Monitoring the effect on household food security of food and cash transfers to pregnant women in the Low Birth Weight South Asia Trial (LBWSAT)

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Background: The Low Birth Weight South Asia Trial (LBWSAT)

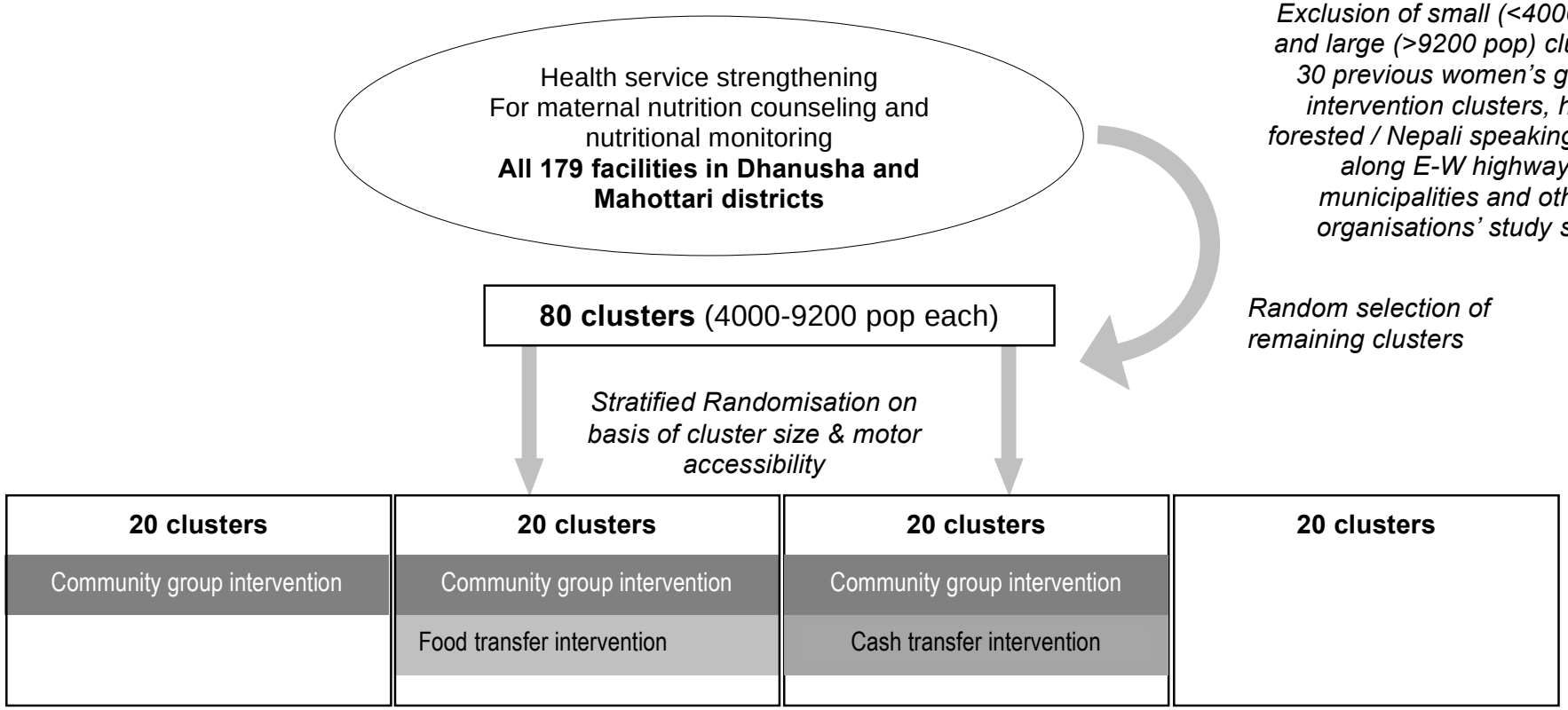
- a large-scale cluster-randomized controlled trial
- testing the impact of 3 community-based interventions on **birth weight**
- in Dhanusha and Mahottari districts of Nepal.

Primary outcome: birth weight

Secondary outcomes include

- Maternal nutrition / eating in pregnancy
  - intrahousehold food allocation
- Neonatal Mortality / Morbidity
- Rest/ Hygiene behaviours/ Empowerment
- **Household food security and child nutrition**.

LBWSAT Study Design



Hypotheses

Hypothesis of LBWSAT: improved nutrition behaviour change strategies combined with or without a social transfer constitute a cost-effective approach to improving birth weight.

