Necessity to Introduce a New System for Financing Nature Conservation in sub-Saharan Africa

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The European Union has been aware of the specific geopolitical status of Africa and its extraordinary importance for protection and conservation of biodiversity including natural ecosystems as well as of need to support sustainable economic prosperity there. The European Green Deal states: "The EU will launch a "NaturAfrica" initiative to tackle biodiversity loss by creating a network of protected areas to protect wildlife and offer opportunities in green sectors for local populations." The article aims at proposing possible measures to meet the above high ambition.

How has African protected area management been financed?

Well-managed protected areas (PAs) in sub-Saharan Africa play a key role for maintaining biodiversity and local and global ecosystem services/nature's contributions to people and for economic prosperity development of local communities and regions. The number of large-size PAs has been exceeding 7,800 there and they cover 17% of the continent in various biomes, particularly savannas, rain forests, high mountains, wetlands, semi-arid areas). The share of the whole country's territory covered by PAs and their quality in various sub-Saharan African countries is presented in Table 1. Natural habitat degradation has generally been alarming across the continent: in addition, PA management has been to a great extent insufficient. The fact is indicated by decline in areas covered by natural ecosystems and in population sizes of threatened species as well as by increase in biodiversity loss rate, both occurring not rarely within PAs. Except of some countries, namely the Republic of South Africa, Rwanda, Kenya, PA management is strongly underfinanced, reaching only dozens

The Mikumi National Park in Tanzania in 2020 © František Pelc or small hundreds of USD per km^2. The basal minimum values of PA appropriate financing was set by experts as USD 1,000 – 2,000/km^2 (LINDSEY *et al.* 2018). Although the number and its interpretation is always worth of discussion and it is clear that it reflect socio-economic parameters of individual countries or regions neighbouring PAs, as a clue for strategic thoughts is sufficient. For other approaches applied in this article minimum of USD 1,000/km^2 is taken into account. As an average, only 10 – 20% of necessary costs are financed in African PAs. In addition, inner structure of financing has been quite variable and it is shared among the Government/State, non-governmental organisations (NGOs) and other bodies. The contribution of the Government/State varies in a wide range between less than 10% up to almost 100%, reaching an average of approx. 60%. In total PA financing, the share of NGOs funding (*e.g.* African Park up to USD 76 million, African Wildlife Foundation USD 34 million, David Sheldrick Wildlife Trust USD 3.5 million, all data *per annum*) has also been quite variable (between 0 and more than 90%), having been approx. 30% as an average (LINDSEY *et al. l.c.*). Data on the selected African countries area summarised in Table 2. The COVID-19 pandemic accompanied by decrease in income from ecotourism has just exposed the extent of lack of funds for appropriate PA management and the instability of such funding (WAITHAKA 2020). The pandemic contributed to decrease in GDP of the respective countries by up to 10% (ALU 2020). Ecotourism significantly contributes to national/state budgets in foreign currencies (WORLD BANK 2018, PLANET TRACKER 2020) and at the same it is one of preconditions for providing PAs with management, enhancing involvement of local communities and indigenous people, economic prosperity of whole regions and as it has been highlighted a financial source for PA management (Table 3). The up-to-date system of providing finances for PAs in sub-Saharan Africa is in the vast majority insufficient and for the future unsustainable.

Table 1 Percentage of the country's territory covered by protected areas and that covered by effective protected areas in the selected sub-Saharan African countries (UNEP-WCMC & IUCN 2020)

Country	Share of the country's territory covered by protected areas (%)	Share of the country's territory covered by reasonably managed protected areas (%)
Republic of Congo	42	10
Zambia	41	16
Tanzania	38	12
Namibia	38	16
Guinea	36	6
Benin	30	10
Botswana	29	19
Togo	28	7
Zimbabwe	27	6
Senegal	25	6
Côte d'Ivoire	23	6
Malawi	23	12
Gabon	22	11
Mozambique	22	5
Chad	21	12
Equatorial Guinea	19	12
Ethiopia	18	3
Central African Republic	18	6
Niger	17	16
Guinea-Bissau	17	16
Uganda	16	7
South Sudan	16	9
Ghana	15	1
Nigeria	14	2
Democratic Republic of Congo	14	7
Egypt	13	8
Kenya	12	5
Rwanda	9	9
Mali	8	8
South Africa	8	5
Cameroon	33	---

Proposals for Change in Financing African nature conservation

Below there are proposals for principles designated for making financing nature conservation and protected areas in sub-Saharan Africa more effective and stable. The European Union's Green Deal (2019) sets up general intentions to improve protection, conservation and sustainable use of natural ecosystems, paying special attention to African continent. For reasonable implementing them, it is necessary to make financing more robust, thus to ensure conservation and sustainable use of natural ecosystems generally and particularly within PAs through its well-balanced diversification and stabilization. Therefore, the existing and newly formulated financial tools are proposed to be suitably and properly used: they are divided into five mutually interconnecting areas.

