The Sustainability Professional: 2010 Competency Survey Report

A research study conducted by the International Society of Sustainability Professionals

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Abstract

In response to a growing need to move the world towards sustainable development and sustainable practices within government and industry, a whole new profession is emerging. This research study was conducted to bring clarity, cohesion and credibility to this new area. The study, conducted over a 9 month period, sought to answer the question, "What should a sustainability professional know how to do?" A review of related studies and a backward chaining approach to identifying starter skill sets led to a series of interviews with invited experts in the field. This process culminated in a survey tool that was administered to nearly 400 professionals working in the field. This report summarizes the competencies identified as being most critical to the successful performance of professionals working in the field of sustainability.

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Executive Summary

Overview

In 2009 ISSP initiated its first research project to begin to identify the critical competencies necessary to perform the job duties of a sustainability coordinator or sustainability consultant. The study involved nearly 400 professionals working in the field of sustainability, well over half of them having more than three years experience, and nearly a quarter reporting over a decade of experience in the field. The study used both open-ended questions and ranking and rating questions for respondents to identify the most critical issues and skills of relevance to their work. This summary highlights the key findings of this study.

Issues & Challenges

When sustainability professionals were asked to describe the most important issue facing their organizations (or their clients' organizations) in their own words, the top two major issue categories were: 1) promoting an understanding of the value of sustainability, and 2) dealing with climate change and related energy needs. Promoting understanding was expected to decrease in importance in five years, while climate and energy issues were expected to increase in importance in five years.

When respondents were asked to rate the importance of a series of pre-defined issues, items rated most important by the group as a whole included gaining the support of management and customers, and financial issues—proving fiscal viability and attracting funding. Other issues rated as highly important involved change management—dealing with changing business priorities, overcoming resistance to change, and redesigning products and services to be more sustainable. Ensuring environmental compliance rounded out the top tier of these issues. Guaranteeing social responsibility performance was generally considered less important than environmental concerns.

Perceptions of key issues and their importance vary by size and type of organization. Generally speaking, the larger the organization, the more important many issues become. The one exception was the need to develop the business case for sustainability. This issue was considered more critical by the smallest organizations.

Those working in non-consulting organizations tended to be more concerned than consultants with educating customers and with staying current with scientific findings. Consultants, on the other hand, were more concerned with developing business cases, getting buy-in from top management, and benchmarking. Funding for individual initiatives was somewhat more important to consultants and those in government, education and non-profits than to those in manufacturing/services. Conversely, those in manufacturing/services were more likely than those in other industries to think designing or redesigning product and service offerings is very important.

Skills Needed

When respondents were asked to describe in their own words the top skills needed for success as a sustainability professional, good communication skills came out on top. Other skills were mentioned less often by the group as a whole.

When asked to rate the importance of pre-defined "hard" skills, the most important items cited were strategic planning, systems thinking and project management. Scientific expertise and sustainability accounting/reporting tended to be more important to larger organizations than to smaller ones. Financial analysis/ROI was somewhat more important to consultants and those in manufacturing/services than to those in government, education and non-profit organizations.

Those outside North America were more concerned than North Americans with policy expertise and risk assessment. On the other hand, North Americans said financial analysis, vendor management and systems thinking were more important.

Respondents said most "hard" skills will continue to be needed in the future because they are necessary for competing in a business climate, enable a strategic approach, are fundamental to change, and/or allow performance tracking.

Key Findings

Challenges

- Establishing the value of sustainability
- Climate change
- Building support
- Financing sustainability

Hard skill needs

- Strategic planning
- Systems thinking
- Project management

Soft skill needs

- Communication with stakeholders
- Problem solving
- Inspiring and motivating others

In general, more "soft" skills were deemed of extremely high importance than "hard" skills. Among the soft skills examined, those considered most critical were communication with internal and external stakeholders, problem solving, and inspiring and motivating others. Non-consultants felt more strongly than consultants about the importance of networking and influencing change. While important to all types of organizations, several skills were most important to those in government, education and non-profits: those included communication with internal stakeholders, flexibility or adaptability, inspiring and motivating others, and consensus building. In general, respondents said "soft" skills will continue to be needed in the future because they are necessary for bringing about transformational change.

The findings of the study begin to paint a clearer picture of what sustainability professionals are called upon to know and do. This information will make an important contribution to the creation of relevant curricula to prepare professionals for the field as well as help employers determine requirements for newly created sustainability coordinator positions.

Purpose of the Study

Why Consider the Competency of Sustainability Professionals?

One of the central challenges of the 21st century is determining a way to achieve a more sustainable relationship between people and the environment. Scientists and policy-makers have begun to recognize that it would eventually be suicidal to allow a further undermining of the sustainability of ecological life support systems, locally and globally. At the same time, they acknowledge that development is required to eliminate destitution, ensure material security, and allow individuals and communities more choices and more power to exert greater control over the factors affecting their lives – thus the call for "sustainable development." But the practice of sustainable development by professionals is unclear with regards to consistency and standardization. At the same time, a combination of socio-economic and environmental forces related to present global conditions have led to accelerating interest in mechanisms for promoting, verifying and validating the quality of professionals practicing sustainable development around the world. The concept and recognized need for sustainability in a global arena has matured to the point that society expects practicing sustainability professionals to act as responsibly in advancing socio-economic progress, protecting human health, and conserving natural resources as other licensed professionals such as architects, engineers, surveyors and medical doctors. Professional credentialing bodies — setting and administering standards for scientists, sociologists, economists, planners, and other professionals advising on inter-disciplinary sustainability practices — are and will be called upon to fulfill this universal need.

The practice of sustainable development is rapidly growing and evolving. As such, an increasing number of professionals are providing needed services in a variety of areas: planning and auditing, energy and waste management, sustainable food systems, watershed adaptive management, community economic development, sustainability science, business improvement, green building, international community development, and facilities management to name just a few. With this proliferation comes growing confusion and disparity in the quality and consistency of professional services as well as potential uncertainty regarding basic principles and concepts. The time has come to engage the professional community in a dialogue about the competencies practitioners in the diverse areas of sustainability should have to:

Purpose of this study:

1. Bring consistency to the field
2. Support professional development
3. Aid consumers of professional services

1. Bring consistency to the level of professionalism in the field.
2. Help those who want to enter the field with their training, learning, and development.
3. Aid consumers in distinguishing among service providers, vendors and potential employees.

What Do We Mean by 'Competency'?

Achieving sustainability will require a new set of skills and abilities. We must revamp the decisions and activities of professionals so that they are supported by an understanding of science and business with the goals of:

a) Integrating actions of conservation and human development.
b) Satisfying basic human needs.
c) Achieving equality and social justice for all.
d) Facilitating social self-determination and cultural diversity.
e) Managing our legacy for future generations.
f) Maintaining ecological integrity.
g) Developing new technologies and product manufacturing processes.

In order to attain this model of practice, existing and aspiring practitioners in different areas of sustainable development should be exposed to a consistent set of criteria and competencies defining their educational achievements in the overall field of sustainability.

This study was designed to identify the most commonly used set of competencies for those working in the field. A competency is an observable, behavioral act that demonstrates a professional's knowledge, skill and ability (KSA). (Pojasek, 2008). ISSP seeks to create a comprehensive taxonomy of competencies that define professional conduct and practice in the field of sustainability and that fulfill the requirements of organizations and communities pursuing sustainability. This taxonomy would, by itself, be a valuable resource to the profession, as it would provide clear guidance to members of the field for their professional development. In addition, it would form the foundation for more consistency across training and educational programs, and could eventually support the development of professional accreditation. This study takes into consideration the complexity of disciplines within the practice of sustainable development and the emerging field of sustainability science. ISSP wishes to establish criteria and competencies for practice in the very diverse and complex field of sustainability that will provide the various involved professionals a sense of recognition and credibility with their peers and with the public served by their work.

Review of Related Studies

The Sustainability Professional: 2010 Competency Survey Report is one of the first comprehensive assessments of the knowledge, skills and abilities necessary for practicing sustainability professionals, but like many pioneers, the ISSP researchers relied on the earlier work of others in crafting and refining their survey methodology. Below is a summary of previous research on key sustainability competencies from a variety of sources.

Sustainability Now! Workshop

In part, the genesis of ISSP's current effort on competencies for sustainability professionals was a workshop convened at George Washington University in 2006, which focused on the skill sets necessary for, and the potential certification of, sustainability professionals. Two current board members of ISSP, Warren Flint and Ira Feldman, who are also co-authors of this report, conceived and facilitated the Sustainability Now! Workshop, along with Mark Starik, a business school professor at GWU.

Acknowledging that sustainability principles are not always well elaborated or applied and that there was room for improvement in how sustainability should be translated into practice, the workshop organizers brought together more than 30 sustainability professionals for a discussion of "the scope of sustainability practice" and "sustainability practitioner competency areas." In the former category, participants shared definitions of sustainability practice; identified disciplinary domains and potential tasks of sustainability professionals; and explored underlying values and ethical issues supporting the work of sustainability professionals. In the latter category, the participants sought to articulate criteria and standards of knowledge, skills, education, and experience that would justify a certification program or a "Certified Sustainability Practitioner" ™ designation.(Sustainability Now!, 2006)

The summary report from the workshop details the range of disciplines and professions involved in sustainability practice; a catalogue of sustainability practitioner tasks; and proposed components of a certification program, including alternative goals, rules and outcomes. This initial effort also considered various approaches for areas of evaluation and demonstration of competencies. In addition to suggestions for core competencies and specialized skill sets (e.g., legal, communications, etc.), the report recognized that multiple paths for certification might be needed, mixing and matching education and experience. Looking to the future of the profession, the discussion ranged from the need for an independent board of approval to the need for a code of ethics. Finally, the participants debated the pros and cons of certification, along with suggestions for next steps, which included the formation of a professional society, since accomplished by the establishment of ISSP.

