secure the habitat for aquatic species."

ELEM Comment 18: This statement is tendentious. See **ELEM comment 4.** Further

1.) 10-12 % of average water flow is not „minimal water flow" instead minimum biological flow according National Law for water

2.) It's not specified to which HPP this 10-12% referees.

3.) For both large HPP projects investor is proposing minimum ecological asseptable flow which is proposed based on certain analyses and researches.

Page 13 – " In the present case, the construction plans for the dams would have inacceptable impacts due to their interference in the aquatic ecosystems in more or less the total area, regardless of their size .."

ELEM Comment 19: See **ELEM comment 4.**

Page 14 – "The need for hydropower energy can by far not justify the proposed interventions."

ELEM Comment 20: See ELEM comment 3.

Page 14 - ". To meet the IUCN principles action has to be taken to diminish the negative impact caused by various existing installations discharging water for hydropower usage, and to prohibit further constructions threatening nature and biodiversity in the protected area."

ELEM Comment 21: Prohibition of further construction of such HPP could be nominated from official National authority's.

Page14 – "As can be seen on the Radika River at Crn Kamen, no water remained in the Radika riverbed at the time of the appraisal."

ELEM Comment 22: At the moment of appraisal due to the occurred erosion in the spring time there is huge sedimentation located in the catchment facility. There is no automatic system for controlling the discharge of water, because this system is built during '50s and the new project of Lukovo Pole proposes improvement of this system.

Page 14 – "most intakes to the Lukovo Pole Lake are situated in the active management zone."

ELEM Comment 23: See **ELEM Comment 14**

Page 14 – "The impacts of both HPPs on biodiversity are not evaluated in this observer's report and will be documented separately."

ELEM Comment 24: It's not clear what type of additional comments will be documented separately and where and when.

Page 15 – "It would be worth checking the renewable energy strategy of "the former Republic of Macedonia" against the requirements of protected areas, primarily the National Park Mavrovo."

ELEM Comment 25: There is Strategic Environmental Assessment (SEA) for Strategy for Development of Energy in Macedonia covering Renewable Energy Strategy as a part of it and SEA is elaborating all the influences of potential new projects for energy production in NP Mavrovo.

Page 15 – "The Radika and the Mala rivers will dry out more often and for longer periods than under natural conditions. The remaining water in the riverbeds is not sufficient to provide natural conditions for aquatic habitats. In addition, water from several rivers and brooks in- and outside the National Park is diverted via intakes to the water storages at Lukovo Pole and Boskov Most with possible negative impacts on local water supplies."

ELEM Comment 26: See **ELEM Comment 4**

Page 18 – Title of this section

ELEM Comment 27: It is not clear why this observer from the Delegation is not presenting observer report, instead he‘s elaborating sort of scientific article on Balkan lynx?

Page 18 – Foot note 59, 60

ELEM Comment 28: The footnotes are referring to Facebook page, which is not adequate source for reference

Page 18 – “the Boskov Most seems to be important for the reproduction of the lynxes and hence it is a highly sensitive area.”

ELEM Comment 29: This is speculative statement

Page 24 – “Statements made during the meetings also gave indications that the surrounding area of the reservoir would be opened for developments and these aspects have not been properly addressed in the assessments”

ELEM Comment 30: There is no reference to the subject of interest of this statement, neither is clear what type of developments of surrounding area of the reservoir is subject of interest in this sentence.

Page 24 – “Since such an additional stress to a population in such a critical state must be taken properly into account in the assessments, further research by recognized scientist using the most up-to-date techniques will be needed to have a much better understanding of the impact of the planned project on the Balkan lynxes”.

ELEM Comment 31: The writer is minimizing the expertize of Macedonian recognized scientists

Page 24 – “Before proceeding with any of the above-mentioned actions, following the precautionary principle, the project as currently designed must be abandoned until the conservation status of the Balkan lynx population is brought back to a safe level and until when the Mavrovo National Park is no longer the only known core area of reproduction of this species .”

ELEM Comment 32: The writer of this statement goes beyond its obligations.

Page 24 – “From all available studies and technical reports it is impossible to assess the level of influence from the foreseen hydro power plants: Lukovo Pole and Boshkov Most. There is no background information for the key areas for reproduction of brown bear, wolf, wild cat, trout species and some more and there is no way to properly assess the effect of construction work and HPP. For the extremely vulnerable in fresh water ecosystems Astropotamobius torrentium there is only vague data in the revaluation report that states this species is present in fresh waters in the park. There is lack of assessment of the influence of HPP building on this crayfish.

The HPP “Boshkov Most” clearly fits in the reproductive area of rarest of all lynx subspecies – Balkan Lynx.

Lukovo pole area is key reproduction site for corncrake.

ELEM Comment 33: The three paragraphs are contradictory among each other.

Joint-stock Company for Electric Energy Production in State Property Macedonian Power Plants (Elektrani na Makedonija – ELEM), 11 Oktomvri 9, 1000 Skopje, Macedonia

Comments on the On-the-spot appraisal report to the Hydro power development within the territory of Mavrovo National Park: documents T-PVS/Files (2015) 36; T-PVS/Files (2015) 41

By Dr. Svetozar Petkovski

Member of Independent Panel of Experts – Environmental and Social Panel covering biodiversity /natural habitats on Lukovo Pole Renewable Energy Project (LPREP); Consultant on biodiversity issues for the Boskov Most HPP Project engaged by ELEM.

General Impressions of the On-The-Spot-Appraisal Reports

This on-the-spot appraisal to the project areas of Lukovo Pole Renewable Energy Project and Boskov Most Hydro Power Plant organized by the Bern Convention Secretariat in agreement with the Macedonian Ministry of Environment and Physical Planning has had a bumpy ride during the planning, meetings and field trips. The limited duration of the mission and the large areas which cover the two hydro power projects do not relieve the involved actors, that is, the independent expert to the mission and the observers from the IUCN and the European Commission from providing solid reports that can form the basis for a successful public hearing and a sound implementation process by ELEM.

It is unusual that both reports are prepared mainly on the basis of data given in references of the NGOs Eco Svest and MES and into a minor degree taken into consideration documents like the Mavrovo Protected Area Revalorization Study (2011), Mavrovo Protected Area Management Plan (2011), ESIA on Boskov Most HPP Project (2011), Biodiversity Survey of the Boskov Most HPP Project Area: Pre-construction Annual Report (2013), or completely neglecting official documents like the ESIA on Lukovo Pole (2015) and the Aquatic Biodiversity Assessment Study for the Mala Reka River Watershed (2015).

It is very disappointing and unfortunate that an IUCN observer makes conclusions that are not supported by any appropriate and relevant reference, which are wrong (the case with fishes), presents invalid data on species composition within the two IBAs (the case with birds) and gives incorrect information on the conservation status of certain species (the case with Corncrake).

