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TRAINING A NEW GENERATION FOR CAREERS IN WILDLIFE MANAGEMENT IN ETHIOPIA

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Abstract

We describe the start-up of a new interdisciplinary Master's program in Wildlife Management at Arba Minch University (AMU), Ethiopia. The need, salient features, review of curriculum, and stakeholders of the program are examined. The human dimensions of wildlife management have been given its due with an aim to get biodiversity stewardship on a firm footing in the country. The program, aims to link young graduates to regional stakeholders on conservation perspectives through courses such as Human Dimensions of Wildlife Management, Wildlife Economics and Entrepreneurship and Biodiversity Conservation. The scope of wildlife tourism in Ethiopia has been highlighted in the program. The survey results of stakeholder representatives found good prospects for the sustainability of the MSc program in wildlife management provided stakeholder coordination and community participation in the program are diligently ensured. In conclusion, the Master's program in wildlife management is interdisciplinary, job-oriented and intended to prepare a new generation for placements with the government, NGOs and private sector in order to contribute to wildlife management and biodiversity stewardship in Ethiopia.

Keywords: Wildlife Management, Masters Program Wildlife, Biodiversity Stewardship, Ethiopia Wildlife Management

Introduction

Africa has been and will be the poster child of global biodiversity for ages. One-fourth of Africa's biodiversity is in Ethiopia, and is comprised of 320 mammals, 860 birds, 240 reptiles, 71 amphibians, 150 freshwater fish, and over 1,225 arthropods and 6,600 plant species with a high rate of endemism. The endemic wildlife include the Ethiopian wolf and Swayne's hartebeest, Prince Rasplio's turaco and Stresemann's bush crow, Bale mountains heather chameleon and the Ethiopian mountains adder, and the Ethiopian banana frog and Bale mountains moss frog. There are diverse habitats ranging from 110 meters below sea level at

Kobar Sink in the Afar depression, to a peak of 4620 meters above sea level at Ras Dejen in the Siemen Mountains. The high relevance of wildlife management in Ethiopian Universities is therefore a given.

Wildlife management can be defined as art and science of managing wildlife populations and their habitats with the participation of stakeholders (Pai and Serekebirhan, 2014). Much as wildlife science is an integral part of Ethiopia's 33 universities and some 100 other colleges, it was only 4 years ago the country's first Master's program in wildlife management was offered at the Wondo Genet College of Forestry and Natural Resources. A second program is nearing launch in March 2014 at Arba Minch University, also in southern Ethiopia. The prerogative of managing wildlife and wild lands in the second-most populous country in the continent is vested with over 80 ethnic groups with some 200 spoken dialects, diverse cultural values and social mores with the GDP per capita estimated to be \$1200 in 2012. Seemingly, food security, water, health and infrastructure take precedence over biodiversity. These challenges are compounded by climate change impacts; resource degradation and subsistence hunting make wildlife management a daunting task.

The Protected Areas of Ethiopia are closely hemmed-in and utilized by the agrarian and pastoralist communities. There are 20 National Parks, 3 Wildlife Sanctuaries, 2 Wildlife Reserves, 19 Controlled Hunting Areas, and 10 Open Hunting Areas till date. Yet, only 2 National Parks – the Simien and Awash are gazette notified. The potential for biodiversity stewardship via payments for ecosystem services schemes (PES) is yet to be realized and this could be the future of conservation. The risks of emerging diseases are stark and there is urgent need for research at the interface of wildlife, people and ecosystems, or 'one health'. Wildlife management empowers its practitioners with tools to try and tackle such critical issues. Although human dimensions can overwhelm science at the roof of Africa, a formidable combination of skilled biologists and committed wildlife managers can move the mountains beyond mountains.

Arba Minch University (AMU) is one of Ethiopia's leading public universities and was founded in 1986. The Department of Biology at AMU trains 150 undergraduates for their first degrees each year, and offers 3 out of 9 postgraduate programs on offer at College of Natural Sciences, AMU. Much as wildlife science is an integral part of Ethiopia's 33 universities, it was only 4 years ago the country's first Master's program in wildlife management was offered at the Hawassa University's Wondo Genet College of Forestry and Natural Resources. A second program was recently launched, in March 2014, at AMU. A study about the curricula of the regional wildlife colleges at Garoua (Cameroon), Mweka (Tanzania) and SAWC (South Africa) showed important differences emanating from regional needs, aspirations and commitments of the wildlife management profession (Scholte, 2003).

