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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

KIBIITO SUBCOUNTY



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

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

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- 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 Kibiito Sub county 310 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

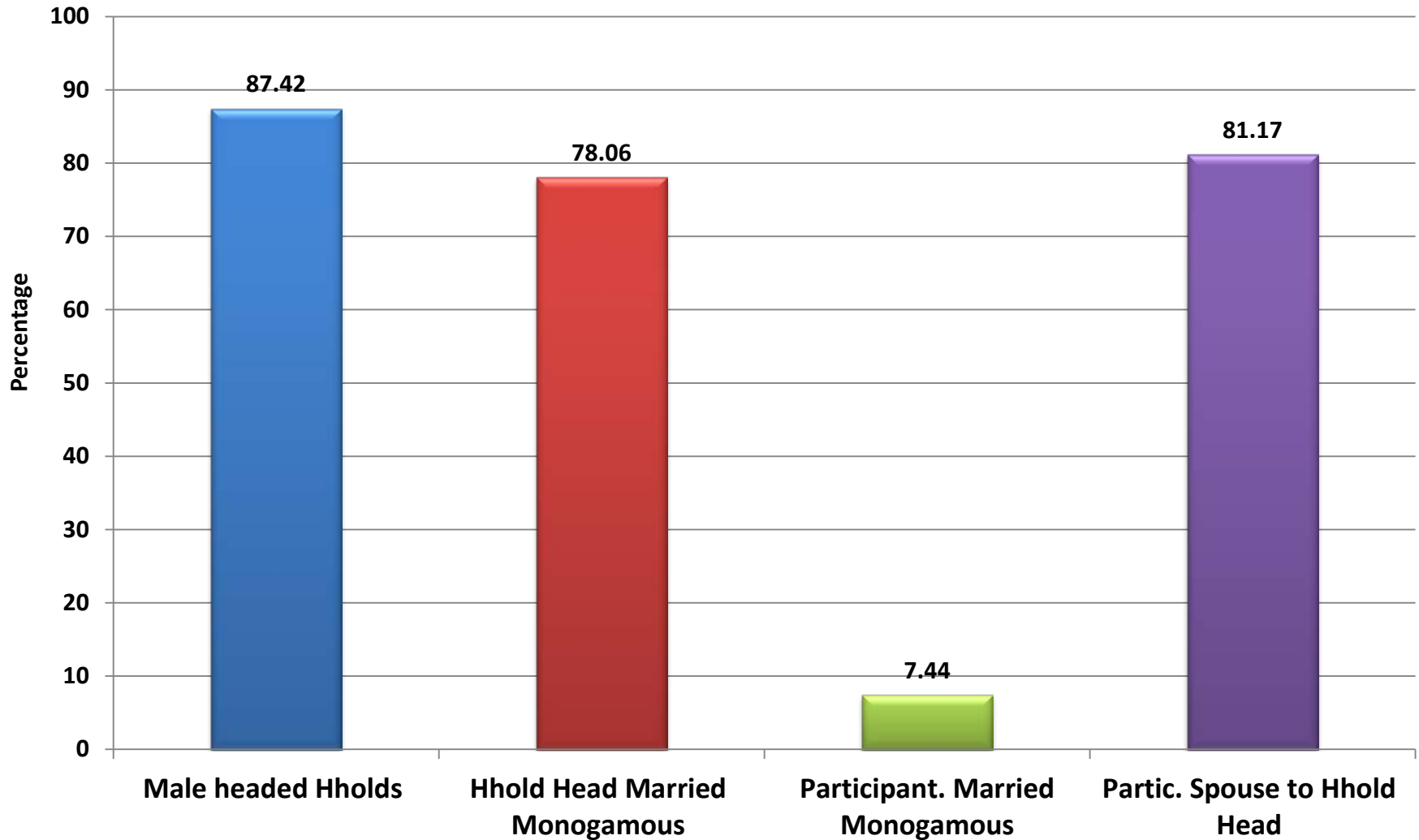
Data Collected

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

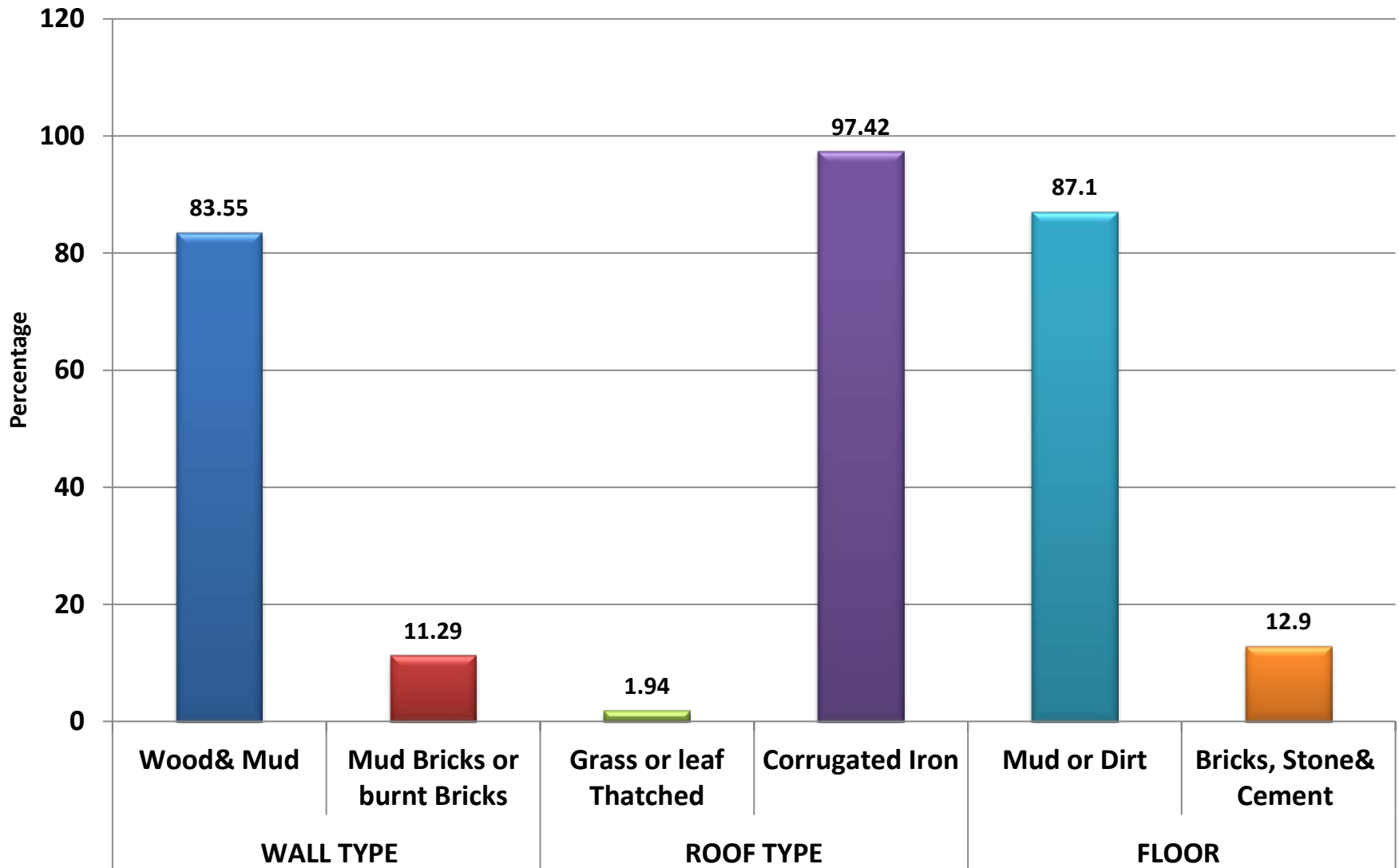
Household Demographics

Kibiito-Household Characteristics



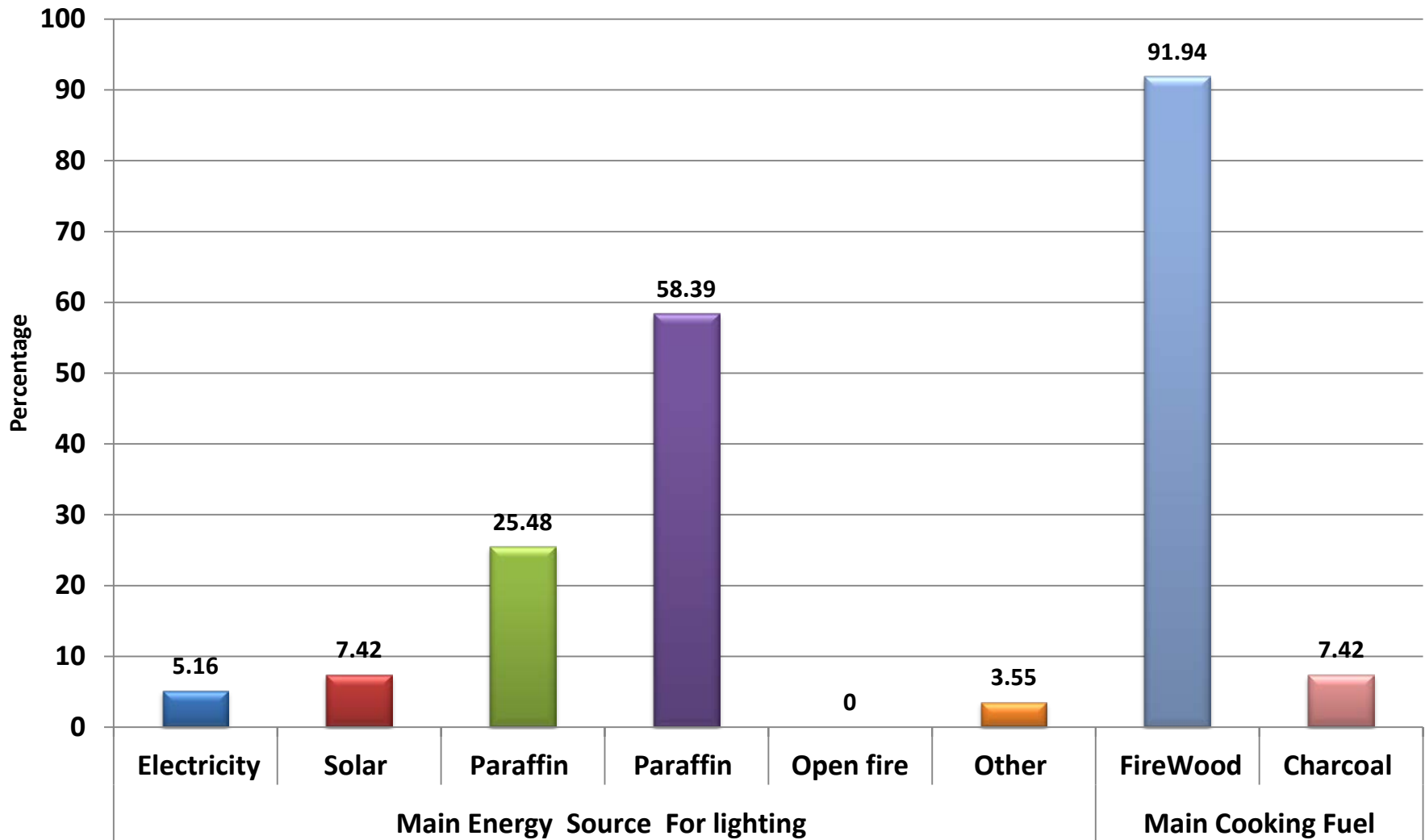
Housing Characteristics

Kibiito- Household Housing Characteristics



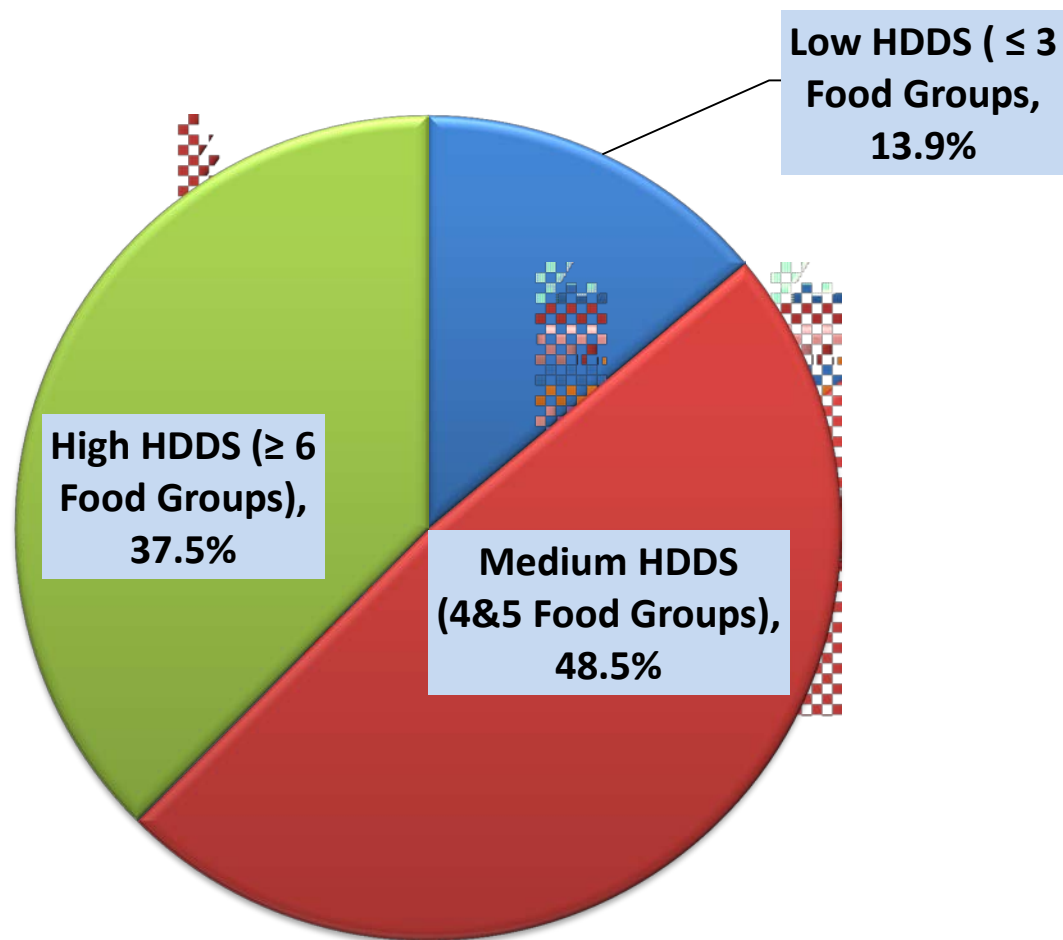
