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[From the Editor: New MEAM Website](#) ^[1]

Dear MEAM subscribers,

We are very excited to announce that MEAM has a new and user-friendly website – <https://meam.openchannels.org> ^[2]. On this website, you can find all issues of MEAM dating back to our launch in 2007. We encourage you to explore the past feature articles, Tundi's Takes, and EBM Toolboxes for more insights and resources for your work. If you have colleagues who do not currently receive MEAM, please pass along the new subscription link – <https://meam.openchannels.org/subscribe-meam> ^[3].

Best wishes for your work,

Sarah Carr

MEAM Editor

[Incorporating the Social Sciences in Ocean Planning: Trends and Possibilities](#) ^[4]

Successful management and conservation of marine ecosystems depends as much on understanding humans as it does on understanding marine organisms and their environment. Human impacts on marine ecosystem health are extensive and often detrimental (e.g., www.nceas.ucsb.edu/globalmarine ^[5]). At the same time, humans benefit significantly from healthy marine ecosystems and, thus, from successful management and conservation efforts (e.g., www.oceanhealthindex.org/Goals ^[6]). And although successful management and conservation efforts sometimes get less attention than failures, humans can sustainably manage marine resources (e.g., <http://ocean.si.edu/slideshow/success-stories-ocean-conservation> ^[7]).

The social sciences — economics, political science, sociology, anthropology, history, psychology, law, and more — are the formal examination of human society. They study how societies function, how individuals in a society relate to one another, and the institutions societies form. Insights and data from these disciplines in ocean planning are essential to understanding how people use the marine environment, and how they create and may react to new and different forms of ocean governance.

A recent assessment of the incorporation of social data in coastal and ocean planning (see <http://micheli.stanford.edu/pdf/currentpractice.pdf> ^[8]) found that ocean planning practitioners are indeed engaging a wide range of social data — including data on governance, economic, and cultural attributes of planning regions and human impacts. The authors also found that much more could be done to incorporate ecosystem services and social-ecological linkages in planning and move from “people as impacts to people as beneficiaries” of coastal and ocean planning.

In this edition of MEAM, we asked four social scientists from a range of disciplines about some of the most exciting ways they see — or would like to see — the social sciences being incorporated into ocean planning.

Patrick Christie: Social-learning networks and social movements critical for ocean planning

Editor's note: Patrick Christie is Professor in the School of Marine and Environmental Affairs and Jackson School of International Studies at the University of Washington. His research focuses on the human dimensions of marine conservation employing marine protected areas, ecosystem-based management, and conservation fishing technologies in the US, Philippines, Indonesia, and Latin America. E-mail: patrickc@uw.edu

The adoption of social sciences in ocean planning is absolutely essential for really identifying causes and, more importantly, possible solutions for the degradation of the oceans. One example is the increasing appreciation for the role of social-learning networks and social movements in planning processes. Social science supports the creation of more potent learning networks such as the Locally-Managed Marine Area Network (www.lmmanetwork.org/whoweare/vision ^[9]) and Big Ocean peer-learning network (www.bigoceanmanagers.org ^[10]) that generate context-appropriate solutions. Social scientists have also made it clear why transparent planning processes that respectfully include and resonate with the majority of coastal inhabitants are really the only tenable path forward. These are now proven means to ensure balanced and sustained progress toward ecological and social goals.

Patrick McConney: Social sciences can connect ordinary citizens to the open ocean

Editor's note: Patrick McConney is a Senior Lecturer at the Centre for Resource Management and Environmental Studies (CERMES) at the University of the West Indies in Barbados. His research focuses on the socio-economic and governance aspects of small-scale fisheries and marine protected areas in the Caribbean. E-mail: patrick.mcconney@gmail.com

Ocean planning beyond territorial waters (usually 12 nautical miles from the coast) is a critical area of concern. The Deepwater Horizon oil spill, endangered charismatic marine megafauna, the disappearance of airliner Flight MH370, and similar events create images in the minds of the public that the open ocean is problematic and hostile. Social science input would benefit this planning by connecting ordinary citizens who are not seafarers to marine space to champion its sustainable use. By linking to political science, ocean planners can empower citizens to urge and contribute to more informed and sustainable decisions. Sociologists can determine the networks of actors and the

distribution of power to be leveraged. Anthropologists can elucidate the cultural context through which people make connections to the open ocean. Cumulatively, a deeper appreciation for the ocean can result. This appreciation needs to be bone deep so that society recognizes that the ocean beyond the horizon is essential to the future of human well-being.

