INTRODUCTION

Capacity development for biodiversity conservation is a global priority. Threats to biodiversity from landscape fragmentation, rapid economic development, resource depletion, and climate change require new approaches to maintain and safeguard ecosystem processes and ecosystem services, vital for ecological integrity and human wellbeing (Naeem et al., 2009). Marine protected areas (MPAs) are established and implemented to support a number of conservation-related objectives, including maintenance of biodiversity; habitat protection and restoration; cultural and historic resource preservation; scientific research and education; delivery of ecosystem services; and sustainable multiple-use and economic development. However, the effectiveness of MPAs in achieving stated objectives is often limited by lack of capacity in key competency areas. Sustainable tourism can serve as a mechanism to aid biodiversity protection, while simultaneously affording opportunities for economic benefits and increased collaboration between protected areas and local communities. However, to effectively meet the increasing demand for nature-based tourism marine and coastal areas, MPA managers and their partners must have the appropriate capacity. Targeting conservation professionals from protected areas, state and local authorities, environmental nongovernmental organizations (ENGOs), and their partners, the International MPA Management Capacity Building Program works with hosts in Asia, Oceania, North, Central and South America, Europe, and Africa, to develop local and regional capacity for planning and management of marine protected area networks. This paper will focus primarily on the sustainable tourism training in the context of the Convention on Biological Diversity (CBD) strategic goals and Aichi 2020 Targets (Secretariat of the Convention on Biological Diversity, 2012) sustaining natural and cultural heritage resources essential to achieving environmental, social, and economic objectives.
MARINE PROTECTED AREAS AND TOURISM

Worldwide, MPAs – and MPA networks – are increasingly recognized as a valuable science-based resource management tool for supporting biodiversity and ecosystem services protection and ecosystem-based conservation (Agardy, 1997; Gaines et al., 2010). By engaging partners across multiple sites at national and regional scales, MPA networks foster communication and collaborative learning, as well as increased opportunities to address ecological, social, managerial, and economic goals (Feurt, 2011; IUCN-WCPA, 2007; IUCN-WCPA, 2008).

Participants at the Fifth World Parks Congress in Durban, South Africa articulated a ‘Global Commitment for People and Earth’s Protected Areas’ through the Durban Accord (IUCN, 2003). In alignment with previous calls to action for marine and coastal resource protection and biodiversity conservation (e.g., COP 2 Decision II/10, Jakarta Mandate; CBD COP IV/5, Programme of Work), the recommendations from the 5th World Parks Congress and Durban Action Plan called for the establishment of a global system of effectively managed and representative networks of marine and coastal protected areas by 2012 (IUCN, 2004; Vierros, 2006). However, despite an annual increase in MPA areal extent of 4.6 per cent since 1984, recent assessment of MPA coverage indicates that global representation remains less than one per cent of total ocean and two per cent of Exclusive Economic Zone extent, respectively (Wood et al., 2008; Laffoley et al., 2008). Additionally, the WCPA-Marine thematic team reported in their MPA Plan of Action that, five years after the Durban Accord and Fifth World Parks Congress, “global...
distribution of protected areas is both uneven and unrepresentative at multiple scales, and only half of the world’s Marine Protected Areas are part of a coherent network” (Laffoley, 2008, p. 3).

Tourism is one of the largest global industries, representing one of every twelve jobs (UNWTO, 2012b). The UNWTO estimates international visitors will exceed one billion globally in 2012 (UNWTO, 2012a). Much of the growth is associated with nature-based tourism in highly desirable destinations near ‘pristine’ natural environments (e.g., coastal and marine protected areas) (Balmford et al., 2009; RAMSAR, 2012). At the seventh CBD Conference of the Parties (COP), COP President Dato’ Seri Law Hieng Ding, emphasized the “need to address gaps and institute capacity-building for conservation and sustainable use of biodiversity” (IUCN, 2004, p. 13). United Nations Environment Programme (UNEP) Executive Director Klaus Töpfer also highlighted the need for capacity building and management of biological diversity, emphasizing that, “responsible and sustainable tourism [is] also necessary to ensure that the local people benefited from their biodiversity assets” (IUCN, 2004, p. 14). Sustainable tourism can capitalize on benefit opportunities generated by protected areas to achieve multiple social and environmental outcomes (e.g., CBD Aichi 2020 Targets, Millennium Development Goals) (UNWTO, 2010).