Household Characteristics

Kibiito -Households' Main Lighting Source and Cooking Fuel



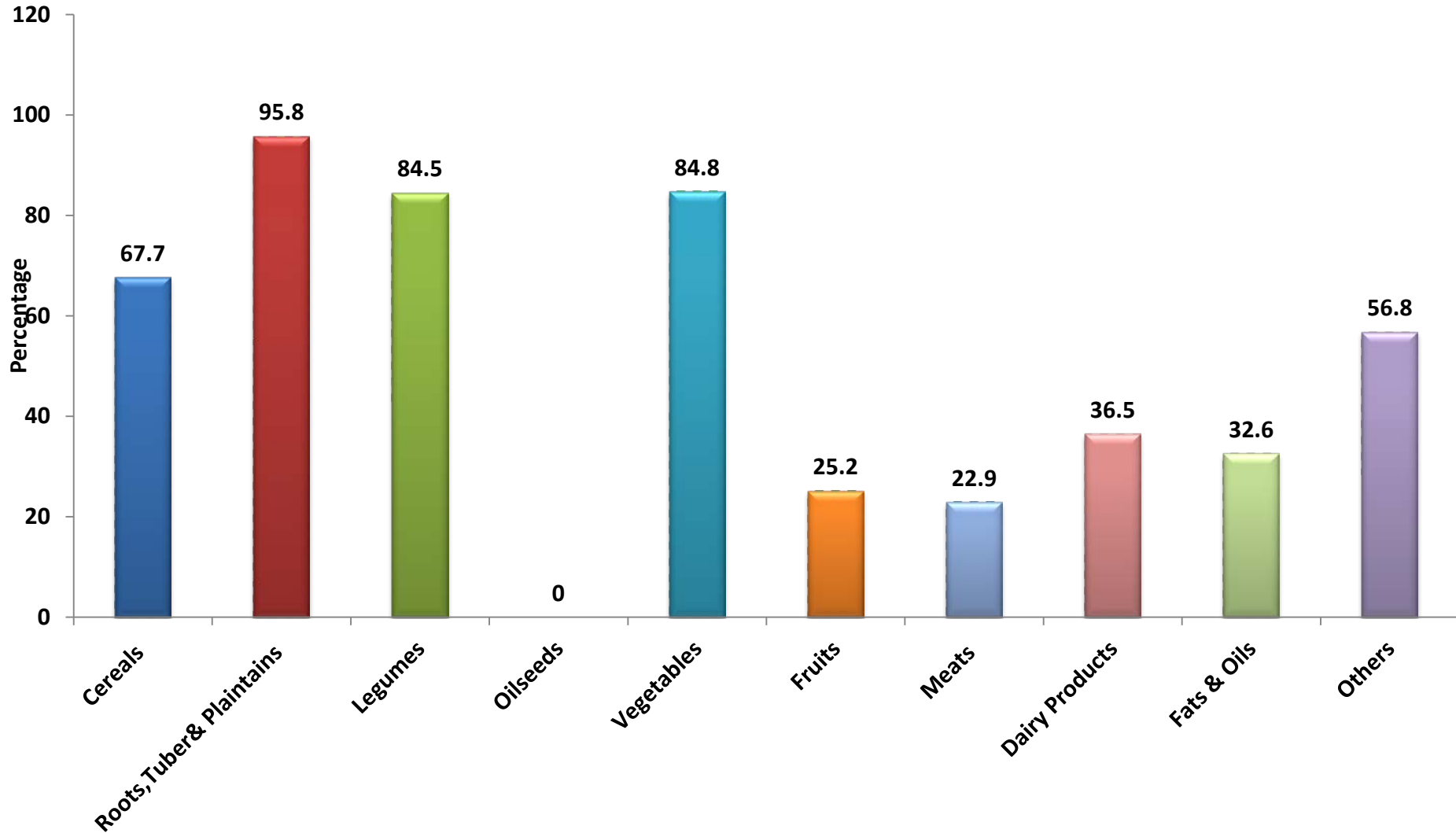
Household Dietary Diversity Score

Kibiito - Household Dietary Diversity Score



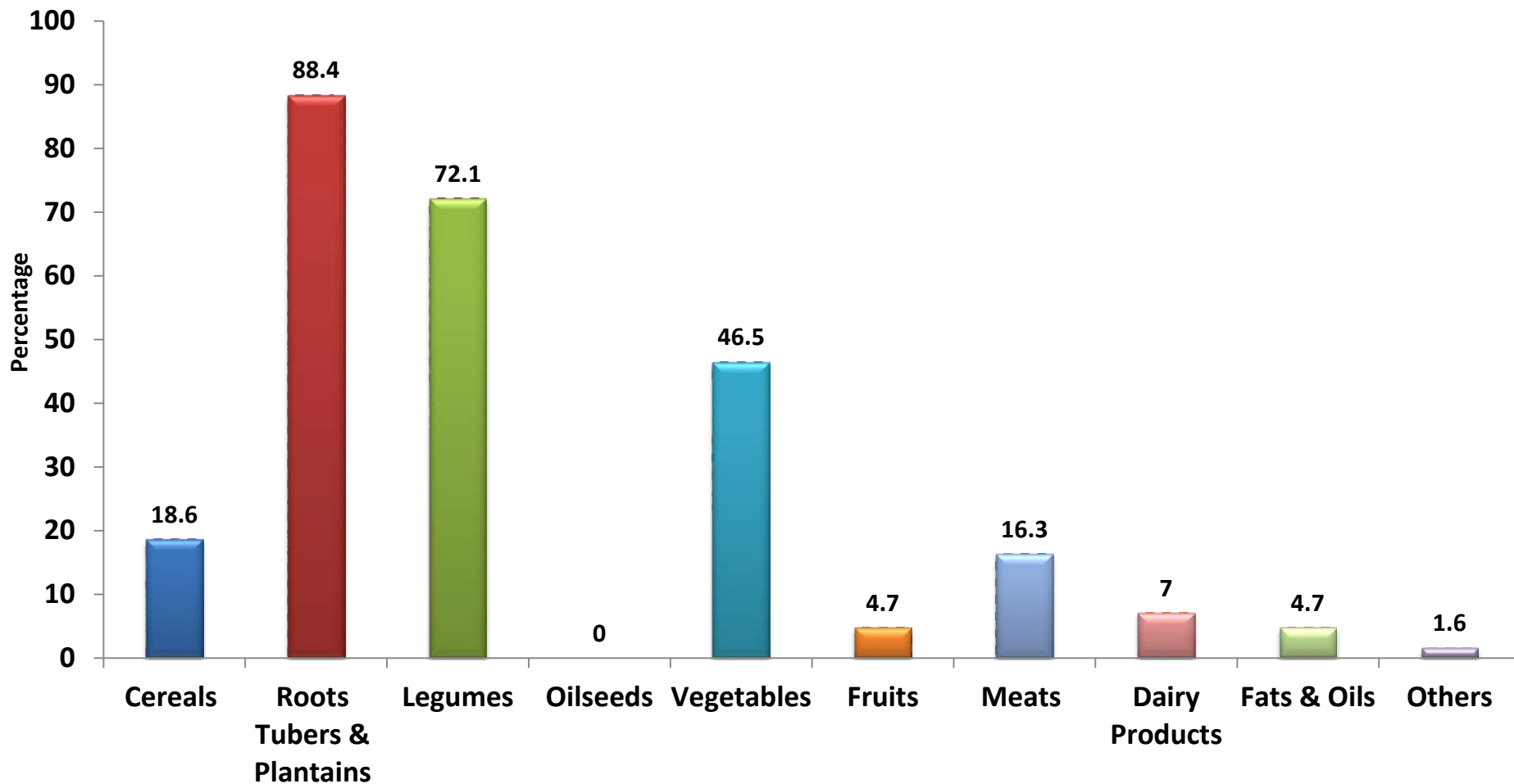
Consumption of Major Food Groups

Kibiito- Food Groups Consumed by Households



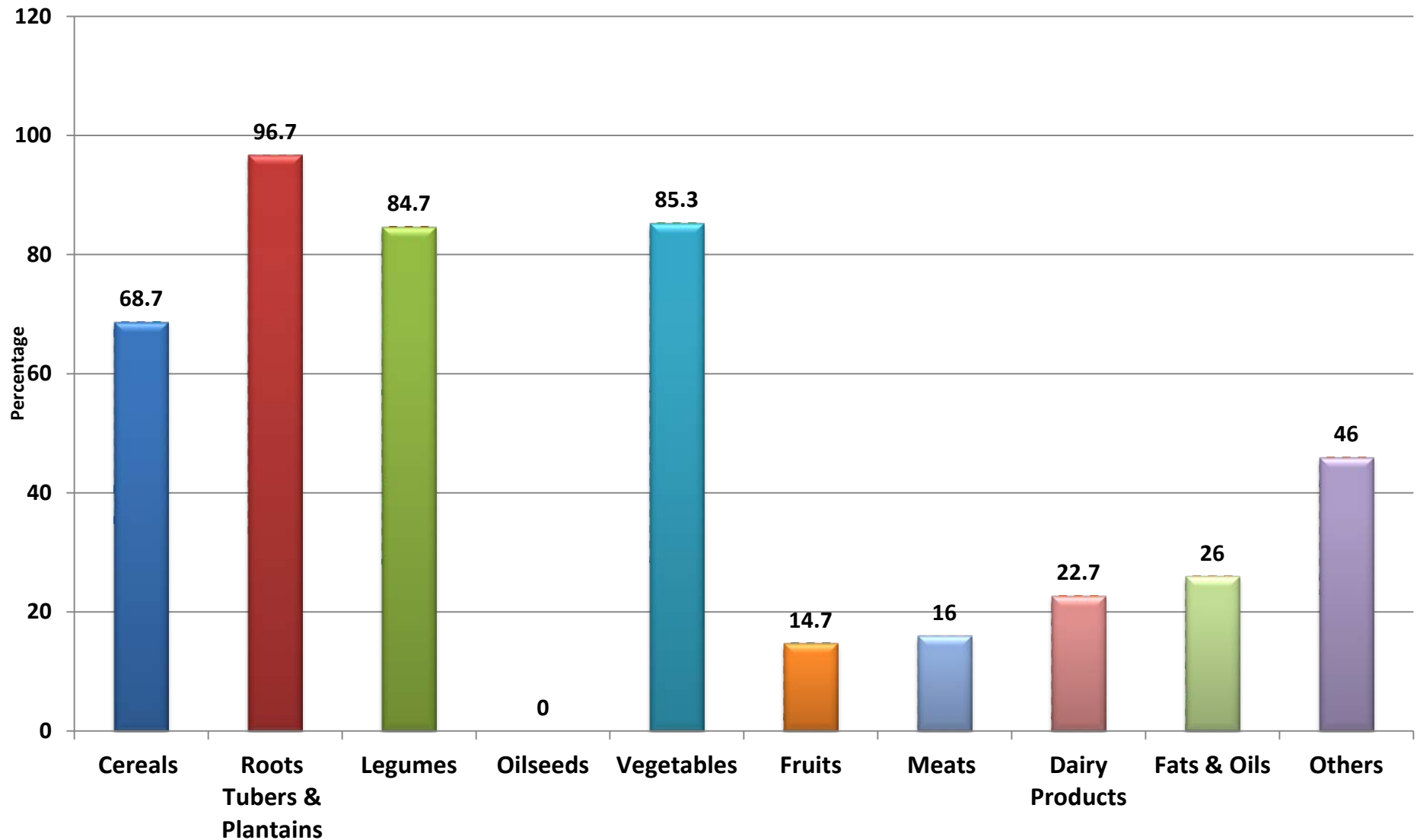
Food groups Consumed by Low HDDS group

Kibiito-Food Groups Consumed by Households with Low HDDS



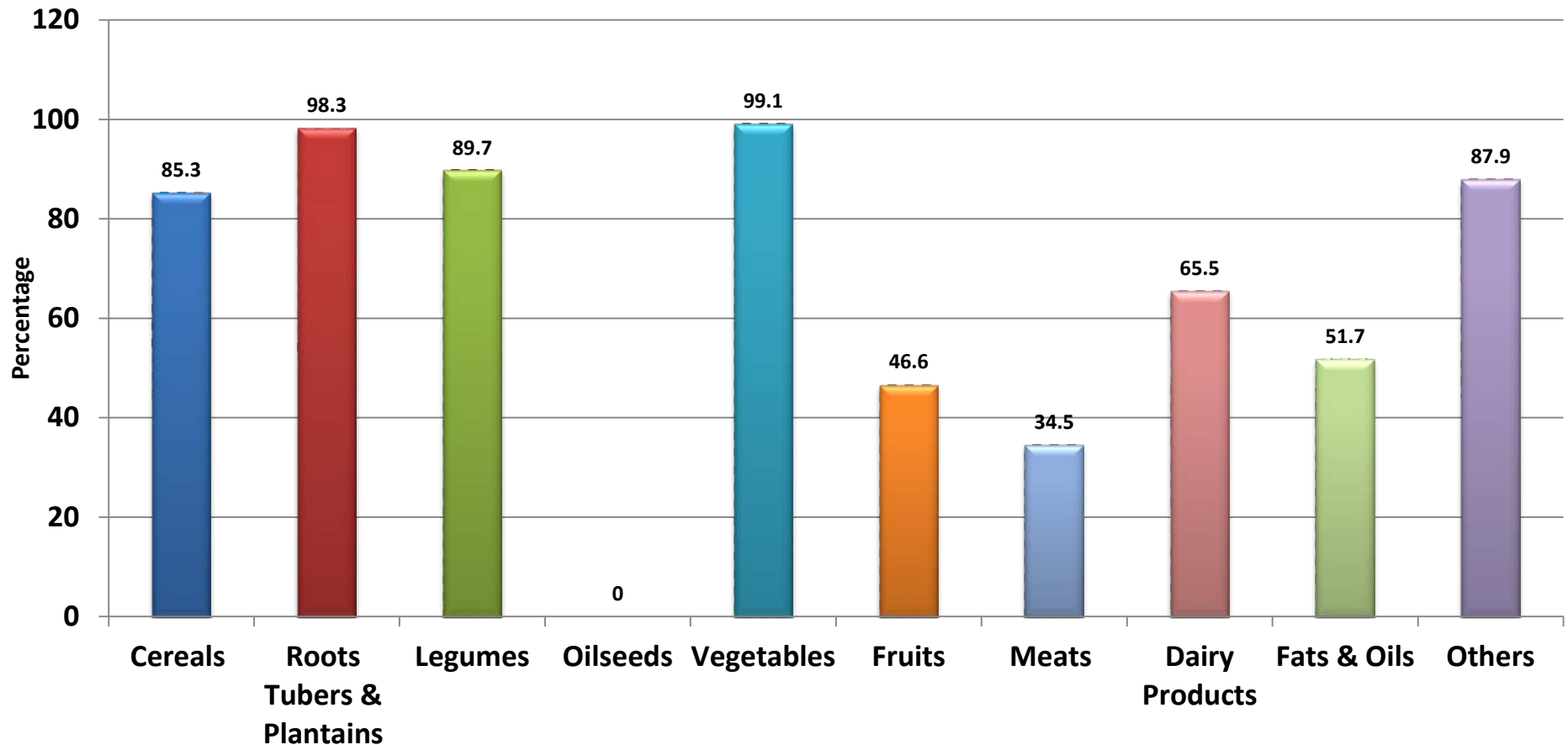
Foods Consumed by Households in Medium HDDS Group

Kibiito- Food Groups Consumed by Households with Medium HDDS



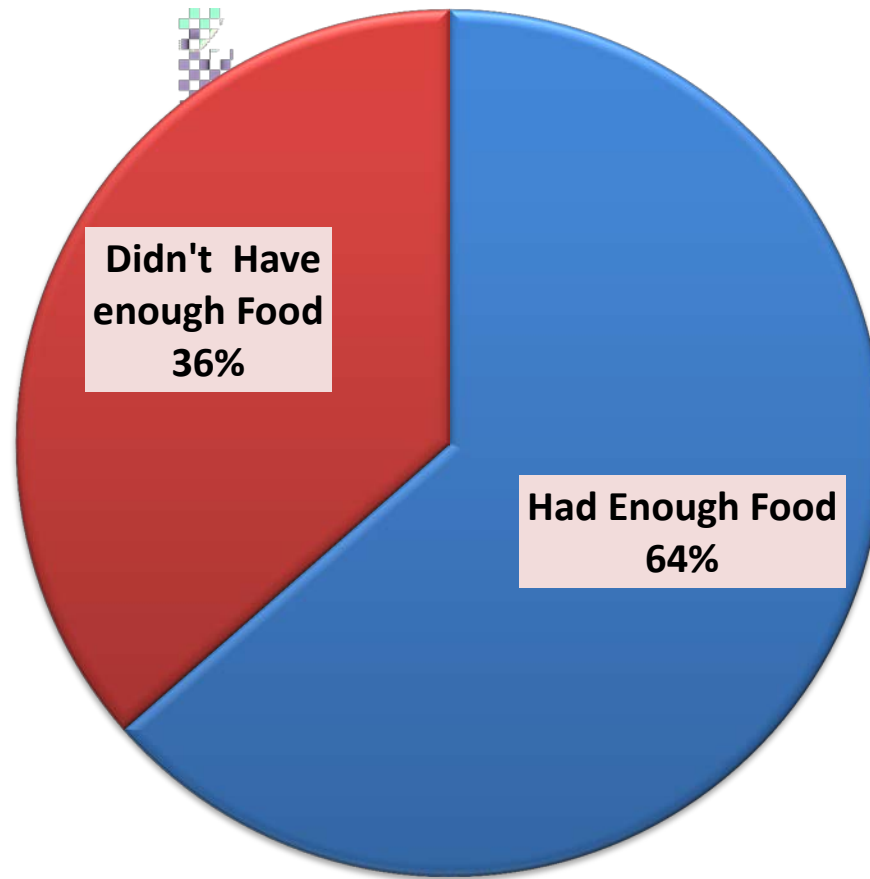
Food Groups consumed in High HDDS Group

Kibiito -Food Groups Consumed by Households with High HDDS



Household Food Provisioning (MAHFP)