Natalie Ban: Make integrated perspectives part of the planning processes

Editor's note: Natalie Ban is Assistant Professor in the School of Environmental Studies at the University of Victoria, Canada. Her research spans ethnoecology, conservation biology, marine spatial planning, conservation planning and implementation, and evaluation and mapping of cumulative impacts in marine and coastal systems. E-mail: nban@uvic.ca

The most exciting trend I see in ocean planning is fully integrating social and ecological considerations in marine planning rather than viewing them as separate realms of expertise and knowledge. Integrated social-ecological perspectives can be incorporated into ocean planning in different ways — by seeking relevant information from subject-area and local experts and/or by making people with integrated perspectives and knowledge full partners in the ocean planning process. For example, the Marine Planning Partnership (MaPP; www.mappocean.org ^[11]), an ocean planning endeavor in British Columbia, Canada, included First Nations — as indigenous people are referred to in Canada — as co-planners. In this way, First Nations traditional knowledge — which encompasses knowledge, practices, and beliefs that do not see people as separate from nature — was included in the planning process in ways that were appropriate to the cultural and planning context.

Luc van Hoof: Social sciences can help integrate planning across sectors and countries

Editor's note: Luc van Hoof is the manager of European research development for the Institute for Marine Resources and Ecosystem Studies (IMARES) in the Netherlands. He also coordinated the MESMA (Monitoring and Evaluation of Spatially Managed Areas) project, which developed tools for evaluating marine spatial plans. E-mail: luc.vanhoof@wur.nl

Integration in marine spatial planning — across sectors and activities as well as across national jurisdictions — is in its infancy. In the Netherlands, implementing the environmental Natura 2000 policy is basically a fisheries process since most of the other uses of the North Sea — windfarms, oil and gas extraction, sand and gravel extraction, and shipping — are declared to be of national interest and therefore planned on a sectoral basis. And despite efforts such as the European Marine Spatial Planning Framework Directive which establishes a framework for maritime spatial planning, European Union member states still tend to apply a sectoral approach, and cooperation in planning between riparian states is not really taking off. The social sciences can contribute to integrating planning across sectors and countries by helping to build shared knowledge. Involving stakeholders is crucial for arriving at a shared definition of the problems to be addressed and selecting factors on which to base decisions. Joint fact finding between actors helps address conflicts and devise solutions.

Resources for Incorporating Social Sciences into Ocean Planning

- **Embedding social considerations in conservation planning:** Many conservation plans fail to be implemented because they do not consider the social context in which implementation would occur (e.g., interactions between individuals and institutions, cultural norms, socioeconomic constraints, outside agendas, conflicting incentives). This paper suggests linking conservation planning to a social-ecological systems framework to better understand human-environmental interactions and more effectively integrate social considerations.
 - See Ban, N.C., et al. 2013. Towards a social-ecological approach for conservation planning: embedding social considerations. *Frontiers in Ecology and the Environment* 11: 194-202. Available for free download at www.researchgate.net/publication/235007071_A_social-ecological_approach_to_conservation_planning_Embedding_social_considerations ^[12].
- **An approach for incorporating human use data into ocean planning:** This paper presents a three-step approach for the often-difficult process of incorporating human use data into ocean planning.
 - See Kittinger, J.N., et al. 2014. A practical approach for putting people in ecosystem-based ocean planning. *Frontiers in Ecology and the Environment* 12: 128-144. Available for a fee at www.esajournals.org/doi/abs/10.1890/130267 ^[13] or for free by contacting the corresponding author atjkittinger@gmail.com.