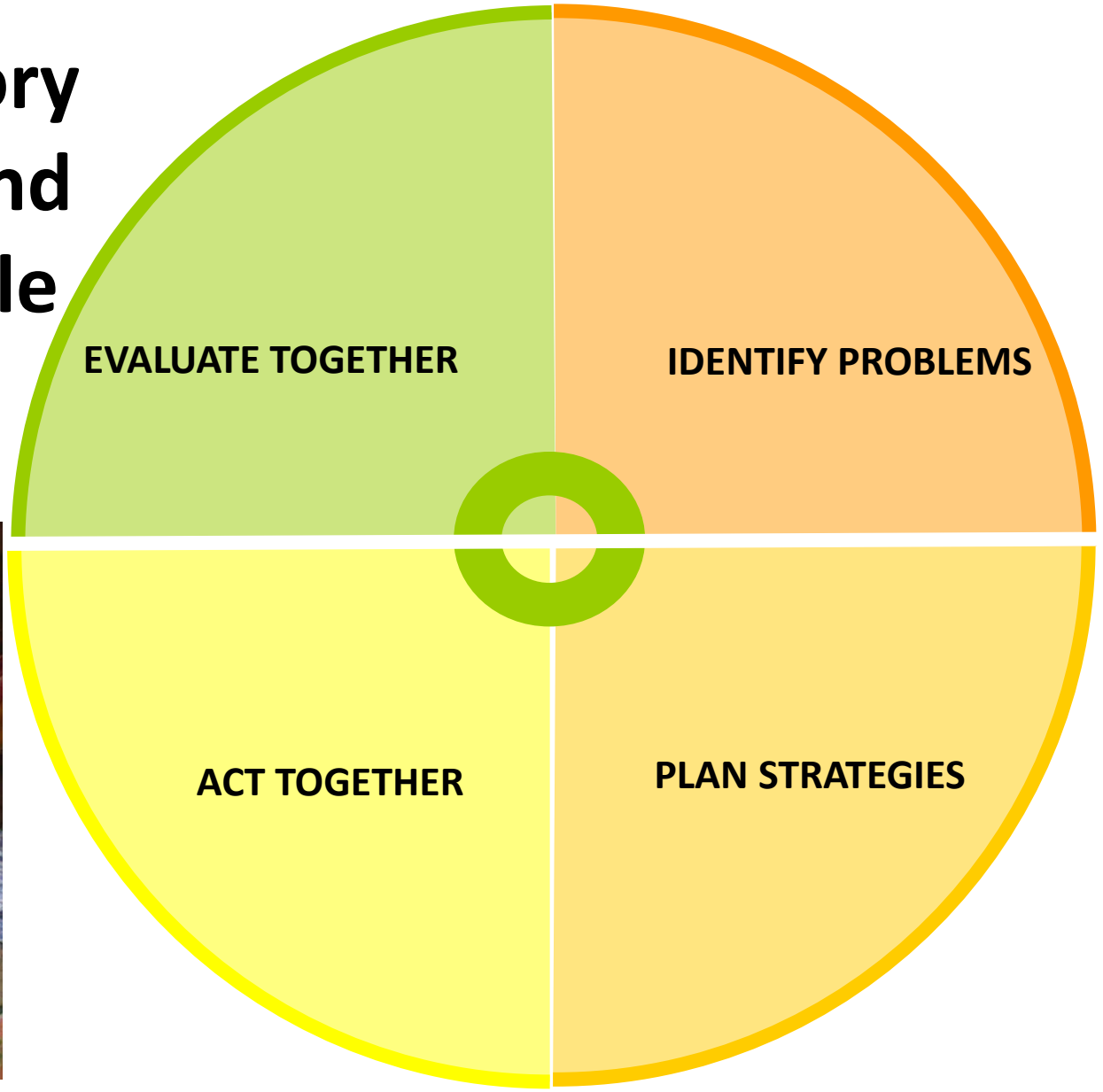
Hypothesis of the food security component: behaviour change strategies with or without a monthly 10kg transfer of Super cereal or an unconditional monthly cash transfer of NPR750 during pregnancy will result in improved household food security and improved nutritional status in under-5 children compared with control areas.

