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EFFECTIVENESS OF INTEGRATED AGRICULTURE, HEALTH LIVELIHOOD & NUTRITION INTERVENTIONS TO IMPROVE MATERNAL AND CHILD NUTRITION & HEALTH IN RURAL UGANDA : A COHORT BIRTH STUDY

PAROMBO SUB-COUNTY



HARVARD
SCHOOL OF PUBLIC HEALTH



Tufts
UNIVERSITY

Outline

- Study team
- Objectives of the Study
- Implementation Status
- Research design
- Data Collection
- Results
- Conclusions

STUDY TEAM

MAKERERE UNIVERSITY

- Prof. Bernard Bashaasha, PI
- Dr. Flo Turyashemererwa, Project Coordinator.
- Ms, Annet Kawuma, Research Specialist
- Edgar Agaba, Researcher

IFPRI

Dr. Nassul Kabunga, Post Doc Fellow

TUFTS UNIVERSITY

- Prof. Jeffrey Griffiths, Director
- Dr Shibani Gosh, Associate Director

HARVARD SCHHOL OF PUBLIC HEALTH

- Dr. Christopher Duggan , Co -PI
- Dr Wafale Fawzi, Co- PI
- Dr Nilupa Gunaratna, Co- PI

Overall Objective

- To understand the effect of Integrated Interventions (Nutrition, Agriculture and Health) on the Health and Nutrition status of Mothers and Children under Two years of Age

Specific Objectives

- To determine the Effect of integration of nutrition, agriculture and health interventions on the health and nutrition status of pregnant women and children under two years of age
- To determine the effect of aflatoxin exposure and environmental enteropathy on health and nutritional status of pregnant women and children under tow years of age

Specific Objectives

- To assess the coverage, uptake and adherence to CC intervention messages and activities and assess the effect of heterogeneity on pregnant women and children under two years of age
- To determine the heterogeneity in the effect of CC interventions on maternal and child health and nutrition status due to variability in households

Research Design

- A Cohort of Mothers and young children were followed from pregnancy through the first two years of life
- Randomly selected CC interventions were matched to non cc sub-counties that provided the control
- Each selected CC sub-county was individually matched to a non-CC sub-county with the same
 - Agro ecology
 - Predominant language
- The matched sub –counties are located in non-CC districts to minimize spillover from interventions areas

Table 1: Implementation sites

District	Sub county	Predominant Language	Status
Kabale	Ruhija	Runyankore/Rukiga	Intervention
Kabale	Nyamweru	Runyankore/Rukiga	Intervention
Kanungu	Rugyeyo	Runyankore/Rukiga	Intervention
Kamwenge	Bwizi	Runyankore/Rukiga	Intervention
Kabarole	Kibiito	Runyankore/Rukiga	Control
Rukungiri	Kebisoni	Runyankore/Rukiga	Control
Rukungiri	Bugangari	Runyankore/Rukiga	Control
Rukungiri	Buyanja	Runyankore/Rukiga	Control
Nebbi	Parombo	Alur	Intervention
Zombo	Atyak	Alur	Control
Pader	Atanga	Acholi	Intervention
Lamwo	Agoro	Acholi	Control
Lira	Agweng	Langi	Intervention
Kole	Ayer	Langi	Intervention
Apac	Aduku	Langi	Control
Apac	Apac	Langi	Control

Sampling and Sample size

- The study was conducted in 16 sub-counties
- Village health teams/guides were recruited and worked closely with the team to identify pregnant women
- Approximately 322 pregnant women were selected in each of the 16 sub-counties
- The target was to enroll 5152 pregnant women and children
 - In total 5,044(98%) women were enrolled in the study
 - Were to be followed up over a three year period
- In Parombo Sub-county 319 pregnant women were selected and formed the study sample

Sampling contd..

Eligibility criteria

Sample of respondents consisted of

- Pregnant women aged 15-49 years
- Women in their second and third trimester
- Must be Living in the study area until study follow-up period
- Mother provides informed consent

Data Collected

- At Household level
 - Demographic and socioeconomic information
Household composition, Wealth indicators, assets, income, livelihood activities , social participation, water and sanitation, sanitation, access to health services
 - Agriculture
Activities, production and sale, labor, utilization of technologies and management practices
 - Food Security
 - Gender roles and Dynamics
Women's role in agriculture, access, ownership and control of assets , production and income, decision –making, time use and access agricultural and nutritional information

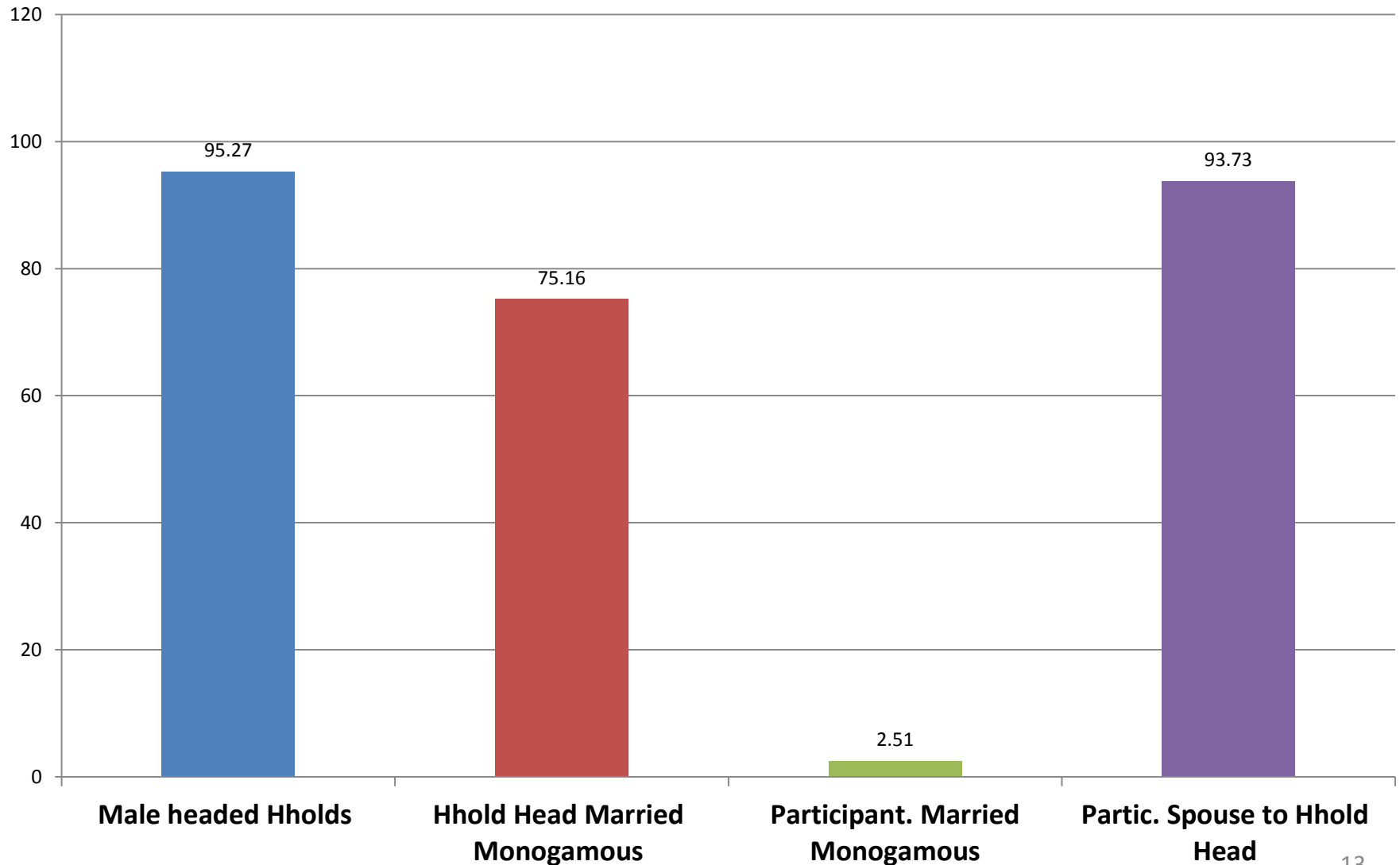
Data Collected

Caregiver and child (0-23 months)

- Diet
 - Included infant and young child feeding practices
- Health
 - Recent morbidity, hygiene, utilization of health interventions and services
- Nutritional status
 - Anthropometry
- Venous blood draws
 - Iron, Malaria, Aflatoxins