The general conclusion of the mission regarding the two hydro power projects presented in document T-PVS/Files (2015) 36 derives from the IUCN protected area management categories classification, disregarding the criteria on protected areas incorporated into the national legislation.

The consultant's overall impression of the report T-PVS/Files (2015) 36 submitted by the Bern Convention Secretariat is that it basically is relatively well structured, but incomplete in its handling of biodiversity/social/legal issues with poor figures illustrating discussions on the meetings and a shifting quality in using geographical terms, national and IUCN criteria on protected areas management categories, as well as conclusions made on the basis of unverified data.

Within the T-PVS/Files (2015) 41 report, the overall impression is that they are well structured, however missing in a greater degree the main objective of the mission (in the case of the first report) final conclusion that do not corresponds to the analysis in the body text of the report (in the case of the second report) and an unprofessional approach to the report, using unverified wrong information on various components of biodiversity (in the case of the third report).

Relevant issues with detailed comments to text: Document T-PVS/Files (2015) 36

Numerous information presented in this report are being taken up from the other three separate reports of the T-PVS/Files (2015) 41 document, therefore they will not be commented in this chapter.

I have no suggestions on the introduction and the background chapters.

In Chapter 2 (The Mavrovo National Park), on page 4, penultimate paragraph, where the numbers of species of various taxonomic groups are given, the number of invertebrate species is not correct (see Petkovski, 2011).

In the same Chapter, the data presented on page 5, in the Subtitle on Species Conservation are extracted from the third report prepared by Dutsov in the T-PVS/Files (2015) 41 document will be analyzed in details in one of the next chapters.

On page 6 under the subtitle "Mavrovo National Park as a candidate Emerald Site (ASCI) regarding the Fairy Shrimp *Branchipus intermedius* Orghidan, 1947 which is given as an example of the importance of this site since this is the ultimate known locality of this species. That is all correct, but there is no explanation in which way this species will be threatened by the construction of the two hydro power plant projects. The independent expert to the mission, author of the report T-PVS/Files (2015) 36 document do not suggest any mitigation, restoration or offset measure to minimize the negative impact on this rare freshwater species.

In fact, the only existing population of *B. intermedius* is developing in a few shallow temporary rain pools, less than 20 cm in depth, scattered over a single locality Tri Bari (three pools) on the Bistra Mountain, located at 41° 35' 16.50" North geographic latitude and 20° 47' 07.00" East geographic longitude, at an elevation of 1,924 m asl. The water in these habitats is exclusively from the melted snow and spring rainfall. The population is developing in the first half of June (see Petkovski, 1997). The life cycle is already finished in July, before drying up of the temporary pools. This temporary freshwater habitat type is closely related with spring rainfalls and snow-melting. The construction of the two hydro power projects will have no any negative or positive impact to the species.

In the same paragraph, the significance of the site for Taiga type Coniferous Forests on higher altitudes is pointed out, which is quite correct. Notwithstanding the fact that on the territory of the Protected Area Mavrovo National Park, coniferous forests of taiga type (spruce and fir forests) accompanied with birch and aspen trees cover relatively small areas, the Boreal (Siberian) complex of the Mavrovo National Park is represented by highest level of species richness and population density compared to any other high mountain in the Republic of Macedonia (see Petkovski, 2011).

The Norway Spruce (*Picea abies*) is widely distributed throughout Europe from Norway in the northwest to the Ural Mountains eastwardly. The northern limit is in the arctic, while the southern limit is in the Bulgarian high mountains and the locality Adjina Reka within the boundaries of the Mavrovo National Park. In Macedonia, the locality Adjina Reka is the only site on which grows the Norway spruce forest stands.

In the Alps, Carpathians and the Balkan high mountains the Norway Spruce occupies the montane to subalpine zones especially on moist sites and in cold air pockets. Recently, the Norway spruce forest stand at the Adjina Reka locality is faced with a process of edge-related forest desiccation. Canopy-moisture levels in forest trees adjacent to clearings and the forest edge show significant water loss compared to intact forest trees.

In order to undertake certain restoration measures, during development of the Mavrovo National Park Management Plan, one third of the Norway spruce range was transformed from the Zone of Strict Protection into a Zone of Active Management. In that way, the Management body of the Park could conduct a restoration project to stop the forest desiccation.

Current knowledge on the edge-related forest desiccation of the Norway spruce is not sufficient to make any serious conclusion. However, on one hand, we should have in mind that the core area of the Norway spruce forest stand is located along the Adjina Reka River. On the other hand, with the former Mavrovo HEPP there is an intake of the head waters of Adjina Reka River that encompasses the whole water flow, without obtaining any residual flow. Consequently, the whole river bed that passes through the Norway spruce forest stand is completely dry.

Our assumption is that by the water intake and desiccation of the Adjina Reka River the air moisture content has significantly dropped, that has negative effect on the status of Norway spruce.

The restoration project anticipates installation of several automatic temperature and moisture measurement devices, reconstruction of the water intake in order to obtain environmental flow

downstream the intake on Adjina Reka River. Furthermore, development of a long-term monitoring program on the status of the Norway spruce forest is essential for the project.

In addition, construction of Lukovo Pole Reservoir will cause increased levels of air moisture content in the adjacent areas, including the range of Norway spruce forest stand that will result in improved ecological conditions for development of this taiga type forest stand.

On page 6 under the subtitle "Mavrovo National Park as a candidate Emerald Site (ASCI), second paragraph, regarding the Corncrake (*Crex crex*). The statement that the species meet A1 criterion for an Important Bird Area is not valid.

The site qualifies A1 criterion if it is known, estimated or thought to hold a Globally threatened species i.e. a population of a species categorized by the IUCN Red List as Critically Endangered, Endangered or Vulnerable. In general, the regular presence of a Critically Endangered or Endangered Species, irrespective of population size, at a site may be sufficient for a site to qualify as an IBA. For Vulnerable species, the presence of more than threshold numbers at a site is necessary to trigger selection. However, the Corncrake (*Crex crex*) in both the IUCN Red List of Globally Threatened Species, as well as in the European Red List of Birds as a species of Least Concern is categorized (see http://www.iucnredlist.org/; BirdLife International, 2015).

On page 6, the subtitle: IUCN position regarding the Hydropower Plant Development in The Western Balkan is mainly focused on construction of HPP in Albania and general, superficial statements that are irrelevant to the ELEM projects. The Brunner's report on IUCN criteria and aquatic ecosystems will be discussed in a separate chapter.

On page 6, under the subtitle "Hydropower in Mavrovo National Park" the author uses the geographical term "Drina River". The same term is repeatedly used on pages 7, 8, 11, 17. From geographical point of view (see a hydrology map of the Balkans) as well as from an aquatic zoogeography aspect (see Banarescu, 2004), the Drina River belongs to the Danube Watershed and it has not any relation with the Mavrovo National Park, neither to the ELEM's HPP project areas.

