



**MR. KALYAN PAUL**

**Recipient of the Award for Application of Science and Technology for Rural Development - 2012**

Born: September 3, 1956

In 1992, Kalyan Paul set up Pan Himalayan Grassroots Development Foundation with a clear vision and objective. It focused on the initiation and implementation of fundamental ways and means for renewal of hydrology and restoration of the ecology.

Paul is a driving force in promoting holistic mountain development programs. His efforts have initiated appropriate technologies for conserving natural resources and setting basic amenities, which have improved the quality of life of many. Some of the areas of activities include.

Water: Infiltration Wells for drinking water, Roof Runoff Rainwater Harvesting; Surface Runoff Rainwater Harvesting.

Energy: Biogas Units

Sanitation: Twin Pit Water Seal Sauchalaya

The most appropriate methodology to implement all these initiatives with maximum effect and use is by involving the youth and building their capacities to be barefoot engineers. Paul strongly believes that this will help tap and nurture the entrepreneurial spirit in village communities. This methodology led to establishment of Kumaon Artisans Guild, wherein these barefoot engineers help in creating awareness regarding the importance and benefits of appropriate technologies and assist communities in adopting such technologies through active engagement and cost-sharing.

Under his leadership and in partnership with various civil society organisations and the government, Grassroots, over a span of 20 years, has benefited communities with such outreach programs spread over 800 villages in 12 districts in the states of Uttarakhand and Himachal Pradesh.

Infiltration wells have proven to be a suitable technology for community managed drinking water systems—a boon indeed. The benefit of 500 infiltration wells has spread to 350 villages, 55 blocks, 12 districts of Uttarakhand and Himachal Pradesh, providing 2.40 million litres of safe drinking water daily to 17,600 households with close to 100,000 people. This has further reduced the drudgery of women and children who otherwise spent time travelling to distant locations to fetch water.

Sanitation infrastructure comprising of twin-pit water-seal sauchalayas have been built in 4,000 households in Gagas river basin, wherein installation of 100 per cent in some gadheras. This technology along with roof run-off rainwater harvesting structures have been demonstrated in large schools in the states of Uttarakhand and Himachal Pradesh benefiting more than 20,000 children, especially girl-students.

In the area of renewable energy, biogas units have been set up in various far-flung watersheds. More than 2,400 households have now access to clean energy for cooking food for 3-4 hours daily. This has drastically reduced the drudgery, health hazard as well as biotic pressure on scarce natural resources.

The loss of environment assets is viewed by Paul as an additional component of poverty leading to his engagement with conservation of natural resources focused on the inter linkages of Forests and Water, through revival of traditional moisture conservation methodologies and provision of fresh vegetal cover

on degraded village commons. Continued interactions during multi stakeholder workshops led the government to allow SHGs of women to enter reserved forest areas for revival of this tradition. Over the years, these efforts have been consolidated in Gagas river basin, Almora district of Uttarakhand, largely through the participation of women.

It is indeed worth noting that at a grassroot level, appropriate institutional structures have been formed to work on the renewal of river basin hydrology and its linkages with sustainable mountain farming systems. By 2011, over 4300 households were engaged in 101 SHGs (2-3 per village) and 39 Gadhera Bachao Samities (1 per village), forming the bedrock for sustainable change and development.

Communities in the river basin have been enabled to raise over 2,00,000 saplings per annum of around 50 species of native trees/shrubs in various small village level nurseries. This in turn has encouraged communities' participation in protection and conservation of ecology, besides gainful employment at the village level.

Farmers have continuously expressed the need to strengthen livelihood opportunities within the river basin. Steps taken are to revive cultivation of traditional rain-fed crops, introduce high value crops like chamomile and also improve soil fertility. Alongside, Grassroots has been modernising small irrigation systems to enhance production and incomes. For example, in Pidyadhar micro watershed in Himachal Pradesh, the exciting open channel irrigation system has been modernized by laying of underground irrigation pipes and construction of appropriate inlet chambers at the headwaters, which led to the benefiting and tripling of incomes for around 100 families. For the past few years, hundreds of small farmers are benefiting through establishment of backward and forward linkages which provide a bridge between "farm gates to fork" through the brand HimKhadya-safe food from the Himalaya.

Grassroots has introduced Free Range Poultry activity wherein over 500 households with an average of chicks of Kroiler birds are enabled to earn through sale of mature hens at a premium, as well as get nutrition at home through egg consumption.

The projects are supported by Sir Dorabji Tata Trust, Jamsetji Tata Trust, World Wide Fund for Nature, Artha-Sustainable Development Fund, Government of Himachal Pradesh, Government of Uttarakhand and Government of India amongst others.

Grassroots, spearheaded by Paul's zeal, continues to develop programs and act as an interface between communities and other stakeholders for promoting sustainable mountain development. He plans to increase the force of barefoot engineers due to his strong belief that Guilds of Barefoot Engineers is the most effective and appropriate way for technology transfer at the grassroot level. This will further enable the village communities to determine their own destiny, establish goals, take risks and invest their time and energy to achieve their aspirations for a better life-attributing to self- sustainable and independent community.

In the near future, Paul wants to bring the ten states of the Indian Himlayan Region on the table of the planners, extensively promote the concept of barefoot engineers and work towards innovative capacity building mechanisms. It is Paul's dream to see Grassroots as a community-based and community-run organization.

Kalayan Paul is a Fellow of Ashoka: Innovators for the Public and Lemelson Technology Fellow of the USA and Salzbaug Global Seminar, Austria. He has presented several papers on sustainable mountain development both at national and international forums. Special features on the activities of Grassroots have been highlighted in the media: Social Watch in Doordarshan, Unstoppable Indians in NDTV and in the 2009 Outlook Business-50 Social Entrepreneurs edition.

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