



Improving access to breeding and animal health services in disadvantaged locations—An impact narrative from Uttarakhand, India

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This is one of seven briefs from the Enhancing Livelihoods through Livestock Knowledge Systems (ELKS) partnership program in India. It sets out an impact narrative for different interventions, showing how project activities are translating research outputs to development outcomes.

Introduction

Livestock make important contributions to the livelihoods and food and nutritional security of small-scale farming households in hilly areas of India. In Uttarakhand, cattle and buffaloes are important parts of the mixed crop–livestock systems: manure, milk and draught power are all important outputs.

With rapidly growing demand for milk and milk products, driven by growing populations and increasing per capita consumption, there are opportunities for poor livestock keeping households to improve their incomes by shifting from subsistence-based to market-oriented production.

Intensification of livestock production, however, requires an integrated approach which addresses the need for better housing, nutrition, health and genetics and breeding, and also better market linkages.

To support sustainable intensification of livestock production in the hilly areas new approaches are needed to make quality animal health and breeding services available, affordable and accessible, especially to poor livestock keepers.

A model for the delivery of breeding and preventive health care services has been developed and trialed recently in the remote hills in Uttarakhand under the auspices of the TATA–ILRI partnership program, ELKS.

ELKS (Enhancing Livelihoods through Livestock Knowledge Systems) is a partnership between the Navajbai Ratan Tata Trust and the International Livestock Research Institute (ILRI). It aims to put the accumulated knowledge and experience of advanced international livestock research directly to use by disadvantaged animal-keeping communities in rural India. The partners involved in this work in addition to ILRI in Uttarakhand were the Uttarakhand Livestock Development Board (ULDB), the Himmotthan Society and the NGOs MVDA, HGVS, CHIRAG and others.

The problem

Access to reliable quality breeding and animal health services is currently a major constraint to improving productivity of livestock enterprises. There are insufficient state employed paravets in the Uttarakhand to provide effective and dependable breeding and animal health services, especially in the more remote and hilly areas.

Artificial insemination (AI) services, which are the cornerstone of initiatives to upgrade local cattle and buffalo populations, do not extend much beyond the plains in Uttarakhand: just 15.2% of the state herd is made up of crossbred dairy animals with the remainder being local animals typically yielding less than 2 litres of milk/day. Although the Uttarakhand Livestock Development Board (ULDB) has the mandate to provide AI services throughout the state it is unable to provide these in the hills where population density is low and roads poor. This leaves the majority of the hills cattle and buffalo owners dependent on natural service using locally available bulls; this can be inconvenient, requiring cows and female buffaloes to be transported to bulls for mating, and also denies livestock keepers the opportunity to upgrade their herds by using semen of elite, more productive sires.

Currently just 42% of the state breeding cattle herd (813,000 adult female cattle) is covered by organized breeding using either AI or natural service using elite sires.¹ For cattle, the state's breeding policy is to upgrade low yielding local females in hilly areas with Red Sindhi or by crossing them with Jersey to produce crossbred offspring with up to 62.5% exotic blood. In the case of buffaloes, the policy is to upgrade the local with Murrah.

How it was addressed

A model has been developed and tested for the delivery of breeding and animal health services by Himmotthan Society (under Integrated Fodder and Livestock Development Project) with the support of ILRI.

Local young persons have been selected to become AI workers and providers of preventive health care services—known as AI and Preventive Animal Health Care (APAHC) workers. After completing an initial four months training period they were provided with a certificate from the ULDB and also the equipment and start-up supplies needed to enable them to provide artificial insemination and simple animal health services to their local community. Training was provided by ULDB, Himmotthan Society and ILRI, and ULDB also provided cattle and buffalo semen, liquid nitrogen, containers and other equipment needed for artificial insemination and for basic animal health services.

For the first three years the APAHC workers received monthly payments of 2000 Indian rupees (INR)² per month from the project to support them while they became established. The idea was that from year four onwards the APAHC workers would be able to support themselves from fees paid by livestock owners for the breeding and animal health services provided, which include artificial insemination, deworming, vaccination, castration and first aid—this includes traditional (ayurvedic) treatments. The Uttarakhand model is a business model; the APAHC workers are intended to be self-sustaining entrepreneurs providing services to livestock owners for which they are paid a fee (by the farmer) that covers all costs and enables them to make a profit.

Impact

The major advantage of this approach for livestock keepers is that quality and affordable AI and preventive health care services are available when and where required—farmers call the APAHC workers via their mobile phones and they then travel to the farm. Some farmers reported that APAHC workers even attended urgent cases during the night, although it was noted that if they acquired motorcycles this greatly improved their ability to respond rapidly to requests for help. They generally refer those cases that they cannot attend or are not qualified or permitted to attend to the local veterinarian.