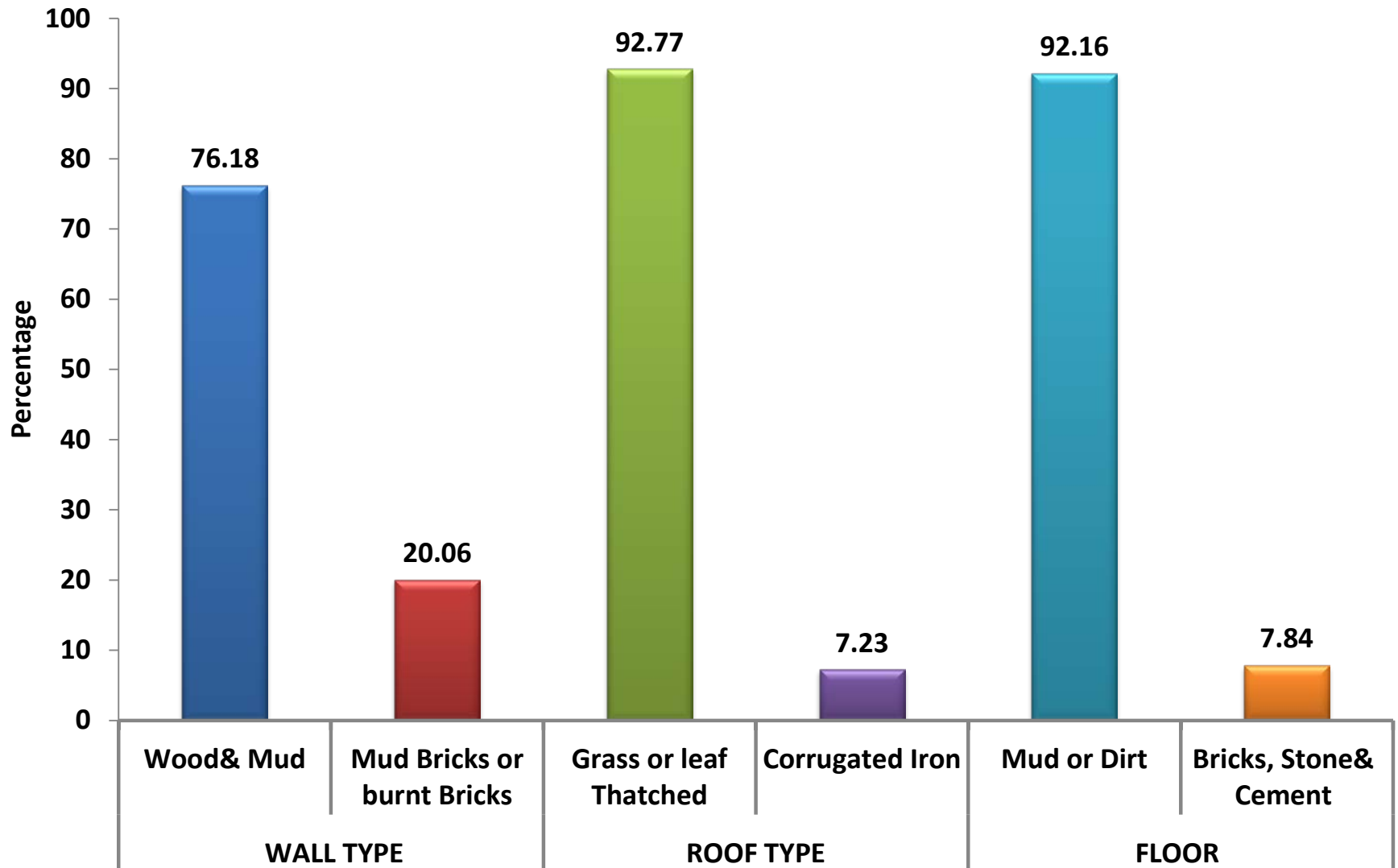
Household Demographics

Parombo- Household Characteristics



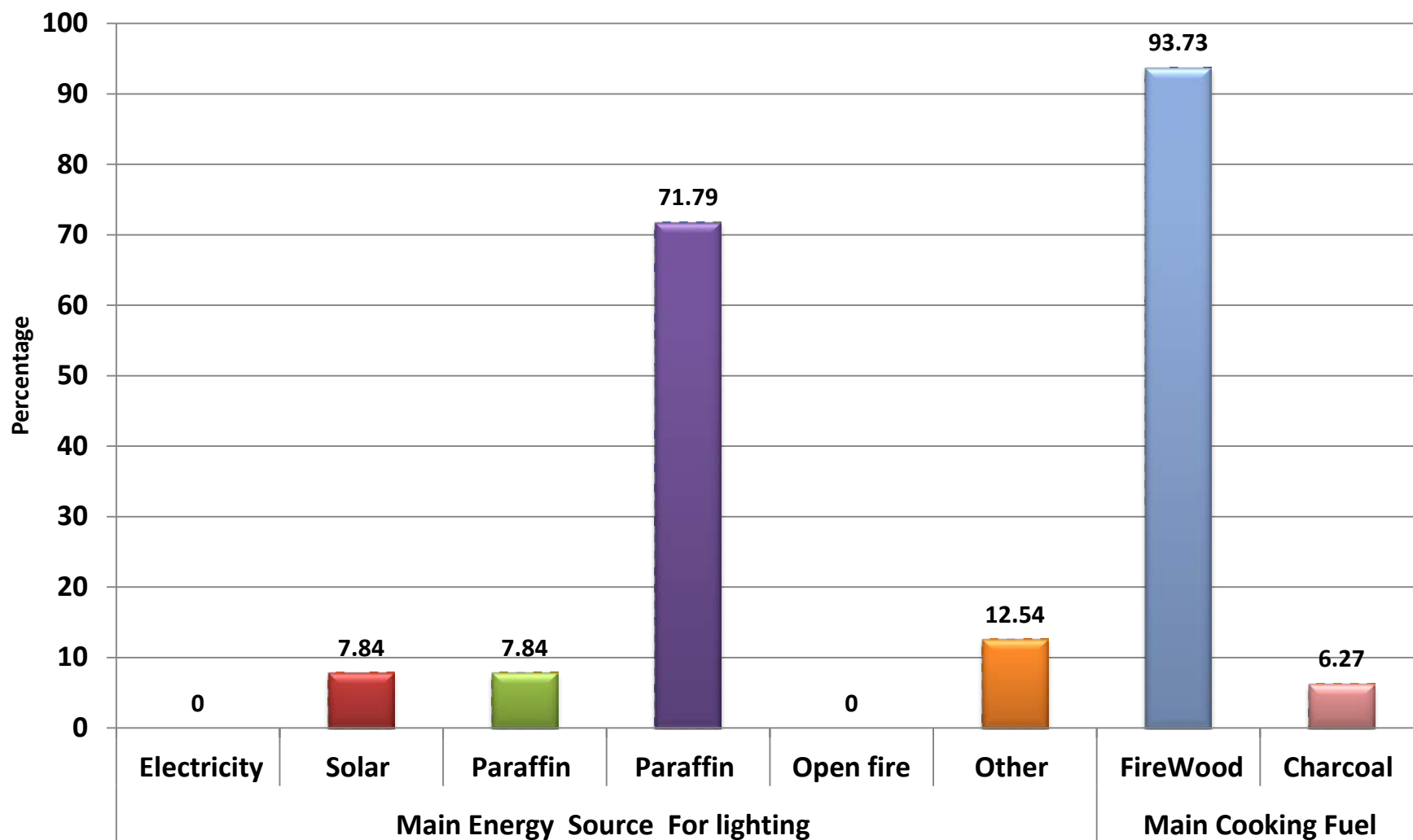
Housing Characteristics

Parombo- Household Housing Characteristics



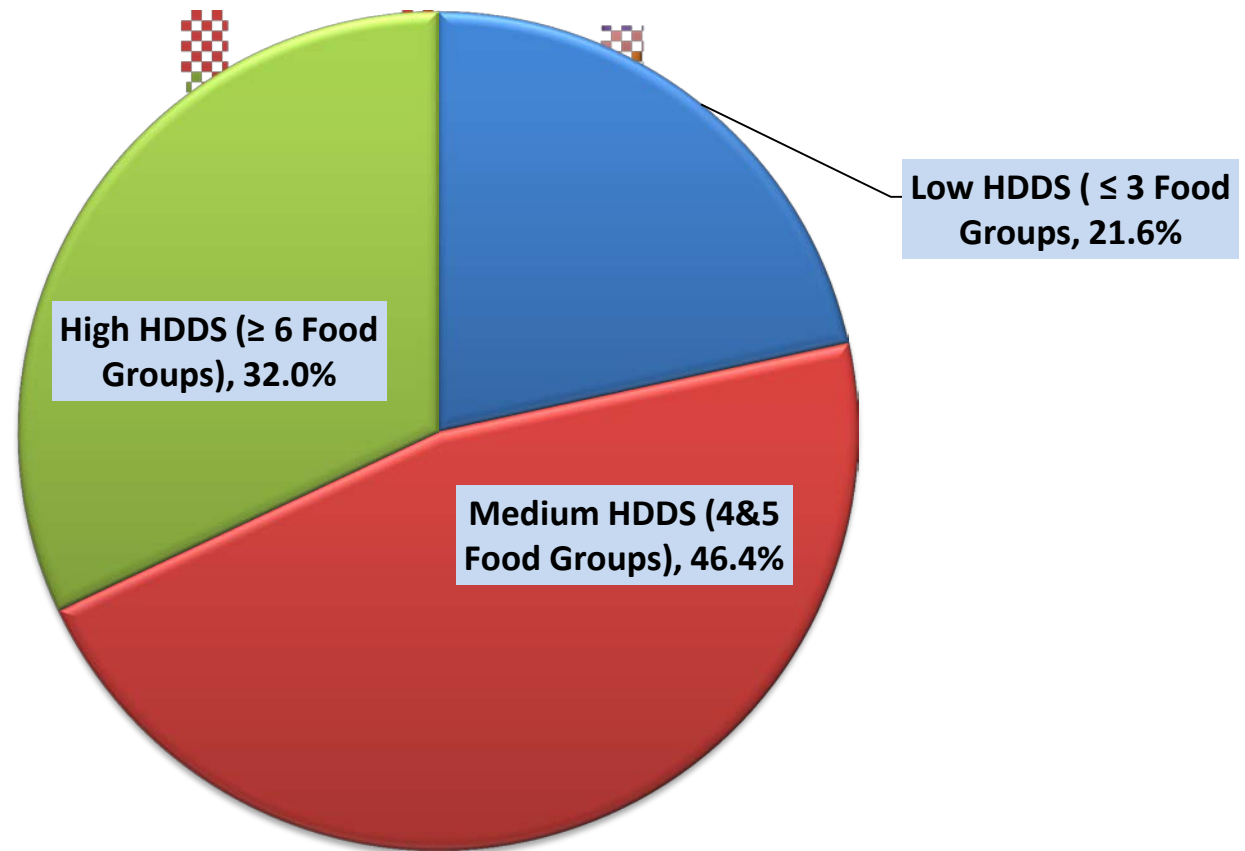
Household Characteristics

Parombo- Households' Main Lighting Source and Cooking Fuel



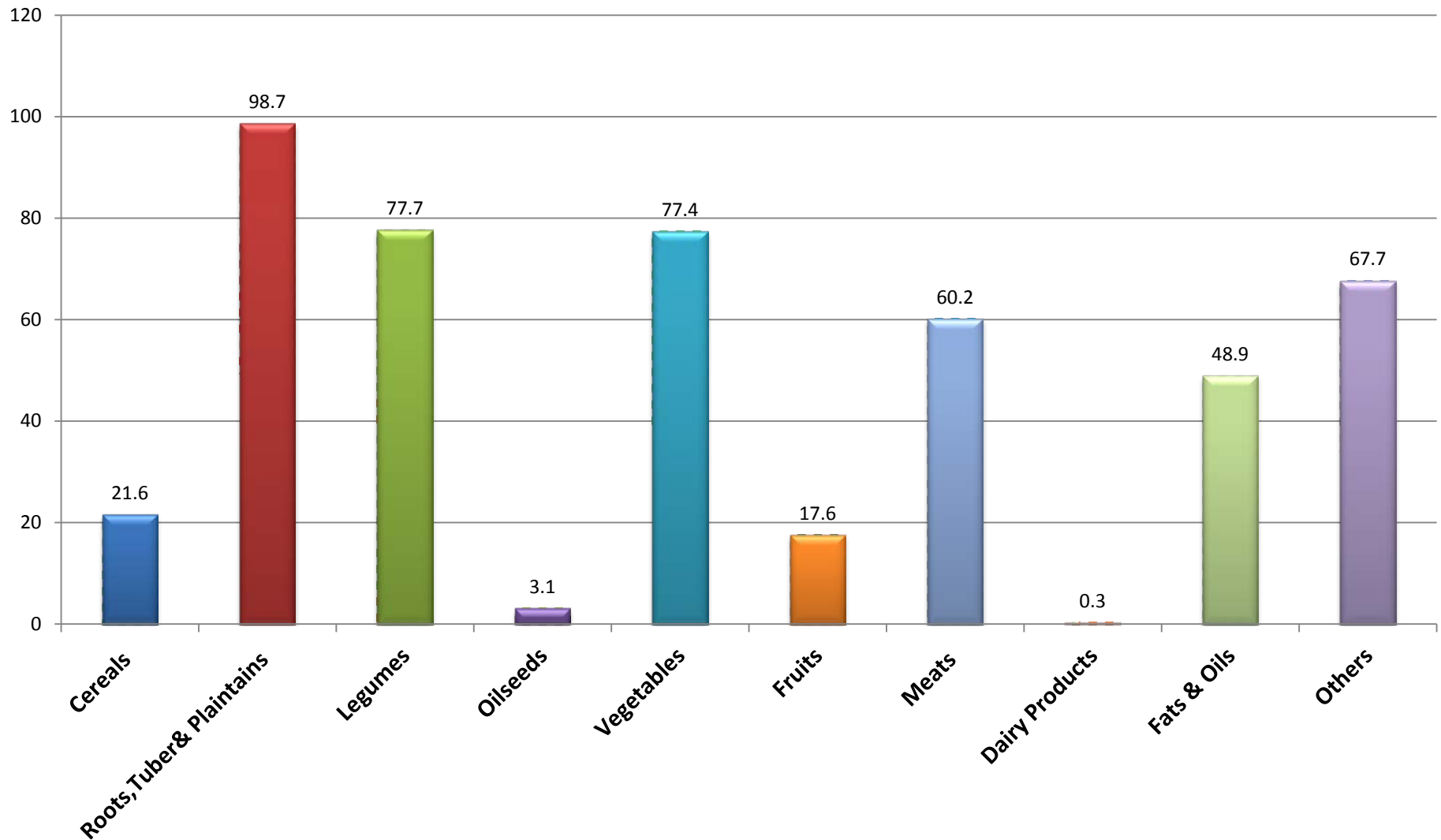
Household Dietary Diversity Score

Parombo - Household Dietary Diversity Score



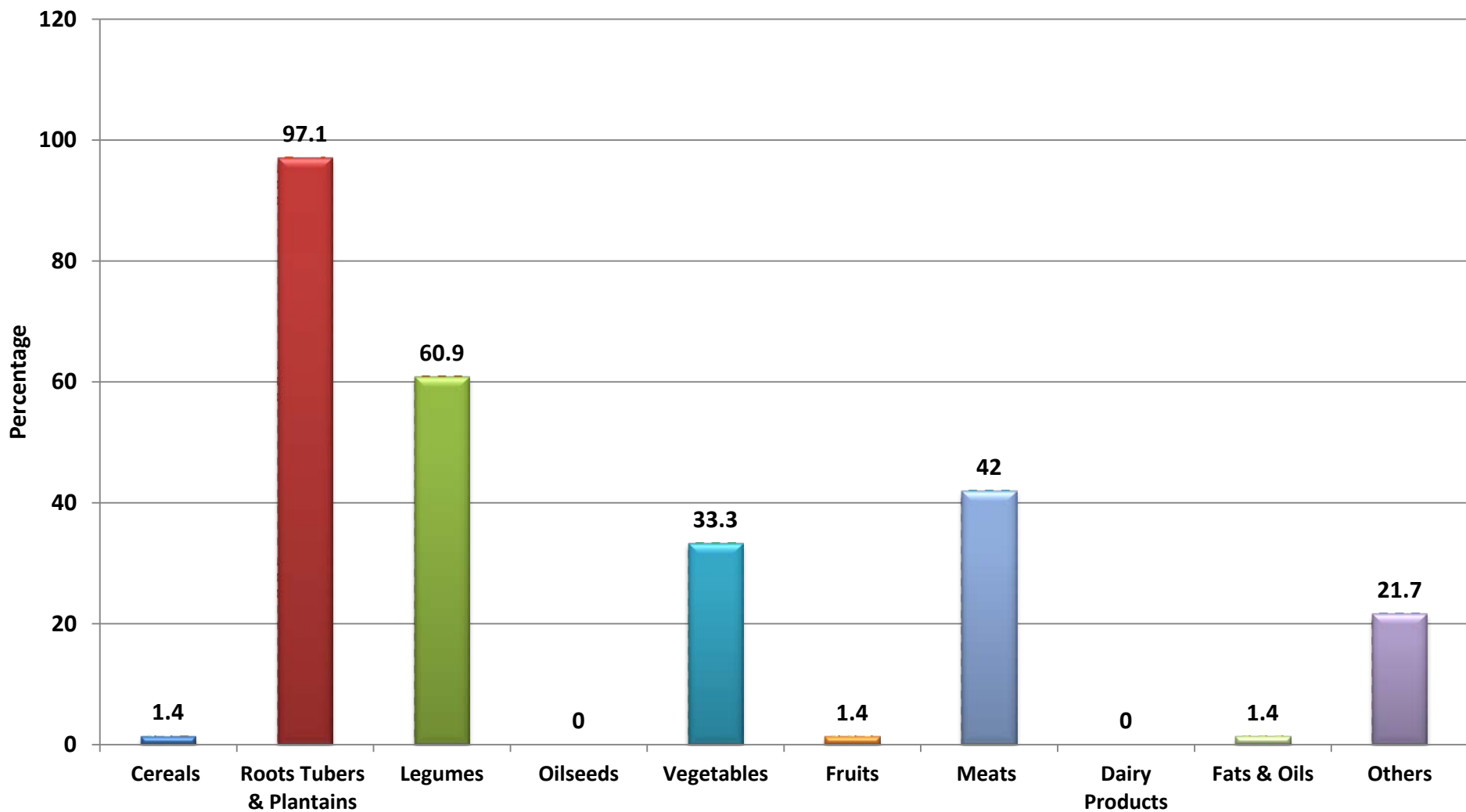
Consumption of Major Food Groups

Parombo- Food Groups Consumed by Households



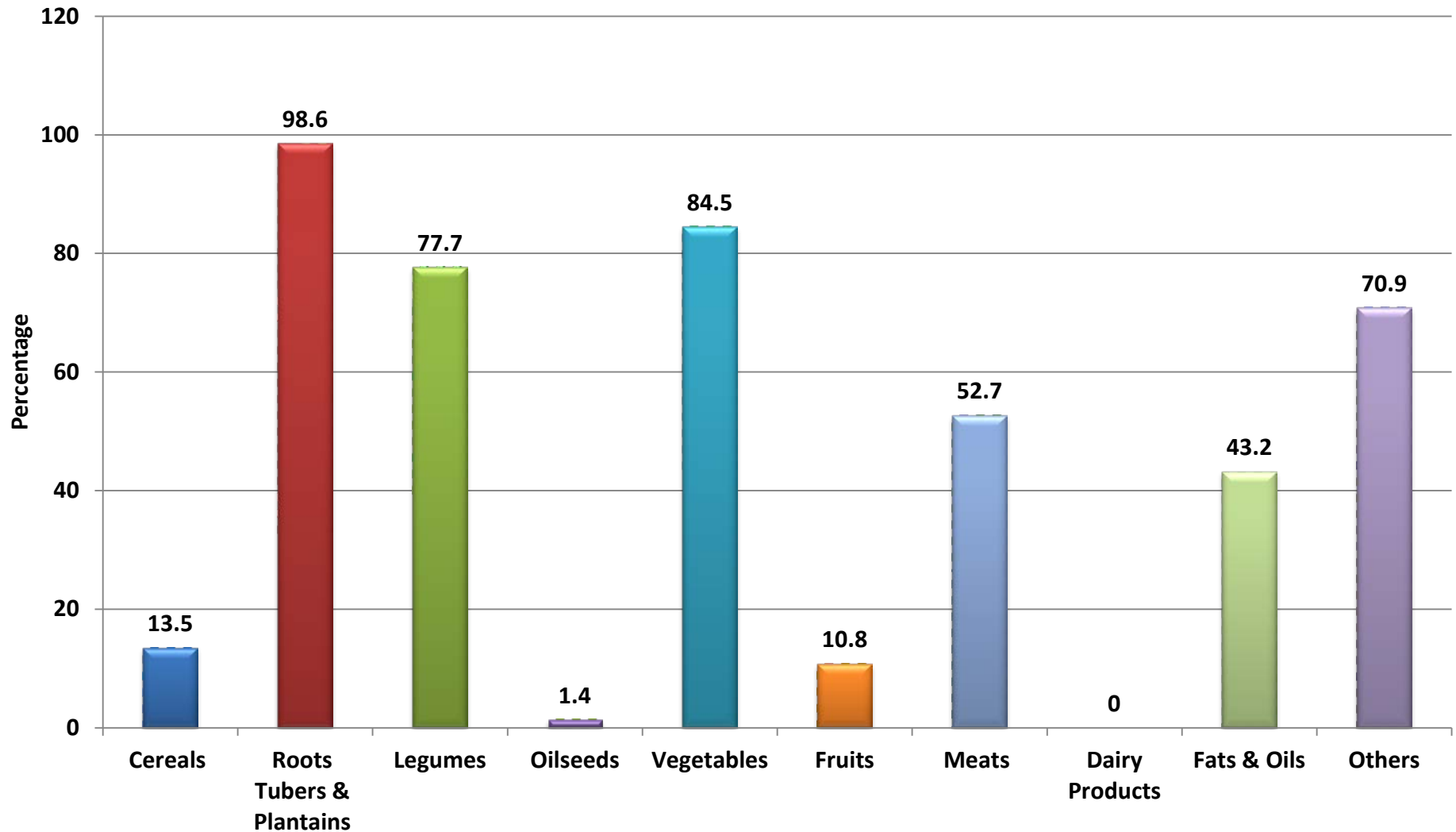
Food groups Consumed by Low HDDS group

Parombo -Food Groups Consumed by Households with low HDDS



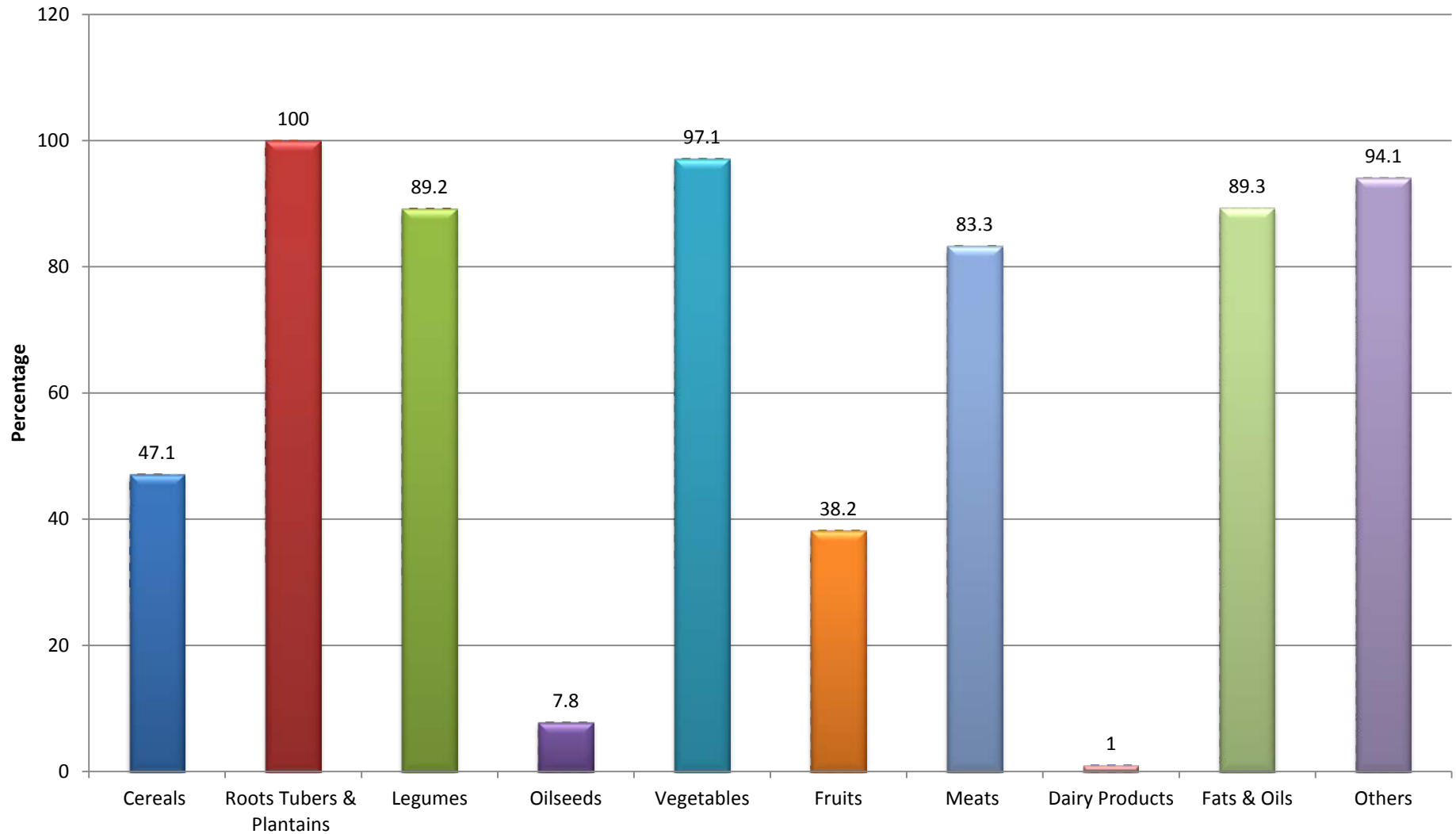
Foods Consumed by Households in Medium HDDS Group