On page 7, the first two paragraphs written in italics are citations taken from the Mavrovo Protected Area Management Plan (2012-2021), page 85. The second paragraph is cited in original, while the first paragraph is cited incorrectly, since the author of this report has made changes to the original text (see Petkovski, 2011).

On page 7, in the last paragraph of the subtitle "Hydropower in Mavrovo National Park" the author gives general statements on the flow rates, aquatic habitats and organisms that live in the water in the river sections downstream the water intakes. All these issues are analyzed in details in the Aquatic Biodiversity Assessment Study for Mala Reka River Watershed (see Petkovski et al., 2015).

On page 7, under the subtitle "HPP Lukovo Pole", the statement on the "*20 kilometers long covered feeder channel, running slope parallel, to transfer water to from the Korab catchment to Lukovo Pole storage ...*" is not valid, since the Government of the Republic of Macedonia on its 167 Session, held on November 19, 2013 has arrived at the following decision "The Joint-stock Company for electric energy production in State Property Macedonian Power Plants (ELEM) is obligate to inform World Bank that the Project Lukovo Pole will be realized without the Intake Proyfel (Dlaboka Reka = Deep River)". (Governmental Decision Nr. 41-8393/1 from November 13, 2013).

On page 8, under the subtitle "National Park status and management plan" the author has made an attempt to make a comparative analysis on the national legislation criteria for management with protected areas categories, especially with national protected area category II with the IUCN Protected Area Category II, unnecessarily rewriting numerous articles of the national legislation.

On page 10, under the Title 3 (Comments on the Draft Management Plan for the NP) the author continues with his endless analyses on the zoning of the Park pointing out that the proposed zoning is not in line with the IUCN guidelines for management categories. However, all these issues are already widely elaborated in the Revalorization Study on the Mavrovo Protected Area and discussed with the numerous stakeholders on public hearings organized for the purposes of the Revalorization Study. It is also pointed out in the Management Plan, for example on page 103 the following statement is given: *Notwithstanding the IUCN Guidelines for establishing Protected Area Management Categories apply a*

quantitative criterion to made distinction between protected area categories and stipulates that the primary management objective should apply to at least three-quarters of the Protected Area, it is not transposed in the Macedonian Law on Nature Protection.

Criteria for applying protected area management categories have been discussed on numerous workshops and public hearings, including the Dudley (2008) guidelines and authorities from the Mavrovo National Park and from the other protected areas are aware of the need to harmonize the national legislation with the IUCN criteria and the EU Habitat and Bird Directives. Consequently, as a result of these initiatives the Ministry of Environment and Physical Planning in 2016 is going to start a project implementation of Natura 2000 in Macedonia. One segment of the project will be harmonizing of the national legislation with the EU Bird and Habitat directives.

The IUCN protected area management categories classify protected areas according to their management objectives. The categories are recognised by international bodies such as the United Nations and by many national governments as the global standard for defining and recording protected areas and as such are increasingly being incorporated into government legislation. However, the IUCN classification of protected areas is not an obligatory issue like it is the case with the EU Directives. As a result, none of the European countries, including the author's own country in its national legislation strictly follows the IUCN protected area management categories classification.

In the last paragraph on page 10, the author on the basis of Brunner's report suggests re-zoning of the Park introducing two additional distinct zones: urban development zone and zone for the construction of visitor facilities. It is only unclear if the author suggests amendments to the Law on Nature Protection in order to include these two distinct zones in the Law, or it is a recommendation to the authorities of the Park to make the re-zoning against the current Law on Nature Protection, on the basis of WCPA, IUCN expert opinion?

The titles regarding the Balkan Lynx will be discussed into a separate chapter.

On page 15, under the subtitle "Mountain Pastures" the statement that: "*The construction of the Lukovo Pole Lake and the associated uptake of rivers and stream would have a significant impact on a well maintained high mountain cultural landscape…*" is not correct. The issue on maintaining of high-mountain pastures as significant traditional landscapes is quite well elaborated in the Mavrovo Protected Area Management Plan (2012-2021), on page 95, under the title 2.2.2. Identification (Evaluation) of Significant Traditional Landscape (see Petkovski, 2011). In general, the high-mountain pastures as significant traditional cultural landscapes that have been produced by interaction of local people and nature over centuries of traditional High Nature Value (HNV) pastoralism at national level are endangered by abandonment of traditional grazing practices. The management of high-mountain pastures by traditional sheep and cattle grazing practices is severely declined. In such situation, the former grasslands have undergoing natural successional change into scrublands and forests. In lack of grazing, the mountain pastures become overgrown with tall grass that dry up during the late summer, which is highly potential risk of fires. With the climate change, the dry grassland fires become a significantly raising risk.

On page 16, under the subtitle Tourism, in the second paragraph, the author gives unverified information on tourist development with additional tourist infrastructure around the Tresonche Reservoir, which will be located between the villages of Selce and Tresonche. The statement that "*such a tourist development would add another unacceptable pressure in a very sensitive area, namely for the Balkan Lynx population*" is wrong opinion of the author of this report, who has not analyzed in details the main threats that have caused lynx population decline.

On page 16, under the title "Conclusions" the author of this report again comes on the zoning of the Park, repeating that it "*… is not compatible with the IUCN guidelines for a protected areas Category II area ("the 75% Rule")*", without any recommendation or suggestion, neglecting the existing national legislation.

Finally, the general conclusion of the mission regarding the two hydro power projects presented in document T-PVS/Files (2015) 36 derives from the IUCN protected area management categories classification, disregarding the criteria on protected areas incorporated into the national legislation.

Such general conclusion of the mission without offering of any mitigation, restoration or offset measure is superficial, disappointing and unacceptable since it does not reflect the In Situ conservation of ecosystems, natural habitats and plant and animal species. It is clearly directed against the national legislation, without any respect to the national law on nature protection, which completely fulfills the obligations on the Bern Convention.

Relevant issues with detailed comments to text: Document T-PVS/Files (2015) 41

1. Comments on the separate report prepared by Mr. Robert Brunner, WCPA (IUCN) observer

This report has been in a large portion commented within the review of the T-PVS/Files (2015) 36 document. The author of this report in a greater degree has missed the main goal of the mission, focusing all his efforts in rewriting a whole paragraphs and chapters of the IUCN guidelines for applying Protected Area Management Category II for the Mavrovo Protected Area Management Plan (2012-2021). The proposed Management Category II including zoning of the Park is made in line with the national Law on Nature Protection. The authorities of the Mavrovo National Park and the Macedonian Ministry on Environment and Physical Planning are aware that national legislation is not harmonized with the IUCN Criteria on protected areas. However it not the reason the author of this report to rewrite the whole Dudley's (2008) guidelines.