LBWSAT study arms

Arm 1: **control clusters** receiving government programmes

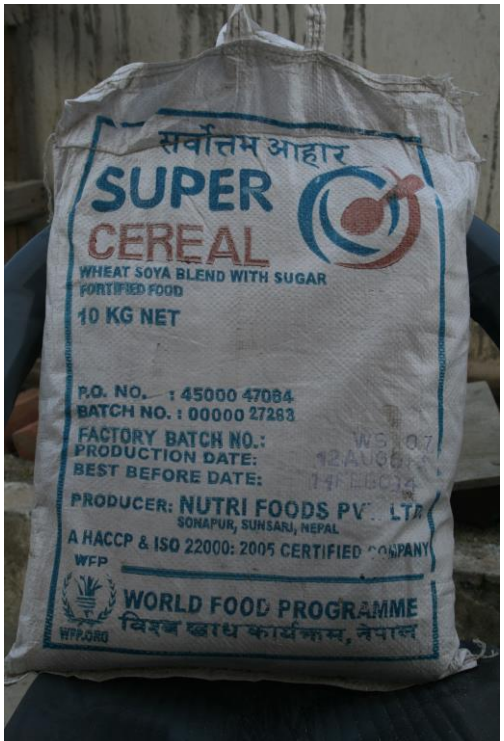
Arm 2: clusters implementing a **women's groups** behavior change strategy involving **participatory learning and action** focused on nutrition, rest and infection control in pregnancy plus home visits

Participatory learning and action cycle



LBWSAT Food arm

Women's groups plus up to 7 monthly 10kg transfers of "Super Cereal" fortified wheat-soya blended flour to pregnant women



Food distribution pictures

LBWSAT Cash Arm

Women's group plus up to 7 monthly cash transfers of NPR 750 per month to pregnant women.

Ward Enumerators

VDCIs and M&E FCs

Frontline SMS

Methods: Flow Diagram of Data System

Frontline SMS

VDCI

Verify Pregnancy

ODK

Food /Cash / WG

NM

Reports Pregnancy

Menstrual Monitoring/Regular follow up

Verify Birth

WE

Migration

pregnancy (6 -30) weeks & SE Questionnaire

CommCare

3rd Trimester (31-37) weeks SE Questionnaire (Late enroll)

Birth Questionnaire (Anthropometry of baby) SE Questionnaire (Late enroll)

42 days follow up (Questionnaire, Anthropometric measurement of mother & baby)

Verbal Autopsy (VA)

Food security monitoring tools used

1. **Household Food Insecurity Access Scale (HFIAS)**

- once in the third trimester of pregnancy.

2. **Months of Adequate Household Provisioning (MAHFP)** expressed as a proportion of the months recalled

- in the 12 months preceding the early pregnancy interview
- between receiving the pregnancy ID card and the 6 weeks postpartum interview

3. **Household dietary diversity score (HDDS)** using the 12 food groups used by FAO and FANTA and the 9 food groups used in the FAO IDDS tool

- in early and late pregnancy

4. **Height-for-age (HAZ), Weight-for-age (WAZ) and Weight-for-height (WHZ) Z-scores of** youngest child under 5y

- at early pregnancy and at birth

How to assess the effect of interventions on household food security?

