Development and optimization of the questionnaire for Knowledge Assessment with Nutrition-Sensitive Agriculture Scale (KANSAS)

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Introduction

- The development of Nutrition Sensitive Agriculture (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. Extension Advisory Service (EAS) providers, who are most often extension staff of Agriculture Departments, are key grassroot level links in the provision of information to farmers and rural households on new technologies, new crop varieties and improved agricultural practices and can play an important role in the promotion of NSA.
- However, the conventional knowledge domains and mandates of EAS staff are mostly restricted to practices relevant for improving agricultural productivity. The potential role of EAS staff in promoting NSA may be hampered by limited knowledge of what NSA involves.
- We develop a standardised validated scale to assess the knowledge of EAS staff on different dimensions of NSA.
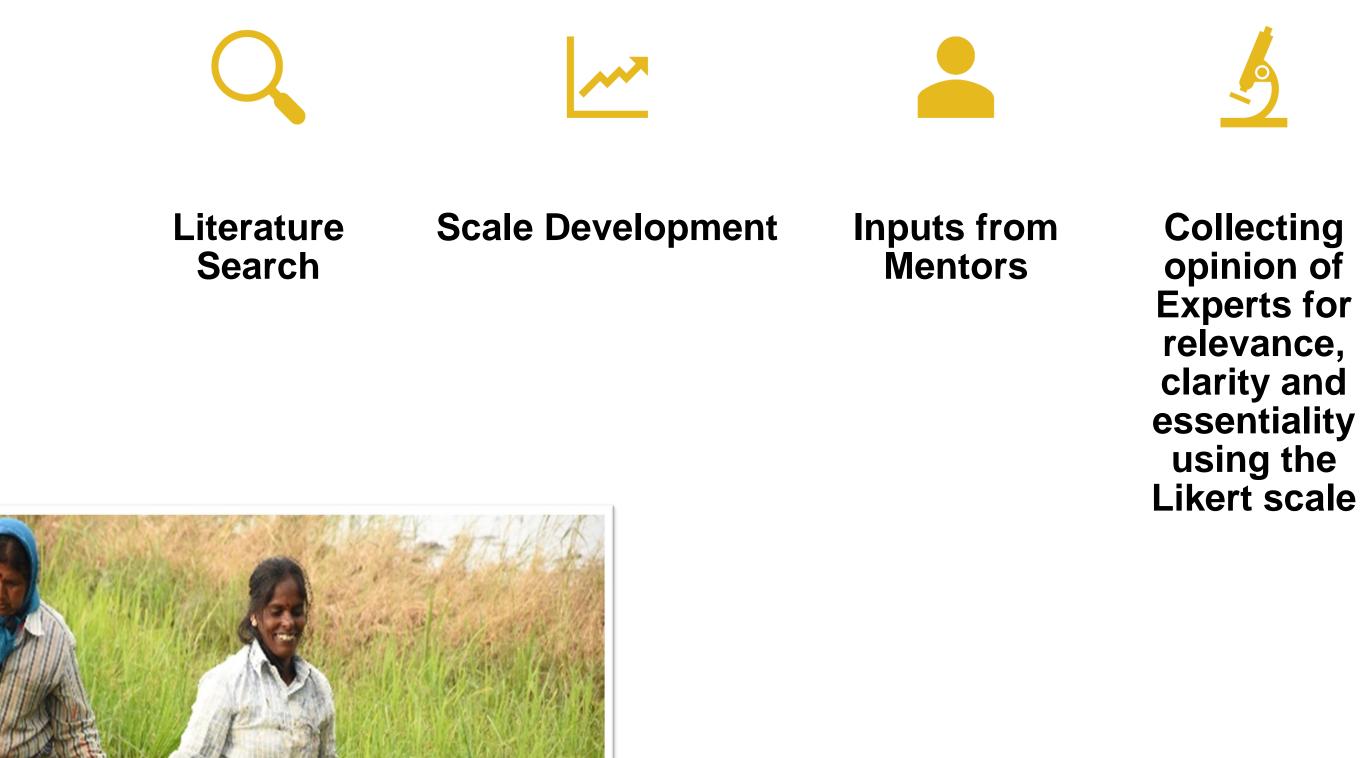
Objective

- The metric is designed to measure the knowledge gaps relating to NSA of EAS workers.
- The metric will quantitatively measure the validity of scale based on expert's feedback and respondent's training experience.
- The nutrition and agriculture pathways, projects and interventions shown positive impact and implementable by Agricultural Extension was considered.

9 Dimensions
- ❑ Importance of Dietary Diversity
- ❑ Nutrition Education
- ❑ Promotion of School and Kitchen gardens
- ❑ Promotion of the role of women farmers
- ❑ Promotion of diversification of crops
- ❑ Promotion of value added Food products
- ❑ Promotion of biofortification
- ❑ Locally available nutritious crops
- ❑ Malnutrition and Nutritional status Indicators

Methods

Literature Search — Scale Development — Inputs from Mentors — Collecting opinion of Experts for relevance, clarity and essentiality using the Likert scale — Calculating Content Validity Index (CVI), Content Validity Ratio (CVR), Kappa statistic etc. — Field Testing and Computing results

Participation of Women in farming activities

Results

Characteristics of expert panel, N=16	
Gender	10 men, 6 women
Age	On average 50 years (28 years min, 61 years max)
Education level	3 postgraduates, 13 doctorates
Experience	On average, 21 years (4 min; 37 max)
Position	5 Scientists, 5 Professors, 1 Founder & CEO, 2 Consultants, 2 Directors, 1 Deputy Director
Organization	2 Non-profit Organization (NGO), 4 State institutions, 9 Central institutions, 1 Free lancer
Expertise Area	5 Agriculture, 4 Nutrition, 4 Extension, 3 Policy Research

Parameters	Interpretation
I-CVI	**30 items were below 0.79 CVI scores, further revised**
S-CVI	**S-CVI was above 0.82 within the acceptable range**
CVR	**11 items was below the acceptable range, further revised**
Proportion of items judgement	0.89, which shows **good agreement between the panelists**.
Cronbach's alpha	0.96, indicating **excellent internal consistency**
Readability	Flesch-Kincaid Grade Level: 10 The SMOG Index: 8

After revisiting the items out of 103, **95 items were retained**, and 8 questions were eliminated for the 9 dimensions.

Agriculture Extension Staff undergoing training program on NSA

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Conclusion

KANSAS was developed as a standardised scale to assess the knowledge of EAS staff on 9 important dimensions of NSA and to identify training priorities. Although the scale has been developed in India, it can be readily adapted for use as a tool for rapid assessment of NSA knowledge in different developing country contexts. By enabling targeted training programmes for EAS staff, the scale can make an important contribution strengthening their role for the promotion of NSA.

Outcomes

1	The metric will facilitate the design of capacity building and training programs for EAS workers for promotion of NSA.
2	The capacity building and training programs can be tailored to the specific knowledge gaps of EAS workers from different locations.
3	Training needs identification will help in planning the suitable training to translate agriculture into being more nutritionally sensitive.

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