Parombo - Food Groups Consumed by Households with Medium HDDS



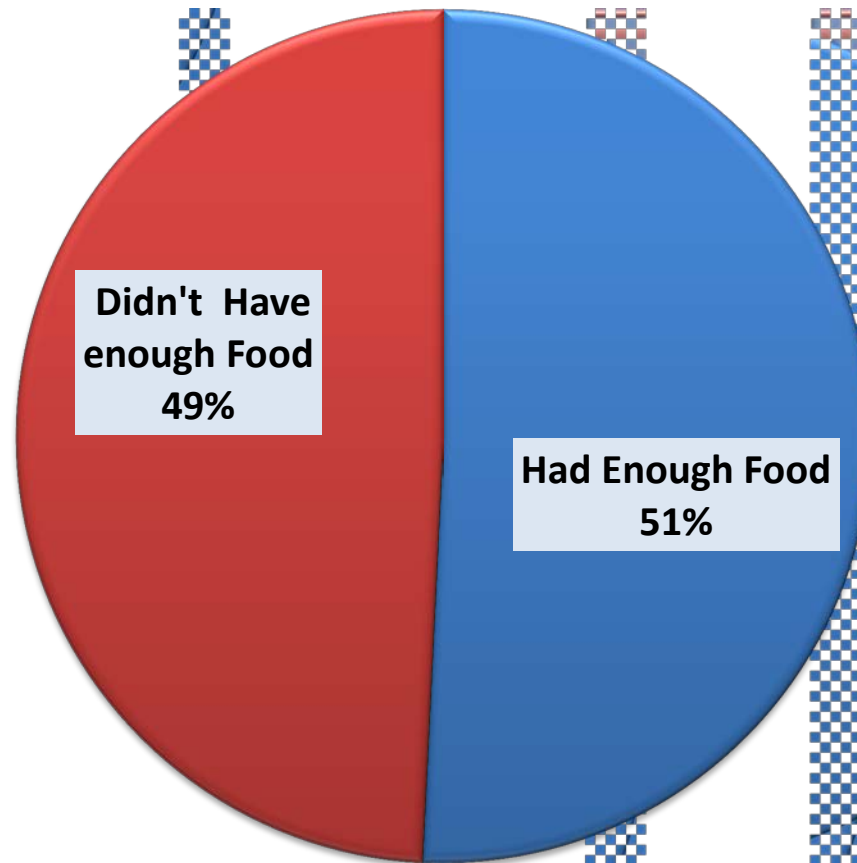
Food Groups consumed in High HDDS Group

Parombo - Food Groups Consumed by Households with High HDDS



Household Food Provisioning (MAHFP)

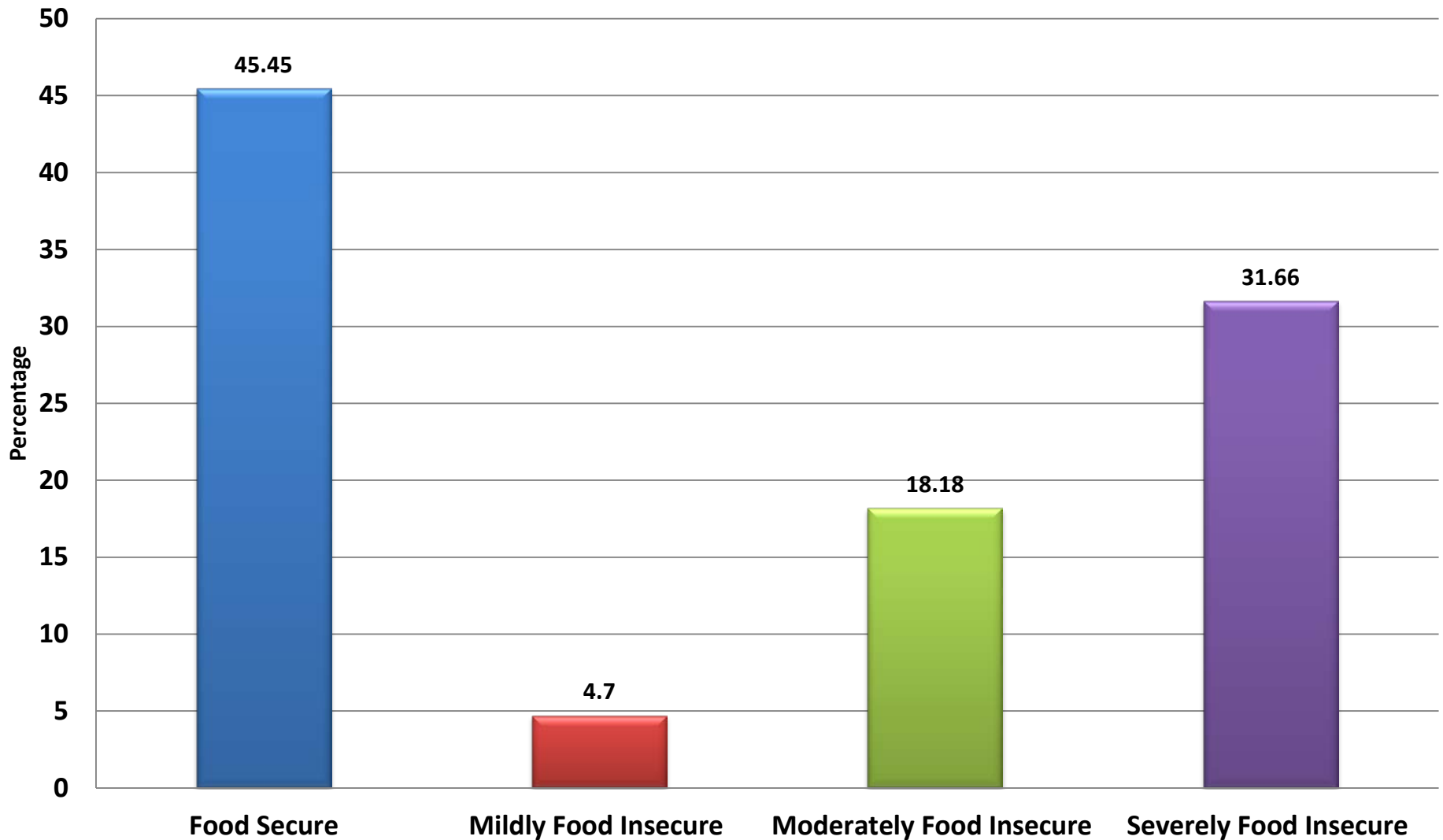
Parombo - Adequate Household Food Provisioning (MAHFP) in last 12 Months



Households in Parombo had 4 months of inadequate food access in last 12 months

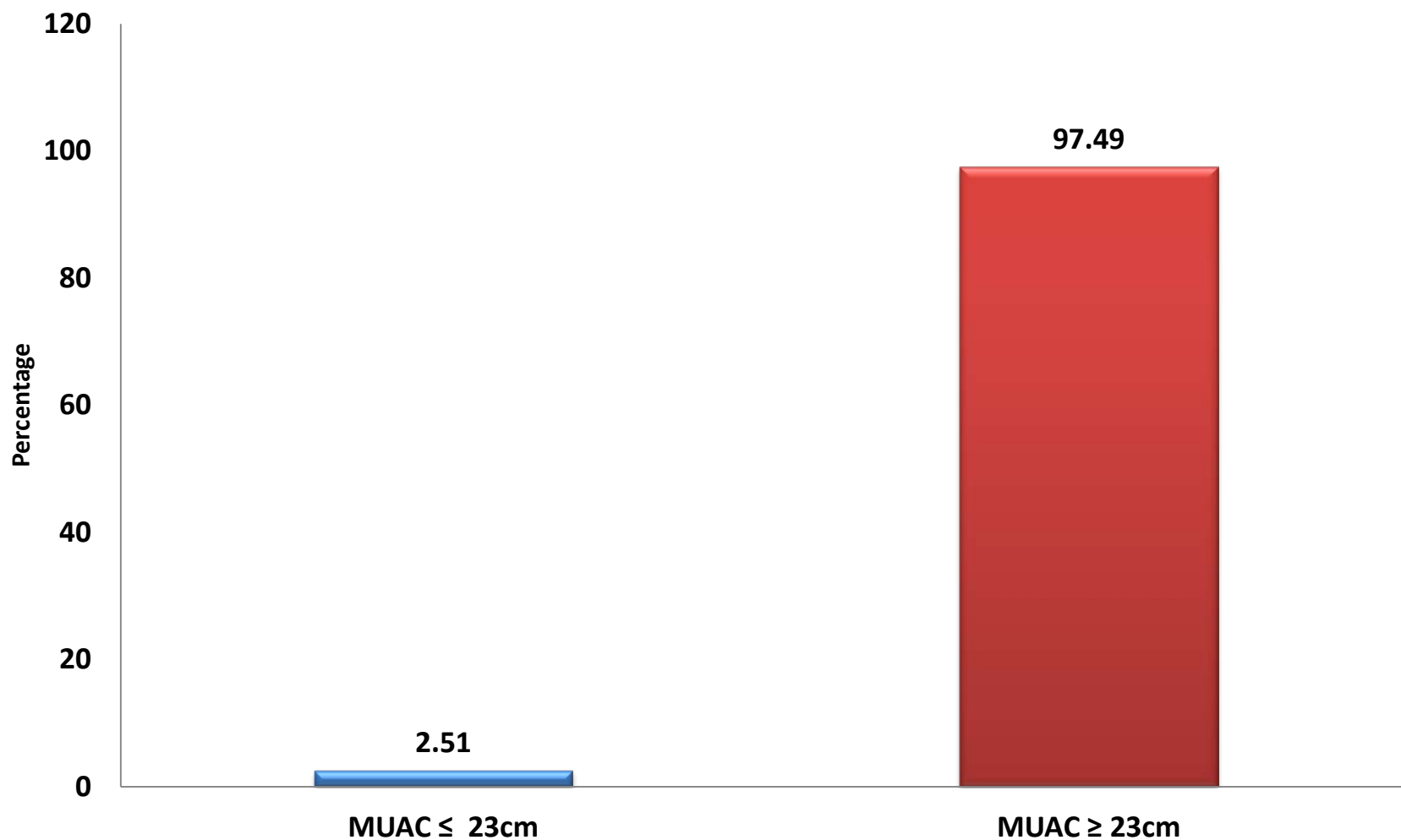
Household Food Insecurity Access Prevalence

Parombo -Household Food Insecurty Access Prevalence



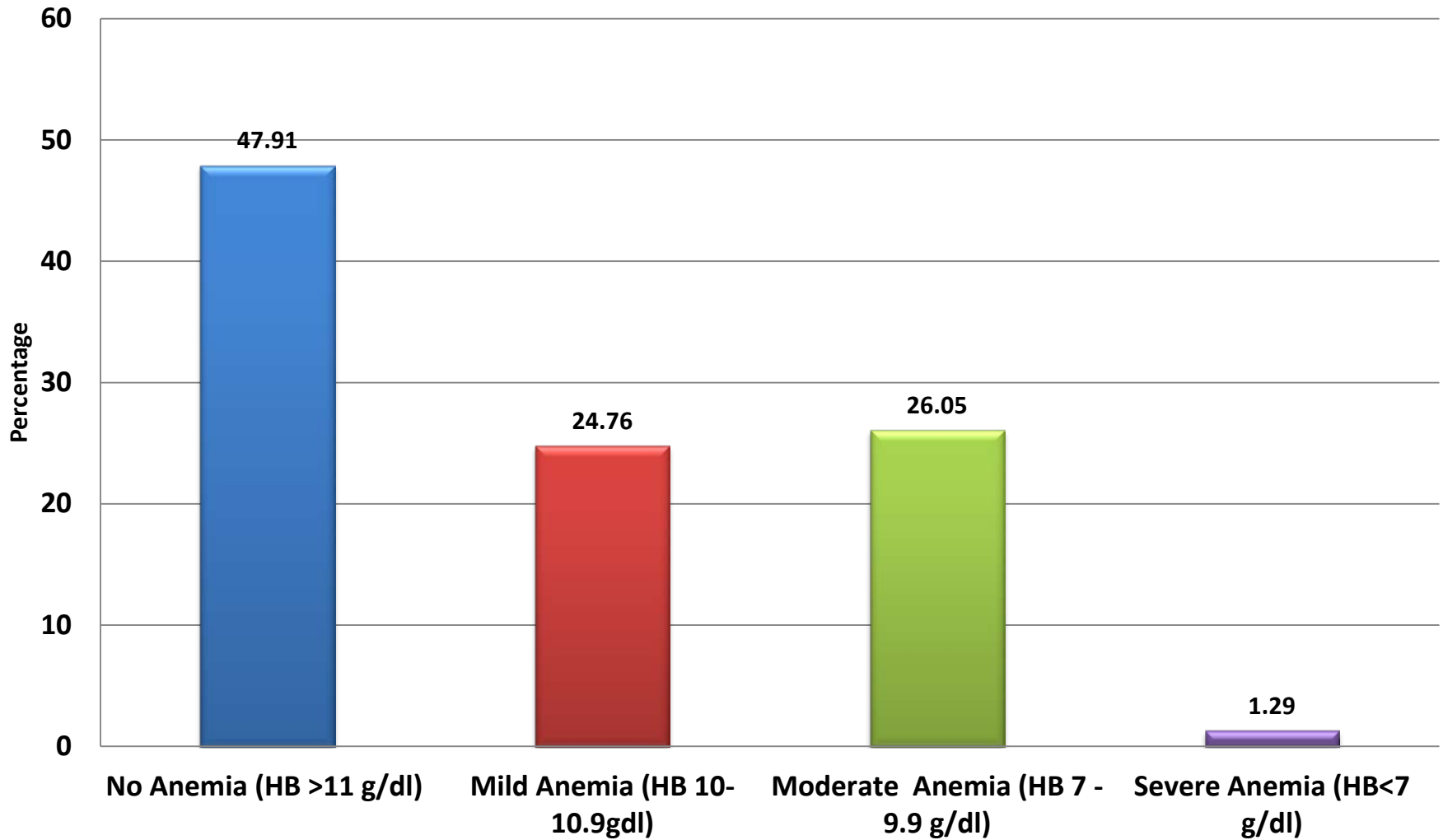
Maternal Wasting

Parombo - Mid Upper Arm Circumference (MUAC) for Pregnant Women



Maternal Anemia

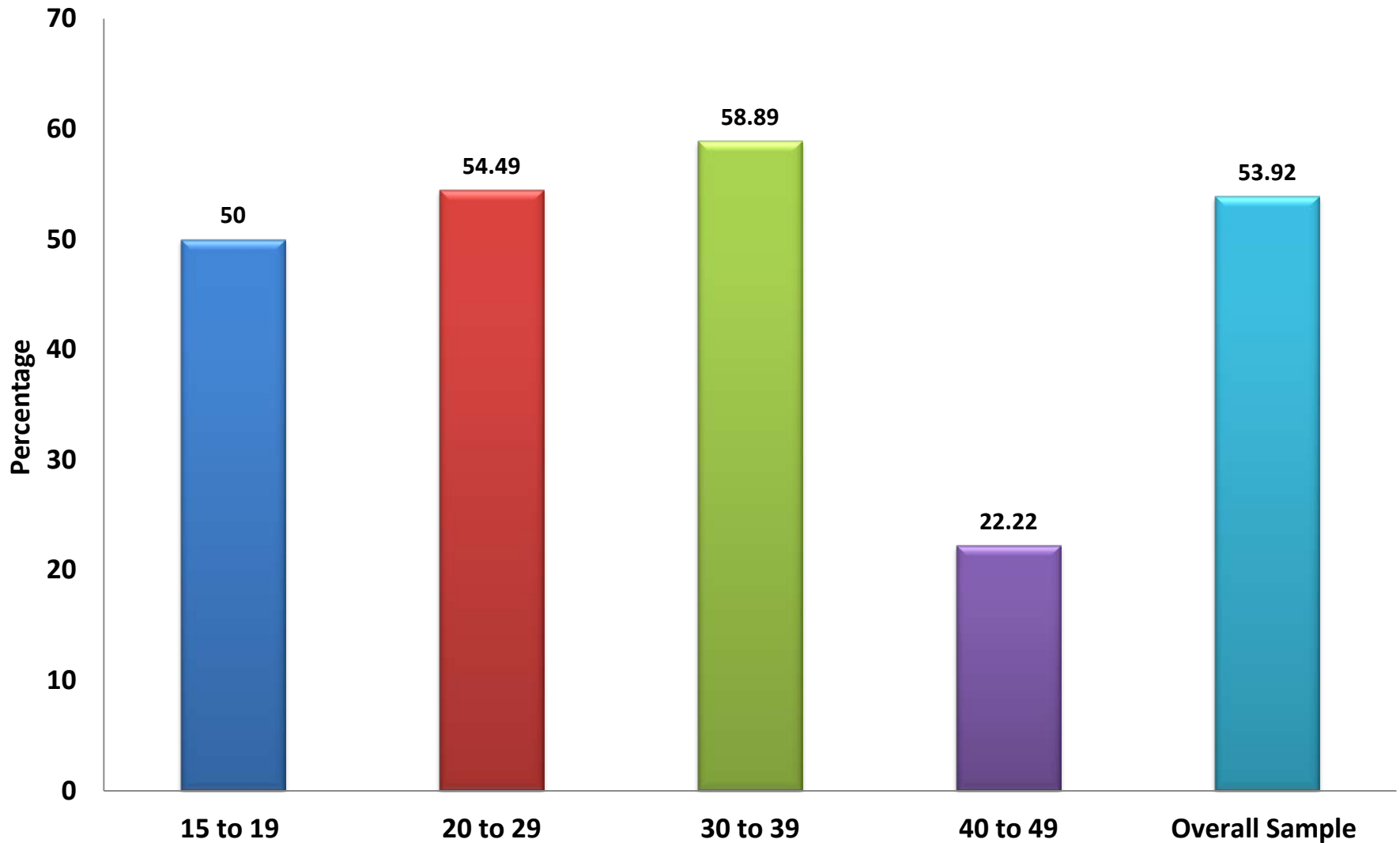
Parombo- Prevalence of Anemia in Women 15 to 49 Years