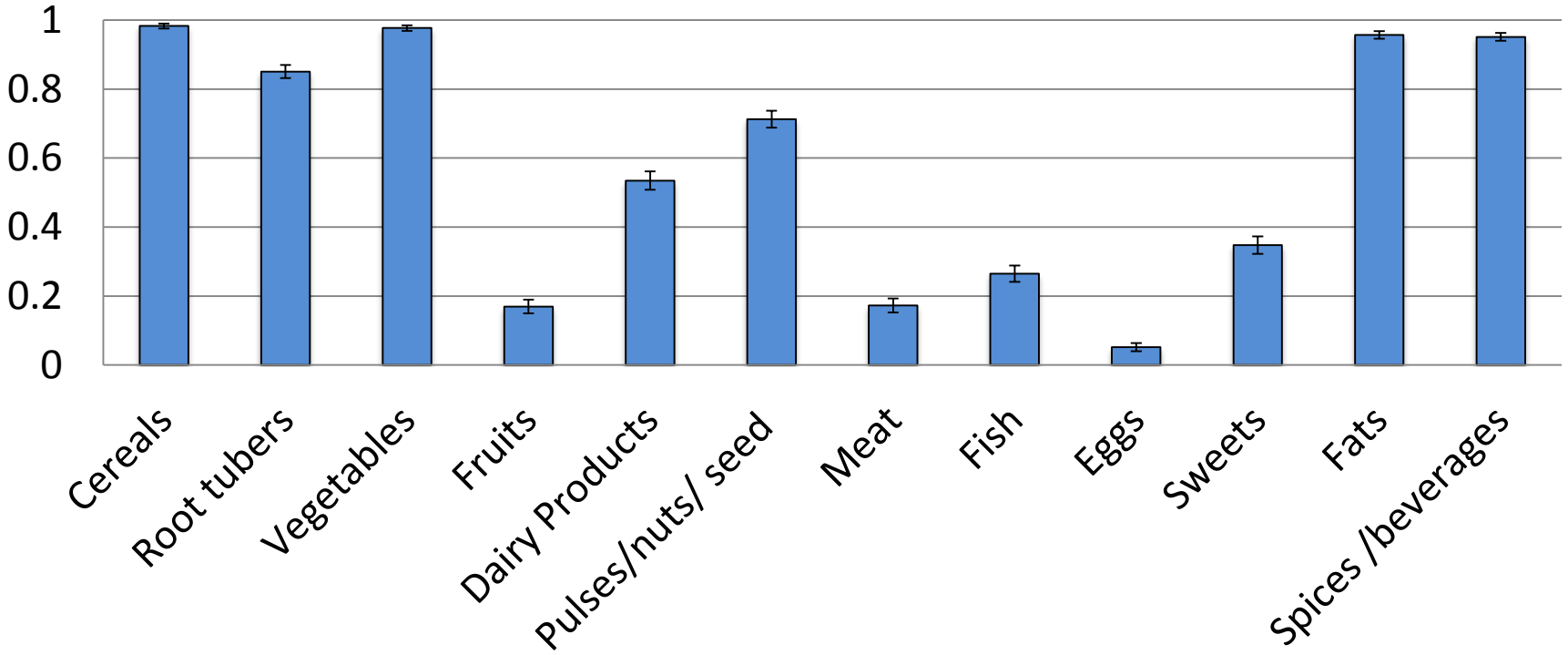
Measure of food security	Early pregnancy	Late pregnancy	Birth	Post-neonatal	Compare study arms at each time point	Comparison between study arms in change over time
HFIAS - 30-day experience of food insecurity		✓			✓	
HDDS - 24-hour food group consumption	✓	✓			✓	✓
MAHFP - proportion of months recalled with adequate food	✓			✓	✓	✓
Under-5 **nutritional status**	✓		✓		✓	✓

Results from control clusters on baseline food security measures

Household dietary diversity score food group consumption using **FANTA HDDS**:

Mean score in control arm 6.97 (95% CI 6.81-7.12) n=348

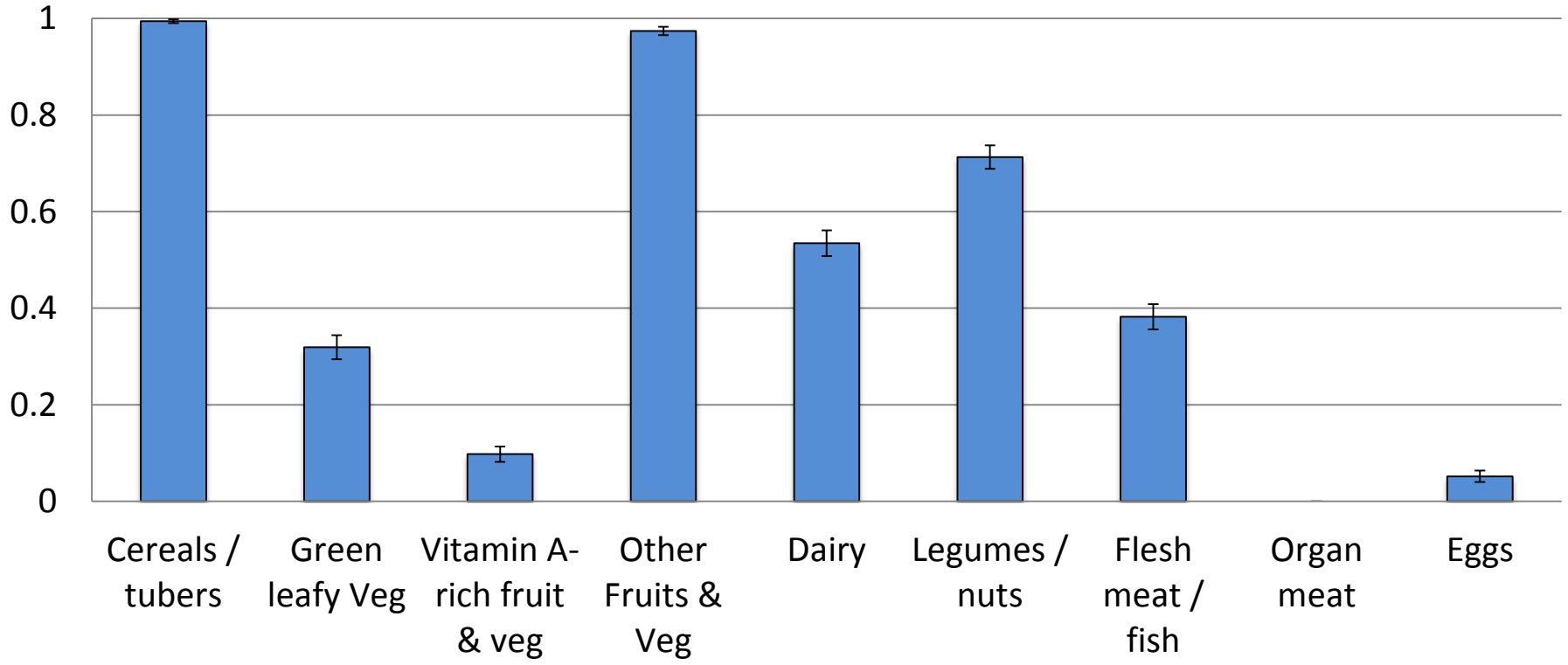
Proportion of control households with women in early pregnancy that consumed food groups of the Household Dietary Diversity Score in the preceding 24 hours (n=348)