Tundi's Take: The Need for Social Science, with an Emphasis on the Science ^[14]

By Tundi Agardy, MEAM Contributing Editor (tundiagardy@earthlink.net)

One of the greatest shortcomings in our attempt to manage marine ecosystems is not having enough social science to support ecosystem-based approaches, regulations, and conservation interventions. The motivations, perceptions, and politics of people living on the coast and using the sea do matter — a lot. In trying to steer human behavior toward sustainability, one could argue that social science is even more important than natural science, because EBM is after all about managing people, not nature. But we need to ensure that the social science we harness is appropriate, rigorous, and replicable.

I have had the great fortune of working with brilliant social scientists who ask tough questions — “Where is the empirical evidence for that?”, “What are the assumptions of your conceptual model?”, “Could it be that your survey prompted certain answers from respondents?” There is nothing soft in the approach of these “soft scientists”... They use empirical evidence from well-designed studies to test clearly articulated concepts and increase our understanding of human nature and needs. The methods they employ — household surveys, rapid rural appraisals, governance assessments, cost-benefit analyses, valuations, user questionnaires, industry trend analyses — help us develop effective EBM systems and monitor those systems.

Are we lowering our standards for the social sciences?

But in our rush to gather and incorporate data and perspectives arising from the social sciences, it seems to me — from my perspective as a non-social scientist — that we are not always expecting the same degree of rigor and replicability from the social sciences that we do from ecological science. And this has led us to accept some rather unscientific claims.

Perhaps the worst example of this is in the current vogue for valuation of ecosystem services, where there is a wide array of studies that attribute very high economic values to coastal habitats with little solid evidence for doing so. One can understand why this happens — we are under tremendous pressure to attach value to the remaining natural habitats along our coasts to protect them from degradation, or even destruction. But these spurious claims about economic value are rarely questioned, and once the magical figures appear in the literature, they attain the status of proven facts. Behind the dollar signs are all sorts of assumptions about the drivers of human behavior — perceptions, dependencies, plasticity, strength and role of institutions, markets, and macroeconomic forces — assumptions that in good science would be clearly stated and tested. But in not-so-good, rushed science, these assumptions can be swept under the rug. How can decision-makers have confidence in this sort of social science?

Worse than sloppy science that cannot be tested or replicated is the fact that solid ecological understanding of how those ecosystems are structured, function, and how they are impacted by human activity is sometimes skipped over in the rush to value ecosystem services. As we advance our practice of EBM and acknowledge the need for and role of social sciences, we would be wise also to remember we need a foundation of ecology. Solid social science and solid natural science go hand-in-hand, and ultimately they together are the basis for the changes in human behavior that mark a sustainable society.

EBM Toolbox: Figuring Out the Economics of Coastal Climate Change Adaptation ^[15]

Editor's note: The goal of The EBM Toolbox is to promote awareness of tools for facilitating EBM and MSP processes. It is brought to you by the EBM Tools Network, a voluntary alliance of tool users, developers, and training providers. Learn more about EBM tools and the EBM Tools Network at www.ebmtools.org [16].

There are scores of resources for helping coastal planners gauge potential climate change impacts to natural resources and communities (e.g., www.natureserve.org/climatetoolsguide [17]). However, resources for gauging climate change **adaptation** actions, particularly their economic/financial aspects, are much rarer.

There are some tools and resources that provide guidance on the costs and benefits of adaptation options such as relocating vital infrastructure (e.g., hospitals, wastewater treatment facilities) and building coastal defenses (e.g., seawalls). Over the past few years, the EBM Tools Network (www.ebmtools.org [16]) has pooled its knowledge of what is available, and this compendium is available at www.openchannels.org/blog/ebm-tools-network/figuring-out-economics-and-finances-coastal-climate-change-adaptation [18].

Two key resources we found are:

- **Coastal Adaptation to Sea Level Rise Tool (COAST)** is a process that helps users answer questions about the costs and benefits of actions and strategies to avoid damages from sea level rise and/or coastal flooding. Much of the value of using COAST is that it helps connect organizations and communities with the social, political, and economic realities of local adaptation so that informed discussions about the future can take place. Learn more about COAST at www.bluemarblegeo.com/products/COAST.php [19]. View an introductory webinar about the tool at www.openchannels.org/webinars/2013/webinar-demonstration-coast-coastal-adaptation-sea-level-rise-tool [20].
- **What Will Adaptation Cost? An Economic Framework for Coastal Community Infrastructures** is a report that provides a framework for making economically informed decisions about adapting to sea level rise and storm flooding. This resource helps users perform holistic assessments of costs and benefits of different adaptation approaches for communities and select infrastructure. Read the report at www.csc.noaa.gov/digitalcoast/publications/adaptation [21]. View an introductory webinar about the report at www.openchannels.org/webinars/2013/what-will-adaptation-cost-economic-framework-coastal-community-infrastructure [22].