Hudson Gain

Hudson Gain, a New York City consulting firm, approached the issue of sustainability competencies from the perspective of applied research:

> If a corporation was considering hiring a chief sustainability officer, what characteristics would be sought and where could the best candidates be found? (Hudson Gain, 2008)

The firm selected global public and private organizations, several mid size companies, and businesses with established sustainability practices and reviewed the experiences and education of 214 sustainability executives. Follow-up interviews were conducted with 61 of the executives. The interviewees in the study cited these non-sector specific or universal qualities, criteria and characteristics of successful sustainability executives:

- Communication skills
- Technology knowledge
- Financial responsibility
- Commitment to continual improvement
- Innovation
- Ethics
- Supply chain knowledge
- Operations, structure, and culture understanding

When the 61 participants were asked to identify top-flight sustainability leaders and describe what made them special, they cited these qualities:

- Creative, innovative and breaking new ground
- Delivering results in sustainability across the 3 P's (people, profit, planet) of the Triple Bottom Line
- Great communicators
- Someone who sets a vision, gets the ball rolling, and measures success – typical in any function, but difficult in the new and sometimes elusive area of sustainability
- Freely sharing what they do with other companies

Environmental Defense Fund

The Environmental Defense Fund, a well known advocacy organization with over a half a million members, partnered with KRC Research in 2008 to conduct interviews with 25 senior sustainability professionals in Fortune 100 companies (Janin, 2009). The purpose of the survey was to understand what issues the executives tackled in their positions, the challenges they faced, and how they learned. Although competencies weren't the focus, one can surmise what they could be by looking at the critical issues the executives identified as requiring mastery:

- Building a business case for sustainability.
- Reducing energy costs, increasing efficiencies and shrinking the carbon footprint.
- Tracking and measuring improvements.
- Understanding regulations.
- Tapping into informal networks.
- Following best practices.
- Cooperating with others to share knowledge.

Cloud Institute for Sustainability Education

The Cloud Institute for Sustainability Education "equips school systems K-12 and their communities with the core content, competencies and habits of mind that characterize education for a sustainable future." With a target on classrooms instead of the boardroom, the Cloud Institute takes a high altitude bird's eye view on elements of sustainability:

- 21st century themes such as global awareness, financial, economic, business and entrepreneurial literacy, civic literacy and health literacy.
- Learning and innovation skills such as creativity, critical thinking and problem solving, communication and collaboration.
- Information, media and technology skills, such as information literacy, media literacy, and ICT (information communication technology) literacy (the Cloud Institute, 2004).

The International Institute for Sustainable Development

The Winnipeg based International Institute for Sustainable Development (IISD) produced a white paper in 2007 on their role in developing the next generation of sustainability leaders (Timmer, et al, 2008). 208 former IISD interns and young professional staff were surveyed, nine host organizations interviewed, and several focus groups conducted to identify the skills and beliefs required for entry, mid-level, and leadership sustainability positions.

Figure 1. Skills and beliefs for sustainability professionals

SKILLS	BELIEFS
1. Staff and team management	1. Global mindset
2. Long-term planning	2. Rooted in community
3. Project management	3. Thirst for global awareness
4. Financial skills	4. Equity
5. Donor or client relations	5. Sense of urgency
6. Communication skills	6. Passion for sustainability
7. Translating complex ideas	7. Capacity for innovation
8. Analytical rigor	8. Embrace a learning culture
9. Knowledge management	9. Accept trade-offs
10. Influencing strategy	10. Tenacity
11. Awareness of stakeholder roles	11. Warmth in human relationships
12. Geo-political awareness	12. Respect for diversity
13. Facilitation skills	13. Science as part of the solution
14. Network management	14. Value integrated thinking
15. Systems approach	15. Commitment to sustainable living
16. Understanding global institutions & processes	
17. Understanding the private sector	
18. Managing unpredictability	
19. Bridging disciplines or sectors	
20. Bridging cultures	
21. Managing diversity in the workplace & socially	

PP4SD

Fourteen professional bodies in the United Kingdom launched an initiative called Professional Practice for Sustainable Development (PP4SD). The objectives were:

- To engage the participating professions in a learning process to develop a common curriculum framework for sustainable development.
- To develop, test and publish training materials derived from the framework appropriate to the needs of the professional institutions.

The professional organizations published a report in 2000 identifying what all sustainability professionals should know. Disappointedly, the researchers failed to describe the methodology they used to arrive at their extensive list of knowledge areas (Hall, 2003).

Figure 2. Knowledge areas for sustainability professionals

ACTION TOOLS	HISTORY OF SUSTAINABILITY: progress to date	CULTURE and EMOTION
Economic instruments	Politics	Cynicism, guilt, fear, denial
Avoiding, remedying and mitigating environmental effects	Business; current state of play in various business sectors	Joy, 'it's not hopeless'
Public education and awareness, both at home and at work	State of environment – living planet index	Creativity
Sectoral strategies for sustainable development, e.g. transport, energy, waste, etc.	Social issues	Attitudes to and perceptions of sustainable development
An achievable plan for you as an individual (personal, spiritual and professional)	Threats to future progress of sustainable development	Image, style
An achievable path or plan for your organization	UK Sustainable Development Strategy	Ethics – personal, professional and corporate
Partnership	**Definitions**	Value judgments
Environmental management systems	Quality of life	**Vision**
Legislation – current and future trends, e.g. polluter pays	Value	Social, environmental and economic aspects – achieving a balance: 10, 20 and 50 year scenarios
Innovation	Sustainable economy	
Industrial ecology	**Human needs**	**The role of the professions**
The Natural Step – framework for sustainability	Environmental assessment – project, strategic, impact	General role
Ecoefficiency	Social audit, indicators, footprinting	Diversity of roles and responsibilities
BSI, CEN and ISO Standards e.g. 14000 series	Scenario planning, including Shell, World Business Council for Sustainable Development	Helping professions become more sustainable
Planning/'town planning'	Biodiversity plans	Accessible information and public understanding
LA21	Life cycle analysis	Inter-professional working
Carbon management	Risk assessment	**Business case for sustainability**
Ethical and fair trading	**Science**	Examples of emerging business opportunities: renewables, fuel cell, bioplastic
Stakeholder dialogue	Systems thinking	Natural capital, social/human capital, financial, intellectual capital
Waste minimization	Thermodynamics	Links-between health and safety, risk, accountability, stakeholders, shareholders
Supply chain management	Man's niche in the eco- and techno-system	License to operate
Factor 4 and Factor 10	Interaction of industry and nature	Good management is efficient and profitable and good for the environment
Equal opportunities	Complexity of interactions	Working with clients
Leadership and change management	Air, water, land and space	Consensus across industrial sectors
Social and environmental reporting	Regional variation, bioregions, the North–South divide	
Dealing with trade-offs	Population trends	
Technology transfer	Limits to growth	

Conclusion

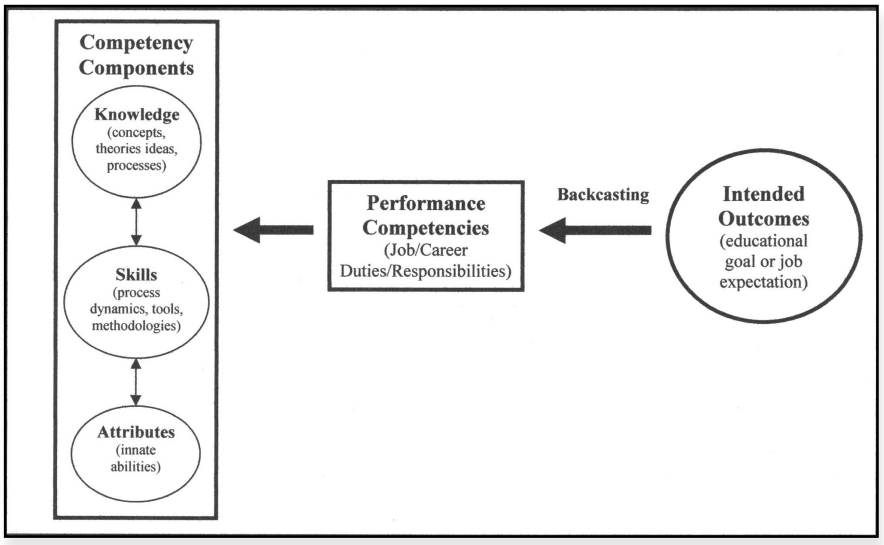
Each study had a slightly different focus yet resulted in an overlap of skills identified. Communication skills were identified in more than one study, as was the ability to understand systems and to build the business case for sustainability. The nature of the information provided by these other pieces of research provided good high-level overviews of the field. ISSP sought to bring more specificity to the conversation in an effort to help professionals and the people that employ them determine more precisely the skills and abilities most critical to the work of implementing sustainability within organizations.

ISSP Study Methodology

ISSP built on the existing body of knowledge in an attempt to further refine and define the field. A team comprised of ISSP members of the Board of Directors and associates sought to determine the precise competencies required to excel as sustainability professionals, both now and in the near future. The committee was made up of veteran sustainability professionals who collectively had decades of experience as sustainability practitioners, consultants, educators and researchers. The ISSP study included three phases of research.

Phase 1: Review of the Field

The ISSP committee first established an a priori competency matrix based on the experience of committee members, review of other studies and examination of existing curriculum from institutes of higher education offering advanced degrees or training in sustainability. Using a backward chaining process, the committee began with the job requirements common to sustainability professionals and then worked backward determining the abilities, skills and knowledge necessary to successfully achieve those job outcomes. This analysis enabled the committee to identify a set of both technical skills and "soft" skills commonly demanded by the work in the field. In addition, the committee identified several knowledge areas needed to support the performance of the tasks commonly required in our work.



