Inclusive Societal Development through Technology Intervention in Uttarakhand State, India

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Abstract— The Uttarakhand state has 13 districts and out of which 11 districts are hill and during rainy season the wide spreads landslides occurred round the part of the state and road connectivity remain cut off. In that time the farmers could not able to send their vegetable, fruits and other product in the market and most of the product has nastiest. The most of the region in Uttarakhand is known for production of Orange, Malta, Lemon, Pomegranate, Tomato, Pear and Apple etc. During rainy season landslides occurred in many places and road connectivity to the market has inaccessible for the villager, the fruit produce rots before it reach to the market. In order to address this problem, Technology Resources Centres (TRCs) has been developed a community facility centre for fruit processing, which in turn promotes Self Help Groups (SHGS) for women and socially deprived and offers fruit processing training such as: to look after raw material, judicious use of preservatives, packaging and marketing. A mechanism adopted by them enhanced the knowledge of the region. Now, more than 10838 inhabitants taking the benefit of the technology centres. Now they are not hurry to take fruits to market, rather they are in a position to negotiate good price for their processed products. In this paper an attempts has been made to highlights' the successes stories of Technology Resources Centres established by Uttarakhand State Council for Science & Technology (UCOST) in the different part of the state.

Key words: Uttarakhand state, Technology Resources Centres and Benefit

I. INTRODUCTION

Science and Technology (S&T) is widely recognized as an important tool for fostering and strengthening the economic and social development of the country. India has made significant progress in various spheres of science and technology over the years and can now take pride in having a strong network of S&T institutions, trained manpower and an innovative knowledge base. The application-oriented research and development (R&D) for technology generation; promotes human resource development, especially in terms of encouraging bright students, local inhabitants to take up science as a career. The forces of technology, modernization, urbanization, and our unique demographic dividend are shaping the future course of the country and paving the way for unprecedented development. However, as we move on this trajectory of development and growth, we also need to be mindful that we are creating a society that is inclusive and equitable. India has a huge reservoir of unmet needs in critical areas such as health, education, agriculture, energy etc. which is depriving large sections of our populations from aspiring to opportunities that would transform their future for the better in the broad scenario of a vast population with limited resources, is a major challenge. At the same time, with rapid advances in new technologies, changing needs of the economy and very presence of the challenges identified, the sector itself presents a fertile ground for pioneering the societal development. Science &Technology intervention is a critical element of growth for society. Government has initiated several schemes for the growth and development of society which are the primary source for development of the country. Technology is the key to convert knowledge into wealth and social development. The rural sector initially was characterized as traditional labor-intensive units but of late this sector has made quantum leaps. This sector is equipped with modern machines and latest technologies. Uttarakhand state is newly curved out state from the northern part of Uttar Pradesh on 09th November, 2000, consisting the part of great Himalaya. The objective of the state separation is to accelerate the development in the typical geographical terrain and to deliver benefits to the rural areas. The rural community of Uttarakhand is the most marginalized section irrespective of inclusive development with sound technological intervention. However, the state is rich in natural resources but traditionally income generating activities are agriculture, animal husbandry, handicraft and other skilled and semiskilled activities adopted by the community, in the past are unable to meet year long need of the family vis-a-vis these occupation has never given due respect in the society. Less employment opportunities, negligible industrialization, unawareness regarding education, health, poor infrastructure, lack of technology is the major constraints hindering the up-liftment of socio-economic condition of the community. Uttarakhand state is hilly state, the development of remotest places expected from the government. The state government prioritizes the schemes for road, health, education, electricity etc. while, a simple small contribution in the process of development can be given by providing them opportunity, by the intervention of Science & Technology with the utilization of resources such as: entrepreneur development, value addition of agricultural products, demonstration and communication of technology in the grass root level which can also prevent the migration of rural people to urban areas. In the 13 districts of state mainly depend on agriculture, therefore, entrepreneurship programs related to food processing and canning are very important small scale enterprise (Srinivas et al. 2009). However these entrepreneurs and innovators constitute only 5% of population, even in developed countries (Bolten, 2004; and Loporpt, 2005).

II. UCOST EFFORT OF TECHNOLOGY PROMOTION:

Uttarakhand State Council for Science and Technology (UCOST) was established in 2005 as a nodal agency of Department of Science & Technology (Govt. of India) to disseminating the science in the society. The objectives of the council's is to advice the state government for promotion of science and technology in the state, identification of thrust areas for technology intervention, demonstration and extension as well.