SEEKING HEALTH CARE SERVICES

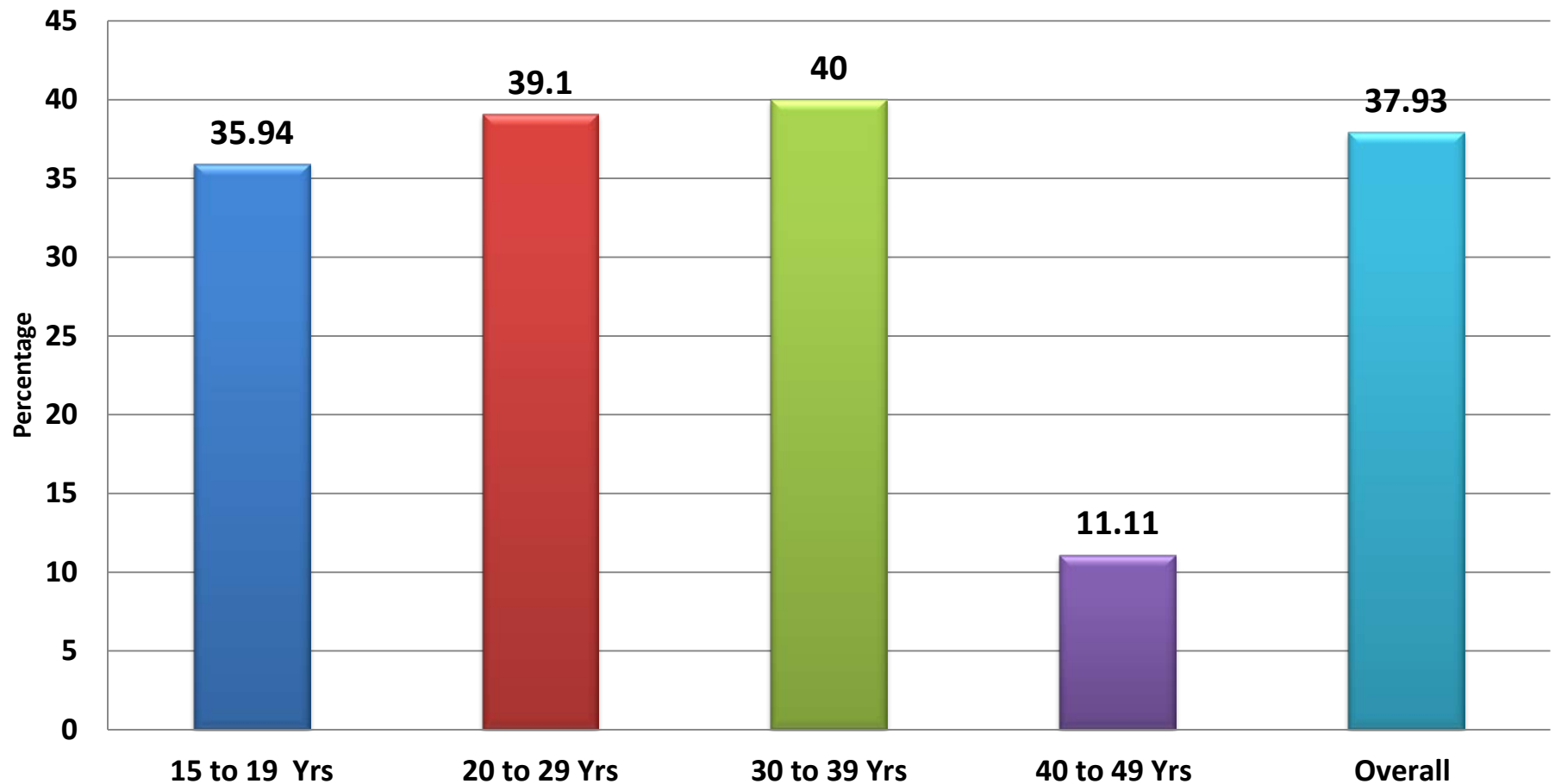
Maternal Health Status & Pregnancy

Parombo-Women of Variuos Age Groups Who Sought Antenatal Care



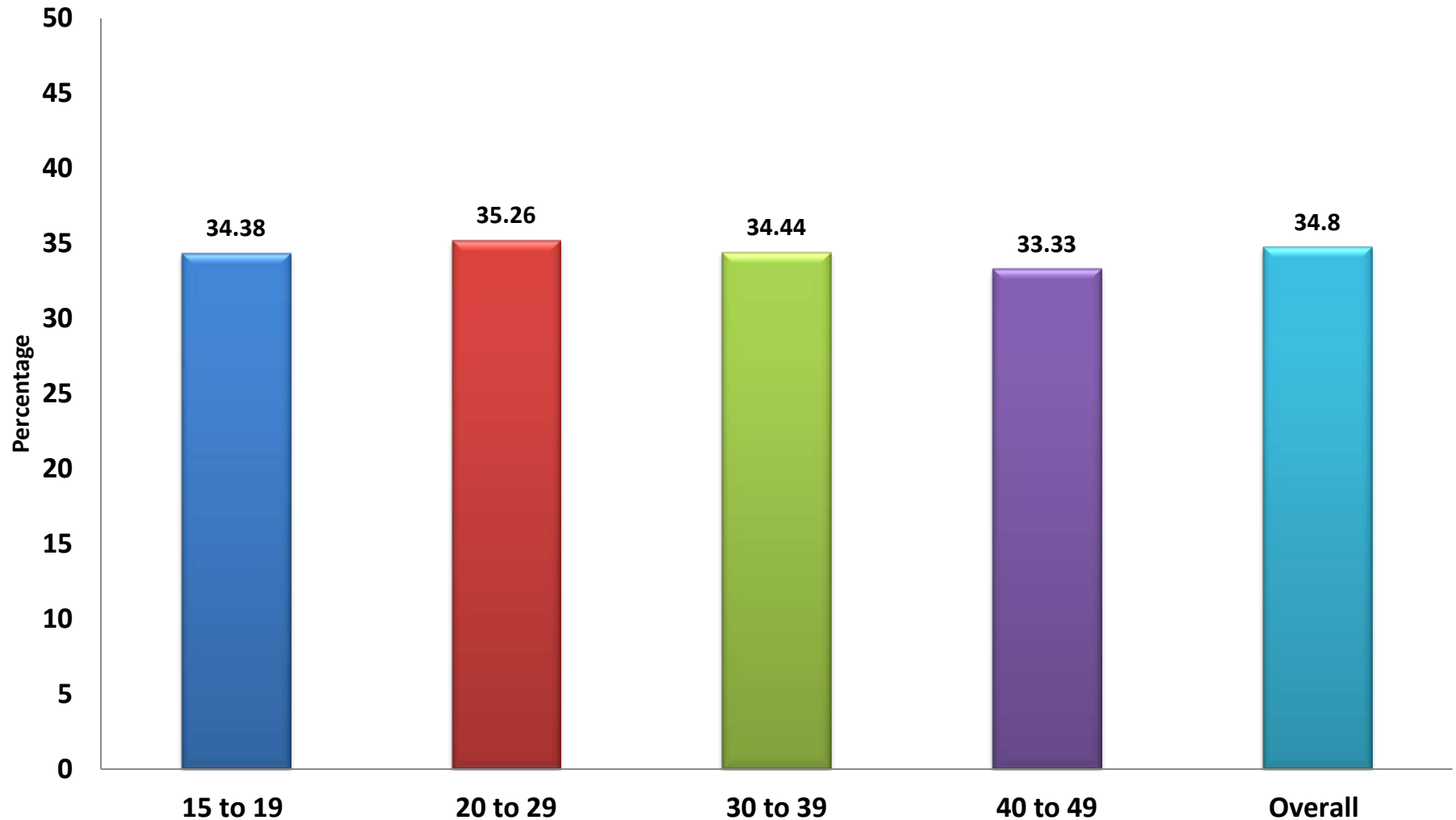
Maternal Health Status & Pregnancy

Parombo-Women of Variuos Age Groups Who Received or Bought Iron Tablets



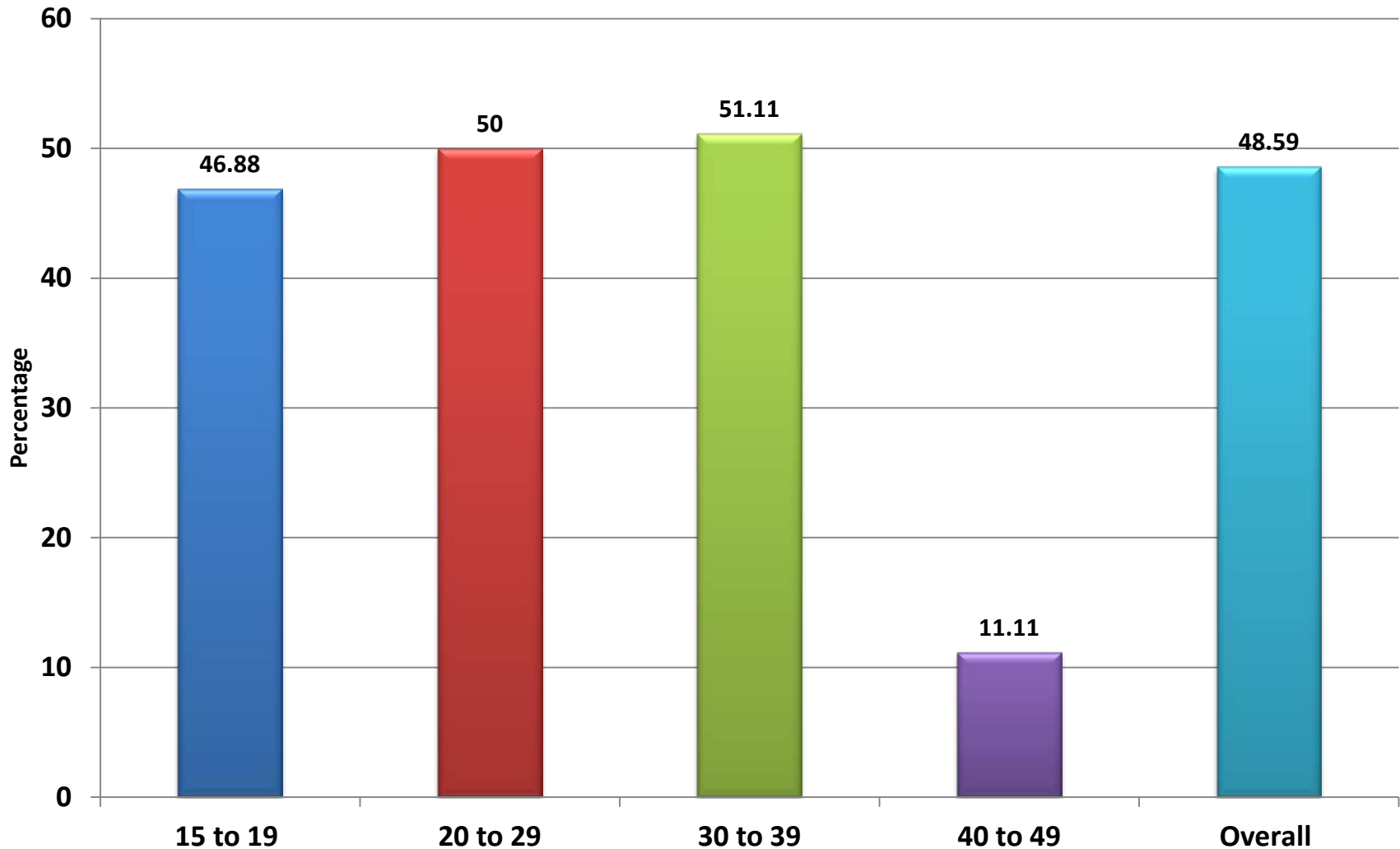
Maternal Health Status & Pregnancy

Parombo-Women of Various Age Groups who Received Deworming Drugs



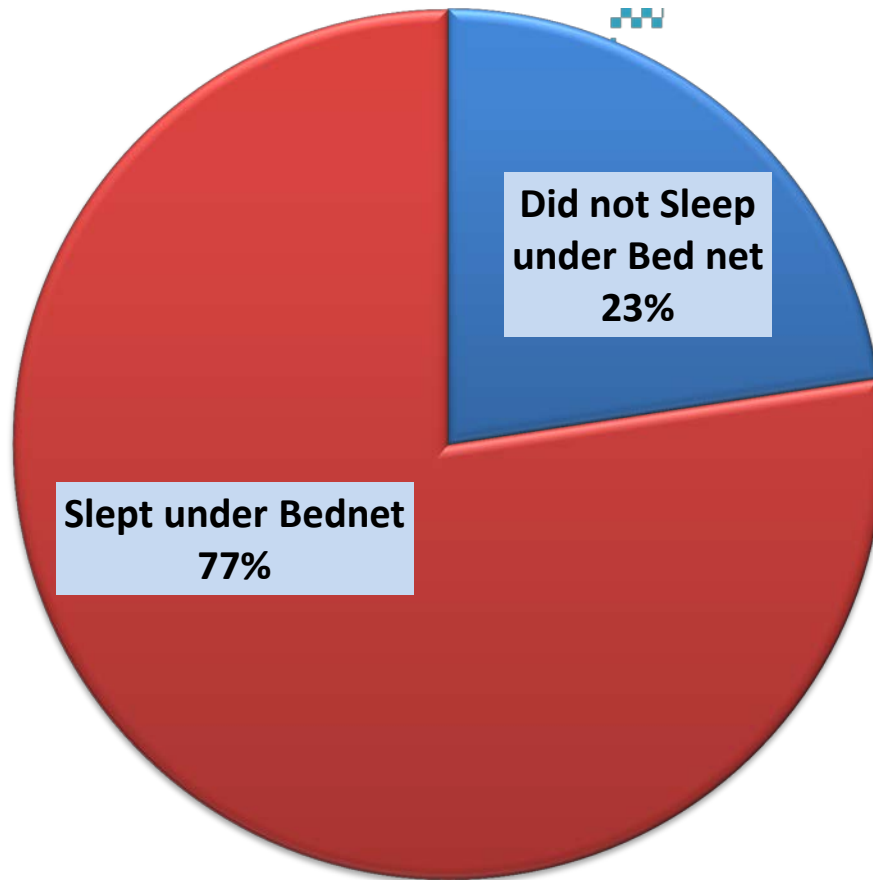
Maternal Health Status & Pregnancy

Parombo-Percentage of Women who Received HIV Testing



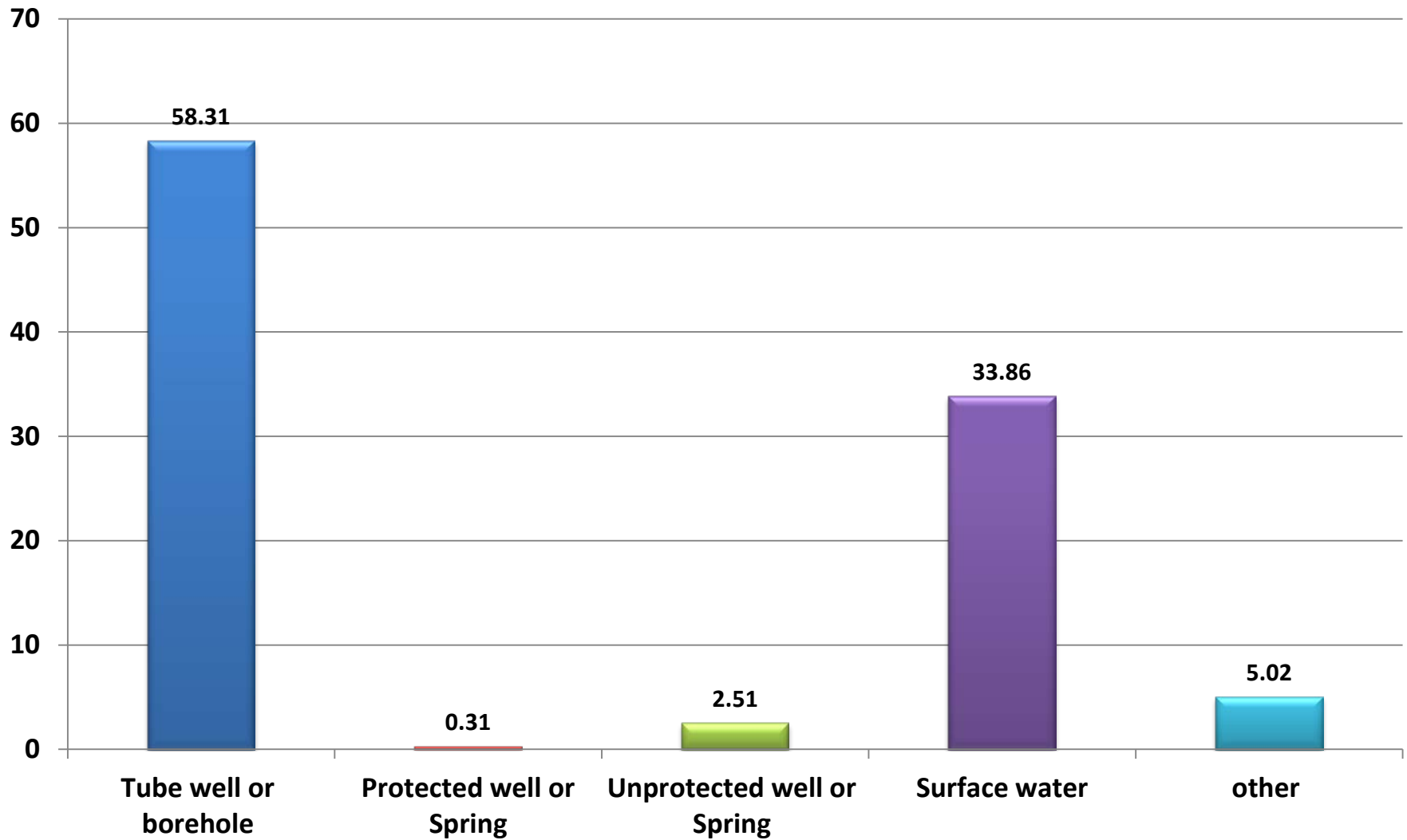
Maternal Health Status & Hygiene