1. Contributory payments to countries for ecosystem services/nature's contributions to people in protected areas

Within the proposed fund for supporting ecosystem services there also is a sub-program aiming at reaching effective PA management, *i.e.* USD 1,000/km^2/year. From a point of view of attractiveness for the individual countries as well as effectivity of the support the structure of the contribution should be agreed. It is recommend to allocated three quarters of the contribution for activities in the particular PA and one quarter for decision of the beneficiary country. Moreover, there should be terms that the remaining part of necessary funds should be provided from other sources (*e.g.* NGOs, private bodies, state/national budget). The aim of the

Table 2 Annual finances spent per 1 km² of protected area by the Government/State and NGOs in the selected sub-Saharan countries (LINDSEY *et al.* 2018)

Country	USD total	USD spent by Government/State	USD spent by NGOs
South Africa	3,014	3,014	?
Rwanda	2,006	245	1,960
Kenya	1,688	1,435	82
Chad	753	?	753
Malawi	690	6	681
Benin	557	54	498
Uganda	418	332	85
Burkina Faso	370	207	164
Zimbabwe	241	235	?
Botswana	200	189	11
Tanzania	176	41	54
Namibia	166	123	35
Mozambique	135	4	121
Central African Republic	128	29	84
Democratic Republic of Congo	116	?	116
Zambia	116	70	46
Nigeria	103	58	45
Ethiopia	63	45(?)	35
Senegal	47	31	16
South Sudan	45	9	4
Niger	43	26	17
Angola	34	?	34
Cameroon	21	12	9

support is to improve PA management and to provide a contribution to ensure maintaining ecosystem services/nature's contributions to people in the respective natural ecosystems or as the case may be support to establishing new PAs. Main activities to be supported from the fund include engagement of local communities in elimination of human-wildlife conflicts, anti-poaching actions, maintenance, salaries and development of the basic infrastructure, compensation of damages, *etc.*

2. Contributory payments to countries for ecosystem services/nature's contributions to people outside protected areas

For reducing large-size extensive destruction of the selected natural ecosystems producing global and sub-global ecosystem services/nature's contributions to people (rainforest, deciduous forest and savannas of various types, wetlands, *etc.*) and for involvement countries in the above activities payment per 1 km² is proposed which is not ring-fenced or assigned except of avoiding activities aiming at destructions of the habitats which have been supported. Monetary assessment of ecosystem services/nature's contributions to people has been for a long time studied, therefore the financial flow should be interpreted only as a contribution for their provisioning. In this context, adjustment has to stimulate interest to generally prefer providers of ecosystem services/nature's contributions to people to activities degrading and destroying them and at the same time interest to introduce or improve enhanced protection and conservation, *e.g.* in PAs. Financial amount of the support should definitely be further debated and it should reflect the potential of a financial source. Nevertheless, in the context to the proposal under 1. Contributory payments to countries for ecosystem services/nature's contributions to people in protected areas (see above) it should be considerably lower than USD 250/km²/year, maybe USD 100/km²/year. Prime example can be provided by natural ecosystem rich Zambia where miombo woodlands and other natural landscapes (open savannas and wetlands) have been still covering approx. 500,000 km², *i.e.* two thirds of the country's territory (VOLLESEN & MERRET 2020). In this case when applying the above proposed charge the total contribution to protect and to conserve natural ecosystems and ecosystem, services/nature's contributions to people related to them there would reach EUR 50 million/year. Checking and controlling system would be based on remote sensing, namely satellite imagery.