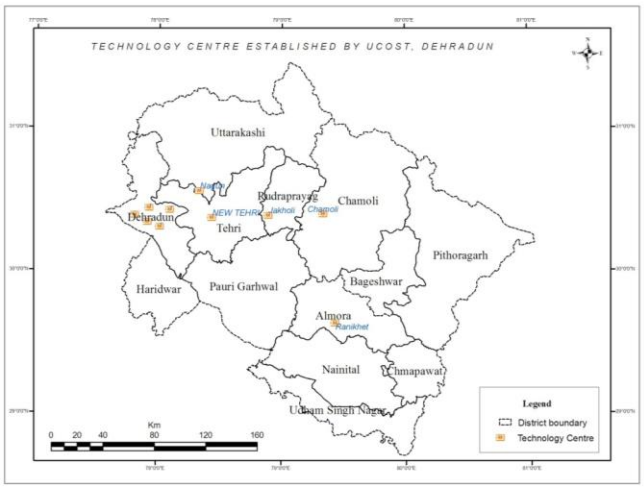

Fig. 1: S&T programs conducted by UCOST, Dehradun

The council reaches up to the grassroots level to the widespread the new technological interventions in the state and established six Technological Resource Centres (TRCs) and 125 Vigyan Prasar Kendras throughout the state (Khandka et al.2012). The council provides popular science books, magazines, equipment's and capacity building trainings on various scientific issues to the Vigyan Parasar Kendra's (VPKs) so that they can update their knowledge and spread the knowledge in the society. The technology provided by the council is based on the available resources in the endemic pockets.

Council establish TRCs in different geographic locations in the state and these TRCs basically catches the need of inhabitants to effectively utilized the natural resources available in the adjoining areas of particular TRCs. As the Uttarakhand state is the rich in their climatic conditions and changed from foot hills to high elevations. The technology intervened by the council is based on available resources in those particular areas. This can be converting into entrepreneur and can provide opportunity to rural people to adapt as occupation. Most of the intervened technology is based on the agriculture and horticulture due to rich in their produce and most of the state population engaged in these activities. Therefore, the technology intervened viz., 3 units of Polyhouse demonstration of 50x25x15 ft. (Poly sheet, polymetal structure, poly curtains, drip irrigation system, fogging system, fertilization system, spriklers, pump, 3 tier structure, input material etc.), power tiller, bari making machine, hammer machine, malta juice machine, vacuum filling head, up gradation of chullu decorticator, Colloidal mill with tank, mixing machine 25 Kg capacity + hydro machine, Potato peeler, slicer, nankeen pouch packing machine, Bhujiya making machine, Pressurizer diesel stove, nitrogen gas cylinder, RTS cup sealing 7 filling machine, High pressure sealing machine, Cap sealing machine, Juice filter machine, Bottle lamination machine, steam boiler, homolyser, aqua guard filter, microscope, pH meter, soil testing kit, humidity testing machine, hand refrectometer for measuring concentration, seed analysis kit, anemometer, Refrectometer, stainless steel top tables, electric heat sealer, weighing machines, storage drum, peeling tools, lab equipment & preservatives, hand operated slicer & grater, diesel bhatti, mechanical rier, grinder, crown corking machine, pulper juicer, mixing machine, fruit mill, Pulper juicer machine, juicer, offline water purifier, refrectometer, pouch sealing machine, plastic glass sealing machine. A capacity building training programme and awareness campageian also conducted by the council in different part of the state on Phenyl making and paper conversion, Computer skill Development, handicraft, and various other EDPs for men women's in the disaster affected area,. Total 10,838 benificries benefited by this programs in which 3249 by TRC Naugn, 4251 by TRC, kalishor, 1589 by TRC Jakholi, 150.160, in TRC Shahspur, Kanatal, and Almorsa, resoectivelly. While in the capacity building and awarnewss campaign on Phenyl making and paper conversion, Computer skill Development, handicraft, and various other EDPs 480,200, 30, 350, 70 peoples benefitted.