The success of MPAs and aligned sustainable tourism relies on social processes and opportunities for local stakeholders (e.g., affected parties) to access, participate in, and influence decision-making. Elkington’s (1997) ‘triple bottom line’ concept – expressed in terms of simultaneously achieving social and cultural, environmental, and economic objectives – is often suggested as a working model for sustainable tourism. However, the complexity of social-ecological systems that support sustainable (nature-based) tourism make measurement of related inputs and outputs difficult to quantify (Buckley, 2003). Eagles et al. (2002) outline potential risks in terms of observable economic, financial, social, cultural, and environmental costs associated with tourism at protected areas, but indicate that proper planning and management can help alleviate these. Pomeroy et al. (2003) suggest that institutional arrangements must be present that support an individual incentive structure (e.g., social, economic) affording benefits from co-management actions (Pomeroy et al., 2006). That is, community members must foresee an immediate or long-term benefit (e.g., personal, social, cultural, economic, environmental, quality of life) in order for them to expend their energy or resources on MPA priorities (Pomeroy et al., 2003). Successful co-management derives from institutional structure that enables recurring involvement and fosters legitimate influence and trust that benefits local communities and
sustains natural and cultural heritage for future generations.

DEMAND FOR CAPACITY DEVELOPMENT
Capacity development is a global priority for achieving both biodiversity and sustainability goals. The Global Environment Facility (GEF) and United Nations Development Program (UNDP) combined efforts under the Capacity Development Initiative (CDI) to broadly assess capacity needs and develop a conceptual framework for supporting national capacity development activities for meeting environmental priorities (Bellamy & Hill, 2010). Results from the CDI led to development of the GEF Guide for Self-Assessment of Country Capacity Needs for Global Environmental Management (2001) and Strategic Approach to Enhance Capacity Building (2003), and the National Capacity Self-Assessment (NCSA) programme. The NCSA programme fosters a consistent approach: “to identify country level priorities and needs for capacity building to address global environmental issues, in particular biological diversity, climate change, and land degradation, with the aim of catalyzing domestic and/or externally assisted action to meet those needs in a coordinated and planned manner” (GEF, 2001, p.1). More than 150 countries have received GEF funding to implement NCSA actions. A recent synthesis of NCSA activities reported that most countries list biodiversity conservation (84 per cent) and capacity development (75 per cent) as national priorities (Bellamy & Hill, 2010).

Establishment of regional MPA networks in many parts of the world has prompted growing need for training, technical assistance, and coordination to support marine, coastal, and estuarine conservation. For example, the government of Indonesia has recently proposed a plan for increasing management capacity for dozens of new MPAs over the next five years (Coral Triangle Initiative, 2012). MPA management requires mastery of a wide range of complex skills, processes, and dynamic information across multiple scales, topics, and disciplines – biological, physical, social, cultural, legal, economic, managerial, and political. In 2004, the U.S. Ocean Commission’s report – An Ocean Blueprint for the 21st Century – recommended that, “the United States should increase its efforts to enhance long-term ocean science and management capacity in other nations through grants, education and training, technical assistance, and sharing best practices, management techniques, and lessons learned” (U.S. Commission on Ocean Policy, 2004, p. 455).

Capacity is defined in several ways. The following definition of capacity, adapted by donor organizations relative to sustainable development, aligns well with the goals of the MPA capacity building programme: “… the process by which individuals, groups, organizations, institutions and societies increase their abilities to: (1) perform core functions, solve problems, define and achieve objectives; and (2) understand and deal with their development needs in a broad context and in a sustainable manner” (OECD, 1995; UNDP, 1998, pg. 6). Capacity development occurs at several levels, from the individual or micro-level (e.g., MPA manager, team) to the meso-level (e.g., community, programme, sector) to the macro- or system-level (e.g., agency, nation, MPA network) (UNDP, 1998; GEF, 2010). The Global Environment Facility recommends the following capacity typology (Table 1), distilled from GEF (2003) and UNDP (2009) capacity development approaches, to guide development and assessment at multiple levels (GEF, 2011, pp. 8-9).

