

REINSTATING THE MODERN FARMING WHEEL IN THE HILLS

FARM MACHINERY BANK



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FARM MACHINERY BANK INITIATIVE

Farm Machinery Bank initiative of the Central Government had a huge potential but it is difficult to expect a farmer to indulge in buying a complicated expensive farm machinery. Uttarakhand Grameen Vikas Samiti (UGVS) has build up its trust and association with the farmers for over a decade. UGVS ventured into the initiative and with help of need based inputs of the farmers turned the initiative into a gainful workable proposition. Within one year the farmers who have used the machinery have reported an improvement of 30-40% on the crop yield.

The Himalayas has been the favourite destination for adventure seekers but life is equally adventurous for the inhabitants of the area. In Uttarakhand, out of the total 7.41 lakh ha land is under cultivation, 89% are under small and sub-marginal holdings, thereby limiting the scale of economies where input cost of per unit of output is higher.



Terrace farming in Uttarakhand

MIGRATORY CHAOS Struggling with the problems on daily basis and then getting meager results has convinced the people of the area that the solution to their lives lies in the urban areas causing migration to increase year on year. Many (1048) villages in Uttarakhand have been totally abandoned and the dream of most of the people is to move to the cities to for jobs. According to the 2015 National Institute for Rural Development and Panchayati Raj survey of 88% houses reported at least one member having migrated of whom 86% are male.

Though the mountainous terrains are fertile but due to the lack of resources, monetary issues, crop destruction by the insects, pests or by the wanton destruction caused by monkeys, wild boars and other wild animals leave poor farmers discouraged so much so that men and youth migrate, leaving their field barren.

COMPROMISED LAND HOLDING The land holdings in hilly farming in small and scattered. Out of the total cultivated area, about 50 per cent of landholdings are sub marginal, and 21 per cent of landholdings measure between 0.5-1 hectares. Over 27 per cent of the area under cultivation consists of plots less than 1 hectare in size. Majority of farmers are submarginal or marginal, not having the access to new machines and modern farming equipment as they are economically weak. Therefore, the land remains barren because the farmers lack resources and information regarding agriculture.

DISEMPOWERED WOMEN Mostly the farming is practiced by women who are left behind in villages increasing their drudgery. Already burdened with household work, caring for small children, and elderly members, they are ridden with additional responsibility of farming and milch cattle.

TRADITIONAL TOOLS like Darati, Khudal, Pthal and ploughing the fields using animals for farming made it even more difficult especially for women to carry out farming activities. The activities being more labour intensive, the dependency on farm labour is increased, who charged higher rates upsetting the economics of profits from cultivation of small farm holdings. Cost of production increased and returns became less due to higher cost of operations. Most of the farmers were marginal, individual ownership of machinery was unviable for small farmers.





Traditional Agricultural Practice: A Man Ploughing his field using Cattle

DRUDERY ALLEVIATION Small or marginal farmers cannot invest in costly machines to alleviate farming practices. Ministry of Agriculture and Farmers Welfare introduced the Farm Machinery Bank Initiative (FMB) for mechanization of small farms with the aim to restore farmers interest in agriculture and horticulture practices, increase land cover under cultivation, reduce work load on farmers majority being women and enhance economic growth of rural farmers.

Under Farm Machinery Bank scheme a fund worth Rs. 10 lakh is provided to a small group of farmers and a subsidy of Rs. 8 lakh is given by the Government for it. Additionally farmers also get 50% subsidy on GST.

MECHANISATION The scheme provides farming machines such as Power tiller, Power Weeder, Thrasher, Chaff Cutter, Self Propelled Reaper, Brush Cutter, Harrow, Seed Drill, Reaper cum Binder, Water Pumps, Power Sprayer, Pump Set and Water Pipes to the farmers.

The State Government has set up Farm Machinery Bank scheme at Nyaya Panchayat level and an amount of Rs. 4000 lakh under central sector and Rs 400 lakh under state sector had been sanctioned for it.



