Harish Hande, who was one of the Magsaysay awardees this year, co-founded SELCO that has been working to provide solar lighting in rural areas of Karnataka. In this Idea Exchange moderated by Special Correspondent Amitabh Sinha, Hande speaks about the potential of solar energy

IDEA eXCHANGE

OINAM ANAND

'We are hiding behind the poor when we say we are a poor country and we need coal and nuclear energy'

AMITABH SINHA: Harish Hande is working to provide energy solutions, mainly to the underprivileged. He has been in this business for about 18 years but unfortunately, we got to know of him only after he won the Magsaysay Award. Tell us about your work.

What we do is very simple: we provide sustainable energy solutions, basically solar power, to rural villages, individual households, street vendors, schools. Most of our work is in Karnataka but a few years ago, we started work in Gujarat too. Our primary focus is the individual household. We went about destroying three myths: that the poor cannot afford technologies, the poor cannot maintain technologies and thirdly, that you can't start a commercial venture while trying to meet social objectives. When you graduate from IIT, it is pumped into your head that you have to do a PhD. So I went to the US for a Masters and PhD but I had the luck to visit the Dominican Republic in early 1991 where I met Richard Hansen and saw what he had done with very small systems for three or four very poor households. I thought the idea was applicable to India too. So I returned home and began to look at the socio-economics of alternative energy. I started my PhD thesis on rural electrification in India and whether solar energy made sense.

I was hesitant to come to India, initially because I had the so-called IIT "chhaap". I chose to go to Sri Lanka instead where I did not know the language. If you don't know the language, people treat you at the same level—sign language breaks all education barriers. So I went to north Sri Lanka, Anuradhapura. Those were exciting times because the LTTE was close by—this was in 1992. I had a friend who was doing a project on how lighting used to scare away elephants. We put up solar lights in the field so that the elephants didn't attack the sugarcane crops.

Then I came back to India, to Karnataka. I got into the politics of the state, into the dynamics of the village. There was one incident that really moved me when I was leaving a village: a 65-year-old lady said to me, "Can you provide me light before I die?" We're talking of 1992—after more than 50 years of Independence, half of India's population was without electricity. Even today, 500 million people live without electricity and we're talking of 8 to 9 per cent growth. It doesn't make sense. The lady had not seen a light bulb in her life and she was willing to pay for it. We have assumed that the poor can't pay, that their affordability is different, so we need to make cheaper products. That's not true—it's a combination of technology, finance, market forces. Everything falls into place when you are delivering a right market product to the end user.

With Rs 1,000, we started SELCO in 1993. Today, we have around 170 employees and 120,000 households, where we provide electricity to individuals—all of them pay for it without subsidies. We have clients who earn Rs 1,600 a month. They pay for solar because the average household pays Rs 200 for kerosene and candles a month. If you create finances to equal that amount, you can provide them a Rs 10,000 product—provided they get financing. That Rs 200 they are spending on kerosene and candles in fact goes towards an installment for our product. Rather than looking at subsiding that Rs 10,000, we need to look at how to push financial inclusiveness in our country. Second, everybody assumes that everybody has a monthly pay cheque. The best financial lesson I learnt was in 1998 when a pani-puri wala said, "Harish bhai, Rs 300 a month is expensive but Rs 10 a day is fine." How do you create mechanisms to collect Rs 10 on a daily basis? On an average, a pani puri vendor or a vegetable vendor in Delhi spends Rs 450 on kerosene a month. You and I don't pay Rs 450 a month for a kerosene light, we don't even pay that much for a bulb for four hours. Can you imagine having five lights in the house and paying Rs 2,000? No. The poorer you are in society, the energy costs actually go up. But they need two lights or four lights for two hours and another three lights for four hours.

Today, we are actually ruining the choices for the poor. We are not sitting with them and looking at what they need. We're pushing shampoos and sachets instead.

We have clearly defined ourselves to be in the space of need, not in the space of want. One man told he wanted a three-light system and we knew he couldn't afford a three-light system. Our technician went to his house, cut open a part of the roof and put in one light. He needed light in three rooms; he did not need three lights. Thus, one light lit up three rooms. Suddenly, it became affordable, one-third the price. Within six months, 100 houses near him bought solar. The financing was created through banks. We partner with nine banks, mostly regional rural banks. We have 28 centres in Karnataka.