BUILDING REGIONAL CAPACITY
The NOAA MPA capacity building programme operates at a regional or ‘seascape’ scale, stemming from the IUCN category V – Protected Landscape/Seascape (Dudley, 2008) and related Conservation International (2007)
Conservation International defines seascapes as: Large multiple-use marine areas, defined scientifically and strategically, in which government authorities, private organizations and other stakeholders cooperate to conserve the diversity and abundance of marine life, and to promote human well-being. Seascapes typically have high biological diversity, ecological and economic connectivity, and aesthetic and cultural values. Seascapes may include government-authorized protected areas for addressing special management needs, and provide an opportunity for government agencies to coordinate their efforts voluntarily to secure more effective regional management programmes (Bensted-Smith and Kirkman, 2010, p. 6).

Candidate seascapes must satisfy ‘minimum criteria’ for programme development, including: (1) a defined need and high priority interest in MPA management capacity building; (2) presence of an applicable legal and management policy framework to support implementation of MPAs; (3) presence of the basic physical and institutional infrastructure necessary to support a recurring multi-year training programme; (4) documented commitment from the dominant MPA management authority in support of capacity development toward improving MPA management effectiveness; and (5) documented commitment from on-the-ground partners to support implementation of the training programme for a minimum of three years.

Long-term capacity development is accomplished through establishment of an advisory board and exercising a train-the-trainer model with regional mentors. Advisory boards comprise appropriate energetic representatives from seascape MPAs, authorities, ENGOs, and other stakeholders and serve as the coordination body for the programme. In addition to teaching responsibilities, mentors assist with programme coordination, oversight of student teams, real-time translation, community field exercises, post-training projects (e.g., tourism community survey), and evaluation, providing consultative support and guidance for implementing lessons learned. Garnering long-term institutional support for new and innovative actions can prove challenging. The development of social networks and an online presence help to maintain information flow, foster collaborative learning, and sustain energy to retain capacity and aid MPA effectiveness across networks. Several regional programmes have directly involved senior ministry officials in trainings to gain first-hand experience in the work of their field staff. This has led to increased support, and in some cases broad endorsement (e.g., authorization, requirement), for all relevant MPA or agency staff to participate in trainings.

The training programme employs a learner-centred approach, drawing from dominant adult learning theory and practice to maintain high-functioning and nonthreatening learning environments, delivering content in a manner best suited to learner needs and preferences (Hunter, 1994). The instructional framework stems from the ADDIE (i.e., Analysis, Design, Development,
Implementation, and Evaluation) instructional systems design model (Branson et al., 1975), incorporating evaluation throughout the process (Figure 1). The analysis phase includes a comprehensive assessment of the learning environment, learner needs and characteristics (e.g., existing knowledge, skills, attitudes, behaviours), desired competencies, social and cultural context, and potential constraints. Assessments are informed through in-depth involvement from state and local ministry staff, MPA managers, local stakeholders, donor organization representatives, and international training programme staff. Steps include face-to-face meetings, literature and policy review, training in programme design and evaluation, questionnaires and interviews, and targeted site visits. The design phase focuses on the ‘architecture’ of the capacity development programme, using a logic model to define programme elements (i.e., inputs, activities, outputs, objectives, outcomes), develop a timeline, and formulate an evaluation plan. The development phase provides the operational structure for achieving learner objectives and constructing the building blocks of the programme (e.g., specific content, delivery strategies, instructional materials, resource and logistical requirements). The implementation phase moves the programme from pilot test to production, with opportunities for adjustment, adaptation, and refinement based on informal and structured evaluation actions.