Considerations and Courses Offered

The presence of 4 National Parks viz., Nechisar, Mago, Maze and Omo and a Wildlife Sanctuary, namely Senkelle, within a distance of 150 km from Arba Minch is a major impetus for the wildlife management program at AMU. A key focus of this program will be to work with ethnic groups in southern Ethiopia including Gamo, Gofa, Guiji, Suri, Nyangtom, Hammer, and Omo. As seen the world over, wildlife management plans can succeed only when human

dimensions of wildlife issues are addressed at par (Saberwal and Kothari, 1996). This is germane to Ethiopia, as the indigenous resource management system is not conducive to conservation (Ashenafi, Z.T. et al. 2012). The program, therefore, aims to link conservation to regional stakeholders through courses such as wildlife damage management, wildlife habitat management, biodiversity conservation, and wildlife laws and international conventions (Table 1. List of Courses).

Table 1. List of courses offered in the MSc Program in Wildlife Management (* Elective)

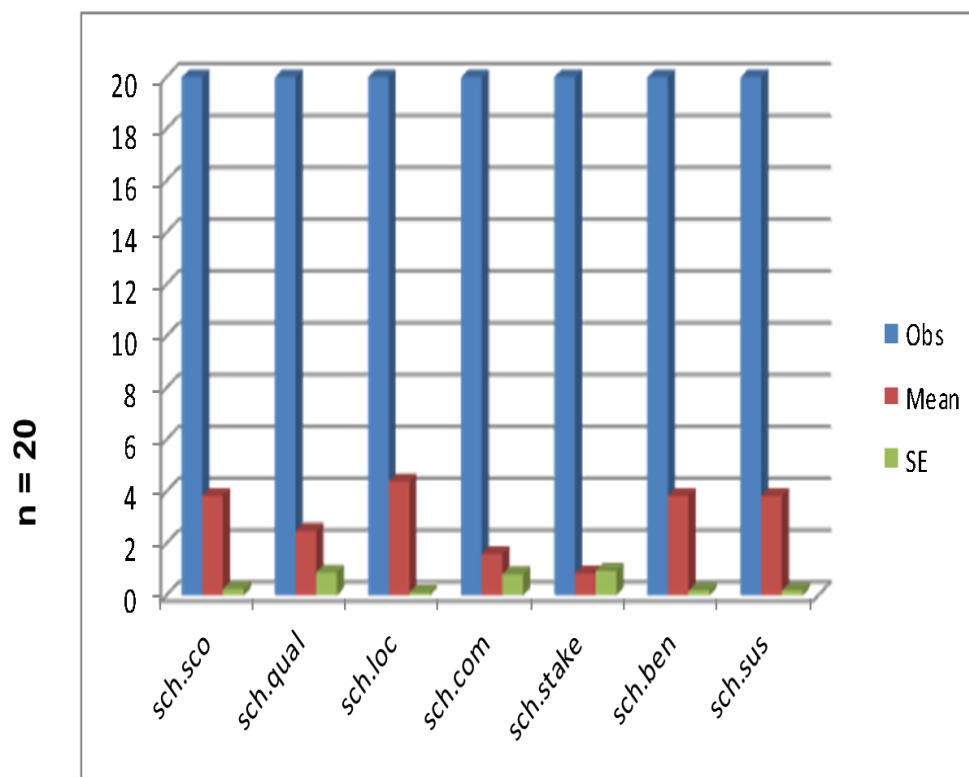
S. No.	Course Code	Course Title	Credit Hours
1	WLM 511	Wildlife Ecology	3
2	WLM 503	Remote Sensing and GIS for Wildlife Management	3
3	WLM 519	Wildlife Habitats and Protected Areas Management	3
4	WLM 515	Animal Behavior	2
5	WLM 520	Mammalogy*	2
6	WLM 505	Research Methods and Scientific Writing	2
7	WLM 510	Biodiversity Conservation	2
8	WLM 512	Wildlife Health	3
9	WLM 507	Biological Data Analysis	3
10	WLM 528	Environmental Impact Assessment*	2
11	WLM 516	Human Dimensions of Wildlife Management	2
12	WLM 522	Ornithology*	2
13	WLM 514	Wildlife Economics and Entrepreneurship	3
14	WLM 524	Ichthyology*	2
15	WLM 518	Wildlife Laws and International Conventions	2
16	WLM 526	Herpetology*	2
17	WLM 611	Seminar	1
18	WLM 613	M.Sc. Thesis	6