Parombo-Percentage of Women Who Slept Under a Bednet



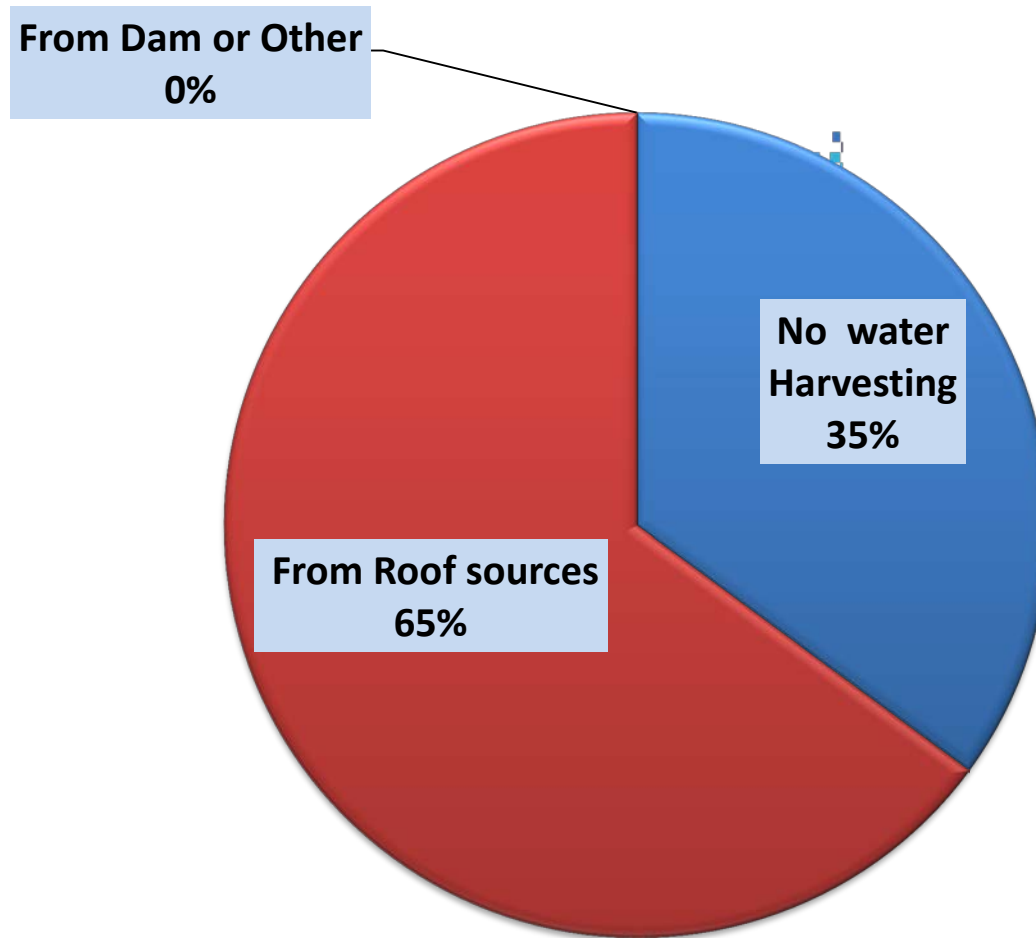
Water ,Sanitation & Hygiene

Parombo-Most Commonly Used Sources of Water



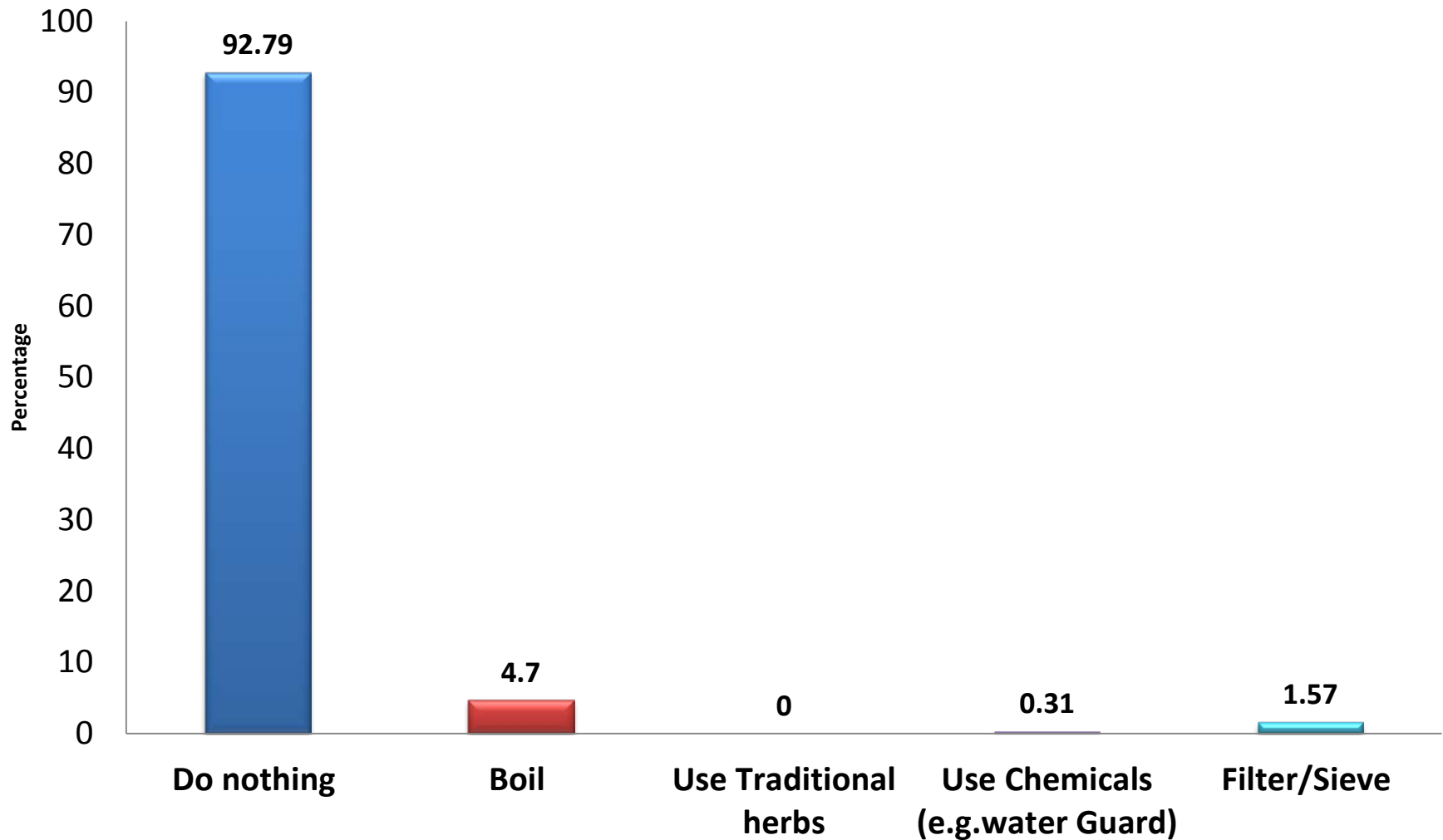
Water Sanitation & Hygiene

Parombo-Percentage of Households Harvesting Rain Water



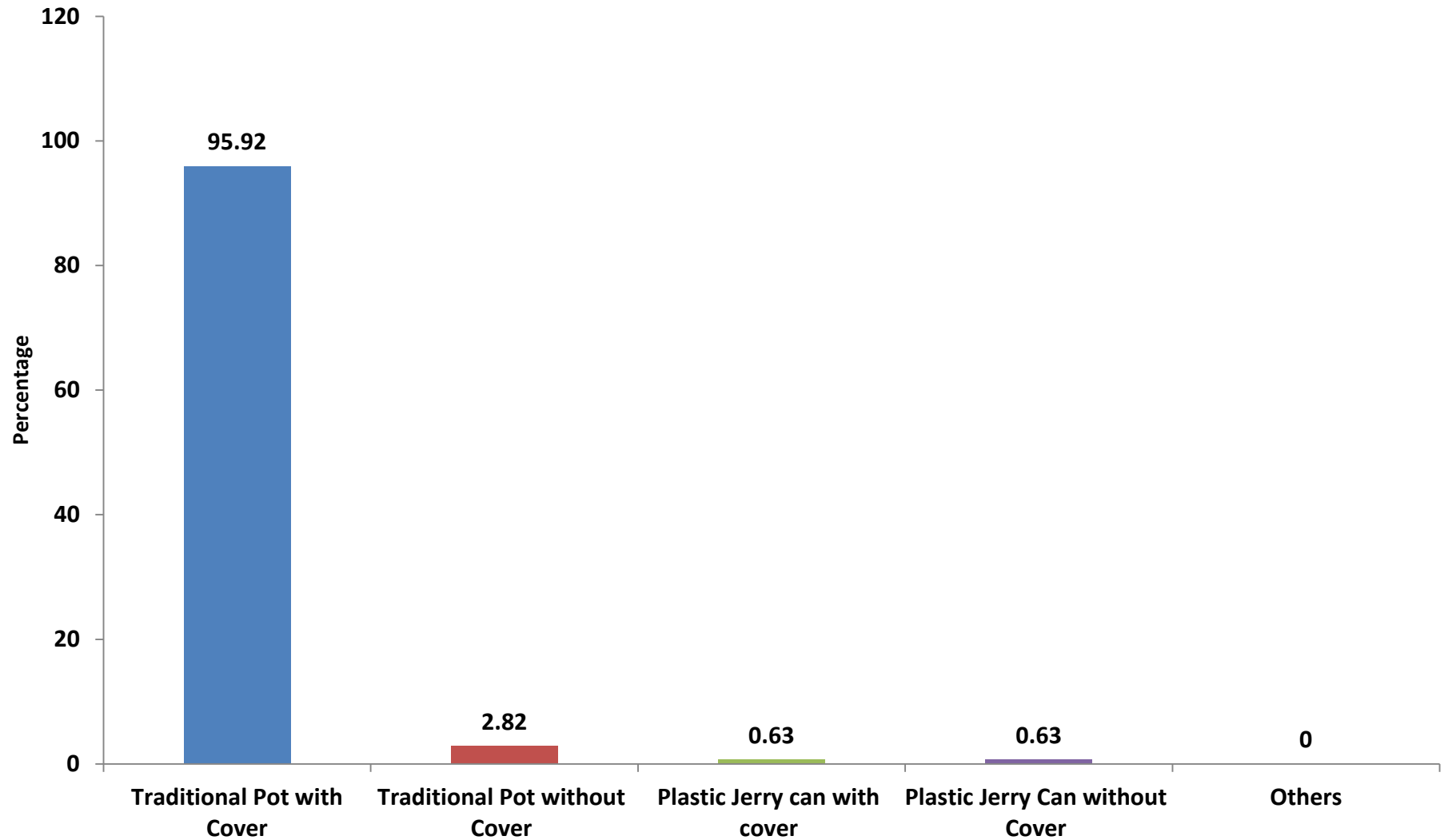
Water, Sanitation and Hygiene

Parombo-Common ways Households Treat Drinking water



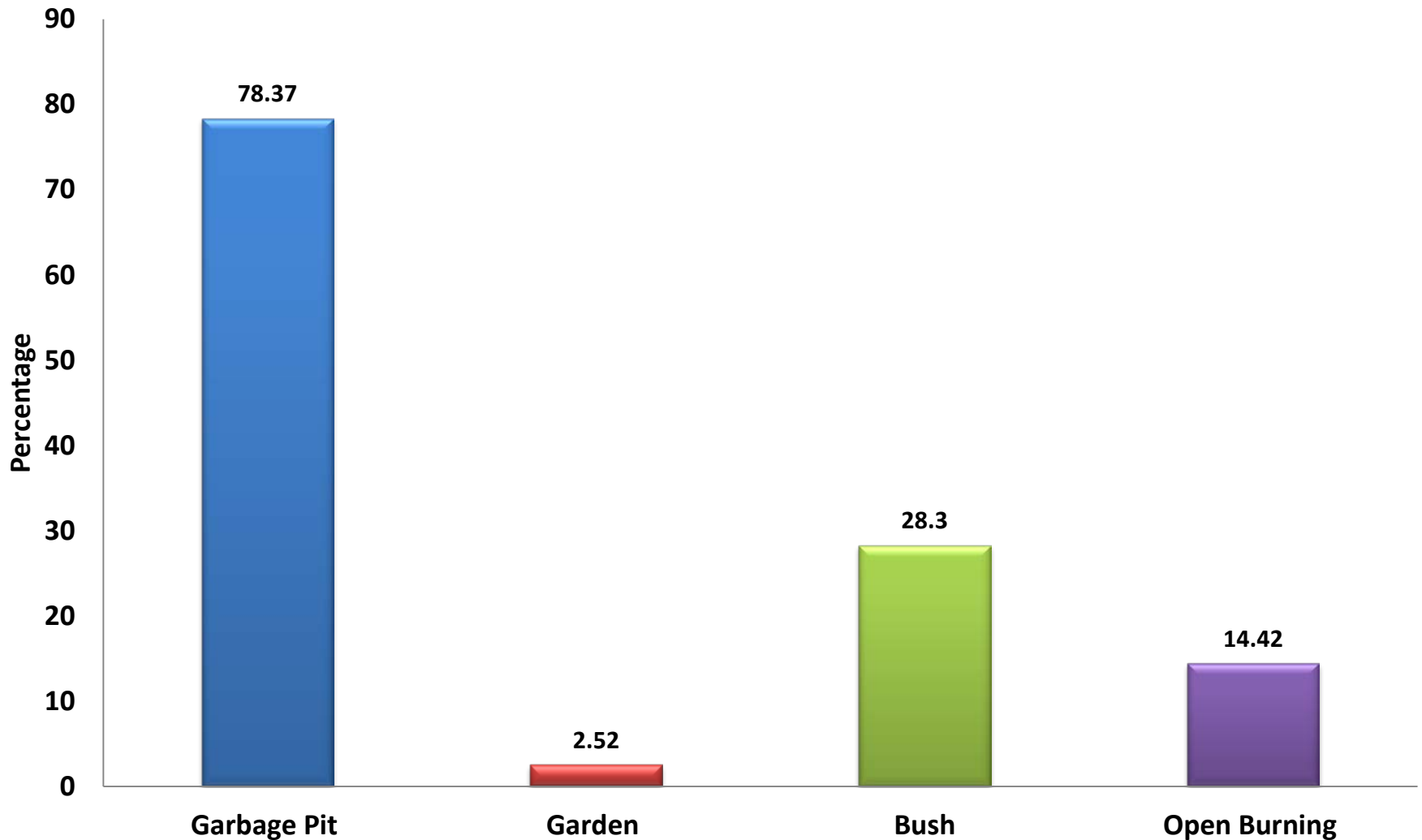
Water, Sanitation and Hygiene

Parombo-Where Households Store Drinking Water



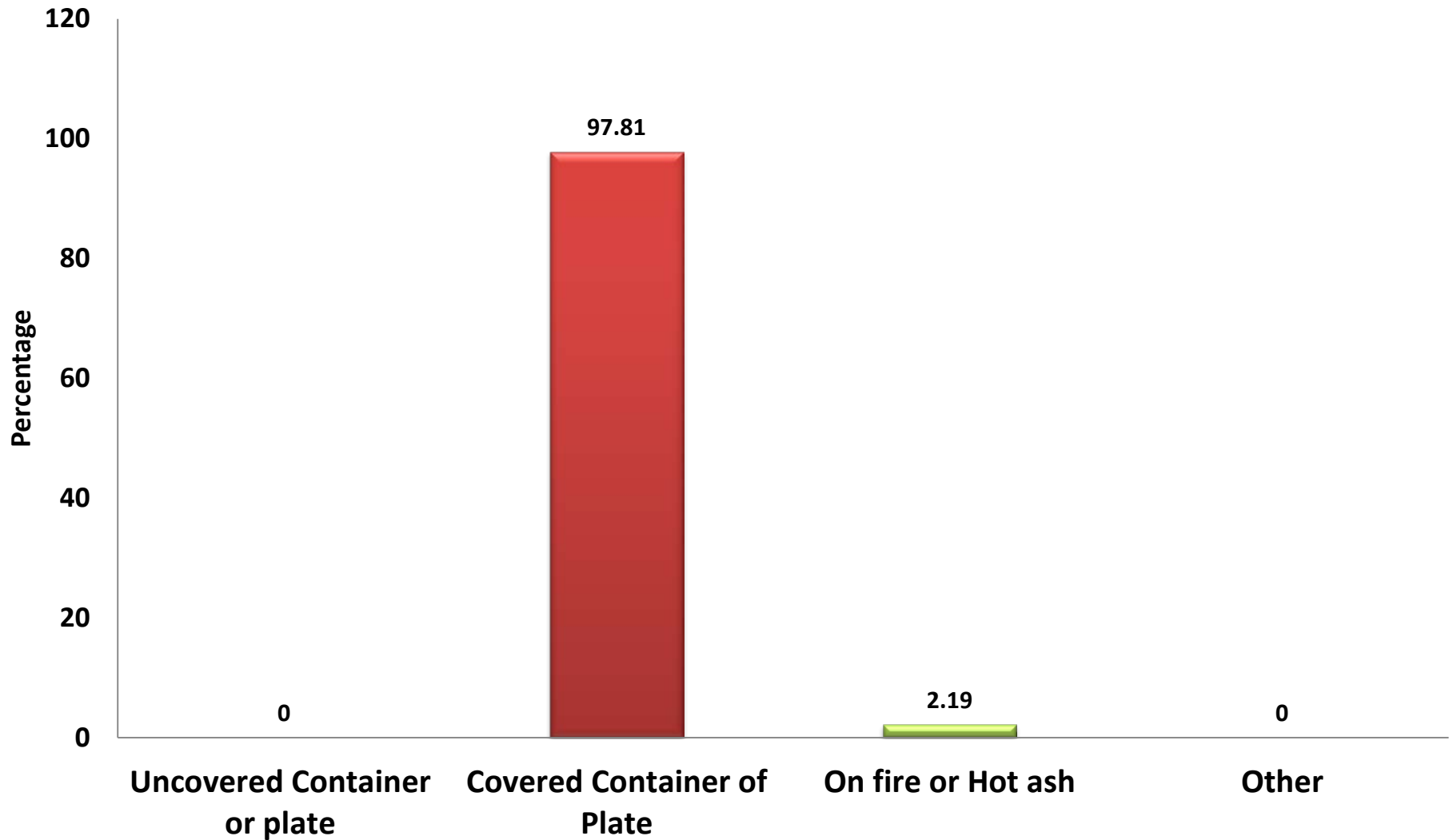
Water, Sanitation and Hygiene

Parombo-Household Garbage Disposal Methods (n=319)