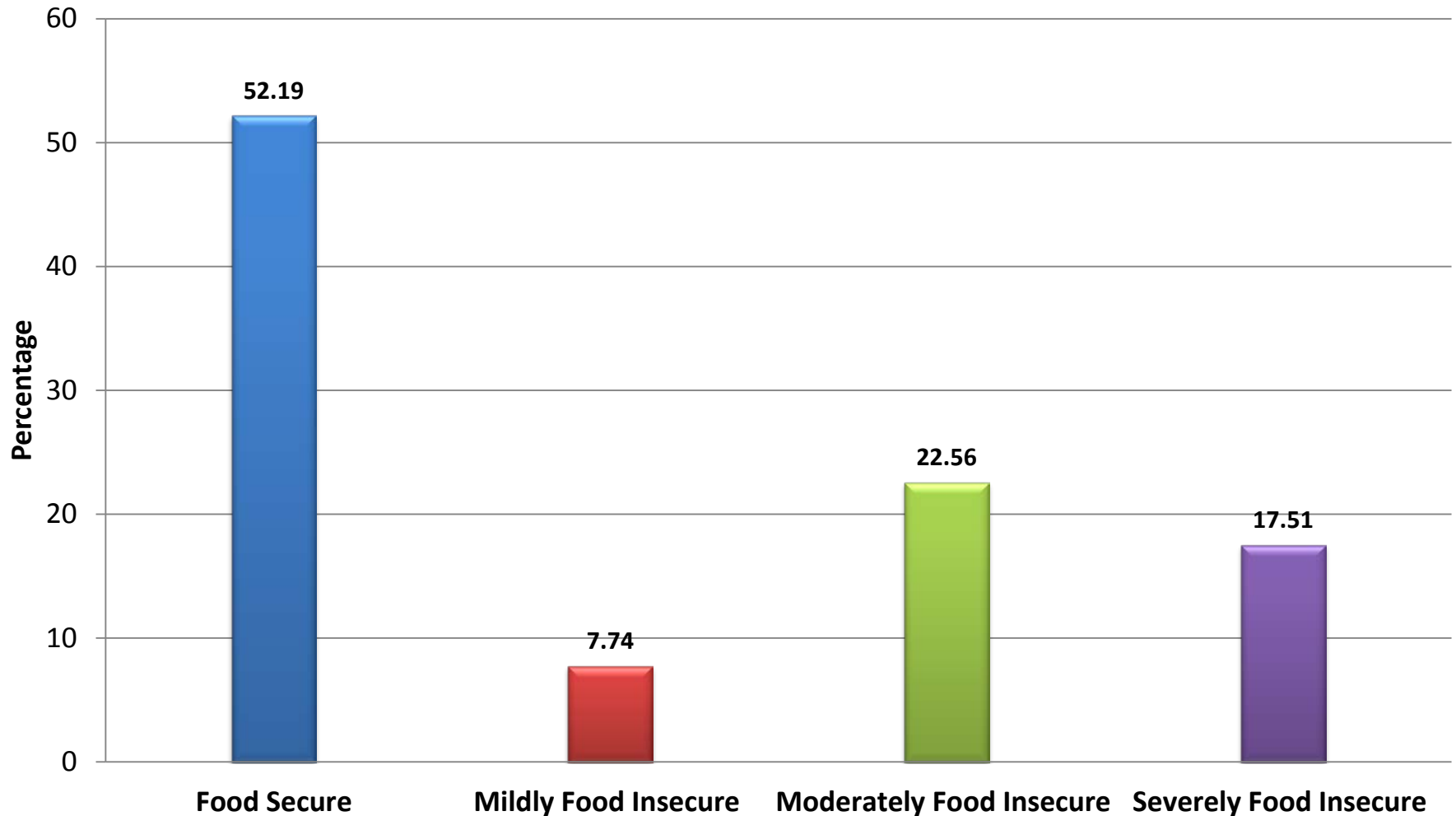
Kibiito -Adequate Household Food Provisioning (MAHFP) in last 12 Months



**Households in Kibiito
had 3 months of
inadequate food
access in the last 12**

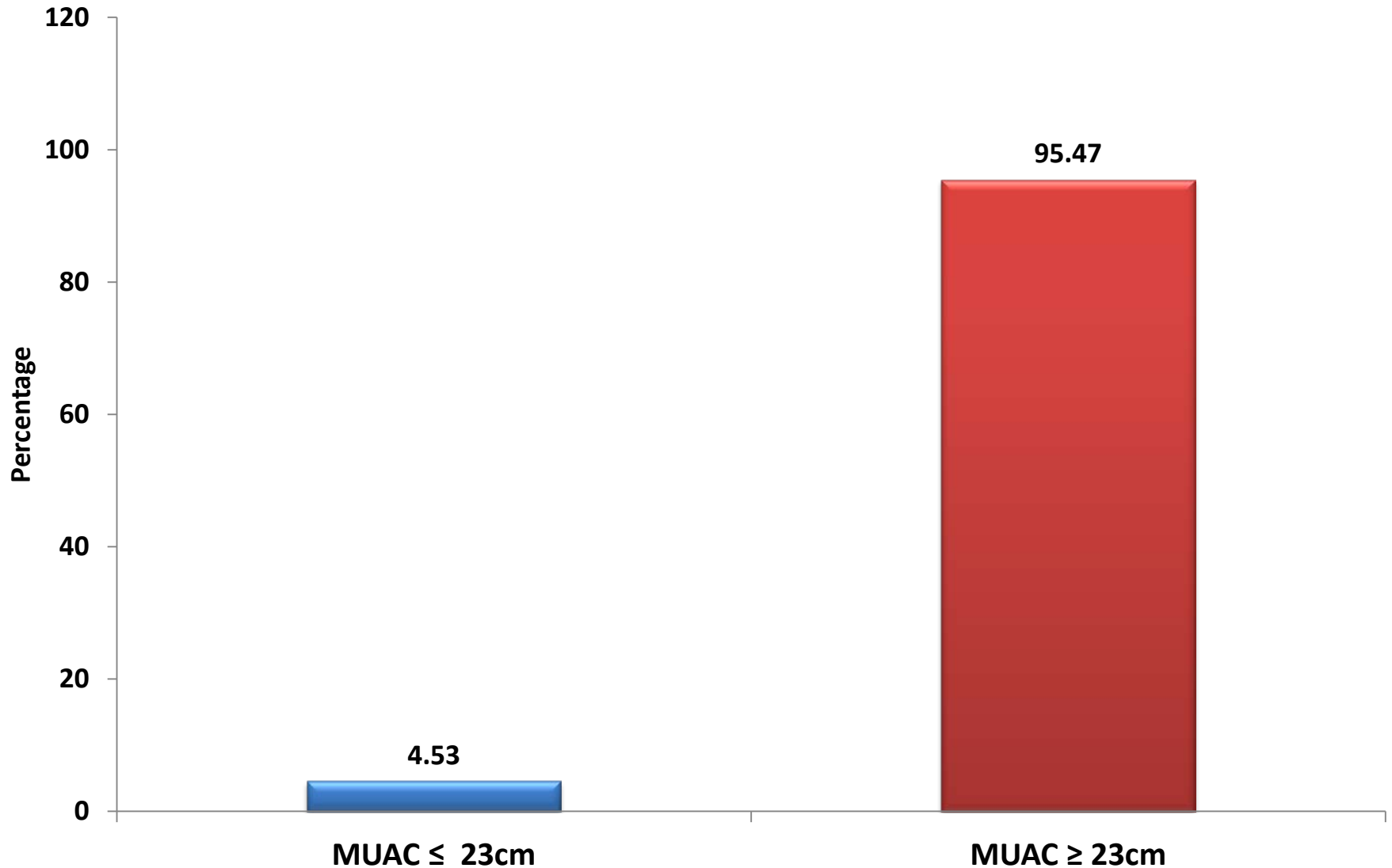
Household Food Insecurity Access Prevalence

Kibiito- Household Food Insecurty Access Prevalence



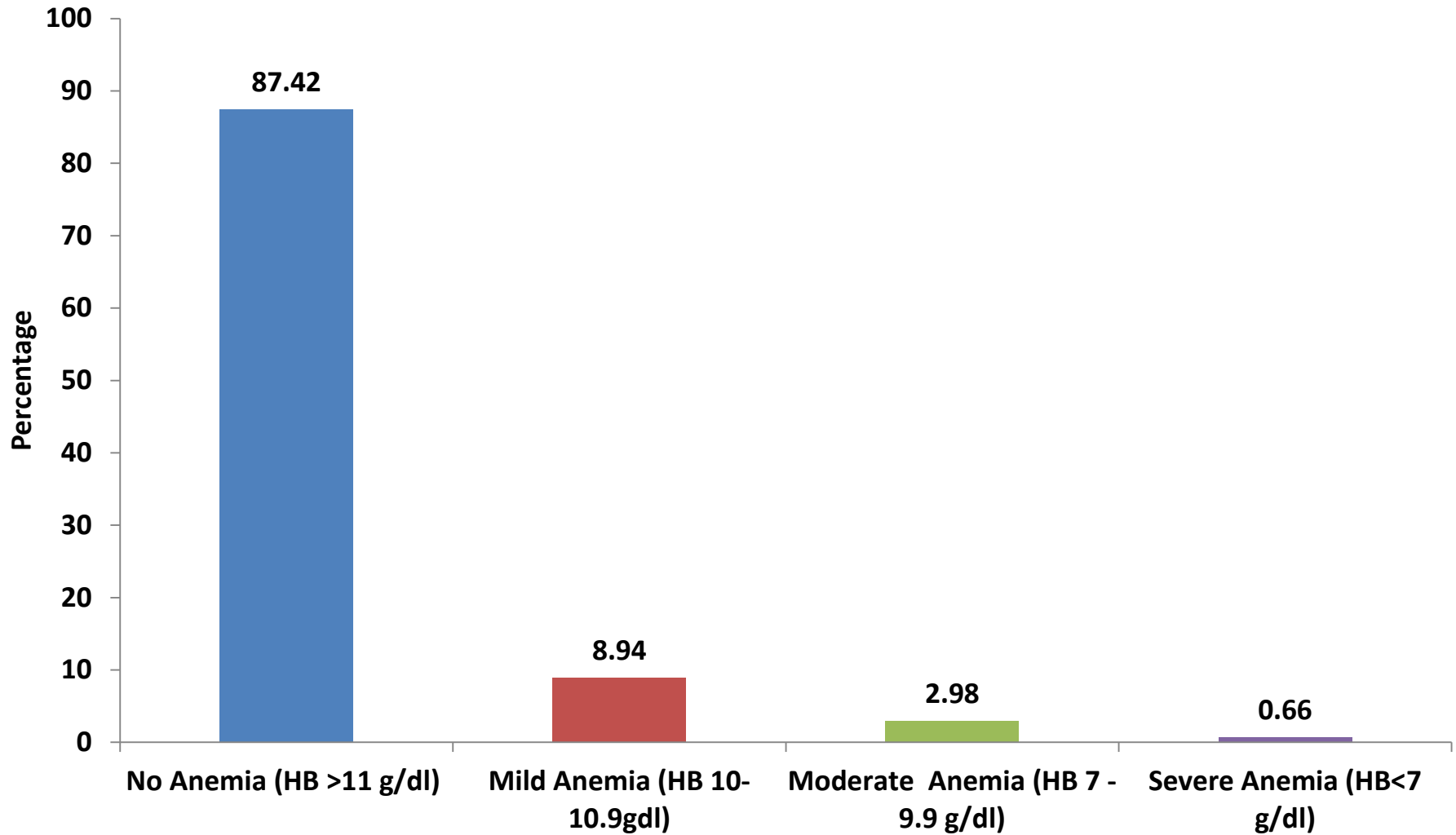
Maternal Wasting

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



Maternal Anemia

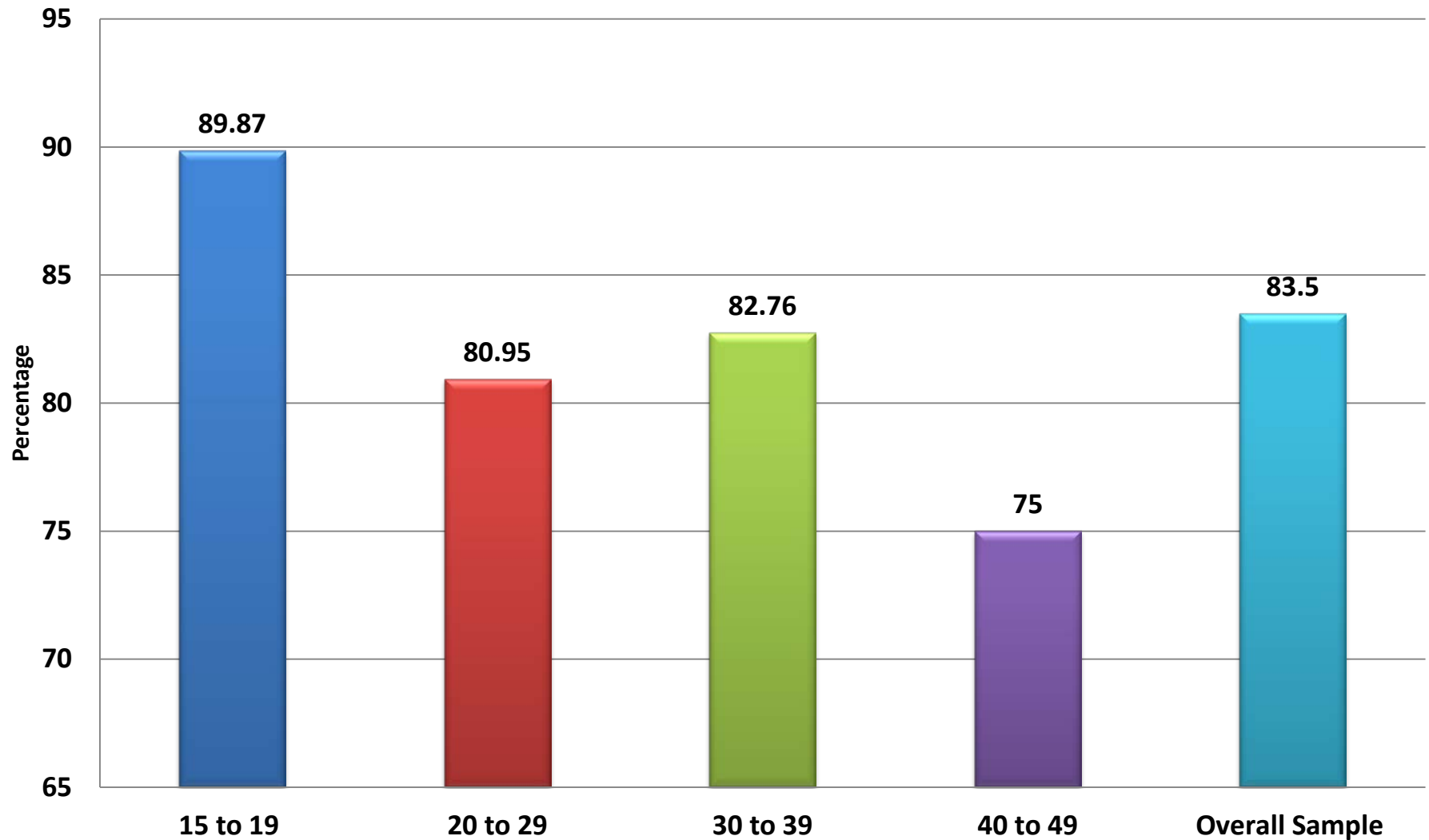
Kibiito -Prevalence of Anemia in Women 15 to 49 Years



