

ID 029: Skills and Training Needs in Community Based Natural Resource Management

Gandiwa, Edson; Antje Barabasch (Chinhoyi University of Technology, Zimbabwe Swiss Federal Institute for Vocational Education and Training)

Abstract

Southern Africa is rich in natural- and wildlife resources as well as cultural heritage cultivated by local communities. Tourism development, sustainable natural resource management and sustainable agriculture are highly relevant sectors for local employment. Socially, many rural dwelling Africans who interact closely with nature, possess indigenous knowledge and skills required to sustainably manage their natural resources. Such knowledge and skills need to be integrated into training programs. The aim of this paper is to explain the role of community based natural resource management (CBNRM) programs in Southern Africa in the broad natural resource conservation, rural, and socio-economic development. Further, we evaluate the training needs of actors in CBNRM programs in Southern Africa and advocate for structured vocational education and training provision that would address these needs. An analysis of published literature and authors' practical experiences in CBNRM programs were used to assess the skills and capacity needs, and potential training areas related to CBNRM. Our findings show the complexity of issues related to natural resource conservation in CBNRM programs and highlights the need for new skills for local communities in Southern Africa. Although most training in CBNRM programme setting is informal, it is, however, recommended that formalisation of training be considered through integrating vocational and education training as a way to enhancing skills needed for the broader natural resource conservation while at the same time broadening the local communities employment opportunities in other sustainable development related sectors.

Introduction

The earliest conservation paradigm in African countries was that of protectionist approaches. Conservation policies and strategies were focused on exclusion of local communities and their subsequent alienation from natural resources. More recently, conflict between local communities and wildlife managers saw a need to foster relationships which promote conservation of natural resources (Alpert, 1996). Escalating human-wildlife conflict threatened the existence of wildlife particularly outside protected areas where illegal wildlife killings were high. There was a need to encourage wildlife conservation among communities living with wildlife (Gibson & Marks, 1995; Hughes & Flintan, 2001). The elimination of unsustainable wildlife use practices such as illegal hunting was important for continued survival of wildlife populations. One of the mechanisms to address human wildlife conflicts was to instil a sense of proprietorship among the local communities (Heitkönig & Prins, 2009) by means of including local communities into wildlife management through various community based natural resource management (CBNRM) initiatives across Africa. Brosius, Tsing & Zerner (1998) propose CBNRM as an approach to economic development in rural areas where local communities need to be more involved in the planning and management of natural resources.

Jones & Erdmann (2013) highlighted two major forms of CBNRM that have emerged in Southern Africa, i.e., formal CBNRM and informal CBNRM. Formal CBNRM refers to those CBNRM programs where a typical approach has been to establish or strengthen community-based structures that are legally recognized and to grant these structures conditional rights over resource use and management. This includes commercial uses that may involve partnerships with private sector companies. These are usually characterized by the devolution of resource rights by the state to community structures and are mostly based on wildlife utilization but also wildlife-based tourism and/or forestry. In contrast, informal CBNRM programs are characterised by

communities that use natural resources according to their own, often customary or traditional rules, and are able to exclude others without external intervention (Jones & Erdmann, 2013).

CBNRM programs in Africa are enshrined upon such principles as devolution of decision making and management to local communities, benefit sharing and community participation. The implementation of CBNRM programs varies across countries, based on governance and institutional arrangements. They have been used with the level of devolution and control over revenue being largely retained at some government structure (Chevallier, 2016). CBNRM programs in Southern Africa can be traced back to the establishment of the Communal Areas Management Program for Indigenous Resources (CAMPFIRE) in Zimbabwe in 1989 (Martin, 1986). Prior to the CAMPFIRE initiative, an initial program known as Wildlife Industries for All (WINDFALL) was introduced in 1978 in Zimbabwe with the aim of enabling rural communities to realize economic benefits from wildlife. Local communities used to have little interest in wildlife conservation, mainly due to limited benefits (mostly game meat handouts facilitated by rural councils) accruing to local people. Additionally, there was little opportunity for the participation of local people in decision making given that most of the wildlife was found on state land (Metcalfe, 1994). With these shortcomings, WINDFALL failed to forge the link between wildlife resources and economic benefits, which would have been necessary for the continuing success of community-based wildlife development (Murindagomo, 1990). CAMPFIRE, however, gave full control of wildlife management to rural communities through creating appropriate institutions. Community run centres cared for the management and exploitation of wildlife resources by generating communal benefits and distributing them to individual households. The idea behind CAMPFIRE was that communities would invest in environmental conservation if they can exploit these resources on a sustainable basis for their own benefit (Murindagomo, 1990). CAMPFIRE saw the rural district councils being granted appropriate authority for wildlife management to manage natural resources in their areas of jurisdiction on behalf of the local communities (Frost & Bond, 2008; Child, 2012).

