



What Is the Worth of a Degree in Sustainability?

(Or, “Hey, can I help fix that for you?”)

By George Basile

If economics has been hampered by the label, “the dismal science,” then sustainability may be in the process of being pegged as “the problem science.” From climate change to global inequity, sustainability is often described as a cacophony of seemingly disparate and globally grand challenges to which the expectation of a tantalizingly simple solution is then attached, i.e., “Please do today, so that we can still do tomorrow.” With this rather heroic framing, what does an academic degree in sustainability mean? What is its role and value-proposition for those students who are—possibly quite naively—the brave pioneers in this emerging field? Given the expanding educational efforts, we have a ready answer, yes? Not quite. In a recent meeting with a diverse group of academic leaders it remained challenging to readily identify the unique and high value contribution that a graduate in sustainability would bring to a company. Perhaps this was just us? Unfortunately, probably not, given the explosion in sustainability efforts without an equal explosion in clarity of what that means.

Some of this may be a misunderstanding of the state of the field. It is not uncommon after an introduction that involves sustainability to hear the jocular (and somewhat apologetic) addendum “whatever that is exactly.” Yet, even putting aside the library of works related to sustainability over the last decades and more, there has now been over a decade of specific research on the exact topics of sustainability, sustainability science, and sustainable solutions. Sustainability has both a broad and widely accepted definition supplied by the United Nations Brundtland Commission,¹ as well as an increasing array of more detailed theoretical and pragmatic explorations. In addition, there is a growing library of examples and case studies of sustainability efforts at different scales. There are also a number of syntheses highlighting the definition of sustainability as a solutions-based, design-enabled and applied endeavor, including recommendations for education, research, and applications (for example, see Broman,² Kates,³

Robèrt,⁴ Clark,⁵ and Matson,⁶). At the same time, the explosion of unmanageable sustainability challenges at all scales highlights the gaps between where we are and where we want to be.

It is in this gap between sustainability examples and emerging challenges that we can see the beginning of general approaches and specific skills that those who gain a sustainability degree should expect to be able to bring to bear. Here, sustainability graduates can exchange the saddle of problems for the empowerment of solutions. The challenge and opportunity is nowhere more on display than in multinational business where near-term pressures mix with global sourcing and markets.⁷ For example, a number of authors have reported that sustainability requires a solutions orientation and the ability to not only describe and weigh trade-offs for different solutions pathways, but to apply approaches that help to “design out” sustainability challenges while generating near-term gains.^{3,5} Sustainability graduates should be skilled in moving beyond a limiting focus on immediate problems and in constructively reframing challenges within complex systems in terms of overall success. In other words, sustainability graduates should have the ability to bound challenges not only in classic ways, such as the factory floor or institutional reach, but also in terms of success in both the short and long terms and small and large scales. In the case of a business, for example, a sustainability graduate should be able to map what a business actually does (not just what the organization thinks it does), understand how decisions are made and link both classic and novel drivers of success and risk for the business to new solutions pathways and mitigation opportunities using a sustainability lens.⁸

Fortunately, sustainability graduates and those who might choose to employ them do not have to guess at what types of unique skills they should have. As with engineering, political science, biology, or medicine, a group of skills are critical for sustainability. A review by Arnim Wiek, et al., highlights the competencies required for solv-



George Basile

Sustainability requires a solutions orientation and the ability to not only describe and weigh trade-offs for different solutions pathways, but to apply approaches that help to “design out” sustainability challenges.

Graduates
should be able
to help all of
us redefine
planning
boundaries and
horizons in terms
of sustainable
successes ...

ing problems sustainably, including: systems thinking competence, interpersonal competence, anticipatory competence, normative competence, and strategic competence.⁹ Each of these competencies matches key dimensions of assessing and planning in complex systems when aiming for sustainable solutions and while engaged with experts and nonexpert decision makers in contexts with inherent uncertainty, i.e. in almost any real-world situation today where one is seeking sustainable solutions. Graduates with this mix of skills can bring to bear the ability to think and act—and help others understand, think, and act—across multiple aspects of a system. They have the capability to develop and link visions of success to flexible strategic platforms while working with the diverse set of decision makers involved in most of today's significant challenges. Mixing evidence-based knowledge with values and cultural and ethical decision-making perspectives, while challenging, is something that a graduate in sustainability understands is simply part of the process of building effective and strategic efforts that will last.

