

# 적정기술연구소 창립 10주년 기념 특집호

2014. 7

Volume 6, Number 2 (Issue 10)



# 적정기술

Appropriate Technology



 **국립 한밭대학교**  
HANBAT NATIONAL UNIVERSITY  
**적정기술 연구소**

 적정기술  
미래포럼 **Appropriate  
Technology  
Future Forum**

# Brief Reflections on Appropriate Technology

**Susan Murcott**

**Senior Lecturer, Civil and Environmental Engineering Department  
Massachusetts Institute of Technology**

I would like to send my warmest congratulations for the 10th year anniversary of Center for Appropriate Technology in Korea. I applaud the work of Prof. Seong Uk Hong and his colleagues and students. I have had the opportunity on two occasions in my life, 1973 and 1995, to visit and travel throughout Korea and I have seen the remarkable transformation of your society over those two decade. It is a pleasure for me to know that the work that is being done at MIT on appropriate technologies is also being done around the world in countries such as Korea. I wish you all the best of luck in the next decade of your work and service. Also, I would like to share my perspectives on appropriate technology and hope this article can be helpful to people in Korea who are interested in this important and growing field.

E.F. Schumacher, an economist who, in 1973, wrote a critique of Western economics and scientific materialism called *Small is Beautiful: a Study of Economics as if People Mattered* defined “Appropriate Technology” (also known as “Intermediate Technology”) as

- \* Simple design & production;
- \* Inexpensive;
- \* Use local materials for local use;
- \* Rural focus.

The first three characteristics of appropriate technology are well-understood



by the current generation of practitioners and students who are working in the field of international development. The rural focus requires a bit of thought. Of course, we know that rural areas around the world often experience serious poverty. We are also aware of the growth of cities and of urban slums. The emphasis on a rural focus may be due to the fact that Schumacher had spent time in 1955 as an economic consultant in Burma. It was there that he developed a set of principles called “Buddhist Economics.” He considered that “production from local resources for local needs is the most rational way of economic life,” and, he traveled throughout many developing countries encouraging local governments to become self-reliant economies. He founded the "Intermediate Technology Development Group" (which today is called "Practical Action") in 1966.

When I studied and practiced Buddhist teachings beginning in 1968, during the height of the Vietnam War, I was strongly influenced not only by the teachings and philosophy of non-violence of Mahatma Gandhi, Martin Luther King and Thich Nhat Han, but also by the writings of E.F. Schumacher.

I have been working as a water and wastewater engineer at MIT in the field of Appropriate Technology for the past 25 years. I began my career working on innovations in wastewater treatment for megacities in the developing world. I continued that work with my mentor and professor, Donald R.F. Harleman, who himself had a career at MIT that spanned over 50 years. When I first proposed to the MIT administration in 1998 that I do small-scale, appropriate technologies for drinking water in rural Nepal, I was told that students at MIT were interested in high tech, and no one would be interested in such low tech work. I persevered and in the next year, I was allowed to propose a project in rural Nepal. That year, 1999, we had about 20 students in the water/environmental engineering track and 16 signed up for Nepal as their top choice in a competitive bidding process. Since that time, I have continued to promote



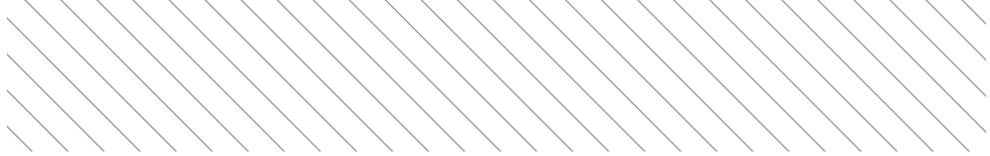
small-scale, appropriate technologies, especially targeting the bottom one billion people. This work has been under the umbrella of “Safe Water for 1 Billion People.” <http://web.mit.edu/watsan/>

There have been concerns about Appropriate Technology(AT) expressed by various commentators:

- Neo-colonialism: Is the “enlightened” Global North imposing these technologies to the vulnerable masses in Global South?
- Modernization: Will a nation using AT end up with a technology that is useless in the “modern world?”
- Industrialization and Competitiveness: Does AT discourage the Global South from industrializing and becoming competitive? (Many developing economies, in Asia for example, have successfully competed using advanced technologies).
- Trained Workforce: Does AT lead to national development in terms of a trained workforce?
- Technology Transfer: AT is locality-specific and may be difficult to plan and manage. Wouldn't technology from the Global North be a better use of resources and time?
- “Intermediate” Technology: Is it “intermediate” in terms of quality, efficiency, environmental standards, worker safety, child labor laws, etc.?
- Output vs. Jobs: Efficiency and financial bottom-line driven or human-capital driven (or both?)
- Technology-focused: Development issues are equally or more predominantly social, institutional, environmental, etc. Should we not be thinking in terms of sustainable technologies rather than appropriate technologies.

These are important points for us to consider.

More recently, I have written on co-evolutionary design for development, or



what some of my colleagues refer to as “human-centered design” or “co-creation.”

Meanwhile, we have worked hard to make an impact, and we have had some small successes. Our greatest successes have actually been training a generation of students from around the world who are aware of global inequities and have seen the realities of poverty in rural areas and urban slums in Africa, Asia and South America. And in the Global North as well! We have also had some success with scaling up small-scale systems for arsenic remediation in Nepal and for microbially contaminated drinking water in Ghana. Lately, we have started building public latrines in Ghana and a tree farm to address reforestation and to neutralize our carbon footprint. These are humble efforts. As I continue into the next 25 years, hoping to follow in the footsteps of my beloved professor’s long life and work, I am, at the same time, confident that the next generation will carry this work forward, because it is right and true. At least, that is how I see it.

## 편집위원

위원장   홍성욱 (suhong@hanbat.ac.kr)  
부위원장   김정태 (danhovision@hanmail.net)  
위원   강경철 (pkkang@mit.edu)  
          김주현 (zestor33@gmail.com)  
          김현주 (realsea1@hotmail.com)  
          신유진 (meggonagul@gmail.com)  
          유선영 (sunyoung128@gmail.com)  
          윤서영 (seoyoung.youn@gmail.com)  
          이종현 (presidentjhl@paran.com)  
          조아라 (ara.cho@gmail.com)  
          하재웅 (younstory@gmail.com)  
          허성용 (africainsight@africainsight.or.kr)

---

## 적정기술, Vol. 6, No. 2, 2014

---

2014년 7월 1일 인쇄

2014년 7월 1일 발행

발행인 : 홍성욱

발행처 : 한밭대학교 적정기술연구소/적정기술미래포럼

주소 : 대전광역시 유성구 동서대로 125

전화 : 042-821-1536

팩스 : 042-821-1593

인쇄처 : 이미지룩 Tel. 042-627-3105

I S S N 2287-6707

---

# 적정기술

2014. 7 | Volume 6, Number 2 (Issue 10)

Appropriate Technology

 **한밭대학교**  
HANBAT NATIONAL UNIVERSITY  
적정기술 연구소

 **적정기술  
미래포럼** Appropriate  
Technology  
Future Forum