Household dietary diversity score food group consumption using **FAO IDDS** groupings:

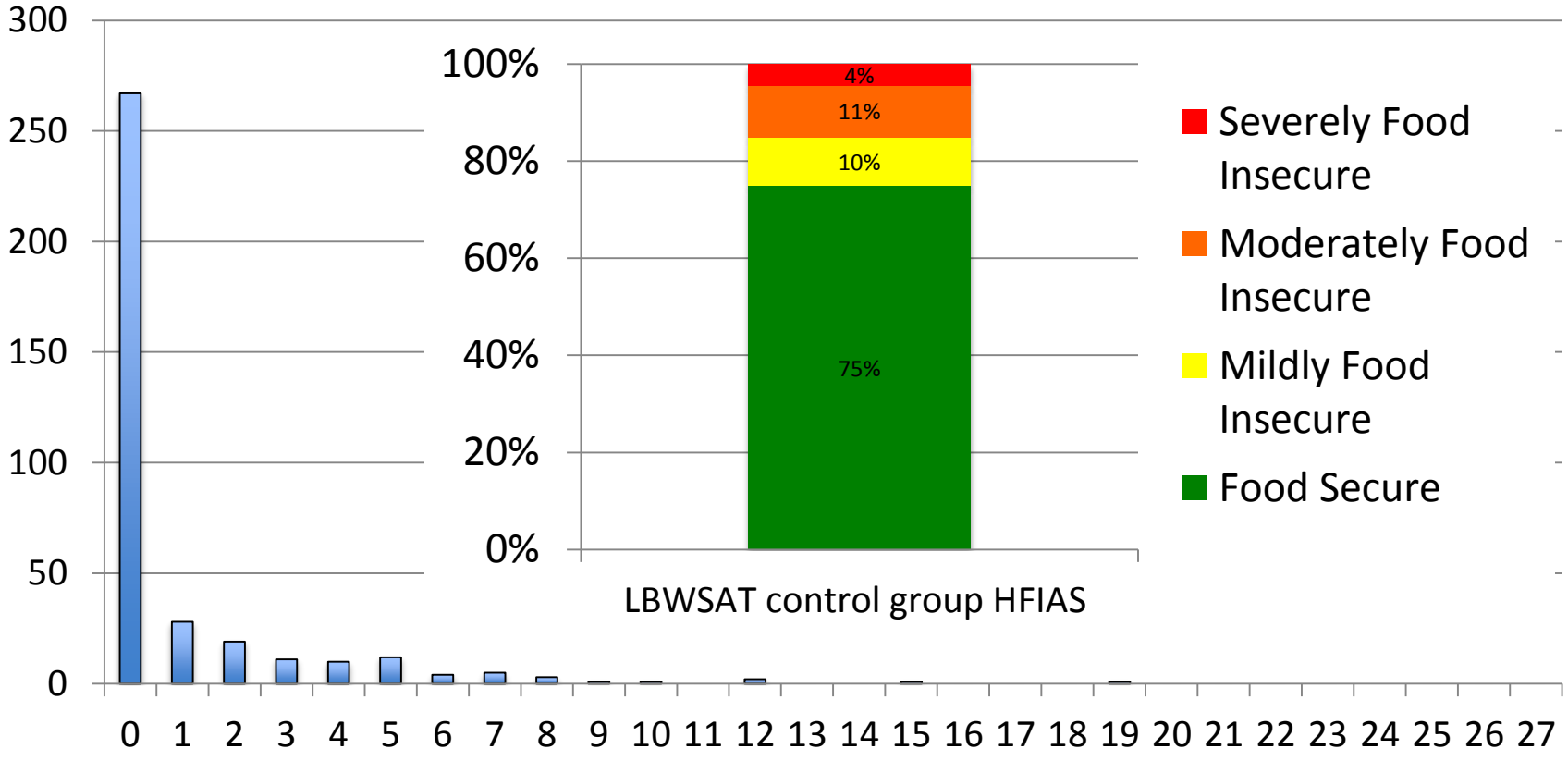
Mean score = 4.1 (95% CI 3.9-4.2); n=348

