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Ask the Experts

by Steve Rice & Richard MacLean

December 2001

Recession, Risk, and Reward: Notes for Job-Seekers

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Q: I'm a student considering an environmental career, but I'm concerned about the recession. What are the prospects? **Steve:** Even the recent "good" economic period has been difficult for the environmental, health and safety (EH&S) profession, especially in the manufacturing sector. These tougher economic times compound the pressure. Here are two good reasons to pursue an environmental career, or more broadly, an EH&S career:

1. **Invest in experience.** There will be a severe shortage of experienced leaders in the next three to five years. Although companies and organizations are shedding their more experienced and "costly" veterans, I doubt that the profession's time has come and gone. By entering the field now and gaining experience in a variety of areas including business integration and value management, those entering the profession will have opportunities for success in the future.
2. **The career offers more than a paycheck.** One reason why many of us got into this field is that we have the desire, and in some instances the spiritual mandate, to do more than just earn a paycheck. We have the satisfaction of knowing that we help protect the environment, change organizational behavior, and improve living conditions for all.

Admittedly, you're taking a risk if you enter the profession now, but only you can know if, for you, the potential reward justifies the gamble. Richard has other thoughts on this question: **Richard:** As Steve said, we're short on experienced EH&S leaders. Although we have plenty of EH&S managers, are we cultivating leaders for tomorrow's need? This distinction is critical, as it will determine if the people holding senior jobs today are viewed as "taskmasters" or as strategic resources. Let's look at the context: Job opportunities for entry EH&S positions are generally good, especially for engineering or science majors. Folks with several years of

experience are especially attractive in today's market. If you are young or at mid-career with the right qualifications, prospects might look good, but what are your chances for long-term career advancement and security? Neither corporations, the public nor the government recognize the need for experienced EH&S leaders. Top career positions often are filled by "administrators" taken from other professions, or by junior, lower-paid workers. We can question whether most executives consider these positions necessary. Dramatic, unexpected events could change career prospects overnight, shifting EH&S managers from taskmasters to strategic resources. Professions do change that suddenly: look what Sept. 11 did for the security industry. And remember when job opportunities swelled on public outrage over gross contamination that triggered the pollution control era? New calamity could do the same for EH&S. For better or worse, I fully expect such a wake-up call will reinvigorate our field. Choose this career with eyes wide open, and if the balloon goes up during your tenure, expect a phenomenal job market desperate for experienced EH&S leaders. [Back to Top](#)

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Q: What is the connection between sustainability and business finance? Steve: Much of the dialogue of the past few years has focused on the "triple bottom line," which holds that to be sustainable and achieve lasting results, the actions of the trinity of governments, communities and businesses must achieve benefits that address economic (financial), equity (social) and environmental (ecological) needs. Certainly, it is a complex and difficult prescription to fill. For example, a product that is financially successful yet lacks two other sturdy legs of the sustainability stool will topple. Similarly, a social service or environmental program that is not financially sound will fail. Visionaries have planned wonderful environmental technologies, some of which haven't been funded because they are not thought to be financially viable. The next generation of sustainability, however, will need to achieve an even higher objective if it is to generate mainstream interest from the business community; it will need to look far beyond the triple bottom line to what I call the triple top line, and put the "development" back into sustainable development: it will need to become the driving force behind the development of new sales and revenue growth, not merely sustain and support the existing status quo. What can businesses create that will increase their revenues, expand social wealth and improve the environment? What type of financial reporting and tools, similar to Economic Value Added (EVA) and Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) can measure these increased sales accurately? What are the future markets and what products will be needed to meet those future needs? We have barely begun to scratch the surface. [Back to Top](#)

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Q: Our nonprofit group wants to update our educational trailer display of renewable energy technologies. What interactive displays would appeal to school groups and the general public? Richard: Personalizing the alternative energy technology message is a challenge. Anything seen, heard or touched enhances the impact of what is read. Visit any major science museum and you will find that the "touch me" theme dominates. I asked one of the leading suppliers of renewable and alternate energy devices, John Balfour, president of PerfectPower.Net (www.perfectpower.net), for his recommendations:

