



Electric fencing

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Farmers increase contribution in electric fencing and brings better results

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Electric fencing

With the popularization of fabricated electric fencing, farmers request for the technology under development support fund is increasing. Although the promotion of electric fence technology is on a cost sharing mechanism in which development programs fund the supply of energizers, charge controllers, insulators, wires and other accessories which is imported and farmers

contribute labour, local materials for poles and carry out periodic maintenance and replace accessories and materials after the initial establishment, the increasing request from the farmers has put enormous pressure on the development support programs. The cost on development support estimated at about Nu. 35,000 per Km vis a vis increasing request is not only unsustainable

to fulfill all requests but since cost sharing mechanisms are prioritized for community based establishments which encourages communities to establish fence and manage jointly to cut down cost is also associated with various problems post establishment including communal disputes and poor post establishment interventions.

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Land area coverage, location of field either at the periphery or in the middle also affects in equitable contribution of labour and maintenance cost. Thus many fences end up damaged, left without care despite positive impact on protecting crops and contributing to livelihood security.

Therefore, in view of the limited funds and in order to meet the increasing request for electric fence, the ARDC explored the possibility of increasing the contribution from farmers to contribute towards up scaling the coverage with the limited development support funds.

Implementation Approach

ARDC Wengkhari in 2015 in addition to continued works in electric fencing was assigned coordination

of electric fencing works in four geogs of Mongar Dzongkhag namely Drepong, Mongar, Chali and Tsakaling. With limited funding supports available with the centre and having to promote in several places, the centre proposed for increasing farmers' contribution in electric fencing.

The local leaders i.e. Gups of the above four geogs were called in for consultation where in firstly available resources to fund equipment's and materials was explored. While some geogs such as Drepong had kept some allocations under GDG, most did not have adequate and reliable source of fund to cover the cost. The centre had some allocations for purchasing energizers with support from the Market Access and Growth Intensification Programme (MAGIP)

through IFAD funding. However, in any case these resources were not sufficient to cover the sites. The centre and the geogs began consulting communities requesting for electric fence to increase their contributions so that available resources are effectively utilized.

The consultation meetings began composed of an awareness program on the importance and benefits of electric fencing, guide to fence establishment, costs and the benefits and advantages of beneficiaries taking ownership over fencing and the time it would take for development support programs to have adequate funding if all materials were to be provided free. A video developed by the National Plant Protection Centre (NPPC) on electric fence establishment was also shown



Survey of some of the sites using Google Earth showing locations of fence

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Installation of electric fencing

materials such as wires, insulators, earthing materials and nails were procured from hardware shops by the farmers based on the estimates prepared by the centre.

Outcome and lessons learnt

The cost sharing mechanism was implemented in groups or community willing to fence jointly. These were mostly farmers whose fields are in one location suitable for joint fencing and self-funding was applied for individual household or those farmers whose land is located in isolation. A total of 101 households managed to fence a total of 20.3 kms of electric fence covering an area about 323 acres in three geogs. Of the total cost of Nu. 761, 655.41, about 90 % of the cost is borne by the beneficiaries while 10 % was the contribution from the development support funds (refer Table 1, 2 and Figure 2).

Electric fencing through increased financing from beneficiary farmers though with much difficulty has brought immediate benefits to the community. A sample survey conducted at a later stage after fencing showed that apart from protecting the crops, there is an indication of reverting fallow land into cultivation. Production has increased mainly from protection as well as through double cropping

to reinforce and encourage them to take up the fencing technology. In order for equitable distribution of available resources, the consultations decided that all individual requests, isolated sites for fencing be funded fully by beneficiary's except for technical assistance in estimation and establishment to be provided by the centre and the geog extension while the available funds from Geog Development Grant (GDG) and MAGIP be used for supporting at least energizers and some top up for imported materials but for those beneficiaries of at least more than four having land adjoining each other suitable for shared fencing. This seemed to be the way forward and agreeable to most and thus

began sorting out the requests. Some farmers came forward and agreed to the proposal.

Subsequent to the consultations, the interested households who came forward to self-fund their fencing were given attention and provided hands on practice training on installation of electric fencing including safety measures, monitoring and maintenance of the fence. Technical Assistance in surveys and estimation works began on a first come first serve basis. Gradually more and more farmers came forward. The center facilitated procurement of energizers, charge controllers and solar panels from the suppliers identified by the National Plant Protection Centre and other

Table 1: Geog-wise progress under 100 % funding by farmers and TA by MoAF (Individual farmers and isolated land)*

Geog	Group	No. of hh	Perimeter (Km)	Area (Acre)	Community funding	MAGIP ARDC	Total
Chali	individual	32	9.56	147.89	364,152.08	0	364,152.08
Mongar	individual	9	4.02	62.18	135,631.05	0	135,631.05
Drepong	individual	3	0.9	13.92	37,355.28	0	37,355.28
Total		44	14.48	223.99	537,138.41	0	537,138.41

*All equipment's, materials, labour borne by beneficiaries; TA and facilitation of energizers and charge controllers, panels by ARDC and geog.