Recently, Michael Porter and Mark Kramer described these types of skills in a more traditional context: creating value for business.¹⁰ The new twist: getting beyond trade-offs by using shared values that link business and society together as a lens for new innovation and immense value creation. Another good thing: This is not news to sustainability graduates! Sustainability graduates are tomorrow's professionals who have been designing themselves with this exact opportunity in mind. These students do not have to be convinced of this emerging opportunity, nor must they have key aspects explained or classic business cases overridden before they are ready to move. These graduates are on the cutting edge of this value creation analysis and are tomorrow's engineers of shared value creation. For example, while Life Cycle Analysis (LCA) is traditionally seen as a "whole-systems efficiency and risk mitigation tool," the reality is that LCA may be more important as a key proof point to employees that a company has a vision for sustainability and the company is, thus, a good place for a career. This, in turn, means getting and keeping the "best and the brightest" adding huge value to any business—and this is something sustainability graduates understand. That this may be a value proposition of LCA in many cases well beyond squeezing out a bit more efficiency in the production chain is no surprise to a sustainability graduate. For the sustainability graduate, it is business-as-it-should-be usual and will only be one example of a class of cross-cutting recommendations that are the norm for these graduates.

In the end, it may be most important to keep in mind that the world out there is filled with experts—and it is also increasingly filled with a growing class of sustainability challenges (and opportunities). We all find ourselves in an unsustainable pinch. It is clearly not simply a matter of doing more of what we already do and just doing it better. Indeed, it is rather easy to argue that doing more of what we are doing is exactly part of being unsustainable.

It is into this breach that the sustainability graduates can and must launch themselves. If sustainability education succeeds in creating the sustainability graduates we all need, then graduates should be able to help all of us: redefine planning boundaries and horizons in terms of sustainable success; understand and manage resource potentials; handle trade-offs while minimizing the creation of new sustainability problems; integrate the growing knowledge and tool-base for sustainability into increasingly robust and flexible strategic pathways; support cross-sector collaboration and cooperation; embrace uncertainties that are inherent in our emerging planning reality; and, while possibly the greatest challenge today, translate all of this given today's context of unsustainable concepts and institutions.

Luckily, we don't have to take this potential on faith. A growing group of graduates from new programs and longer-standing efforts are beginning to show all of us exactly how much a degree in sustainability is not only worth, but how much these graduates change the entire game. And, if sustainability is highlighting one thing, it is this: The game has changed and we'd better change too. Having some sustainability graduates on your side will be just the ticket.

References

1. Brundtland Commission. Our Common Future, Report of the World Commission on Environment and Development, 1987. United Nations World Commission on Environment and Development. Published as Annex to General Assembly document A/42/427.
2. Broman, G et al. Simplicity without Reduction: Thinking Upstream Towards the Sustainable Society. *Interfaces* 30 2000;13-25.
3. Kates, RW et al. Environment and Development: Sustainability science. *Science* 2001;292: 641-642.
4. Robèrt K-H et al. Strategic Sustainable Development—Selection, Design and Synergies of Applied Tools. *Journal of Cleaner Production* 2002;10:197-214.

5. Clark WC. Sustainability Science: A room of its own. *Proceedings of the National Academy of Sciences of the U.S.A.* 2007;104:1737–1738.
6. Matson P. The Sustainability Transition. *Issues in Science and Technology*, 2009;25(4):39-42.
7. Basile G, Broman G, and Robert K-H. A Systems-Based Approach to Sustainable Enterprise: Requirements, utility, and limits. In *Sustainable Business Practices*, Vol. 1, McNall S, Hershauer J, and Basile G, Eds. New York: Praeger, 2011. In press.
8. Basile G. Being Strategic about Sustainability: A pragmatic guide. In *Sustainable Business Practices*, Vol. 2, McNall S, Hershauer J, and Basile G, Eds. New York: Praeger, 2011. In press.
9. Wiek A, Withycombe L, Redman C, and Banas Mills S. Moving Forward on Competence in Sustainability Research and Problem Solving. *Environment: Science and Policy for Sustainable Development* 2011;53(2):3-12.
10. Porter, ME and Kramer MR. The Big Idea: Creating Shared Value. *Harvard Business Review*, 2011;Jan-Feb:62-77.

George Basile is a professor at the School of Sustainability and senior sustainability scientist at the Global Institute of Sustainability, Arizona State University.

Address correspondence to:
George Basile
Global Institute of Sustainability
Arizona State University
800 S. Cady Mall
Tempe, AZ 85287
Email: George.Basile@asu.edu