



CHAPTER 9

CAPACITY DEVELOPMENT

Principal authors:

Eduard Müller, Michael R. Appleton
and Glenn Ricci

Supporting authors:

Allan Valverde and
David W. Reynolds

CONTENTS

- Introduction
- Capacity development in protected area systems
- Basic concepts and capacity development approaches
- Capacity development
- Education in a changing world
- Capacity development planning and assessment
- Why do we need protected area professionals?
- Knowledge management
- Competence-based approaches to capacity development
- Performance review and certification programs
- Learning resources
- Conclusion
- References
- Appendix 9.1: Example capacity development organisations



Convention on
Biological Diversity

PRINCIPAL AUTHORS

EDUARD MÜLLER is Vice Chair, Education and Learning, International Union for Conservation of Nature World Commission on Protected Areas, President, Universidad para la Cooperación Internacional, Costa Rica, UNESCO Chair for Biosphere Reserves and Natural and Mixed World Heritage Properties, and Coordinator of the WCPA Global Partnership for Professionalising Protected Area Management.

MICHAEL R. APPLETON is an independent consultant based in the UK specialising in protected areas and sustainable development, and an adviser to Global Environment Facility financed projects.

GLENN RICCI is Coastal Management Specialist at the Coastal Resources Center, University of Rhode Island, Narragansett, Rhode Island, USA.

SUPPORTING AUTHORS

ALLAN VALVERDE is Training Specialist, Universidad para la Cooperación Internacional (UCI), Costa Rica.

DAVID W. REYNOLDS is Senior Advisor, Capacity Development, IUCN Global Protected Areas Programme, based in Medford, New Jersey, USA.

ACKNOWLEDGMENTS

Appreciation is expressed to Theresa Sowry, James Barborak, Ryan Finchum, Wayne Lotter, Natalia Danilina, Vinod Mathur and Michael Lockwood for their work on Appendix 9.1.

CITATION

Müller, E., Appleton, M. R., Ricci, G., Valverde, A. and Reynolds, D. (2015) 'Capacity development', in G. L. Worboys, M. Lockwood, A. Kothari, S. Feary and I. Pulsford (eds) *Protected Area Governance and Management*, pp. 251–290, ANU Press, Canberra.

TITLE PAGE PHOTO

Student receiving a bachelor degree in protected area management, December 2007, Costa Rica

Source: Eduard Müller

Introduction

Today's protected areas are becoming increasingly complex institutions that require a competent, motivated and adequately resourced workforce that has access to the most current ideas and best practices developed through decades of lesson learning around the world. Many protected area directors, managers and staff, however, lack the necessary range of competencies to ensure the effective and equitable management of these areas, and they have limited capacity for sustained and adaptive organisational management. Despite being responsible for the complex management of a significant proportion of the world's natural capital, protected area management is still not recognised in many countries as a distinct profession with its own standards, qualifications and career structure. In this chapter, we will discuss the need to move towards the professionalisation of protected area staff and how different approaches for capacity development can lead to competence levels that allow for effective management.

Understanding capacity development as the development of knowledge, skills and attitudes in individuals, organisations, institutions and society to set and achieve their own objectives, we will discuss knowledge management, skills development and the role that attitude plays to ensure competence. Also discussed are recent developments that are geared towards a shift of educational paradigms, where competence-based learning and the use of online educational alternatives are rapidly changing the way we deliver capacity development throughout the world.

This chapter will be useful for anyone interested in capacity development in protected areas though it is mainly intended for professionals responsible for developing capacity in protected areas and protected area systems—from planning to implementation and evaluation. The discussion of the most relevant concepts and methods will make it easier to select the best programs for specific capacity development tasks at the protected area level or within a system. Academic institutions can also benefit and incorporate new approaches to training or education. We have provided a brief summary of some key capacity development concepts and developments that provide a prelude to this chapter (Box 9.1).

Box 9.1 A summary of key capacity development concepts

Capacity

Capacity is more than just the knowledge and skills of individuals. There are also capacities of organisations and institutions to perform, though people are central to making anything work. Capacity is also about individuals' motivation and leadership in line with the organisation and societal actors. To achieve management effectiveness of protected areas, there must be combined performance from individuals and organisations working together. This is often best achieved in society through professionalising the field.

Methods

Methods to develop capacity are expanding, though the most critical advancement is the codifying of competencies that drive individual and organisational capacity development. The methods used to build competencies are increasing due to new technologies and the limitations of financial resources. There is a renewed focus on going beyond short-term training courses and traditional formal degrees, which remain effective in selected contexts. Online learning, internal mentoring and apprenticeships managed through an organisation's knowledge management system can be very effective. Additionally, the focus is moving to an approach to training that tailors the process around the needs of the individual learner and takes a holistic perspective to solving real work issues. All methods, when linked together as a system for capacity development, are appropriate for selected situations.

Individual capacity development

Individual capacity development according to job function in protected areas can be grouped into three core levels: policy and planning, site management and field operations. A diversity of competencies is required to be a protected area professional at any level, including in traditional areas of conservation science and enforcement as well as policy development, compliance strategies, communications, wider ecosystem services, financing/budgeting, consensus building, leadership and ethics.

Organisational capacity development

The capacity of individuals/staff is of minimal value if the organisation is not structured, responsive and working in partnership with communities and other actors. Professionalising the field of protected area management will also influence organisational capacity and performance.

Professionalising protected area governance and management

A profession serves as a framework to tie together all elements of capacity development—from individuals to organisations and to institutions of interrelated actors. Professions focus on competencies required to perform at minimum standards, to create a common language and formal and informal means to learn competencies, to promote leadership and to identify ethics for the professional community. Currently, there are many competency programs established in protected area systems and some innovative certification programs to complete the system.



Virginia Falls, Nahanni National Park, Canada

Source: Alison Woodley

Capacity development in protected area systems

Protected areas are the most effective means for conserving biodiversity, ecosystems and a large array of services provided for the maintenance of the diversity of life on Earth, including human wellbeing. Though there has been great progress in the establishment of a global network of protected areas, there is still a great way to go. The establishment alone of protected areas and protected area systems does not guarantee that their objectives will be achieved. Global analysis of management effectiveness assessments reveals that a large proportion of designated protected areas are still inadequately managed (IUCN 2014a). In order to achieve effective management of protected areas and protected area systems, appropriate institutional and governance arrangements and competent professionals are required.

Nature has a value of its own, reflected through the thousands of years of dependency humans have developed for their livelihoods. Conserving biodiversity is our responsibility since human factors are the most important in causing the losses we are observing. In the Western world, where monetary value is often given more importance than social or spiritual values, we can argue that protected areas are home to greater economic assets than many of the productive alternatives that are often impacting on them. The value of the world's ecosystem services and natural capital is becoming more and more

recognised since Costanza et al. (1997) published one of the first papers on the topic, estimating ecosystem services at US\$33 trillion per year. Using updated data, unit values and changes to biome areas, total global ecosystem services in 2011 were US\$125 trillion per year, with a yearly loss in the order of US\$20 trillion (Costanza et al. 2014).

The achievement of conservation goals and the future provisioning of these services depend on the capacity of individuals to make the correct decisions but also on the institutional capacity and enabling environment to allow for effective action. The decisions taken by protected area staff must be based on knowledge, experience and skills. The ways in which decisions are implemented are dependent on the attitude of staff at all levels. Institutional capacity is composed of many factors, including funding, legal and policy backing, the number of staff, public awareness, and many others. Nevertheless, achieving institutional capacity also boils down to the capacity of the individuals within the institution to build it up and run it effectively. The role of capacity development in protected areas is increasingly recognised at all levels, including in Goal 3.2 of the Convention on Biological Diversity (CBD) Programme of Work on Protected Areas (PoWPA) (CBD 2014a; Box 9.2). The Aichi Targets, especially Target 11, set the stage for action until the end of 2020. Within each target, we can identify the capacity that has to be developed at individual, institutional, national and global levels.

There are large variations in job structures within protected area systems depending on many factors such as resource availability, especially funding; whether the country is developing or developed; years of establishment; social and political recognition; governance type at site level; and many others. In well-staffed and trained systems, we can find specific job descriptions, whereas in some countries, the small number of staff assigned to an area (in some cases only one person) requires them to fulfil a large set of activities. Nevertheless, we can establish at least three basic levels of staff—system management (including policy and planning), site management, and operational or field level (park rangers, wardens, and so on)—and in some cases, we still have a further level comprising lower-skilled workers. The domains of these levels can be very similar but the competencies for each vary. For a system manager, site planning will probably entail a national scope wherein conservation gaps and long-term land-use planning might be the area of focus, while the site manager is concerned with zoning, buffer and connectivity areas, and threat analysis or community development. The operational level will be more involved with on-the-ground enforcement, visitor management and protection. These differences require specificities in the capacity development strategies for each of these levels.

Basic concepts and capacity development approaches

In order to design and implement effective capacity development processes, we need to understand the different components related to proficiency in performing on the job. Through self-assessment processes, a person or organisation can identify where the major gaps are and seek specific strengthening. We can design different capacity development strategies that focus on different aspects. In the following paragraphs, we define some of the most relevant components of capacity development.

Ability

'Ability is usually regarded as a set of innate attributes that determine our potential for a given activity. Such potential may be developed into skilled behaviour by training and practice' (Egate and Groome 2005:100). In other words, ability is not something that can easily be taught and is related to genetic abilities and the environment in which the person grew up. Examples are the ability to dance samba or to learn different languages.

Box 9.2 Convention on Biological Diversity Programme of Work on Protected Areas: Goal 3.2

This goal is concerned with building capacity for the planning, establishment and management of protected areas. The goal was established in 2004 following the 2003 World Parks Congress in Durban. By 2014, implementation of the goals had been steady, but further work was required. The original goals are repeated here, as they set a context for ongoing capacity development work.

Target: By 2010, comprehensive capacity-building programs and initiatives are implemented to develop knowledge and skills at individual, community and institutional levels, and raise professional standards.

The suggested activities of the parties include the following.

- By 2006 complete national protected area capacity needs assessments and establish capacity-building programs on the basis of these assessments, including the creation of curricula, resources and programs for the sustained delivery of protected area management training.
- Establish effective mechanisms to document existing knowledge and experiences of protected area management, including traditional knowledge in accordance with Article 8(j) and related provisions, and identify knowledge and skill gaps.
- Exchange lessons learnt, information and capacity-building experiences among countries and relevant organisations, through the clearing house mechanisms and other means.
- Strengthen the capacities of institutions to establish cross-sectoral collaboration for protected area management at regional, national and local levels.
- Improve the capacity of protected area institutions to develop sustainable financing through fiscal incentives, environmental services, and other instruments.

Source: CBD (2014a)

Skills

There are many definitions for skills depending on the area of endeavour, such as sport, business, handicrafts, and so on. For the purpose of this chapter, we define skill as 'the ability to do something that comes from training, experience, or practice' (Merriam-Webster Dictionary 2012), or 'the learned ability to bring about predetermined results with maximum certainty, often with the minimum outlay of time or energy or both' (Knapp 1963:11). There are four main characteristics of skills:

1. a learned ability
2. predetermined results: a specific goal or target is reached
3. maximum certainty: repeatable results every time
4. maximum efficiency: lowest effort and time.

Cornford (1999:266) defined the following attributes of skill and skilled performance:

1. Skill is learned or acquired and does not consist of innate, instinctive actions and simple or reflex actions, which everyone possesses.
2. Skill involves motivation, purpose and goals.
3. A mental plan or schema is required before a skill can be performed; this should include components, processes, correct sequences of components and temporal elements.
4. Skills require specific content and context knowledge and also specific stimuli, which signal the appropriate time and circumstances in which to perform or apply the knowledge.
5. Skills involve problem solving relevant to the particular context.
6. There are individual differences in skilled performance and the same level of skill performance cannot always be obtained with different people.
7. Standards of excellence are required to judge performance.
8. Skill involves comparable replication or consistency of application over time.
9. Considerable time is required to achieve high levels of skill, especially where more complex patterns of thought and behaviour are involved.

In relation to job performance, we also have further refinements of capacity development terms.

Hard skills

These are the capabilities required for specific occupations, usually related to professional knowledge, tools or techniques that allow us to work within our profession. They are easy to observe, quantify and measure. They are also usually easy to teach when new to the learner and where no 'unlearning' is necessary.

Soft skills

Also called 'people skills', these are the complete collection of our social, communication and self-management behaviours and are vital for professional

success. These are the skills that enable us to work effectively and 'fit in' in the workplace. Soft skills are usually hard to observe, quantify or measure and are used both for day-to-day life and for work. It usually takes a greater effort to change or develop them since often they are already embedded into behaviour. Change in soft skills can be achieved through frequent reinforcement over the long term, preferably by a knowledgeable coach or co-workers (Coates 2006). Examples of soft skills are: time management, reliability, team work, interpersonal communication, language and a desire to learn and be trained; demonstrating integrity and ethical behaviour; being motivated and having a positive attitude; and critically analysing information (Phani 2007).

Competence (competency)

Competence can be defined as '[t]he ability of the individual within an occupation to carry out a defined task' (Appleton et al. 2003:2). A more detailed definition can be found in Sanchez and Ruiz (2008:29), in which competence is 'good performance in diverse, authentic contexts based on integration and activation of knowledge, rules and standards, techniques, procedures, abilities and skills, attitudes and values'. The concept of competence is not new. White (1959:297) used the term, relating it to 'an organism's capacity to interact effectively with its environment'. Miller (1990) developed a framework for clinical assessment that simplifies understanding of the transition from knowledge-based to competence-based education and assessment (Figure 9.1). Competence-based learning builds on the existence of three learning domains: cognitive (knowledge), psychomotor (skills) and affective (attitudes).

Competence-based learning is becoming more and more popular. Its most important characteristic is that the focus of education is not on what academics believe students need to know (teacher centred), but rather on what students need to know and be able to do in varying and complex situations (job focused) (Coates 2006). Competence-based programs do not assume that the achievement of learning outcomes is reached by successful completion of a series of courses within a study plan. Rather they are learner centred, focused more on the use of many different learning opportunities and activities that allow students to learn and demonstrate their capacities at their own pace.

Competence-based programs in recent years include peer-to-peer social networks, open educational sources, learning management systems and online advising and coaching (Klein-Collins 2013). Competence-based learning requires the definition of the necessary

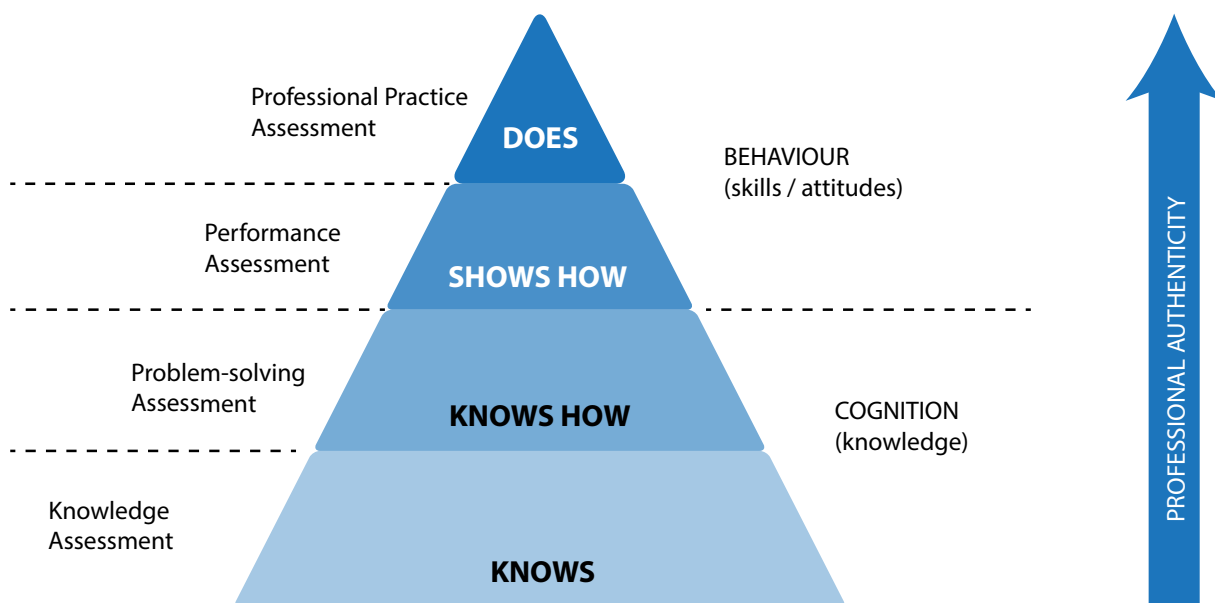


Figure 9.1 Framework for clinical assessment

Source: Adapted from Miller (1990)

competencies pertaining to a profession or job. Knowledge is then integrated with attitudes and values according to each student's professional or personal life. It is important to note that it seeks to promote the ability of students to learn how to learn (Sanchez and Ruiz 2008).