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which was not followed earlier. Farmers reported that their annual income from maize increased by almost 80 % mainly through double cropping and crop loss to wild animal damage has reduced by almost 90%.

Appropriate consultation and sensitization on the benefits of electric fencing helped in convincing farmers. Immediate attention towards those coming forward encouraged others to follow. Moreover, it has been observed that self-funding initiative instills sense of ownership and fosters mutual trust amongst the members. Further, fencing installed through self-funding mechanism is more likely to be sustainable as farmers took better care.

And finally, attempting for self-

funding or increasing the beneficiary contribution in electric fencing should only be tried in communities which are fairly known to be better off socially and economically which can be either indicated by their social well being or simply through their access to market and commercial farming activities. All four geogs in the case presented above are communities which have engaged in semi commercial farming activities with most of them supplying farm produces to the local market in Mongar and thus the above approaches may not result equally in other communities which are socio economically not well off, for which development support still continues to be a major factor in promotion of electric fence to reduce crop loss to

wild animals.

Hence, the cost sharing mechanism (done in groups) with an average unit cost of Nu. 24,000 certainly have an advantage in terms of reducing cost as compared to self-funding mechanism (done individually) with an average unit cost of Nu. 37,000 per km. However, the cost savings in cost sharing mechanism is often negated by disadvantages of poor post establishment management in groups as compared to more sustained fencing carried out individually. Additionally, scattered settlements, small land holding, location of land and communal disputes are other major obstacles in prompting electric fencing through community based approaches involving cost sharing.

Table 2: Geog-wise progress under increased cost sharing by farmers and TA by MoAF (in groups and adjoining lands)**

Geog	Group	No. of hh	Perimeter (Km)	Area (Acre)	Community funding	MAGIP ARDC	Total
Tsakaling	3	26	2.48	38.36	74,166.00	37,593.00	111,759.00
Chali	4	27	3.27	50.58	61,508.00	27,800.00	89,308.00
Drepong	1	4	0.7	10.83	16,500.00	6,950.00	23,450.00
Total	8	57	6.45	99.77	152,174.00	72343.00	224,517.00

** Energizers, some additional pipes and GI wires, TA and facilitation of energizers and charge controllers, panels by ARDC and geog while most of the materials such as GI wires, Pipes, Poles, labour were provided by beneficiaries

Armyworm ALERT

2018

All the Extension officers and ARDCs are advised to carry out regular monitoring of the armyworm particularly in paddy nurseries and maize fields to implement control measures on time.

If you detect armyworm outbreaks in your locality, please contact National Plant Protection Center at phone number: 02351016 or email at nppcsemtokha@gmail.com.

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ePest surveillance application in google Playstore

The ePest surveillance app is android based application which is maintained by the National Plant Protection Centre (NPPC), Department of Agriculture, under the Ministry of Agriculture and Forests. The main purpose is to collect and share real-time information on pests of Agricultural crops and send data via internet. It is connected to a central server that will allow rapid data entry, collation and analysis, and makes the data reports available in real time to the participating Gewogs, Dzongkhags and Research Centres. Any desired combination of qualitative and quantitative outputs can be generated, that may be used to develop strategic pest management plans. As the system gathers and store information for any given time period, it will allow the to study the trend of pests occurrence with reference to contributing factors such as climate change and changing crop production system. The trend in pest occurrence under variable climatic conditions will enable us to develop pest forecasting and Early Warning system.

Interested Researcher or Extension official may write to NPPC (nppcsemtokha@gmail.com) requesting for the user credential..

-NPPC

Leisure



Submit articles for
RNR-Newsletter
to
tandindorji@moaf.gov.bt



The Ministry's week

IHR-PVS National Bridging Workshop

The health of humans and animals is interlinked and majority of emerging, re-emerging, and endemic human diseases have their origins in animals, and diseases of animals can have additional implications for human health through food safety and food security. More than 60% known

human pathogens originate from animals and about 75% emerging infectious diseases are zoonotic in nature. Therefore, there is a shared responsibility and synergic potential for collaboration between public and animal health sectors in the efforts to combat zoonotic diseases.



World Wildlife Day celebrated

Bhutan celebrated the fifth World Wildlife Day with a theme 'Big cats: predators under threat'. March 3, was declared as the World Wildlife Day at the 68th Session of UN General Assembly. The day was celebrated at Dodheyra Park Range under Jigme Dorji National Park (JDNP). It was attended by 55 students from five schools accompanied by teachers under Thimphu Thromde.



Bhutanese Journal of Agriculture launched

The Department of Agriculture launched the first volume of the Bhutanese Journal of Agriculture. The journal is dedicated to the 38th Birth Anniversary of His Majesty The King. The journal provides a platform for researchers to share their findings to wider audience. It is expected to motivate Bhutanese researchers and field colleagues to develop a habit of scientific writing and contribute to knowledge

management. It will also serve as a coherent mechanism for sharing appropriate agriculture technologies and knowledge with clients. The first edition of the journal includes articles on food crop agronomy, variety evaluation and development, propagation methods in fruit plants, participatory vulnerability assessment and economic analysis of crop production as well as processing among others.



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