Other CBNRM initiatives in Southern Africa include the Administrative Management Design (ADMADE), an integrated wildlife conservation and community development program operating in the Game Management Areas (GMAs) or buffer zones of protected areas of Zambia, focus on community participation and their derivation of tangible benefits through sustainable wildlife utilization. ADMADE is run directly by the Zambia Wildlife Authority and the local community (see Shackelton & Campbell, 2000 for CBNRM case studies in Southern Africa; Marks, 2001).

CBNRM programs have benefited much from external funding through various organizations for capacity building. The United States Agency for International Development (USAID) began funding CBNRM initiatives in Southern Africa in the 1980s under the Southern Africa Regional Program (SARP) in Zambia and Zimbabwe. Other institutions, which financially supported CBNRM, include the World Wide Fund for Nature (WWF), which was instrumental in the success of the CAMPFIRE program in Zimbabwe. They funded training programs and project activities, such as game counts and quota setting. However, increasing concerns exist about devolving decision making and management of CBNRM programs to the local level. It is questioned whether local communities are able to effectively administer the programmes (Rihoy & Mugaranyanga, 2007; Balint & Mashinya, 2006; Harrison et al., 2015).

The aim of this paper is to explain the role of CBNRM programs in Southern Africa in the broad natural resource conservation, rural, and socio-economic development. Further, we evaluate the training needs of actors in CBNRM programs in Southern Africa and advocate for structured vocational education and training provision that would address these needs.

Methods

A literature review of training and capacity building related to CBNRM was undertaken between June and September 2017. It included academic articles and CBNRM related reports using the following search engines:

Google Scholar, Scopus and Web of Science. The following key words were used to search articles: community based natural resource management; training; capacity building, Southern Africa; competence development, vocational training and their combination using AND operator. A total of 84 articles were considered and these further screened through reading the abstract for relevancy to the current study focus. The final 45 selected articles were read through and particular content related to the study focus noted. Furthermore, the authors also used their participant experience of CBNRM in Southern Africa spanning over 20 years. In particular, the author's experiences with socio-ecological interactions, extension and capacity programmes, review of CBNRM programmes in Southern Africa, vocational training and protected area-human interface research helped inform the nature and types of training, local community involvement in CBNRM and training needs.

CBNRM training

Normally, local people who are elected into management committees or as field staff, e.g., scouts, rangers or natural resource monitors are trained on natural resource conservation and financial accounting. Both are topics essential in managing the sustainable use of resources and the generation of material benefits for local communities. CBNRM training occurs in two forms: formal and informal. The formal training mostly leads to attainment of certificates, e.g., from basic to advanced (degree) qualifications; whereas the informal training might comprise elementary and basic knowledge acquisition on particular subjects or social learning through case study visits. Generally, formal trainings are conducted by state and non-state owned universities, colleges, vocational training institutions, non-governmental organisations, rural council authorities and consultants. Training in CBNRM helps to 1.) reduce illegal hunting of wildlife resources (Lindsey et al., 2013), 2.) enhance law enforcement efforts, 3.) enhance governance in the natural resource and environmental sector (Nelson & Agrawal, 2008; Child, 2012), 4.) promote involvement of local people in decision-making processes related to CBNRM, e.g., CAMPFIRE (Gandiwa, Heitkönig, Lokhorst, Prins & Leeuwis, 2013), 5.) enhance devolution of power to local communities (Manyena, Collins, Mudimba & Mudimba, 2013), and 6.) reduce the manipulation of poorly educated communities by better-informed individuals (Schiffer, 2004). Although results are mixed, CBNRM has delivered positive outcomes in terms of conservation, rural development and governance (Jones & Erdmann, 2013).