SEEKING HEALTH CARE SERVICES

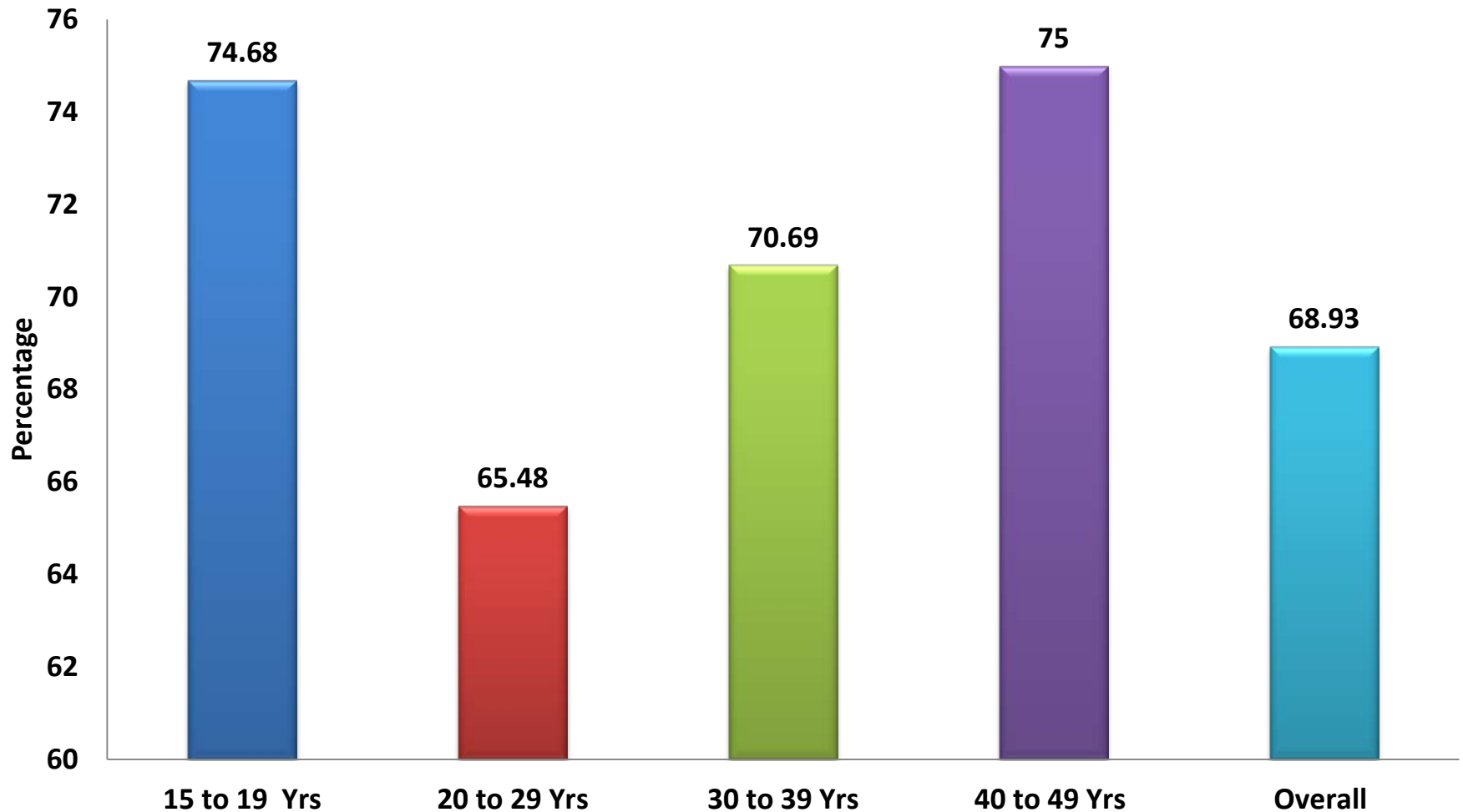
Maternal Health Status & Pregnancy

Kibiito - Women of Variuos Age Groups Who Sought Antenatal Care



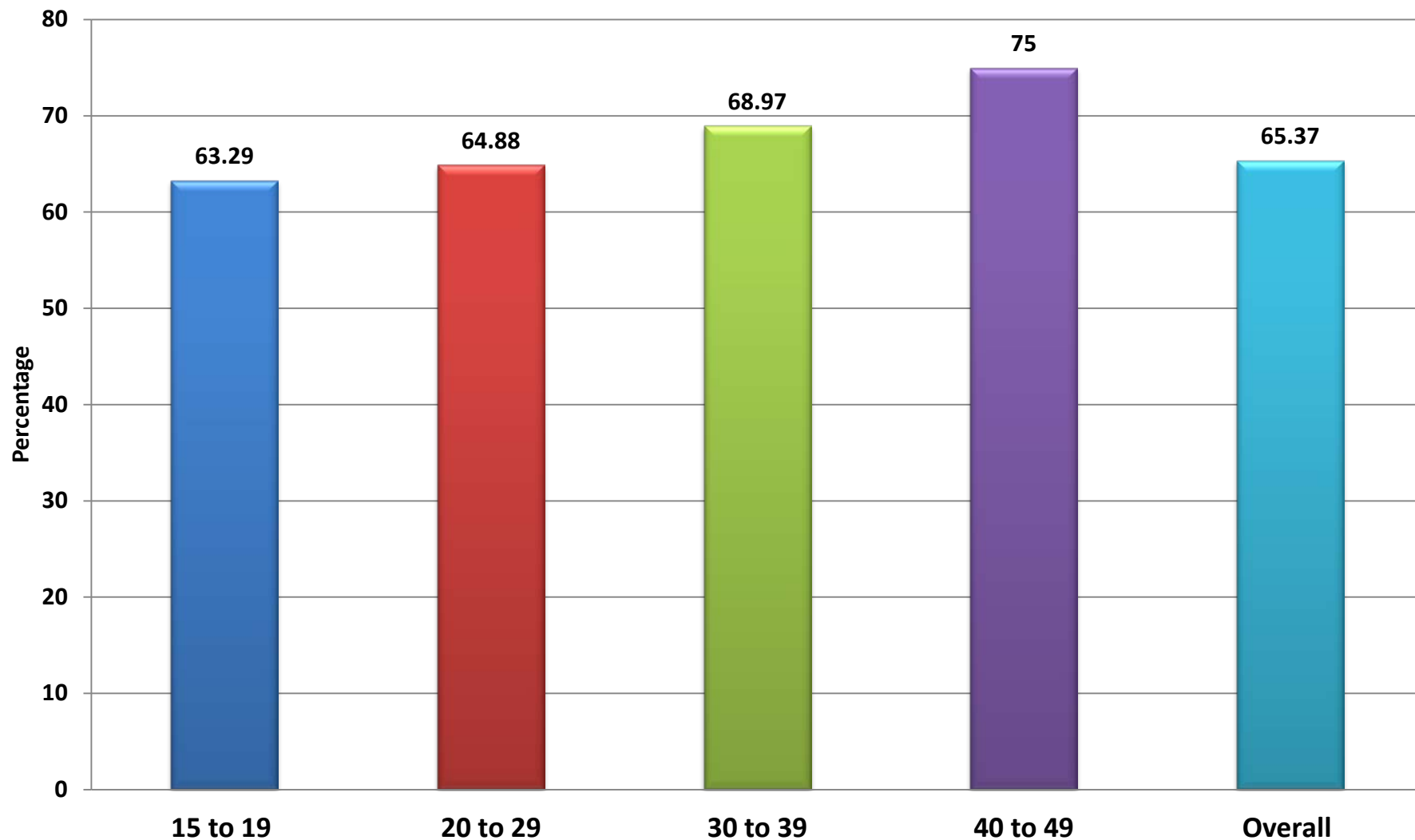
Maternal Health Status & Pregnancy

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



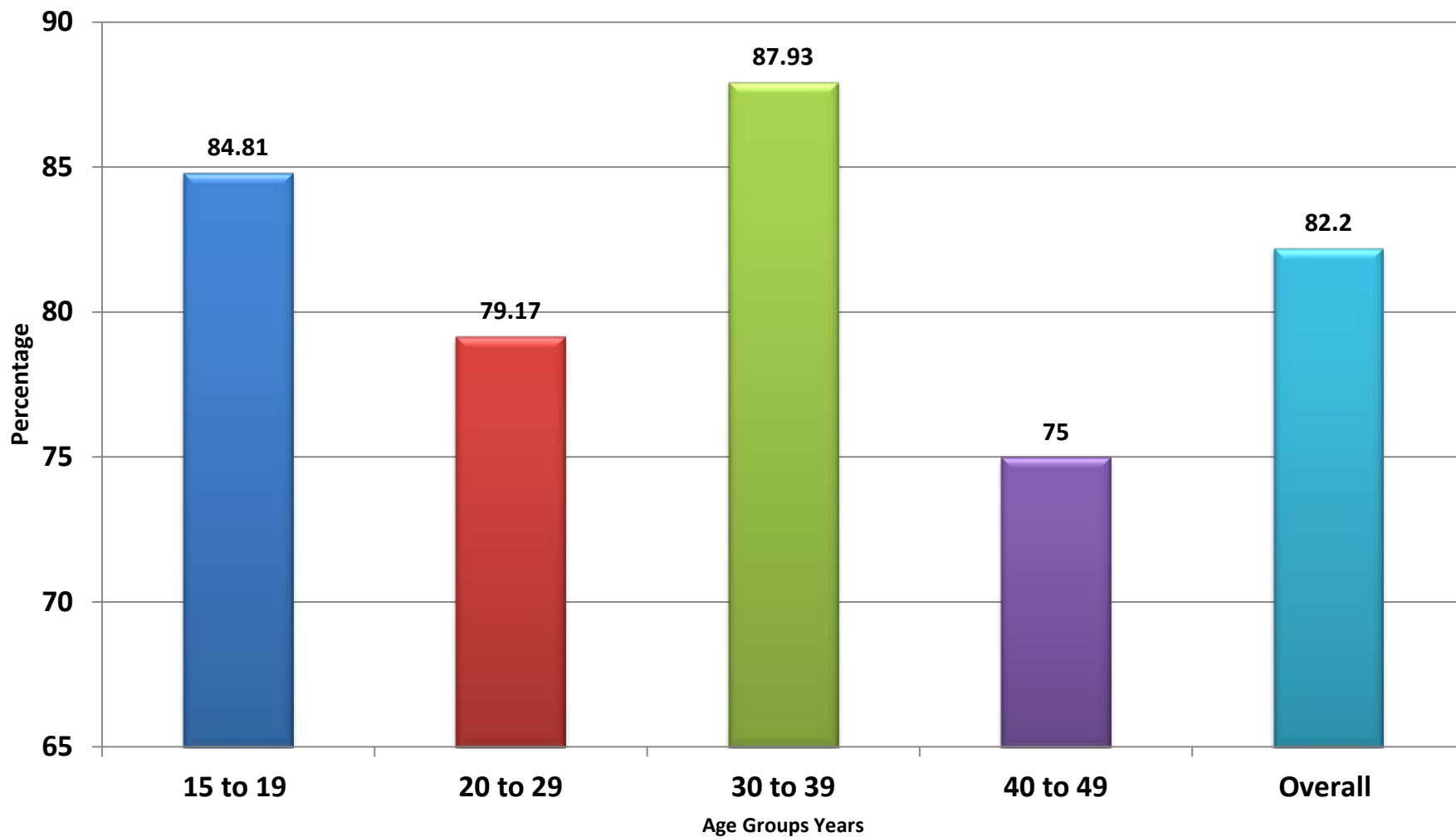
Maternal Health Status & Pregnancy

Kibiito -Women of Various Age Groups who Received Deworming Drugs



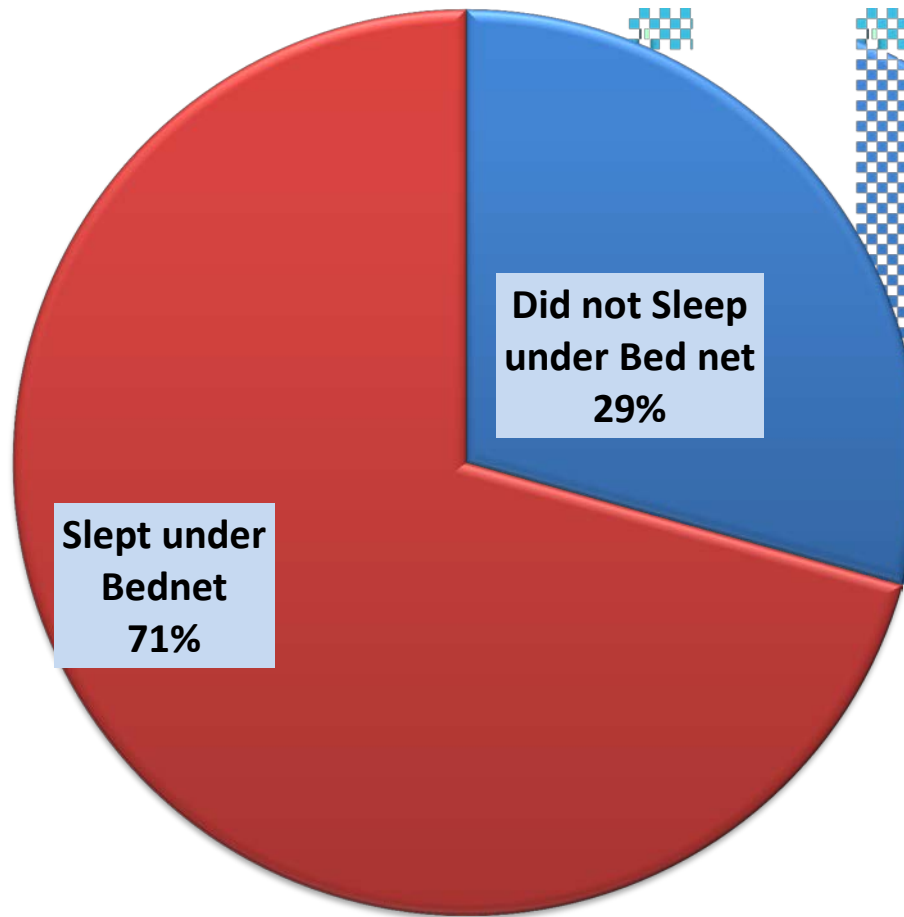
Maternal Health Status & Pregnancy

Kibiito -Percentage of Women who Received HIV Testing



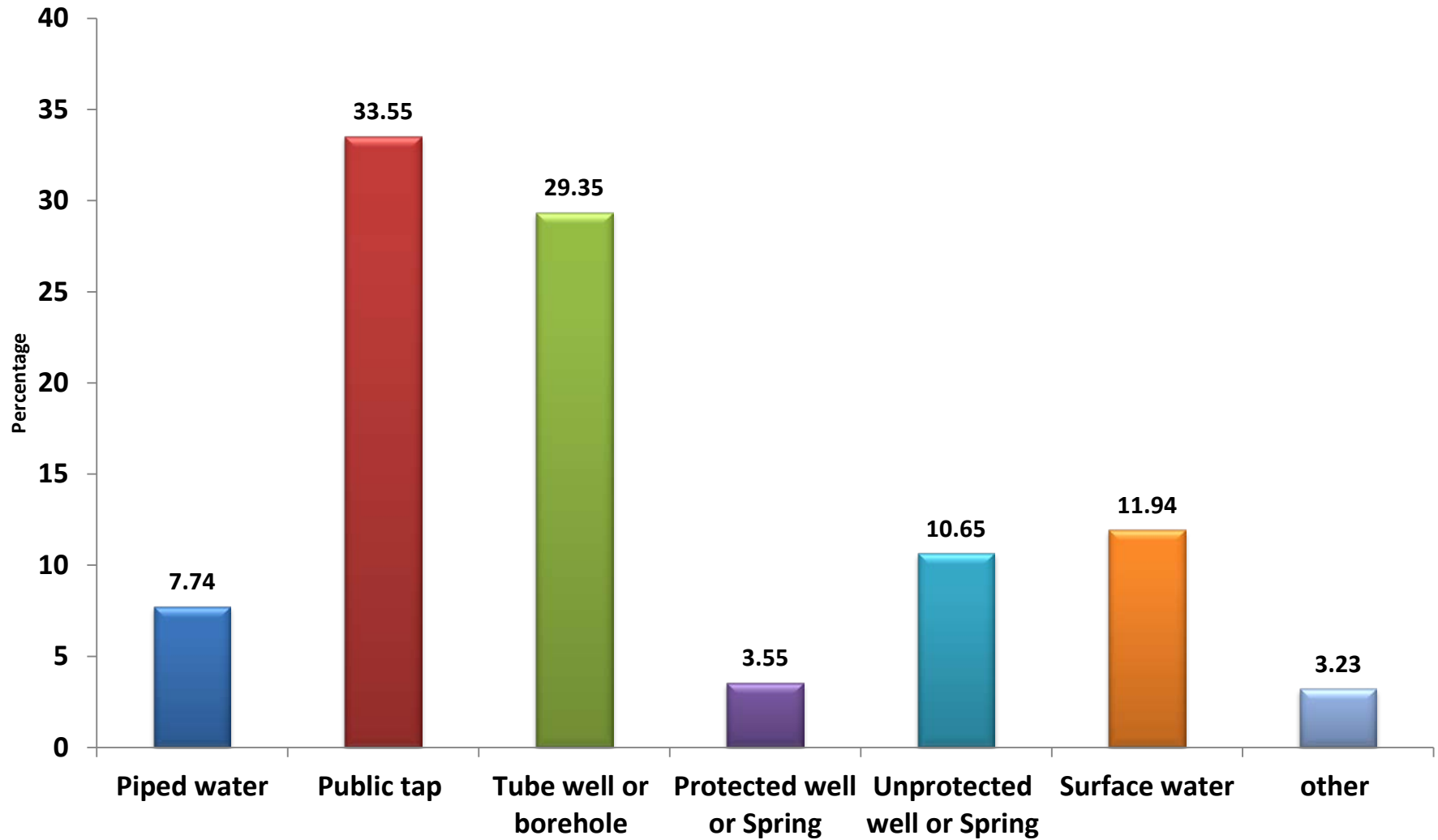
Maternal Health Status & Hygiene