Many thanks to the EBM Tools Network members who provided these resources!

Notes & News: Global MSP indicator - Oceans at/past carrying capacity - Ocean governance reform – Responding to climate change - Connecticut MSP legislation – UK Blue New Deal – Belize ecosystem services framework - Redistribution of marine biodiversity [23]

Global MSP indicator proposed for United Nations Sustainable Development Goals

In September 2015, the United Nations adopted a post-2015 development agenda focused on 17 Sustainable Development Goals (SDGs) and associated targets. These SDGs aim to improve development and put all countries, wealthy and poor, on a pathway to sustainability by 2030. The goals and their targets are laid out in the "Transforming our world: the 2030 Agenda for Sustainable Development" report (<https://sustainabledevelopment.un.org/post2015/transformingourworld> [24]).

To speed the process of measuring achievement of the SDGs, the Sustainable Development Solutions Network (SDSN) – a UN initiative to harness expertise from academia, civil society, and industry – has offered an outline of a comprehensive indicator framework supporting the goals and targets. For the target to "conserve at least 10 percent of coastal and marine areas" by 2020 (Goal 14, Target 5), the SDSN has proposed two indicators: 1) share of coastal and marine areas that are protected and 2) an indicator to be developed on the implementation of spatial planning strategies for coastal and marine areas. Marine spatial planning is defined in this case as "a strategy to distribute (spatially and temporally) human activities in coastal and marine areas in order to guarantee those ecological, social and economic objectives that are decided through a public and political process."

The UN's Inter-agency and Expert Group on SDG Indicators is currently working to define a final SDG indicator framework. Read more about the SDSN proposed indicator framework at www.unsd.org/indicators [25].

World Ocean Assessment warns world oceans at or past carrying capacity

The First Global Integrated Marine Assessment, or "World Ocean Assessment", steered by a United Nations (UN) Group of Experts of the Regular Process, was presented to the UN in September 2015 to help guide its decisions on oceans. The assessment marks one of the first times current knowledge of the biological, chemical, economic, physical, and social aspects of the oceans have been fully integrated. The Group of Experts found that many parts of the world's oceans are seriously degraded from threats such as climate change, ocean acidification, land-based activities, unsustainable fishing practices, invasive non-native species, and marine debris. The report concluded that "the world has reached the end of the period when human impacts on the sea [are] minor in relation to the overall scale of the ocean. Human activities now have so many and such great impacts on the ocean that the limits of its carrying capacity are being (or, in some cases, have been) reached." The full assessment can be found at http://www.un.org/depts/los/global_reporting/global_reporting.htm [26].

Call for input on global ocean governance reform

The Global Governance Reform Initiative, a project of The Hague Institute's Global Governance Program, is developing policies for improving global governance of the oceans. It is soliciting applications from academics, policymakers, and practitioners from diverse sectors and regions of the world to present their research at an expenses-paid policy workshop in the Netherlands in March-April 2016. The project will provide participants with opportunities for networking with international ocean governance experts and having their research published and disseminated to relevant policymakers. The deadline for applications is 16 October 2015. Learn more about the application process at http://thehagueinstituteforglobaljustice.org/index.php?page=News-News_Articles-Recent_News-Call_for_Experts:_Oceans_Governance&pid=138&id=442 [27].

Call for input on marine spatial planners' needs for responding to climate change

Climate-informed coastal and marine spatial planning (CMSP) integrates the full suite of climatic changes and effects into planning for resilient coastal and marine environments. EcoAdapt, a US-based NGO, is requesting input from CMSP professionals on their needs for preparing for and responding to multiple stressors including climate change. This input will inform guidelines, case study examples, and an online decision-support toolkit on how, when, and where to integrate climate changes and impacts into CMSP. Respond to the survey at <http://ecoadapt.org/programs/adaptation-consultations/cmssp> [28].

