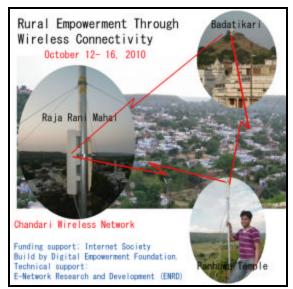**Chandariyan: Rural Empowerment through wireless connectivity**

After the Indian Government has initiated the process of setting up approximately 240,000 Common Service Centers across rural and semi-urban areas within the country, then India has becoming a home to some of the largest telecentre initiatives in the world. This initiative is becoming an evidence to push India in an emerging national economy from the rural and urban sector. Digital Empowerment Foundation (DEF), a pioneer non-for –profit organization based in Delhi has been recorded an initiative to empower remote rural community by adopting broadband wireless technology and offering Information Communication Technology (ICT) training to the community leaders in their local language. DEF has joined it's
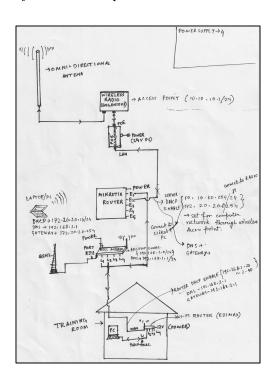
hand with E-Networking Research and Development (ENRD) chaired by Mahabir Pun Winner of 2007 Magsaysay Award on community leadership to expand such training program in India.

At first time in October 12-16, 2010 there has been organized an ICT training to establish rural broadband wireless network in Chanderi of Lalitpur district in Madhya Pradesh of India by DEF. The training has been supported by the Internet Society (ISOC). Rajendra Prasad Poudel, who is the program Director of ENRD and team member of Nepal wireless project and Bikram Acharya has been invited as trainer and resource person for the training. There were 12 participants representing from different region of India with different backgrounds. The training material is also developed in the local language by the trainer. According to Rajendra Prasad Poudel, "*The training is focus for the people who have low level of literacy and with low knowledge on English language.*"

Mr. Poudel is one of the experienced trainers for the ICT training in the rural community of Nepal. In addition of technical training Poudel includes community mobilization content for the trainees. According to Rajendra Prasad Poudel, *"The person who works in community tele center should have enough technical knowledge. In addition it is highly recommended that they should know how to mobilize the community because, they have to directly deal with each community members. And the sustainability of the centers depends on their role. So these telecentre operators should be trained well, these are the pillar of the rural ICT project."* During this 5 days training trainees has received lots of practical and theoretical knowledge from basic concept of wireless networking including with cabling, site survey, building tower, configuration of different wireless radios devices, IP addressing , routing and DNS etc.
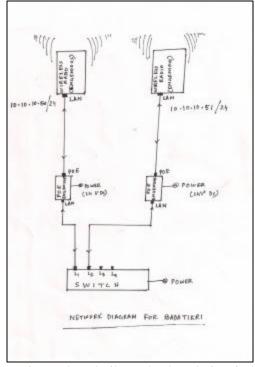

One of trainees Vijaya Roya from Rajastan said *"I could not understand English so always I was hesitating to participate in such training. I could not learn any things except sitting behind and have no any question to them. But this is the first time I got training in language which I speak. Our trainer has used such simple language which I can easily understand. Now I have confidence that I can build the wireless network in my Village. I am encouraged Now I have many questions in my mind and again I want to learn many things from*
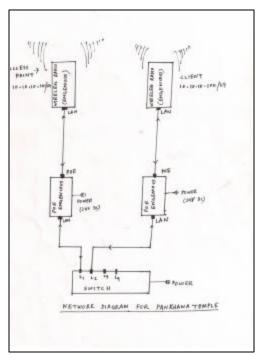
similar training.. Also another trainees Jadomani bro explained that *"I already did course of computer network and Cisco training still could not get practical idea. But this time our instructor has explained us in such way that it is very simple to understand. Now I can setup wireless network in my village in Assam. Since we have short time."*

Since the objective of the workshop is to provide training to the trainees and also build wireless network connecting 3 places of Chandari Nagar. During the training trainees has done filed survey by themselves and explored the location for building tower. Trainees has collected GPS data, calculated the distance between towers, estimated the tower height and configured the radio and placed them in proper place. Trainer Bikram Acharya explained *"Since Radio Physic seems technically complex but we have done a lot effort to explain to our trainees in local language which they understand easily"*According to the Mr. Sahid who has been taking care about Chandarian Project explained *"This wireless network will provide access of Internet to the poor and marginalized community living around the Chandari nagar. Although thee is coverage of the VSNL internet but it is still expensive for the women and marginalized community. And also they do not have their personal computer. The other motive of the wireless network is to establish connection between*

many small entrepreneurs who are running by local people."

NETWORK DIAGRAM FOR BADATIKRI

Trainees has built and placed 3 wireless towers in RajaRani Mahal, BadaTikari and Pankhuwa Temple respectively. The internet has been connected via VSNL ADSL router in the RajaRani Mahal. One internal wireless radio has been placed in the Raja Rani Mahal for distributing wireless internet around the Raja Rani Mahal square. Being RajaRani Mahal in the top of the hill an Omni Antenna has been placed to distribute wireless internet for the telecenter or individuals. Radios have been configured in 2.4GHz frequency spectrum and providing maximum 54mbps data bandwidth. To managed the authentication and accounting system Microtik router has been installed in RajaRani Mahal. Any person who like to access internet should contact

NETWORK DIAGRAM FOR PANKHAWA TEMPLE

System administrator of the Chandarian Project. The administrator he/She will add Mac address of the specific PC in the Router only then the internet will be accessed in the PC. Also in the same tower there has been kept two wireless client bridge/access point to connect other two relay stations Pankhuwa Temple and Badatikari respectively. Badatikari is in the South side of the Cahandari Nagar and in 3.5 km distance having clear line of sight from Raja Rani Mahal. The objective of placing relay tower in Badatikari is to expand the coverage of the wireless network where signal from Omni Antenna of Raja Rani Mahal can not reach. Second objective of selecting this location is to connect other many isolated villages behind the hill of Badatikari. From the Badatikari to the eastern direction one can see clearly the Pankhuwa Temple relay station which is in

6.5 km distance. Also Pankhuwa Temple can bee clearly seen from the Raja Rani Mahal. So at this moment the internet has been shared from Raja Rani Mahal to these relay stations. Any telecenter who like to access internet via these two realty stations should be registered in the Microtick router placed in Rajarani Mahal. Since the dream of the chandairan wireless network is to expand it to around the villages to establish communication among the small entrepreneurs. Such communication facilities will enhance the skill of the rural people as well as support to expand their business.