Competencies are also being used for protected area training and learning. Appleton et al. (2003) developed competence standards for protected area jobs in South-East Asia. These are recommendations for skills and knowledge required for 24 key jobs in protected areas, divided into 17 categories and five levels. During 2013 and 2014, a new effort, led by Appleton as part of the World Commission on Protected Areas (WCPA) Education and Learning Task Force, was undertaken to define global competencies for protected area jobs. Another initiative in Africa developed competencies tailored to marine protected areas with means for assessing performance leading to certification (Squillante et al. 2010), and this is discussed later in this chapter.

Leadership is a soft competence yet critical to most positions within understaffed protected area systems with significant challenges in meeting their mandates. How protected area staff internalise the concept of leadership is illustrated in Box 9.3 (Squillante et al. 2010). Leadership in protected areas is discussed further in Chapter 12.

Box 9.3 About leadership

Actions

- Hands dirty and feet wet.
- Initiative: lead by example.
- Do not ask others to do what you would not do (that is, apprehending).
- Ahead of the game (fingers on the pulse).
- Take a hard decision at the right time.
- Own success; do not disown failure.
- Consistency.

Interactions with staff

- Motivate others by mentoring and team building.
- Delegate properly; do not micromanage.
- Exhibit trust in staff.
- Take responsibility for honest mistakes by junior staff.
- Prepare to stand your ground.

Interactions with communities

- Be respectful.
- Listen first.
- Become almost part of the community (embedded, approachable, fair).
- Do not disrespect but do your job.
- Seek respect (from staff and stakeholders)—not to be 'liked'.

Source: Squillante et al. (2010)

Learning

Learning is a continuous process of creating knowledge grounded in experience (Kolb 1984). Learning builds on pre-existing knowledge or experiences. Thus, an educator not only must implant new ideas but also has to help modify or dispose of old ones. This is important to take into consideration when designing and applying a training process. The more we can build on existing knowledge or experience, the easier it will be for the student to pick up what is being taught. If existing knowledge or practices are incorrect, a greater effort must be made in the learning process.

Motivation is fundamental to learning; only an individual who wants to learn can do so. Thus, motivation is one of the most important aspects of capacity development and must be worked into the starting phase of any training or educational event. The learner must know what the scope of the training event is and what outcomes are expected from him or her. A person learns more easily if he or she can identify with clarity what is the use of what is learnt in their day-to-day job or personal performance. This is something that often was previously not taken sufficiently into account in protected area training, especially when cooperation projects had built-in training components that were designed by the education provider, with little or no participation from the protected area staff in the design process.

It is also important to relate new knowledge areas or skills to the existing knowledge or skills of the individual. The construction of schemas or mental plans enables better learning by relating acquired knowledge to existing knowledge in the memory. Learning-to-learn strategies make it easier for a student to construct mental models and schemas that will guide performance (Cornford 1997). The construction of mental models requires attention, retention and motivation: 'Most human behaviour is learned observationally through modelling: from observing others, one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action' (Bandura 1977:22).

Experience-based learning or learning by doing

Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.
— Confucius, cited by Ostashewski et al. (2011)



Postgraduate University of Tasmania protected area management students working with experienced and senior Tasmanian protected area management staff on site at Cockle Creek, South West National Park, Tasmania

Source: Graeme L. Worboys

Experiential learning is 'the process whereby knowledge is created through the transformation of experience' (Kolb 1984:38), or in other words, 'the personal acquisition of knowledge through practice' (University of Iowa 2014). Whereas the traditional classroom focuses on knowledge, experiential learning involves three domains of the student: intellect, feelings and senses (Andresen et al. 1999).

Kolb (1984) describes experiential learning as a cycle that starts with a concrete experience, which is then followed by personal reflection on this experience (Figure 9.2). The person then applies general rules or known theories to this experience—called abstract conceptualisation (the process of making sense of what has been observed) (Kolb 2014)—to construct ways of possibly modifying the next occurrence of the experience. In other words, how we can put this into practice (active experimentation) to finally go to the next experience. An effective learner must then perceive information, reflect on how it impacts on their life, compare it with their own experience and then think about how they can find new ways to act (Conner 2007). This may occur very rapidly or over a longer period. For those who want to go into a more detailed analysis and application of this cycle, there are additional reports (see Atherton 2013).

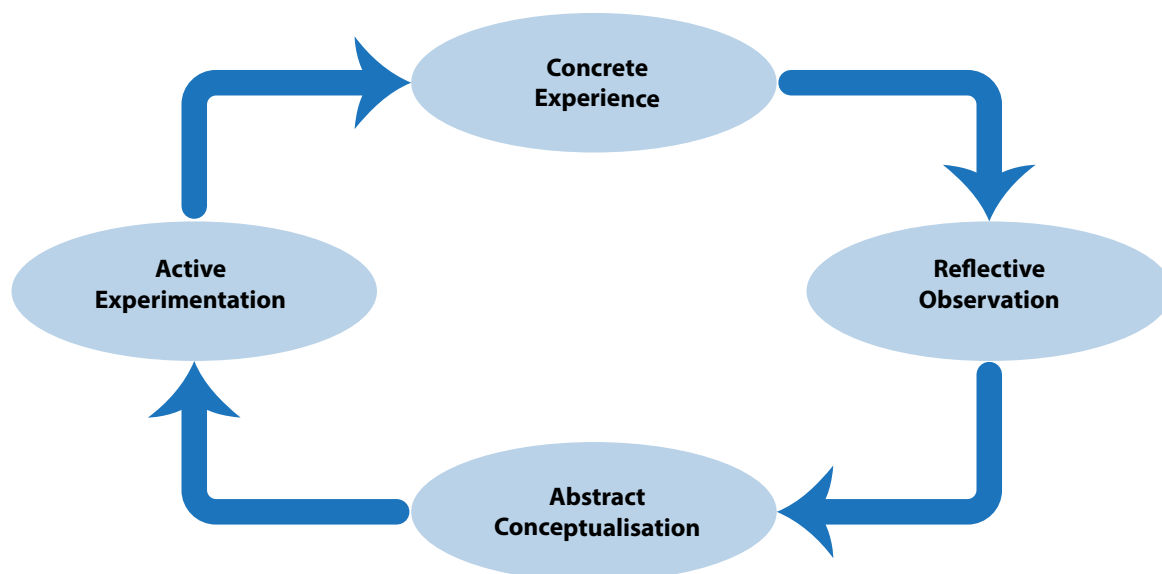


Figure 9.2 Kolb's Cycle of Experiential Learning

Source: Adapted from Oxendine et al. (2004)

For experience-based learning to be successful, we must first clearly define the goal and how this goal is significant to the individual. We then need to assure personal engagement with the experience and bring previous experience and knowledge to the learning process to ensure an adequate process of reflection and conceptualisation (Andresen et al. 1999). Experience-based learning is highly adequate for internal institutional capacity development, where experienced protected area staff can mentor younger or newer staff.

Vocational training or learning

Vocational training is oriented towards improving or updating knowledge and skills or to the acquisition of new ones required for a specific job function or trade. It is usually oriented towards the technical level and can be successfully used to enhance job performance by learning how to use new instruments, methodologies or technology. In protected areas, it is often employed at the operational or ranger level, especially for learning to use new tools or techniques such as a global positioning system (GPS), trail construction or wildlife monitoring.

Induction training

Induction training is given to new employees or employees coming to a new area in order to facilitate the adjustment to the new job tasks, other members of staff and the work environment, reducing the time needed to become productive. It can cover the organisation's mission and vision, objectives, organisational chart,

terms and conditions, working culture, equipment, information and communication systems, health and safety, and monitoring and evaluation. It is site or organisation specific and can cover a wide range of geographies, topographies, vegetation cover, water, caves, wild animal presence, climate extremes, incidents, social environments, political environments, conflict zones and other environmental and managerial considerations. Induction training is not about skills; it is about the basic routine tasks that have to be understood. Often protected area systems run in-house training for new staff or to update existing staff.

Informal/self-directed learning

Thanks to increased communication, self-directed learning is rapidly growing in importance. Increased access to the Internet, efficient and easy to use browsers, discussion forums, social networking, video instruction (TedX, for example), online courses (many of them free, such as Coursera), live streaming of meetings and conferences, and many others, allow easy and timely access to the latest information.

Mentoring/apprenticeship

Mentoring and/or informal peer learning can be highly effective and very low cost, especially for training young staff. A mentoring culture has to be promoted within the organisation, avoiding knowledge and skills being used as a power play. The possibility of having staff from one protected area interact with mentors from other

protected areas can also be very effective, using protected areas with good capacity and thus management, as training places. This is also the case with partnerships, including international ones that allow staff from different countries to do internships in well-managed protected areas.

Formal education

Formal education is provided by accredited institutions and is based on a curriculum that leads to degree-granting programs—often required by professional associations to allow people to work in a given field. Formal education has an important advantage in that it allows for the deeper transformation of a person and changes in their mindset. Formal recognition or accreditation is required, be it through a ministry of education, an accreditation board or other means. In many cases, the validity of a degree obtained in a foreign country must undergo a set of steps to receive final recognition as being equivalent to a similar degree within a country. In many protected area systems, having a formal degree is a prerequisite for higher positions within an institution and is normally accompanied by better salaries.

Formal education specifically designed for protected areas is still scarce throughout the globe. In part, this could be due to the lack of recognition in the past of the need to professionalise protected area management, but other constraints can be easily identified. University degree programs in protected areas are difficult to run as there are few new job openings and most potential students are in fact current protected area staff who cannot leave their areas to sit in classrooms. Long-term sustainability is not easy to achieve, especially in smaller countries, where the total staff who can be potentially trained is limited to a few hundred, taking into account that not all staff want to or can go through a degree program (often protected area staff do not have the requirements for higher education, and many times they have not even finished secondary education).

Finding adequate teachers who have the required academic background in protected areas, teaching/learning skills and real-world experience in protected areas is difficult. The Latin American School for Protected Areas at the University for International Cooperation has tried to overcome some of these limitations by offering online and blended-learning alternatives that reach out to protected area systems in many countries. Online education (which is discussed later in this chapter) allows for the involvement of students and teachers from many countries, but it does not solve the issue of limited funds for degree education within protected area systems and



Onsite postgraduate protected area management tuition from an experienced Tasmania Parks and Wildlife Service ranger, South West National Park, Tasmania

Source: Graeme L. Worboys

the inability of protected area staff to pay for their own studies due to low income. This situation compromises the long-term financial sustainability of such delivery. Many efforts to set up protected area management schools have ended when the international grants that started them terminated.

Capacity development

According to the Organisation for Economic Cooperation and Development (OECD 2006), adequate country capacity is one of the critical factors missing from development. If the development of sustainable capacity is not given the correct attention, development efforts will fail, even if supported by substantially increased funding. In the early part of the 21st century, much effort is being put into rethinking capacity development. Capacity development must go beyond the enhancement of the skills and knowledge of individuals and is very closely related to the quality of the organisations in which they work. An enabling environment is crucial for an organisation to be effective. Thus, capacity development must take place at three levels—individuals, organisations and society (Nuffic 2014)—as represented in the following classic and often-cited model for capacity in a nested structure (Figure 9.3).

In terms of protected areas using this model, we can identify many initiatives for capacity development at different scales (Table 9.1).

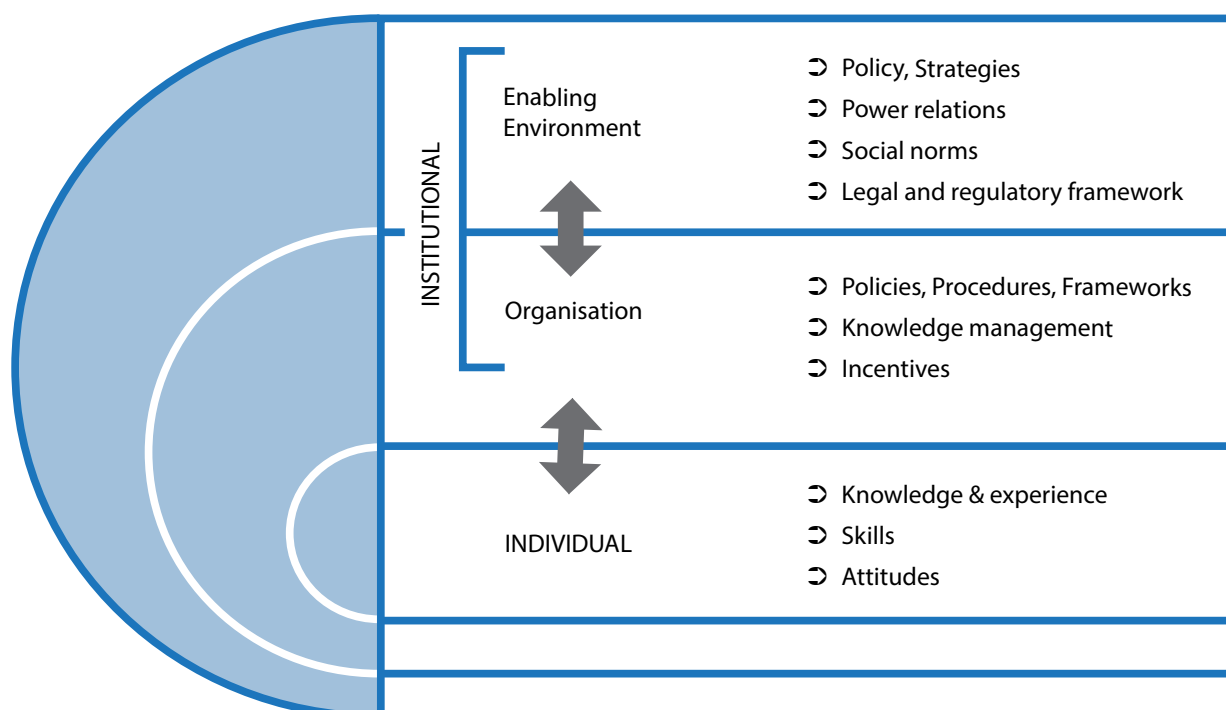


Figure 9.3 A systems approach to capacity development

Source: Adapted from UNDP (2009)

Table 9.1 Capacity development at different scales

Capacity scale	Examples
Enabling environment (system) <ul style="list-style-type: none"> policy, strategies power relations social norms legal and regulatory framework 	<ul style="list-style-type: none"> IUCN work on legislation IUCN work on governance IUCN (and others') work on financing Species Survival Commission (red lists, species action plans) protected area categories Programme of Work on Protected Areas Convention on Biological Diversity Aichi Targets
Organisation <ul style="list-style-type: none"> policies, procedures, frameworks knowledge management incentives 	<ul style="list-style-type: none"> IUCN/WCPA guidance on system planning, management planning, governance, financing (see Chapter 2) management effectiveness evaluation and the Green List Programme of Work on Protected Areas processes and procedures such as human resources, monitoring and reporting, institutional development, and organisational cultures
Individual <ul style="list-style-type: none"> knowledge and experience skills attitudes 	<ul style="list-style-type: none"> competence learning resources (body of knowledge) curricula certification of individuals learning support such as training, courses and mentoring

The nested model described in Table 9.1 is very simplistic and a more adequate representation is provided in Figure 9.4, which reflects the true dynamics that exist between the three levels.