Farm Machinery Bank Center at Tehri

UGVS FACTOR The association of Uttarakhand Gramya Vikas Samiti (UGVS) with its farmer members has been more than a decade old. The State Government gave priority to UGVS Livelihood Collectives (LC) for opening FMB Centers. The organization sensitized LC members about the Farm Mechanization scheme, importance of setting of Farm Machinery Bank Centers and advantages of using advance tools of agriculture over traditional methods.

UGVS was registered in 2004, promoted by Department of Rural Development, Government of Uttarakhand in association with International Fund for Agriculture Development (IFAD) to undertake implementation of Livelihood Support projects. UGVS implemented Uttarakhand Livelihood Improvement project for Himalayas (ULIPH) from the year 2004 to 2012 . UGVS subsequently implements Integrated Livelihood Support Project ILSP too with an overall goal to enable rural households to take up sustainable livelihood opportunities integrated with the wider economy. It is being implemented in 41 Blocks and 11 hill Districts of the state.

Operation Strategy

Farm machineries are quite an expensive proposition as compared to the income of marginal farmers, so is the rent quite high and tricky operation of a mechanical device makes it a challenging affair for the implementing organisation. UGVS's field experience has come into practice for the implementation of the programme, therefore the following strategy was devised to mitigate the challenges.

- A machine bank was decided to set up at each Livelihood Collective.
- Machines are given on rent to a SHG or individual farmer for a season or a year.
- Rentals are decided by Livelihood Collectives as per the cost of the machines.
- MoU is signed with the farmers or the group ensuring community usage, market based rental for operations in fields of others and proper maintenance of the machines.
- Procurement committee of the LC ensures that the leased machines are used for maximum number of farmers.
- MoUs legally vetted and the Chief Agriculture Officer is the main authority to settle the disputes.
- Committee also oversee that the leaser does not manhandles the machines
- UGVs estimated that on an average the LC stated earning Rs 5000-Rs 6000 per month from leasing out machines.

SUCCESS STORY In the year 2017, subsidy under the scheme was availed by 131 Livelihood Collectives. Till September 2018, 131 FMB Centers were operational, one FMB Center has been set up per Livelihood Collective. The target for financial year 2018 is to reach 250 Livelihood Collectives having 250 functional FMB centers. The tools purchased for one FMB Center approximately covers 40-50 Ha of farm land. On an average each FMB center caters to around 500 households and 50 Producer Groups.



Farmers using machines for farming

Rekha Bhandari, a 32 year old woman farmer from Jajurali village, Bin Block, Pithoragarh was able to grow crops in just to fulfill few of her family needs 3 years back. Now she is able to earn Rs 40000 a year from her fields. She lives in a joint family with in-laws, has two children and her husband owns a small grocery store in the village. They always faced fund crunch to meet out basic needs like household expenses, school fees and social obligations. She says that her 3 years old association with UGVS since 2015 has improved her socio-economic condition. She is president of Gurung Ghati Aajeevika Sahitya Sahakarita. An enthusiast farmer, she attended various training programs and exposure visit about improving agriculture productivity conducted by UGVS. From Farm Machinery Bank Centers, she regularly use tools like bush cutter and Power Weeder and Wheat Thresher in her farm. Over time she has learned to operate these machines on her own with some initial hiccups. She says that use of machines saves considerable amount of time and has made farming easy for her. Seeing her operating the machines, other women from the village also got inspired and now use these tools.



Impact: After a year of implementation of the scheme with UGVS LCs, the impact of the Farm Machinery Bank Initiative on the agriculture can be envisaged as:

Enhanced Productivity: UGVS estimated that use of machines resulted in 30-40% increase in harvest. Better quality tilling, sowing, watering etc increased land productivity leading to better production of all type of crops

Reduced Cost of Cultivation: UGVS estimated that use of machines resulted in 40-50% reduction in cost of cultivation. Machines from the FMG Bank could be procured at reasonable rentals enabling small and marginal farmers for use them, completely eradicating the huge buying costs. Money spend on hiring manual labor charges was reduced leading to considerable reduction in cost of cultivation.

Good Quality Harvest: Good quality seeds, mechanized agricultural practices resulted in good quality produce.