3. Establishing new European/European Union Official Development Assistance (ODA) scheme for sustainable ecotourism

Ecotourism in sub-Saharan PAs and financial flows related to it are of utmost importance for nature conservation and socio-economic development because it generates income to public and private budgets, particularly through entrance fees, accommodation, boarding and guide services. At the same time it engages local people in nature conservation awareness, acceptance and implementation, also generating jobs in the sector itself as well as in other follow-up services and activities (see Table 3). Before the COVID-19 pandemic at least 3.6 million people worked in ecotourism in Africa: the sector generated more than USD 29 billion annually there. Tourism helps sub-Saharan governments justify protecting wildlife habitat, creates revenue for state wildlife authorities, generates foreign exchange earnings, diversifies and strengthens local economies, and contributes to food security and poverty alleviation. It generates 40% more full-time jobs per unit investment than agriculture and employs proportionally more women than other sectors (LINDSEY *et al.* 2020). Ecotourism facilities are often connected with other activities influencing nature conservation. For example, the iSamangaliso Wetland Park covering 3,600 km² in Kwazulu-Natal in the Republic of South Africa was established under difficult socio-economic conditions (the landscape threatened by mineral extraction) and is visited by more than 500,000 visitors annually, earns USD 1.6 million generated by tourism and provides 1,600 direct and 6,000 indirect jobs (The World Bank 2018). The Ol Pejeta Conservancy in Kenya is connected with 14 ecotourism facilities generating 1,000 jobs (ALU 2020). PAs without ecotourism facilities are mostly paper parks. The ODA in this field has for a long time been insufficient in volume, poorly effective and unsystematic.

Therefore, a sophisticated model of support should be elaborated, *e.g.* trough establishing the specific programme within EU funds aimed at ODA with well-defined and measurable target on number of newly established facilities in PAs, *e.g.* 500 or 1,0000 supported facilities. With respect to model investment into a single facility of approx. EUR 0.25–0.5 million the volume of medium-term allocated finances will be neither low nor astronomical (roughly EUR 125–500 million).

For stabilising its operations and income generated by it ecotourism services should support raising middle-class and educative programmes on reducing future disturbances and lability in incomes and in future to support environmentally friendly local and long-distance traffic. A certain part of incomes from these services where infrastructure is supported from ODA shall be directly returned to PA management.

4. Providing minimum basic contribution by metropolitan states/mother countries for PA management

Involvement of governmental authorities in nature conservation is necessary and can be indicated by various ways, *i.e.* by credible allocation of a part of the public budgets for PA and natural habitat management. Moreover, analyses from various countries suffer from sharp methodological and other differences. With only a few exceptions, governments spend for PA management annually only dozens or small hundreds of USD per km^2 (Lindsey *et al.* 2018). Despite various economic turbulences the aim should be to allocate at least 20–30% of real costs for sufficient PA management, *i.e.* USD 100–300 km^2/year. Another elementary precondition for stabilising PA sustainable financing is to meet at least the basic parameters of PA establishing and functioning (*e.g.* declaring a PA by a legal instrument, delineation on a map, active management, management plan elaboration and implementation, *etc.*).

5. Using contributions from NGOs

Non-governmental organisations (NGOs) play an important, irreplaceable and in some countries, *e.g.* in Malawi, dominant role in financing PA management (see Table 2). Moreover, they should not bear for a long time providing PAs with funds. In future they should particularly implement specific projects including preparation of establishment of new PAs and serving as a flexible reserve for medium-term deficits and shortfalls of financial resources as needed. Thus, the total volume of fund to be provided by them should not sharply differ from the current one.

General financial context of support from the European Union's budget

The EU's financial support to developing countries has for a long time been displaying a relative generosity but at the same time considerable fragmentation of its management and of subsidiary tools. Only the recently launched EU long-term budget, also known as the 2021–2027 Multiannual Financial Framework (MFF) has fundamentally clarified it, has provided it with unified structure and management and has newly aimed at issues which were previously not covered by the financial support. The main tool for financing the support has been the Neighbourhood, Development and International Cooperation Instrument – Global Europe (NDICI – Global Europe). Within its framework most of up to date used partial tools of the support have been merged.

Within NDICI – Global Europe there are EUR 79.5 billion allocated for 2021–2027 which is by comparison only a few EUR billion less than within the largest nonrecurring programme for financing science, research and innovation worldwide – Horizon Europe, thus highlighting the fact that funds available for NDICI – Global Europe are not within the MMF negligible. When comparing the amount of money with similar characteristics of the support used in 2014 – 2020 the funds available for that purpose has been increased by 12%.

The most important part of the above funds is geographically delineated: NDICI for sub-Saharan Africa has EUR 39.18 at disposal, aims at 17 United Nations Sustainable Development Goals (SDGs) and it includes, inter alia, priorities such as environment and climate change, inclusive and sustainable economic growth and decent employment or eradicating poverty.

Within the priority Environment and climate change, four thematic areas can be supported. The first is targeted on disaster risk reduction where support aims at the eradication of poverty caused, *inter alia*, by climate change, promoting environmental and social resilience and at elaboration and implementation of specific strategies, plans and activities. The second area deals with supporting ecosystems and biodiversity conservation and is divided into geographical tools where there is for each country in relation to the identified needs "a financial envelope", thematic programmes which include the selected priority topics to be implemented in a transboundary way, and Public-Private Partnership projects where in addition to the EU funds private capital enters. The third and fourth area highlight sustainable forestry and effective water resource conservation and management.

