

Project: Development of a Gravity Based Ropeway

NGO's associated: Himalayan Action Research Centre, Dehradun

Objectives: Keeping in view the tough geographical conditions and to overcome these obstacles, the ropeway technology was developed with support from the office of Principal Scientific Advisor to The Govt. of India, New Delhi. Generally, ropeways had been used mostly for transporting woods from the higher reaches to the roadsides, and less used for transportation of fruits and vegetables.

RuTAG Uttarakhand with the help of the scientists of IIT Roorkee, have provided the technical support for the establishment of gravity-based ropeway. The department of Industrial and Mechanical Engineering of IIT Roorkee has made improvements and upgraded the traditional ropeway, keeping in view the safety and strength of the rope way.

The modified ropeway system as shown in figure is having capacity of 80 kg. per round, will cover 1200 meters distance in 15 seconds

Achievements:

The innovative changes that were made in the original design of the Himachal ropeways are as follows –

- The foundation of Plummer blocks has been laid. The anchor blocks of concrete have been case in pits dug at platforms built at lower and upper stations.
- Angle iron, channel and girders have been used for making the chassis at both the ends instead of wooden frames and ballis used in conventional designs.
- Steel thrust transmitters have been designed in place of old wooden beams.
- Double pulleys have been provided in the trolleys to avoid derailing during continuous operation.
- The provision of toggle clutching system at each end of the shaft attached with key ways has been made within the system to harness the energy being released in operations due to potential difference.



Figure. Gravity Based Ropeway