The beginning presumption was that work in the realm of sustainable development requires complex experience and understanding of multiple concepts and theories as well as an ability to improvise, adapt, innovate, and dream up still more visionary-yet-feasible ideas about how to transform a global civilization or rescue ecosystems in trouble. Sustainability practice is a collaborative activity that assesses, plans, implements, coordinates, monitors, and evaluates the options and services required to collectively meet an individual's, group's, or community's socio-economic and environmental well-being needs, using communication and available resources to promote quality, cost-effective, limited resource sensitive outcomes. Subsequent phases of the study sought to test these hypotheses in order to define more specific competencies.

Phase 2: Interviews with Leaders

Based on this background work, the committee then worked with Hansa GCR, a full service marketing research and advisory firm, to craft a set of interview questions to pose to a chosen set of seasoned professionals. The purpose of these interviews was to validate our notions of critical skills and issues in order to develop a broader survey with high face validity.

Hansa GCR and the ISSP committee identified a group of ten subject matter experts (SME) to participate in these initial interviews. The ten participants were hand-picked on the basis of their level of experience and standing in the profession. Each of the participants had at least ten years experience, several much more. Many are recognized authors and practitioners in the field. We are grateful for the time these individuals took to contribute to this study, lending their insight, experience and expertise.

These SMEs were interviewed with open-ended questions to develop a list of items for use in the survey (See Appendix A for the complete list of interview questions). Hansa GCR contributed their time and expertise to conducting, analyzing and summarizing the results of the interviews. Using their conclusions, Hansa GCR created the first draft of the survey intended for use in phase three of the study. This initial survey was subject to several pretests. The pretests were used to clarify questions and eliminate redundancies.

Phase 3: The Professional Survey

After several reviews, the final web-based survey instrument was developed and administered by Zanthus, provider of technology-related market research and business consulting. The survey was open for completion from September through December 2009. The survey was written in English, but made available to our international audience (See Appendix B for the complete survey). Initial survey questions served to separate out respondents who did not meet the minimum age requirement or respondents for whom sustainability was less than a quarter of their current or recent work.

The survey consisted of over thirty items segmented into these categories:

- Screening questions to assure the appropriateness of respondents
- Background and demographic information about respondents
- Current and future challenges and issues
- Current and future skill needs
- Compensation rates

Requests for participation were sent to the ISSP membership, the ISSP mailing list, to members of other related organizations with whom ISSP has a relationship (e.g. Association for the Advancement of Sustainability in Higher Education, GreenBiz.com), to institutes of higher education that offer graduate programs in sustainability (e.g. Bainbridge Graduate Institute, Presidio School of Management) and individuals within the professional networks of committee members. Respondents self-selected by accessing links to the survey placed in the invitation materials and on the ISSP web site. Respondents were able to opt in to the survey at their convenience. The survey took approximately 25 minutes to complete.

A total of 385 qualified respondents completed the survey. The survey had a sampling error of +/-5.0% at the 95% confidence level in the most conservative case (Some questions have smaller sample sizes and therefore larger sampling errors). Potential non-sampling errors should also be considered when evaluating the results of this survey. Chief sources are a focus on English-speaking respondents and potential self-selection bias, which may contribute to the relatively high level of experience among survey respondents.

Respondent Profile

Demographics:

- 79% of sustainability professionals polled for the survey work in North America.
- 53% are males.
- 61% are between 35 and 54 years of age.

Education:

- 93% have at least a bachelor's degree.
- 60% have a master's degree.
- 10% have doctorates.
- 19% have completed a sustainability certificate program.
- 20% are currently pursuing one.

Experience:

- 74% are currently in a paid position where sustainability comprises at least 25% of their responsibilities.
- 63% have three or more years of paid work experience in the field, and
- 27% have 10 or more years.
- 36% are consultants.
- 56% work in organizations with fewer than 100 employees.

Compensation:

- 47% of U.S. residents earn between $50,000 and $99,999 per year (before taxes) from sustainability-related work.

Research Results

The survey netted rich results. This section summarizes the findings from our three key areas of interest, beginning with the issues and challenges considered of most importance to the respondents and then following with a summary of the performance requirements those challenges imply. Performance requirements cover both "hard" and "soft" skills in an effort to create a complete set of competencies.

The Issues

ISSP began the survey questions with an open-ended question asking respondents to identify the sustainability issues of most importance to their organizations, and for consultants, to their clients' organizations (see box). This question helped us identify where the field may be going while at the same time added context to the questions regarding skills and abilities that followed.

Q15

What would you say is the single most important sustainability-related issue [your organization is / your clients' organizations are] facing? Please be as specific as possible in your answer.

Q23

Now, please think about the sustainability issues [your organization / your clients' organizations] will likely face five years from now. What do you think will be the single most important issue?

The top two major issue categories that emerged were: 1) promoting an understanding of the value of sustainability, and 2) dealing with climate change and related energy needs. Promoting understanding is expected to decrease in importance in five years, while climate and energy issues are expected to increase in importance in five years.

Promoting an understanding of the value of sustainability reflected several underlying themes, including:

- Demonstrating the return on investment in sustainability initiatives, and maintaining a competitive edge while addressing sustainability issues.
- Obtaining funding for sustainability initiatives.
- Getting people to understand sustainability and begin to think with a sustainability "mind set," and to adopt sustainable lifestyles.
- Getting buy-in from leaders as to the strategic and competitive benefits.

Sampling of verbatim responses:

"Overcoming the false preconception that sustainability means sacrifice and expense rather than the reality that it leads to opportunity and competitive advantage."

"Uncertainty over federal climate and energy legislation and federal funding and tax treatment for renewable energy."

"The balance between profitability and sustainability. How can we achieve both, quickly?"

We were not surprised to see issues related to energy and climate change near the top. Respondents spoke about climate change in a number of different ways. Some were concerned about the impacts of climate change on their world and their industries. Others made comments about their concern for how their

organizations or their clients would need to respond in terms of accepting responsibility for their greenhouse gas emissions and, separately mentioned, about how to manage and decrease those emissions.

As to how respondents see these issues changing over time, most seemed to believe that energy and climate issues will be increasingly important in the coming few years, as will increased regulation (carbon related legislation being the most often cited regulatory issue). Water (e.g. water availability, toxicity, management) also moves up on the list of concerns of the future. However, most respondents believe that the need to teach people about sustainability and convince them of its importance and relevance will begin to diminish over time.

Figure 4. Most important sustainability issues

% Mentioning	Now	In 5 Years
	A	B
	381	375
Promoting understanding/value of sustainability (Net)	34%[B]	16%
ROI	9%[B]	1%
Competing pressures (profits vs. enviro impacts)	8%[B]	2%
Funding	5%	4%
Mind sets for sustainability	4%[B]	1%
Convincing the public to change/adopt sustainable lifestyles	3%	2%
Getting buy in from leaders and shareholders	3%	2%
Proving the benefits of sustainability	3%[B]	1%
Market advantage from sustainability	1%	0%
Staying competitive	0%	4%[A]
Climate/Energy (Net)	29%	40%[A]
Energy	10%	14%
Climate change	8%	12%
GHG management	6%[B]	1%
Carbon emissions	5%	9%[A]
Regulation and legislation	3%	9%[A]
Training and education	8%[B]	3%
Managing organizational change	5%[B]	2%

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

After giving respondents a chance to self identify issues, we tested the perceived importance of issues ISSP thought might be of concern. This listing did not call out specific environmental or social concerns, but focused instead on the internal workings of an organization. Of the eighteen items we listed, respondents again gave highest rankings to those four issues related to demonstrating the value of sustainability in terms of getting buy-in, proving the business case both internally and externally, and getting funding for sustainability initiatives. Close behind were issues of maintaining focus on sustainability in the face of changing business priorities and overcoming internal resistance to changes that result from implementing sustainability related initiatives.

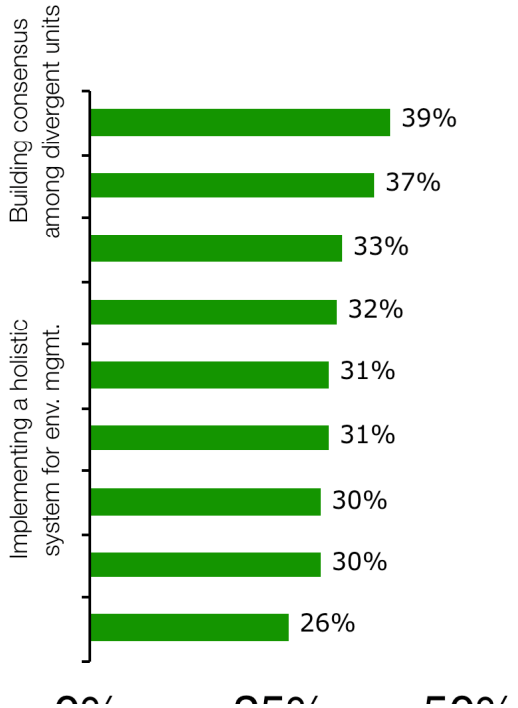
Q16
Rate the 18 issues provided on a scale of 1-7 indicating their importance.

Q17
Now, rank the top three issues from among the top-rated issues.

Figure 5. Importance of sustainability issues – top tier

Figure 6. Importance of sustainability issues – second tier

% Rating "Of Extremely High Importance"



(6-7 on 7-pt. scale)
n (sample size) = 385

Slicing the data further, we see that these rankings change somewhat depending upon the size of an organization, and, of course, whether the respondent was working internally or acting as an external consultant to organizations. The charts below break down the responses to question 16 and question 17 by size of organization as well as by internal/external perspectives.