Proportion of control area households with women in early pregnancy that consumed food groups of the FAO Individual Diversity Score in the preceding 24 hours



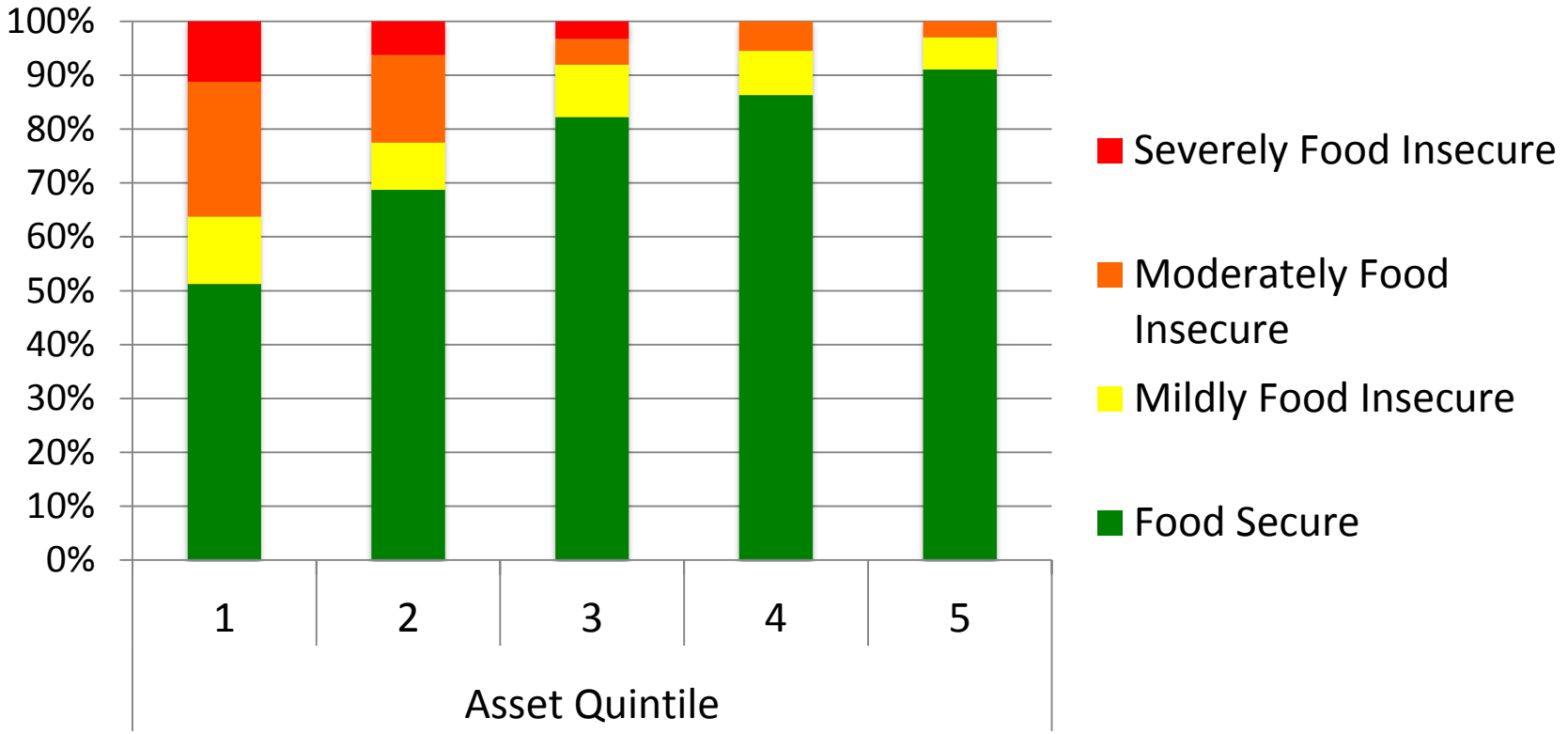
Household Food Insecurity Access Scale

Household Food Insecurity Access Scale (HFIAS) score in either early or late pregnancy in control areas of LBWSAT