The other face of the business of conservation is entrepreneurship involving ecotourism and wildlife safaris. The evolution of ecotourism in Kenya and Tanzania has moved from an idea to an industry, and not only a major source of revenue, but also vital for conserving wilderness areas (Watkin, 2002). This aspect is highlighted in the course titled wildlife economics and

entrepreneurship, which also includes payments for ecosystem services (PES) as a potential harbinger of biodiversity stewardship in Ethiopia. Considering that economically backward communities control much of the ecologically sensitive land in developing countries, they could benefit from PES – a market-based approach that compensates land stewards for ecosystem conservation (Milder et al. 2010). Ethiopia potentially stands to gain from both ecotourism and PES.

The rigor in wildlife management is provided by biostatistics and data analysis and this course in experimental design and sampling provides the concepts of cause-and-effect and gives the big picture about populations (White, 2001). Wildlife health and population management is integral to the new conservation paradigm of ‘one health’ i.e., health and conservation at the wildlife-livestock-human interface (Deem et al. 2001). The science of climate change is also covered under health as it is a major threat to biodiversity, ecosystem services and human well-being (Pettorelli, 2012).

Needs Assessment



Mean & S.E. for Variables

Figure 1. Survey Results of Need Assessment

Respondents (n=20) representing potential stakeholders from the Ethiopian Wildlife Conservation Authority (EWCA), citizens of the Arba Minch town, and local communities residing near the Protected Areas within a distance of 300 km from AMU were surveyed to

assess the need for the aforesaid Master's program. The responses to survey questions (Figure 1) did not lead to a 'yes' or 'no' and were coded for analysis using the statistical software STATA 11.

Results

Most respondents opined that there was fairly good scope for the proposed Master's program in Wildlife Management at AMU (Mean = 3.5 ± 0.25). Half of them believed that AMU's academics had the wherewithal to teach the program (Mean = 2.5 ± 0.89). A vast majority of respondents viewed Arba Minch's location near well-known Protected Areas in southern Ethiopia as a big plus for the program (Mean = 4.4 ± 0.11). AMU was not viewed as savvy at community involvement in its study programs by most respondents (Mean = 1.6 ± 0.82). On equal measure, a vast majority presumed that AMU did not score well on the stakeholder coordination integral to the program (Mean = 0.85 ± 0.95). Most respondents said considerable benefits could be accrued for wildlife conservation in Ethiopia from the program (Mean = 3.85 ± 0.18) and also forecast good sustainability prospects for the MSc program in Wildlife Management at AMU (Mean = 3.85 ± 0.18).

A variance ratio test between competence of academics at AMU and sustainability of the program bodes well for its possible success (Mean = 3.17 ± 0.46 , Ho: ratio = 1, $f = 24.14$, $df = 19, 19$).

Review of curriculum

After the curriculum was reviewed at the inter-collegiate level and comments and suggestions from academia at AMU were duly incorporated, it was sent to 4 experts in the field of wildlife management in Ethiopia for external review. At a meeting held at AMU on Feb 27, 2014 the experts gave their verdict on the proposed Master's program in Wildlife Management at AMU. Overall, the reviewers approved the curriculum subject to revisions in nomenclature, course contents and practical aspects of the program.

Conclusion

The new master's program in wildlife management is interdisciplinary, job-oriented and intended to prepare graduates for placements with the government, NGOs and private sector. It is not just another program adopted by a University but the second such program in Ethiopia, and could potentially influence conservation ethic in a country grappling with much loss of biodiversity. Furthermore, degree holders could play a role in drafting wildlife policies and strategies for Ethiopia.

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