Kibiito -Percentage of Women Who Slept Under a Bednet



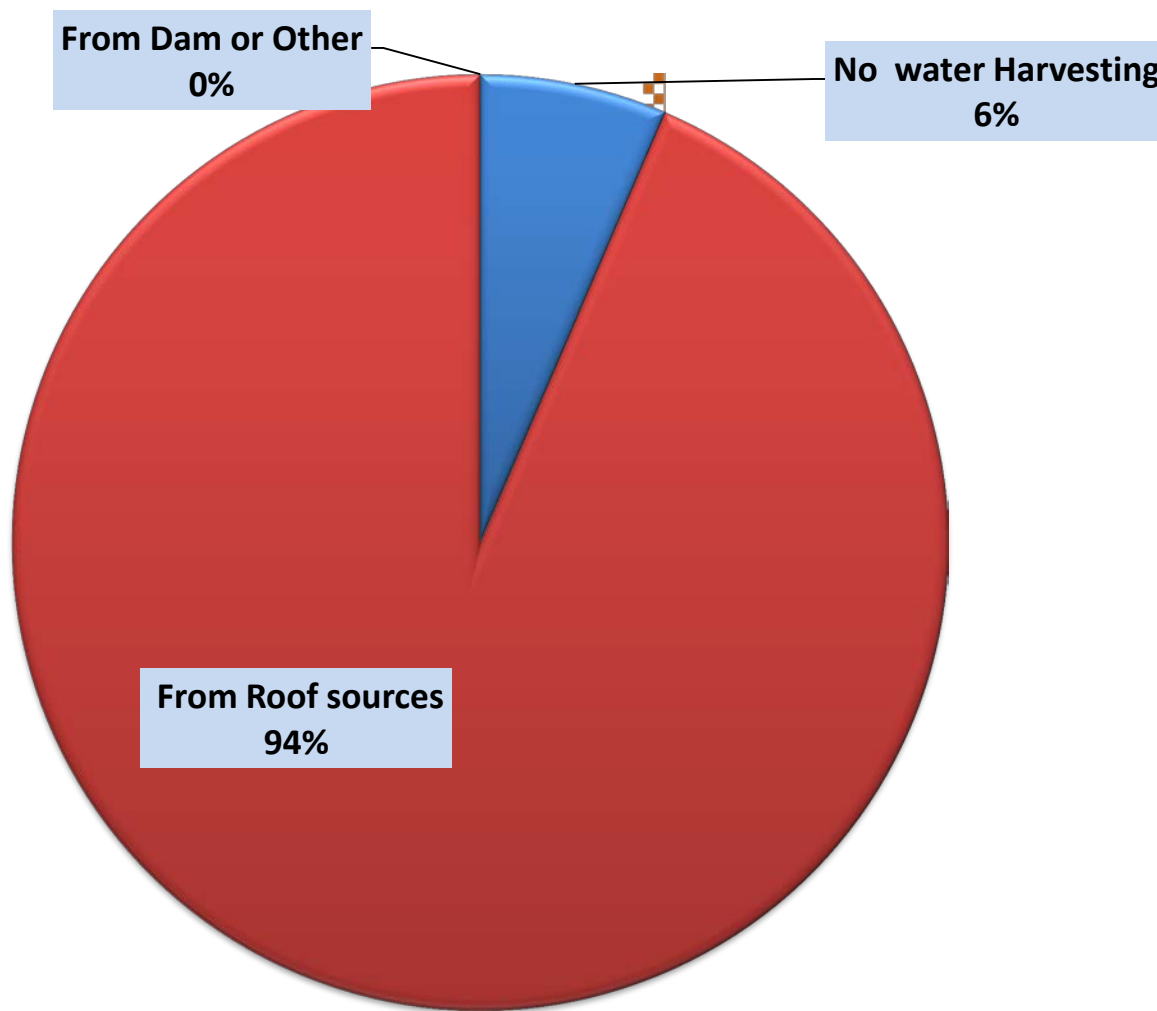
Water ,Sanitation & Hygiene

Kibiito-Most Commonly Used Sources of Water



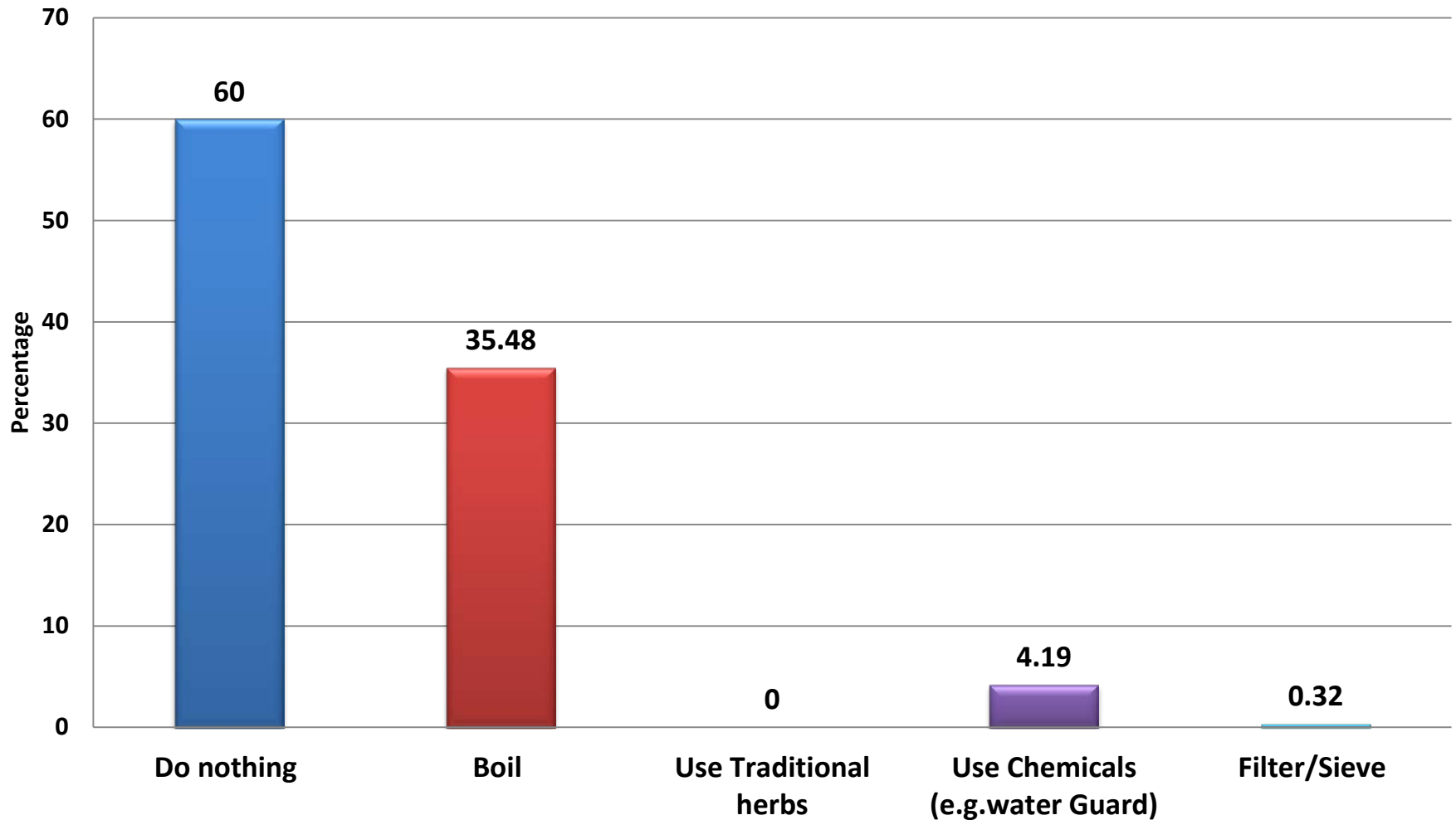
Water Sanitation & Hygiene

Kibito - Percentage of Households Harvesting Rain Water



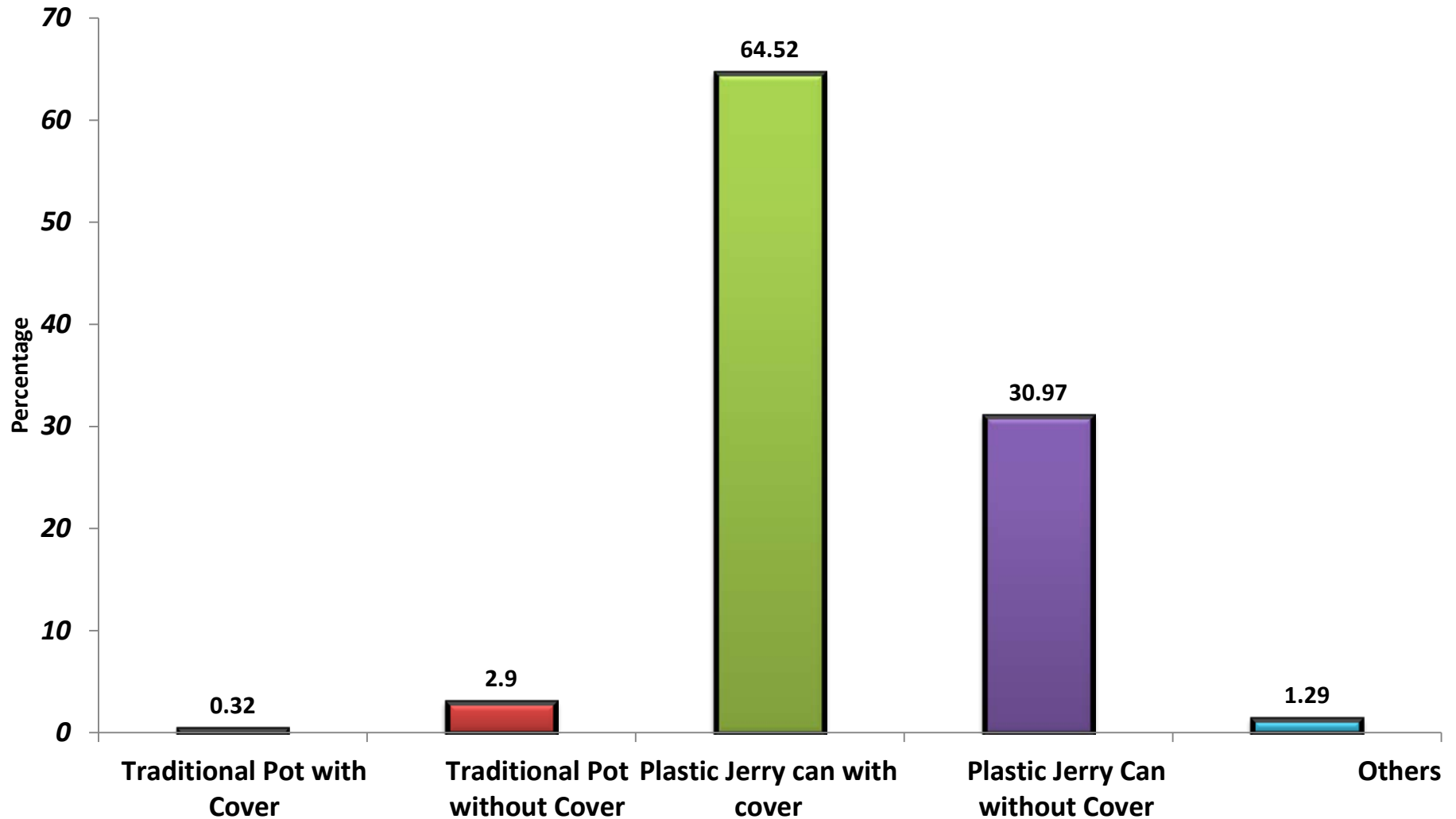
Water , Sanitation and Hygiene

Kibiito -Common ways Households Treat Drinking water



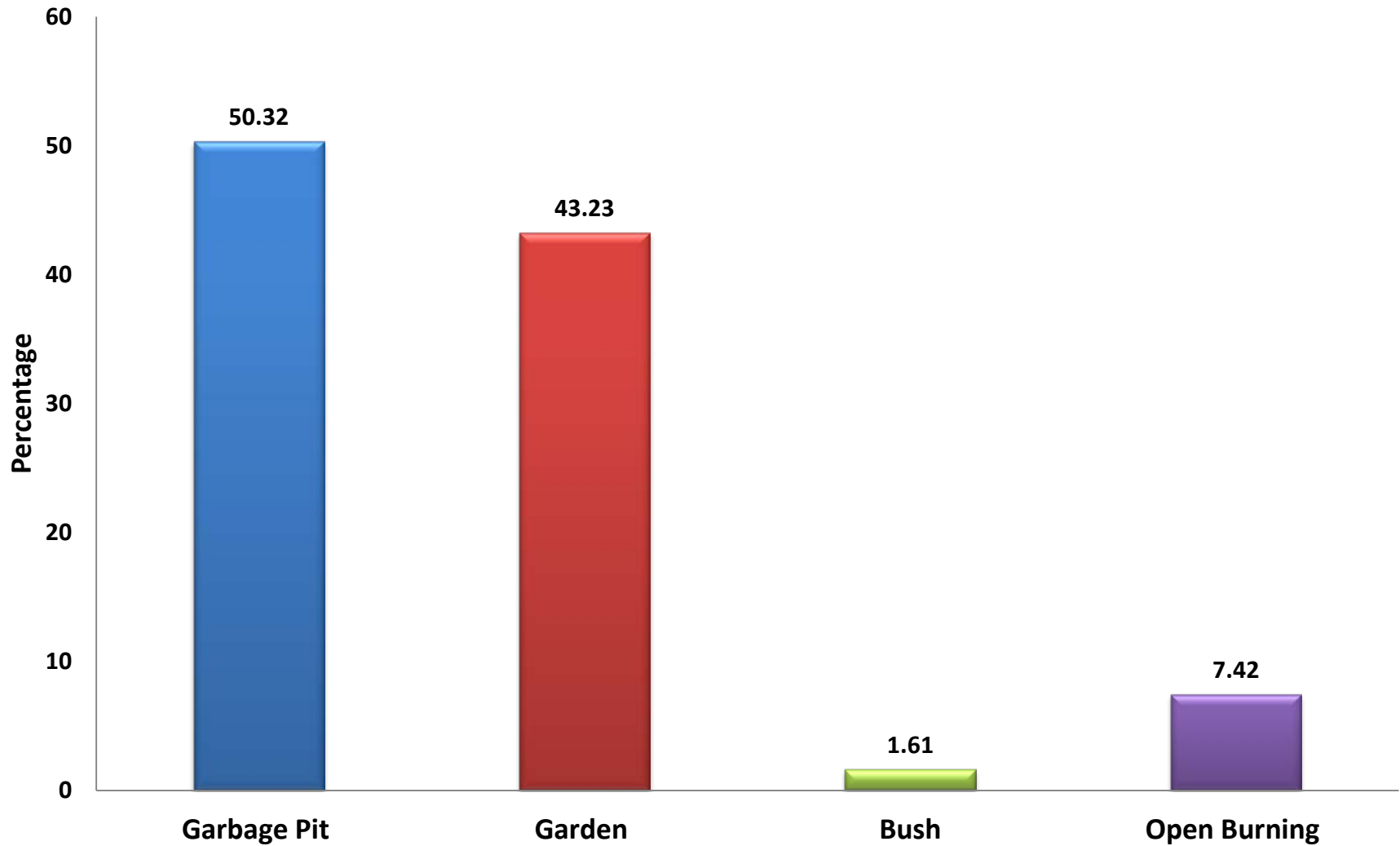
Water, Sanitation and Hygiene

Kibiito -Where Households Store Drinking Water



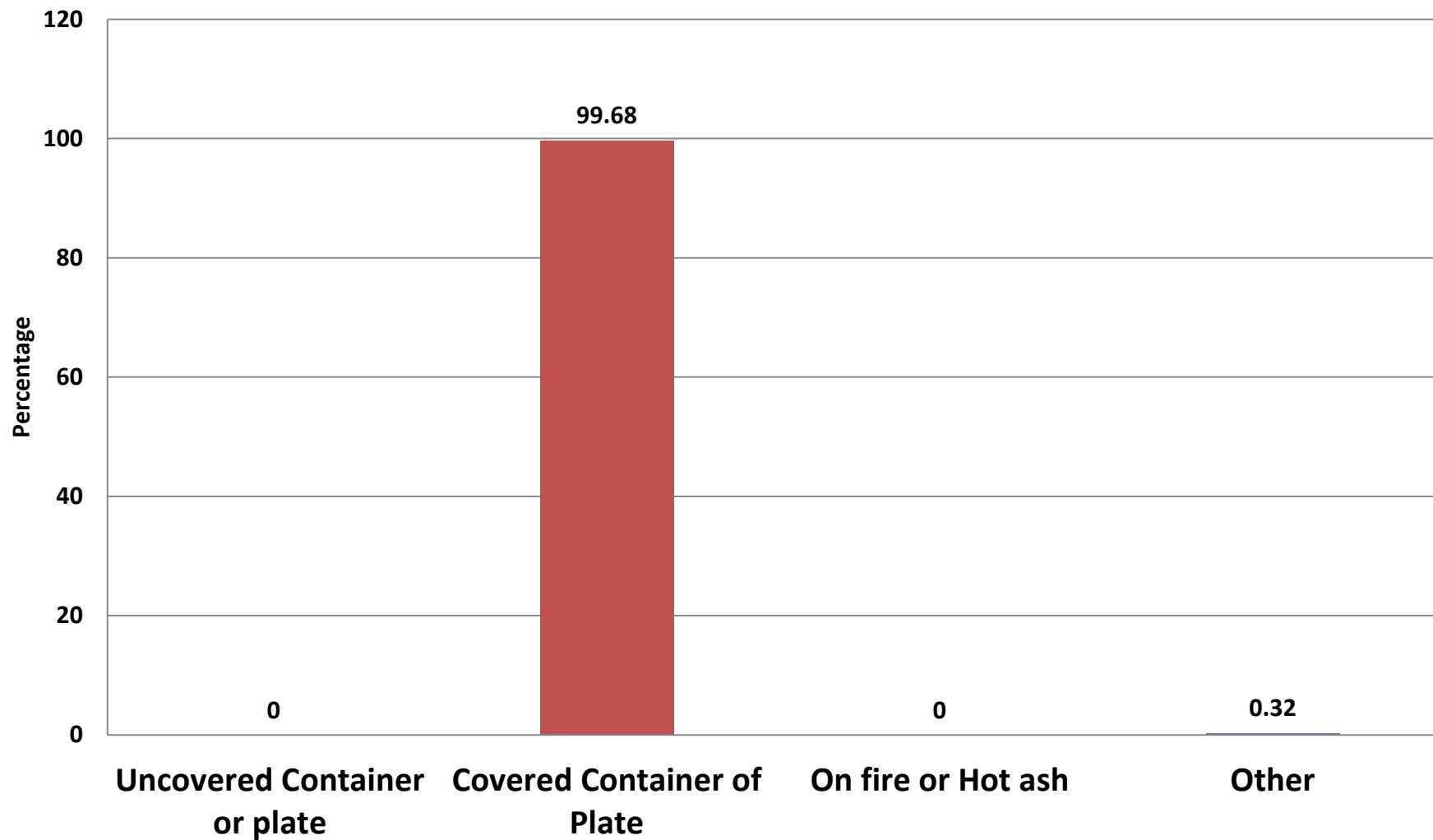
Water, Sanitation and Hygiene

Kibito-Household Garbage Disposal Methods (n=310)