AMITABH SINHA: What is the economic model that works for you and your customers?

The average cost per light is approximately Rs 4,000. So people buy either a one-light system, a two-light, three-light or four-light system. Typically, they receive financing from a bank and that is for between 3-5 years. Interest rates are anywhere between 12-14 per cent. But the payment mechanisms would differ depending on the work: a schoolteacher, a postmaster, a rural doctor would pay in monthly installments. The paddy farmer would pay once a year, a peanut farmer twice a year, etc. Since the rural banking system is already mature, they have the financial products to match the cash-hold of these farmers. But there's also the daily income earner. We had to innovate—90 per cent of our work goes into financial innovation and the rest into technology innovation.

AMITABH SINHA: How is your model different from what we see in other states, say UP? They also have a financing mechanism with banks.

It took us four years to convince banks. Rural banks thought solar lighting is not income generating and they wouldn't finance it. We started pushing them, saying a child's education is a future investment. One banker finally agreed to give us $100 for financing. I asked him for a letter and I took it to other banks and said, "If that bank could finance this, how come you're not financing?" That's how it started and that's been replicated eight years later into the Aryavart Gramin bank in UP. The only issue I have with that is, it's gone into a complete sales model. It's not into after-sales services, which is always the critical part because if in a village, even two systems stop working, people will start blaming solar technology. Secondly, you have created a standardisation that if a person has two rooms, buy three lights. You're not giving a choice. Many communities require innovation in terms of products as well as financing. That's where the catch lies if we have to go further in UP and Bihar.

VANDITA MISHRA: The argument has been made recently that Magsaysay awardees should be on the Lokpal panel. As a Magsaysay awardee, do you believe you have a special vantage point to judge corruption or to suggest solutions?

No, my expertise is not in that. I would rather spend time on leveraging my experience of 16 years for the younger generation to look at sustainable energy. I support the movement against corruption but do I have the expertise? No.

VANDITA MISHRA: What has your experience been with the different state governments?

It was easier to have a meeting with President Obama and President Clinton than any representative of the state. I have never met anybody from Karnataka government except bureaucrats who are my friends.

UNNI RAJEN SHANKER: How do you set up a centre and how do you select a village?

If you look at the demographics of a typical village, about 60 per cent people would have no electricity and the 40 per cent who have electricity are fed up of power cuts. We started with villages close to Mangalore where we were initially based and then we grew organically: we would set up a centre, pick up local people, put them into an existing centre then transfer them back to their villages.

COOMI KAPOOR: SELCO is now self-sustaining but would it have been so without loans, initially from organisations like USAID?

It was a loan; it was not a grant. So we paid it back. We have taken grants but mostly as bank guarantees for a poor person who cannot pay banks the Rs 1,500 as per RBI's 15 per cent down payment regulation. Once the person pays back the down payment, we remove that grant money and leverage it for another entrepreneur or a poor person.

RAKESH SINHA: How much maintenance do your systems require and how frequently?

In the maintenance chain, the weakest part is the battery. It requires maintenance once in six to eight months. You need technicians to regularly clean it up so that the lights run longer. You have cases where cockroaches pee into the circuits, short circuiting the lights. Rats eat the wires because they like the glue. That happens very frequently.

RAKESH SINHA: What roadblocks do you face when you try to open a centre?

The roadblocks are sadly from the government. The Solar Mission has really been a problem. We put in lot of inputs but NABARD is not able to handle itself on how to refinance rural banks with lower interest rates. Earlier, there was no connection between NABARD and the banks for solar financing. But now, with the Solar Mission, the subsidy is routed through NABARD and that has become a big bottleneck. The other big bottleneck is the younger generation. The younger generation is not ready to go into the rural areas, it has lost the sensitivity towards the rural and the poor. How do you inculcate that passion—not the romance? Romance leads to volunteerism. Passion leads to actually doing it. That is the biggest barrier. If sustainable energy has to grow in India, we need both rural and urban youth to have that sensitivity towards the 600 million people of the country.

