

Introduction: Appropriate Technologies in the Developing World

Outline of this session

- Introduction
- World Fact Quiz (see handout)
- Technology examples
- Quick survey of D-Lab projects



Introduction

This class has three primary objectives:

- Perspectives and discussion on philosophy of development;
- Introduction to key development sectors, e.g. agriculture, water, energy;
- Hands-on experience with tools of development – e.g. photovoltaics, water filtering.

During the term, students in project teams will be communicating with international community partners. You'll be exploring technical issues, resource development, community building. You'll be asked to approach the project and the communities as field investigators.



If a project started during an IAP field trip really catches on, the team is encouraged to continue with the spring design seminar, and follow through with summer field trips as appropriate. Many successful projects take on a multi-year and multi-country scope. For instance, an idea may take shape and be tested initially in Haiti; after a year or two, teams may expand the project to India or other countries.

The course is structured around three different types of sessions.

- Concepts introduced in lectures and with guest speakers.
- Labs will provide essential experience to support your project field work.
- Beginning in the third week of class, we'll start working in project teams devoted to a particular country and community partner, generally meeting once a week during the Friday session.



Students are expected to bring a commitment to this class and to their project that's perhaps above and beyond a typical class. The projects are important and the community partners and those they serve must be respected!

Course Goals

- Gain awareness of third world communities and the technical challenges they face
- Learn about appropriate technologies for developing communities, their impact, and how they can be conceived, designed and implemented
- Understand the role MIT can play in helping and advancing developing communities throughout the world
- Learn the hands-on skills required to implement selected development projects
- Gain exposure to the culture, history, economic and developmental state of the host countries
- Work with community organizations to prepare field projects for the IAP fieldtrips

World Fact Quiz

[In-class activity: see lecture slides and the World Fact Quiz handout.]

Technology examples

Pot in a Pot

In tropical regions, fruits and vegetables begin to rot 3-4 days after being picked.

The Pot-in-a-Pot holds promise as an appropriate technology for food preservation. It was invented by Nigerian teacher Mohammed Bah Abba. Water (mixed with sand) between the inner and outer pots creates an evaporative cooling effect. It reduces temperature within the inner pot by up to 20 degrees and can preserve food for 20-25 days.


Light Up The World

The NGO "Light up the World" uses recently developed full-spectrum LEDs that produce white light with minimal power required. They match the LED lights with a rooftop PV (photovoltaic) system or other charging scheme (e.g. pico-hydro, human power), allowing communities to have lights on all night long.

Charcoal Briquettes

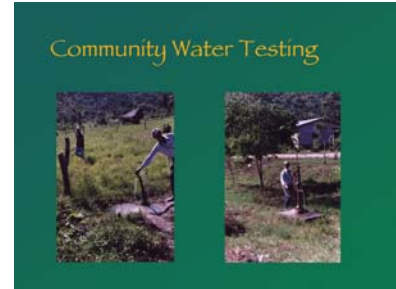
As noted in the World Facts quiz, cooking fuel poses a major problem in many communities. Haiti is 98% deforested; but there is a lot of sugar cane waste that could be burned if the right technology and processes were in place? Manufacturing and selling the briquettes also could become a microenterprise opportunity.

**Fuel from the Fields:
Charcoal Briquettes**



Community Water Testing

In many communities that have had water-oriented development projects during past few decades, there's still no solution to verify that the water is really safe. There may be treatment or filtering technologies in place, but they need to be monitored and maintained. The slide shows the instructor testing water on a D-Lab project in Honduras.



Quick survey of D-Lab projects

D-Lab field projects are being planned for the following countries (although plans may change):

- Mexico
- Haiti
- Honduras
- Brazil
- Lesotho
- Zambia
- India
- China
- Samoa

Next week the class will look at these countries and potential projects in more detail.