In Southern Africa, CBNRM training focuses on developing skills and capacities related but not limited to the following (e.g., Jones & Erdmann, 2013):

- i. Natural resource governance, including participatory development of constitutions, transparent financial management, approval of budgets by members, holding AGMs, communication between committees and members, and transparent decision-making by committees,
- ii. Business development and operation, including marketing, business plans, managing contracts, operating camp-sites and similar small to medium enterprises, and understanding concepts such as turnover and gross versus net income,
- iii. Adaptive and sustainable management and use of renewable resources (wildlife related controlled hunting and ecotourism),
- iv. Participatory resource management,
- v. Benefit sharing - financial returns to individuals or through shared resources such as schools, grinding mills among others,
- vi. Natural resource management, including monitoring, game counts, law enforcement/ anti-poaching, quota setting, and human-wildlife conflict reduction and mitigation.
- vii. Resource monitoring and evaluation structure, including incorporation of traditional knowledge systems,
- viii. Financial management, including budgeting, accounting, and procedures for authorized spending, and
- ix. Organizational development, including office administration, employment policies, keeping asset registers, and vehicle and other asset management.

Challenges related to CBNRM training

Limited financial resources for robust training and skill development programmes (Turner, 2004) as well as inadequate financial resources, infrastructure and field equipment (Child & Barnes, 2010) are the common limitations to skills training in CBNRM programs. Furthermore, due to the informal character of training within CBNRM, the following are some of the challenges that arise:

- i. No formal recognition of qualifications (no standards for quality of training, salary, further training),
- ii. The informal character assumes that skills and knowledge (e.g., on principles of wildlife conservation, community development, ecotourism etc.) is captured structurally and passed on to new trainers in the field,
- iii. There is no effort in place regarding the extension of general education within these training measures which would enable students to move on in their education and professional careers, and
- iv. CBNRM might mainly focus on instantly qualifying for very particular means, which serves the purpose of involving the local community better in decision making and nature conservation. However, it does not provide the necessary skills to take on management positions.

Benefits of enhanced skills and trained personnel in CBNRM

The following are some of the benefits that could be realised with increased training and capacity building of actors in CBNRM programs in Southern Africa:

- i. Improved efficiency in participatory processes (Schiffer, 2004),
- ii. Expanded networks of cooperation,
- iii. Improved knowledge and skills among resource monitors for analysing local natural resource conditions,
- iv. A better appreciation of the importance of documenting and disseminating information on natural resource management at the local level,
- v. Diversification of CBNRM models which will likely increase the benefits for local communities,
- vi. Strengthened capacity of key CBNRM stakeholder groups and associated local participation in CBNRM decision making processes (Muboko & Murindagomo, 2014),
- vii. Improved general awareness and consideration of mainstreaming important issues such as gender among others in CBNRM,
- viii. Enhanced sustainable transformation and development of CBNRM projects, and
- ix. Improved financial and administrative management (App, Mosimane, Resch & Robinson, 2008).

Opportunities for training and education in CBNRM

Training is an important mechanism for capacity building. Its aim, particularly in CBNRM programs is to enable people to carry out their duties or responsibilities, so its primary emphasis is on building collective and institutional capacity for managing natural resources (Aslin, Mazur, & Curtis, 2002). Southern Africa has a diversity of vocational, tertiary and higher education institutions that offer CBNRM related training as a way of strengthening the CBNRM projects and the protected area system and conservation efforts. The region also has a high demand for training and capacity development of local people in CBNRM projects particularly in communities adjacent to protected areas, in particular, related to sustainable natural resource use.