Economically Affordable: Small farmers could not invest in purchasing the modern tools. Renting of machines from FMG Centers made it possible for small farmers to use them.

Increased Work Productivity: Farmers drudgery was reduced as machines replaced many farm jobs formally carried out by manual labour or by animals mainly oxen.

Reviving Farming: Farmers who had left farming because of high inputs of physical and monetary needs started farming again. Use of advanced machineries eased farming practices, resulting in conversion barren fields to cultivated ones.

Shift from Subsistence Farming to Market Oriented Farming: Increased harvest output, mechanization farming led farmers shift from subsistence farming to market-Oriented farming. More farmers started growing vegetables and spices which fetch them high returns. This in future can have impact on rural youth who increasingly seek employment in urban settings rather than in villages.

Ease of Operation: Most of the machines are light weight, convenient and so easy to operate that women farmers use them on their own reducing the dependency on other men folk to a considerable extent. It ensured higher outputs regardless of the age, gender or physical well-being of the farmer.

Better Farming Practices: Mechanized farming promoted better practices like reduced tillage and mixed cropping. Rotational and mixed cropping practices reduced the soil degradation, risk of pest etc.

Increased Efficiency: Use of machines saved a considerable amount of time and effort. Women farmers were happy using the machines as it considerably reduces farming time giving them space to focus of children or themselves.

Employment Generation: The functioning of FMG Centers created employment opportunities for 2 local persons responsible for repairing and maintenance of machines.

Improvement in Socio-economic Status of Farmers: Overall it resulted in increasing farmers income and achieved food security while improving people's livelihoods.

Freedom to Choose: FMG Centers worked well also because farmers had the liberty to choose type of machines to be purchased. Need based collective decision were taken by LC stakeholders to finalise the list of equipments to be bought under the scheme.

Demand Expansion: Witnessing the benefits of using machines in agriculture by Livelihood Cooperatives associated with UGVS, more farmers started demanding to setup FMG Centers for their LC.

Ripple Effect: In Uttarakhand, Farm Machinery Bank Centers are proving to be a crucial input for agriculture crop production. Mechanized farming is resulting in timely completion of more farming tasks. Greater areas are being farmed to produce greater quality of crops at the same time conserving natural resources. FMB is also contributing to effective development of Hilans Supply Chain as it is proving to have the potential to render post harvest and marketing activities more efficient and effective.

Challenges:

Limited Reach: Farmers whose fields are away from road find it difficult to take these machines from FMB Centers to their field limiting its usage. Some women farmers in Almora and Pauri have small fields away from road down on the mountain slopes. They are finding it logistically unviable to carry these machines to their fields, restricting them to reap benefits of farm mechanization.

Petrol Diesel Logistics: Most of the machines run on either petrol or diesel with an average 1hr/litre. Farmers have to fetch fuel from far off petrol pumps and keep stock for use. Regular increase in price hike psychologically dissuades small farmers to use these machines.

Transportation Hassles: Some of the machines weigh 60-80 kgs making it difficult for farmers to carry them to their field. Hiring of transportation vehicle is additional cost of operation making it difficult for small farmers.

Maintenance Issues: Till one year repair and maintenance is under warranty coverage. Since these machines are used by community, it runs on its maximum capacity, in future regular repair and maintenance would be an additional cost.

Limited Women Users: Women farmers are habitual of using traditional tools. Their exposure and expertise to use mechanized tools is limited. Most of the women still have to depend on their men folk for running.

High Rental: The rentals of these machines are in the range of Rs. 500 - Rs. 600 per hour, to be unaffordable for small farms having scattered fields.

Recommendations:

Behavior Change training should be imparted to the farmers who are unaware of modern farming equipment as 80% of the land is abandoned in the hills.

Exhibition of mechanized farm equipment should be held at all Gram Sabhas.

Farm Machinery Bank reduces physical drudgery which invites migrated youth scared of hard labour in the hill farming. FMB should be included in the Uttarakhand's development policy document as major initiative to combat unemployment in the state.

In a phased manner scaling up strategy of FMB should be devised for Uttarakhand in consultation with UGVS.



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