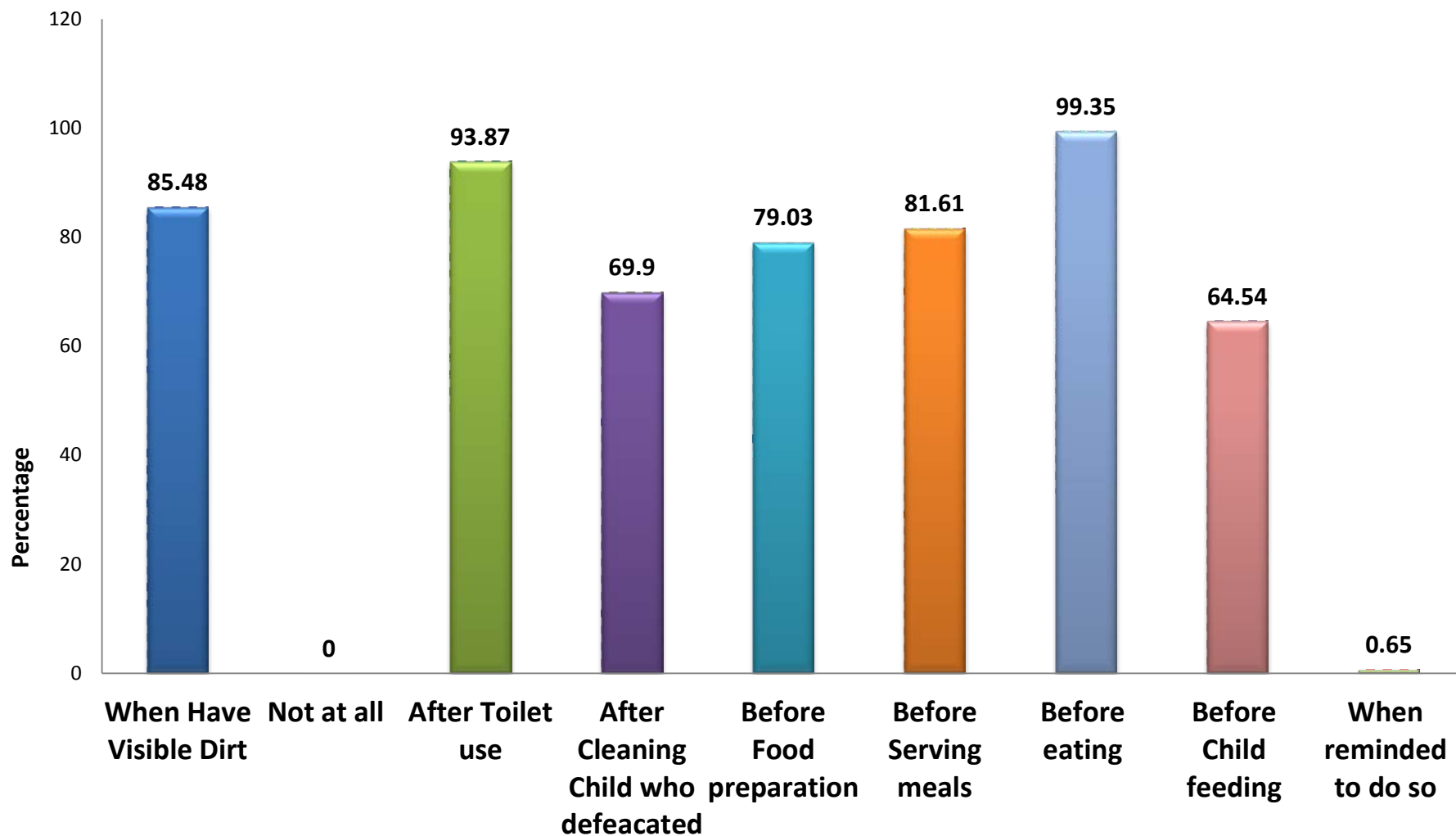
Water, Sanitation & Hygiene

Kibiito- Common Ways Food Prepared is Stored



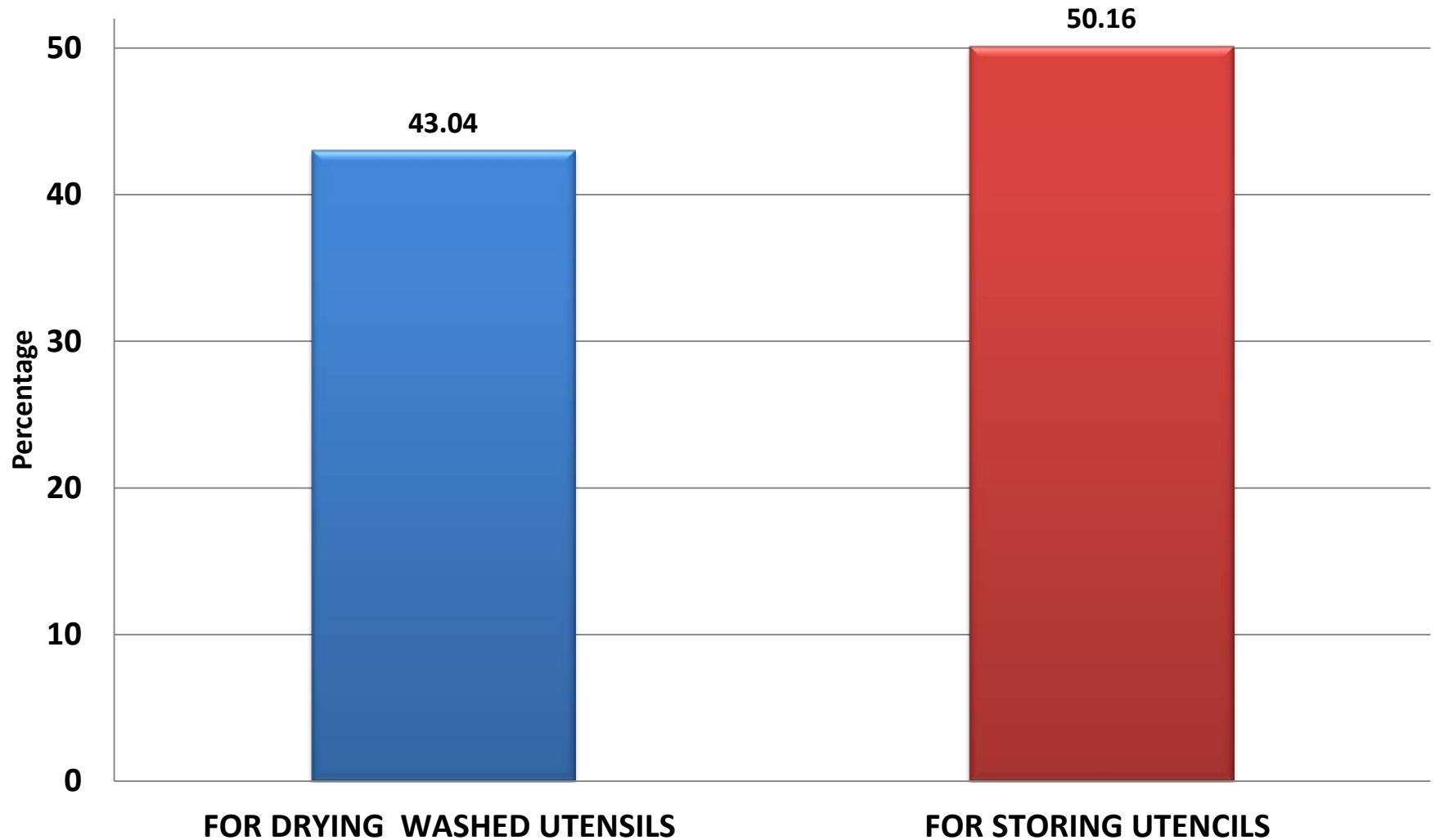
Water, Sanitation & Hygiene

Kibiito -Time When Repondents Wash Hands



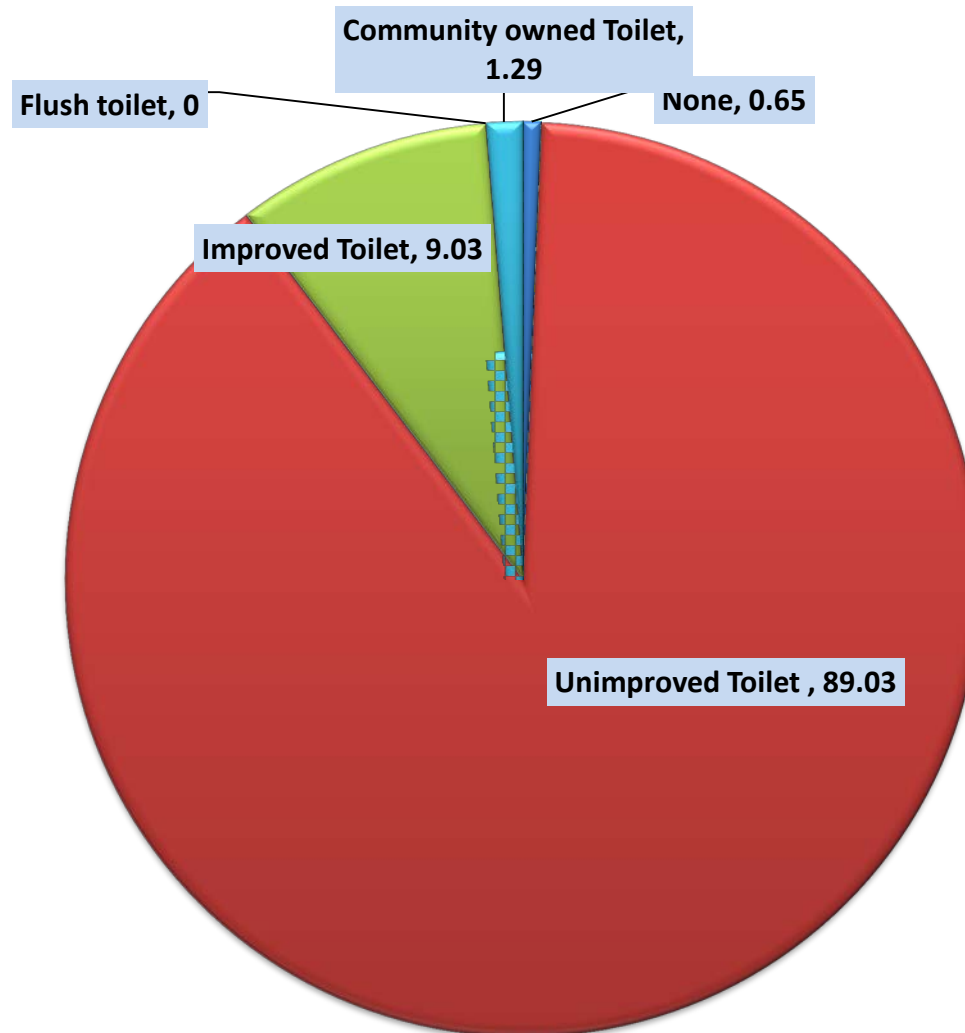
Water, Sanitation & Hygiene

Kibiito-Household Rack use and Ownership



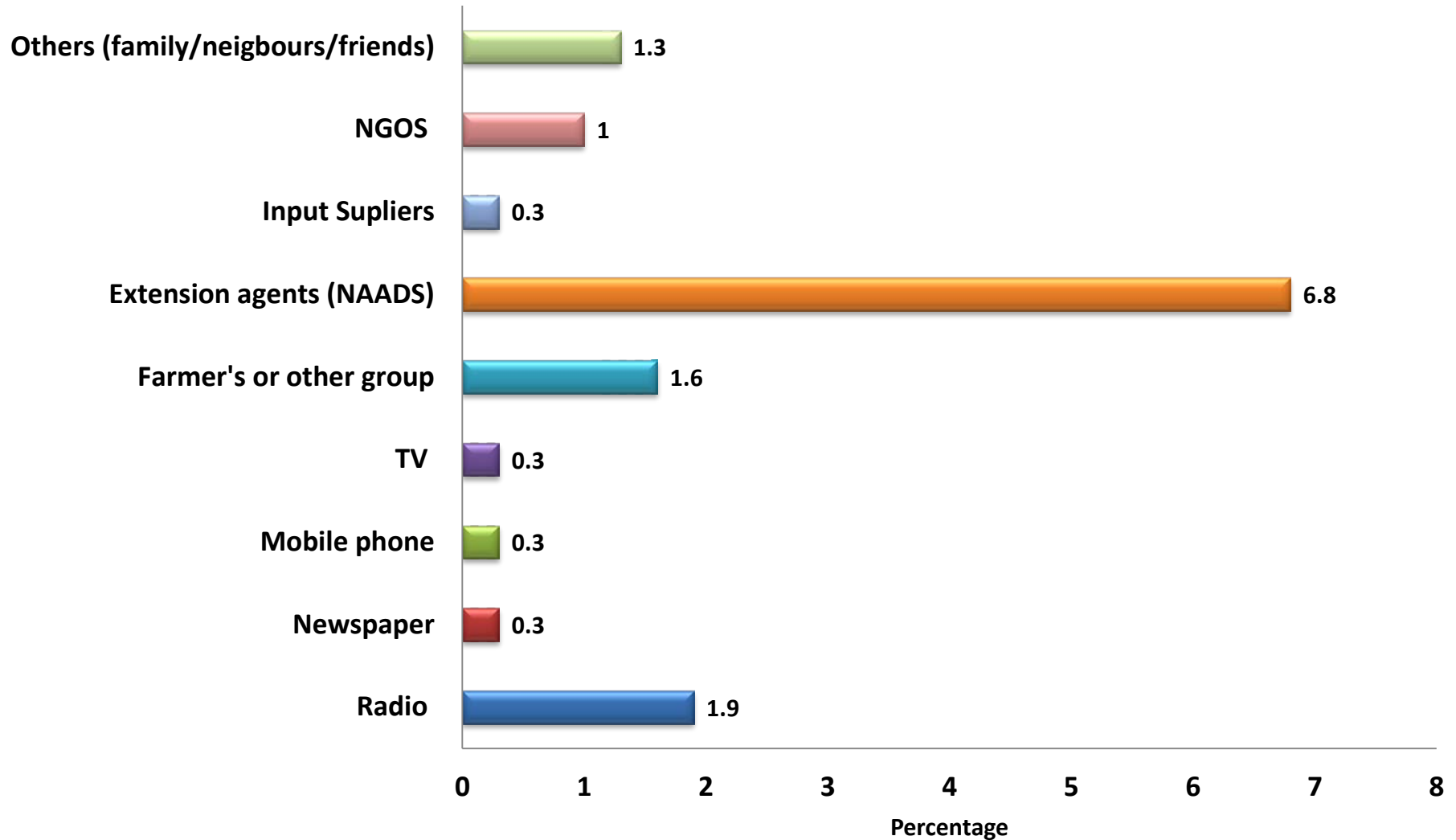
Water Sanitation & Hygiene

Kibiito-Common Types of Toilet used by Households



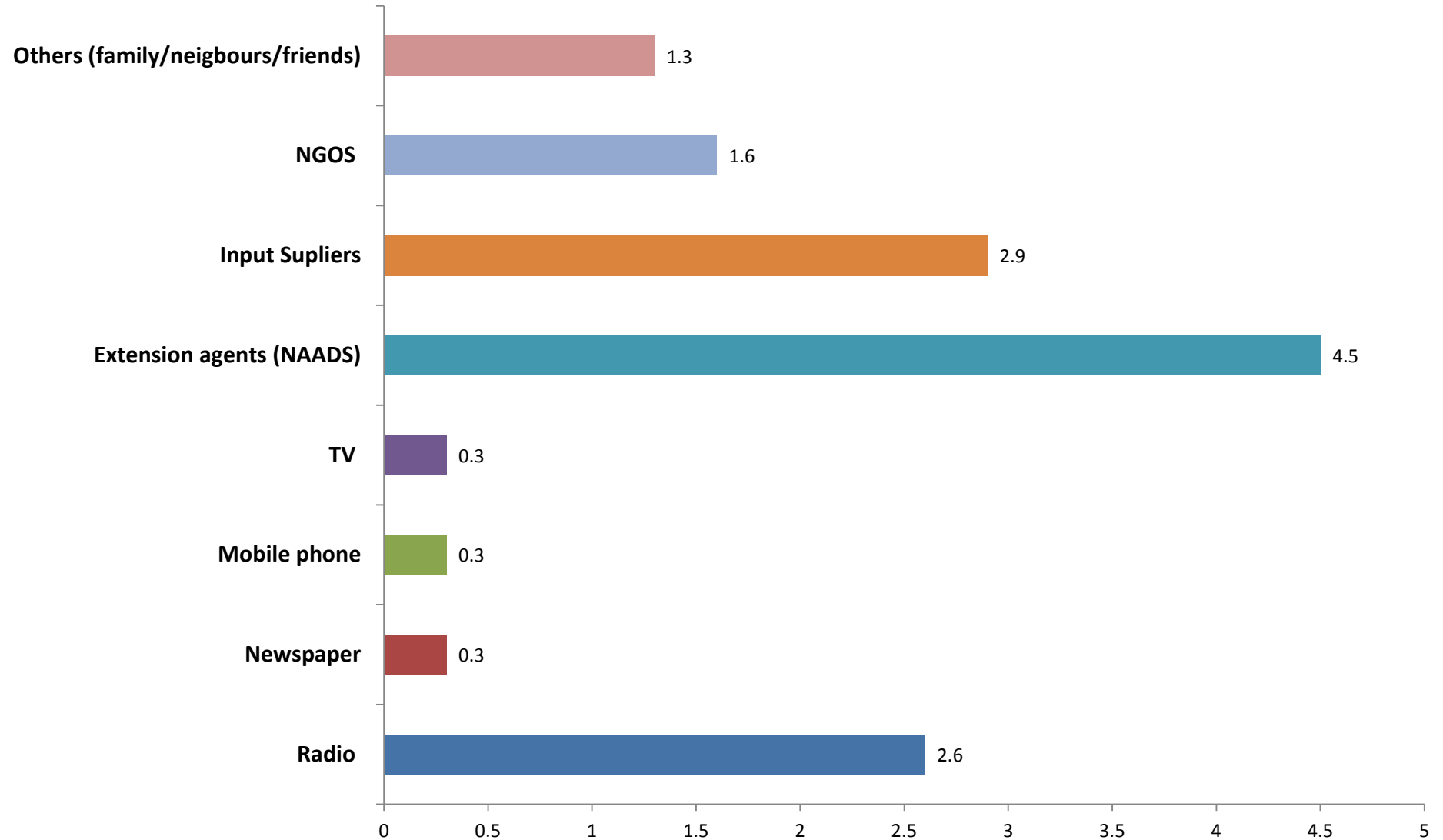
Sources of Agricultural information