Currently, there are shrinking or stagnant wage opportunities in many African countries and large numbers of the population are undereducated. Furthermore, limited opportunities for field-related training due to a shortage of adequate equipment, and the chronic lack of funding can hinder effective resource management in CBNRM programs. In order to address the complexity of the challenges related to nature- and wildlife management and its utilization for income generation, the development of skills through training is essential (King & McGrath, 2002; McGrath, 2002). One such opportunity for skills development in CBNRM programmes is through vocational training, i.e., training that emphasises skills and knowledge required for a particular job function or activity, which needs to be specified for the context of wildlife management, nature conservation

and sustainable community involvement and development.

Vocational training and CBNRM

Although CBNRM training is commonly at an informal level, it is essential that vocational skills are recognized. This would be one precondition for the establishment of formal training programs, which can build on these skills. Formal training with state-wide recognized diplomas would ensure a certain quality standard among employees, such as resource monitors or game scouts. From this perspective, formal diplomas that build on recognized and somewhat standardized skills acquisition would provide more flexibility to participating individuals and better job opportunities. In addition, it would support the empowerment of local communities since the higher quality of education can be expected to lead to sustainable job creation. Categorized knowledge as much as practical skills, such as rules and regulations related to anti-poaching policies and law enforcement or coping skills for the challenges involved in patrolling wildlife areas are required for workers in this sector. Given the modernisation of illegal hunting a variety of specific skills for preventing it or catching poachers are needed.

The further development of vocational education and training in the field of sustainable development is one of the main policy priorities in Africa (outlined by UNESCO in its Global Monitoring Report (2012), Johannesburg Conference (2002), Education for Sustainable Development (ESD), UNESCO's Bonn Declaration on "Learning for Work, Citizenship and Sustainability" (2004), World Bank Poverty Reduction Strategy, papers by Southern Africa Development Community (SADC) and the GiZ) (see also Bloom, Canning & Chan, 2006). Especially in the rural regions, including the border lands of wildlife reserves, the lack of teaching quality, a discrepancy between content taught in schools and community/labour market needs, a lack of resources provided to educational institutions as well as a lack of training quality and articulation between various training programs (Atchoarena & Delluc, 2001; South African Development Community, 2013a; South African Development Community & KFC, 2013b; Gardiner & Van der Walt, 2014) requires further investigation. Thus, further work on CBNRM needs to go beyond immediate skill needs for wildlife protection and nature conservation. These topics however, the skills acquisition in these fields combined with education can build the foundation for further learning and qualification opportunities. Therefore, CBNRM measures should in the future more seen in connection to other training measures, vocational education and training more general and become an integrated part of the educational system.

In order to decide upon the training provision some labour market research would be necessary. Next to studying the effectiveness of existing training measures research on the provision of job opportunities through existing stakeholders or how new entrepreneurship skills support the establishment of new enterprises and the creation of new jobs within CBNRM programs would be needed. On top of that the requests for specific skill training needs to be investigated and on top of it existing skills need to be evaluated through skills assessments and skills activation exercises.

There are different vocational education and training systems in the world that serve as models for policy transfer in vocational education and training. Some of these systems are more school-based, e.g. the Danish or Dutch vocational education and training systems, others are following a dual nature where education and training is divided between school and workplace as well as training centers. One opportunity for the development of training that leads to new employment opportunities is to borrow some of the training policies from developing countries, such as Switzerland, a country that has a long tradition in vocational education and training. About 70% of each cohort in the country participates in training which makes the country an expert hub for skills development at this level. Vocational education and training is in Switzerland the most chosen educational pathway at secondary II level. Young adults can select among 250 vocational education and training programs (Maurer & Gonon, 2013; Baumeler, Dannecker & Trede, 2014; SBFI, 2015a, 2015b). The success of the system is due to a high permeability within the secondary and tertiary education system, including the possibility to acquire a professional baccalaureate which opens pathways to universities and universities of applied science. More popular are higher vocational education and training programs (Tertiär B) with about 240

occupations and 170 higher exams. Besides the high engagement of Swiss employers in training there are also employers' associations that support regional training centers. At the workplace as much as within these training centers practical competences for the world of work are developed (Zbinden-Bühler, 2009). Switzerland has a long tradition of cooperating with development countries in the vocational education and training sector and advice has been provided for a large number of development projects that target the development of training and employment creation (Jäger, Maurer & Fässler 2016; Renold & Probst, 2016; Strahm, Geiger, Oertle & Swars, 2016).