Figure 7. Issue importance by size of organization

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Number of Employees			
	A	B	C	D
	< 10	10-99	100-999	1,000+
n (sample size) =	133	81	70	100
Overcoming internal resistance to change	39%	42%	46%	55%[A]
Environmental compliance/performance	38%	37%	47%	52%[AB]
Building support among employees	32%	32%	51%[AB]	53%[AB]
Building consensus among divergent units	32%	33%	37%	57%[ABC]
Creating/maintaining sustainability reporting	26%	21%	37%[B]	45%[AB]
Designing a holistic system for env. mgmt.	26%	22%	39%[B]	36%[B]
Social responsibility compliance/performance	26%	27%	26%	42%[ABC]

% Ranking in Top 3	Number of Employees			
	A	B	C	D
	< 10	10-99	100-999	1,000+
n (sample size) =	110	71	59	76
Developing business cases	43%[CD]	30%	22%	29%

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Generally speaking, the larger the organization, the more important it is to manage change and build support. Similarly, larger organizations put more emphasis on establishing and maintaining systems for managing efforts and assuring compliance. It is further worth noting that the issue of social responsibility is more important in the largest of organizations and is significantly less important to smaller organizations.

As indicated in Figure 8, those working in non-consulting organizations tend to be more concerned than consultants with educating customers, and with staying current with

scientific findings. Consultants, on the other hand, are more concerned with developing business cases, getting buy-in from top management, and benchmarking.

Figure 8. Issue importance between internal and external professionals

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Industry	
	A	B
	Consulting	Other
n (sample size) =	140	245
Educating customers or clients about efforts	39%	57%[A]
Staying current with env. scientific results and info	23%	39%[A]

% Ranking in Top 3	Industry	
	A	B
	Consulting	Other
n (sample size) =	110	207
Developing business cases	43%[B]	27%
Buy-in from top mgmt.	42%[B]	23%
Educating customers or clients about efforts	19%	33%[A]
Benchmarking against other organizations	20%[B]	9%

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Funding for individual initiatives is somewhat more important to consultants and those in government, education and non-profits than to those in manufacturing/services. Conversely, those in manufacturing/services are more likely than those in other industries to think designing or redesigning product and service offerings is very important.

Figure 9. Importance of issues by sector

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Industry		
	A	B	C
	Consulting	Govt, Educ, Non-Profit	Mfg. & Services
n (sample size) =	140	118	126
Funding for individual initiatives	53%[C]	62%[C]	33%
Re/designing product/service offerings	34%	35%	57%[AB]
Creating/maintaining sustainability reporting	26%	38%[A]	33%
Designing a holistic system for env. mgmt.	26%	37%[A]	28%

% Ranking in Top 3	Industry		
	A	B	C
	Consulting	Govt, Educ, Non-Profit	Mfg. & Services
n (sample size) =	110	97	109
Funding for individual initiatives	30%[C]	43%[AC]	18%
Re/designing product/service offerings	15%	22%	39%[AB]
Changing business conditions/priorities	20%	13%	25%[B]

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Skills

When sustainability professionals are asked to describe in their own words the top skills needed for success in the field, good communication skills come out on top. Other skills are mentioned less often by the group as a whole.

Q18
Thinking about the sustainability challenges facing [your organization / your clients' organizations], what are the top skills that someone would need in order to be successful as a sustainability professional? Please list up to three skills, separated by commas.

Figure 10. Skills deemed important to respondents

Hard Skills

Q19
Please consider the following list of "hard skills." Please rate the importance of each of these skills in terms of how necessary they are for you to be successful as a sustainability professional.

Q20
Please rank your top 3 most important "hard skills" in order of importance.

The top rated hard skills -- strategic planning, systems thinking, and project management – rose to the top of the list in response to both our "high importance" and "top 3" questions, indicating consistent recognition across the board. There was a clear separation between these three and the next cluster of responses, which included: financial analysis, auditing, accounting and reporting, policy expertise, risk assessment, and life cycle costing. One interpretation of these findings is that the top cluster is somewhat more generic than the second cluster of more specialized skills. Indeed, one could argue that the top three could have been included as responses in the "soft" skill category, i.e. they were not specific enough to qualify

as "hard." Another interpretation is simply that the responses ranged from general and cross-cutting to the more specific and specialized, since the next lower cluster of responses – vendor management, technology/engineering expertise, scientific expertise, process management – is even more specialized.

Hard skills will remain important five years out for a variety of reasons. The most frequently cited responses were generic in nature: hard skills as providing competitive advantage, as essential or foundational, and as strategic or transformational. A more specific response – hard skills fostering performance tracking and accountability – also ranked highly.

Figure 11. Hard skills needed for success now

When the data was analyzed by organization size, there was a significantly higher importance placed on accounting and reporting for larger organizations as compared to smaller organizations. Similarly, technical expertise was considered a "top 3" item in larger organizations.

Figure 12. Difference in hard skill needs by size of organization

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Number of Employees			
	A	B	C	D
	< 10	10-99	100-999	1,000+
n (sample size) =	133	81	70	100
Sustainability accounting and reporting	30%	22%	40%[B]	41%[B]

% Ranking in Top 3	Number of Employees			
	A	B	C	D
	< 10	10-99	100-999	1,000+
n (sample size) =	128	79	69	92
Scient. expert. (chem., env. tox., climate)	11%	6%	19%[B]	23%[AB]

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Financial analysis/ROI ranks higher in importance for both consulting and manufacturing /services as compared to the not-for-profit group. Risk assessment is also more important in the manufacturing/services sector than for not-for-profit respondents.

Q21
Please consider the following list of "soft skills." Please rate the importance of each of these skills in terms of how necessary they are for you to be successful as a sustainability professional.

Q22
Please rank your top 3 most important "soft skills" in order of importance.

Somewhat surprising was the higher importance attributed to auditing in consulting and not-for-profit sectors as compared to manufacturing /services. Finally, as might be expected, we found a significantly higher importance placed on technology and engineering expertise for manufacturing/services as compared to the other sectors.

Across sectors, strategic planning and systems thinking remain important, though they are especially likely to emerge as top-ranked issues among government, education and not-for-profit organizations.

Figure 13. Difference in hard skill needs by industry sector

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Industry		
	A	B	C
	Consulting	Govt, Educ, Non-Profit	Mfg. & Services
n (sample size) =	140	118	126
Financial analysis/ROI	49%[B]	34%	47%[B]
Auditing (GHG, Sustainability)	47%[C]	40%[C]	25%
Risk assessment	37%	27%	40%[B]

% Ranking in Top 3	Industry		
	A	B	C
	Consulting	Govt, Educ, Non-Profit	Mfg. & Services
n (sample size) =	134	111	123
Strategic planning	57%	68%[C]	50%
Systems thinking	57%	68%[C]	45%
Financial analysis/ROI	28%[B]	15%	30%[B]
Auditing (GHG, Sustainability)	23%[C]	26%[C]	11%
Technology and/or engineering expertise	8%	3%	24%[AB]

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

There is clearly a North American bias favoring the "hard" skills in favor of financial/ROI and vendor management as compared to other regions, but the preference is reversed for policy expertise and risk assessment, a significant finding that will require further exploration and interpretation. We found that the "systems thinking" terminology resonates more strongly in North America than elsewhere, while "risk assessment" scores were high in regions outside of North America.

Figure 14. Differences in hard skill needs by region

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Region	
	A	B
	N. America	Other
n (sample size) =	305	80
Financial analysis/ROI	47%[B]	31%
Policy expert. (env. comp., res. mgmt)	33%	46%[A]
Risk assessment	32%	45%[A]
Vendor management	28%[B]	13%

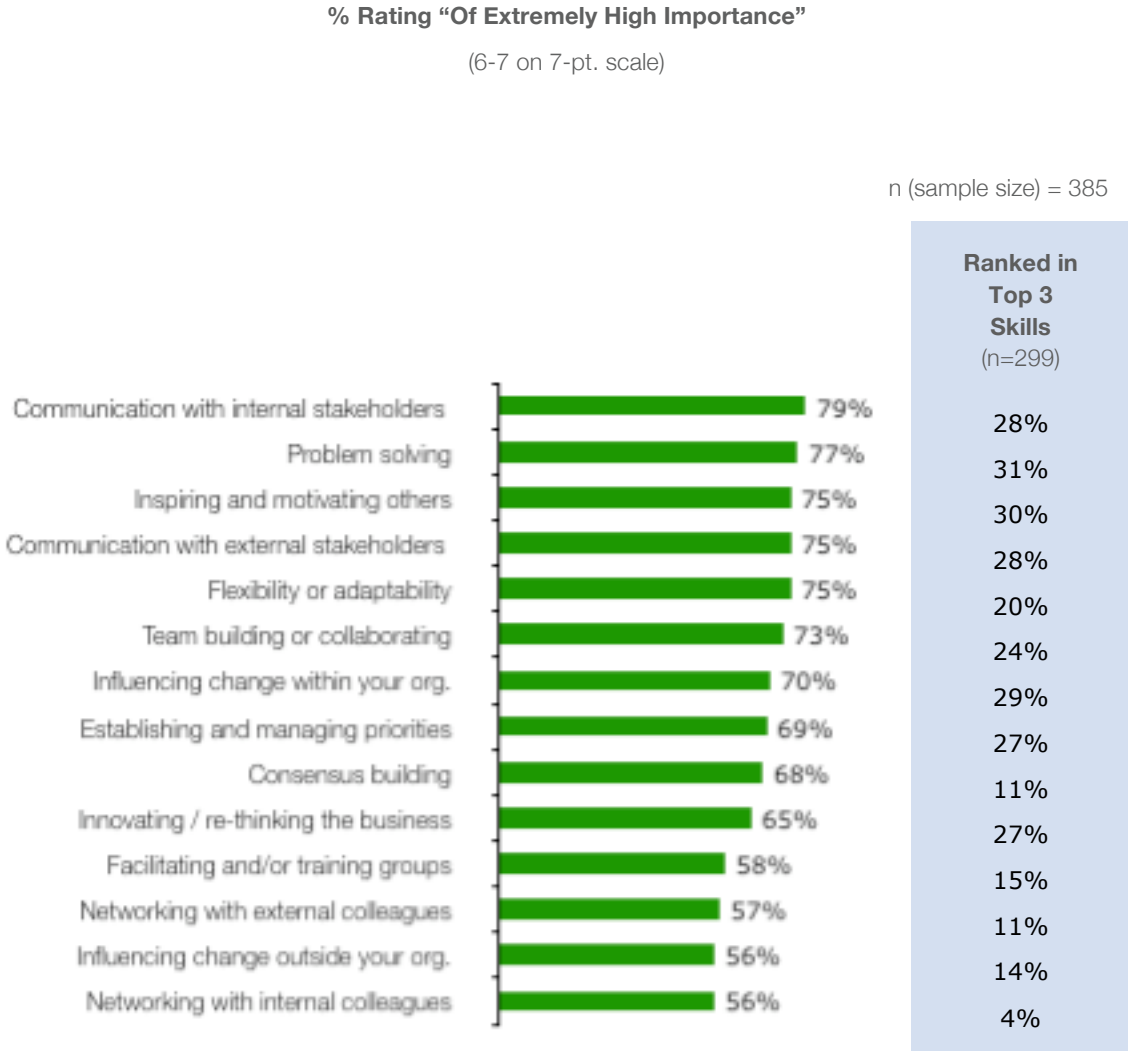
% Ranking in Top 3	Region	
	A	B
	N. America	Other
n (sample size) =	293	76
Systems thinking	59%[B]	45%
Risk assessment	7%	26%[A]