Inclusion of evaluation actions throughout the process aligns with current best practice recommendations for protected area capacity development (Kopylova & Danilina, 2011). The needs assessment serves as a ‘front-end’ evaluation to guide overall programme direction. Formative evaluations are used at regular points (e.g., daily debriefings with trainers, mentors, and team leaders; post-training questionnaires for participants, mentors, and trainers) to ground-truth programme elements and inform mid-stream modifications and adaptive measures. Summative evaluations are conducted following the 3-5 year programme life cycle, as a means to gauge performance against initial needs assessment findings (e.g., gap analysis), specific objectives, and outcomes, and to drive future capacity building in particular need areas (e.g., fisheries, enforcement). While the context for evaluation varies from programme to programme, findings are based on direct feedback from participants, identifying particular strengths and weaknesses, and priorities for improvement.

Beginning in the South China Sea in 2005, the programme has conducted more than 100 training sessions across six regional seascapes with participants (n>2,500) from dozens of countries (Table 2). The programme has evolved in alignment with identified needs, delivering a range of protected area topics and skill areas, including MPA fundamentals, conflict management, sustainable fisheries management, climate adaptation planning, sustainable financing, and marine spatial applications. Trainings are interactive, employing a combination of individual and participatory methods – lectures, case studies, multimedia presentations, guided discussions, games, hands-on small group activities, and community field exercises. Mandatory attendance and active participation in classroom and field activities are required. Students are strongly encouraged to share experiences from their respective MPAs and communities. Training content draws from a range of government, academic, and conservation organization sources to ensure
timely and appropriate context-relevant examples. Materials are provided in English and in the host language(s) to enhance the learning experience across different English proficiency levels. Field exercises and guided visits to nearby protected areas are arranged with local managers and community leaders to highlight on-the-ground management issues and allow interaction with local stakeholders. Vietnam’s Nui Chua National Park provided the backdrop for course participants to observe target resources, traditional resource use, tourism activities, and management applications pertinent to the course content. Conversations with local ministry staff revealed a recent upsurge in coastal tourism development, which fuelled group discussion regarding potential best practices to reduce threats to target resources and enhance community involvement and benefits. Nui Chua National Park recently worked with provincial agencies, local communities, tourism sector representatives, and other stakeholders to develop a sustainable tourism plan.

SUSTAINABLE TOURISM PLANNING FOR MPAS

The sustainable tourism planning curriculum includes an overview of protected area planning and management basics; sustainable tourism concepts; identification and prioritization of conservation targets vis-à-vis tourism assets; sustainable tourism programme planning, assessment, and monitoring methods; tourism industry practices and impacts; education, outreach, and marketing techniques; community and stakeholder involvement approaches; and development and implementation of field-based community involvement exercises. The curriculum content stems from seminal U.S. public land management and carrying capacity planning frameworks – for example, Limits of Acceptable Change (Stankey et al., 1985) and Visitor Experience and Resource Protection (National Park Service, 1997) – and other pertinent guidance materials developed by academic, ENGO, industry, and public sector practitioners (e.g., Eagles et al., 2002; Pomeroy et al., 2004; Secretariat of the Convention on
Biological Diversity, 2004). The operational framework adheres to recognition that marine protected area managers are challenged with balancing two competing goals – protection of natural and cultural resources and provision of opportunities for public use or visitor experiences. Further recognition is required that some level of compromise between the two goals is necessary, where one goal constrains the other. For example, a biodiversity protection goal might constrain a tourism goal regarding access to a specific natural area. The process comprises a systematic series of steps that help managers work with stakeholders to establish objectives relative to conservation and tourism targets, define potential threats and impacts, evaluate root causes of change, create indicators and standards (i.e., minimally acceptable conditions) for inventory and monitoring of resource and social conditions and tourism outputs, and select and implement appropriate management prescriptions (Figure 2).