- **Fuel cells.** Commercially available 1 kW fuel cells are about the size of a personal computer monitor and can be used as an uninterruptible power supply or a portable energy source (e.g., for camping). Educational fuel cells are available that clearly demonstrate the fuel cells breaking water into hydrogen and oxygen, and then recombining them to make energy. These are simple yet powerful portable tools.
- **Photovoltaic (PV).** I presume that you already have PV modules. These can be upgraded to more efficient designs, but the key is to have them operate energy monitors, radios/stereos, CD players, televisions, water pumps or fans. Let the visitor *experience* PV technology in terms that are personal and immediate.
- **Solar heating and evaporative cooling.** Commercial units are available and could readily be adapted to a trailer installation.
- **Wind.** Commercial units may be impractical and dangerous if mounted within a trailer. Several wind-speed measuring devices could substitute visually for a "mini-generator."
- **Other technologies** such as biomass, geothermal, and hydroelectric. The previous four technologies offer the opportunity see and touch the "real thing." These other technologies can be modeled, but one-of-a-kind models are expensive relative to

photos, diagrams and text. There are new "micro-hydro" units available that would make a fascinating display, but these are expensive.

There are plenty of options, but the real challenge may be raising the funds to bring the displays to life. These days it is tough getting free brochures, much less free demonstration units. Distributors such as PerfectPower.Net will sometimes supply the equipment at cost. Check with the manufacturers and contact the local utility company. Ask volunteers or a like-minded company to sponsor a particular display. Be persistent. [Back to Top](#)

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Q: What does society get out of biodiversity? **Steve:** Biodiversity is important as it provides a flexible organic system that can withstand stresses, thus allowing it to recover more quickly and completely than a monolithic system. A monolithic system or culture thrives within a narrow set of constraints and conditions upon which it becomes established. Changes to those constraints and conditions, however, are not readily accommodated by such systems because they are really not a system, such as a spider web or bridge truss -- they are merely single filaments. Break one spider web strand or eliminate one truss girder and, although it's a catastrophe for the strand or girder, the larger structure remains strong and survives. Look at a meadow, which lives with many types of plants and animals in balance -- if there is drought, some species will recede and others predominate. Yet, if the next season is overly wet, some of those other species will temporarily predominate. If there were no biodiversity, the meadow would be very abundant under one type of condition but be unable to cope with the other. The system would collapse and die. A few years ago researchers explored exactly that premise: Sample plots in a meadow were established and all but a single type of vegetation were extracted from each one; each sample plot had a different monolithic species. As stresses varied throughout the test period, the areas of the meadow with a diverse biological population recovered faster and more completely. Many of the monolithic vegetative plots simply could not manage the stress and became barren. I presume this general experience can be extrapolated to whole ecosystems and possibly even populations and geopolitical regions, too. The value of biodiversity is a bit harder to quantify, though attempts are being made to quantify the value of nature. This is the underlying premise of [Natural Capitalism](#) -- that extracting and depleting natural resources without paying their inherent value is an unsustainable operational model. **Good resources on biodiversity:**

- See the November, 2001, issue of [National Geographic](#) magazine. Near the front of the issue, editors ran a two-page graphic: "Ecosystems: Valuing the Invaluable", prepared by two consultants with the [World Resources Institute](#).
- See Patricia Moles' article, "Venture Capital Investment Opportunities in Biodiversity Markets", appearing in Vol. 8, No. 4 of [Corporate Environmental Strategy](#).
- Closer to home, GreenBiz.com has put together an essential [primer on biodiversity](#), which notes that in business terms, as species are lost, so, too, are their direct and indirect benefits: the potential they may offer to create new medicines, fibers, fuels, crops, pollution fighters, or any of countless other products and services.

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