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Soft Skills

Our results indicate that more "soft" skills are deemed of extremely high importance than "hard" skills. Among the soft skills examined, those considered most critical are communication with internal and external stakeholders, problem solving and inspiring and motivating others.

Figure 15. Soft skills needed for success now



One of the most striking findings of our study, as illustrated by the responses to questions 21 and 22, is that larger organizations prize internal communication skills (or, otherwise interpreted, they recognize internal communication as a stumbling block for implementing sustainability programs, so relevant remedial skills would be highly valued). In contrast, smaller organizations are more concerned with external stakeholders and influencing change outside the organization.

Figure 16. Difference in soft skill needs by size of organization

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Number of Employees			
	A	B	C	D
	< 10	10-99	100-999	1,000+
n (sample size) =	133	81	70	100
Communication with internal stakeholders	74%	69%	89%^{AB}	87%^{AB}
Influencing change within your org.	61%	63%	77%^{AB}	83%^{AB}
Influencing change outside your org.	64%^{CD}	58%	47%	48%
Networking with internal colleagues	45%	46%	57%	76%^{ABC}

% Ranking in Top 3	Number of Employees			
	A	B	C	D
	< 10	10-99	100-999	1,000+
n (sample size) =	101	67	57	73
Communication with internal stakeholders	23%	16%	42%^{AB}	34%^{B}
Communication with external stakeholders	37%^{CD}	34%^{D}	19%	18%
Influencing change within your org.	18%	21%	40%^{AB}	45%^{AB}
Influencing change outside your org.	21%^{CD}	16%	9%	7%

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Also, it was rather unexpected to find that, when comparing consultants to all others, networking with internal and external colleagues and influencing change within the organization were significantly more important for others than for consultants.

Figure 17. Difference in soft skill needs between internal and external professionals

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Industry	
	A	B
	Consulting	Other
n (sample size) =	140	245
Networking with external colleagues	48%	62%[A]
Networking with internal colleagues	45%	62%[A]

% Ranking in Top 3	Industry	
	A	B
	Consulting	Other
n (sample size) =	112	187
Influencing change within your org.	21%	35%[A]

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Interesting, and worthy of further exploration given its implications, is our finding that innovating is deemed much less important to not-for-profits (including government and education) as compared to consultants and manufacturing. The distinctiveness of not-for-profits is further emphasized by our finding that not-for-profits rate a slate of four soft skills – communication with internal stakeholders, flexibility and adaptability, inspiring, and consensus building - consistently higher than their consulting and manufacturing counterparts.

Figure 18. Difference in soft skill needs by industry sector

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Industry		
	A	B	C
	Consulting	Govt, Educ, Non-Profit	Mfg. & Services
n (sample size) =	140	118	126
Communication with internal stakeholders	76%	89%[AC]	72%
Flexibility or adaptability	71%	84%[AC]	71%
Inspiring and motivating others	69%	85%[AC]	71%
Consensus building	63%	80%[AC]	62%

% Ranking in Top 3	Industry		
	A	B	C
	Consulting	Govt, Educ, Non-Profit	Mfg. & Services
n (sample size) =	112	83	103
Innovating/rethinking the business	33%[B]	8%	35%[B]
Team building or collaborating	27%[C]	33%[C]	15%

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Finally, by region, we found that North American respondents are more focused on establishing and managing priorities and facilitating or training groups as compared to their non-North American counterparts.

Figure 19. Difference in soft skill needs by region

% Rating "Of Extremely High Importance" (6-7 on 7-pt Scale)	Region	
	A	B
	N. America	Other
n (sample size) =	305	80
Establishing and managing priorities	72%[B]	58%
Facilitating and/or training groups	61%[B]	48%

% Ranking in Top 3	Region	
	A	B
	N. America	Other
n (sample size) =	237	62
Establishing and managing priorities	31%[B]	11%

[NOTE: superscript letters indicate those columns with which the difference is statistically significant]

Looking ahead five years, we found that soft skills are considered important for change and transformation purposes, whether applied inside the organization or in dealings with suppliers and partners.

Implications

The findings of this study will provide important information to professionals interested in preparing for a career in sustainability as well as purveyors of training and education eager to help prepare those people. The implications of the results of the survey suggest the following focus areas for professional development.

Organizational change and stakeholder management

Change management is a key theme that emerges from the survey findings, across all organization sizes and types. Sustainability professionals recognize the enormous task of bringing about change, and all that it implies in terms of managing stakeholders, adapting organizational systems and building support and commitment. As a result, "soft" skills such as communication, facilitation, consensus building and networking are deemed of especially high value by the group as a whole. Demonstrating financial viability and return on investment are considered important enablers of change.

Educational programs should stress these as "core" skills, and recognize subtleties between bringing about change within organizations (especially for large organizations), and doing so externally.

Where feasible, consider partnering with organizations that offer training programs in communication, public speaking and persuasion.

Technical skills are more industry specific

Aside from planning and project management, many "hard" skills vary in importance by industry. This implies creating tracks for professionals of various types where they can develop expertise that is specific to their type of business or organization. The one exception to this rule is in the area of greenhouse gas auditing and action planning. While it is a specialty skill area in itself, the survey indicates that organizations in all sectors will need help in managing, mitigating and monitoring greenhouse gases.

Leverage current professionals as educators and mentors

Many current sustainability professionals have deep experience in the field. Many ISSP members, for example, have demonstrated experience in a variety of aspects of sustainability that stretch back into the last century. Professional networks, like the one created by ISSP, help connect professionals to foster learning and mentoring and bring strength and credibility to the field.

With this guidance, professionals can experience a reorientation to existing education that includes:

a) Principles, skills, and perspectives related to sustainability.

b) Learning that is appropriate and relevant.

c) A vision that integrates environment, society, and economy.

d) Knowledge of tools and methodologies to employ in guiding and motivating people to participate in a democratic society, assess their core values, and live in a sustainable manner.

With the appropriate training and continued professional development approaches, the sustainability practitioner should be able to bridge the gap in aligning economic practices with social and environmental goals as well as assist decision-makers to both select and synergize their efforts for maximum strategic effectiveness and efficiency.

Next Steps

There is a need for practitioners to begin to conceptualize sustainability in the context of inter-disciplinary approaches that cross traditional boundaries of organizational development, technical environmental management, corporate philanthropy and public relations. As the professional association for this field, ISSP is in a unique position to support this evolution and forge consensus around the standards, competencies, practices and methodologies that define sustainability expertise and begin to identify specific objectives for education and training which will guide a new model for continued professional development of the practitioner.

As a next step towards this goal, ISSP will take the information from this study and begin populating a matrix with information that will guide our understanding of sustainability competency core components as they relate to each other and to supporting professional activities. Building on the backward chaining approach described earlier in this report, ISSP will assign the skills and competencies and the implied knowledge areas needed to fulfill the tasks common to sustainability coordinators. A hypothetical example of what the Core Competency Matrix looks like after data has been entered from competency study research is illustrated by the following tables. These tables demonstrate the process we will ultimately pursue in identifying a complete, integrated picture of core competencies/learning outcomes in sustainability (i.e., what students must know in order to graduate and pursue a specific career in the field).