The particularity of the Swiss system is that only the most necessary aspects for standardization and quality assurance have been regulated while the system overall leaves a broad scope for manoeuvre within the professions. It is a highly professional system that functions because a large number of employers are committed to train and gain a return on their investment. While the system per se is not suitable for a one to one transfer, certain features within it are worth to be considered for CBNRM. These are strategies for curriculum development as well as curricular features for professions related to the work that CBNRM involves (e.g., forestry or agricultural profession, certain crafts, hospitality and tourism, accounting and office work). In addition, measures of quality assurance and recognition of prior learning would be relevant for professionalizing CBNRM. Not least research on how to finance vocational education and training, how to work with diverse groups of learners, how to teach interdisciplinary or how to work with new media would be relevant.

The final feature of the Swiss VET system to be mentioned here would be how teacher education is organized and provided. The vast majority of teachers in the Swiss VET system are practitioners, who often work in a job next to teaching. While they all receive a professional education at colleges, this education is framed to meet the specific needs of the teaching profession and ensures a common standard at the input level. The close contact of practitioners to practice ensures that the immediate needs to the labour market are met. Overall, therefore, we argue that the Swiss VET system has many features to offer that would support the further development of CBNRM to meet the training needs of local communities. The advocacy for a higher standardization of training measures is based on the concern that training at all levels should benefit the participants immediately while at the same time also providing further education perspectives. Lifting up the standards of CBNRM would support the development of entrepreneurship skills, sustainable employment opportunities and further development opportunities in terms of management. All together these development needs would support the empowerment of local communities and help uplifting their work- and life conditions. Thus, where possible, we recommend adapting some of the best practises in vocational education and training and applying them to training and capacity building in Southern Africa's CBNRM programs.

However, formal training as much as formal employment is much less common in Southern Africa, which limits the possibilities to relate developments there to highly advanced formalized vocational training systems. When researching training for employment, training for the informal sector is highly relevant in many African countries where about a third of the workforce is employed (ILO, 2002; Haan, 2006). It comprises subsistence types of self-employment characterized by part-time (seasonal) operations, traditional technologies, local materials, and local markets, small family enterprises serving rural markets, and small-scale enterprises with 10 to 50 workers, using some modern technologies with some growth potential. Each of these segments has its own set of constraints and requires a particular support strategy (Haan, 2006). These specific conditions prohibit a direct transfer or translation of the Swiss approach to the conditions in Southern Africa and call for adjusted program development in which the knowhow of particular related professions in Switzerland can be integrated.

Besides the localization of training programs there is also the need to train adult educators and vocational education and training teachers. In order to ensure adequate training teachers and workplace trainers need to be prepared for working with a variety of didactical approaches, such as participatory skills development methods, indigenous knowledge diffusion or interdisciplinary as well as inter-cultural learning. More knowledge is needed on how training for sustainable development can balance the relationships between social, economic, and cultural systems, a balance that seeks to promote social (and gender) equity (UNESCO-UNEVO, 2004).

Teachers and trainers not only need to understand the ways in which professional training can be provided, but also the local context, indigenous knowledge as well as issues of climate change. Teacher training further requires an institutional facilitation, curricula development and definition of qualifications. Also the gender distribution within training programs is an issue of concern. Although women are employed in all sectors of activity in African economies, the force of stereotypes and the gender structure of the labour market confine them to low-skilled activities, be it in agriculture (the main economic activity of African women), the informal sector or the modern sector, particularly the civil service (Atchoarena & Delluc, 2001).

