

Session 23, 5/8/07

Case Study: Biogas Energy as an Alternative Fuel Source in Nepal

Reading: <http://www.american.edu/TED/new-fuelwood.htm>

Discussion questions:

- What are the advantages and disadvantages of photovoltaic (PV) systems, wind energy systems and biomass systems? Which systems are more inclined towards vertical or horizontal forms of technology transfer? What are some other technologies that clearly lean towards either horizontal or vertical transfer?
- How can the Kyoto Protocol benefit the current biogas system in Nepal?
- What obstacles are there to the Kyoto Protocol? Where will it go in the future?
- What is the importance of bodies like the Alternative Energy Promotion Center in Nepal?
- In the case study how do human rights come into play?
- What role did subsidies play in implementing a biogas system in Nepal?
 - The Biogas Support Program Questions:
 - What was the history of biogas and biogas programs in Nepal from 1955 to the present?
 - What are some of the factors that make Nepal an ideal location for biogas implementation?
 - What were some of the direct benefits of implementing a biogas system in Nepal?
 - What were some of the drawbacks? What about cattle-less and landless farmers?
- What did you think of the Nepali Times article?
- Biogas is a cyclical system, whereas burning wood is a linear one.
- Biogas allows you to limit the CO₂ released
- More methane is produced, but then you burn that off
- What is the difference between horizontal and vertical transfer?
 - We try to work with communities and share together in horizontal transfer
 - Vertical transfer is just a direct transfer from one group down to another
- In the projects planned in this class, how many of them are vertical in nature and how many are horizontal? Most of them are vertical
- What are some advantages of a vertical transfer?
 - It often happens faster
- What are the differences between Photovoltaic (PV) vs. Wind vs. Biomass
 - PV panels are harder to understand and to explain
 - PV panels can be expensive, and people in these nations don't want to just serve as a market for these American companies
 - Wind energy is often most available in the summer, when the energy is least needed

- What are people going to be doing with this energy? Often these people don't have any access to electricity right now, and it's hard to know just how different their lives will be once they have access to light at night, or the ability to power appliances.
- What did you think of the discussion of Kyoto Protocol?
- The Kyoto Protocol was a document signed by most countries in the world agreeing to cap their CO₂ protocol
- Two countries refused to sign: the US, and Australia.
- Australia didn't want to sign because it would hurt their mining industry
- The Protocol was crippled when the US refused to sign

- What are some characteristics of Nepal?
 - It has three major terrains: mountains, hills, and terai (sub-tropical forest)
 - It's very impoverished and rural.
 - About 35% of its people make less than 1 dollar per day.
 - About 85% of the population lives in rural areas.
 - GDP per capita is about \$236
- What do we know about the culture of Nepal?
 - Hindu
 - They respect cows, and they don't mind cow dung. They even use dung cakes for fuel (but it doesn't provide very much of their total fuel).
 - Agrarian lifestyle

- What's the history of biomass in Nepal?
 - 1955 – Biogas was introduced
 - 1956-1961 – First 5-year plan, tenth 5-year plans
 - 1974 – Majesty's government, development bank of Nepal roll out subsidies program
 - 1974-1985 – Produced 100-200 biogas digesters per year
 - 1985 – Produced 800 biogas digesters per year
 - 1990 – Subsidies were frozen for all biogas digesters. People pretty much stopped buying them during this time
 - 1992 – The biogas support program, with the support of the Netherlands.
 - Subsidies went up to 50% capital investment
 - There were also 50% subsidies on interest payments on loans, to make that feasible

- What are some direct benefits of biogas?
 - Health
 - Lessens indoor air pollution
 - Prevents eye ailments
 - Increased sanitation
 - Economic
 - Increased access to energy

- Improved access to energy
- Increased employment (particularly useful for people who don't have land of their own)
- Provides electricity and can thus increase productivity and reduce unnecessary domestic labor (wood collecting)
- Education
- Light
- Gender - Woman-friendly
- Environment

MIT OpenCourseWare
<http://ocw.mit.edu>

EC.715 D-Lab: Disseminating Innovations for the Common Good
Spring 2007

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.