In the past, capacity building was viewed as a technical process whereby knowledge or organisational models were transferred from high Human Development Index (HDI) countries to low HDI countries, where it was about teaching and training directed to individuals (OECD 2006; Walters 2007). The word 'building' suggested that previous capacity did not exist.

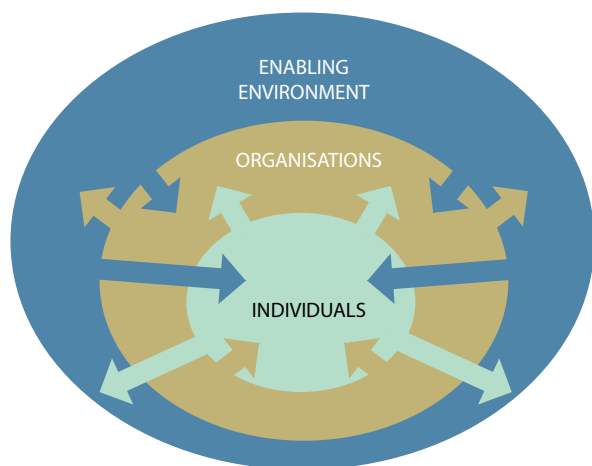


Figure 9.4 Dynamic model of capacity development

The broader political and social context under which capacity development efforts took place was not taken adequately into account (OECD 2006). The focus on providing the right answers without knowing the right questions often led to capacity development initiatives that did not respond to true needs, especially in developing countries. This then led to the lack of recognition of the importance of capacity development and could explain why there is very little recognition of having well-trained and educated staff in protected area management.

Many projects with the goal of resolving diverse conservation and development challenges have focused on the provision of technical solutions and funding with very little effort (and funding) provided for true capacity development. This has proven insufficient and has led to a ‘renewed focus on the underlying human and organisational capabilities that need to be strengthened, through working more closely with the individuals, organisations and societies that were the intended beneficiaries of development support’ (Capacity.org 2013).

Many current and past capacity development initiatives were provided through technical cooperation projects or training providers, many of which are active at a global scale. This often created supply-driven capacity development based on inputs. Today it has become obvious that the focus must be on demand and on needs based on outcomes (Figure 9.5), and capacity development programs must be tailored to these. The inclusion of local views and knowledge is fundamental and the capacity development process must be appropriated by the ‘receptors’ in order to be effective, long lasting and actually contribute to the development of individual, institutional and societal capacity.

The new consensus, articulated strongly in the 2005 Paris Declaration on Aid Effectiveness, sees capacity development as a necessarily endogenous process, strongly led from within a country, with donors playing a supporting role (OECD 2006:12).

This requires political recognition of and leadership on the importance of stimulating capacity development as a basis for achieving true country-level development.

There are many definitions of capacity development and its scope. The OECD (2006:12) has defined ‘capacity’ as ‘the ability of people, organisations and society as a whole to manage their affairs successfully, and “capacity development” is understood as the process whereby people, organisations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time’. Ubels et al. (2010:4) emphasise the intrinsic dynamic character when they define capacity as ‘the ability of a human system to perform, sustain itself and self-renew’. They refine this further, affirming that it is not a static state but instead leads to changes in capacity over time. It is about creating added value for members and the outside world through permanent action and adjusting and developing over time. Defining it as a human system reflects the fact that there are different scales or levels of human organisation—from individuals to teams, organisations and networks.

More importantly, especially in times of rapid change, capacity will always evolve in interaction with the surrounding environment. In order to develop or build capacity, we must make deliberate efforts to ‘stimulate, guide, strengthen, unleash, nurture and grow capacities beyond the existing condition’ (Ubels et al. 2010:4). Thus, capacity is the ‘ability of people concerned to (collectively) perform and deliver results in a chosen area, to sustain the activities required and adapt them over time’ (Ubels et al. 2010:5).

According to Ubels et al. (2010:ix), this means that capacity development requires engagement with real-life issues and results, in which ‘abstract organisational abilities must be seen to be believed’, and where ‘capacity develops as much through relationships between actors as it does within an individual organisation, therefore involving unleashing collaboration’.

Finally, capacity is fuelled by local actors’ ambitions and resources, which cannot be replaced with external inputs and finance.

Capacity development at the protected area level can be challenging since the person or group of persons defining any capacity development program have to be able to clearly answer ‘capacity for what’ and ‘capacity

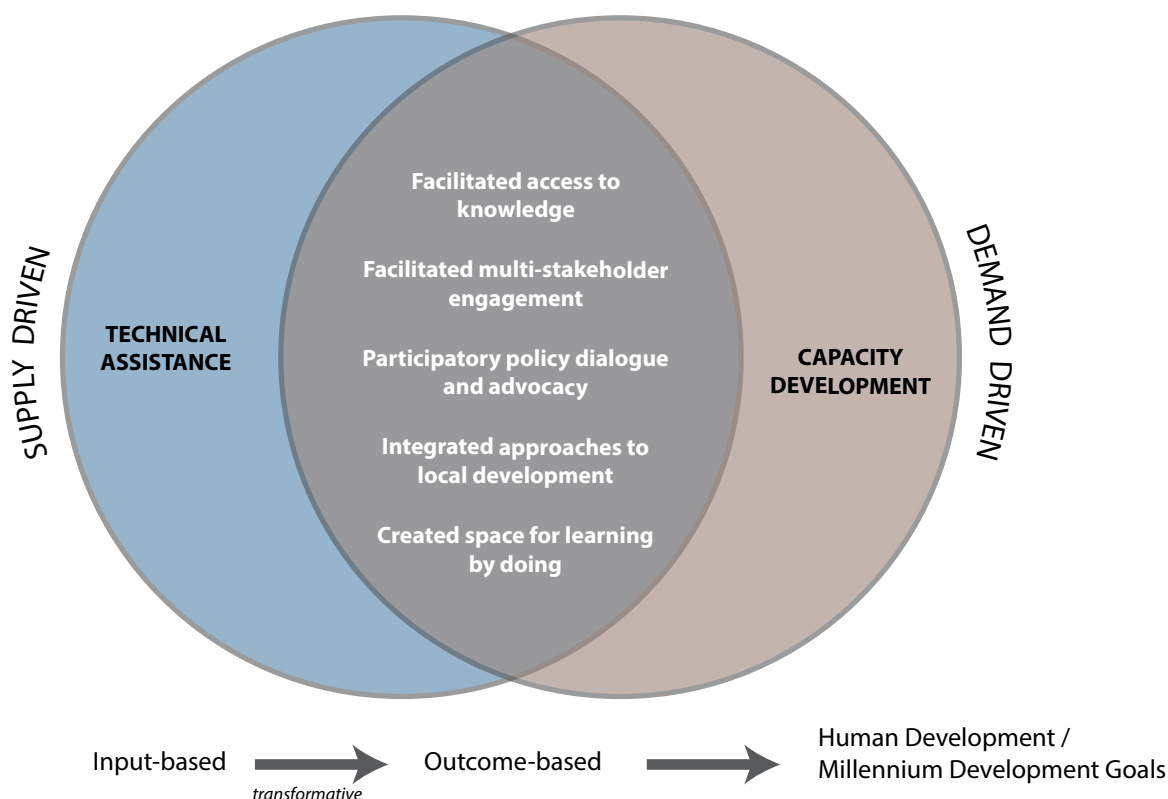


Figure 9.5 The shift in paradigm to a capacity development approach

Source: Adapted from UNDP (2009)

for whom', and focus on specific capacities required to accomplish clearly defined goals under particular circumstances (technical, environmental, political and financial) in which these goals must be reached. Rapid changes due, for example, to climate change require permanent analysis of the main factors of change, which must be identified, quantified and monitored, requiring a permanent process of capacity development. We must identify the capacity that already exists but we must be able to determine if it effectively enables both individuals and their organisations to perform and achieve the goals they want to achieve. Under this premise, capacity development is about closing the gap between actual and desired performance (Walters 2007).

At the protected area systems level, the planners' or policy-level perspective of capacity development will benefit from more holistic approaches to capacity. The European Centre for Development Policy Management, in a study report by Baser and Morgan (2008) and Capacity Development in Practice (Ubels et al. 2010), identify five core capabilities that are required to achieve organisational capacity (although they also apply to individual capacity). Their combined results are provided in Figure 9.6.



Stream erosion prevention and soil conservation work, Baripada ICCA, near Pune, India: village children learning by doing at an early age

Source: Graeme L. Worboys

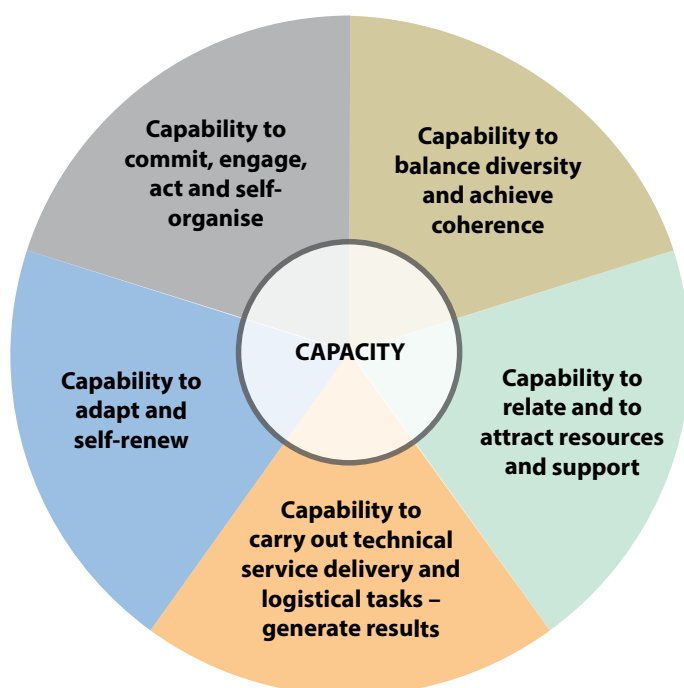


Figure 9.6 Five core capabilities required to achieve organisational capacity

Source: Adapted from Baser and Morgan (2008)

If we try to relate these to existing protected area systems and their functioning, we might be able to identify more effectively where capacity development must be enhanced.

1) Commit and engage

This core capability is often not recognised. It has to do with the importance of ownership and motivation, and is what allows organisations to empower themselves and have intrinsic capabilities for long-term capacity development. This capability is very closely tied to the essential components of competencies, which are attitude and self-perception, the human side of which often is what makes people motivated, have the energy to act and achieve their goals, leading to higher self-esteem and improved competencies overall (Baser and Morgan 2008).

2) Technical, service delivery and logistical tasks

This core capability is most commonly associated with traditional capacity-building processes and is focused on performance and results (Baser and Morgan 2008). Within protected area systems, this is often attended by hiring consultants or companies that deliver supply-driven short courses.

3) Capability to relate and to attract resources and support

This core capability is related to true and demonstrated achievements resulting from the development of key relationships required for organisational survival. It relates to earning the trust of others through credibility and legitimacy, including internal and external relationships (Baser and Morgan 2008). This is highly required, both at the protected area level involving local communities and stakeholders and at the system level, where, for example, a good communication strategy with the minister of finance might be able to solve a lack of government recognition of the role of protected areas in the national accounting and thus solve many of the problems related to lack of funding or political support. Achieving capacity at this level requires the correct attitude and skills and will be strongly enhanced through experience and personal ability.

4) Adapt and self-renew

This core capability is fundamental for long-term sustainability, especially in times of rapid change. It requires a collective awareness of the state, intrinsic capabilities, leadership, a critical need for foresight, continuous discussions and brainstorming and an understanding of the importance of adapting to change (Baser and Morgan 2008). Spaces for collective interaction that allow this are usually not found within

protected area systems. Additionally, the biggest challenge is to overcome the resistance to change of individuals and organisational structures—often related to power issues.

5) Balancing diversity and coherence

This core capability is about finding a balance between the diversity of thoughts, perspectives, beliefs and ways of doing things and developing the coherence needed to avoid fragmentation in order not to lose focus or break apart (Baser and Morgan 2008). This can be especially challenging for system and protected area management, due to the diversity and complexity of fields and very diverse individual backgrounds that have to be integrated.

Defining core capabilities can be challenging for protected area systems since it must contemplate the institutional structure, which is often complex, depending on centralised or decentralised decision-making, very diverse thematic or program areas, territorial distribution, and effective institutional communication channels. In many protected area systems, there is a lack of staff with high-level managerial, administrative or project management training or education, often due to the fact that staff has been promoted from the field to central offices based on their on-the-ground performance, which might not always suffice for higher-level strategic management.

Education in a changing world

Today it is less important to possess knowledge than to be able to find it, select it and apply it—and do all this swiftly. Change, even environmental change, is not an exception any more; it is the rule. This makes it imperative to be able to permanently seek new approaches and solutions to the increasing complexity of current development. For adaptive management, we look back at monitoring results, making the necessary changes as we move forward to reach our planned objectives. Today, rapid change does not allow us to base our strategies only on past experiences; we must also look at future scenarios and lay the groundwork to try to reach the best-case scenarios. This is creative management.

The need to be permanently alert and choose different sources of information has changed the perception of what a successful student or professional is. Several decades ago, students went to school with an ‘empty suitcase’, which was slowly filled up each semester until graduation. After several years at university, students could go home and open this ‘suitcase’ and start exercising to gain the competencies required by the labour market.

They were able to use the acquired knowledge for many years of professional practice with only occasional updates. Today, if a graduate is not able to permanently update and further develop his or her knowledge, skills and even attitudes, he or she will be obsolete for the labour market very soon after graduation.

This change in the learning process has not come about by chance. The accessibility of information in the era of the Internet and information technology, where mobile phones with their increased power and transportability are replacing computers, and the sheer amount of information that has become available at the click of a button, allow the close to two billion people who have access to the Internet to be part of the information era. Technological developments are permanently changing the way we educate and learn. It took many decades for distance education to gain a reputation; it has taken only a few years for online, e-learning and virtual education to change the educational paradigm. Most of the detractors of online education are people who themselves are not connected. It is true that there are many things that cannot or should not be taught without face-to-face time, but the support of technology is required for most learning processes today.

Another important shift in knowledge management comes from a realisation that conventional scientific approaches are not sufficient in many instances for the development of solutions to current problems. The use of alternative knowledge systems such as communitarian or indigenous knowledge has proven essential for the understanding of ecosystem functioning and the use of ecosystem services by local communities. Restoration of functional landscapes must inherently incorporate local knowledge. In fact, modern science has proven today that ‘natural’ ecosystems such as the forests in Mexico’s Yucatan Peninsula (Levy-Tacher et al. 2002) or in the Amazon Basin (Coomes et al. 2009) have been modified by humans over hundreds of years to match their productivity with people’s needs for food, fibre, fuel, medicine, and so on. Today we must learn to recognise local knowledge as equally important for decision-making. It is highly relevant to bring science to local people so they can understand phenomena like climate change, which are not imprinted in traditional knowledge.

Learning versus teaching

An important shift in capacity development is the transition from teaching to learning. Today’s information and communication technology makes knowledge available at a fingertip through most smartphones.

