

Research institute links ancient Indian thought with new technology

By Amy Lieberman

21 August 2009 [MEDIAGLOBAL]: A dual lamp and stove fixture, dubbed a “lanstove,” may redefine rural domestic life, while combating troubling trends of alcoholism, according to the Nimbkar Agricultural Research Institute (NARI), a research and development nonprofit based in rural Maharashtra, a central Indian state.

NARI won the Global Sustainability Research Award for the unparalleled device in June, and is now focused on marketing the “Lanstove,” making it accessible to rural communities across the nation. It runs on a 55 to 60 percent ethanol–water mixture, exuding only steam, but provides light equivalent to a 100–Watt electric bulb, and can boil a pot of water in 40 minutes. NARI’s director, Anil Rajvashi, says he developed the ethanol–fueled lamp/stove concept by speaking with representatives of rural communities, asking them what problems most commonly plague their villages.

“I spoke with a man who came from Uttaranchal, in the north of India, and he said that the biggest problem in his rural area was that men drink liquor, and they beat up their wives and it creates a lot of problems in the households,” Rajvashi told **MediaGlobal**. “That was how we started working on the idea of using liquor for cooking and heating, not just for consumption.”

About 60 percent of India’s rural population lacks electricity and relies on kerosene lamps for lighting, according to Rajvashi. A non–renewable fuel, kerosene can also get expensive. Low–grade ethanol, on the other hand, can be locally produced, is environmentally friendly, and is safe for household use. The Lanstove requires 2.6 times less energy than an electric device, and its slow–cooking methods would enable rural women to maximize their time and productivity, according to Nardini Nimbkar, president of NARI.

“At present most rural households depend on firewood as their main

cooking fuel and women usually take up the burden on walking many kilometers every day, chopping the wood, and hauling it over their heads to their homes,” Nimbkar wrote in an e-mail to **MediaGlobal**. “After this they have to do the cooking and other household chores. Lanstove will not only do away with this, but give substantial leisure time and availability of bright light to the woman while cooking is being done.” It would also potentially discourage men from drinking the alcohol, as the liquid could not be accessed from the Lanstove without breaking its 25- to 30-liter cylinder.

Nimbkar noted that the Lanstove might potentially catch on “in a large scale, mainly in villages,” but that excise laws in India, which consider ethanol a controlled substance subject to taxation, may prohibit this trend from ensuing. “Without this change, use of ethanol for household use will be illegal and any further progress in dissemination of Lanstove in India will be impossible,” Nimbkar explained.

Ethanol can be produced from sweet sorghum, a stalk that yields juice and syrup and can be grown under rain-fed conditions, with low external inputs. Its juice could then be fermented for alcohol production. NARI is partly focusing its research on cultivating indigenous technology that could maximize the products yielded by sweet sorghum and safflower, which produces edible oil. Its flowers also contain medical properties and health benefits.

“In India, due to shortage of agricultural inputs, emphasis needs to be given to crops which perform well under low-input conditions,” Nimbkar said. “Similarly, multipurpose crops, which yield many different products or have products with multiple uses should be preferred due to the flexibility they offer and generally greater economic benefits from them.” It all fits into NARI’s basic philosophy, which advocates that sustainable lifestyles can be “achieved with the combination of ancient Indian philosophical thought and modern high-tech agriculture,” according to its Web site, Nariphaltan.org.

“My mantra has always been to use very high technology for rural development. Spirituality plus technology equals sustainability,”

Rajvanshi elaborated. “What happens when we use lower technologies is that there becomes a very person–centric technological focus, and when the person gets out of the scene, the situation fails.”

NARI’s goal is to create sustainable systems that will allow rural people to generate their own wealth, thus allowing them to live a more productive life.

According to some sample Lanstove owners, the product—which costs around Rs.1,000, or US \$25, to manufacture—has enabled them to just that, according to Rajvanshi. “People who have tried the lamp are all coming to us with positive feedback. They all want it immediately,” he said. “We see this as potentially being a world movement.”