**CAPACITY FOR ACHIEVING BIODIVERSITY TARGETS**

Balancing competing goals is both a challenge and a necessity for protected areas in coupled social-ecological systems (Buckley, 2009; Newton, 2011). To achieve conservation targets set at local, regional, or global scales, protected area managers and their partners should have the appropriate context-relevant knowledge, skills, and competencies. Using a MPA capacity building lens, one can see alignment of several MPA training programme elements toward achievement of CBD strategic goals, Programme of Work on Protected Areas (PoWPA), and specific Aichi 2020 biodiversity Targets. For example, the programme directly supports capacity building for planning, establishment, and management of protected areas at the national and regional level (e.g., COP 10 X/31, PoWPA 3.2), for communication and education (e.g., PoWPA 3.5), and for evaluation and management effectiveness (e.g., PoWPA 4.2). Specific to sustainable tourism, the MPA training programme supports Aichi 2020 Targets 1 and 2, with curriculum content highlighting the connections between biodiversity and successful tourism, as well as education, outreach, marketing, and community engagement approaches that can increase conservation literacy among stakeholders, and reduce biodiversity impacts. The programme addresses Targets 4 and 8 directly, by highlighting unsustainable (avoidable) impacts, demonstrating alternative ‘green’ business practices and community engagement techniques to reduce

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**Figure 2. Simplified protected area management planning framework (adapted from Hammitt & Cole, 1998; Leung & Marion, 2000)**
waste and pollution, offset costs, and enhance image and marketability. The programme addresses Target 18 by emphasizing the importance and value of indigenous populations, traditional and cultural practices, and traditional ecological knowledge in the context of informing MPA management and supporting diverse opportunities for sustainable tourism. Lastly, the programme directly supports Target 11 by operating within a context of MPA networks, developing regional capacity for achieving conservation targets.

LESSONS LEARNED

Implementing capacity development at a seascape scale requires consideration of a complex range of sub-national, national, and transnational relationships, regulatory frameworks, conservation programs, social dynamics, skill sets, and levels of commitment. Each seascape presents its own challenges, but despite claims that every network of MPAs is unique, there are often more commonalities than differences. Institutional barriers and operational resource limitations are ubiquitous across the MPA community. Levels of community involvement, trust, acceptance, and support vary from location to location. Garnering public support for sustainable tourism requires vigilance and persistence in building trust, community engagement, and creating opportunities for mutual benefit. Local capacity is essential to a successful MPA-based nature tourism enterprise; however, it is difficult to build sufficient management capacity at the individual manager or MPA site level. It is more efficient to consider system-wide capacity development to bolster collective capacity across a network of MPAs, which can also aid implementation at the individual site level.

To fully realize the value of collective capacity across MPA networks, a functional operational framework must be created that all parties can agree upon and jointly implement. For example, using decision support processes that are logical, quantitative, and replicable is important to building consistency across MPA networks. In addition to increasing the capacity of on-the-ground managers, continuous effort is needed to garner the necessary institutional support and political will to move from training delivery and content knowledge to practical implementation and regional coordination. This goes beyond the development of specific topical expertise (e.g., sustainable tourism) to include other process-based aspects of protected area management, such as meeting facilitation, public involvement, conflict management, sustainable financing, marine spatial planning, and policy development.

Evaluation of capacity development and programme effectiveness at the seascape level is an on-going process. Qualities that participants have reported as important to regional capacity development include:

- enlisting instructors representing content experts and seasoned MPA practitioners with specific management experience;
- presenting seascape-relevant curriculum content and specific case studies;
- fostering dynamic learning environments that include ample opportunities for hands-on experiential peer-to-peer learning; structuring practical exercises that engage local stakeholders;
- ensuring participation by multi-level MPA practitioners to foster collaborative learning across the management hierarchy;
- providing availability of post-training consultation with instructors and mentors; and,
- maintaining an “infrastructure support system for programme coordination, communication, evaluation, and to provide a framework for implementation” (Di Carlo et al., 2012, p.11).

The train-the-trainer method has been a successful approach in fostering regional capacity to champion ongoing capacity development and support for MPAs, allowing the international capacity development programme to balance long-term commitments with successful programme transition to in-country leaders.