Thus, a successful capacity development program today is not one that teaches knowledge; instead it is one that enables the learning process, allowing for collective construction of knowledge through learning communities and learning by doing. The possibility of the learner to immediately apply the knowledge and skills will lead to a more confident person, with a positive attitude towards his or her working environment. For the educator, it is often not an easy shift from being a teacher to becoming a mentor or moderator of a learning process. This does not disregard the importance of the experience a teacher might have acquired or their immense knowledge—often constructed through their own experiences. The learning process must be accomplished by the student according to his or her existing capabilities and deficiencies. Students learn by self-assessment through actual doing, more than through teacher evaluations or exams. As in other disciplines, in protected areas, teachers usually have a good subject background but have not been trained and are not very active in pedagogy and its development. Personal experience shows that it is not easy for protected area experts to take on the role of mentorship to assist the learning process as most of them still want to ‘teach’ (Case Study 9.1).

Reductionist versus holistic approaches

During the past decades there has been a growing critique of the traditional reductionist framework of education, wherein a complex whole is taken apart into ‘boxes’ that are studied through different disciplines. The assumption is that if we understand the parts, we can understand the whole. Where this fails is that many of the interactions are lost, making it difficult to deal with complexity. A good example of this is climate change. The huge complexity of climate change makes it difficult to find effective solutions through institutions that are set within a sectorial framework and which see only parts, but there is no institution to oversee the whole.

In the reductionist framework, the educational process seeks the transfer of what a teacher knows to the student. The assumption is that knowledge is discrete, identifiable, objective and impersonal, and learning is static and additive in nature. Under this approach

knowledge is made up of elementary units of experience which are grouped, related, and generalised, and ... the parts of a given learning experience are equal to the whole ... In this model, which units are to be taught

and in what sequence they will be presented is determined by the teacher or a curriculum specialist. (MacInnis 1995:8)

Holistic educators focus on the construction of knowledge, where the learner transforms new experiences into knowledge by relating them to previously acquired knowledge and transforming both of these into something new and meaningful. Learning goes then from a whole to the parts and then back to the whole. A good example for better understanding is the need to learn the letters of the alphabet prior to attempting to write or otherwise trying to communicate in writing; letters will be learned as needed (MacInnis 1995). If we truly intend to increase the effectiveness of conservation and development goals, the complexity of management of protected areas will benefit from a shift to more holistic approaches, both in management and in capacity development.

Delivery: Face-to-face, online or blended learning

We will not go into an in-depth discussion of the different delivery methods and their advantages and disadvantages since this is not the scope of this chapter and more often than not these aspects are bound to the education or training institutions. Nevertheless, it is important for protected area staff to understand the basics of these delivery methods and the potential each of them has for different protected area capacity development efforts. Internet access is growing quickly, especially through smartphones, making connectivity issues less relevant as time passes.

Most people have been brought up with traditional face-to-face learning, be it in classrooms, as a cross-generational (elders to youth) system or within the working arena. The main drawback is that students have to travel to the training site and there is a limit to the number of students who can attend a class with satisfactory results. Costs are elevated and, especially where air travel is involved, some of these courses are becoming prohibitively expensive. Face-to-face education has many advantages, starting with the human interaction that is essential, for example, in increasing communication and teamwork skills. It is valuable for complex field processes where direct observation and then practice with expert supervision can lead to more effective mastering of these skills. Game roles and other interactive methods are excellent training events, especially when conducted within an organisation or team.

Case Study 9.1 Learning-based approach: Latin American School for Protected Areas, Costa Rica

Moving away from the traditional approach where a student first 'learns' all the subject areas and then moves on to implementation and integration, the learner starts by mapping the protected area in which he or she works, including its surroundings. The task lies in using maps or geographical information systems (GIS) to identify and plot all issues that influence or affect the protected area. When working with each of the themes, the learner has to go to different sources and see which aspects have the highest relevance for a desired outcome. Any of the subject areas can serve as a starting point—for example, the ecological and conservation biology aspects, identifying if size and borders allow the conservation goals to be met, determining whether the connectivity and buffer zones are present or where they can be established, and their effectiveness for different species and under the influence of climate change. Communities can be mapped, identifying threats and opportunities and areas for conflict management or support for community education, involvement and development.

Visitor management can be analysed, including joint efforts with local tour providers to increase visitor experience and seek co-investments. Research requirements to provide information for management can be prioritised and links to academic institutions identified. Within the final steps is determining what the required linkages are with the whole protected area system in terms of budget, technical assistance, alignment with national and global policies such as the PoWPA, and innovative funding sources. The learner can use different sources for acquiring information including guidance from a mentor or peers, internet searches, paper reports, management plans, and interviews with fellow workers or even community members.

He or she can choose the sequence by prioritising problems, gaps or previous experience. At the end, the map allows a holistic view of the protected area and all of the required processes to be undertaken to achieve the conservation goals, and the learner has the opportunity to gain knowledge and skills in the array of fields that affect a protected area.

Distance learning relates to having teachers and students in different places. Delivery originally was through materials sent by mail with instructional designs that allowed the student to learn by studying the materials at his or her own pace; these were often called correspondence courses. Online learning or e-learning, also called virtual learning, has gained enormous ground over the past two decades, facilitated by improved internet connectivity and speed and the development of different platforms, especially Moodle, which was the most widely used interface early in the 21st century. The main characteristic of online education is rapid change as technology develops further. Less than a decade ago no-one would have thought of the possibility of attending university programs through a mobile phone. Internet delivery was seen as something for the few and left many people, especially those from less-developed countries, out on a limb. In 2013, 39 per cent of the world population was using the Internet, up from 16 per cent in 2005. In the developing world, 31 per cent of the population used the Internet, up from 8 per cent in 2005, whereas 77 per cent of the people in the developed world used the Internet in 2013 (ITU 2014).

Face-to-face educators and even educational authorities have often offered resistance to the online process, and for many years it was considered to have lower quality than the face-to-face process. It is true that, under present conditions, some disciplines are still impossible to learn exclusively through the Internet. Nevertheless, technology is stepping in and we now have, for example, surgical training through high-tech communications

systems, where expert surgeons assist students or less-experienced professionals in remote areas using video communication, coaching the apprentice through every step.

Blended learning is a mix of both worlds and has proven to enhance the learning process when practical experiences are required. Online programs are now fostering face-to-face encounters between students based on geographic proximity. These self-managed working groups help construct knowledge collectively, allowing for the development of skills and attitudes. In recent years, massive open online courses (MOOCs) have gained popularity and will probably completely transform the educational process, even at world-renowned universities such as the Massachusetts Institute of Technology (MIT) and Stanford University, which have invested significantly in their development.

Capacity development planning and assessment

Establishing a capacity development action plan allows for better alignment and synchrony between the capacity development efforts and personal, institutional and community goals. The CBD has developed a guiding process for the establishment of capacity development action plans for protected areas (Box 9.4).

There are many different methods for assessing capacity needs. The basis is frequently a comparison of the current situation (existing capacity) versus a desired

one (assessment of future capacity) and the road map for how to get there. There are several guides to capacity assessment methodology (UNDP 2007, 2008). There are also different levels for capacity assessment related to the enabling environment, organisations and individuals (Kay et al. 2008), while other authors add still another layer related to the network level of organisations where capacity development should aim at improving the relationships between different stakeholders in order to fully utilise their diverse capacities (Nielsen 2011).

In protected area systems, we find many different assessments for capacity development needs and many different approaches are taken to establish them. Some assessments are based on expert opinion (don Carlos et al. 2013); others are based on questionnaires to staff working in protected areas, buffer zones and central offices (Acevedo et al. 2006); and others have used broader samples, including on-site questionnaires and detailed self-assessment questionnaires (Gombos et al. 2011). We also find more complex assessments where a combination of participatory and iterative methods

was used, including focus group discussions, field visits, interviews, literature review and intensive consultation with key stakeholders carried out at the community level.

This is the case of the Centre for People and Forests (RECOFTC) capacity-building needs assessment for the development of community forestry and community protected areas in Cambodia (The Learning Institute and RECOFTC 2011) and for the development of community forestry in Indonesia (Siscawati and Zakaria 2010). The more complex processes usually render more accurate results but require higher investments, in terms of both time and funding.

The advancement of management effectiveness evaluations (Hockings et al. 2006) based on the establishment of management standards and assessment of performance against these standards, which lead to benchmarks for protected area management using a stepped scoring system from 'complete failure' to 'full compliance', can ease the identification of the areas that require capacity development, which can then be targeted

Box 9.4 What is a protected area capacity plan?

While most protected area management effectiveness studies identify and prioritise critical threats and key weaknesses, they often do not identify the specific capacities and corresponding opportunities and strategies needed to address them. On the other hand, many capacity plans are based on a generic checklist of potential capacity needs, rather than on a systematic assessment of the actual management weaknesses and threats within the protected area system.

Ideally, planners will integrate management effectiveness results into the capacity action planning process, in order to ensure that the results are relevant and are focused on improving the most urgent weaknesses and abating the most prevalent threats. Furthermore, many capacity assessments focus exclusively on individual capacity needs and skill development, rather than on broader institutional and societal capacities. Ideally, planners will consider the range of capacity levels needed to ensure a comprehensive and well-managed protected area system.

A protected area capacity action plan is defined as a suite of strategies and actions aimed at strengthening the individual, institutional and societal capacities needed to create a representative and comprehensive protected area network, address critical management weaknesses, abate key threats and improve the enabling environment within a protected area system.

While the actual process of developing a capacity action plan will vary from country to country, the following are some basic principles that are likely to apply to all cases.

- Build on the results of existing assessments of protected area management effectiveness.
- Focus on the capacities needed to address key management weaknesses and abate critical threats as the basis for the action plan.
- Consider individual and institutional capacities and, depending on the scope of the assessment and available resources, societal capacities.
- Engage the right actors at the right time—park guards and field-level staff can provide one level of input into the capacity plan, while ministerial staff and policymakers can provide another. Often several meetings will be needed to include different levels of expertise.
- Include multiple actors from different sectors, including, for example, tourism, economic development, land-use planning, forestry, fisheries and agriculture.
- Emphasise a self-assessment approach, empowering protected area staff and administrators to identify their capacity needs and constraints.
- Ensure the support of senior-level management in conducting the capacity assessment and following up with the results.
- Ensure that the capacity action plan is integrated into national budgetary processes in order to increase the likelihood that the plan will be implemented.

Source: CBD (2014b:4, 6)

with specific training. In a global study (Leverington et al. 2010), overall management effectiveness was most strongly linked to adequate infrastructure, equipment and information; good administration and communication; adequacy of information and staff training; and good management planning—all of which are linked to capacity.

We must be aware, however, that there is often a fundamental gap when capacity development needs are assessed, and it is based on the premise that one does not know what one does not know. In other words, often organisations and individuals are not up-to-date with knowledge, science and development trends and thus may not be aware of the need to develop capacities in one or another field. This is especially true where lower capacity exists or where language or technological barriers have not allowed for new trends or needs to be incorporated. One good example of this is climate change. The words 'climate change', 'mitigation' and 'adaptation' are often found on capacity development needs assessments but with further inquiry there is often a misunderstanding or vague definition of what is actually required under each of these headings.

In order to overcome these limitations, it is necessary to seek expert support or at least establish processes through which the systems are kept up-to-date in terms of knowledge, science and technology. Adequate political leadership is fundamental for this to happen but recognition of the importance at all levels is also needed and this, in itself, is part of capacity development. Engaging external stakeholders and 'clients' can help an organisation assess its capacity or more importantly its performance and determine whether or not the gap is caused by a capacity issue.

It is often difficult to measure the impact of capacity development activities, especially in the short term. Since capacity development happens at the individual, organisational and community levels, assessment must happen at these levels also. Outcomes, however, depend strongly on the enabling environment, which depends on external factors such as policy or politics, the capacity of high-ranking officials nominated politically, worker unions, funding and other factors. Constant change to organisations also affects capacity as does a lack of organisational response to change, as this will render the highest capacity useless over time. The most difficult level of assessment is the community or society level due to the high complexity of this setting and the almost impossible task of identifying the direct results of capacity development processes. In the long term, the behaviour of a community or society will allow for a wider recognition of capacity that will nevertheless

be difficult to clearly attribute to specific capacity development processes. This becomes highly relevant when protected area community outreach programs are evaluated, especially those that are donor funded and require reporting on effectiveness.

One of the most widely used evaluations for training programs was developed by Kirkpatrick in 1959, redefined by the same author in 1998 (Kirkpatrick 1998). The evaluation model has four levels.

- Step 1: Reaction—How well did the learners like the learning process?
- Step 2: Learning—What did they learn (knowledge and skills gained by learners)?
- Step 3: Behaviour—Resulting changes in job performance from the learning process (capability to perform the newly learned skills while on the job).
- Step 4: Results—Tangible results of the learning process in terms of reduced cost, improved quality, increased production, efficiency and other measures.

Organisational capacity development is of the utmost importance if we want effective protected area systems; assessing the impact of capacity development at this level can prove complex and challenging. Hailey et al. (2005:12) have identified some clear methodological and practical challenges associated with measuring impact:

1. unclear program and process design
2. power, control and ownership: whose needs and agenda
3. measuring complex and intangible change
4. demonstrating causality and attribution
5. responding to context and culture
6. committing to the investment costs.

These authors have developed approaches that have been adopted to overcome the challenges and put impact assessment into practice:

1. stakeholder involvement and prioritisation
2. self-assessment
3. triangulation
4. balance of different methods and tools
5. simple and systemic
6. accept plausible association, not direct attribution
7. recognise levels of investment
8. organisational learning: linking assessment with action (Hailey et al. 2005:12–13).

Assessing the impact at the individual level is somewhat easier, though it varies with the scope of the process. When training activities focus on specific tools such as the use of GIS, trail design and building, fire control, first aid or similar, it becomes simpler. More structured and longer-term processes will require different approaches for evaluation. It is critical, however, to recognise that there can be institutional limitations that do not allow trained staff to put in place what they have learned. This is especially true when the upper hierarchical levels have not received training and feel threatened by more capable subordinates.

Due to the increased need, more and more assessment frameworks are being developed. The Australian Centre for International Agricultural Research (ACIAR) has developed a well-designed step-by-step assessment framework (Gordon and Chadwick 2007; Templeton 2009) that aims to map and substantiate the linkages between the training provided and the intended or realised benefits, thus facilitating the attribution of benefits to specific capacity-building investments. It is based on estimating the value of the impact resulting from the change in practice and behaviour of organisations and then determining what share of these benefits can be attributed to the capacity-building activity (Gordon and Chadwick 2007). A similar effort for protected areas or conservation efforts could possibly facilitate impact evaluation.

Why do we need protected area professionals?

At the beginning of protected area designations, managers were confronted mainly with landscape preservation for visitation. Later, the importance of protected areas for conserving nature, especially emblematic species, was recognised. With the transition from preservation to conservation and the development of concepts such as biodiversity and ecosystem services, the role of protected areas for local livelihoods became increasingly recognised and thus social and economic aspects were incorporated into management, challenging the natural sciences background of many protected area staff. Today, we see protected areas as one of the most efficient and cost-effective natural solutions to help the fight against climate change. At the same time, the challenges of climate change impacts—with great variability throughout regions and countries, the need to manage uncertainties and risk, and develop management strategies that require a look into the future with scenario analysis, and the search for creative solutions to both

adaptation and mitigation—have surpassed the current capacity of many of today's staff involved in protected area management.

In an attempt to fill the gaps, staff have often been trained through short courses, and we frequently find personnel with long lists of capacity-building events in their curriculum vitae. Interestingly enough, unlike other professions, in protected area management, no real professional or degree programs were established until the 1980s. An early associate diploma course in park management, for example, was established by the Riverina College of Advanced Education in Australia by 1983, with a degree course being provided soon after. There are only a few academic institutions around the world that offer formal programs in protected area management, and frequently there is a bias in these programs towards training in biology and ecology. Protected areas in many developing countries are frequently managed by non-professionals or professionals in fields such as biology, geography, geology, anthropology, forestry, agronomy, architecture or some other profession, who have modified their career paths. In economic sectors other than protected areas, typically only well-prepared professionals are hired for managerial positions, requiring usually at least an MBA or equivalent degree related to what they are managing. It would be difficult to imagine designing a house without an architect and building it without an engineer or hiring a person without proper education for bank management.