Kibiito- Source of Agricultural Information



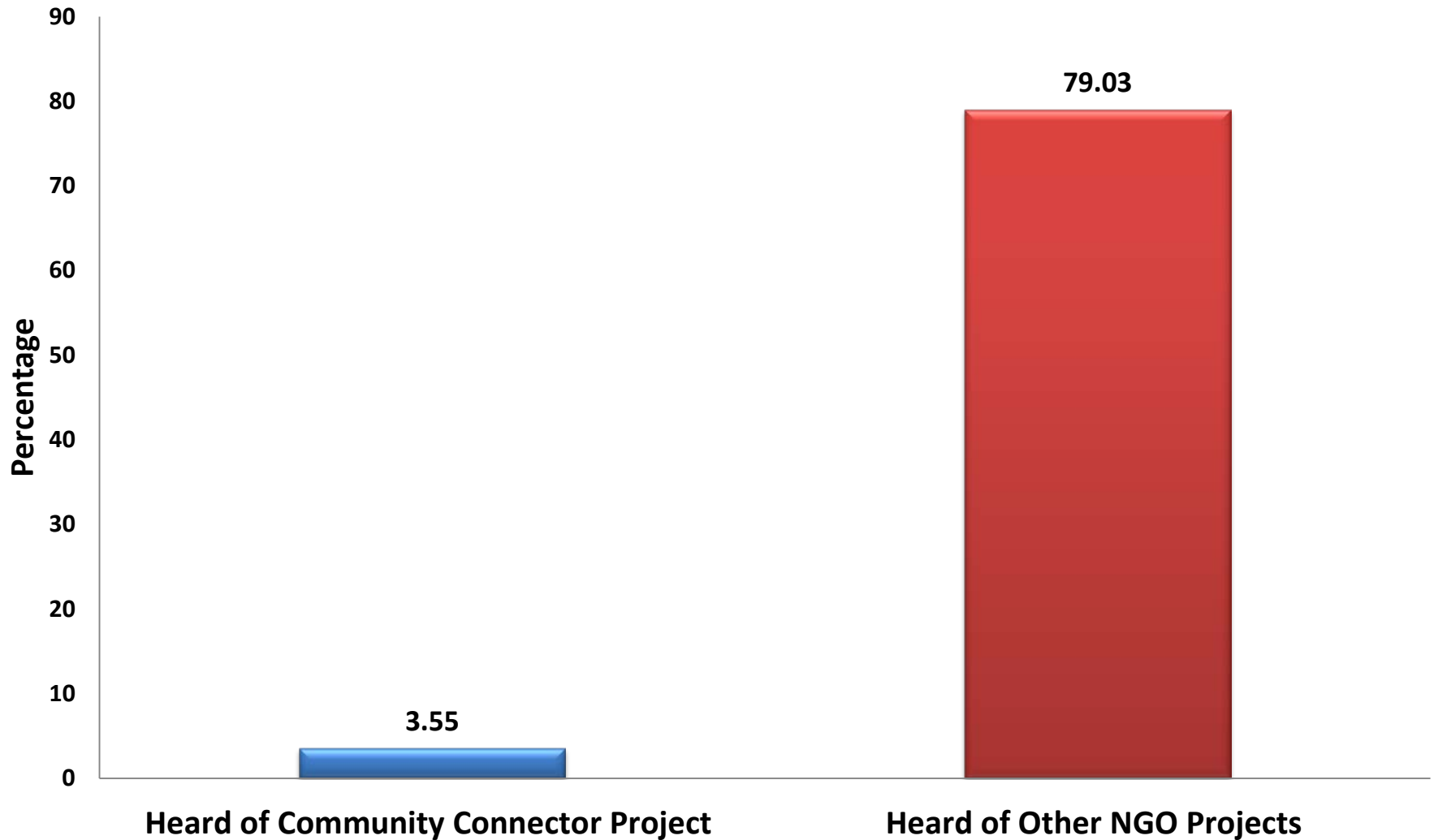
Sources of Nutrition information

Kibiito- Sources of Nutrition Information



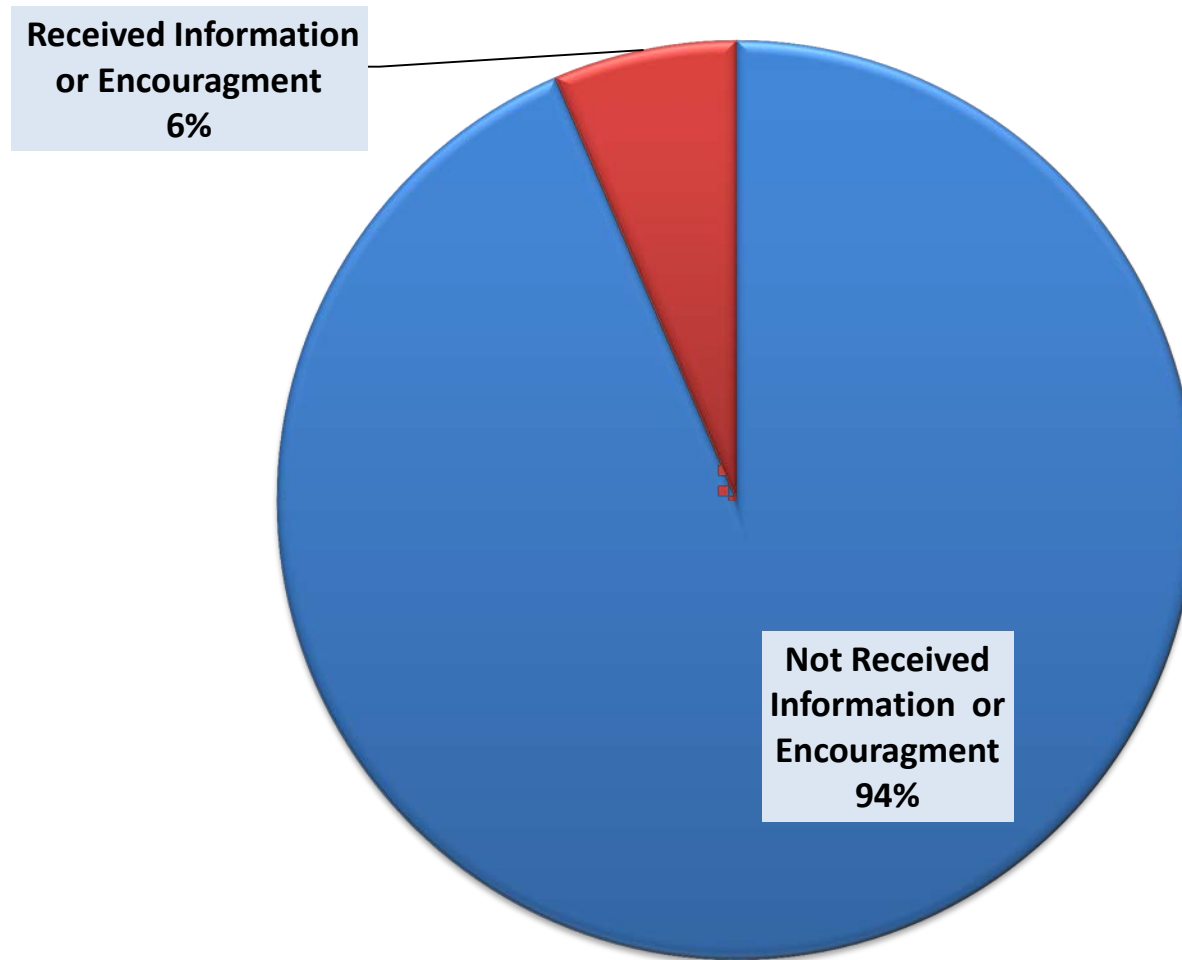
SOCIAL PARTICIPATION, ACCESS TO INFO. , PROGRAM EXPOSURE

Kibiito -Program Exposure & Uptake



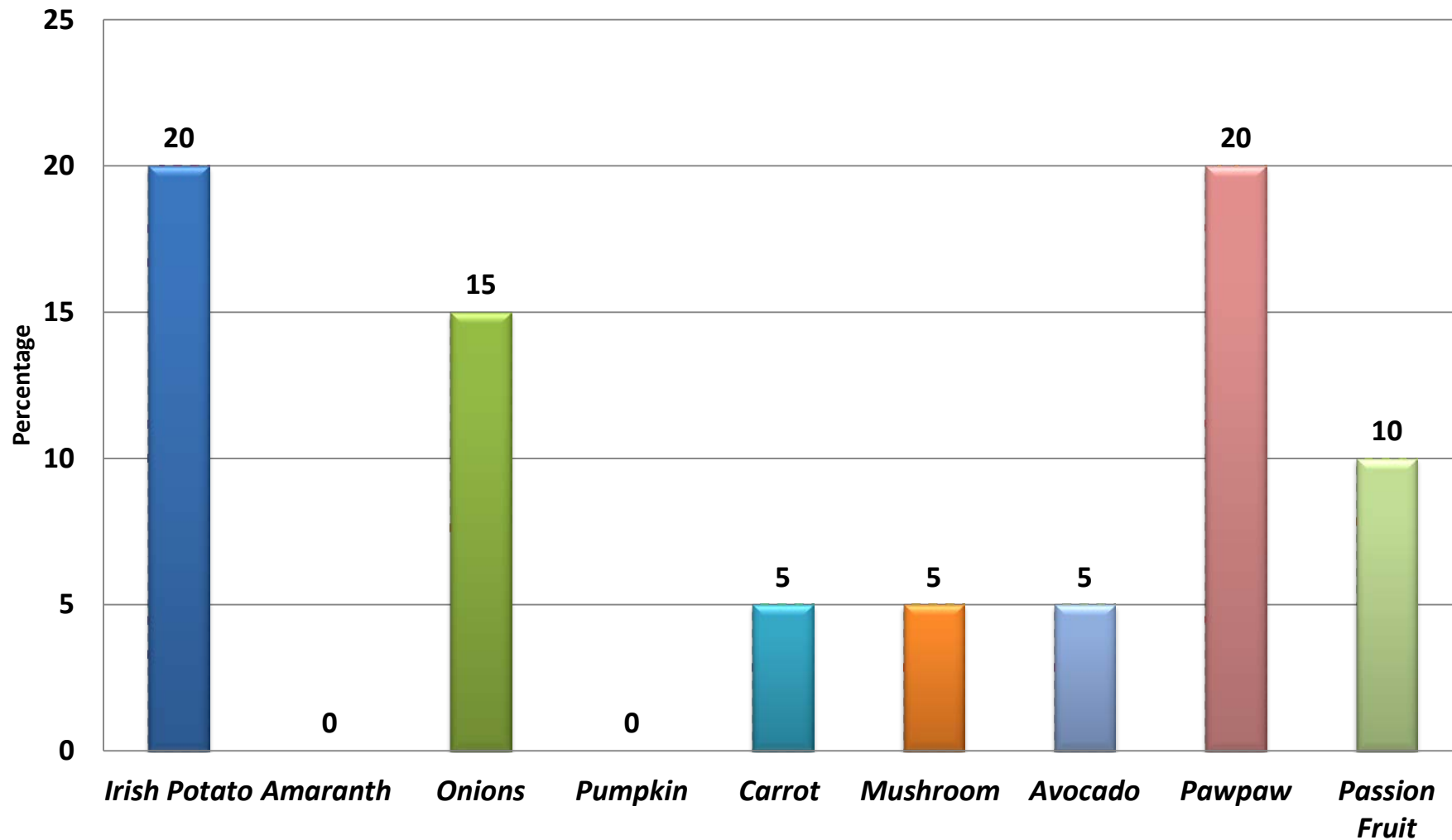
SOCIAL PARTICIPATION, ACCESS TO INFO. , PROGRAM EXPOSURE

Kibiito -Receipt of Information to Increase Cultivation of Crops



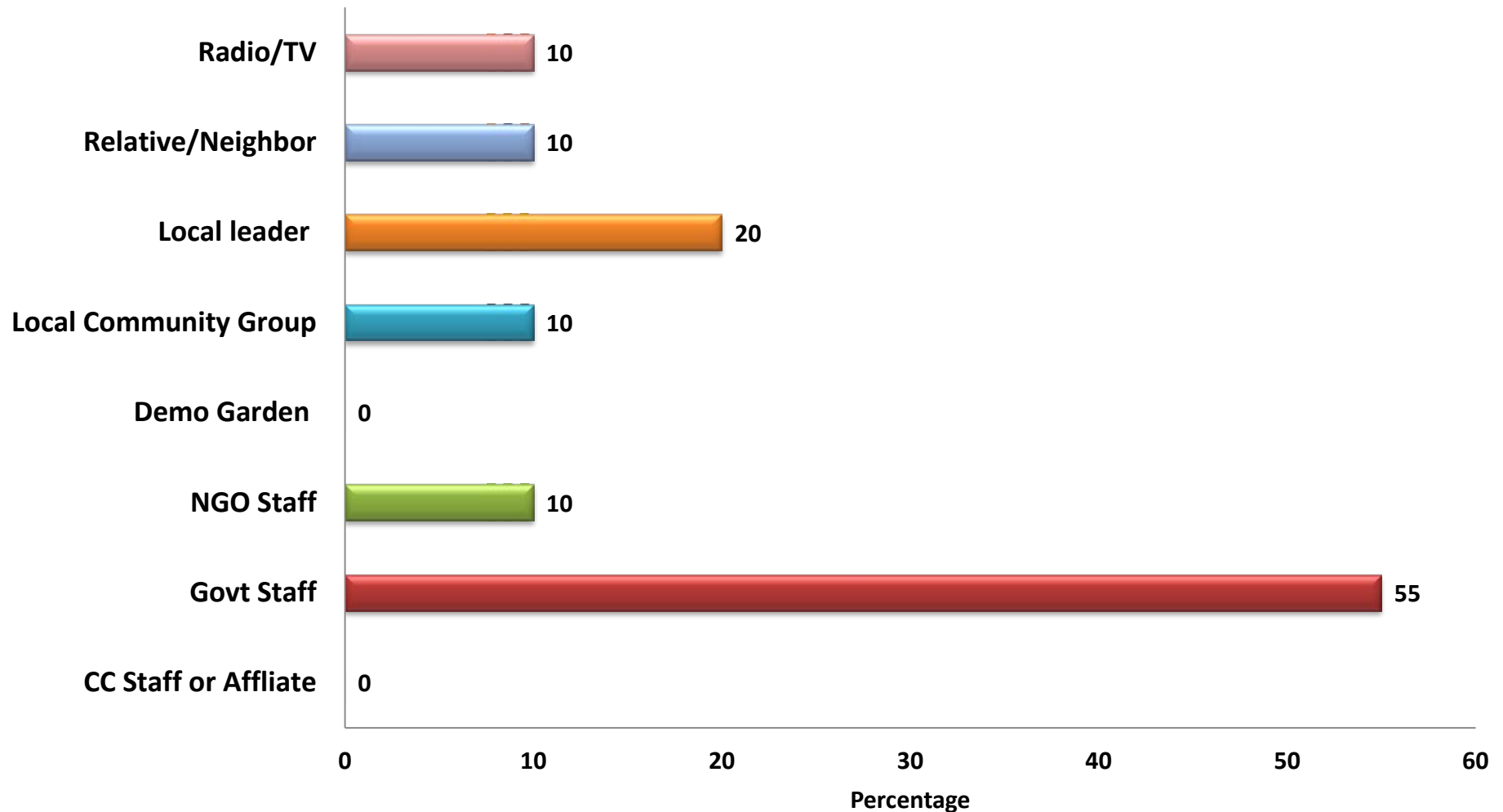
Social Participation , Access To Info. & Program Exposure