2. Comments on the separate report prepared by Mr. Andras Demeter, European Commission expert/observer

It is strange that the author of this report on several pages unsuccessfully is trying to develop a scientific theory that implementation of the Lukovo Pole Renewable Energy Project and the Boskov Most Hydro Power Plant Project will be the main threat to the survival of the Balkan Lynx. However, the superficial analysis of presented data mainly originating from NGOs references do not gives any right to the author of this report to develop such drastic final conclusion:

"*Before proceeding with any of the above-mentioned actions, following the precautionary principle, the project as currently designed must be abandoned until the conservation status of the Balkan Lynx population is brought back to a safe level and until when the Mavrovo National Park is no longer* ***the only known core area of reproduction of this species****…*."

Seriously speaking on an exclusively scientific basis, with this conclusion in the way how is it written, it seems like the author is trying to rise up the taxonomic status of the Balkan Lynx to a level of species. If it is like that, than the National Park Mavrovo from this very moment is no longer the only known core area of reproduction of the species.

I have written the previous paragraph to worn the author on the need of high level of responsibility in suggesting such a serious conclusion, which does not arises from the author's analyses to the issue but rather as a result of an advertising campaign of the NGOs.

If we want to understand the problem with the Balkan Lynx population declining, than we have to made an analysis on historical data of the population status to establish scientifically based knowledge on the main threats in order to undertake efficient measures to minimize the negative impacts and conduct additional mitigation or restoration measures.

The author's analysis on historical data presented in the last paragraph on page 18, under the title "Background" comes-down to the following sentence: "*After a dramatic decline in the 19th and 20th centuries, the present total size of the population is estimated to be only about 27-54 individuals*" with distribution range restricted to Monte Negro, Albania, Kosovo and Western Macedonia. For the territory of Mavrovo National Park, the author presents data for 7-9 individuals in 2008, and preliminary data for 8-9 recorded individuals for the current year.

Since the author do not gives any historical data for decent comparative analysis, we shall make an attempt, shortly to present some data given in the monographic study of Miric (1981). In the period 1920-1929 only in Tetovo, 34 individuals of Lynx from Shar Planina Mountain have been killed. Kappus (1932) in burrier shops in Skopje in the year 1928 has recorded 15 skins of Lynx originating from Shar and Korab Mountains. Kuzman Ugrinovski (former director of the Mavrovo National Park) for the year 1974 gives data for presence of stable subpopulations of Lynx on the following localities

within the boundaries of the Park: Adjina Reka (6-7 individuals); Lazaropole (5-6 individuals); Brzovec (8-9 individuals).

In the period 1965-1974 the population status was relatively stable ranging 121 individuals in Macedonia, 11 individuals in Monte Negro, 73 individuals in Kosovo, 75 individuals in Albania and 5 individuals in Greece.

According to Miric (1981) the feeding habits of the Balkan Lynx depends on the availability of food sources. During the summer season it's primary food source is consisted of small rodents, while during the winter season it attacks larger animals. Because of competitive relations with the Wolf regarding food sources mainly on Brown Hare and Roe Deer, in the period 1952-1953 during the campaign for wolves poisoning, the lynx population has been rapidly increased.

However, regarding the territory of Mavrovo National Park and the adjacent areas, surviving of the Lynx population is rather related to the population status of Wild Boar (in the case of Shar Planina Mountain) and the Balkan Chamois (in the case of Korab and Bistra Mountains) than to the population status of Brown Hare and Roe Deer. Competitive relations on food sources besides the wolves, with humans are also present, not only regarding the small game (Rock Partridge, Brown Hare), but also for large game (Roe Deer, Wild Boar, Balkan Chamois).

When ranking the main threats, Miric pointed out the illegal killing and lack of food sources, especially during the winter season.

On the other hand, Miric gives historical information on regular lynx presence in close neighborhood of the villages: Galicnik, Lazaropole, Gari, Osoj, Selce, Tresonche, pointing out that the species is not sensitive to human presence. In addition he notes that there was not any historical record of lynx road casualties, nevertheless that regional asphalt road Mavrovo-Debar with relatively high traffic frequency is passing through the Mavrovo National Park.

Finally, Melovski et al. (2012) in the European Commission's document "Status, management and distribution of large carnivores in Europe" give information on Balkan Lynx in Macedonia. In the Summary Table 7, in the row: Most important threats, ranking the threats at the following order: small population size; poaching; depletion of prey base. In all other countries, where the lynx is present the most important threats are illegal killing and overharvesting of wild prey populations.

The Korab Mountain subpopulation of Balkan Lynx that has been counted on the locality Kobilino Pole as more than 1,400 individuals by the end of 20th Century, has been rapidly decreased to less than 100 individuals during the ethnic conflict in Macedonia in 2001 (interview with Mavrovo NP Staff).

Consequently, it is strange from where the author has extracted his opinion that the implementation of the HPP Projects is the main threat to the survival of the Balkan Lynx, and the only conservation and restoration measure should be the abandonment of all activities on these projects, completely neglecting the other real threats.

3. Comments on the separate report prepared by Mr. Aleksandar Dutsov, IUCN expert/observer

As it was emphasized in the chapter of general impressions, the author of this report has missed some of the essential official documents like the Mavrovo Protected Area Revalorization Study (2011), Mavrovo Protected Area Management Plan (2011), ESIA on Boskov Most HPP Project (2011), Monitoring of Herpetofauna in: Biodiversity Survey of the Boskov Most HPP Project Area - Pre-construction Annual Report (2013), or completely neglecting official documents like the Aquatic Biodiversity Assessment Study for the Mala Reka River Watershed (2015).

On page 28, second paragraph, under the title "Executive Summary", the statement: "*National Park Mavrovo is declared as strictly protected area…*" is invalid since Strictly Protected Area is classified as Category I by both National Legislation and IUCN criteria.

On page 28, title Facts and Findings, subtitle "Fish": the author uses various taxonomic classifications for both trout species in order to ascend their threat status. Obviously he has not been using the Mavrovo Protected Area Revalorization Study (2011), Mavrovo Protected Area Management

Plan (2011) and especially the Aquatic Biodiversity Assessment Study for the Mala Reka River Watershed (2015), where the taxonomy of the trout species is presented as follows:

The waters of Mala Reka River watershed are inhabited exclusively by representatives of the Salmon Family (Salmonidae). Both native species of trouts: Balkan Brook Trout (=Radichka Pastrmka Trout) (Salmo farioides) and Montenegro Trout (=Garska Pastrmka Trout) (Salmo montenegrinus) are typical inhabitants of mountain streams and rivers with high-gradient, clear waters, rapid flow, low water temperature, high level of oxygen saturation, rapids, small waterfalls and deep pools.

Karaman (1933) has originally described the Montenegro Trout (Salmo montenegrinus) under the name Trutta montenegrina for the city of Podgorica watershed area in Montenegro. Karaman (1938) has described the Balkan Brook Trout (Salmo farioides) on the basis of specimens collected from the rivers: Krka (upper-course) near the city of Knin, Croatia; Neretva (middle-course), Prenj Mountain Range, Bosnia; Radika (middle-course) below the village of Rostushe, Macedonia; and Bistrica (upper-course) near the city of Pec, Kosovo.