With limited research capacity, and a lack of national research agencies for technical and vocational education and training or capacity within those that do exist, very little current information about vocational education and training, including research on policy and systems, the impact of vocational education and training on development and poverty reduction, or the relationship between vocational education and training and national and regional labour markets, is available. There is a need to strengthen vocational education and training research capacity to ensure availability of data and information to promote a better understanding of the system.

Vocational training, CBNRM and Southern Africa

Considering the specific conditions in Southern Africa there is a need to understand how the conservation community can adapt practices to respond to changing demands at the labour market and support the development of suitable training programs that lead to gainful employment. Community-based tourism, sustainable agriculture and natural resource conservation are among the sectors in which development potential is high and jobs can be created. However, for capacity building it is highly essential to understand how the current curriculum addresses components related to wildlife, ecology and conservation, gender equality, climate change and the role of indigenous and scientific knowledge in natural resource conservation in order to further develop these programs. Deep content knowledge on environmental and social sustainability issues as well as skills and competences to apply this knowledge in practice need to be acknowledged in curricula design. In order to build a workforce in the field with the ability to upgrade knowledge the articulation of various training programs at low, intermediate and high skills levels is another important aspect to look at. Current training measures provided in the field of nature- and wildlife conservation, community development and ecotourism and their impact on employment need to be evaluated as well as policies supporting training for employment. The identification of conditions for skills development includes the exploration of conditions for access and equity, quality training provision, mobility and integration of local knowledge.

Research on training also addresses financing of programs including the exploration of favourable conditions for private investments. Additionally, the conditions for facilitating a participatory community development approach in terms of skills development and skills utilization needs to be explored, which also addresses delivery methods, especially in respect to dual approaches of training, where schools collaborate with workplaces to ensure knowledge transfer and interactive knowledge building. So far the research base in these areas is, overall, rather small and mostly found within reports of major donor organizations or limited to individual case studies. Very little research exists regarding training needs, training supply, job creation or job development/entrepreneurship in this field. Thus it is essential to develop a vocational education and training research infrastructure that would address the broad training needs across Southern African countries given the important role of CBNRM programs to the national economies and local livelihoods in the region.

Conclusion

Training communities on how to sustainably manage their natural resources is increasingly becoming important given the ever increasing threats to biodiversity especially in developing countries. Training and skills development will enhance meaningful participation of communities, and improved biological conservation of natural resources. Skills and training approaches should be flexible enough to accommodate different situations, needs and interests. The informal nature of CBNRM training needs to be reconsidered and possibly upgraded to a formal training system which offers recognized qualifications that individuals can build on. This

would enhance the effectiveness of the broader natural resources conservation and sustainable development. To this end, vocational education and training presents a good opportunity for integration of basic practical skills required in most CBNRM programs and also the high end skills for other technical areas which broadens the participants' knowledge and contribution to sustainable development.