"I was leaving a village in Karnataka when a 65-year-old lady said to me, "Can you provide me light before I die?" We're talking of 1992—after more than 50 years of Independence, half of India's population was without electricity. Even today, 500 million people live without electricity and we're talking of 8 to 9 per cent growth. It doesn't make sense"

***KAUSHAL SHROFF: How viable is your business model? What has been the success percentage of your consumers in meeting all the payment and have you evolved any system for daily collections?**

We have a standard saying in SELCO—we started the same year as Lehman Brothers, but we're still here. We look at financial, social and environmental sustainability at the same level. But in 2005, the German markets went up, they had a huge subsidy for people putting solar on the rooftops. It sucked up the world's solar panels. The manufacturers in India started making larger solar panels for the German markets and our prices for smaller modules went up by 47 per cent. We had huge losses for two years, we nearly collapsed. But we somehow recovered, we got the investment and now we are pretty healthy. Regarding the financing, we look at different models. We look at an entrepreneur who collects Rs 10. He takes a loan from the bank, he pays on a two-week or a monthly basis. For him, the cost per light point is Rs 6.50. So he makes Rs 3.50. So you are creating an income-generating activity for the entrepreneur who delivers on a daily basis.

***SRINATH RAO: How viable is solar electrification in India and what is its potential?**

A hundred million households today do not have electricity. We are not propagating solar as a solution. We are looking at sustainable energy depending on the district. For example, in the southern districts of Karnataka and Upper Kerala, it could be a mix of solar and micro hydel. If I go to Gujarat, I would definitely look at a hybrid between solar and bio-gas.

***SRINATH RAO: Do you foresee a situation where renewable and sustainable energy can compete or even replace thermal energy?**

Over a period of time, but not today. We need to look at sustainable energy as a holistic model where you look at the parts of the ecosystem together and then it makes so much sense. Even if you have coal and nuclear today, they are not going to these 500 million people in a sustainable manner.

SURABHI: Tell us about the sourcing of your technology. In the 1990s when you first went into villages with the proposal of solar lights, how did people take it?

Our expertise is not in the technology. We assume technology is on the shelf. Our expertise is in the business model. The poor need to be given a choice. Our first client refused solar. But his mother was very interested. So one day, we went to his home when he was out for four hours and installed our system and ran off before he could come back. The next day, he had the Rs 14,000 in cash. He was thrilled. That's empowerment.

AMITABH SINHA: What are your views on the way the debate on energy security is going? It is said that we need nuclear energy because solar technology is not viable, at least in the short term.

The debate between nuclear and solar energy is very unfair. The beauty of India is the decentralised approach in terms of energy options that are available. Both coal and nuclear do not look at the external cost and the social cost. You are blindly looking at the technology cost and nobody is talking about the social cost on the miners. In nuclear energy, you are not looking at the cost of the wastage. This ground level disconnect is what scares me. I'm not a proponent of just solar energy. Hydro, bio-gas, bio-mass, solar—with a combination of these technologies, we could actually be a superpower in innovation where we come up with technology and business models that countries in Africa and Latin America could follow.

VANDITA MISHRA: It has become fashionable for political observers to say that there is a different kind of voter, the voter today is voting more for *bijli-sadak-paani* than before and that's why many governments are performing better. Do you see that connection being made between the electricity and the vote?

Maybe roads, but not electricity. We are completely relying on the patience of the poor. We are hiding behind the poor for making decisions, saying that we are a poor country and we need coal and nuclear energy but that's not going to the poor, it's going to the big industries of inefficiencies.

***SOURABH SHARMA: Are you satisfied with the R&D in non-conventional energy resources?**

If we are satisfied, it will never progress. Where is the R&D? There are no R&D companies. The IITs are not providing R&D. Tell me one product that has come out from the IITs in the energy sector. Zero. Also, people are not spending enough time on where R&D should be, where capital subsidies should be. Everybody is looking at the solar panel. Look at the value end, the lights, the income-generating activities.

Transcribed by Naveed Iqbal
For longer text, visit www.indianexpress.com
** Students of Express Institute of Media Studies*