Figure 20. Sample Core Competency Matrices

1 **Knowledge** (Concepts, theories ideas, processes)	2 **Skills** (process dynamics, tools, methodologies)	3 **Attributes** (Innate Abilities)	4 **Performance Competencies** (Job/Career Duties/Responsibilities)	5 **Intended Outcomes** (Educational Goal or job expectation)
• Niche Market • Basic Principles of Natural Systems • Business Model • Carbon Footprint • Ecological Integrity • Economics • Environment • Environmental Justice • Environmental Management Systems • Gross National Product (GNP) • Social Responsibility • Supply Chain • Triple Bottom Line • Ecological Economics • Ecosystem services • Efficiency • Externalities • Globalization • Gross Domestic Product (GDP) • Human Rights • Natural Resources and Biodiversity • Social Justice • Value Chain	• Pollution prevention (P2) • Analysis of Environmental Problems • Cap and Trade • Socially responsible investing (SRI) • Pollution Trading • System's Thinking • Business Case • Full Cost Accounting • The 4 P's of Marketing • Designing a Sustainable System • Life Cycle Analysis • Ecological Footprinting • Economic Restructuring • Effective Communication • Efficiency • Indicators and Indexes • Influencing the organization • Interdisciplinary • Leadership • The Natural Step • Sustainability Planning • System's Thinking	• Accountability • Change Agent • Critical Thinking • Ethical • Decisive • Social Equity • Confident • Integrative and Adaptive • Local & Global Responsibility • Open-minded • Organizational Structuring • Systematic • Personal Responsibility • Precautionary • Proactive and Organized • Problem Solving • Process Focused • Versatile	1. greenhouse gas reductions 2. experience in developing and presenting sustainable business concepts, training, and burgeoning technologies 3. knowledge of emerging sustainable business strategies 4. measure progress through use of indicators 5. performs life cycle assessments 6. develop resource inventories 7. waste elimination 8. environmental policy/planning 9. social marketing to change consumer behaviors 10. environmentally preferable purchasing and supply chain management 11. transportation energy saving 12. write and present annual sustainability reports 13. ability to work with teams to evaluate decisions based on financial and sustainability goals 14. design and direct a sustainability operating system (SOS) 15. conduct sustainability audits 16. assist departments in development of metrics specific to their work areas 17. understand basic principles that govern natural systems	**Corporate Sustainability Manager**

1 **Knowledge** (Concepts, theories ideas, processes)	2 **Skills** (process dynamics, tools, methodologies)	3 **Attributes** (Innate Abilities)	4 **Performance Competencies** (Job/Career Duties/Responsibilities)	5 **Intended Outcomes** (Educational Goal or job expectation)
• Globalization • Governance • Green Building • Ecosystems • Adaptive Management • Tragedy of the Commons • Land Management • Basic Principles of Natural Systems • Low-Impact Development (LID) • Carbon Footprint • Ecological Integrity • Economics • Environment • Environmental Justice • Intergenerational Equity • Natural Capital • Social Responsibility • Natural Resources and Biodiversity • Ecological Economics • Urban Design	• Conservation-Based Development • Analysis of Environmental Problems • Citizen Engagement • Community Development Assets • Community-Based Decision-Making • Effective Communication • Team Engagement • Ecological Footprinting • Economic Restructuring • Indicators and Indexes • Influencing the organization • Interdisciplinary • Leadership • Multilateral Organizations • Negotiation and Conflict Management • Pollution prevention • Problem Solving • Project Planning • Public Discourse and Policy • SWOT Analysis	• Precautionary • Open-minded • Systematic • Confident • Change Agent • Adaptable & Resourceful • Diplomatic • Observant • Critical Thinking • Decisive • Democracy • Ethical • Flexible • Integrative and Adaptive • Lifelong Learning • Local & Global Responsibility • Logical • People sensitive • Perceptive • Personal Responsibility • Problem Solving • Proactive and Organized	1. environmental policy/planning 2. effective communicator 3. foster an environment of acceptance, fairness and mutual respect 4. transportation planning 5. environmental health and quality improvement 6. climate change research and analysis 7. greenhouse gas reductions 8. resource conservation 9. waste elimination 10. foster an environment of acceptance, fairness and mutual respect 11. facilitation, change management and group process skills 12. project management and priority setting 13. community partnerships 14. identify sustainability project funding sources 15. develop new initiatives that promote organizational or community sustainability 16. understand the significance, definition process, and utility for sustainability indicators 17. ability to analyze data, evaluate outcomes and recommend actions 18. understand basic principles that govern natural systems 19. recognize cultural, economic, and political forces that affect environmental attitudes and decisionmaking based upon science and technology understanding 20. ability to marshal support	**Sustainable Community Development Director**

Once the competencies for practice in sustainable development are identified and agreed to by professionals in the multidisciplinary field, ISSP and others will be in a position to partner with institutions of higher education in developing or strengthening curricula to train their graduates. Likewise, the competencies will offer guidance to those organizations, including ISSP, in developing training materials that fill the gap in the further professional development of the field.

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Appendix A - Interview Questions

i. Position Description

a) I'd like to begin by asking you a little about how your organization is structured. Thinking about your organization's structure or org chart, where is your role positioned within the organization?

b) To whom do you report? What is their job title?

c) Does anyone report to you? If so, what are their job titles?

II. Job Responsibilities

a) In your own words, how would you describe your position?

b) If necessary: Please tell me briefly about your primary job responsibilities?

c) Which of the following are included in your job? Read options.

- Sustainability
- Health or Environmental Safety
- Corporate Social Responsibility

d) Are you able to apportion your work responsibilities in terms of the three legs of the "sustainability stool" (environment, society, and economy)?

- If yes, What does that apportionment look like? Please explain.
- If no, Why not?

e) Does your job description accurately reflect what you do? If not, what would you add or take away?

f) Is your position a new role within your organization?

- Do you know why your organization created your role? If yes, please explain.

g) Before accepting your current position, were you employed elsewhere within the organization, or did you join the organization from outside?

- [if previously employed elsewhere within the organization] Do you feel that your previous experience within the organization is essential to success in your current position? Why or why not?

III. Organizational Challenges and Climate

a) Thinking about your organization's (clients') position on sustainability, what are the key business challenges facing your (their) organization today?

- How do you see those business challenges aligning (or being apportioned) among the three legs of the sustainability stool?

b) How do you see those business challenges evolving or changing over the next five years?
   - Do you foresee a shift in how those changing business challenges are aligned with the sustainability stool? How so? (or Why not?)

c) Does your organization's (clients') leadership team actively support sustainability efforts at your (their) organization? How do they show their support?

d) What about the rest of the employees at your (their) organization, do they actively support the organization's sustainability efforts? Is employee support measured in some way?

IV. Success Criteria and Goals

a) [Don't ask if interviewee is a consultant] How well are the formal duties in your job description aligned with your organization's strategic sustainability priorities? Why or why not?
   - What needs to added (or removed) from your job description to make it a better fit?

b) What criteria are you using to measure success in your job? Is it, for example, based on outcomes, results, or benefits?
   - And how does your manager evaluate your success?

c) Give me an example of an important goal you had to set as part of your role. Was this goal attained? Why or why not?

d) What action that you have taken has been most effective in encouraging the rest of your company to support efforts related to sustainability?

e) Thinking about your current position, describe the outcome or achievement that you are most proud of. What resources—both at your company and for you specifically—were needed to make it possible?

f) Within your position, what are your professional goals for the next year or two? What are you hoping to achieve for your organization?
   - How do you see your position evolving, both professionally and organizationally?

V. Barriers and Challenges

a) Now, thinking about yourself, what are some of the challenges that you face regularly in your position?

b) Describe one of the toughest challenges you've encountered in your current position. How did you respond? What did you do and what was the outcome?

c) In your current position, have you ever been called upon to do something that you didn't feel you had the knowledge or skills for? If so, what was the situation? What knowledge or skills did you wish you'd had?

VI. Referrals and Close

a) Do you know any other individuals in positions similar to yours we should talk to? If so, capture contact details.

b) I've been asking you a lot of questions during this interview and before we finish up I wanted to give you the same chance. Are there any questions I should have asked but didn't?

We have reached the end of the interview. We will be sending you a copy of the research findings as soon as they are ready. Thank you again for your time.

Appendix B - Survey items

ISSP Competency Study Questionnaire

SURVEY INTRODUCTION

Thank you for your willingness to complete our survey today.

Results will be used to bring cohesion and definition to this emerging profession, as well as to inform the design of educational programs that will best prepare sustainability professionals for the future.

Your responses are completely confidential. You will not be contacted as a result of your participation unless you indicate an interest in being contacted.

The survey will take about 15-20 minutes to complete, depending on your answers.

Screener

QA) First, what is your age? SINGLE RESPONSE

Younger than 18	1	TERMINATE
18 or older	2	

Q1) For this research, we are surveying individuals who support or manage sustainability-related activities.

This includes professional sustainability managers or coordinators, environmental health and safety officers, corporate social responsibility officers, or others who do planning, research, assessment or management in this field. It also includes consultants who work on sustainability-related projects.

Are you currently… (Select all that apply). MULTIPLE RESPONSE.

Working in a paid position where sustainability represents 25% or more of your responsibilities (any type of position, including employees, consultants and freelancers)	1	
Working in a paid position where sustainability represents less than 25% of your responsibilities (any type of position, including employees, consultants and freelancers)	2	[MAKE OPTIONS 1 AND 2 EXCLUSIVE OF EACH OTHER]
Seeking work as a sustainability professional	3	
Volunteering in a sustainability-related role	4	
A student	5	
None of these	6	[EXCLUSIVE; TERMINATE IF Q1=6]

Q2) How many years of paid work experience [SHOW IF Q1= 2, 3, 4 OR 5 AND Q1 NE1: , if any,] do you have in the field of sustainability in total, including ALL paid experience?

Please count only work experience where sustainability represented 25% or more of your responsibilities. SINGLE RESPONSE

[SHOW IF Q1=2, 3, 4 OR 5] None	1	[IF Q1=2, 3, 4, OR 5 AND Q1 NE1, AND Q2=1 (Not currently working in the field (AT LEAST 25%) and have no qualifying experience, SKIP TO Q2A]
Less than 1 year	2	
1 year or more, but less than 3 years	3	
3 years or more, but less than 5 years	4	
5 years or more, but less than 10 years	5	
10 years or more	6	

[IF Q1=2, 3, 4, OR 5 AND Q1 NE1, AND Q2=1 (Not currently working in the field (AT LEAST 25%) and have no qualifying experience, ASK Q2A. OTHERWISE, SKIP TO Q3A.]