References

- Alpert, P. (1996). Integrated conservation and development projects. *BioScience*, 46, 845-855.
- App, B., Mosimane, A., Resch, T. & Robinson, D. (2008). "USAID support to the Community-Based Natural Resource Management Program in Namibia: LIFE program review". USAID, Washington, DC.
- Aslin, H. J., Mazur, N. A. & Curtis, A. (2002). Identifying regional skill and training needs for integrated natural resource management planning, Bureau of Rural Sciences Canberra.
- Atchoarena, D. & Delluc, A.M. (2001). Revisiting technical and vocational education in Sub-Saharan Africa: an update on trends, innovations and challenges. Paris: International Institute for Educational Planning for World Bank.
- Balint, P. & Mashinya, J. (2006). The decline of a model community-based conservation project: Governance, capacity, and devolution in Mahenye, Zimbabwe. *Geoforum*, 37, 805-815.
- Baumeler, C.; Dannecker, K. & Trede, I. (2014). Höhere Berufsbildung in der Schweiz. Expertenbericht. Studie des EHB IFFP IUFPF im Auftrag der Geschäftsstelle des WIR.ArbeitsdokumentGeschäftsstelle SWIR, 2. Bern: SchweizerischerWissenschaft- und Innovationsrat.
- Bloom, D.E., Canning, D. & Chan, K. (2006). Higher education and economic development in Africa. World Bank.
- Brosius, J. P., Tsing, A. L. & Zerner, C. (1998). Representing communities: Histories and politics of community-based natural resource management. *Society and Natural Resources* 11, 157-168.
- Chevallier, R. (2016). The State Of Community-Based Natural Resource Management In Southern Africa: Assessing Progress And Looking Ahead. SAIIA Occasional Paper, Governance of Africa's Resources Programme. SAIIA, South Africa, 240
- Child, B. & Barnes, G. (2010). The conceptual evolution and practice of community-based natural resource management in southern Africa: past, present and future. *Environmental Conservation*, 37, 283-295.
- Child, B. (2012). Evolution and innovation in wildlife conservation: parks and game ranches to transfrontier conservation areas, Earthscan.
- Frost, P. G. & Bond, I. (2008). The CAMPFIRE programme in Zimbabwe: payments for wildlife services. *Ecological Economics*, 65, 776-787.
- Gandiwa, E., Heitkönig, I., Lokhorst, A., Prins, H. & Leeuwis, C. (2013). CAMPFIRE and human-wildlife conflicts in local communities bordering northern Gonarezhou National Park, Zimbabwe. *Ecology and Society*, 18.
- Gardiner, A. & Van der Walt, M. (2014). Development and implementation of cross-border mobile training in six SADC TFCAs'. Final Report. Southern African Wildlife College, South Africa.
- Gibson, C. C. & Marks, S. A. (1995). Transforming rural hunters into conservationists: an assessment of community-based wildlife management programs in Africa. *World Development*, 23, 941-957.

- Haan, H. C. (2006). Training for work in the informal microenterprise sector: Fresh evidence from Sub Sahara Africa. UnescoUnevoc, Springer, The Netherlands.
- Harrison, E., Dzigirai, V., Gandiwa, E., Nzuma, T., Masivele, B. & Ndlovu, H. (2015). Progressing community-based natural resource management in Zimbabwe. Institute of Poverty, Land, and Agrarian Studies Policy Brief Series, 35.
- Heitkönig, I. M. A. & Prins, H. H. T. (2009). Land use in Zimbabwe and neighbouring southern African countries. In: BOERSEMA, J. J. & REIJNDERS, L. (eds.) Principles of environmental sciences. Springer Netherlands.
- Hughes, R. & Flintan, F. (2001). Integrating Conservation and Development Experience: A Review and Bibliography of the ICDP Literature. London: International Institute for Environment and Development.
- ILO (2002). Women and men in the informal economy. Geneva: ILO.
- Jäger, M., Maurer, M. & Fässler M. (2016). Exportartikel Berufsbildung? Internationale Bildungszusammenarbeit zwischen Armutsreduktion und Wirtschaftsförderung. Bern: hepVerlag.
- Jones, B. T. B. & Erdmann, T. K. (2013). Community-based natural resource management in southern Africa: a decision-makers' guide. United States Agency for International Development.
- King, K. & McGrath, S. (2002). Globalisation, enterprise and knowledge, Symposium, Oxford.
- Lindsey, P. A., Balme, G., Becker, M., Begg, C., Bento, C., Bocchino, C.,... Zisadza-Gandiwa, P. (2013). The bushmeat trade in African savannas: Impacts, drivers, and possible solutions. Biological Conservation, 160, 80-96.
- Manyena, S. B., Collins, A. E., Mudimba, F. & Mudimba, D. (2013). 'Are you serious to ask me about who owns wildlife?' Politics of autonomy over wildlife resources in the Zambezi Valley, Zimbabwe. Forum for Development Studies, 40, 87-109.
- Marks, S. A. (2001). Back to the Future: Some Unintended Consequences of Zambia's Community-Based Wildlife Program (ADMADE). Africa Today 48(1), 121-141.
- Martin, R. B. (1986). Communal Areas Management Programme for Indigenous Resources (CAMPFIRE). Revised Version. CAMPFIRE Working Document No. 1/86. Harare, Zimbabwe: Branch of Terrestrial Ecology, Department of National Parks and Wild Life Management.
- Maurer, M. & Gonon, P. (2013): Herausforderungen für die Berufsbildung in der Schweiz. Bestandesaufnahme und Perspektiven. Bern: hep.
- McGrath S (2002). Skills for development: A new approach to international cooperation in skills development? Journal of Vocational Education and Training 54(3), 413-430.
- Metcalfe, S. (1994). The Zimbabwe Communal Areas Management Programme for Indigenous Resources (CAMPFIRE). In: WESTERN, D. & WRIGHT, R. M. (eds.) Natural Connections: Perspectives in Community-Based Conservation. Washington: Island Press.
- Muboko, N. & Murindagomo, F. (2014). Wildlife control, access and utilisation: Lessons from legislation, policy evolution and implementation in Zimbabwe. Journal for Nature Conservation, 22, 206-211.
- Murindagomo, F. (1990). Zimbabwe: WINDFALL and CAMPFIRE. In Living with Wildlife: Wildlife Resource Management with Local Participation in Africa. ed. A. Kiss, pp. 123-139. Washington, D.C.: World Bank