Karaman (1957) in his study on the Radika River Trouts for the Mala Reka River and its tributaries, presence of both species has ascertained. For the Montenegro Trout he gave a local common name "Garka" as a result of the presence of this species in the Garska Reka River. It does not enter the Radika River and its other tributaries. On the other hand the Balkan Brook Trout enters the waters of Mala Reka River from Radika River and there appears a mixture population of both species in the lower-course of Mala Reka River.

Kottelat & Freyhof (2007) recognize both trout as valid species, widening significantly the range of Balkan Brook Trout to the streams of eastern Adriatic slope, from Zrmanja to Mornos drainages (Croatia, Bosnia-Herzegovina, Montenegro, Albania, Kosovo, Macedonia and Greece). On the contrary, for the Montenegro Trout they have restricted the range of the species exclusively to the Moraca and Neretva river drainages.

Published data on spatial distribution of the two trout species within the Mala Reka River watershed are insufficient. Recognized as valid species, in absence of additional genetic data allowing critical decision on their validity, the diagnoses regarding their taxonomy and distribution presented in this report should be considered tentative.

Consequently, until further taxonomic, ecological and spatial distribution investigations and analyses are conducted, for the purpose of this report we shall tentatively present the distribution of Montenegro Trout restricted to the Garska Reka River and its tributaries Valovnica River and Lazaropolska Reka River, while the Balkan Brook Trout restricted to the Mala Reka River from its mouth upstream to the upper-course consisted of Tresonechka Reka and Jadovska Reka rivers.

Kottelat, who is a legend in the freshwater fish taxonomy, in his book on the European Freshwater Fishes on page 412 on a half page text entitled as "Trout taxonomy: the shame of European Ichthyology" explains the problems with the trout taxonomy (see Kottelat & Freyhof, 2007).

Dutsov in his report uses the old IUCN classification made by Crivelli (2006) in which the Montenegro Trout is placed in synonymy with *Salmo obtusirostris*. However, Allain Crivelli is an expert in fish ecology and not in fish taxonomy. The Crivelli's taxonomy is made on the basis of Freyhof & Darwall (2004) classification. Crivelli (2006) in his assessment on the population status of Soft-muzzled trout (*Salmo obtusirostris*) has not used any specimens collected from Radika nor from Mala Reka River. Banarescu (2004) prefers close relations between the Dalmatian genus *Salmothymus*, in which belongs the Soft-muzzled trout with the Ohrid endemic genus *Acantholingua*, in which belongs the Belvica or Ohrid Soft-muzzled trout (*Salmo ohridanus*).

Dutsov's comment on the Balkan Brook Trout (*Salmo farioides*) is also unacceptable. He uses the Catalogue of Life information.

In Fauna Europaea (2015), an online taxonomic classification of the Europaean fauna (see http://www.faunaeur.org/) both species the Balkan Brook Trout (=Radichka Pastrmka Trout) *(Salmo farioides)* and the Montenegro Trout (=Garska Pastrmka Trout) *(Salmo montenegrinus)* are with valid taxonomic status, reviewed by Jorg Freyhof.

On page 29, title Facts and Findings, subtitle "Amphibians and Reptiles": The Dutsov's statement on Amphibians and reptiles presented in the paragraph are not in line with the Annual Monitoring of Amphibians and Reptiles (see Sidorovska, 2013).

On page 29, title Facts and Findings, subtitle "Bird Species": The presented data in Duttsov's report on the two Important Bird and Biodiversity Areas (IBAs) under the codes: MK001 Shar Planina Mountain and MK002 Radika River Catchment, regarding the species composition and population estimate in Key Biodiversity, as well as in the species composition and population estimate in the tables on IBA trigger species (see BirdLife International, Important Bird and Biodiversity Areas (IBAs) for the MK001 Shar Planina Mountain: http://www.birdlife.org/datazone/sitefactsheet.php?id=120 ; and for MK002 Radika River Catchment: http://www.birdlife.org/datazone/sitefactsheet.php?id=132 .

On page 30, title Facts and Findings, subtitle "Radika River Catchment": in the middle of the penultimate paragraph, the statement: *"… and the most interesting and important one is the Corncrake (Crex crex). Corncrake is Bern Convention Appendix II species, species of highest priority for protection because it is globally threatened species.*"

The statement that Corncrake is a Globally Threatened Species is not valid. The Corncrake (*Crex crex*) in both the IUCN Red List of Globally Threatened Species, as well as in the European Red List of Birds as a species of Least Concern is categorized (see http://www.iucnredlist.org/; BirdLife International, 2015).

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COMMENTS / OBSERVATIONS ON REPORTS, PREPARED BY VARIOUS AUTHORS FOR BERN CONVENTION, IN THE FRAMEWORK OF "HYDRO POWER DEVELOPMENT WITHIN THE TERRITORY OF MAVROVO NATIONAL PARK"

Report – Observers' Report following the on-site Appraisal

Prepared by:
Mr Konstantin Siderovski
ELEM's ESIA consultant

(1) Report by Mr. Robert Brunner, representing WCPA (IUCN)

Comments

According to the author, this particular report "considers the proposed technical interventions versus the regulations, recommendations and guidelines of the IUCN concerning protected areas, categorisation of protected areas and zoning. It does not include statements on the consequences for biodiversity, wildlife and landscapes."[1)]

However, the report includes such statements and stipulates that "Additional intakes would discharge water from smaller rivers and brooks, transport would result in numerous lorry trips over a long undefined period, noise and traffic would disturb wildlife and could lead to emigration of species. The aquatic system would be devastated along outstanding river sections." These conclusions are not supported by concrete facts or qualitative and/or quantitative indicators on project level but are generalised for all projects subject to the report (both ELEM's dams – HPP B.Most and L.Pole Renewable Energy Project, as well as small HPPs).

With such generalised approach, the report also does not recognize any differences among various categories (type and size) of the projects, i.e. large dams and small hydro power plants or differences among projects in same category. This is important shortcoming of the report due to the fact that with such approach no firm or project specific recommendations are proposed in the report, but rather general "go" or "no go" recommendations are given for all potential / proposed projects as a single package – "It is also recommended that the EBRD and the WB should abstain from both projects and from potential funding of small HPPs in the National Park Mavrovo." [2)]

The previous observation is especially crucial in relation to the small HPP, as the report speculates with their number (20 to 30) and does not include further specific site related analysis, even on protection zone level (which maybe is not part of the report's terms of reference). As a result, the report simply gives general recommendation that all small HPP should abstain. Until when? – there is no rational criteria in the report in this respect. And why to abstain all small HPP? Are all of them in pristine areas, or in areas with high conservation interest? Are all of them problematic in terms to the construction needs? Do all of them pose risk to priority habitats? Response on these and other similar questions is likely unknown in this moment and would be subject to consideration throughout ESIA process for each particular small HPP, on case by case approach. Recommendation to abstain all small HPP given in the report is therefore very general.

