## III. Recommendations for Building a New Field of Sustainable Development Practice

### RECOMMENDATION 1:
### Establish the Core Competencies of the Sustainable Development Practitioner

Effective, comprehensive development work requires proficiency in several cross-disciplinary skill and knowledge areas. These core competencies enable a sustainable development practitioner to analyze the cross-disciplinary nature of development issues; choose a course of action based on sound ability to diagnose the key drivers and the relevant obstacles of a situation, and the practical steps that can most directly affect outcomes; and effectively manage policies, programs and projects.

This work is rooted in each of the four key disciplines that must inform the training of the sustainable development practitioner. Drawing from the key disciplines of health sciences, natural sciences and engineering, social sciences and management, the core competencies define the essential knowledge, skills and attributes of an effective sustainable development practitioner. These include, but are not limited to, the knowledge areas and skill sets listed below.

**Diagram 2**

**Sustainable Development Practice at the intersection of the Four spheres**

## HEALTH SCIENCES

- **Nutrition**—Malnutrition, particularly in pregnant women and children, is a leading cause of disease and death and represents a significant threat to any development effort.

- **Health and Epidemiology**—Development interventions are ineffective if they fail to address the basic life-and-death issues pertaining to child health, reproductive health, maternal health, infectious disease control (such as HIV/AIDS, malaria and tuberculosis) and non-communicable disease control. As just one example, child mortality rates in the poorest countries are often 30 to 50 times higher than in industrialized countries. Most interventions to reduce this gap require implementation of basic and proven technologies.

- **Population Sciences**—Population dynamics must be a key consideration in any long- or short-term development strategy. Understanding the strong connection between high fertility rates and poverty, practitioners must have basic knowledge of reproductive health, family planning and voluntary child spacing strategies, as well as interventions to promote gender equality and health education to enable women and men to make informed family planning decisions.

## NATURAL SCIENCES & ENGINEERING

- **Agriculture, Forestry and Fisheries Management**—The majority of people living in extreme poverty throughout the world depend on agriculture, fisheries and forests for their livelihoods, although biophysical environments vary tremendously both by region and within regions. Food production and rural economic transformation often hinge on animal productivity, crop yields and forest production, which in turn depend on soil fertility, availability of inputs and land management.

- **Energy**—Essential to all aspects of development—including agricultural productivity, access to water, health, education and transportation—is a safe and consistent supply of energy. Well-designed interventions must consider how renewable or non-renewable energy sources will be harnessed and distributed, and the associated economic, environmental and health impacts.

- **Engineering and Urban and Rural Planning**—Public infrastructure is essential to poverty reduction and economic growth, including water supply systems, waste management systems, clean air systems, irrigation systems, roads and transportation systems and telecommunication systems. The strategic design of such systems must also take into account the environmental, economic and social impacts and include appropriate adaptations for predicted changes in climate.

- **Environment, Water and Climate Science** — Large numbers of the world's poor live in fragile ecosystems and many developing countries are experiencing severe ecosystem degradation as human settlement expands and natural resources are mined. Evolving ecosystems typically define patterns of disease transmission affecting human, animal and plant health. All of these dynamics are affected by climate patterns, which are shown to be shifting due to anthropogenic climate change. Policy analysis and recommendation is imprudent without a sound understanding of basic environmental, water and climate science.

## SOCIAL SCIENCES

- **Delivery Science**—In order to achieve measurable success, development practitioners must know how to strategically apply, implement and deliver prescribed interventions, including technological innovations. Drawing upon the lessons of past successes and failures, practitioners must be able to identify and design the most appropriate and effective means of delivering a given intervention. This requires a keen understanding of the economic, political and logistical factors that must be considered in order to successfully implement and later "scale-up" interventions.

- **Economics**—Microeconomics is essential for understanding the ground-level incentives and practicalities of economic policy design. Macroeconomics is crucial for understanding how programs interact with large-scale government decision-making and budgets, and the movement of goods, resources and services across countries.

- **Education**—A critical component of any long-term development strategy, formal education systems must ensure students acquire the knowledge and skills that will bring them improved quality of life, appropriate competencies to prepare them for the work force, and creative problem solving skills to pave the way for future innovations. Non-formal and community-based education programs are also vital as they catalyze the adoption of improved agricultural, health and sanitation, nutritional and vocational practices, and can play a vital role in peace-building and conflict resolution.

- **Politics, Anthropology and Social Studies**—To affect long-term structural change, interventions must be designed with careful consideration for the culture, local history, local and regional politics, and political and institutional structures of a given location. In addition, development efforts must take into account power and social relations at various levels: within households, within communities and across societal groups.

- **Statistics**—The collection and analysis of critical information is essential for project design, management, monitoring and evaluation. In addition, key decision-makers must be able to understand and interpret statistical findings in order to make informed policy decisions and to design appropriate development strategies.

- **Technology and Innovation Systems**—Understanding the intricate network of actors involved in the research, design, development and diffusion of technology is essential in order to create supportive policies and mechanisms for the transfer and flow of knowledge and innovation.

## MANAGEMENT

- **Budget Planning, Financial Management and Commodities Management**—Sustainable development practitioners must be able to design and manage programs and project budgets with transparency and efficiency. Knowledge of financial markets, credit and microfinance is required as well as the procurement, supply chain, production management and distribution of essential commodities.

- **Communications and Negotiation**—Project implementation and policy design at the local-, regional- or national-level require keen understanding of power relations and cultural interactions. Practitioners must be able to interact with local community leaders, colleagues, partners and stakeholders from diverse backgrounds and disciplines, as well as coordinate participatory planning processes to implement sustainable development programs. Effective practitioners must also have skills of social entrepreneurship such that they can pull together a variety of political, financial and institutional resources to imagine, build, market and deliver new ideas. In addition, practitioners need to be able to reflect on their own attitudes, perceptions and biases in terms of how they are formed, and how they affect their choices and performance.

- **Geographic Information Systems (GIS)**—Appropriate applications of GIS allow the development practitioner to effectively analyze agricultural, demographical, ecological, environmental, infrastructural, social and other conditions. This information is used to develop comprehensive needs assessments, risk analyses, implementation plans, as well as dynamic monitoring and evaluation tools.

- **Institutional and Human Resources Management**—As professionals advance in their careers, they must be able to lead, mentor and inspire ever-larger numbers of staff subordinates to achieve successful outcomes. Institutional development is a key element in building long-lasting programs that result in valuable, measurable solutions.

- **Information Systems Design and Management**—The rapidly evolving use of information management systems in the field of sustainable development provides growing opportunities for professionals to quickly transmit vital information and key indicators, to share best practices, and to engage in virtual mentorship. Practitioners must be able to collect, monitor and evaluate relevant information to inform and update policy and project implementation.

- **Project Design and Management**—Practitioners need to be able to design and manage work streams that measure progress against clear benchmarks. They often also require strong proposal-writing skills.

Mixed with an understanding of the global and cross-cultural influences on development, educational programs grounded in these core competencies would provide a major step forward in preparing professionals to confront the complex challenges of sustainable development.