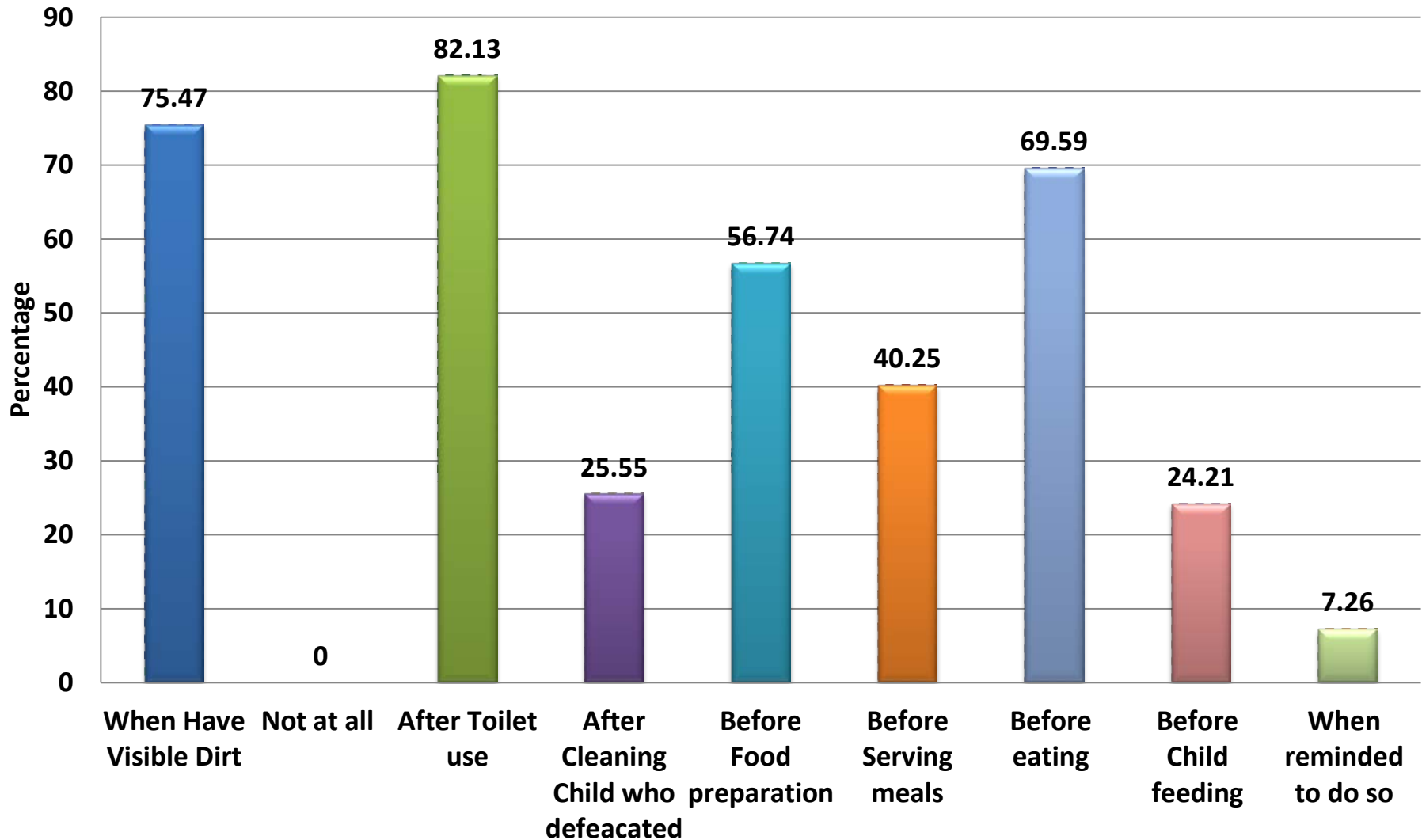
Water, Sanitation & Hygiene

Parombo-Common Ways Food Prepared is Stored



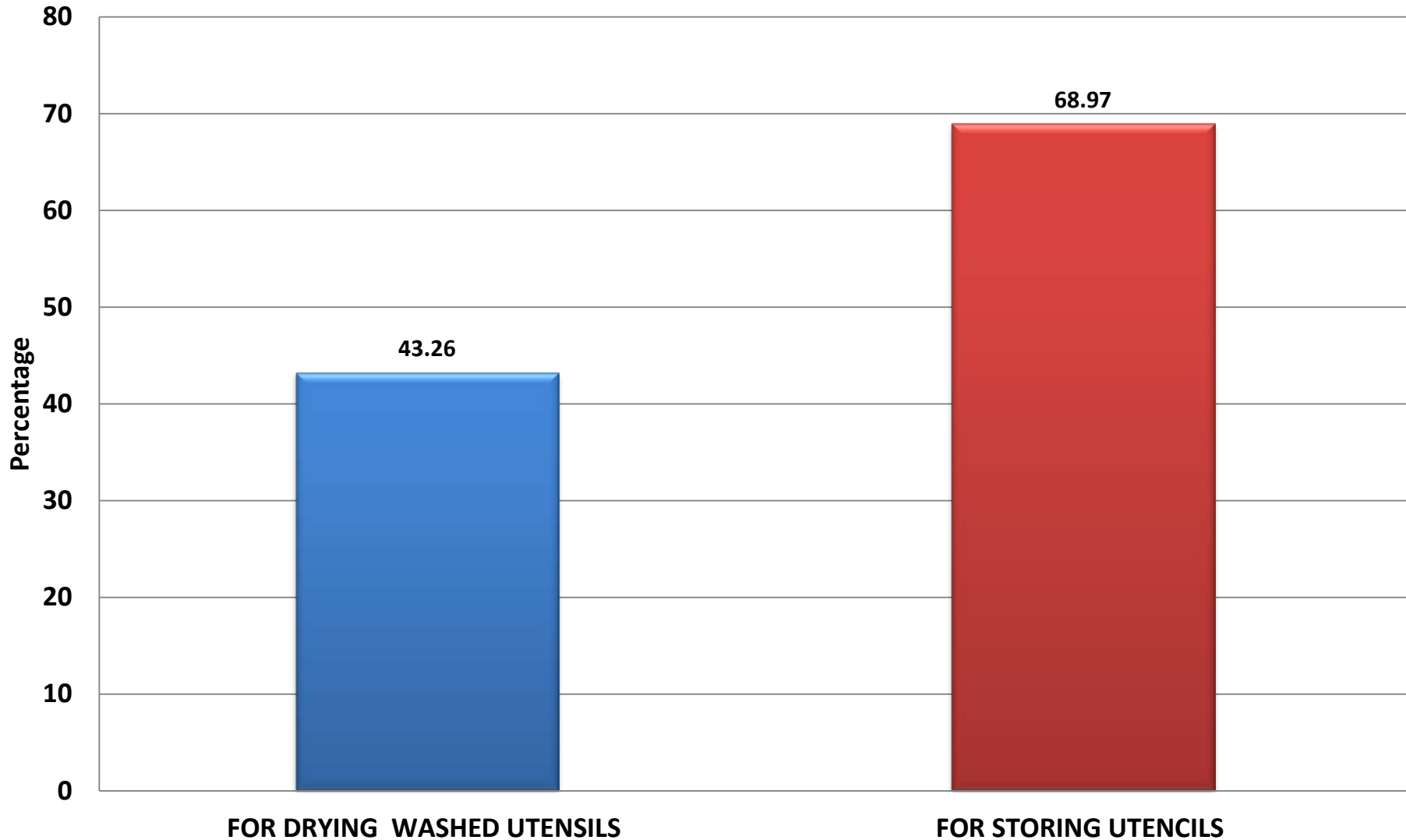
Water, Sanitation & Hygiene

Parombo-Time When Repondents Wash Hands



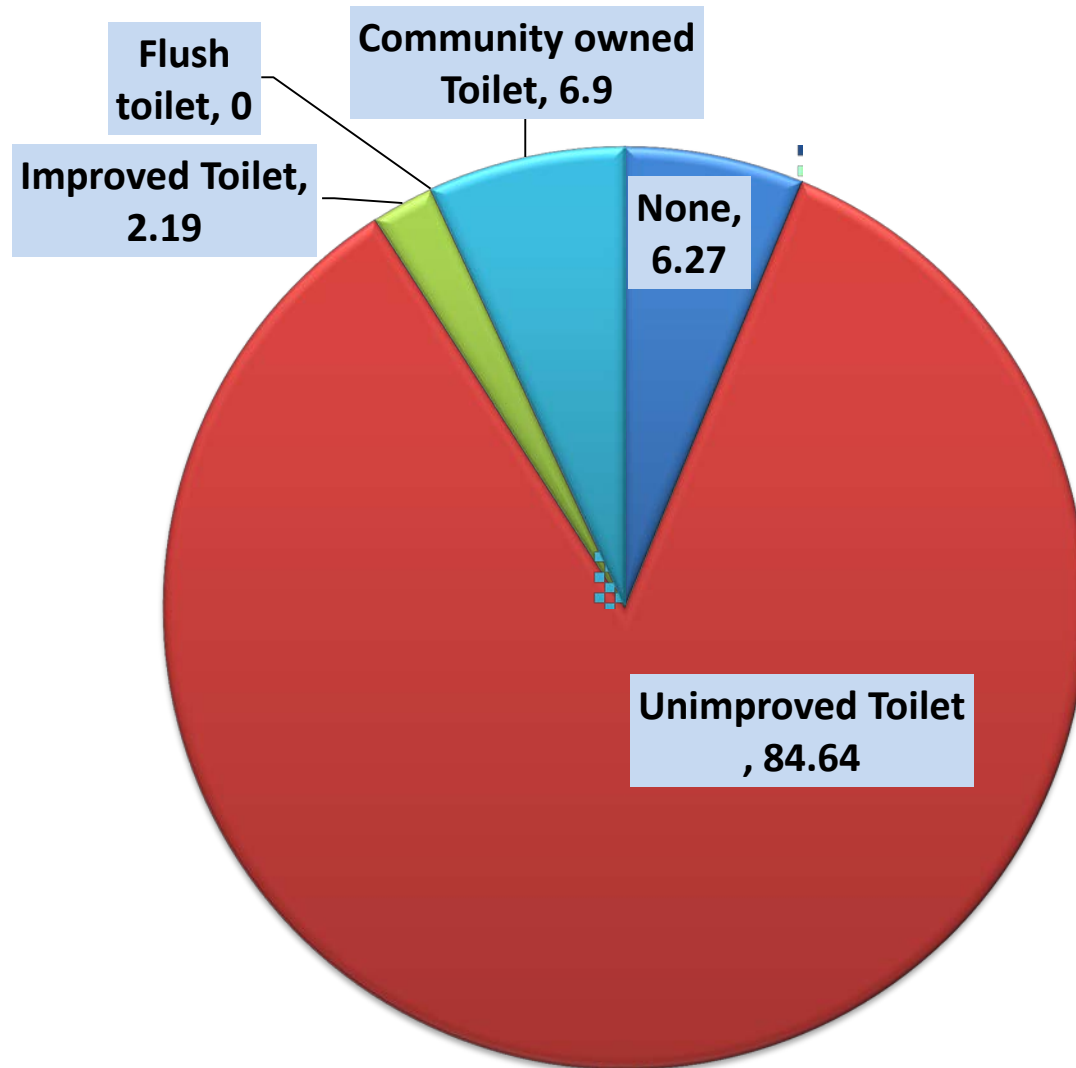
Water, Sanitation & Hygiene

Parombo-Household Rack use and Ownership



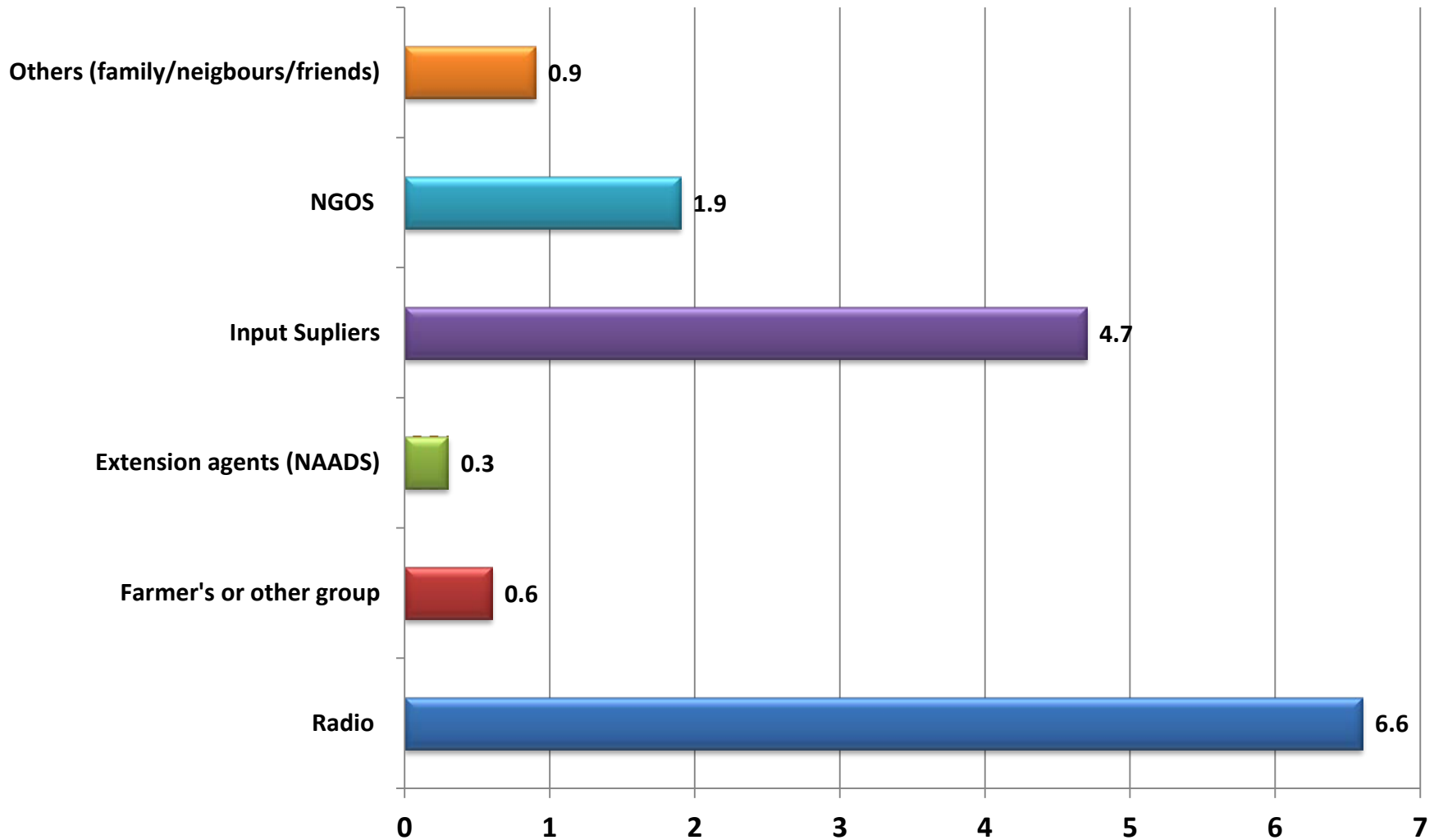
Water Sanitation & Hygiene

Parombo-Common Types of Toilet used by Households



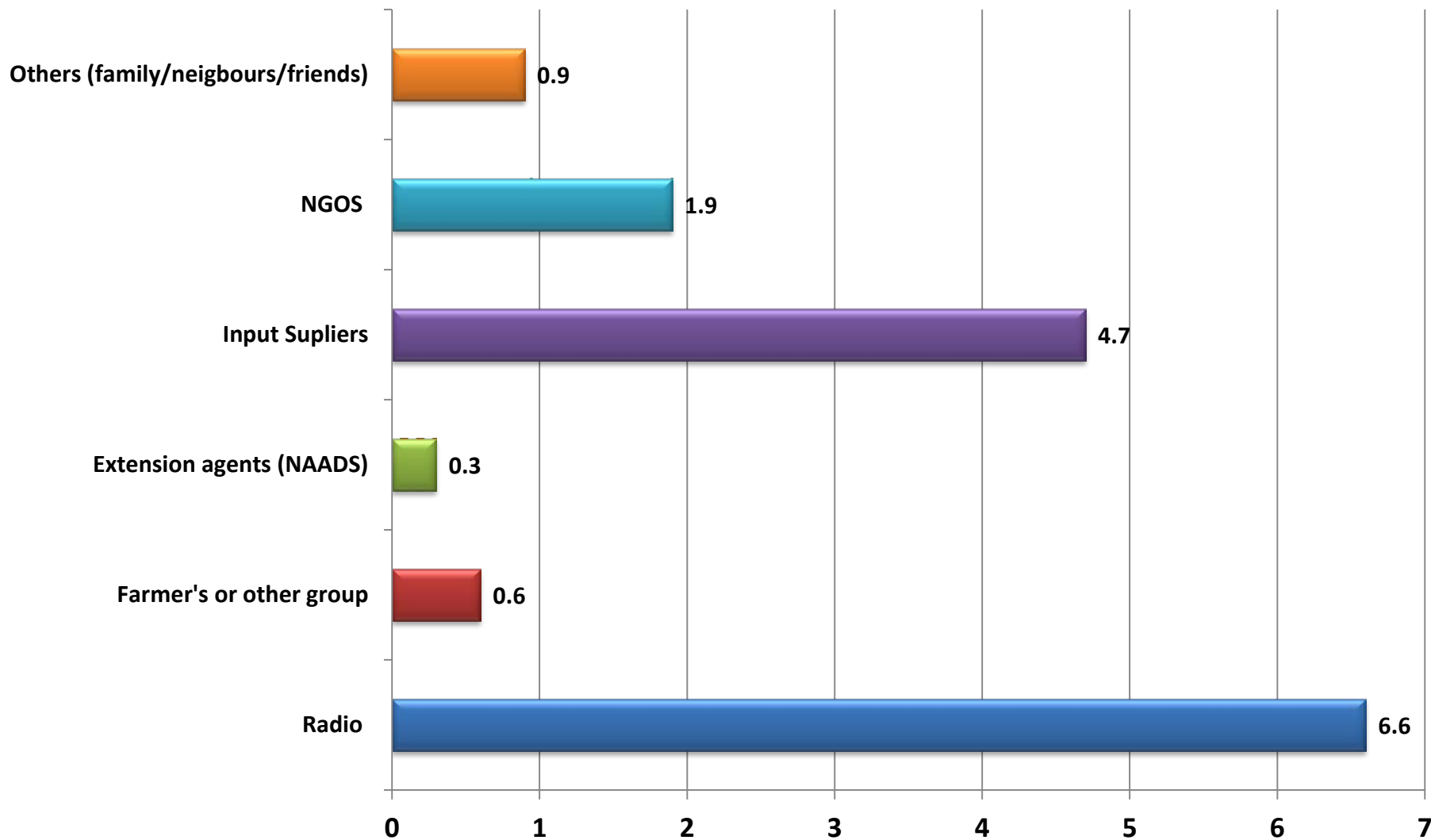
Sources of Agricultural information

Parombo-Sources of Nutrition Information



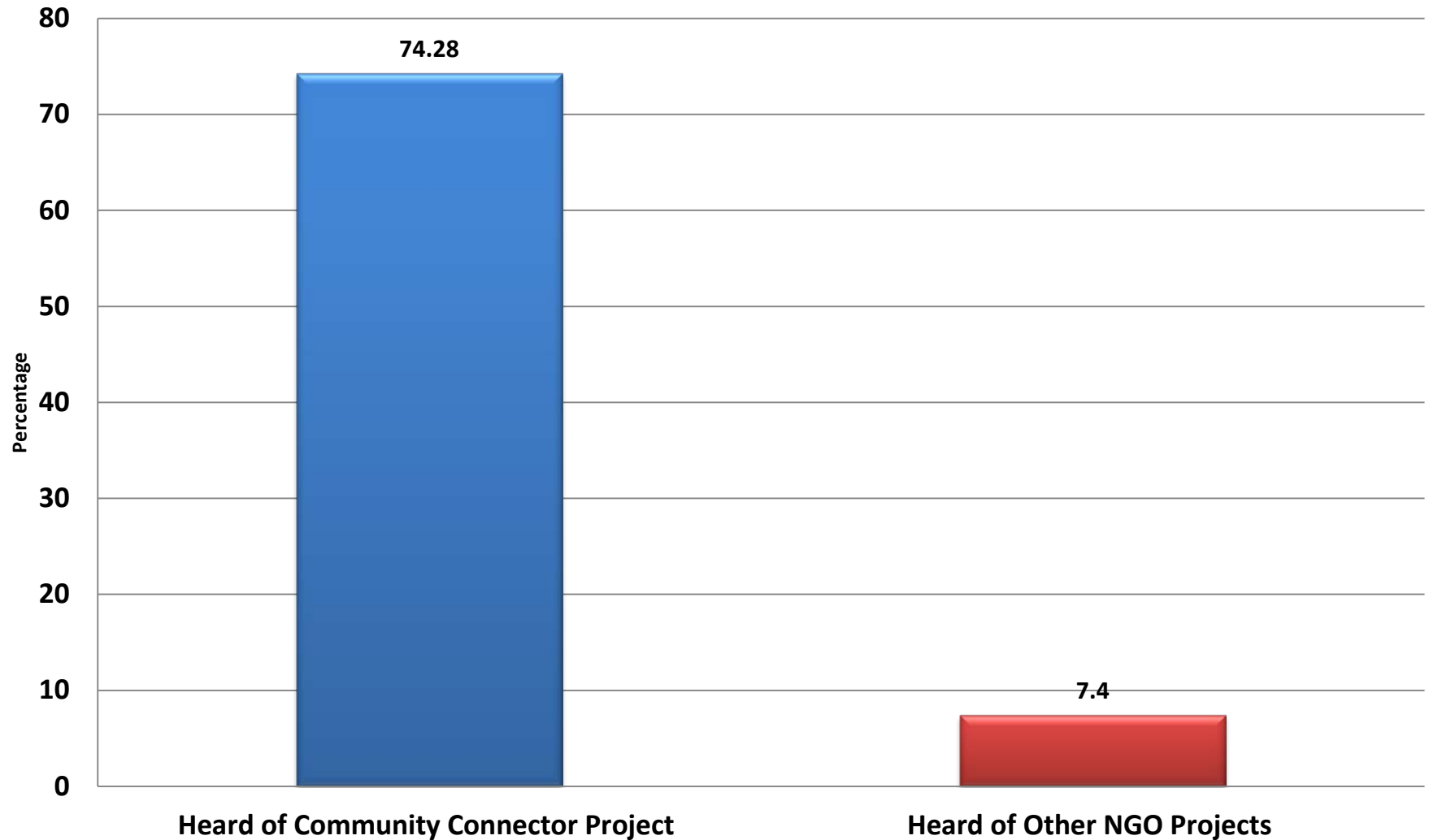