III. Training Program For Woman Empowerment

IV. Fish Farming Using Natural Water Resources In Pithoragarh

V. Community Facilitation Centre, Chamoli

VI. Tissue Culture Lab At Nagaon, Uttarkashi District

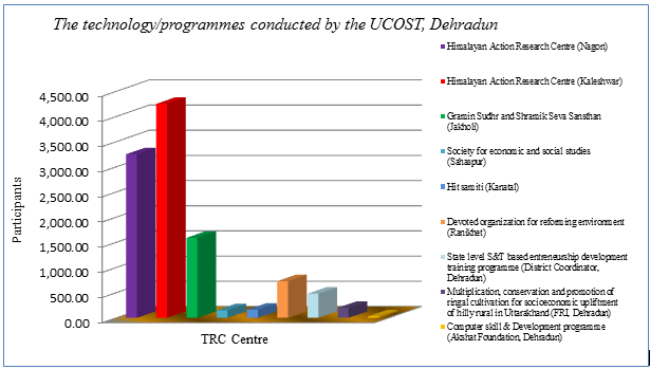

Fig. 2: Graph showing beneficiaries in different part of the state

S. No	Coordinating organization	Location of the Centers	Available Technologies	Beneficiaries
1	Himalayan Action Research Center (HARC)	TRC, Naugaon, Uttarkashi	3-Units of Poly-house demonstration of 50x25x15 ft. (Poly sheet, polymetal structure, poly curtains, drip irrigation system, fogging system, fertilization system, spriklers, pump, 3 tier structure, input material etc.), power tiller, bari making machine, hammer machine, malta juice machine, vacuum filling head, up-gradation of chullu decorticator	3249
2	Himalayan Action Research Center (HARC)	TRC, Kaleshwar, Chamoli	Colloidal mill with tank, mixing machine 25 Kg capacity + hydro machine, Potato peeler, slicer, namkeen pouch packing machine, Bhujiya making machine, Pressurizer diesel stove, nitrogen gas cylinder, RTS cup sealing 7 filling machine, High pressure sealing machine	4251
3	Gramin Sudhar and Shramik Seva Sansthan, (GRASS)	TRC, Jakholi, Rudrapra yag	Cap sealing machine, Juice filter machine, Bottle lamination machine, steam boiler, homolyser, aquaguard filter, microscope, pH meter, soil testing kit, humidity testing machine, hand refrectometer for measuring concentration, seed analysis kit, anemometer	1589
4	Society for economic and social studies	TRC, Sahaspur, Dehradun	Pulper juicer machine, grinder, refrectometr	150
5	Hit Samiti	TRC, Kanatal, Tehri	Refrectometer, stainless steel top tables, electric heat sealer, weighing machines, storage drum, peeling tools, lab equipment & preservatives, hand	160

			operated slicer & grater, diesel bhatti, mechanical rier, grinder, crown corking machine, pulper juicer, mixing machine, fruit mill	
6	Devoted organization for reforming environment (DORE)	TRC, Ranikhet, Almora	Pulper juicer machine, juicer, offline water purifier, refrectometer, pouch sealing machine, plastic glass sealing machine	729
7	State level S&T based Entrepreneu ship Developmen t Training Programmes	District coordinat or UCOST, Dehradun	Phenyl making and paper conversion	480
8	Multiplicatio n, Conservation and Promotion of Ringal cultivation for Scio-economic upliftment of hilly rurals in Uttarakhand	FRI, Dehradun	Preparation of nursery for the plating of ringal rhizomes. Literature generated and distributed for farmers. Training conducted at village level.	200
9	Computer Skill & Developmen t Programme (CSDP)	Akshat Foundati on Dehradun , Uttarakha nd	Computer skill Developmen t	30
1 0	Scienfun-Symphony with Science for the Children of Garhwal Region of Uttarakhand	SPECS, Dehradun	To Generate Awareness among the school children's for Science & Technology	350
			and role of Science in daily life.	
1 1	Poor Women Entrepreneur ship Developmen t Training	District coordinat or, Dehradun	Entrepreneur ship Developmen t Training for socially backward women's for livelihood security	71

Table. 1: The technology/programs conducted by the Councils are as under

VII. CONCLUSION

The Uttarakhand state largely depends on agricultural and our council's aims for the self-employment generating of local people through adopting cost effectives and well established technologies. We have identified many program related to food processing and canning are important in small scales. The Technology Resources Centres (TRCs) act as a source for technology dissemination and training of local people to start small enterprises related to processing of fruits juices, vegetables, pickles and fish rearing. All these initiatives have been generated momentum activities in the state and channelized the message for self-employment. In order to make the development sustainable, the present paces have been continue with leap towards multiplying these council efforts in the large scale in the state. Many of the beneficiaries had established their own small scale product and trying for modified better products which can be supply in the market. We are confident that Councils initiatives taken for promoting technology will be helpful in generating employments opportunities as well as developing and promoting scientific temperaments among the inhabitants of the state.

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