Extended Abstract
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Paper/Poster Title	**Knowledge gaps of extension advisory service (EAS) providers on nutrition-sensitive agriculture (NSA): Insights from the application of a standardised instrument in India**

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Abstract	***200 words max***
Extension Advisory Service (EAS) providers, who are mostly extension staff of Agriculture Departments in developing countries, can serve as key agents of change in the development of nutrition-sensitive agriculture (NSA). However, the conventional knowledge domains and mandates of EAS staff are generally confined to production practices involving the use of inputs and new technologies to improve crop productivity. The potential role of EAS staff in promoting NSA may be hampered by their lack of knowledge of what NSA involves. We develop a standardised and validated instrument to assess the knowledge of EAS staff on different dimensions of NSA and their training needs. A survey of EAS staff in India using the instrument highlights the significant knowledge gaps of EAS staff on NSA. We also find that there are significant differences in the knowledge levels of EAS staff with and without NSA training. We show that NSA training based on a systematic assessment of knowledge gaps can strengthen the capacity EAS staff for bringing about the nutritionally sensitive transformation of agriculture in developing country contexts.	

Keywords	Agriculture, Assessment, Dimensions, Extension staff, Knowledge, Nutrition-Sensitive Agriculture (NSA), Training.
JEL Code	Q160 Agricultural R&D; Agricultural Technology; Biofuels; Agricultural Extension Services

Introduction	***100 – 250 words***

The development of NSA is seen as an important priority for agricultural development to combat the incidence of malnutrition in rural areas and to address the agriculture-nutrition disconnect observed in many developing country contexts. NSA is a food-based approach to agricultural development that puts nutritionally rich foods, dietary diversity and food fortification at the heart of overcoming malnutrition and micronutrient deficiencies (FAO, 2015). Making agriculture more nutrition-sensitive requires a change in the way of thinking, planning and implementing agricultural development programmes and requires partnership among a spread of stakeholders from multiple sectors. It also requires identifying critical entry points where nutrition goals are often incorporated into agro-food systems (Jaenicke and Virchow, 2013).

EAS staff with their long tradition of close links with the farming community can potentially serve as key agents of change in bringing about the nutritionally sensitive transformation of agriculture. However their conventional knowledge domains and

mandates tend to focus almost exclusively on crop production and the use of new technologies to increase agricultural productivity. The NSA knowledge gaps of EAS staff may hamper their ability to contribute to the development of NSA. There is an urgent need to embed NSA concepts in the mandates of EAS staff. This requires the systematic assessment of their knowledge gaps related to NSA and targeted training programmes for capacity building to enable them to act as change agents for the nutritionally sensitive transformation of agriculture.

Methodology	***100 – 250 words***

We developed an standardised instrument for assessing the knowledge of EAS staff on nine key dimensions of NSA that covers the roles of (1) dietary diversity (2) nutrition education (3) kitchen and school gardens (4) women farmers (5) crop diversification (6) crop value addition (7) biofortification (8) locally available nutritious crops in improving nutrition and an understanding of (9) the prevalence of malnutrition and nutritional status. The instrument had 95 questions (items) covering these nine dimensions of NSA. Using an expert consultation involving experts in agriculture, nutrition, extension and policy research we validated the instrument using qualitative and quantitative methods and assessed its internal reliability.

The instrument was then used for a survey of 100 EAS randomly selected staff from different geographical zones of India, 50 of whom had received training in NSA and 50 who had received no training in NSA. We tested for significant differences in knowledge levels along the nine NSA dimensions between trained and untrained EAS staff and assessed the determinants of NSA knowledge through regression analysis.

Results	***100 – 250 words***

Our results highlight the dimensions of NSA along which there are significant knowledge gaps among EAS staff. We find there is a significant difference between trained and untrained EAS staff along the NSA dimensions of dietary diversity, biofortification, understanding of malnutrition and nutrition status indicators. While there are no significant differences in NSA knowledge across gender among trained staff, among untrained staff we find a significant difference across gender in understanding the role of women farmers. We find that graduate and post-graduate level educational qualifications are the key determinants of the level of NSA knowledge among EAS staff.

Discussion and Conclusion	***100 – 250 words***

We demonstrate the development and use of a standardised and validated instrument for assessing the NSA knowledge of EAS staff along its key dimensions. This scale can be readily adapted for use in different developing country contexts. This instrument can make an important contribution in capacity building for EAS staff for nutritionally sensitive transformation of agriculture in developing countries.

The survey of EAS staff in India using this instrument shows how the conventional knowledge domains and mandates of EAS staff may leave them with significant knowledge gaps for acting as change agents for NSA. Our results also show that systematic assessment of training needs and the development of carefully crafted training programmes can be effective in bridging the knowledge gaps. Our results highlight the need for embedding NSA in the mandates and capacity building programmes for EAS staff in developing countries.