Sources of Nutrition information

Parombo-Sources of Nutrition Information



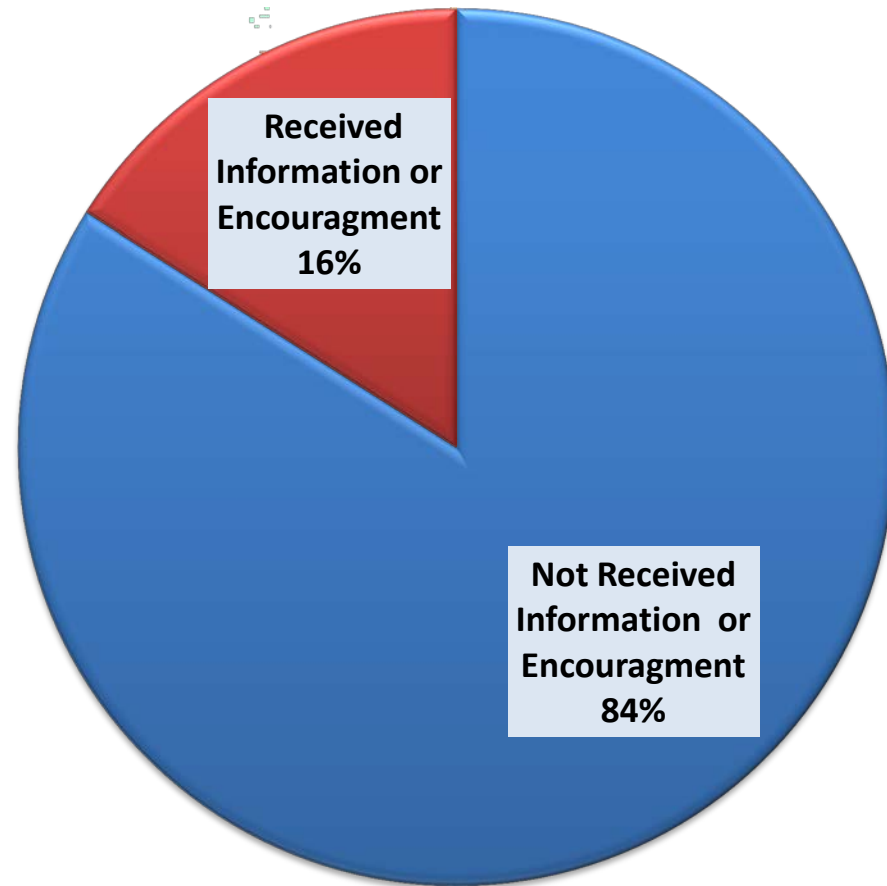
SOCIAL PARTICIPATION, ACCESS TO INFO. , PROGRAM EXPOSURE

Parombo - Program Exposure & Uptake



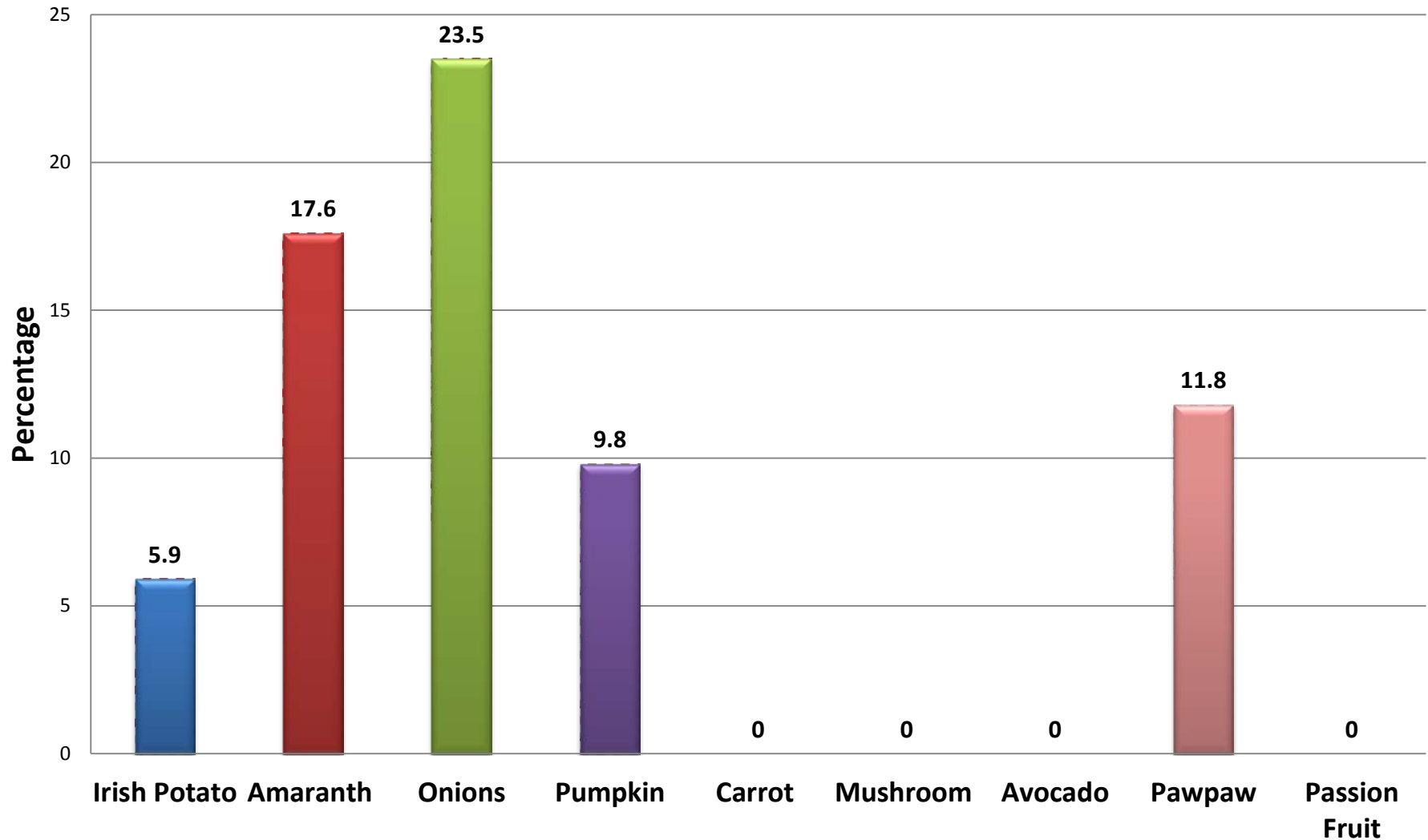
SOCIAL PARTICIPATION, ACCESS TO INFO. , PROGRAM EXPOSURE

Parombo-Receipt of Information to Increase Cultivation of Crops



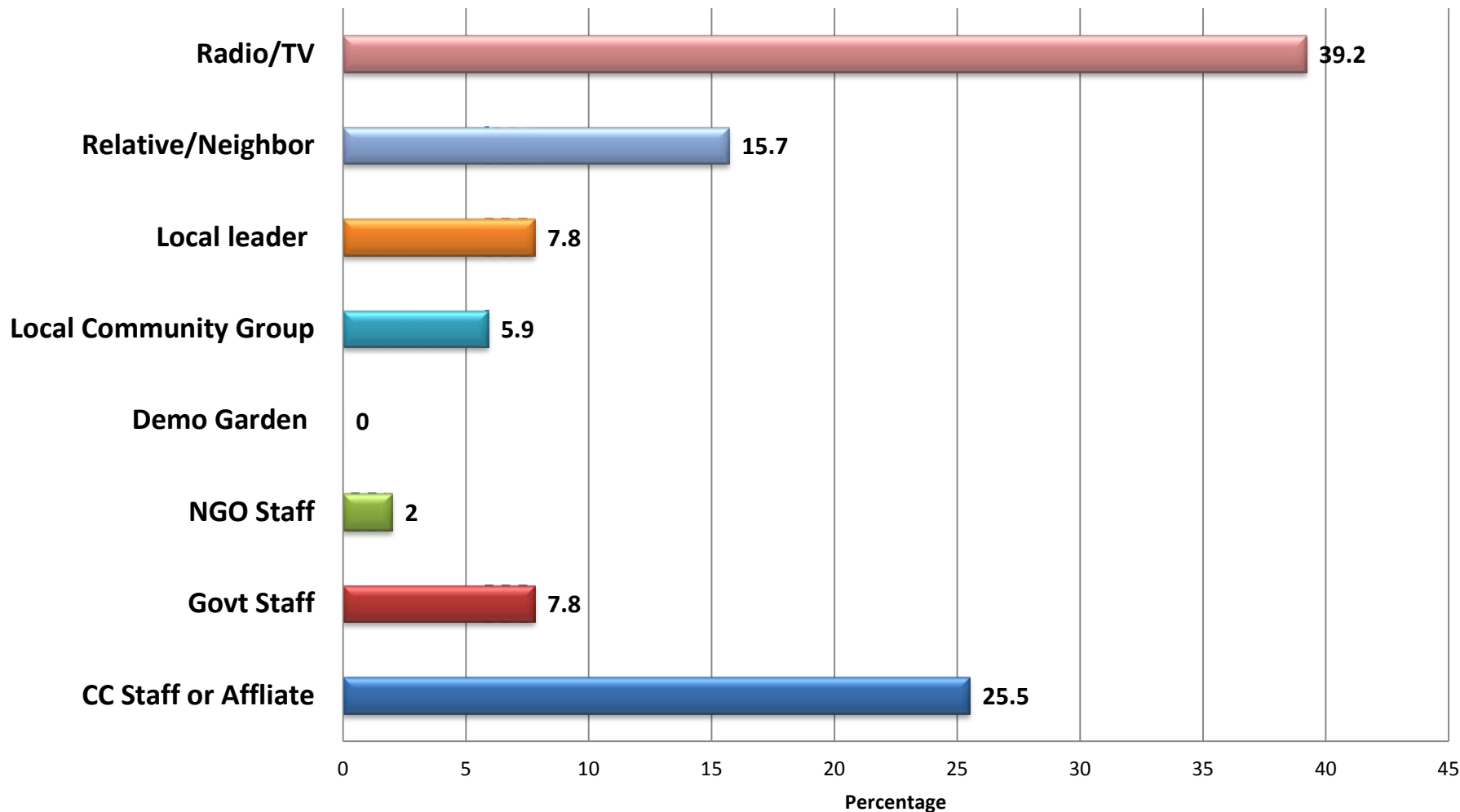
SOCIAL PARTICIPATION, ACCESS TO INFO. , PROGRAM EXPOSURE

Parombo -Crops Households were Encouraged to Produce



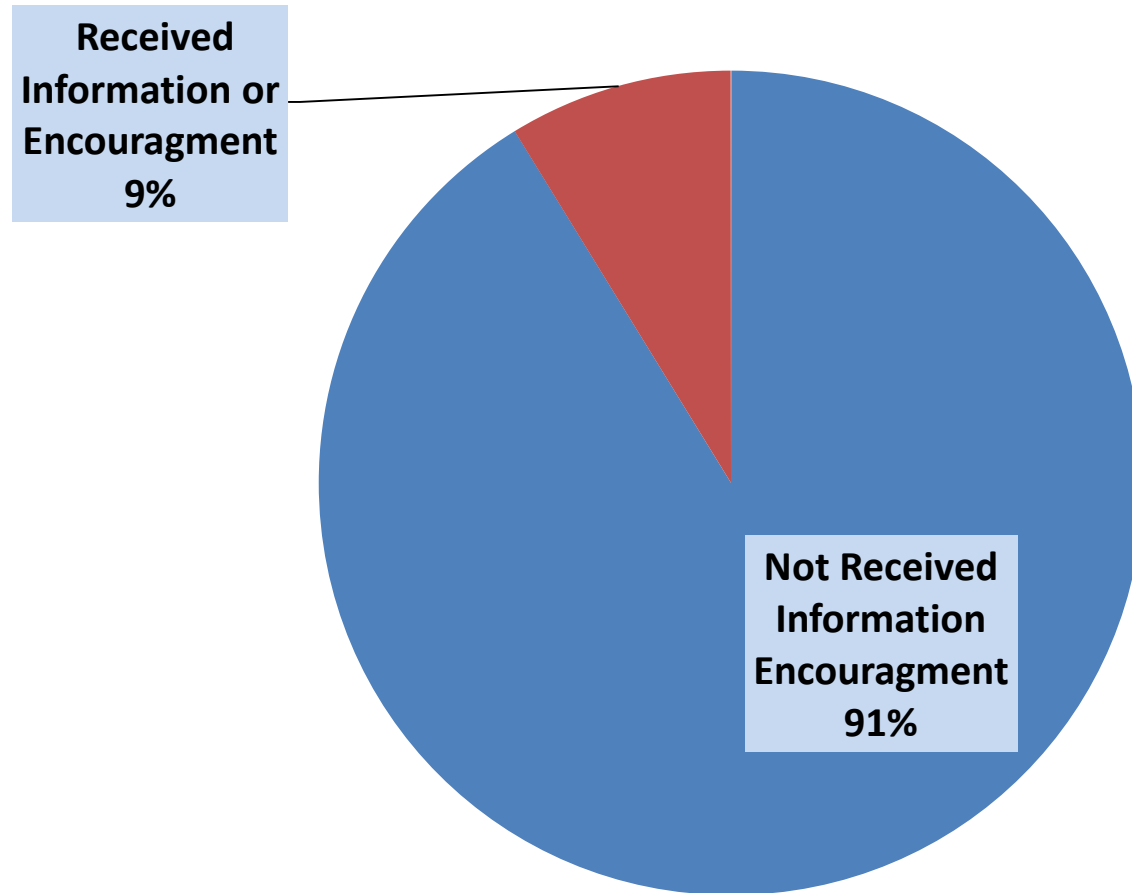
Social Participation , Access To Info. & Program Exposure