There are 16 such APAHC workers in the project area covering 200 villages in hilly districts, namely, Chamoli, Tehri, Nainital, Pithoragarh and Bhageshwar. On an average they carry out more than 80 inseminations per month. Given a conception rate of 70% and calving rate of 60%, 15,360 inseminations ($80 \times 12 \times 16$) would result in 9216 calvings annually ($15,360 \times 60/100$). This will produce about 4147 better quality females ($9216 \div 2 \times 90\%$), of which about 85% (3525) will calve producing at least 1000 kg more milk per lactation, worth INR 88 million ($3525 \times 1000 \times \text{INR } 25$). This additional income will be a significant contribution to the incomes of farmers living in the remote hills in Uttarakhand. If the program is spread to all hill villages in Uttarakhand, the impact will be substantial. Further, the preventive health care services provided by the APAHC workers will drastically reduce the cost of treatment and loss due to potential diseases.

This model has increased access of livestock keepers living in the hilly areas to breeding and animal health care services. This is likely to increase the confidence of livestock keepers in these districts to invest in other livestock productivity enhancing technologies, such as feeding, better housing and management. The AI workers enable the ULDB to extend the reach of its services beyond the plains and into the hilly areas.

The livestock keepers in the project area reported that they had confidence in and valued the services provided by the APAHC workers. While they regarded state employed veterinarians and paravets as figures of authority, with the APAHC workers, who were members of their own communities, they found it much easier to access timely services at affordable rates.



1. <http://www.uldb.org/apr/apr2011/apr2011.pdf>.

2. USD 1 = INR 62.0225 at 27 February 2014.

Scaling out

The pilots have demonstrated that it is feasible to provide satisfactory livestock breeding and preventive health services in remote and hilly parts of India through models engaging trained local young persons, supplied with the required equipment and material under proper guidance. To ensure such approaches are sustainable and can be replicated elsewhere a number of requirements need to be met:

- The initial incentive support provided to APAHC workers towards establishment for the first three years (on a reducing basis) is a 'must' factor as it helps them to establish and remain in business till they gain the confidence of farmers and make satisfactory progress.
- The fees which the APAHC workers can charge need to be sufficiently attractive to act as incentives for them to continue providing their services. The fees therefore need to cover all costs, including travel. Whether the model is a full-time business or as a part-time activity, unless the level of remuneration is sufficient the services will not be sustainable. A key challenge here is to instill an entrepreneurial mindset in the young service providers. Most of them come from poor families and their ambition is almost always to secure permanent employment. This has implications for the long-term sustainability of their services as, given the opportunity, they are likely to take a permanent job rather than remain self-employed. It is found that the APAHC workers on an average earn about INR 5900/month, of which income from AI is INR 4600 (78%).
- Support for mobility is very important as it ensures that inaccessible areas can be serviced on time, resulting in expansion of coverage and financial sustainability. An analysis shows that APAHC workers with mobility (75%) earning INR 12,134 per month, the income of those without mobility is only INR 2064. Coverage of animals by mobile workers is 7830 breedable cattle/buffaloes, those without mobility only reach 2475 cattle/buffaloes.
- The legal status of APAHC workers also requires addressing. Currently they operate in Uttarakhand under the authority of a certificate issued by ULDB: here, although 'unofficially encouraged' by the Veterinary and Animal Husbandry Department, they operate outside the provision of the law; throughout the country many court cases are pending which deal with such animal health services.
- In remote areas, livestock rearers can be better organized into groups/community institutions and APAHC workers can be linked to these groups to provide required services. In such situations, government veterinarians can be mandated to provide backstopping support to the APAHC workers on a regular basis. The veterinarians can also use the APAHC workers to channel inputs and services to farmers in such areas.

Resource/institutional/policy requirement

Initial training, refresher training, on-going referral and support, and start-up subsidies for equipment and temporary monthly payments have all been provided to date on a project basis. Clearly this is not a sustainable arrangement as the project is time limited. These vital roles and inputs need to be provided by institutions who will be present for the foreseeable future and long-term sustainable financial arrangements are also needed. One option would be for the APAHC workers to be regarded as an extension of state government services, enabling the mandated institutions to extend the reach of their breeding and animal health services through partnership with these community-based service providers.

Another option would be for the government livestock department to collaborate with local NGOs (with required competence) and provide financial and monitoring support to manage APAHC service delivery systems with a view to extend the department's coverage of livestock service delivery in remote and inaccessible locations. This would be a practical and user friendly approach to address the issue. A policy decision on these lines could revolutionize livestock service delivery in a hilly state like Uttarakhand.





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Enhancing Livelihoods through Livestock Knowledge Systems (ELKS) is a partnership program between Sir Ratan Tata Trust and its Allied Trusts (SRTT) and the International Livestock Research Institute (ILRI). This is an ambitious initiative to generate new livestock knowledge and put the accumulated knowledge directly to use by disadvantaged livestock rearing communities in rural India.

ELKS aims to support SRTT and its Allied Trusts and their partners to enhance their capacities to improve livestock-based livelihoods in the hilly/tribal areas in Nagaland, Mizoram, Arunachal Pradesh, Uttarakhand and Jharkhand by (1) conducting research to fill technical knowledge gaps, (2) strengthening institutional mechanisms and (3) facilitating pro-poor policies.

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