The complexity of protected area management today requires professionals with adequate competencies in diverse fields who have been adequately trained to be able to take a leading role in integrating the diverse knowledge areas and having the necessary skills and attitude to succeed. Nevertheless, the need to professionalise protected area management, especially in developing countries, has still not been adequately recognised. The provision of effective professional development programs for a large number of professionals is crucial to ensuring they are capable of facing current issues and are prepared for the new challenges of adaptation to climate change.

An effective protected area manager must understand ecological and biological aspects with broad knowledge of conservation biology and monitoring, including population dynamics, genetic diversity and trophic chains. This professional must also understand social dynamics and local community development, law enforcement and policing, governance, socioeconomic issues, mediation and conflict management to integrate protected areas with surrounding communities. Knowledge of general administration, accounting,



Araucaria forest: outstanding biodiversity in Villarrica National Park, Chile

Source: Eduard Müller

project management, planning, budgets, human resource management, risk and emergency management, public use and tourism, sustainability education, infrastructure maintenance, fundraising and many other areas is also necessary. This person must also be a leader and have the capacity for keen observation, analysis and creativity to be able to accomplish true adaptive management.

She or he must also be familiar with legislation and the institutional nature of protected areas, the economic role and the valuation of services, especially ecosystem services and biodiversity value. Spiritual and intangible values are highly relevant in many parts of the globe. This person must also be able to influence policy and decision-makers. As mentioned, climate change adds new requirements, many of which have not yet been well defined for protected area managers. Marine and coastal areas bring great challenges with very dynamic processes happening with the many different stakeholders and in spatial planning.

The goals of protected area management can be highly diverse, including conservation and sustainable use of biodiversity and ecosystem services, protection of indigenous livelihoods, sustainable tourism, multi-use recreation and climate change resilience. The complexity of modern protected area management requires professionals with knowledge of disparate fields who have been adequately trained to comfortably integrate diverse skills. Advanced professional development programs for

a diverse array of staff roles are crucial to ensure protected areas are capable of withstanding current threats and are prepared for new challenges such as climate change.

Many national protected area systems are understaffed, in terms of both quantity of staff and depth of expertise. This limitation has led to a dependency on international and national non-governmental organisations (NGOs) and bilateral technical assistance projects that often do not last. Due to the limited number of academic programs in protected area management, few long-term employees have specialised education that integrates the above fields of protected area management. Challenges are increased for governments since many professionals migrate to the NGO or consulting sectors and the capacity for national systems to train new personnel is often very limited.

If we recognise the value of the national heritage and ecosystem services at stake, we realise the urgency of professionalising protected area management. We need professionals to manage not only the field and office-scale issues of individual protected areas but also the administration of larger national and even trans-boundary and regional systems. These professionals require advanced skills in policy, strategic planning, consensus building, communications and fundraising. Professionals at all levels require specialised training and a diverse array of follow-up opportunities.

Education for protected area management must be expanded globally under new educational paradigms. Today we face the need for professionals who can deal with crosscutting disciplines using holistic approaches on an everyday basis. The complexity of the problems that conservation in general and protected areas especially are facing requires a permanent search for innovative solutions. For example, there is no recipe for adaptation to climate change. There will be important differences in adaptation strategies for sites that are a short distance apart, such as high, middle and lower parts of a river basin. Thus, the ability of a professional to collect all the necessary information, including forecast models, scenario development, policy and development trends, national and international trends in business, trade agreements and natural resource use, will make him or her more competent and thus successful.

Knowledge management

Adequate knowledge management is fundamental for success in management, including protected area management. Often, an organisation has a lot of knowledge spread throughout, be it in documents, other media and organisational processes and even in its people. If this knowledge is not systematised in an adequate way, it is frequently not, or not effectively, used. The adequate use of knowledge can lead, for example, to a set of best practices and lessons learnt. Timely use of knowledge can assist in solving problems or generating strategies. The complexity of individual protected area and protected area systems management requires adequate knowledge management in order to construct solid strategies. This uses both positive experiences transformed into best practices and negative experiences used as lessons learned to improve practice. Nevertheless, we rarely find adequate knowledge management or knowledge management systems that allow for quick searches to support decision-making in day-to-day protected area management. Very often, research results are found in one hardcopy that sits on a desk or bookshelf, not only making access difficult but also concealing its existence. The possibility of having modern web-based information systems and ensuring their widespread use would enhance capacity at all levels.

‘Knowledge is information or data, organised in a way that is useful to the organisation’ (Suryanarayana and Adapa 2013:53). It is about getting the right knowledge to the right person at the right time. Knowledge is abundant and accessible through the Internet. The challenge lies in how to gather, evaluate, classify, systematise and use this knowledge constructively to

achieve the organisational objectives. Intellectual capital and institutional or organisational knowledge are highly relevant and all organisations should have mechanisms in place not to lose these. Additionally, the use of local, community or indigenous knowledge has become highly relevant and is practically indispensable for ecosystem management and restoration and the establishment of functional landscapes (Levy-Tacher et al. 2002; Diemont et al. 2011; Aronson et al. 2007).

Knowledge management can be defined as a multidisciplinary approach to achieving organisational objectives by making the best use of knowledge. It includes processes such as acquisition, organisation, development and sharing of knowledge and the cultural and technical foundations that support and promote the use of it (Kundu 2013; see also Chapter 11). Knowledge management may be viewed in terms of:

- identification of knowledge needs and resources
- acquisition, creation, evaluation, classification or elimination of knowledge-related resources, processes or environments
- people—how do you increase the ability of an individual to influence others with their knowledge
- technology as a crucial enabler rather than a solution: it needs to be chosen according to the requirements of a knowledge management initiative and should not be the starting point
- knowledge-focused culture within the organisation; this is the biggest enabler of successful knowledge-driven organisations
- structure, which refers to the business processes and organisational structures that facilitate the storage, retrieval, application and sharing of knowledge (Balakumaran 2013; University of North Carolina 2014).

Knowledge is only useful if it is used. An organisation should have strategies that promote the use and exchange of knowledge, establishing best practices, and ensuring that new knowledge is permanently constructed, especially if this is done collectively (Box 9.5).

Competence-based approaches to capacity development

As discussed previously, traditional university education has been based mainly on knowledge, with some skill development within each knowledge area. Today we are witnessing a change towards competence-based

education. In order to give some further insight to protected area personnel involved with education and training, we will describe an ongoing WCPA initiative that seeks the establishment of competencies and competence-based education and certification in protected areas globally.

The competence-based approach addresses the need for developing and measuring capacity by focusing primarily on the ability of individuals to perform in their jobs effectively, rather than on delivery of training and acquisition of qualifications. Competence is the proven ability to do a job and is often defined in terms of the required combination of knowledge (to know), skills (to know how to do) and attitude (to know how to be)—often referred to as KSA—allowing individuals to function in the real world. Knowledge provides an understanding of the technical and theoretical background of the task and an appreciation of its purpose; skills ensure the ability to perform a task reliably and consistently; and having the right attitude helps ensure that an individual works professionally, ethically and conscientiously.

An adequate level of competency to perform a particular task or job is often defined as a ‘competence standard’ or ‘occupational standard’, which is ‘a definition, usually developed and accepted by industry, of the knowledge and competencies required to successfully perform work-related functions within an occupation’ (IUCN WCPA et al. 2003:207).

Competence standards are developed with the relevant sector—for example, a protected area agency, supported by multidisciplinary teams and educators (rather than by academic and training institutions alone). A full competence standard for a particular job usually comprises:

- what a person should be able to do
- the range of conditions under which the person should be able to demonstrate their competence (sometimes referred to as the ‘scope’ of the competence or as a ‘range statement’)
- the underpinning knowledge required for the person to be competent
- the ways in which competence can be objectively judged.

The competence approach differs in many ways from conventional approaches to training, learning and assessment. These differences are summarised in Table 9.2.

Box 9.5 Knowledge management strategies

Knowledge management strategies include:

- rewards (as a means of motivating for knowledge sharing)
- storytelling (as a means of transferring tacit knowledge)
- cross-project learning
- post-action reviews
- knowledge mapping (a map of knowledge repositories within a company accessible by all)
- communities of practice
- expert directories (to enable the knowledge seeker to reach out to the experts)
- best-practice transfer
- knowledge fairs
- competence management (systematic evaluation and planning of the competencies of individual organisation members)
- proximity and architecture (the physical situation of employees can be either conducive or obstructive to knowledge sharing)
- master–apprentice relationships
- collaborative technologies such as groupware
- knowledge repositories (databases, bookmarking engines and so on)
- measuring and reporting intellectual capital (a way of making explicit knowledge for companies)
- knowledge brokers (some organisational members take on responsibility for a specific field and act as first reference for others to talk to about a specific subject)
- social software (wikis, social bookmarking, blogs and so on)
- inter-project knowledge transfer.

Source: Suryanarayana and Adapa (2013:55–6)

Table 9.2 Comparison of approaches to training and learning

Element of training, learning and assessment	'Conventional' approach	Competence approach (additional to the conventional approach)
Development of 'curriculum' and learning targets	Training and educational institutions Experts in the field	Practitioners Representatives of the sector
Curriculum implementation	Disciplinary courses, knowledge based with practical training for skills Teacher-based	Holistic problem-based approach with the integration of diverse knowledge areas and skills, strengthening the development of adequate behaviour Student-based
Learning	Classroom learning Practical training	Multiple approaches, with a strong focus on learning in the workplace and self-directed learning
Access to training and learning	Suitably qualified individuals Attendees of formal education and training programs	Any motivated individual in the sector
Assessment	Exams, tests and dissertations Attendance at training courses	Assessment and verification of work-related skills Demonstration of all aspects of competence in the workplace
Mode of learning	Full-time and part-time courses	Multiple routes to lifelong learning: vocational training, mentoring, learning by doing, self-directed learning
Delivery of training	Training and educational institutions Experts and trainers	Learning organisations Colleagues, mentors, individuals

Competence-based learning is not new; it has been used in many sectors for a long time. The most familiar competence standard for most people is probably the driving test. We also expect professionals such as medical doctors to be competent as well as suitably qualified. The International Labour Organisation (ILO) has published guidance on the development of competence standards (ILO 2006).

In the past 20 years, there has been increasing interest in adopting a competence-based approach for protected area staff. This can help address the need for improved capacity in many ways. Occupational standards can help to establish a professional profile for protected area management, encouraging its formal recognition as an occupation, establishing clear career paths, attracting more new recruits, encouraging the development of courses by educational institutions and attracting more funding. Some key areas where a competence-based approach may be applied are described here.

Professionalising protected area management

Occupational standards can help to establish a professional profile for protected area management, encouraging its formal recognition as an occupation,

establishing clear career paths, attracting more recruits, encouraging development of courses by educational institutions and attracting more funding.

Widening access to capacity development and qualifications

Adoption of competence standards can enable far more protected area staff to improve their skills and to acquire qualifications in service.

Improving organisational structures and recruitment

Competence standards can help protected area authorities to develop detailed job descriptions and organisational structures, judge the suitability of applicants for jobs from chief executive to field officer, and to assess performance.

Helping to analyse capacity needs

Competencies provide a comprehensive framework for assessing and identifying capacity and capacity development needs, enabling the accurate and efficient targeting of resources for capacity development.

Assisting training providers

Competence standards can provide a basis for designing and delivering education and training programs, ensuring that providers are working to common standards and helping trainees to assess the scope of courses offered to them.

Recognising different modes of learning

Adoption of competence standards can help people gain recognition of their skills in new and different ways.

Enabling transferability and regional recognition of skills and courses

Common standards can make qualifications ‘portable’ and provide a common language for competence across the sector.

Competence-based approaches in protected area management and conservation have been evolving in various ways for many years. Since 1985, the United Kingdom has been developing competence-based national vocational qualifications (NVQs) for almost every occupation, including environmental conservation (Lantra 2014). In 1995, more than 200 US National Park Service employees contributed to the development of more than 225 job competency descriptions and a set of universal essential competencies applying to all employees in the service (NPS 1995). In New Zealand a set of competence-based vocational qualifications is available (NZQA 2014), while in Canada the National Occupational Standards for Environmental Employment have been developed through the Environmental Careers Organisation (ECO Canada 2014). The Caribbean Association of National Training Agencies has developed competencies and certification for Maintenance of Parks and Protected Terrestrial Areas (Level 2) (NTATT 2014). The Third World Congress of the International Ranger Federation in 2000 identified three levels of ranger and agreed on the ‘universal essential competence’ in terms of knowledge and skills/abilities for rangers for the ‘Master Ranger’ level (IRF 2000).

In 2002, the Association of South-East Asian Nations (ASEAN) Regional Centre for Biodiversity Conservation developed a set of competence standards for protected area staff in South-East Asia with the aim of providing a common, yet flexible platform across the 10 ASEAN countries for improving protected area management and capacity (Appleton et al. 2009). Through a participatory process, a set of 250 competencies for up to five levels in 17 categories was identified. The standards were published (NZQA 2014), translated into regional languages, and were formally adopted by ASEAN in

2009. The standards were developed as a ‘tool not a rule’ and their specific application and implementation were left to the individual countries and users to develop; they have since been widely used across the region and in many other countries.

The 2014 Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS) program is linking standards to qualifications by providing a framework to promote competence, professionalism, leadership, innovation and ethical conduct in marine protected area management. The program:

- defines the full spectrum of core competencies required to perform a range of functions, at three professional levels, associated with the effective management of marine protected areas
- establishes standards within each of these competence areas
- ensures employers/donors are hiring appropriately qualified individuals
- reassures communities that they have a professional committed to working in an ethical manner, which includes consideration of client/stakeholder needs.

In Madagascar in 2014, the Network of Conservation Educators and Practitioners is working to strengthen long-term capacity for biodiversity conservation in Madagascar through the expansion and enhancement of training opportunities in biodiversity conservation for universities and conservation professionals. This initiative has revised and validated national competency standards for protected area management, defining the skills and knowledge needed by managers of a protected area and/or a conservation site in order to be effective. The network has also developed curricula for training and certification in 11 thematic areas.

The capacity development stream at the IUCN’s Fifth World Parks Congress in Durban in 2003 recommended that the WCPA should move towards common standards of competency by:

- agreeing on generic global competency standards for protected area staff, which can be adapted at local, regional and national levels
- encouraging and enabling the use of standards and self-assessments to support the improved effectiveness of protected area staff and training.

The WCPA, recognising the need to professionalise protected area management, has launched the Global Partnership for Professionalising Protected Area Management (GPPAM) (Box 9.6). GPPAM has been working towards these objectives by developing a global

Box 9.6 Global Partnership for Professionalising Protected Area Management

To address the global need to professionalise protected area management and build the competence of protected area staff, the IUCN WCPA and the Global Protected Areas Program (GPAP) of the IUCN Secretariat are leading an initiative called the Global Partnership for Professionalising Protected Area Management (GPPPAM). This global initiative was launched with the support of the Secretariat of the CBD at the IUCN's World Conservation Congress in Jeju, South Korea, in 2012.

GPPPAM aims to support the full life-cycle development of protected area professionals and organisations. It innovates by moving beyond stand-alone training programs that are based on the assumption that knowledge, not competence, is the main basis of job performance. GPPPAM achieves this by building the foundations for a profession with its associated elements, serving the needs of both young and veteran protected area professionals throughout their career. The ultimate goal of this initiative is to formalise and support protected area professional practice, professionalise protected areas as organisations and lead to higher management effectiveness. While external factors cannot be directly controlled, protected areas must start with what they can influence—internal processes and staff competence. By starting with protected area staff, their full spectrum of core competence will flow over to engage other stakeholders to fully participate. Competent individuals will in turn be better equipped to transform their organisations, and ultimately, protected area systems. There are four main components.