7.6% worry about food;
19% suffer insufficient quality of food;
7.4% suffer insufficient intake

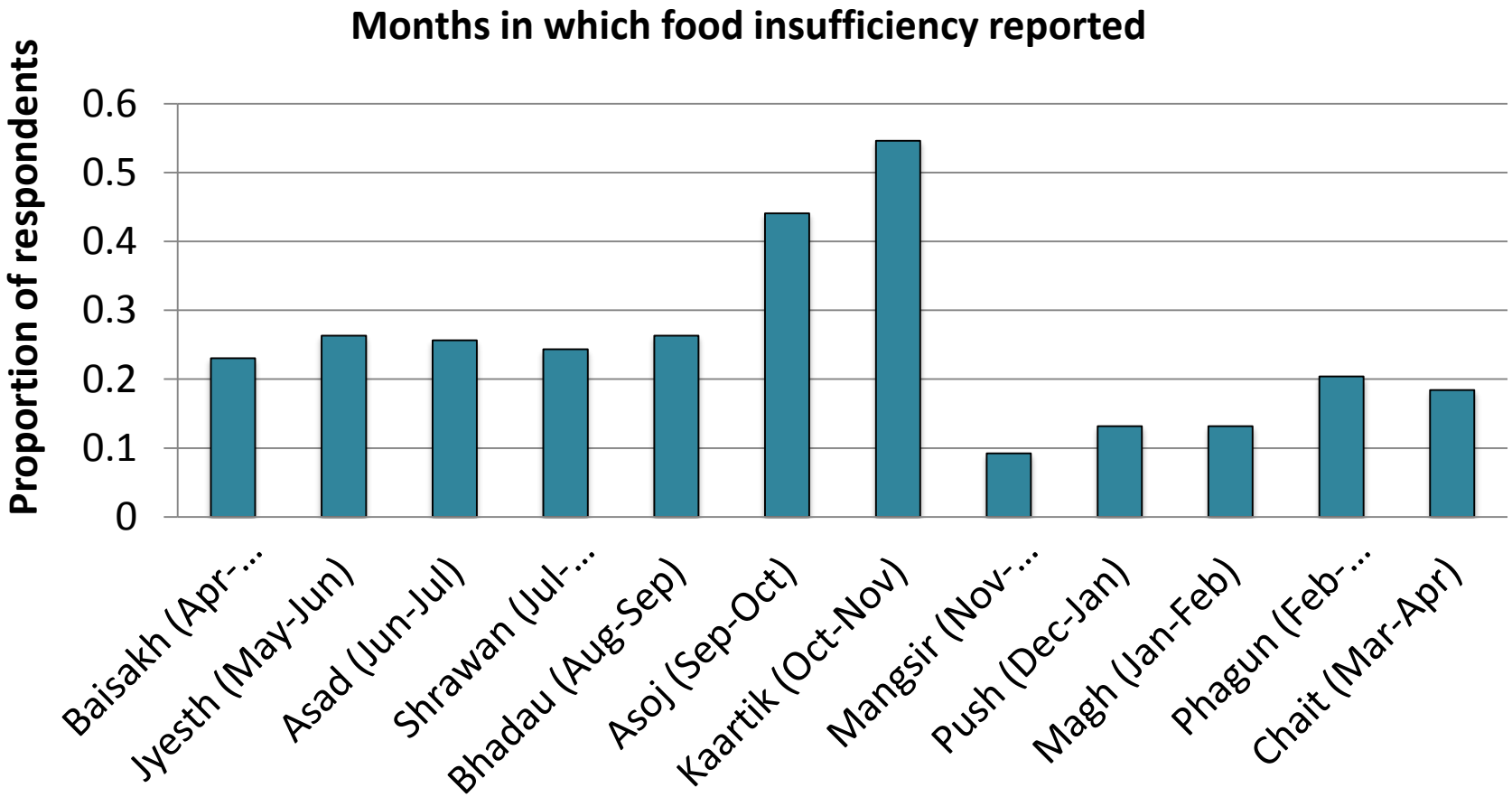
Household Food Insecurity Access Scale by asset quintile in control arm



- Despite low population levels of food insecurity >36% of the poorest quintile suffer from food moderate to severe food insecurity
- LBWSAT interventions may move these households into mildly food insecure or food secure categories