Regardless the reservation given at the beginning of the report that "it does not include statements on the consequences for biodiversity, wildlife and landscapes"[3)], in the section "Proposed hydropower plants", sub-section "Lukovo Pole", the report speculates for the likely impacts due to

[1] Hydro power development within the territory of Mavrovo National Park (Macedonia), "OBSERVERS' REPORT FOLLOWING THE ON-THE-SPOT APPRAISAL", (25-30 June 2015), section "Executive Summary"
[2] Hydro power development within the territory of Mavrovo National Park (Macedonia), "OBSERVERS' REPORT FOLLOWING THE ON-THE-SPOT APPRAISAL", (25-30 June 2015), section "Executive Summary", subsection "Conclusions"
[3] Hydro power development within the territory of Mavrovo National Park (Macedonia), "OBSERVERS' REPORT FOLLOWING THE ON-THE-SPOT APPRAISAL", (25-30 June 2015), section "Executive Summary"

eventual excavation of construction materials (within or outside the NP boundaries), etc. It is a known fact that ESIA for the L.Pole project is still under preparation and attempt of such analysis in the report is premature, therefore it is not understandable why the report tries to speculate about technical details regarding the project related mineral resources excavation or transport needs, and to the end to conclude that required information is not available. If such information availability was expected, one would raise a question – was the timing of this exercise by the Bern Convention good and whether it would have been much better to wait for the ESIA package for L.Pole project in order to have full project information availability?

In same manner, the report suggests that "if the construction material is taken from excavations within the park boundaries, it will definitely have serious impacts and is in discrepancy to an IUCN recommendation of the World Conservation Congress 2000 which suggests that exploration and extraction of mineral resources in protected areas should be prohibited". However, this is not so straightforward in relation to a Nature 2000 site (or an Emerald site, such is NP Mavrovo). EU has issued / published a document related to extractive industries in 2011 – "Guidance document – Non-energy mineral extraction and Natura 2000" (EC GUIDANCE ON: UNDERTAKING NON-ENERGY EXTRACTIVE INDUSTRY (NEEI) ACTIVITIES IN ACCORDANCE WITH NATURA 2000 REQUIREMENTS). In the background of this document it is clearly stated: "There is no automatic exclusion of NEEI activities in and around Natura 2000. Instead, extractive activities shall follow the provisions outlined in Article 6 of the Habitats Directive to ensure that these activities do not adversely affect the integrity of Natura 2000 sites."

In several occasions, the report suggests that the "minimal water flow (10-12%) cannot secure the habitat for aquatic species" / "the remaining water in the riverbeds is not sufficient to provide natural conditions for aquatic habitats". This seems very general conclusion which does not take into account:

- the results of the aquatic biodiversity assessment of the Mala Reka River Watershed, preformed for the purposes of the HPP Boskov Most project (please note that the respective standalone document - Aquatic Biodiversity Assessment Study for Mala Reka River Watershed (ELEM AD, 2015) - is not listed in the reference list of the report).
- the fact that the ESIA package for the L.Pole project is still under preparation. This package would likely include detailed assessment of the affected aquatic biodiversity and would propose minimal water flow that would sustain the aquatic life in the affected watercourses.

In its summary – the report concludes that "the dams will negatively affect most of the area in the long run, both during the construction period and through the management of water resources." In relation to the HPP Boskov Most project this is acknowledged in the respective ESIA package and as a result – comprehensive mitigation strategy is proposed and committed by the project developer (ELEM AD). This strategy, when further detailed via various management plans and implemented during the construction and operations of the project, will significantly avoid and reduce the identified impacts thus leading to sustainable energy production. More details on the mitigation approach could be found in the standalone project document – Biodiversity Mitigation Strategy (ELEM AD, 2015). In addition, more details for mitigation of impacts on landscape could be found in the standalone project document - Landscape Master Plan, Visual Impact Assessment and Landscape Design (2015). In relation to the L.Pole project, full mitigation strategy would be a result of the on-going ESIA process. When ready and adopted by the project developer (AD ELEM), this strategy, as well as the full project's ESIA package would be disseminated to all stakeholders (including Bern Convention).

(2) Report by Mr. Andras Demeter, Directorate for Natural Capital, Directorate-General for the Environment, European Commission, Brussels

This report suggests that the L.Pole project could be considered as neutral vis a vis the lynx issue, as it stipulates "Lukovo Pole possibly poses less threat for the lynx."

The report calls for abandon of the "HPP B.Most project until the conservation status of the Balkan lynx population is brought back to a safe level and until when the Mavrovo National Park is no longer the only known core area of reproduction of this species". What is the meaning of this –

shall the project be suspended until other area or PA in the wider (Western Balkans) region become 'lynx reproduction nucleus'? This is vague and 'heavy' recommendation which, if followed as such - especially the suggestion that the project should be suspended until NP Mavrovo is no longer the only known core area of lynx reproduction - is beyond the power of influence to any institution in Macedonia (and the country itself) and becomes an issue of international regional importance with tremendous impact on various existing sectorial development strategies of all concerned countries. With this approach, it is logically to extend the recommendations of this Bern Convention exercise to other countries in the region which are seen as relevant for the "lynx issue" (Albania, Kosovo, Montenegro, etc.). Macedonian Government via the competent body for the Bern Convention (the MEPP) should seriously consider if this recommendation is acceptable for the country or should be refused as it puts the country in position to take responsibility beyond its power of influence.

(3) Report by Mr. Pierre Galland, (On-the-spot Appraisal)

The comments below are related to the selected recommendations to the Macedonian government.

- Recommendation: Before any HPP construction project, make an integrated strategic social and environmental impact assessment study, taking into account all the planned activities and integrating the potentially impacted local communities outside the Park and the global long distance effects, namely on the water regimes of the Drina and Vardar rivers; supplement this study with the provisions of the EU Water Framework Directive.

Comment:

Full range ESIA package (ELEM AD, 2011) for the HPP Boskov Most exists and is supplemented with reports on additional ESIA related actions / surveys:

- Reports on the annual pre-construction environment and biodiversity surveys, 2012-2013 (seasonal and annual reports) and associated comment-response documents, *note: The comment-response documents are not listed in reference lists of any of the reports prepared by the Bern Convention mission team; therefore it is not clear if they have been used throughout the appraisal process by the Bern Convention mission team.*
- Aquatic Biodiversity Assessment Study for Mala Reka River Watershed (ELEM AD, 2015), *note: This document is not listed in reference lists of any of the reports prepared by the Bern Convention mission team; therefore it is not clear if it has been used throughout the appraisal process by the Bern Convention mission team.*
- Biodiversity Mitigation Strategy (ELEM AD, 2015), *note: This document is not listed in reference lists of any of the reports prepared by the Bern Convention mission team; therefore it is not clear if it has been used throughout the appraisal rocess by the Bern Convention mission team.*

The ESIA process has been conducted under the Macedonian regulations on EIA (which is line with the requirements of the EU EIA Directive) as well as EBRD Environmental and Social Policy and associated Performance Requirements.