1. Core competence standards

GPPPAM is identifying the full range of skills, knowledge and personal qualities potentially required for working in today's protected areas. Based on these, it is developing a comprehensive set of competencies for protected area work at four staff levels: skilled workers, middle managers, senior protected area managers, and higher-level staff of protected area systems. These competencies can be used in many ways: to plan organisational structures, to define job descriptions, to measure and assess current skills and performance, and as the basis for capacity development programs and qualifications.

2. Body of knowledge

A profession must codify its best practices for achieving its required competencies. An open-source database will be curated by recognised protected area professionals, to include the best existing materials in the field of protected area management that will aid in developing staff and organisational performance. Materials include this book, various methodologies, IUCN Best Practice Protected Area Guidelines (see Chapter 2), technical reports, resources for training and learning, presentations, videos, exercises and more.

3. Formal curricula leading to certificates and degrees

Based on the competencies and body of knowledge, detailed curricula will be developed and made available online to individuals or organisations willing to use them in order to work towards common standards around the world. Global feedback will facilitate further development or adaptation. A network of accredited institutions will provide the courses.

4. Assessment and certification

A profession is strengthened when it recognises those who are competent. This can be achieved through performance assessments on the job and/or independent certifications. GPPPAM will create guidelines and criteria to develop or recognise national/regional certification programs, based on the competencies, the body of knowledge and the curricula. Certification addresses the demand of protected area professionals for recognition of their work, career guidance and growth, and networking. It provides incentives for career-long engagement and for innovative leadership.

GPPPAM is being developed through a collaborative effort with partners, including academic institutions, NGOs, national protected area systems and other organisations.

set of competencies for protected area staff. GPPPAM is about full life-cycle development of protected area professionals and innovates by moving beyond training programs alone to provide incentives for protected area staff to pursue the new opportunities that will professionalise protected area management. Many protected area systems have already taken the first steps in this direction: Costa Rica, Chile, Bolivia, South Africa, Russia, and others. A global GPPPAM effort will

make these initiatives easier for countries and, by having professionals in protected area management, the goals established under the CBD can be better achieved.



Protected area training course, Paraguay

Source: Eduard Müller

Performance review and certification programs

Identifying the core competencies and providing learning opportunities are the first steps to building the capacity of individuals and organisations. If, however, those capacities are not applied properly, a performance gap remains. Thus, an important element of a capacity development program (or better, a system with feedback loops) is the use of performance assessment tools. These tools are for assessing performance on the job as opposed to end-of-course or training evaluations. The most common method is the annual performance review of staff, though increasingly as we move towards professionalising protected area management, another tool is becoming valuable: certification. Used in tandem, they can close the loop in a capacity development system to achieve management effectiveness.

Performance reviews (or appraisals/assessments) are defined as a 'structured formal interaction between a subordinate and supervisor, that usually takes the form of a periodic interview (annual or semi-annual), in which the work performance of the subordinate is examined and discussed, with a view to identifying weaknesses and strengths as well as opportunities for improvement and skills development' (North 2010). There are pros and cons to these performance reviews mostly based on the quality of the reviews, the incentives linked to the outcomes and the follow-up actions to improve performance. When seen through the lens of capacity

development and driven by transparent competencies, performance reviews can serve as a valuable tool to accelerate the learning process of protected area staff. Organisations can also identify their strengths and deficiencies when surveying overall staff competencies.

Several protected area programs, including the Kenya Wildlife Service and Cape Nature in South Africa, are working to improve their existing performance review programs by linking to individual competencies and a certification program (Case Study 9.2). Using the evidence-based assessment tools involved with competencies and certification, managers have clear guidance to judge staff performance, moving from subjective to more objective. By streamlining the system, protected area managers can link their organisational objectives to staff capacity development action plans and daily staff activities. This can accelerate the learning and performance periods. When actions and incentives are linked to the performance reviews, there is shared interest in the process.

While every organisation can use a performance review process, some are choosing to also include certification systems. Certification has been used in many professions and professional areas for many years, from medical fields to software development and project management. Most certification processes seek to determine if a person is fit to carry out specific tasks, based on knowledge but also on skills—real on-the-job performance. Competence-based certification programs are somewhat newer and also bring in a joint evaluation that includes

Case Study 9.2 WIO-COMPAS program

In 2004, the marine protected areas (MPAs) across eight countries in the Western Indian Ocean (WIO) region were not achieving the necessary performance results from short-term training courses and guidebooks. To address the need for improved management effectiveness, the Western Indian Ocean Marine Science Association in partnership with the Coastal Resources Center at the University of Rhode Island led the development of a voluntary professional certification program tailored to the needs of MPA practitioners in the region and supported by MPA management agencies which would need to integrate the program into their management objectives.

The overall goal of the WIO Certification of MPA Professionals (WIO-COMPAS) program is to establish a professional association that provides a framework to promote competence, professionalism, leadership, innovation and ethical conduct in MPA management, which recognises those individuals working in MPAs whose knowledge and skills currently meet a clearly defined professional standard. The program then further enhances individuals' knowledge and skills through dialogue and networking with other professionals as a way to share new ideas and think about MPA management and coastal governance. The certification process is not about training, though the competencies provide guidance on specific gaps that training providers can address to assist individuals in achieving competence.

WIO-COMPAS is a professional certification program that:

- has set internationally recognised standards of competencies for MPA professionals at three levels: policy and planning, site management, and marine field operations
- rigorously assesses professionals' performance in these competencies
- formally recognises and certifies MPA professionals whose performance meets the standards
- encourages MPA management agencies to base their recruitment and training of MPA personnel on these competency standards
- strengthens the career path for MPA professionals

- hosts a regional network of MPA professionals to share learning and experiences between MPAs and between countries
- promotes leadership development and adherence to a professional code of ethics
- promotes professional growth through exchanges, short courses and sharing the latest thinking, research and trends in the field of MPA management.

More than 60 leading MPA professionals in the WIO region have completed the certification program. An evaluation of the program stated that 'a large number of the MPA [professionals] have significantly changed their approach to MPA management as evidenced by their greater confidence in tackling management issues; encouraging stakeholder collaboration and community-based management; assessing their staff performance; and better handling of park visitors' (Sisitka et al. 2013:27).

WIO-COMPAS is now supporting MPA management agencies in strengthening their capacity development systems and formalising the relationship with WIO-COMPAS as a third-party certifier. Future plans include expanding WIO-COMPAS into site certification to address organisational performance.

attitude—often included under the concept of soft skills. Many professions use certification as a methodology for attesting to the skill level of the professional in their area of expertise. Certifications are not intended to teach an individual how to 'become' a certain type of professional, but rather measure that individual's knowledge and skills and ability to apply them in real-life professional situations. The differences between the individual who has earned a certificate and the one who has earned certification are summarised in Table 9.3. Certification recognises the certified individual as having met predetermined qualifications and signifies that the certified individual is competent to perform on the job.

A goal of certification is to standardise the credentials for excellence in a profession and to help ensure that those professionals who receive the certification speak the same (professional) language, have a common understanding of the issues and share the same concepts—even as application of these may differ and need to be adapted to accommodate differences in the geopolitical, social and economic contexts.

Table 9.3 The difference between certification and certificate qualifications

Certification	Certificate
Results from an assessment process that recognises an individual's knowledge, skills and competency in a particular specialty	Results from an educational process
Typically requires professional experience	For both newcomers and experienced professionals
Awarded by a third-party, standard-setting organisation	Awarded by educational programs or institutions
Indicates mastery/competence as measured against a defensible set of standards—usually by application, exam, demonstration, and so on	Indicates successful completion of a course or series of courses with a specific focus (different than a degree-granting program)
Standards set through a defensible, industry-wide process (job analysis/role delineation), which results in an outline of required knowledge and skills	Course content determined by the specific provider or institution; not necessarily standardised
Typically results in credentials to be listed after one's name	Usually listed on a résumé detailing education
Has ongoing requirements in order to maintain validity; holder must demonstrate they continue to meet requirements	Demonstrates knowledge of course content at the end of a set period

Source: AALNC (2014)

What are the benefits of certification?

Most governments require a certification program to be formally recognised before it can provide salary rewards for certification. Working on a voluntary basis, management agencies can include certification in their consideration for promotions, work placement and short-term special assignments based on merit. Management agencies also value the third-party assessment process that avoids conflicts of interest when a supervisor must decide the fate of their staff—especially when incentives are involved.

Who are the certifying bodies?

Is this a voluntary or mandatory program? If voluntary, any established organisation can provide the certification. The quality and rigour of the assessment as judged by the protected area professionals and organisations are the best measures of value.

What is being certified?

Certification can be narrow (for instance, handling a firearm) or broad (such as protected area site management). The important criterion is that the certification provides meaning to the individual as well as the organisation. Certifications can also be for an individual or an organisation. We do not recommend certification for narrow skills such as handling firearms, boat captaincy or law enforcement. There are existing national bodies that already certify competence in these specific skills. The complexity of protected area

management demands certification for competencies across a broad skill set, which is often not assessed in existing sectors.

What are the levels of certification?

Once the specific type of certification is outlined, the next decision is to determine how many levels or types of certification to offer. Competencies vary across a protected area organisation and require unique skills and knowledge related to the position. Major job roles include policy and planning, site management and field operations.

What are the specific competencies?

For each certification level, a set of competencies with varying standards is required to provide the basis for the assessment. Each competence should have a standard, range statement and weighting/scoring allocated to it. Competencies will likely vary in each region or country though a ranger is still a ranger no matter which country they operate in, and thus most competencies will be the same internationally. A key factor to consider is that while more competencies would provide details to the position, this also increases the complexity of the assessment for candidates and assessors alike. There is a fine balance to ensure that a minimum of competencies covers the major aspects of a professional performing at that level.

Which assessment instruments to use?

There are various methods—referred to as assessment instruments—that can accurately assess a person's competence. The selection of instruments should be evaluated based on the key qualities of validity, feasibility and relevance to actual practice.

How to score competence?

The process of scoring competencies can become complex. Some competencies might be more significant than others and thus require some sort of weighting system. What is a passing score? Will all competence areas require a passing score or just the overall average?

What are the certification renewal requirements?

Like all professionals, one must continually improve to stay current with advancements in the profession. Consider how long a certification lasts and what are the requirements that a certified person must meet in order to be renewed. It is important to clarify that certification is different from the traditional certificate offered by academic institutions, as shown in Table 9.3 (Squillante et al. 2010).

Lessons on certification

While certification is new to the protected area community, early results indicate that individuals strongly value the certification and overall professionalisation of their field for reasons of career development, staff retention and motivation. Organisations also value the full capacity development system embodied in a professional program as it aligns organisational objectives with staff development while using many of their existing management systems. While the establishment of certification programs does include upfront development costs, there are a few models that can be rapidly adapted and result in certifications that are equal to the costs of traditional short courses but with significant impacts to individuals and organisations. All of the concepts and innovations addressed in this chapter can be organised into a larger capacity development system with meaningful feedback loops. Professionalising the protected area community provides that structure with certification as just one piece of the program.



Training, Montes Azules Biosphere Reserve, south-east Mexico

Source: Eduard Müller

Learning resources

Today through the Internet there is access to a wealth of information related to protected areas, nature conservation, biodiversity, connectivity conservation, and so on. The IUCN is renowned for its best-practice guidelines (see Chapter 2; IUCN 2014b). Multimedia resources are also available (IUCN 2014c). IUCN publications cover many different aspects, from conserving nature and developing capacity (this book) to achieving quality, respecting people and offering solutions. It also publishes the *Parks* journal electronically. *Parks* is the ideal instrument for exchanging experiences and encourages not only scientists but also practitioners from around the world to share their experiences.

Many other organisations also offer a wealth of publications and resources (Table 9.4). It is important to know that today there are many resources other than printed or electronic documents. Multimedia resources are abundant and in many cases are available in many languages other than just English. Important efforts have been made to establish learning portals, such as Conservation Training (CT 2014) or the CBD e-learning modules (CBD 2014b). Another very useful tool is Protected Planet, a UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)/IUCN portal on protected areas (Protected Planet 2014).

Table 9.4 References and training materials for protected areas

African Wildlife Foundation	(AWF 2014)
American Museum of Natural History Network of Conservation Educators and Practitioners	(AMNH 2014)
Ashoka organisation	(Ashoka 2014)
Audubon organisation	(Audubon 2014)
Australian Institute of Aboriginal and Torres Strait Islander Studies	(AIATSIS 2014)
Birdlife International	(Birdlife International 2014)
Conservation Finance Alliance	(CFA 2014)
Conservation International	(CI 2014)
Conservation Measures Partnership	(CMP 2014)
Conservation Training	(CT 2014)
Conserve Online	(CO 2010)
Convention on Biological Diversity	(CBD 2014c)
Cornell Center for Wildlife Conservation	(CCWC 2014)
Equilibrium Research	(Equilibrium Research 2014)
Global Environment Facility	(GEF 2014)
Global Transboundary Conservation Network	(GTCN 2011)
International Centre for Environmental Management	(ICEM 2014)
International Ranger Federation	(IRF 2014)
Library of Congress	(LC 2014)
National Aeronautics and Space Administration	(NASA 2013)
Natural England	(Natural England 2014)
Natural Justice	(Natural Justice 2011)
<i>Nature Conservation journal</i>	(Pensoft Publishers 2014)
Ramsar Convention on Wetlands	(Ramsar 2014)
Routledge Environment and Sustainability/Earthscan	(Routledge 2014)
Sierra Club, BC	(Sierra Club 2014)
The Nature Conservancy	(TNC 2014)
United Nations Educational, Scientific and Cultural Organisation	(UNESCO 2014)
United Nations Environment Programme	(UNEP 2014)
United Nations World Tourism Organisation	(UNWTO 2014)
United States Fish and Wildlife Service	(USFWS 2014)
United States Forest Service	(USFS 2014)
Wetlands International	(WI 2014)
Wild Foundation	(Wild Foundation 2014)
Wildlife Conservation Society	(WCS 2014)
World Bank	(World Bank 2014)
World Wide Fund for Nature	(WWF 2014)
YouTube	(YouTube 2014)



Amboro National Park, Bolivia

Source: Eduard Müller

Conclusion

Today's protected areas require a competent, motivated and adequately resourced workforce that has access to the most current ideas and best practices developed through decades of lesson learning around the world. Protected areas are complex institutions that are home to much of the world's remaining natural capital comprising landscapes, ecosystems and biodiversity, valued in trillions of dollars and a vital component of natural solutions to climate and global change. Development and climate change threats to protected areas are increasing in most parts of the world. The search for sustainable-use alternatives requires clearly defined strategies that fully integrate all different stakeholders and true interdisciplinary approaches. Biodiversity loss is critical and can severely hamper the ability of ecosystems to continue to provide essential ecosystem services for life. Protected areas are the most important natural storage for biological and genetic diversity, required to restore ecosystems and recover degraded lands. Food security, health, the economy and general wellbeing are all dependent on functional landscapes that can be achieved through connectivity conservation.

Though not yet adequately recognised, this complexity in protected area management and the integration of protected areas with the broader landscapes and seascapes require the establishment of adequate career paths to allow staff to fully develop the competencies for the different professional levels required to adequately deal with the diversity of issues that influence management and the achievement of long-term conservation goals. Today's information and communication technology linked to new learning methods allows us to go beyond

traditional capacity-building approaches. The new learning paradigm, where knowledge-based face-to-face teaching is being replaced with competence-based online or blended learning, together with the increase in internet coverage in most of the globe, pose new challenges to those involved in capacity development, but at the same time offer a wide array of new possibilities that can help in developing capacity, knowledge management, collective knowledge construction and the required increase in capacity at individual, organisational, institutional and societal levels. The trend towards professional certification instead of obtaining certificates is also present in protected area capacity development, and if the same trend occurs as in other professional areas, we should expect an increase in these processes.