Q2A) What skills do you think will be most valuable to you as your pursue your interest in sustainability (either in a paid or volunteer position) in the future?

OPEN-ENDED RESPONSE

[TERMINATE ALL WHO ANSWER Q2A.]

Q3A) What country do you live in?

[DROP DOWN BOX (http://www.worldtimeserver.com/country.html), SINGLE RESPONSE]

[IF LIVES IN THE US, ASK Q3B]

Q3B) In what state do you live? [DROP DOWN BOX, SINGLE RESPONSE]

[IF LIVES IN CANADA, ASK Q3C]

Q3C) In what province do you live? [DROP DOWN BOX, SINGLE RESPONSE]

TERMINATION MESSAGE: Those are all the questions we have. Thank you for your time.

Quotas

[TOTAL N = 1,000 MAXIMUM

TRACK (MAY WANT TO ENFORCE MINIMUMS/MAXIMUMS):

- Currently employed in qualifying position: Q1=1
- Not currently employed but have paid work experience: Q1=2, 3, 4 OR 5 AND Q2>1
- Less than 1 year of experience: Q2=2
- 1 to less than 3 years of experience: Q2=3
- 3 or more years of experience: Q2>3
- Country: Q3]

Current or most recent role

[SHOW TEXT ON SCREEN BEFORE Q4:]

[IF Q1=2 & Q2>1 (Currently works in sustainability less than 25% of the time, but used to work more), SHOW TEXT: For the remainder of this survey, when asked about your most recent position or organization, please think in terms of your most recent paid position in the field of sustainability where sustainability represented 25% or more of your responsibilities.]

PROGRAMMER: IF Q1=2, 3, 4 OR 5 AND Q2>1, SHOW SECOND TEXT STRING ("most recent", etc.) IN FOLLOWING QUESTIONS.

Q4) Which one of these best describes your [current / most recent] paid position in the field of sustainability? SINGLE RESPONSE

Climate change adaptation adviser	1
Communicator (writer, journalist or blogger)	2
Community development/activist	3
Consultant	4
Corporate social responsibility officer	5
Designer (industrial, product, interior, architect)	6
Economic development officer	7
Educator	8
Energy analyst or manager	9
Environmental health and safety officer	10
Environmental or social policy maker	11
Facilities manager	12
Greenhouse Gas (GHG) tracking manager or coordinator	13
Investment adviser	14
Land use or property manager or coordinator	15
Project manager	16
Purchasing manager or coordinator	17
Researcher or analyst	18
Social compliance officer	19
Supply chain manager or coordinator	20
Sustainability manager or coordinator	21
Transportation manager or coordinator	22
Something else, please specify	23

[PLACE Q5 AND Q6 ON SAME PAGE]

Q5) What [is your exact current job title / was your most recent job title in the field of sustainability]? OPEN-ENDED RESPONSE

Q6) Which of the following best describes your [current role within your organization / most recent paid sustainability-related role]? SINGLE RESPONSE

Top level decision maker (CEO, CFO, CSO, CIO, etc.)	1
Senior decision maker e.g., VP or director level	2
Direct report to VP or director, typically senior manager or manager level	3
Other managerial role	4
Other non-managerial role	5

Q8) Which of the following best describes the organizational scope of your [current / most recent] paid sustainability role? SINGLE RESPONSE

Worldwide	1
Nationwide	2
Statewide	3
Region, division, agency or business unit	4
Individual office or branch	5

[IF Q4=4 (CONSULTANT), SKIP Q9]

Q9) Which of these best describes your [current / most recent] organization? SINGLE RESPONSE

(Code not used)	1
Education	2
Government	3
Manufacturing	4
Non-profit	5
Services (not including education, government or non-profit)	6

Q10) Including all locations, how many employees work for your [current / most recent] organization, including you? Your best estimate is fine.

SINGLE RESPONSE

1 to 4	1
5 to 9	2
10 to 99	3
100 to 249	4
250 to 499	5
500 to 999	6
1,000 to 1,999	7
2,000 to 4,999	8
5,000 or more	9

Background and Experience

Q11) Which of the following best describes your status prior to starting your [current / most recent] paid sustainability-related role? SINGLE RESPONSE

Employed in a sustainability-related role elsewhere in my organization	1
Employed in a non-sustainability-related role elsewhere in my organization	2
Employed in a sustainability-related role at a different organization	3
Employed in a non-sustainability-related role at a different organization	4
Student	5
Volunteer with a non-profit sustainability-related organization	6
Other, please specify	7

Q12A) Please indicate which, if any, of the following educational degree programs you are currently pursuing, and the related field for each. If you are not sure of the field, please write "Unsure". Select all that apply. MULTIPLE RESPONSE

A. Currently pursuing	1. [CHECKBOX]	2. In what field? (Ex: Agriculture, Business, Engineering, etc.)
Bachelor's degree	1	
Master's degree	2	
PhD or Doctorate	3	
Not currently pursuing any of these	4	[EXCLUSIVE]

Q12B) Please indicate which, if any, of the following educational degree programs you have completed, and the related field for each. Select all that apply. MULTIPLE RESPONSE

B. Completed	1. [CHECKBOX]	2. In what field? (Ex: Agriculture, Business, Engineering, etc.)
Bachelor's degree	1	
Master's degree	2	
PhD or Doctorate	3	
Have not completed any of these	4	[EXCLUSIVE]

Q13A) Please indicate which, if any, of the following certification programs you are currently pursuing, and the related certifying organization for each.

Select all that apply.

If you are pursuing more than one certificate per category/row below, please list them separately under "Certifying organization(s)", separated by commas. For example: Univ. of Oregon Sustainability Leadership Certificate, ISSP Professional Certificate in Sustainability

MULTIPLE RESPONSE

Currently pursuing	1	2 Certifying organization(s)
Certification program(s) in sustainability	1	
Other type of certification program(s)	2	

Not currently pursuing any of these	3	[EXCLUSIVE]

Q13B) Please indicate which, if any, of the following certification programs you have completed, and the related certifying organization for each.

Select all that apply.

If you are pursuing more than one certificate per category/row below, please list them separately under "Certifying organization(s)", separated by commas. For example: Univ. of Oregon Sustainability Leadership Certificate, ISSP Professional Certificate in Sustainability.

MULTIPLE RESPONSE

Have completed	1	2 Certifying organization(s)
Certification program(s) in sustainability	1	
Other type of certification program(s)	2	
Have not completed any of these	3	[EXCLUSIVE]

Q14) Please rate how relevant your completed educational program was in preparing you for your sustainability-related work experience. [7-POINT SCALE WHERE 1="Not very relevant" and 7="Extremely relevant"].

Current Challenges, Skills and competencies

[PROGRAMMER: IF Q4=4 (CONSULTANT ROLE), SHOW 'YOUR CLIENTS' LANGUAGE AT Q15, Q16, Q17, Q18, AND Q23.]

Q15) Next, we'd like to know your opinions about issues related to the field of sustainability.

What would you say is the single most important sustainability-related issue [your organization is / your clients' organizations are] facing? Please be as specific as possible in your answer.

OPEN-ENDED RESPONSE

Q16) Next, please rate the importance of each of the following sustainability-related issues to [your organization / your clients' organizations]. SINGLE RESPONSE PER ROW

[SPLIT ONTO TWO SCREENS AND REPEAT QUESTION TEXT ON SECOND SCREEN; RANDOMIZE SCREENS AND ATTRIBUTES WITHIN SCREENS]

		Of extremely **low** importance						Of extremely **high** importance
1.	Getting buy-in or support from top management	1	2	3	4	5	6	7
2.	Building support among employees	1	2	3	4	5	6	7
3.	Creating and maintaining organizational sustainability reporting e.g., annual report or GRI framework	1	2	3	4	5	6	7
4.	Ensuring environmental compliance/performance	1	2	3	4	5	6	7
5.	Monitoring changes in legislation and regulation	1	2	3	4	5	6	7
6.	Benchmarking your organization's performance against other organizations	1	2	3	4	5	6	7
7.	Obtaining funding for individual sustainability initiatives	1	2	3	4	5	6	7
8.	Developing business cases for sustainability initiatives	1	2	3	4	5	6	7
9.	Planning and designing a holistic system for environmental management	1	2	3	4	5	6	7
10.	Implementing a holistic system for environmental management	1	2	3	4	5	6	7
11.	Overcoming internal resistance to change	1	2	3	4	5	6	7
12.	Building consensus among divergent business units or departments	1	2	3	4	5	6	7
13.	Adapting to changing business conditions or priorities	1	2	3	4	5	6	7
14.	Staying current with new scientific results and information regarding the environment	1	2	3	4	5	6	7
15.	Designing or re-designing product and/or service offerings for your customers to be more sustainable	1	2	3	4	5	6	7

16.	Educating customers or clients about your organization's sustainability efforts	1	2	3	4	5	6	7
17.	Ensuring social responsibility compliance/performance	1	2	3	4	5	6	7
18.	Planning and designing a holistic system for social responsibility management	1	2	3	4	5	6	7

Q17) [Show top 5 rated issues from Q16, including ties, with a maximum of 10 total. Respondents with 11 or more top-ranked issues skip this question.]

These are the sustainability-related issues you indicated are of the highest importance to [your organization / your clients' organizations]. Please rank your top 3 most important issues in order of importance by dragging and dropping the issues into the boxes below, with the one you consider the most important into the box labeled "Rank1", the second-most important issue into the box labeled "Rank2", and so on.