The programme is adaptive and responsive to changing demands relative to MPA management and planning, biodiversity conservation, sustainable tourism, and local and regional community development; yet, there is always more to learn. Working with partners across varied geographies and cultures constantly informs the capacity development process. Every day, every engagement, and every story provides a learning experience that enriches our own knowledge base and makes us better resource managers. Sharing examples from different settings and management contexts affords a richer understanding and forces us to consider multiple perspectives in identifying key elements for addressing resource management issues. What often appears to be the logical path to implementing an element of a management plan might not be feasible under particular cultural settings or institutional arrangements. These new ways of thinking not only inform the moment, but can often be applied in other locations and provide inspiration for our own work at home.
REFERENCES


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ABOUT THE AUTHORS

Tom Fish is the National Coordinator for the Cooperative Ecosystem Studies Units (CESU) Network—a national consortium of government agencies, universities, and other conservation partners supporting public trust resource science, stewardship, and capacity building. Tom has worked in human dimensions of natural resource management, planning, education, and applied research for over 20 years, providing information resources, training, and technical assistance for protected area managers and other decision-makers in the U.S. and abroad. Tom holds a PhD in conservation biology and MS in science education.

Anne Walton has spent more than twenty years working on policy and planning for marine protected areas, both in the U.S. and internationally. Since 2005, Anne has been programme manager for the NOAA International Marine Protected Area (MPA) Capacity Building Program. She oversees programme development and long-term commitments through on-the-ground partnerships with in-country and regional donors, ministries, managers, and content experts to support capacity building in six regional seascapes. Anne holds graduate degrees in education, and marine policy and resource management.
RESUMEN
Las áreas marinas protegidas y las redes de estas áreas pueden resguardar los recursos naturales y culturales y fomentar el aprendizaje basado en la colaboración para abordar una serie de objetivos relacionados con la biodiversidad. El turismo sostenible basado en la naturaleza puede ayudar a proteger la biodiversidad al tiempo que ofrece a las comunidades locales oportunidades para el beneficio social y económico. Sin embargo, para ser eficaz, cada iniciativa precisa de conocimientos, habilidades y capacidades apropiadas, además de acuerdos institucionales para definir y resolver problemas, y procesos participativos legítimos que apoyan la cooperación y procuran influencia y beneficios a los interesados directos como resultado de su participación. El Programa internacional de desarrollo de capacidades para la administración de AMP de la NOAA trabaja con otros organismos a escala regional del paisaje marino para desarrollar la capacidad de las redes de AMP. El plan de estudios para el turismo sostenible hace hincapié en la necesidad de equilibrar objetivos contrapuestos—la protección y el uso sostenible de la biodiversidad. El marco ayuda a los administradores a desarrollar la capacidad para involucrar a los interesados directos, identificar los objetivos de conservación y turismo, definir las posibles amenazas e impactos, establecer objetivos y seleccionar aplicaciones de gestión adecuadas. Las acciones de evaluación informan los elementos del programa para abordar las prioridades regionales y las necesidades de aprendizaje, y apoyan la creación de capacidad a largo plazo.

RÉSUMÉ
Les aires protégées marines et leurs réseaux peuvent protéger les ressources naturelles et culturelles et encourager l’apprentissage collaboratif afin d’atteindre un certain nombre d’objectifs liés à la diversité biologique. Le tourisme durable fondé sur la nature peut favoriser la protection de la diversité biologique, tout en offrant aux communautés locales des possibilités d’avantages sociaux et économiques. Cependant, pour être efficace, chaque initiative requiert les connaissances, les compétences, les capacités ainsi que les accords institutionnels appropriés pour définir et résoudre les problèmes et utiliser des processus participatifs légitimes qui soutiennent la coopération et permettent aux parties prenantes d’influencer et de profiter de leur implication. Le Programme de renforcement des capacités de gestion des aires marines protégées de la NOAA (Agence américaine d’étude des océans et de l’atmosphère) travaille avec des partenaires à l’échelle du paysage marin régional afin de renforcer les capacités des réseaux d’aires marines protégées. Le programme de tourisme durable souligne l’importance et la nécessité d’équilibrer des objectifs concurrents – la protection et l’utilisation durable de la diversité biologique. Le cadre aide les gestionnaires à renforcer leurs capacités pour impliquer les parties prenantes, identifier les objectifs en matière de conservation et de tourisme, définir les menaces et les impacts potentiels, établir des objectifs et choisir des applications de gestion appropriées. Les actions actuelles d’évaluation informent les éléments du programme afin de répondre aux priorités régionales et aux besoins des apprentis, et encouragent le renforcement des capacités à long-terme.