No *Strategic* Environmental Assessment (SEA) is required on project level (if this is also included in this respective recommendation, i.e. "integrated *strategic* social and environmental impact assessment study"). Such SEA has been developed for the Macedonian Energy Strategy, which, *inter alia*, includes the aspect of renewable energy sources (RES). However, SEA may be required for the adoption of the Management Plan of NP Mavrovo (subject to decision by the national competent authority – MEPP).

Provisions of EU Water Framework Directive in terms to the hydrological regime and good ecological status via setting the required minimum biological flow are included in the aforementioned additional ESIA related actions / surveys.

Full range ESIA package for the L.Pole project is under preparation as per the above mentioned required national and World Bank safeguard standards. When ready, this package should be considered by the Bern Convention mission time (if possible), in order to avoid any further

misunderstandings due to lack of information (technical, as well as environmental data), which is clearly case in this moment.

- Recommendation: Carefully weigh the level of impacts against the benefits provided by a well-preserved large protected area with a recognised European significance. Evaluate the global consequences of the loss of an IUCN category II status for Mavrovo National Park which would derive from the impacts of the hydropower plants implemented in the Park, as well as the consequences in regard to the implementation of the Emerald Network of the Bern Convention and subsequently on the Natura 2000 network in prospect of EU accession of Republic of Macedonia.

Comment:

Above mentioned ESIA documentation identifies (HPP Boskov Most project) / would identify (L.Pole project) the whole range of potential impacts from each project and proposes / would propose comprehensive mitigation strategy to mitigate the significant impacts (assessed on bases on significance matrix). Level of impacts vs socio-economic benefits is constituent part of the ESIA.

In addition, it is expected that the ESIA documentation for the L.Pole project would incorporate a full scale cumulative impact assessment (CIA) on NP level, based on the fact that HPP Boskov Most project which is more advanced in terms to its development stage and other small HPP are to be also implemented in the NP Mavrovo. In that way, potential global consequences of losing the NP status and consequences in relation to the Emerald / Natura 2000 process are to be assessed.

- Recommendation: Apply the precautionary principle and suspend all construction projects within the Park as long as the overall impact has not been fully assessed.

Comment:

Precautionary principle for both projects (HPP B.Most project and L.Pole project) has been applied and is to be applied on continuous bases throughout its core pillar – comprehensive environmental and social impact assessment as required by the Macedonian law and best international practices.

It is not clear what is meant by ‘suspend all construction projects”. None of the projects is in actual construction stage to be stopped. Both projects (HPP B.Most project and L.Pole project) are of essential national socio-economic significance for the country and their further evolvement towards level of details to be accepted for construction should carry on - and not be suspended.

EIA / ESIA process is of continuous nature and various actions followed the ESIA for the HPP Boskov Most project: environmental and biodiversity pre-construction survey; aquatic biodiversity survey; biodiversity mitigation strategy; master landscape planning; etc. Many management plans are to be prepared to further detail the mitigation actions (for details refer to the additional aforementioned studies and project’s ESAP). The same approach will be employed for the L.Pole project.

ELEM Comments on the Report T-PVS/Files (2015) 36

General overview of the Reports "On-The-Spot-Appraisal" and "Observers' Report following the On-the-spot appraisal"

Two Reports are produced for the purpose of the open case file "Hydro power Development within the territory of Mavrovo National Park", from the Standing Committee of the Bern Convention.

In the period between 24-26 June 2015, upon request from Ministry of Environment and Physical Planning (MoEPP) of Republic of Macedonia, ELEM has provided support to the mission for visit of the territory, as well as providing of documentation necessary for the mission to have better understanding of two projects (Lukovo Pole and Boskov Most) which are located within NP Mavrovo.

During the two days mission ELEM representatives have participate to official meeting with the representatives of the Bern Convention as well as following the site visit of both projects. During site visit ELEM has organized and has provided full support in terms of transport, site visit, meetings with local stakeholders, knowledge and information from engaged experts etc.

Even though ELEM was open for full collaboration and has provided more documents than what was requested by the representatives of Bern Convention, the two reports do not reflect all the details necessary for proper observation of the influence from both projects within NP Mavrovo.

The details will be presented separately for both Reports.

Comments on the T-PVS/Files (2015) 36

1. Page 3 - "The report did not provide conclusions from the EIAS or monitoring study allowing to judge about possible impacts of the project on the species and their habitat, referred to by the complainant."

ELEM Comment: In R. Macedonia there are defined procedures for approval of future projects in respect to the Environmental protection described in the Law for Environment. The referred report was developed for Boskov Most project and complainant comments was included in the final Report.

2. Page 3 - "Inadequate management and conservation of river ecosystems significantly affects the structural and functional characteristics of the aquatic and riparian communities that are directly dependent on the river ecosystem."

ELEM Comment: The wording of this sentence prejudice that both project are not managed properly nor will be managed if they will be constructed in future.

3. Page 7 - "Most of the water in the Mala Reka and its tributaries will be discharged via a tunnel to the powerhouse. This will reduce the amount of water that flows in the rivers. This reduction in flow rates will reduce aquatic habitats and could damage populations of fish and other organisms that live in the water."

ELEM Comment: The wording is not addequate, the small part of the water will be capture, not „the most of the water". Further ELEM has conducted a number of research activities which are summarised in several documents. Non of this documents were requested by the observer nor have been used as reference for this Report. There is specific attention of the aquatic biodiversity.

4. Page 7 - "Dry sections can already be seen around previously built technical installations.."

ELEM Comment: The wording is not addequate. Dry section in some cases are due to the natural conditions.

5. Page 8 - "In the case of Boskov Most project, the water will remain in the Drina watershed, but while being released only shortly upstream from the Debarsko Lake it won't be available for irrigation to the towns and villages close to the National Park."

ELEM Comment: There is no irrigation system neither there is need for irrigation upstream from Debar Lake. Downstream Debar Lake the irrigation system is constituted by two rivers (Radika and Crn Drim River) and depends from the balance of them. Diversion of water from Radika river are balanced with proper water management of Ohrid Lake and Crn Drim river and this is a part of a protocol undersigned by R.Albania and R.Macedonia.

6. Page 11 - "The next 5-10 years period is absolutely crucial for the survival of the Balkan Lynx."

ELEM Comment: There is no given reference for this statement, thus do not reflect the influence of the projects development and their influence of the lynx population.

7. Page 11 - "In addition, different NGOs and individual specialists consider the results of the Environmental Assessment insufficient and consider that the real impact, especially on large mammals and bird communities, have been underestimated."

ELEM Comment: ELEM has extensive exchange of information with interested parties about Boskov Most project. It should be clarified wether this statement includes only acknowledgement of NGO's and individuals specialists or includes responds from ELEM and team of expert engaged by ELEM upon acknowledgement of NGO's and individuals specialists.