Q18) Thinking about the sustainability challenges facing [your organization / your clients' organizations], what are the top skills that someone would need in order to be successful as a sustainability professional? Please list up to three skills, separated by commas. OPEN-ENDED RESPONSE

Q19) Next, please consider the following list of "hard skills." Please rate the importance of each of these skills in terms of how necessary they are for you to be successful as a sustainability professional.

[SPLIT ONTO TWO SCREENS AND REPEAT QUESTION TEXT ON SECOND SCREEN; RANDOMIZE SCREENS AND ATTRIBUTES WITHIN SCREENS]

		Of extremely **low** importance						Of extremely **high** importance
1.	Financial analysis e.g., calculating ROI	1	2	3	4	5	6	7
2.	Sustainability accounting and reporting e.g., using GRI framework	1	2	3	4	5	6	7
3.	Strategic planning	1	2	3	4	5	6	7
4.	Systems thinking	1	2	3	4	5	6	7
5.	Risk assessment	1	2	3	4	5	6	7

6.	Scientific expertise related to chemistry, environmental toxicology, climate change, etc.	1	2	3	4	5	6	7
7.	Policy expertise related to environmental compliance or natural resource management	1	2	3	4	5	6	7
8.	Vendor management e.g., selecting outside vendors and contractors	1	2	3	4	5	6	7
9.	Project management	1	2	3	4	5	6	7
10.	Process management e.g., Six Sigma management systems	1	2	3	4	5	6	7
11.	Technology and/or engineering expertise	1	2	3	4	5	6	7
12.	Auditing (e.g. greenhouse gas audits, sustainability audits)	1	2	3	4	5	6	7
13.	Life cycle costing and/or life cycle assessments	1	2	3	4	5	6	7

Q20) [Show top 5 highest rated items at Q19, including ties, with a maximum of 10 total. Respondents with 11 or more top-ranked items skip this question.]

These are the top "hard skills" you indicated are most necessary for you to be successful as a sustainability professional. Please rank your top 3 most important "hard skills" in order of importance by dragging and dropping the skills into the boxes below, with the one you consider the most important into the box labeled "Rank1", the second-most important skill into the box labeled "Rank2", and so on.

Q21) Now, please consider the following list of "soft skills." Please rate the importance of each of these skills in terms of how necessary they are for you to be successful as a sustainability professional. SINGLE RESPONSE PER ROW

[SPLIT ONTO TWO SCREENS AND REPEAT QUESTION TEXT ON SECOND SCREEN; RANDOMIZE SCREENS AND ATTRIBUTES WITHIN SCREENS]

		Of extremely **low** importance						Of extremely **high** importance
1.	Influencing change within your organization	1	2	3	4	5	6	7
2.	Influencing change outside your organization	1	2	3	4	5	6	7
3.	Consensus building	1	2	3	4	5	6	7

4.	Innovating the business (re-thinking the business)	1	2	3	4	5	6	7
5.	Team building or collaborating	1	2	3	4	5	6	7
6.	Inspiring and motivating others	1	2	3	4	5	6	7
7.	Networking with internal colleagues	1	2	3	4	5	6	7
8.	Networking with external colleagues	1	2	3	4	5	6	7
9.	Communication with internal stakeholders (listening, writing, speaking)	1	2	3	4	5	6	7
10.	Communication with external stakeholders (listening, writing, speaking)	1	2	3	4	5	6	7
11.	Problem solving	1	2	3	4	5	6	7
12.	Establishing and managing priorities	1	2	3	4	5	6	7
13.	Flexibility or adaptability	1	2	3	4	5	6	7
14.	Facilitating and/or training groups	1	2	3	4	5	6	7

Q22) [Show top 5 highest rated items at Q21, including ties, with a maximum of 10 total. Respondents with 11 or more top-ranked items skip this question.]

These are the top "soft skills" you indicated are most necessary for you to be successful as sustainability professional. Please rank your top 3 most important "soft skills" in order of importance by dragging and dropping the skills into the boxes below, with the one you consider the most important into the box labeled "Rank1", the second-most important skill into the box labeled "Rank2", and so on.

Future Challenges, Skills and competencies

Q23) Now, please think about the sustainability issues [your organization / your clients' organizations] will likely face five years from now. What do you think will be the single most important issue? OPEN-ENDED RESPONSE

[SHOW 3 RANKED ITEMS (HARD SKILLS) FROM Q20. IF Q20 SKIPPED, go to filter before q26. Show Q24 and Q25 on same screen.]

Q24) Previously, you indicated that the following skills were the top "hard skills" needed for you to be successful as a sustainability professional. Five years from now, do you think that they will be the top skills that are needed by someone in your position? SINGLE RESPONSE PER ROW

		Yes	No
1.	[skill #1]	1	2
2.	[skill #2]	1	2
3.	[skill #3]	1	2

Q25) What are your reasons for your response(s)? Please be as specific as possible in your answer. OPEN-ENDED RESPONSE

[SHOW 3 RANKED ITEMS (SOFT SKILLS) FROM Q22. IF Q22 SKIPPED, go to text before Q28. Show Q26 and Q27 on same screen.]

Q26) Previously, you indicated that the following skills were the top "soft skills" needed for you to be successful as a sustainability professional. Five years from now, do you think that they will be the top skills that are needed by someone in your position? SINGLE RESPONSE PER ROW

		Yes	No
1.	[skill #1]	1	2
2.	[skill #2]	1	2
3.	[skill #3]	1	2

Q27) What are your reasons for your response(s)? Please be as specific as possible in your answer. OPEN-ENDED RESPONSE

Additional Respondent Profiling Questions

We have just a few final questions for profiling purposes. As a reminder, all of your responses are completely confidential.

Q28) Are you currently a member of ISSP (the International Society of Sustainability Professionals)? SINGLE RESPONSE

Yes	1
No	2
Not sure	99

[IF Q9 = 4 or 6 (MANUFACTURING OR SERVICES), ASK Q29]

Q29) Which of the following best describes your organization's primary industry? SINGLE RESPONSE

Accounting services	1
Communications	2
Construction	3
Education	4
Electronics, Information Technology, Internet, Telecommunications	5
Engineering services	6
Financial (banking, investments)	7
Government	8
Health Care	9
Insurance	10
Legal services	11
Manufacturing	12
Natural Resources (Agriculture, Forestry, Fishing, Mining and Extraction)	13
Non-Profit Organization	14
Pharmaceuticals	15
Real Estate	16
Retail	17
Transportation	18

Travel Accommodations and Food Service	19
Utilities	20
Wholesale	21
Other industry; please specify	22

Q30) What is your gender? SINGLE RESPONSE

Male	1
Female	2

Q31) What is your age? SINGLE RESPONSE

18 to 24	1
25 to 34	2
35 to 44	3
45 to 54	4
55 to 64	5
65 to 74	6
75 or older	7
Prefer not to answer	99

[IF LIVES IN UNITED STATES, CANADA OR AUSTRALIA (Q3A), ASK Q32A. OTHERWISE, SKIP TO Q32E]

Q32A) What is your current annual income before taxes from sustainability-related work? SINGLE RESPONSE

Please provide your response in your native currency.

Less than $50,000	1

$50,000 - $99,999	2
$100,000 or more	3
Prefer not to answer	99

IF Q32A=1, ASK Q32B.

Q32B) In which of the following ranges does your annual income before taxes from sustainability-related work fall? SINGLE RESPONSE

Please provide your response in your native currency.

Less than $25,000	1
$25,000 - $49,999	2
Prefer not to answer	99

IF Q32A=2, ASK Q32C.

Q32C) In which of the following ranges does your annual income before taxes from sustainability-related work fall? SINGLE RESPONSE

Please provide your response in your native currency.

$50,000 - $74,999	1
$75,000 - $99,999	2
Prefer not to answer	99

IF Q32A=3, ASK Q32D.

Q32D) In which of the following ranges does your annual income before taxes from sustainability-related work fall? SINGLE RESPONSE

Please provide your response in your native currency.

$100,000 - $149,999	1
$150,000 - $199,999	2

$200,000 or more	3
Prefer not to answer	99

[IF LIVES OUTSIDE UNITED STATES, CANADA OR AUSTRALIA, ASK Q32E. OTHERWISE, SKIP TO Q33]

Q32E) What is your annual income before taxes from sustainability-related work?

Please provide the amount, and the name of your native currency (for example, "Euro", where indicated below). Your best estimate is fine.

[NUMBER BOX LABELED "Annual income before taxes" AND TEXT BOX LABELED "Name of currency", WITH CHECKBOX FOR "Prefer not to answer"]

Q33) One last question: Is there anything else that you consider important on the topic of professional skills and issues related to sustainability that we haven't covered? Please let us know your thoughts. OPEN-ENDED RESPONSE.

Q34) Before you go, please tell us if you'd like to … SINGLE RESPONSE PER ROW

		Yes	No
1.	Be entered in the drawing for a one-year membership to ISSP (International Society of Sustainability Professionals) valued at $150, or a $150 credit to use towards an ISSP online class.	1	2
2.	[SHOW IF Q28=2]: Be contacted by ISSP with information about membership, classes and other information	1	2
3.	[SHOW IF UNSURE IF A MEMBER OF ISSP (Q28=99)]: Be contacted about ISSP membership status	1	2

[IF ANY AT Q34=YES, ASK Q35.]

Q35) Please provide us with your name and email address so we can contact you for the reason(s) you just indicated. [TEXT BOXES; ASK RESPONDENT TO RECONFIRM EMAIL ADDRESS AND ENSURE MATCH]

Those are all of our questions. Thank you very much for your time. Your input is appreciated!

[Send respondent to ISSP web site upon survey completion.]