US state of Connecticut passes MSP legislation

A law establishing a process for marine spatial planning for Long Island Sound in the northeastern US took effect in the US state of Connecticut in July. Under the "Blue Plan," Connecticut will develop an inventory of Long Island Sound's natural resources and uses and a spatial plan to guide future use of its waters and submerged lands. The plan is intended to protect natural resources and uses, such as fishing, aquaculture and navigation, from future conflicting or incompatible activities. The plan will not specify "use zones" for the entire sound but could establish priority use areas such as utility corridors or shellfish beds, and identify critical areas in need of greater protection and management of uses. Development and implementation of the Blue Plan will be coordinated with the state of New York and with relevant local, regional, and federal planning entities and agencies. Learn more at http://portal.ct.gov/Departments_and_Agencies/Office_of_the_Governor/Press_Room/Press_Releases/2015/05-

Blue New Deal seeks to spur innovative and sustainable coastal management in UK

The UK think tank New Economics Foundation has launched an initiative, the Blue New Deal, to bring together a range of economic sectors, organizations, and individuals to develop an action plan to “deliver stronger economies for UK coastal communities through a healthier marine environment.” The Blue New Deal is currently focused on five policy areas: sustainable fisheries and aquaculture, renewable energy, coastal tourism and related activities, innovative approaches to coastal management, and opportunities to re-connect people with nature. A web portal and initial report highlight examples of innovative and sustainable approaches, with the goal of making these approaches the norm rather than the exception. These approaches range from investment in renewable energy to innovative management of coastal environments, and are already happening around the UK coast. Learn more about the Blue New Deal at www.blunewdeal.org [30] and www.neweconomics.org/publications/entry/blue-new-deal [31].

Ecosystem services framework used to develop draft management plan for Belize

A recent article in the *Proceedings of the National Academy of Sciences* (“Embedding ecosystem services in coastal planning leads to better outcomes for people and nature”) describes the use of iterative modeling and stakeholder engagement to develop a management plan for Belize. This is among the first examples of a coastal and marine planning process that has used an ecosystem-services framework to understand how human activities affect the flow of benefits, create scenarios, and design a management plan. Modeling results suggest that the preferred plan will lead to greater returns from coastal protection and tourism than outcomes from scenarios oriented toward achieving either conservation or development goals. Modeling results also suggest that the preferred plan will improve coastal protection by more than 25% and more than double revenue from fishing compared with plans based on stakeholder preferences alone. The management plan is currently under formal consideration for adoption by the Belizean government. Read the article for free at www.pnas.org/lookup/doi/10.1073/pnas.1406483112 [32].

Model predicts global redistribution of marine biodiversity

A new study in the journal *Nature Climate Change* (“Climate velocity and the future global redistribution of marine biodiversity”) projects the range shift of nearly 13,000 marine species using a model based on climate velocity trajectories, thermal tolerances, and habitat preferences. Researchers found that ocean warming will increase biodiversity in most parts of the ocean — and homogenize world ocean communities — due to new species entering communities before others leave. But in other regions with many species with restricted ranges, such as the Coral Triangle, ocean warming will lead to less diverse ecological communities due to species extinctions. Widespread redistribution of marine biodiversity is likely to accompany any increase in global temperature, regardless of magnitude, and these changes will have major significance for ecosystems management. The article is available for a fee at <http://dx.doi.org/10.1038/nclimate2769> [33].

From the Archives: Payment for ecosystem services: An idea whose time has come for marine resource management? (MEAM October-November 2014, Issue 8:1) [34]

Editor's Note: From the Archives is a new feature to call attention to past MEAM articles whose perspectives and insight remain relevant.

Highlights:

- Strengthening the business case for Payments for Ecosystem Services (PES)
- Gaining support from stakeholders for a PES program
- PES as an application of the precautionary principle
- PES must complement other ecosystem services approaches
- PES in fisheries
- Resources for applying economic value to ecosystem services
- Resources on blue carbon
- A project to standardize the practice of PES

Read the article at <https://meam.openchannels.org/news/meam/payment-ecosystem-services-idea-whose-time-has-come-marine-resource-management> [35].

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