Technical Paper No. 130.

- Nelson, F. & Agrawal, A. (2008). Patronage or participation? Community-based natural resource management reform in sub-Saharan Africa. *Development and Change*, 39, 557-585.
- Renold, U. & Probst, F. (2016). The Swiss Vocational Education and Training Initiative India – Background, Concept and Results of the Pilot Project 2008-2013. Bern: hepVerlag.
- Rihoy, E. & Mugaranyanga, B. (2007). Devolution and democratisation of natural resource management in southern Africa: A comparative analysis of CBNRM policy processes in Botswana and Zimbabwe. Commons Southern Africa, Paper No. 18. 62pp. CASS/PLAAS Occasional Paper Series. www.uwc.ac.za/plaas.
- SBFI (2015a). Berufsbildung in der Schweiz. Fakten und Zahlen 2015. SBFI: Bern.
- SBFI (2015b). Rahmenlehrpläne Berufsbildungsverantwortliche. Bern: Staatssekretariat für Bildung, Forschung und Innovation SBFI.
- Schiffer, E. (2004). How does community-based natural resource management in Namibia change the distribution of power and influence?: preliminary findings, Directorate of Environmental Affairs, Ministry of Environment and Tourism.
- Shackelton, S. & Campbell, B. (2000). Empowering Communities to Manage Natural Resources: Case Studies from Southern Africa. USAID
- South African Development Community (2013a). Training needs assessment for the development of trans-boundary conservation and management of natural resources in TFCA's of the SADC region. Phase I Assessment Report. SADC.
- South African Development Community and KFC (2013b). Training needs assessment for the development of trans-boundary conservation and management of natural resources in TFCA's of the SADC region. Phase II – Program concept development. SADC.
- Strahm, R. H., Geiger, B. H., Oertle, C., Swars, E. (2016). Vocational and Professional Education and Training in Switzerland – Success factors and challenges for sustainable implementation abroad. Bern: hepVerlag.
- Turner, S. A. (2004). Crisis in CBNRM? Affirming the commons in southern Africa. 10th IASCP Conference, Oaxaca, 2004. 9-13.
- UNESCO-UNEVOC (2004). Learning for work, citizenship and sustainability. The Bonn declaration. Available at: http://www.unevoc.unesco.org/fileadmin/user_upload/pubs/SD_BonnDeclaration_e.pdf (30.3.2016).
- Zbinden-Bühler, A. (2010) (Hrsg.): Berufereformieren und weiterentwickeln. Einhandlungskompetenz-orientierter Ansatz. Bern: hep.