

Technology Stewardship Approach for Knowledge Sharing Among Farming Communities

**Jayathilake H.A.C.K.^{a*}, Jayasinghe-Mudalige U.K.^b, Perera L.D.R.D.^c
Gow G.A.^d and Waidyanatha N.^e**

^a ICT Center, Wayamba University of Sri Lanka, Makandura, Gonawila, Sri Lanka;

^b Dept. of Agribusiness Management, Wayamba University of Sri Lanka, Makandura, Gonawila, Sri Lanka;

^c Dept. of Computing and Information Systems, Wayamba University of Sri Lanka, Kuliypitiya, Sri Lanka;

^d University of Alberta, Edmonton, Alberta, Canada; ^e LIRNEasia, Sri Lanka

*Corresponding Author (e-mail: hackjayathilake@gmail.com)

Abstract

Knowledge in agriculture plays an essential role in the process of transforming the livelihoods of farmers including those who are relied on subsistence agriculture. Yet, the inherent features associated with traditional agricultural extension methods, collectively with high costs of provision of information, act as impediments to improve the livelihood of farmers, particularly those live in developing countries like Sri Lanka. Development of credible approaches to share the indigenous and scientific knowledge in possession of farmers in order to enhance their competitive edge in agriculture has become a necessity at present, but a challenge. This paper, on this understanding, explores the applicability of the concept of 'Technology Stewardship' to promote sustainable knowledge sharing amongst the agricultural communities in Sri Lanka.

A multi-stage process was adopted to gather and analyze data/information, starting from a national workshop organized by the Wayamba University of Sri Lanka in collaboration with the University of Alberta and University of Guelph in Canada in 2013 under the theme of 'Agriculture Knowledge Mobilization' that also helped to identify four specific rural agricultural communities to work on this project. The community consultative process adopted with the officials sponsors and the structured questionnaire-based personal interviews and key-informant surveys carried out with a cross section of smallholder agriculture farmers (n=183) in the Batticaloa and Kurunegala districts facilitated gathering the baseline data, and more specifically, to select and train six Technology Stewards (TEs). Next, a number of field experiments called campaigns were conducted with the smallholder farmers (n=260) during April 2014 to July 2015 "with" and "without" the assistance of those TEs selected. The 'FrontlineSMS' (a low-cost, user-friendly, free and open source text messaging software) and Freedom Fone (low cost Interactive Voice Responses software) were

applied to evaluate the effectiveness of knowledge sharing through the TEs work with these communities.

The outcome of analysis revealed that technology stewardship intervention (i.e. “with” TEs) increases the use of ICT-enabled devices or services, especially ‘Text messaging’ and ‘Voice call’ usage in day-to-day agricultural communication by 22 and 8 percent, respectively, whereas it was just 5 and 3 percent increase, respectively, for the case of “without” TEs. This highlights the fact that knowledge sharing has increased significantly when the Campaigns were assisted with TEs. Further, it was found that if the mode of communication one selects for this type of task is “not in the people’s existing workflow”, the chances of adoption of which by these communities are comparatively low. In effect, this provides justification for widespread use of ‘mobile telephony’ by farming communities as their mode of communication. It was identified that Technology Stewardship approach was quite successful as the farmers received the outputs and outcomes that they were expected satisfactorily through the support of TEs. As the intervention of TEs has led to diminish the transaction costs (i.e. searching, negotiation and verification of information) incurred in the process of knowledge sharing substantially, this approach can be promoted, with necessary modifications such as capacity development and introduction of comprehensive training modules for further learning, to work as a ‘drive for positive changes’ in the livelihood of agriculture-based rural communities, commencing from the lowest socio-economic category in farming communities.

Keywords: Agricultural community; Information; Knowledge sharing; Technology stewardship

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