

Patterns of diffusion of an institutional innovation in pastoral areas of Ethiopia. The community based animal health worker and its geographical and social spread in Afar region.

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a) Summary

The study provides a theoretical framework and revisits concept of the diffusion of a local institutional innovation in the animal health system i.e. the paravets or CBAHWs, community-based animal health workers. CBAHW's have been introduced long time ago in western Africa and only recently in southern and eastern Africa although government have been historically using paravets for vaccination against Rinderpest [Zimmermann W., 1996]. The study provides illustration from Ethiopian lowlands transhumant systems in Afar region where NGO's like ACF have trained hundreds of paravets and are looking at factors to develop and sustain the system.

b) Introduction

Accessibility and eventual access to veterinary service in marginal pastoral areas (geographically and socially) could be envisaged as a topic for research on diffusion of innovations. The role of CBAHW's as an innovation per se and innovation vector (bringing medical technologies and information) is an interesting issue at the border between sociology geography and economics.

c) Objectives

Objective of the research reflection is to guide the targeting of social groups, spatial location of projects and mechanisms that would facilitate the spread of CBAHW's and eventually improve access to service. CBAHW's programs are considered as institutional innovations and the paper addresses the characteristics and factors of their spatio-temporal diffusion with reference to innovation diffusion theory [Haggett P., 1973], [Saint Julien T., 1985], [Picheral H., 2001].

d) Materials & Method

Literature review on diffusion theory suggests that diffusion patterns follows a logistic curve from initial % of adopters to saturation threshold as a function of time and as well that there are diffusion stages in the temporal process and prerequisite conditions for proper diffusion. Normal patterns of innovation propagation are reminded hereafter: i.e. prerequisites, forms of diffusion: through extension versus migration, scale of diffusion, time sequences and process stepping, channels of diffusion: entry point, neighborhood effect, barriers to diffusion: effect of economic cultural and social distance between adopters and leaders, role of networks. The study aimed at identifying which socio-spatial configurations are appropriate candidates for launching paravets and help their diffusion in the study area Afar region pastoral lowlands of Ethiopia where ACF has implemented its paravet program [Bonnet P.,

2001]. Paravets are firstly vectors for spread of various elements of the health system functioning. There are vectors of information (e.g. health promotion = information on health education, or epidemiological information towards surveillance). Secondly they are vectors of drugs and other medical products diffusion which are provided in medical kits by promoters. The limitation in number and type of drugs that are provided put a barrier in drugs diffusion. Thirdly CBAHW's mobility if they are mobile transhumants herders owning animals (by project choice) will bring the innovation with them following animal and people transhumance patterns. It is a particular advantage in comparison with stationary clinics. They are also vector of cash. For the service to spread efficiently the question of payment options for the service should be envisaged. Moreover there are some conditions for diffusion of CAHW's. Prerequisite is that innovation should be mobile. Paravets as pastoralists is be a reasonable best bet unlike educated but settled people from the same area. The first condition in innovation adoption is pre existence of particular location where innovation emerge (by selection of trainees & training in the case of paravets), that would become a spreading center. The second criterion should be the existence of a social network and spatial channels and configurations to guide and channel the diffusion. In Christaller first spatial models for diffusion, urban centres were hubs in the diffusion network. In pastoral life networks are at first spatial networks based on configuration like marketing routes, pasture, water points, and some social networks like hierarchical organization (clans) and functional networks in social life (age groups, community project funding mechanisms). We should envisage the problem in both sociology and geography. Finally there are evidence that some socio-spatial configurations would help spread and instead some would stop being barriers to diffusion. We consider ethnic power territory is a first barrier and that promoters of CAHW's should know the spatial configuration (pasture water management..) of clan groups, and train a paravet portfolio according their clan spatial location is we want to expect full coverage. Fourthly the diffusion should be sustained across time and we should offer enough time for the innovation spread to be achieved and reach final stages of any diffusion process i.e. saturation in an asymptotic manner. This is a topic that concern an enabling policy environments in the area.

e) Results

Not all location in the area are thought to fit first conditions. Locations where pastoralists have few interaction with other seems not reliable. On the other hand location where they spend a significant part of their life (even short but socially important) and have social interaction may fit. We recommend the use of dry season settlements, dry season water points, markets to be proper candidates as emission. We may also envisage the existence of socio-spatial clusters constructed by typology at upper scale. A far region for instance is very heterogeneous and mapping of natural resources with interpretation of satellite image has helped to categorize the natural landscape particularly if put together with other data layers in a GIS. The type of animals, herd structure (given species) and socio economic categories of pastoralists we encounter in some area is related to the natural configuration they live in. Therefore food security zones mapping is of great help with regards to targeting

socio-spatial clusters of population to spreading health services. Paravet selection and training should look at that criteria as illustrated in Figure 1.

Figure 1(left): Socio_spatial clusters distribution and movements patterns in Afar region Ethiopia: Herd transhumance patterns and CBAHW's diffusion

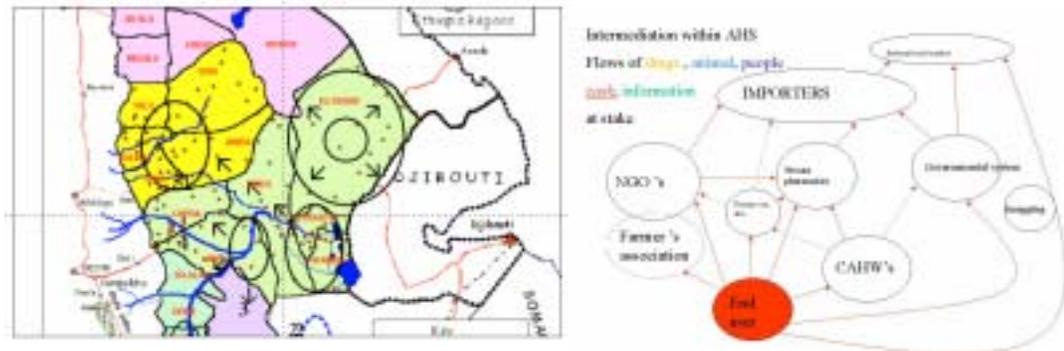


Figure 2 (right): Social diffusion and Intermediation by paravets within the health system , cash flows diagram. Linking the paravets to health system in place is a second challenge where we address incentives and payment options.

f) Discussion

Discussion on CAHW's innovation spread have clear links with studies on geographical & social accessibility to service. We consider paravets in Afar region have only reached the primary step of initiation of the innovation spread process when civil society members have trained paravets originated from several groups of pastoralists. There are location where there are or no paravets. Expansion step is the next step and is still very fragile in the context, since we still consider there are high contrasts in use of paravets within the study area and enabling policy is not put in place. We have never reached the step of condensation neither obviously saturation of theoretical diffusion process.

g) References

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