8. Page 11 - "Other arguments to justify the new artificial lakes, like the increase of the atmospheric humidity, do not look very serious."

ELEM Comment: It's not appropriate neither professional in such report experts from Bern Convention to judge opinions of Macedonian experts without consulting them on the topic of interests.

9. Page 11 - "It is mentioned that the re-directing of significant amounts of waters from the Drina to the Vardar would stabilize the flow of the latter; however, there is no mention of the reduction of the flow of the Drina, which is providing water for several existing hydropower plants downstream in Albania."

ELEM Comment: Collaboration of R. Albania and R. Macedonia on the issue of diversification of waters from Drin river/Adriatic Sea into Vardar river/Eagean Sea officially starts 1948. Since than there are number of agreements which are rattified giving the possibility of R.Macedonia to devert certain amount of water from Radika to Vardar river. On a contrary R. Macedonia by controling discharge of water from Ohrid lake through Crn Drim using the hydro systems on the same river provide control on the water flow for existing HPP downstream in R.Albania.

10. Page 12 - "In the absence of i) a strategic environmental assessment of the national renewable energy production policy and ii) a global social and environmental impact assessment study regarding the globality of the hydropower infrastructures in and around the Mavrovo National Park, the precautionary principle should be applied and the projects as they are presented should not be permitted nor financed by international financial institutions."

ELEM Comment: There is Strategic Environmental Assessment (SEA) for Strategy for Energy Development of R. Macedonia 2010-2030. Renewable Energy Strategy of R.Macedonia is substantial part of the Energy Sector and thus over mentioned SEA includes and cover Environmental Assessment from development of Renewable Energy Projects in R.Macedonia. Second part of the statement as reference do not include number of documents prepared and developed by Macedonian experts engaged by ELEM for the two projects, instead gives opinion based on comments without reference.

11. Page 13 & 14 - "According to recent scientific information, the Mavrovo National Park and its immediate surroundings is the only area in the entire distribution range of the Balkan lynx where reproduction has been documented by camera-trapping young individuals since the Balkan Lynx Recovery Programme has started . It is hence the last remaining functional population nucleus."

ELEM Comment: Documentation of reproduction of Balkan lynx in NP Mavrovo, using camera-trapping do not necesserly supports the statement of „last remaining functional population nucleus". It support conclusion that functional population nucleus exist on the spot (NP Mavrovo) where camera trapping pictures are taken. ELEM as a part of development of two projects will allocate

funds for equipment for continious monitoring of large mammals covering the total theritory of NP Mavrovo.

12. Page 14 - "As regards to the two planned hydropower project in Mavrovo National Park, Lukovo Pole possibly poses less threat for the lynx. During the site visit, the representatives of the NGO informed us that lynx cross the open alpine habitats around the site only occasionally."

ELEM Comment: Lukovo Pole will not threat the linx and this is a statement given by the representatives of NP Mavrovo who also informed the Bern Convention delegation.

13. Page 14 - "This is the core area of the population and important for reproduction."

ELEM Comment: There is no reference supporting the statement of „the core area"

14. Page 14 - "Although the Birds and the Habitats Directives are the main implementing instruments of the Bern Convention in the EU, in none of the documents we found reference to the EU Water Framework Directive (WFD) (Directive 2000/60/EC of the Parliament and the Council)."

ELEM Comment: Generally speaking in none of documents prepared by ELEM there're no specific reference to any EU Directive concerning environment and protection of nature. Thus there is no need for specific reference to EU WFD. Instead they're already transposed into National legislation .

15 Page 14 - "Given the magnitude of changes to the biological characteristics of the watercourse expected to be impacted by the project, and by the fact that water would be transferred from one river basin to another one, it is necessary to supplement the environmental assessments with proper considerations of the requirements of this relevant EU legislation."

ELEM Comment: According National legislation in case water from one river basain is transfered to another one, environmental assessment for future project take into consideration relevant requirements of EU legislation for such cases. It's not necessary to supplement the environmental assessment with proper considerations of the requirements of relevant EU legislation. NOTE: MoEPP should elaborated in more details.

16. Page 15 - "The municipality of Debar has already suffered from the first pack of projects and the mayor is complaining about the drastic decrease of available water to farmers for irrigation in its territory. Local people from villages located on the south-eastern border of the park foresee negatively the uptake of their water which will be brought into the Boskov Most reservoir."

ELEM Comment:

1.) There is no reference on „first pack of projects"

2.) Irrigation of available land is part of Debar lake, which is consist of Radika and Crn Drim river.

3.) The both projects can not be Generalized instead must be separately analysed

4.) A.D ELEM has organized and realized varaities of activities and the outcomes do not foresee negative opinion of local people for development of Boskov Most project.

17. Page 16 - "During the discussion with local municipalities, it was mentioned by local representatives that the artificial lake to be created for the Boskov Most project would facilitate the development of tourist infrastructures around it, as it would be re-zoned as a built-up area. This was not mentioned in any of the technical studies and in the EIA. It was also never mentioned during the discussion at the Ministry of Environment and Physical Planning or in the field with ELEM representatives. Such a tourist development would add another unacceptable pressure in a very sensitive area, namely for the Balkan Lynx population."

ELEM Comment: For Boskov Most, especially ELEM has developed Resettlement plan including possibilities for improvement of social and economical wellfare of the local people. This is in line with EIA and EBRD PR's.

18. Page 16 - "Though a global impact assessment of all the HPP has not been done, it appears already quite clearly that the extension and the expected impacts of the HPP in the park would affect several species and habitat identified of European significance; thus these construction projects would be in contradiction with the general objective as stated in art. 2. Such constructions would also

be in contradiction with the international commitments of "the former Yugoslav Republic of Macedonia", namely regarding the Bern convention and as a candidate country to the EU, alignment with the Birds and the Habitats Directives as well as the Water Framework Directive."

ELEM Comment: For both projects in the NP Mavrovo, ELEM produce documentation where for Boskov Most all necessary documents are publicly available, wile for Lukovo Pole project documentation is under development.

19. Page 16 - "For these reasons, **the general conclusion from the mission is** that the proposed hydropower construction planned in the Park is not compatible with the status of protection of the Park, its high value ecosystems and species; the projects, as currently planned, should be abandoned."

ELEM Comment: The General Conclusions are not acceptable for ELEM for "these reasons".

20. Page 17 - "Before any HPP construction project, make an integrated strategic social and environmental impact assessment study, taking into account all the planned activities and integrating the potentially impacted local communities outside the Park and the global long distance effects, namely on the water regimes of the Drina and Vardar rivers; supplement this study with the provisions of the EU Water Framework Directive;"

ELEM Comment: This was done by ELEM and The Goverment of R.Macedonia is informed about any specific activities that ELEM takes according the National legislation.

Answers to the Report are prepared by:

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