Parombo-Source of Crop Infomation or Encouragement



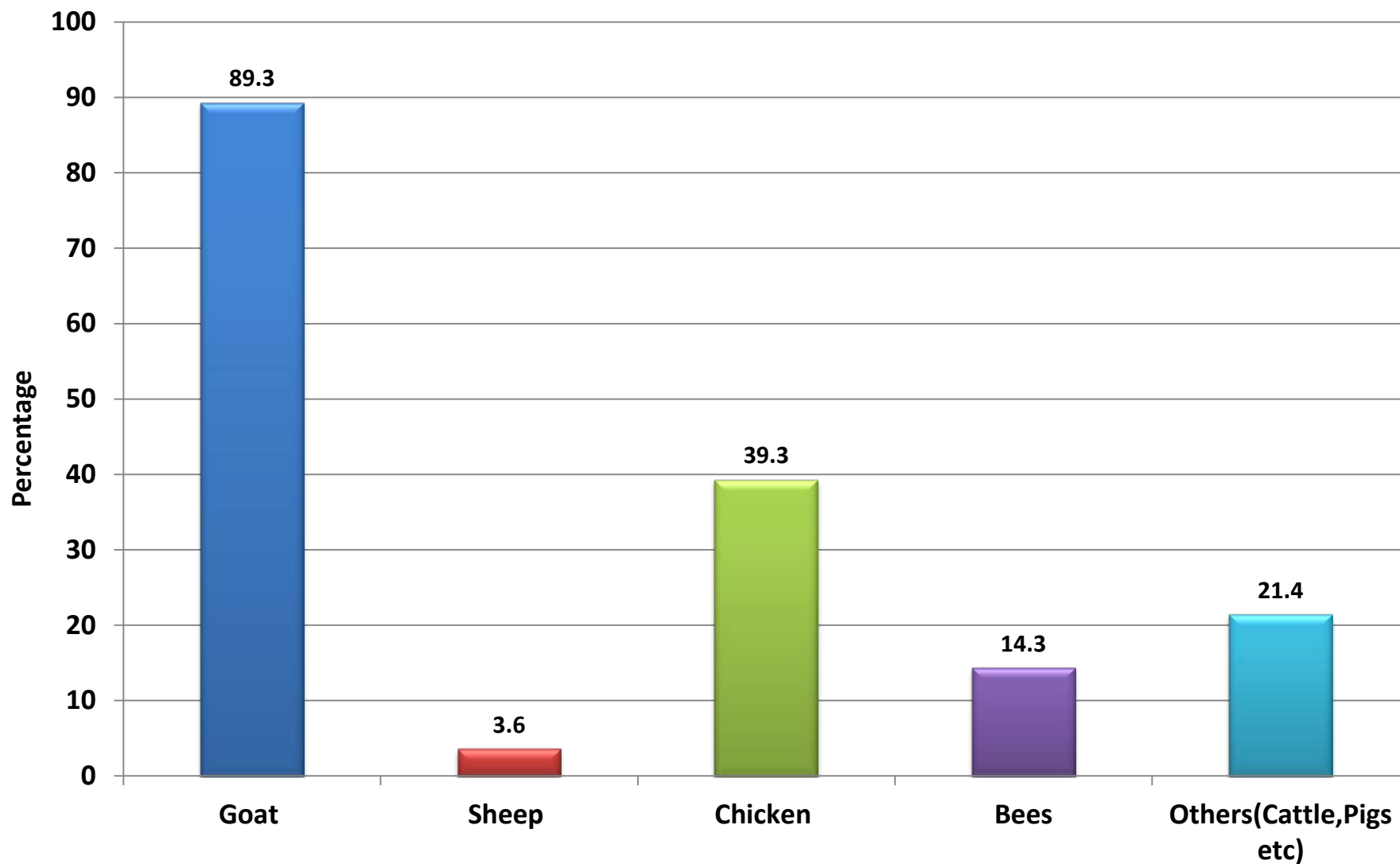
Social Participation , Access To Info. , Program Exposure

Parombo-Receipt of information or Encouragement to Rear Certain livestock



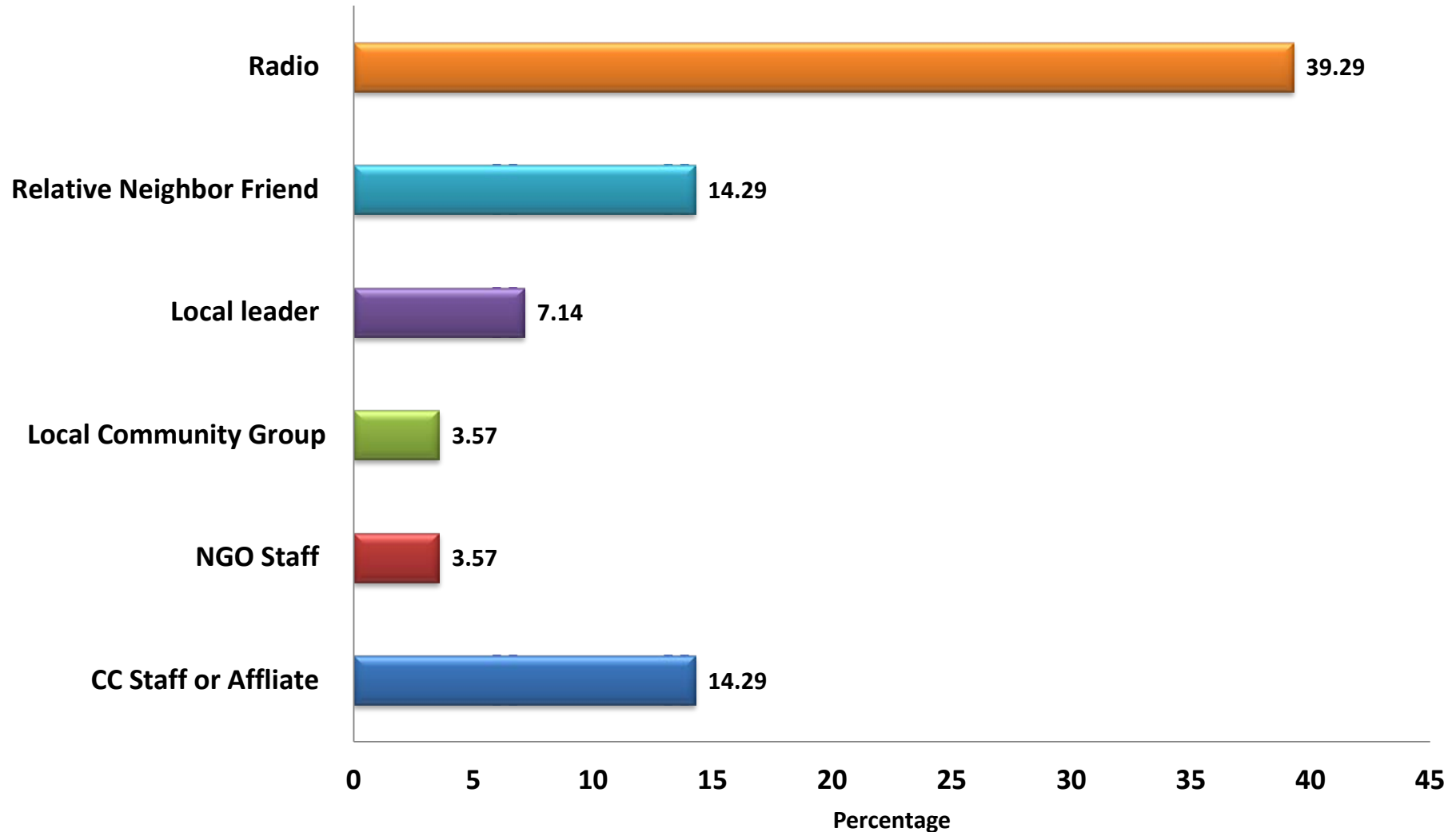
Social Participation , Access To Info. , Program Exposure

Parombo- Livestock that Households were Encouraged to Rear



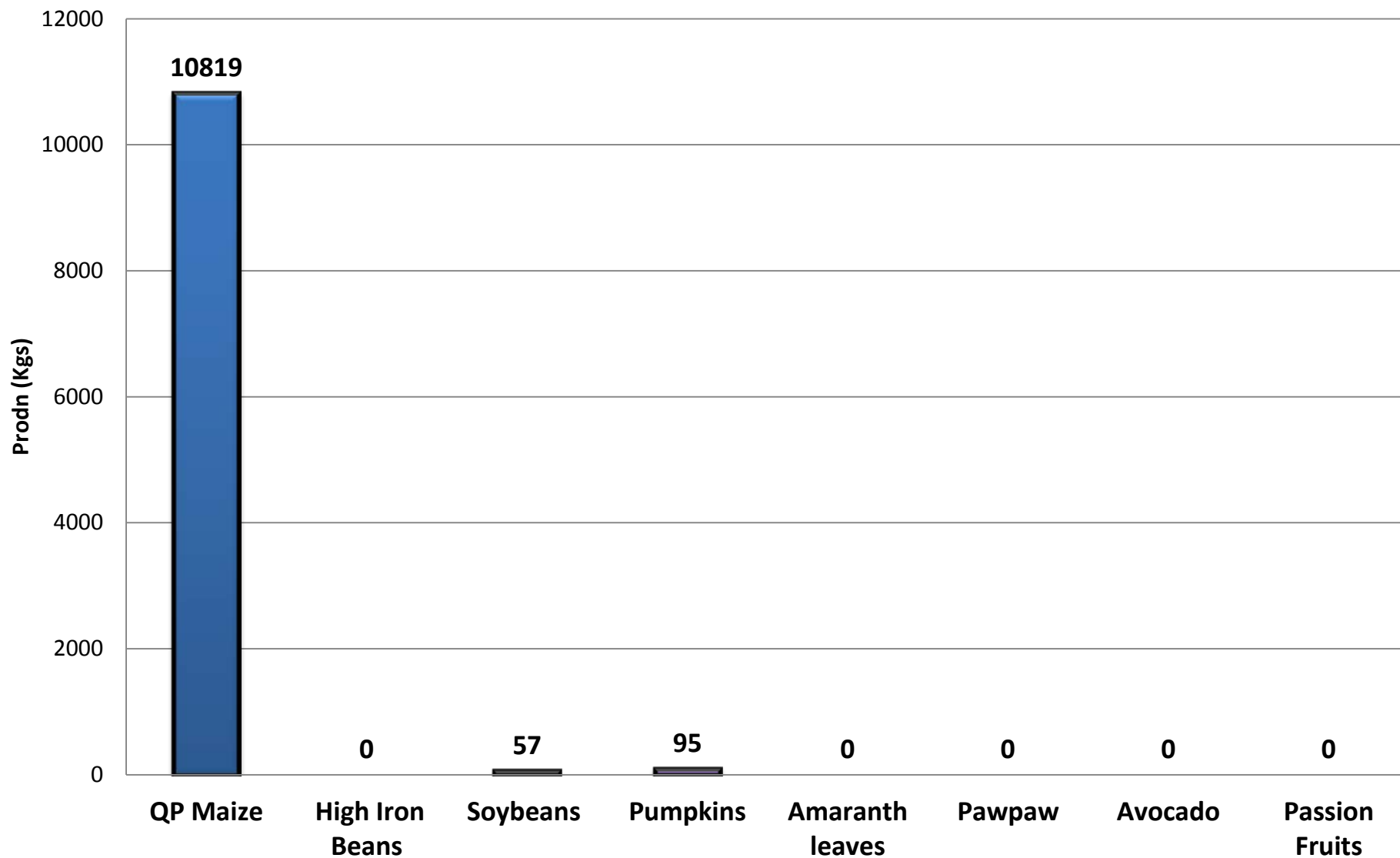
Social Participation , Access To Info. , Program Exposure

Parombo -Source of Information or Encouragement to Rear Livestock



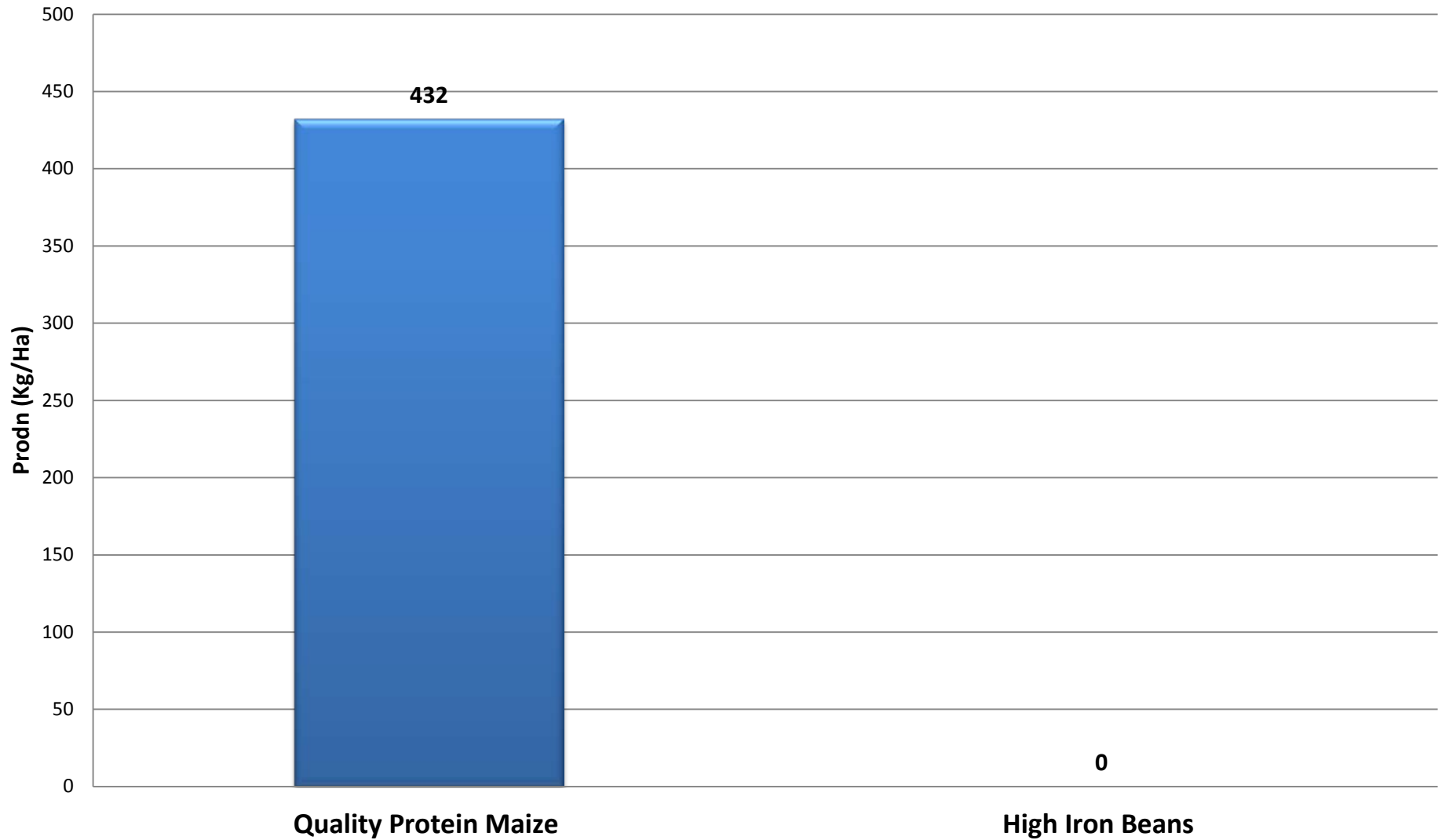
AGRICULTURAL PRODUCTION

Parombo -Production (Kgs) of Key Nutrient Sensitive Crops



AGRICULTURAL PRODUCTION

Parombo - Production (Kg/Ha) of Selected Nutrient Sensitive Crops



AGRICULTURAL PRODUCTION

Parombo- Percentage of Households Using Varouis Technologies/ Practices

