Appropriate Technological Innovation for mitigating Forest Fire Hazards in Western Himalayan Region

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Abstract

Briquetting of organic waste like wheat straw, peanut shell, coconut fibers, rice husk, maize cob and various other agricultural residues is a common practice in India and abroad. Generally briquetting process is done by application of heat and pressure through electrically driven machines. This paper accounts for developing a manually operated bio briquetting machine for a harmful forest bio residue of Western Himalayas named as dry and fallen pine needles. Authors of this paper has successfully designed and manufactured manually driven forest bio residue briquetting machine in vertical and horizontal orientation. These machines are designed to reduce the use of fossil fuels and promote clean and green energy. The uniqueness of the paper is also reflected by adopting grass root level execution strategy for addressing climate change issue and creating livelihood opportunities for the communities through converting a harmful forest bio residue into a useful resource for clean energy under social entrepreneurship skills. It is further added that such an intervention will avoid devastating forest fires which are primarily initiated by huge quantity of dry and fallen pine needles lying on the forest floors. A manually operated bio briquetting machine finds it's larger acceptability for a eco fragile, fire prone, char pine forest areas of Western Himalayas by eliminating fire hazards as well as providing direct economic benefits to the villages through the sale of bio briquettes.

Biography

Kapil Kumar Joshi is a post graduate in Mechanical Engineering from Indian Institute of Technology, Roorkee, India. After serving few years in engineering organizations in India, he joined as an Indian Forest Service Officer in the year 1992.Since 1992 till 2020 he has worked in various capacities as Divisional Forest Officer, Deputy Conservator of Forest- World Bank Forestry Projects, Regional Manager - Forest Corporation, Deputy Director/Director Corbett Tiger Reserve, Conservator, Chief Conservator and Additional Chief Conservator of Forests in the state of Uttarakhand, India.

During the last 28 years, he has been actively associated with management of Forest and Wild Life in the state of Uttarakhand, India. During this period he himself implemented various participatory programs like Joint Forest Management, Eco Development and Forest Development Agency activities in the various divisions of Uttarakhand Forest Department. In the year 2003-2004, 2004-2005 and 2005-2006, he was awarded with State Level Forestry awards for his outstanding services in the state. He has been actively involved in water conservation, pine needle briquetting, and social entrepreneurship and leadership aspects in conservation of natural resources during the course of his service in the Forest Department.



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