Currently, opportunities for professional education in protected area management are limited, and professionalising protected area management throughout the globe may seem an impossible achievement. The WCPA has taken the lead to facilitate this task, with the establishment of GPPAM, which is in the process of identifying global competencies that are being used for competence-based curriculum and course development to be used by academic and training institutions worldwide to strengthen or develop their own programs with permanent feedback loops, which is possible due to the increased communication possibilities we have today. The IUCN's longstanding efforts to provide training and education materials will be enhanced through this increased capacity. This book is part of this effort, and the truly global approach sets a solid base for future development. A description of some institutions providing protected area capacity development is provided in Appendix 9.1.

References



Recommended reading

- Acevedo, C., Vásquez, N. and Robles, G. (2006) *Capacitación para el manejo de áreas protegidas en América Latina; Una aproximación a la demanda de los actores*, Report from the Protected Area Alliance for Conservation Learning, CATIE, CCT, UPeace, OTS, ELAP-UCI and ICOMVIS, San Jose, Costa Rica.
- African Wildlife Foundation (AWF) (2014) Website, African Wildlife Foundation, Washington, DC. <www.awf.org/>
- American Association of Legal Nurse Consultants (AALNC) (2014) *Certification vs. Certificate*, AALNC, Chicago. <www.aalnc.org/?page=certificate>
- American Museum of Natural History (AMNH) (2014) Website, American Museum of Natural History, New York. <ncep.amnh.org>
-  Andresen, L., Boud, D. and Cohen, R. (1999) 'Experience-based learning', in G. Foley (ed.) *Understanding Adult Education and Training*, 2nd edn, pp. 225–39, Allen & Unwin, Sydney. <complexworld.pbworks.com/f/Experience-based%20learning.pdf>
-  Appleton, M. R., Texon, G. I. and Uriarte, M. T. (2009) *ASEAN Guidelines on Competence Standards for Protected Area Jobs*, ASEAN Regional Centre for Biodiversity Conservation, Los Baños, Philippines.
- Appleton, M. R., Texon, G. I. and Uriarte, M. T. (2003) *Competence Standards for Protected Area Jobs in South-East Asia*, ASEAN Regional Centre for Biodiversity Conservation, Los Baños, Philippines.
- Appleton, M. R., Ioniță, A., Nițu, R. and Stanciu, E. (2014) *Assessment of Capacity Development Needs of Protected Area Staff in Eastern Europe*, PROPARK Foundation for Protected Areas, Brasov, Romania. <www.propark.ro/en/publicatii/assessment-of-capacity-development-needs-of-protected-area-staff-in-eastern-europe-187.html>
- Aronson, J., Renison, D., Rangel-Ch., J. O., Levy-Tacher, S., Ovalle, D. and Del Pozo, A. (2007) 'Restauración del Capital Natural: sin reservas no hay bienes ni servicios', *Ecosistemas* 16(3): 15–24.
- Ashoka (2014) Website, Ashoka, Arlington, VA. <www.ashoka.org/>
- Atherton, J. S. (2013) *The Experiential Learning Cycle*. <www.learningandteaching.info/learning/experience.htm>
- Audubon (2014) *Audubon Magazine*, New York. <mag.audubon.org/multimedia>
- Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) (2014) *AIATSIS Research Program: Peer-reviewed publications and other research resources*, AIATSIS, Canberra. <www.aiatsis.gov.au/research/publications.html>
- Balakumaran, S. (2013) 'Enhancement of humans' potential through knowledge management', *Research Journal of Social Science & Management* 2(11): 137–41.
- Bandura, A. (1977) *Social Learning Theory*, Prentice-Hall, Englewood Cliffs, NJ.
- Baser, H. and Morgan, P. (2008) *Capacity, change and performance study report*, ECDPM Discussion Paper 59B, European Centre for Development Policy Management, Maastricht.
- Birdlife International (2014) Website, Birdlife International, Cambridge, UK. <www.birdlife.org/>
- Capacity.org (2013) *People Matter: Introduction to capacity development*. <capacity.org/capacity/opencms/en/topics/introduction-to-cd/index.html>
- Coates, D. (2006) *People Skills Training: Are you getting a return on your investment?* <www.praxisconsulting.org/PeopleSkills.pdf>
- Conner, M. L. (2007) 'Learning from experience', in *Ageless Learner, 1997–2007*. <agelesslearner.com/intros/experiential.html>
- Conservation Finance Alliance (CFA) (2014) Library. <conservationfinance.org/library.php>
- Conservation International (CI) (2014) Website, Conservation International, Arlington, VA. <www.conservation.org>
- Conservation Measures Partnership (CMP) (2014) Website. <www.conservationmeasures.org/>
- Conservation Training (CT) (2014) Website, Conservation Training, Arlington, VA. <www.conservationtraining.org/>

- Conserve Online (CO) (2010) *Measures: Key reports, sites and materials from Conserve Online*. <www.conservationgateway.org/Pages/COL.aspx?Src=>>
- Convention on Biological Diversity (CBD) (2014a) *Programme of Work on Protected Areas: Goal 3.2*, Secretariat of the Convention on Biological Diversity, Montreal. <www.cbd.int/protected/pow/learnmore/intro/>>
-  Convention on Biological Diversity (CBD) (2014b) *Capacity Action Planning for Protected Areas: A quick guide for protected area practitioners*, Secretariat of the Convention on Biological Diversity, Montreal. <www.cbd.int/doc/pa/tools/Capacity%20action%20planning%20for%20protected%20areas.pdf>
- Convention on Biological Diversity (CBD) (2014c) Website, Secretariat of the Convention on Biological Diversity, Montreal. <www.cbd.int/>>
- Coomes, O. T., Abizaid, C. and Lapointe, M. (2009) 'Human modification of a large meandering Amazonian river: genesis, ecological and economic consequences of the Masisea cutoff on the central Ucayali, Peru', *Ambio* 38(3): 130–4.
- Cornell Centre for Wildlife Conservation (CCWC) (2014) Website, Cornell University, Ithaca, NY. <www.cwc.cornell.edu/>>
- Cornford, I. R. (1997) 'Competency-based training: an assessment of its strengths and weaknesses by New South Wales vocational teachers', *Australian and New Zealand Journal of Vocational Education Research* 5(1): 53–76.
-  Cornford, I. (1999) 'Skill learning and the development of expertise', in J. Athanasou (ed.) *Adult Educational Psychology*, p. 266, Social Science Press, Katoomba, NSW.
- Costanza, R., d'Arge, R., de Groot, R., Farber, S., Grasso, M., Hannon, B., Limburg, K., Naeem, S., O'Neill, R. V., Paruelo, J., Raskin, R. G., Sutton, P. and van den Belt, M. (1997) 'The value of the world's ecosystem services and natural capital', *Nature* 387: 253–60.
- Costanza, R., de Groot, R., Sutton, P., van der Ploeg, S., Anderson, S. J., Kubiszewski, I., Farber, S. and Turner, R. K. (2014) 'Changes in the global value of ecosystem services', *Global Environmental Change* 26(2014): 152–8.
- Council on Education for Public Health (2006) *Competencies and Learning Objectives*, Council on Education for Public Health, Silver Spring, MD. <ceph.org/assets/Competencies_TA.pdf>
- Coursera (2014) Coursera website, Stanford University, Stanford, Calif. <www.coursera.org/>>
- Diemont, S. A. W., Bohn, J., Rayome, D., Kelsen, S. and Cheng, K. (2011) 'Comparisons of Mayan forest management, restoration, and conservation', *Forest Ecology and Management* 261: 1696–705.
- don Carlos, A. W., Teel, T., Manfredo, M. F. and Mathur, V. B. (2013) 'Building capacity to enhance protected area management effectiveness: a current needs assessment for the Asian context', *George Wright Forum* 30(2). <www.georgewright.org/302doncarlos.pdf>
- Egate, A. and Groome, D. (2005) *An Introduction to Applied Cognitive Psychology*, Psychology Press, New York.
- Environmental Careers Organization (ECO Canada) (2014) *Occupational Standards*, Environmental Careers Organization, Calgary, Alberta. <www.eco.ca/occupational-standards/>>
- Equilibrium Research (2014) Website, Equilibrium Research, Bristol, UK. <www.equilibriumresearch.com/>>
- Global Environment Facility (GEF) (2014) Protected area publications, Global Environment Facility, Washington, DC. <www.thegef.org/gef/taxonomy/term/251>
- Global Transboundary Conservation Network (GTCN) (2011) Website. <www.tbpa.net/page.php?ndx=77>
- Gombos, M., Arrivillage, A., Wusinich-Mendez, D., Glazer, B., Frew, S., Bustamante, G., Doyle, E., Vanzella-Khourie, A., Acosta, A. and Causey, B. (2011) *A Management Capacity Assessment of Selected Coral Reef Marine Protected Areas in the Caribbean*, Commissioned by NOAA, CRCP, GCFI and CaMPAM, Caribbean Challenge and Gulf and Caribbean Fisheries Institute, Fort Pierce, Fla. <campam.gcfi.org/CapAssess/CaMPAMCapacityAssessment2011.pdf>

- Gordon, J. and Chadwick, K. (2007) *Impact assessment of capacity building and training: assessment framework and two case studies*, CGIAR Impact Assessment Series Report No. 44, Consultative Group on International Agricultural Research, Montpellier, France.
- Hailey, J., James, R. and Wrigley, R. (2005) *Rising to the Challenges: Assessing the impacts of organisational capacity building*, The International NGO Training and Research Centre, Oxford.
- Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. (2006) *Evaluating Effectiveness: A framework for assessing management effectiveness of protected areas*, 2nd edn, IUCN, Gland.
- International Centre for Environmental Management (ICEM) (2014) *Materials*, International Centre for Environmental Management, Hanoi. <www.icem.com.au/02_contents/06_materials/06-04-pad-reports.htm>
- International Labour Organisation (ILO) (2006) *Guidelines for Development of Regional Model Competency Standards (RMCS)*, International Labour Organisation, Bangkok. <www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_bk_pb_234_en.pdf>
- International Ranger Federation (IRF) (2000) *Resolution of the Third World Congress of the International Ranger Federation, Sept. 10–17, 2000, Kruger National Park, South Africa*, Association of National Park Rangers, Golden, CO. <www.internationalrangers.org/wp-content/uploads/2012/06/Kruger-Resolution_2000_english.pdf>
- International Ranger Federation (IRF) (2014) Website, International Ranger Federation, Sydney. <internationalrangers.org/>
- International Telecommunication Union (ITU) (2014) Website, International Telecommunication Union, Geneva. <www.itu.int/en/Pages/default.aspx>
- International Union for Conservation of Nature (IUCN) (2014a) *Global Protected Areas Programme*, IUCN, Gland. <www.iucn.org/about/work/programmes/gpap_home/gpap_capacity2/>
- International Union for Conservation of Nature (IUCN) (2014b) *Reports and Publications*, IUCN, Gland. <www.iucn.org/about/work/programmes/gpap_home/gpap_capacity2/gpap_bpg/>
- International Union for Conservation of Nature (IUCN) (2014c) *Multimedia Reports*, IUCN, Gland. <www.iucn.org/knowledge/multimedia/>
- International Union for Conservation of Nature World Commission on Protected Areas (IUCN WCPA), Southeast Asia Regional Forum, Association of South-East Asian Nations Regional Centre for Biodiversity Conservation, Ambassador and Philippines Department of Environment and Natural Resources (2003) *Building on Lessons from the Field: Protected area management experiences in Southeast Asia. Proceedings of the IUCN-World Commission on Protected Areas 3rd Southeast Asia Regional Meeting, April 1–5, 2003, Edsa Shangri-la, Mandaluyong City, Philippines*, IUCN, Gland.
-  Kay, M., Franks, T. and Tato, S. (2008) *Capacity Needs Assessment Methodology and Processes*, Food and Agriculture Organisation, Rome. <[ftp.fao.org/docrep/fao/008/y5899e/y5899e01.pdf](ftp://ftp.fao.org/docrep/fao/008/y5899e/y5899e01.pdf)>
- Kirkpatrick, D. (1998) *Evaluating Training Programs: The four levels*, Berrett-Koehler Publishers, San Francisco.
- Klein-Collins, R. (2013) *Sharpening Our Focus on Learning: The rise of competency-based approaches to degree completion*, National Institute for Learning Outcomes Assessment, University of Illinois at Urbana-Champaign. <learningoutcomesassessment.org/documents/Occasional%20Paper%2020.pdf>
- Knapp, B. (1963) *Skill in Sport: The attainment of proficiency*, Routledge & Kegan Paul, London.
- Kolb, D. A. (1984) *Experiential Learning: Experience as the source of learning and development*, Prentice Hall, Englewood Cliffs, NJ.
-  Kopylova, S. L. and Danilina, N. R. (eds) (2011) *Protected Area Staff Training: Guidelines for planning and management*, IUCN Best Practice Guidelines, Gland.
- Kundu, S. (2013) 'Knowledge management: value, technologies and its implications', *International Journal of Computer Engineering & Technology* 4(5): 182–8.
- Lantra (2014) *Environmental Conservation: National occupational standards*, Lantra, Coventry, UK. <www.lantra.co.uk/NOS/atech>

- Leverington, F., Costa, K. L., Pavese, H., Lisle, A. and Hockings, M. (2010) *Management Effectiveness Evaluation in Protected Areas: A global study*, 2nd edn, University of Queensland, Brisbane.
- Levy-Tacher, S., Aguirre, J. R., Martínez, M. M. and Durán, A. (2002) 'Caracterización del uso tradicional de la flora espontánea en la comunidad Lacandona de Lacanhá, Chiapas-México', *Interciencia* 27(10): 512–20.
- Library of Congress (LC) (2014) *Classroom Materials*, Library of Congress, Washington, DC. <www.loc.gov/teachers/classroommaterials/themes/nature/exhibitions.html>
- MacInnis, C. (1995) 'Holistic and reductionist approaches in special education: conflicts and common ground', *McGill Journal of Education*, 30(1): 7–20.
- Merriam-Webster Dictionary (2012) *Merriam-Webster Dictionary Online*. <www.merriam-webster.com/dictionary/skill>
- Miller, G. E. (1990) 'The assessment of clinical skills/competence/performance', *Academic Medicine* 65(Supplement): S63–7.
- Mobbs, R. (2014) *How to be an E-Tutor*, Graduate School, University of Leicester, UK. <www2.le.ac.uk/departments/gradschool/training/eresources/teaching/theories/kolb>
- National Aeronautics and Space Administration (NASA) (2013) *Multimedia*, NASA, Washington, DC. <www.nasa.gov/multimedia/#.Uxdt4f5Nio>
- National Park Service (NPS) (1995) *Essential Competencies for National Park Service Employees*, National Park Service, US Department of the Interior, Washington, DC. <www.nps.gov/training/npsonly/npscom.htm>
- National Training Agency-Trinidad and Tobago (NTATT) (2014) *Maintenance of Parks and Protected Terrestrial Areas: Level 2*, National Training Agency-Trinidad and Tobago, Chaguanas. <ntatt.org/images/stories/PDF/ROS/Maintenance%20of%20Parks%20and%20Protected%20Terrestrial%20Areas%20Level%202.pdf>
- Natural England (2014) Website, Natural England, Sheffield, UK. <www.naturalengland.org.uk/>
- Natural Justice (2011) *Protected Areas*, Natural Justice, Cape Town. <naturaljustice.org/our-work/international-advocacy/biodiversity/protected-areas>
- Network of Conservation Educators and Practitioners (NCEP) (2014) *Network of Conservation Educators and Practitioners Program*, American Museum of Natural History, New York. <ncep.amnh.org/index.php?lang=fr&globalnav=about§ionnav=>>
- New Zealand Qualifications Authority (NZQA) (2014) *Qualifications and Standards*, NZQA, Government of New Zealand, Wellington. <www.nzqa.govt.nz>
- Nielsen, G. (2011) Capacity development in protected area management, Diploma thesis, University of Greifswald Institute for Geography and Geology, Greifswald, Germany.
- North, A. (2010) *Introduction to Performance Appraisal*, Archer North & Associates, Australia. <www.performance-appraisal.com/intro.htm>
-  Nuffic (2014) *The Five Capabilities Approach in Capacity Development of Organisations*, Netherlands Organisation for International Cooperation in Higher Education, The Hague. <www.nuffic.nl/en/library/the-five-capabilities-approach-in-capacity-building-of-organisations.pdf/view?searchterm=5%20capabilities>
- Organisation for Economic Cooperation and Development (OECD) (2006) *The Challenge of Capacity Development: Working towards good practice*, OECD, Paris.
- Ostaszewski, N., Moisey, S. and Reid, D. (2011) 'Applying constructionist principles to online teacher professional development', *The International Review of Research in Open and Distance Learning* 12(6): 143–56. <www.irrodl.org/index.php/irrodl/article/view/976/1958>
- Oxendine, C., Robinson, J. and Willson, G. (2004) 'Experiential learning', in M. Orey (ed.) *Emerging Perspectives on Learning, Teaching, and Technology*, Department of Educational Psychology and Instructional Technology, University of Georgia, Athens. <projects.coe.uga.edu/epltt/>
- Pensoft Publishers (2014) *Nature Conservation*, Pensoft Publishers, Sofia. <www.pensoft.net/journals/natureconservation/>

