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Web-Based "Discussion-Support" Agricultural-Climate Information for Regional India

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ABSTRACT: An innovative approach to aiding farmer decisions that involve seasonal climate risk has been trialed with farmers in Andhra Pradesh, India. A key concept has been to copy concepts of "discussion-support" approaches, rather than only relying on computerized decision-support approaches. Use of 2nd life/eLearning distance education methods have been trialed with these farmers and advisers with some success. However, it is suggested that vital aspects not necessarily related to core climate and crop science issues, such as farmers' dress and informal interactions within a discussion environment must be appropriately captured in any synthetic video discussion-support if this approach is to gain widespread uptake.

KEYWORDS: *discussion-support, 2nd life avatars, climate risk, farming risk*

Introduction

The World Meteorological Organization (WMO) and others (Hansen, 2002) have identified the immense challenge required in providing climate forecasts and associated risk information for "real-world" farmers in developing countries. Meanwhile, developments have been taking place whereby innovative web-based learning or extension devices such as "2nd life" (utilizing avatars) and "eLearning" (Figure 1) can provide practical outputs that would be relevant to a broader farming community and which may have direct application to farmer decisions (deLucia *et al.*, 2009; Salmon, 2009). In particular, McKeown (2010) points out that the "Maestro eLearning Pyramid" moves the user/farmer from simple, passive reading of some information through to discussions and making a decision — key attributes required of a "discussion-support" system for farmers. Figure 1 provides an illustration of this "eLearning Pyramid" (copyright: Maestro eLearning).

There have been ongoing deliberations regarding the most effective processes needed for connecting climate-cropping systems analyses with "day-to-day" farm management decisions for many years (Hammer, 2000; Keating and McCown, 2001; Meinke *et al.*, 2001; McCown, 2001; Stone and Meinke, 2005). In fact, Nelson *et al.* (2002) demonstrated that the use of participative systems approaches involving crop simulation-aided

discussion with advisers and decision-makers is most effective when leading to the development of *discussion-support systems* as a key vehicle for facilitating the "infusion of climate forecasting science" and associated outputs into farming practice. The "FARMSCAPE" project provides a particularly novel approach with the notion and consequent rich imagery of "kitchen table discussions," whereby scientists directly interact with local farmers in the farmers' home or farm worksheds to discuss outputs and management options derived from both recently run crop simulation models and climate forecast outputs (McCown *et al.*, 1998; Carberry, 2001).

This project aimed to bring together the "workshed discussion support" environment, within a regional environment in India but to seek to resolve whether a synthetic farmer discussion environment could be brought together in a similar manner to real life settings using 2nd life/avatar distance education methods. This paper addresses the efficacy of such innovative distance education approaches within a real-farm decision environment in India.

Methodology

A team comprising agronomists, climate scientists and extension specialists was drawn together in order to conduct some initial participative workshops would draw together already cooperative farmers to discuss both their agronomic-climate systems and, importantly, the decisions they faced in the coming season (Figure 2).

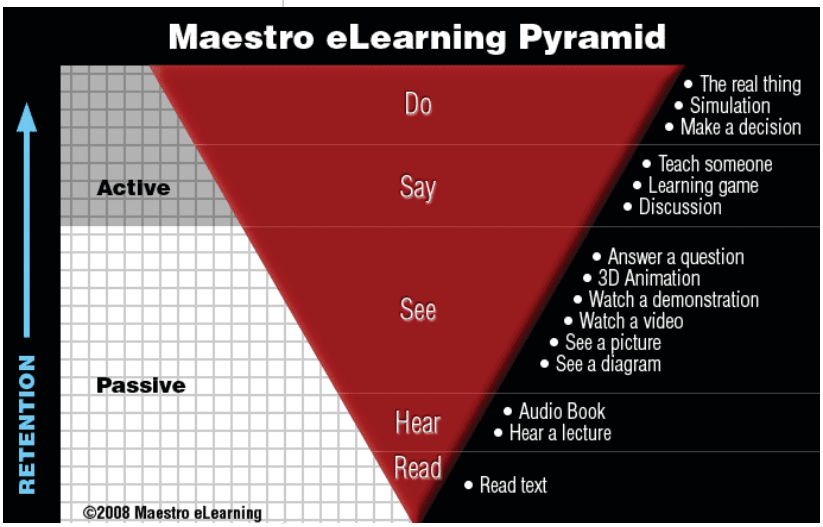

Figure 1. Depiction of the eLearning pyramid (courtesy Maestro eLearning)

Aspects of the 2nd life/avatars video, which capturing the fundamentals of the discussions taking place, would be explained to the farmers in order for them to gain ownership of the processes being developed. Based on feedback obtained, the 2nd life videos would then be revised and placed on a dedicated web-server so that farmers from any village in the larger Andhra Pradesh region (which has a total population of ~100 million) could then benefit from both the "real-world" synthetic discussions taking place in the close-to-real-life 2nd life/avatar videos and all future 2nd life/avatar "synthetic" videos, updated monthly, which would then be produced utilizing the latest climate forecast information but without the need to return to the villages for direct interaction.

Results & Discussion

Results of this pilot project are as follows:

- It was possible to provide relevant "real-world" farmer discussion-support and decision information via 2nd life/avatar videos in a "real-world" setting that is pertinent to a farming environment in regional India.
- The discussion-support videos, that utilized 2nd life machima, required the initial active collaboration of/between climate scientists, agronomists, 2nd life/eLearning specialists, software and 2nd life video production specialists to be effective.
- There is a need for initial concerted interaction with farmers in both a village setting and "on-farm" in order to create a sense of trust and understanding among farmers in the target region to obtain appropriate initial feed-back regards to the approach.
- Farmers/users can easily be "put-off" and distracted by what may appear to scientists to be peripheral aspects in the 2nd life/avatar videos that are not directly related to the core science message. For example, not having 2nd life/eLearning avatar figures that depict local farmers looking or behaving exactly as they would in a real-world (Indian village) meeting

scene serves as an immediate distraction from other important aspects of discussion-support deliberations, such as the climate patterns unfolding or the results from pertinent crop simulation models.

- There is a need to provide 2nd life/avatar videos in all relevant languages for a particular region.

There is a need to correctly portray:

- The farmers' sense of humour in "farmer banter" (Figure 3);
- The age of the (synthetic) 2nd life farmers portrayed in the videos; e.g. do not make them appear too young;
- The number of participants in the discussion-support videos; e.g. do not make them too few;
- The types and amount of housing and farm machinery in the background setting needs to be realistic;
- A clear understanding of the farming systems in use in that particular region to be discussed by the "farmers" in the discussion-support videos;
- A clear understanding of the "big issues" that farmers have had over recent years (e.g. drought, excessive rain) in order to establish relevance in creation of the scripts of the discussion-support videos; and
- What capacity farmers may actually have to use climate forecasts.

Figure 2. Participants attending the first farmer and extension specialist discussion workshop that also explained the concept of 2nd life and avatar farmer videos, held in Biranpalli, Andhra Pradesh, September, 2010, with Dr. Sreenivas, ANGRAU

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Figure 3. Farmer discussion groups attending a village workshop gathering conducted by Dr. Raji Reddy, Dr. Sreenivas (ANGRAU) and Dr. Roger Stone (USQ)

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PROJECT TITLE

Web-based "Discussion-support" Agricultural-Climate Information for Regional India

COUNTRIES INVOLVED

Australia, India

PROJECT DURATION

1 year

APN FUNDING

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