Finances allocated for implementing inclusive economic growth can be used for supporting micro, small and medium-sized enterprises (SMEs), stimulating the creation of decent jobs, enhancing public and private infrastructure, supporting

Table 3 The selected African countries and share of their GDP covered by international tourism in 2018 (Planet Tracker 2020, Waugh *et al.* 2020)

Top 16 sub-Saharan African countries with percentage of their GDP covered by international tourism in 2018		
Country	**% GDP in 2018**	**Income from international tourism in 2018 (USD million)**
Seychelles	38	611
Cabo Verde	27	524
Sao Tome and Principe	17	72
Mauritius	15	2,161
Kenya	10	1.540
Gambia	10	168
Madagascar	6	879
Rwanda	6	528
Tunisia	6	2,320
Ethiopia	4	3,548
Tanzania	4	2,465
Uganda	4	1,044
Botswana	3	575
Namibia	3	488
South Africa	3	9,789
Zambia	3	742

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renewable energy, sustainable agriculture and digital economy and solving public health, social and economic consequences of the crisis caused by the COVID-19 pandemic. Laos for that purpose involvement of private capital is not only allowed but also very welcomed.

The authors can state that in the article mentioned and proposed areas for targeting financial support to sub-Saharan Africa are directly compatible with the possible support from the EU funds. The first two areas fit directly in the thematic issue on ecosystems and biodiversity conservation, while the third area can be implemented *e.g.* by elaboration and implementation of business strategies aiming at ecotourism including business plan and a feasibility study with the first thematic area within environment and climate change. The fourth area should become an integrated part of the project financing where a certain minimal co-financing by the country on territory of which the project is being implemented is supposed; usually an interest of the particular country in reaching the required results has been strengthened. Using NGO funds together with the EU ones has not been common yet, moreover the former can be a private source contributing to financing the project there. Thus, it is important to in advance assess whether the private capital expects from its engagement also some return on and realistically consider whether such a return is achievable.

The European Commission's activities in 2022

It is possible that due to efforts towards implementing the EU Green Deal and other activities carried out in both the EU and across the world the European Commission will in 2022 recommend to double the amount of external financing biodiversity conservation and to significantly involve in financing fighting climate change in developing countries and in countries most severely threatened by climate change.

Presidency of the Czech Republic in the Council of the European Union

In the second half in 2022 the Czech Republic shall preside over the Council of the European Union. During the term, it should aim at providing and implementing thematic priorities significant for both future of the EU as a whole as well as for the Presidency itself. Among the priorities there should be those focusing on strengthening EU influence all over the world. Within it, it would be meritorious if some of the partial activities also include projects typologically based on the proposal described in the article. It would be desired to implement a small and controlled number of the projects as pilot ones. At the same it would also be praiseworthy to elaborate methodological guidelines to implement the idea in a greater scale.

Nowadays, the Czech Republic has been EU Member State the 18th year. Since 2004, it has received from the EU budget almost CZK trillion (EUR 41 billion) in net profit, *i.e.* after subtraction of the payment/contribution to the EU budget required from each Member State. The funds also has helped the country to approach 95% of the average EU Member States measured by gross domestic product per capita inn purchasing power parity. It is about time to avoid considering the use of the EU funds only in rather self-centeredness way and begin to think of others who can be more in need in this respect. If the Czech Republic is successful in this issue its image as well as that of the whole EU in sub-Saharan Africa undoubtedly increase.

Just to sum up

Up-to-date providing finances for iconic and famous protected areas in sub-Saharan Africa is in the vast majority insufficient and for the future unsustainable, particularly when taking into account necessity of more effective biological diversity conservation, reducing negative climate change impacts and necessary sub-national and local development and prosperity. The authors suggest to cover costs for appropriate management of protected areas through (1) payments to African countries for ecosystem services/nature's contributions to people provided by these protected areas; (3) establishing a new EU's ODA (Official Development Assistance) scheme aiming at sustainable ecotourism; (4) securing the minimum basic contribution from metropolitan states (or "mother countries") for the protected area management and (5) using various financial support from NGO, in appropriate and realistic shares, *e.g.* 30-50% (1), 1-10% (3), 10-30% (4), a 0-40% (5). At the same time (2) introducing payments for ecosystems services/nature's contributions to people from the non-reserved landscape, *i.e.* outside protected areas is also proposed. The model supposes voluntary agreements with the individual African countries on the proposed issues and that the COVID-19 pandemic is temporary and that after some time it will be in a reasonable way controlled by public health institutions worldwide. ■

The list of references is attached to the online version of the article at www.casopis.ochranaprirody.cz.