- Phani, C. R. (2007) 'The top 60 soft skills at work', *rediff News*, 8 January 2007. <www.rediff.com/getahead/2007/jan/08soft.htm>
- Protected Planet (2014) Website. <www.protectedplanet.net/>
- Ramsar Convention on Wetlands (Ramsar) (2014) Website. <www.ramsar.org>
- Routledge (2014) Website, Routledge Environment and Sustainability, Abingdon, Oxon. <www.routledge.com/sustainability/>
-  Sanchez, V. A. and Ruiz, M. (eds) (2008) *Competence-Based Learning*, University of Deusto, Bilbao.
- Sierra Club (2014) Parks and protected area publications, Sierra Club of BC Foundation, Victoria, British Columbia. <www.sierraclub.bc.ca/publications/parks-protected-areas-publications>
- Siscawati, M. and Zakaria, R. Y. (2010) *Capacity building needs assessment for community forestry development in Indonesia*, Summary Report, ed. C. Veer, The Center for People and Forests, Bangkok. <www.recoftc.org/site/uploads/content/pdf/CBNA%20Indonesia%20Report%20Short%20Version_365.pdf>
- Sisitka, L., Ricci, G. and Squillante, L. (2013) Certifying Marine Protected Area Professionals: Reflections on the first generation and setting a new course, WIO-COMPAS, Zanzibar, Tanzania.
- Smith, L. (2012) '5 education providers offering MOOCs now or in the future', *Education DIVE*, 31 July. <www.educationdive.com/news/5-mooc-providers/44506/>
-  Squillante, L. J., Ricci, G., Francis, J. and Sisitka, L. (2010) 'Innovations in capacity building: certification of marine protected area professionals', *Coastal Management* 38(3): 272–90.
- Suryanarayana, V. and Adapa, R. (2013) 'Role of knowledge management in business environment', *International journal of Innovative Research in Management* 2(2): 53–8.
- Templeton, D. J. (2009) *A Framework for Assessing the Impact of Capacity Building*, Australian Centre for International Agricultural Research, Canberra.
- The Learning Institute and The Center for People and Forests (RECOFTC) (2011) *Capacity development needs assessment for community forestry and community protected areas in Cambodia*, Summary Report, The Center for People and Forests, Bangkok. <www.recoftc.org/site/uploads/content/pdf/Cambodia_CBNA%20Report%20Summary_12282011_Final_Text_200.pdf>
- The Nature Conservancy (TNC) (2014) Website, The Nature Conservancy, Arlington, VA. <www.nature.org/>
- Ubels, J., Acquaye-Baddoo, N.-A. and Fowler, A. (2010) *Capacity Development in Practice*, Earthscan, London.
- United Nations Development Group (UNDG) (2009) *Capacity Assessment Methodology*, UNDG, New York. <www.undg.org/docs/8948/Capacity-Development-UNDG-August-2009.pdf>
- United Nations Development Programme (UNDP) (2007) *Capacity Assessment Methodology Users' Guide*, United Nations Development Programme, New York. <europeandcis.undp.org/uploads/public/File/Capacity_Development_Regional_Training/UNDP_Capacity_Assessment_Users_Guide_MAY_2007.pdf>
- United Nations Development Programme (UNDP) (2008) *Capacity Assessment Practice Note*, UNDP, New York. <www.unpcdc.org/media/12068/undp_practice_note_on_ca_october-2008.pdf>
- United Nations Development Programme (UNDP) (2009) *Capacity Assessment Methodology*, UNDP, New York. <www.undg.org/docs/8948/Capacity-Development-UNDG-August-2009.pdf>
-  United Nations Development Programme (UNDP) (2014) *A Training Guide to Capacity Assessment*, UNDP, New York. <regionalcentrebangkok.undp.or.th/practices/capacitydevelopment/documents/TRAININGGUIDETOCAPACITYASSESSMENT.pdf>
- United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2014) Online resources, UNESCO, Paris. <www.unesco.org/new/en/unesco/resources/>
- United Nations Environment Programme (UNEP) (2014) *UNEP Knowledge Repository*, UNEP, Nairobi. <www.unep.org/publications/>

United Nations World Tourism Organisation (UNWTO) (2014) *Ecotourism and Protected Areas*, UNWTO, Madrid. <sdtd.unwto.org/en/content/ecotourism-and-protected-areas>

United States Fish and Wildlife Service (USFWS) (2014) Website, Fish and Wildlife Service, Washington, DC. <https://www.fws.gov/>

United States Forest Service (USFS) (2014) Multimedia, Forest Service, US Department of Agriculture, Washington, DC. <www.fs.usda.gov/main/conservationeducation/programs/multimedia>

University of Iowa (2014) *Experience-Based Learning*, University of Iowa, Iowa City. <honors.uiowa.edu/academics/experience-based-learning>

University of North Carolina (2014) *Introduction to Knowledge Management*, University of North Carolina at Chapel Hill. <www.unc.edu/~sunnyliu/inls258/Introduction_to_Knowledge_Management.html>

Walters, H. (2007) Capacity development, institutional change and theory of change: what do we mean and where are the linkages, Manuscript.

Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS) (2014) Website. <www.wio-compas.org/>

Wetlands International (WI) (2014) Website. <www.wetlands.org/>

White, R. W. (1959) 'Motivation reconsidered: the concept of competence', *Psychological Review* 66(5): 297–333.

Wild Foundation (2014) Website. <www.wild.org/>

Wildlife Conservation Society (WCS) (2014) Website. <www.wcs.org/>

Wildlife Institute of India (2010) *Annual Report of the Wildlife Institute of India 2009–2010*, Wildlife Institute of India, Dehradun.

World Bank (2014) *Publications*, The World Bank, Washington, DC. <publications.worldbank.org/>

World Wide Fund for Nature (WWF) (2014) *Publication and Resources*, WWF, Washington, DC. <wwf.panda.org/about_our_earth/all_publications/>

YouTube (2014) Website. <www.youtube.com>

Appendix 9.1: Example capacity development organisations

Africa: Southern African Wildlife College

The Southern African Wildlife College was established in 1997 to serve the training needs of conservation organisations, becoming a Southern Africa Development Community recognised centre of specialisation in 2007 for its role in capacity-building for staff of conservation areas in the region. It is also a recognised centre of occupational excellence and is accredited with the relevant training authority in South Africa.

The college's programs are designed as a direct response to the needs of the conservation industry, and the college prides itself on the monitoring and evaluation of programs conducted every few years in order for it to stay current with its offerings. Of major importance was the college's development of two higher education qualifications for registration with the South African Qualifications Authority. It also has recently opened a division specifically focused on developing field rangers at different levels for protected areas. This division now encompasses the African Field Ranger Training Services, which had more than 20 years of specialised training and was a well-known and respected training provider in the industry. Of importance to the increased poaching scourge in the early part of the 21st century, this division is able to respond rapidly to needs and has developed training capacity across different languages specialising in anti-poaching and the professionalisation of field rangers.

The Southern African Wildlife College opened the Innovation and Development division, which tests best practice and new concepts for implementation across the region. Of special interest is the role of communities in ensuring sustainable use of natural resources and allowing them to understand the true value and governance of benefit flows.

Australia–Oceania–Asia: Protected area learning and research collaboration

The WCPA has identified a need in Asia and Oceania for capacity building to equip protected area practitioners with the necessary knowledge, skills and competencies for effective management of protected area systems on land and sea. A consortium of protected area practitioners

from universities, government, private protected areas and conservation organisations has been established to meet this need. Founding partners include the University of Tasmania, Tasmanian Land Conservancy, Tasmanian Parks and Wildlife Service, Murdoch University, Charles Darwin University, James Cook University, Parks Australia, Parks Victoria, the Secretariat of the Pacific Region Environment Program and the WCPA. The collaboration continues to grow, with the recent involvement of the University of the South Pacific, the Wildlife Institute of India and others. The purposes of the collaboration are, among other things, to:

- provide accredited training programs that meet the needs of the protected area sector, focusing on the Australasian, Western Pacific and Asian regions
- build international capacity and collaboration in protected area management and training to support continuous learning and improvement
- foster, coordinate and disseminate protected area research.

In its first year in 2015, the collaboration will provide short courses, graduate certificate and masters courses delivered by the University of Tasmania, James Cook University and Murdoch University. These courses, and future offerings developed under the collaboration, will specifically address the competence standards identified by GPPAM (Box 9.6).

Russia: Environmental Education Centre for Zapovedniks

The Environmental Education Centre for Zapovedniks is a Russian NGO established in 1996 to raise public awareness and support for protected areas. Its mission is to bring together conservation professionals and others who have a common interest in fostering public support for Russia's state nature reserves and national parks.

For 18 years (to 2014), the Centre for Zapovedniks has been organising capacity-building events for protected area managers, including training courses in different aspects of protected area management, professional study tours and seminars. The first success story of the centre was the development of a new specialisation for protected areas in Russia, 'Specialists in Environmental Education on Protected Areas'. The Government has approved this new specialty for protected areas and, since 2005, the centre has been the only training centre for protected areas in Russia. The curricula of the training courses are adjusted annually based on the needs of staff of protected areas, in agreement with the Ministry of Natural Resources and Environmental Protection,

which manages the federal system of protected areas. The centre initiated and promoted the establishment of training centres for protected area staff in Ukraine, Kazakhstan and Belarus (within the project of the UNEP Global Environment Facility in 2005–08). Since 2000, all newly appointed directors of national parks and reserves in Russia are trained in seminars at the Centre for Zapovedniks. The seminars are organised in Moscow, where the Centre for Zapovedniks is based, as well as in protected areas throughout Russia. The centre's other areas of work include development of ecological trails and visitor centres in national parks and other protected areas, publication of best practices in environmental education, tourism in protected areas, sustainable livelihoods, teaching ecology to children and volunteer camps, and other work.

Latin America and the Caribbean: Latin American School for Protected Areas, University for International Cooperation

The University for International Cooperation (UCI) was established in Costa Rica in 1994 to educate professionals to lead changes required in economic, environmental, sociocultural and political development in Latin America and the Caribbean with students from close to 60 countries. UCI is known for its innovative programs as well as its extensive and pioneering experience with online education. In 1997, through the UCI's Latin American School for Protected Areas (ELAP), one of the first professional degree programs in protected area management was established. Today UCI offers innovative graduate programs in many fields related to protected areas: coastal and ocean management, connectivity conservation, environmental law, ecosystem-based adaptation, ecological economics, climate change adaptation and risk management, project management, and others.

The school provides education, training and technical assistance to strengthen the capacities of protected area and conservation managers in Latin America, the Caribbean and elsewhere. ELAP has developed tailor-made curricula for protected areas in several countries and has been working closely with the WCPA in the development of GPPAM, with the CBD Secretariat to support capacity building for the effective implementation of the Programme of Work on Protected Areas (PoWPA) in Latin America and also hosts the UNESCO Chair for Biosphere Reserves and Natural and Mixed World Heritage Sites. UCI is dedicated to the full implementation of GPPAM and the development of

MOOCs and other online methods to massively increase capacity for conservation, sustainable development and protected area management globally.

United States of America: Warner College of Natural Resources

Often called the ‘ranger factory’ because of its role in training generations of protected area professionals, the Warner College of Natural Resources (WCNR) at Colorado State University is among the oldest and largest natural resource faculties in the United States. The college possesses more than a century of experience in teaching, research and outreach on conservation issues, working with public and private sectors in protected area management at the local, regional, national and international levels. A hallmark of the university’s approach is linking students and graduates to employment and lifelong learning and networking opportunities. Service learning and career preparation are promoted through programs that place students in volunteer and internship positions with businesses, NGOs and government agencies working in conservation. Programs promote communities of practice through websites, social media and learning portals. The college is rapidly expanding into online and blended approaches to better meet the needs of conservationists who lack the time, resources or access to undertake traditional degree programs. Colorado State University partnered with the US National Park Service and five other universities to create a public lands leadership certificate program delivered through a blended approach for protected area managers. The university’s Centre for Protected Area Management develops teaching, research and outreach projects related to protected areas around the world. The centre’s core team associates with the global conservation community to determine needs for, design, implement and evaluate the effectiveness of capacity-building programs. Conservation training programs for practitioners and on-campus and virtual degree programs are linked, allowing graduates of short courses, such as the centre’s protected area management course, to later enrol in degree programs at Colorado State University. The centre also partners with external universities and institutes.

India: Wildlife Institute of India

The Wildlife Institute of India was set up in 1986 as an autonomous institution of the Ministry of Environment and Forests, with a mission to ‘nurture the development of wildlife science and promote its applications in the field in a manner that accords with the country’s economic and socio-cultural milieu’ (Wildlife Institute of India 2010:4).

The institute has the mandate to:

- build scientific knowledge of wildlife resources
- train personnel at various levels for conservation and management of wildlife
- carry out research relevant to management including the development of techniques appropriate to Indian conditions
- provide information and advice on specific wildlife management problems
- collaborate with international organisations on wildlife research, management and training
- develop as a regional centre of international importance on wildlife and natural resource conservation.

The institute has emerged as an eminent regional centre for academics, training and research in the field of wildlife conservation in South and South-East Asia. It is a prominent seat of learning for protected area professionals, for students pursuing postgraduate courses in wildlife science and for natural resource managers, foresters and protected area managers seeking specialised training in wildlife management. In 2014 the institute was recognised as the first UNESCO Centre on World Natural Heritage Training and Management for the Asia-Pacific region.

Global: International Ranger Federation

The International Ranger Federation is a non-profit organisation established to raise awareness of and support for the critical work that the world’s park rangers do in conserving our natural and cultural heritage. Founded in 1992, the federation has a membership of 60 ranger associations from 46 countries, on six continents. The role of the International Ranger Federation is to empower rangers by supporting them through their national or State ranger organisations. The federation exists, *inter alia*, to further the professional standards of rangers throughout the world, to share knowledge and resources, and to foster professional exchanges between rangers. It provides training, capacity building and exchange programs to its members in order to ensure park rangers are well trained and properly equipped to manage the world’s most precious wildernesses. This is done through federation member organisations with the necessary capacity to do so—for example, the PAMS Foundation and the Protected Area Workers Association—and with the support of the International Ranger Federation’s primary fundraising partner, The Thin Green Line Foundation.

This text taken from *Protected Area Governance and Management*,
edited by Graeme L. Worboys, Michael Lockwood, Ashish Kothari, Sue Feary and Ian Pulsford,
published 2015 by ANU Press, The Australian National University, Canberra, Australia.

Reproduction of this ANU Press publication for educational or other non-commercial purposes is authorised without prior written permission from the copyright holder, provided the source is fully acknowledged. Reproduction of this publication for resale or other commercial purposes is prohibited without prior written permission of the copyright holder.