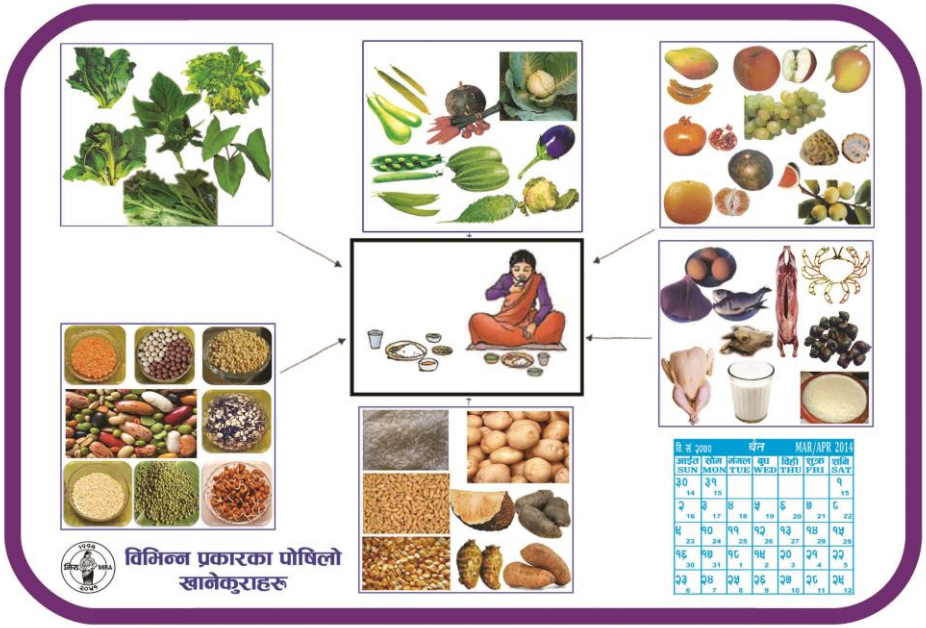
Months of adequate food provisioning (MAHFP) in early pregnancy

>90% of households have zero months of insufficient food, but small numbers suffer 1 to 4 months food insecurity



Conclusion

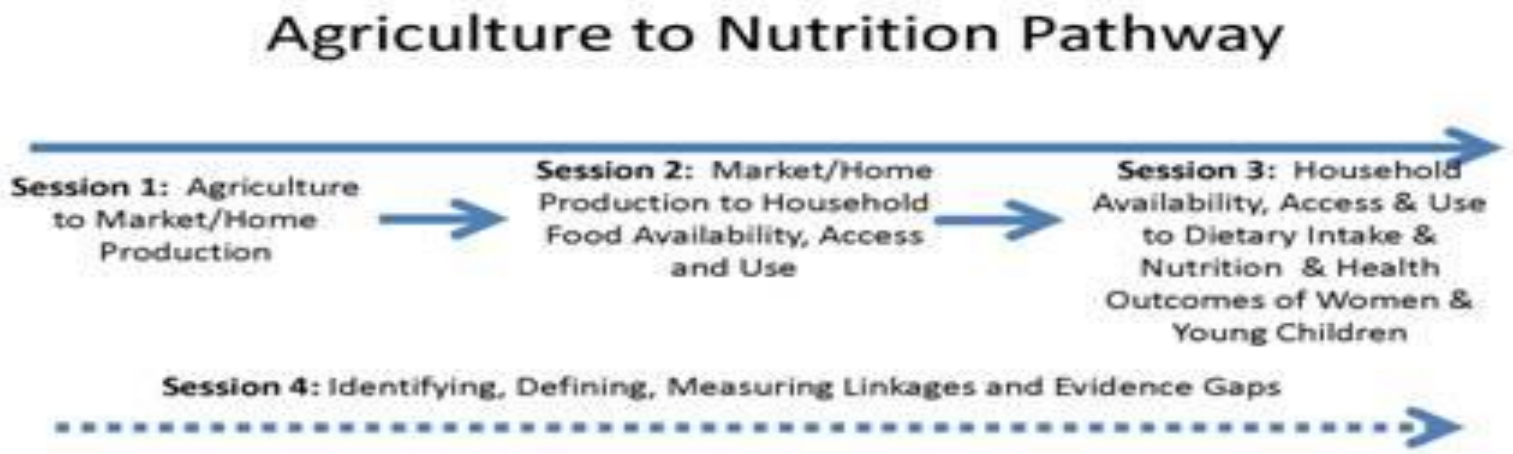
large-scale population studies should utilize opportunities to look at wider impacts of interventions at household and community levels.



Agriculture, Food Systems, and Nutrition: Connecting the Evidence to Action

Findings from LBWSAT on effects of behaviour change with and without social transfers of cash or super cereal will help

- **to understand the pathways from household food availability to household use, dietary intake and nutrition and health of mothers and children**



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