Kibiito - Crops Households were Encouraged to Produce



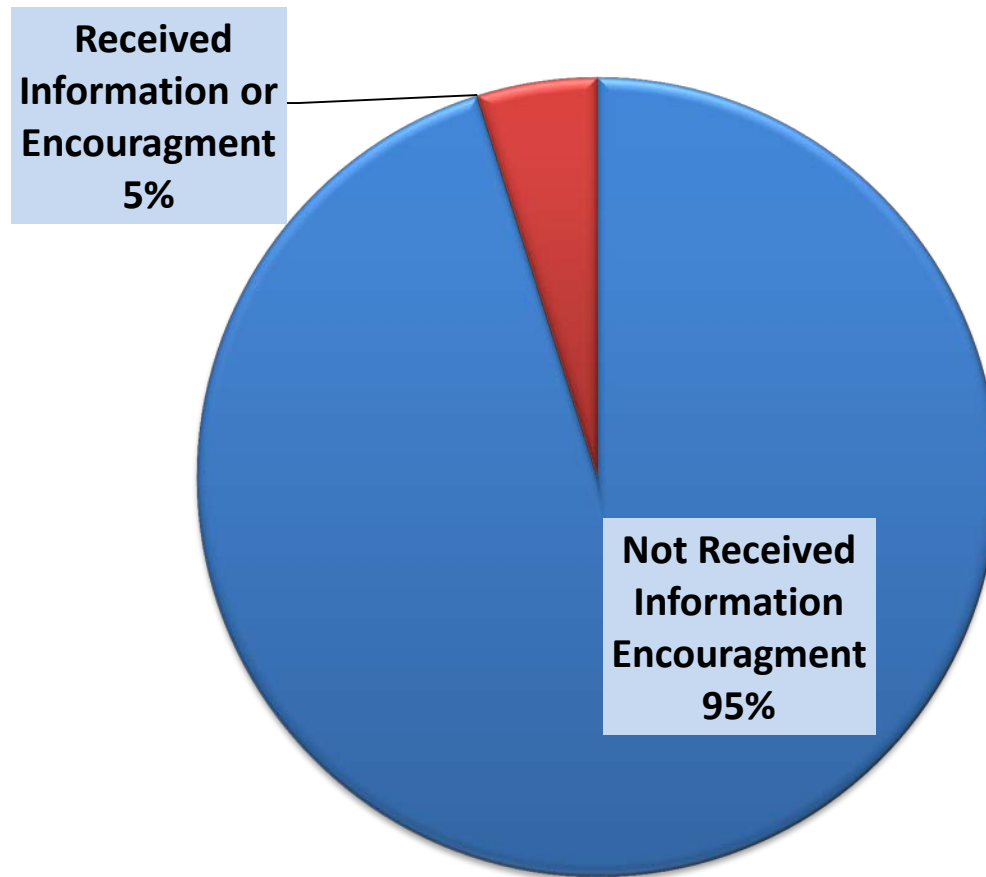
SOCIAL PARTICIPATION, ACCESS TO INFO. , PROGRAM EXPOSURE

Kibiito -Source of Crop Infomation or Encouragement



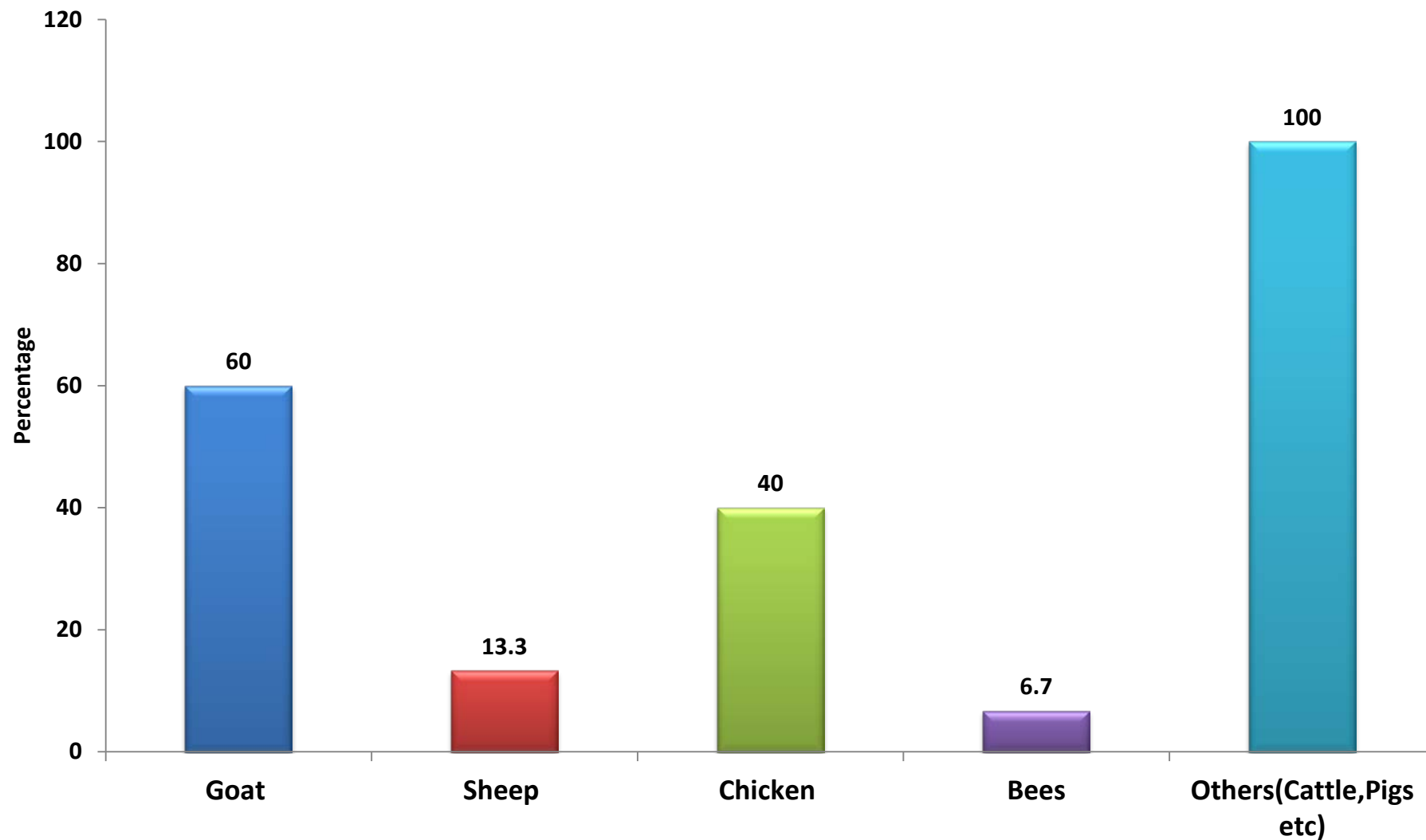
Social Participation , Access To Info. , Program Exposure

Kibiito -Receipt of information or Encouragement to Rear Certain livestock



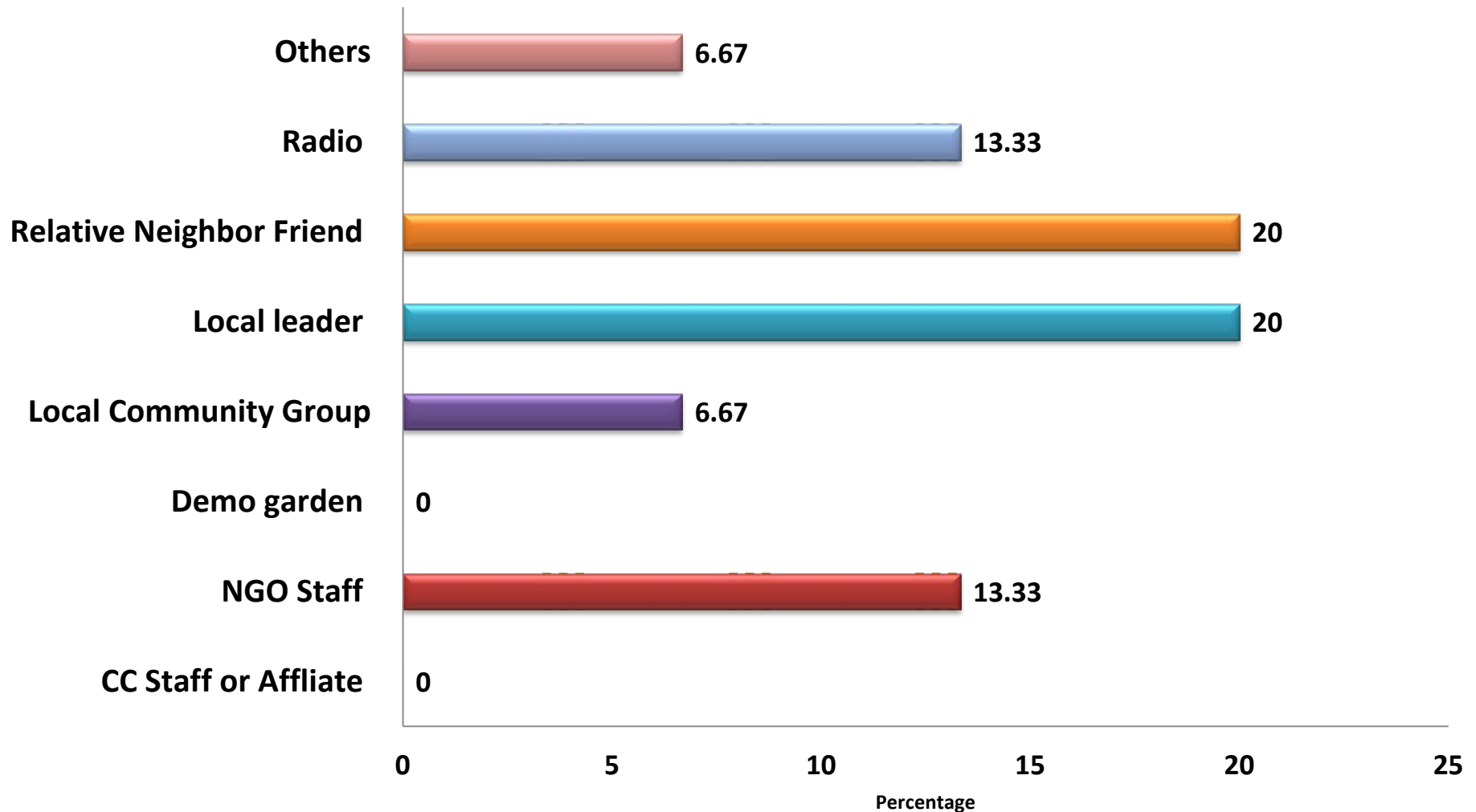
Social Participation , Access To Info. , Program Exposure

Kibiito - Livestock that Households were Encouraged to Rear



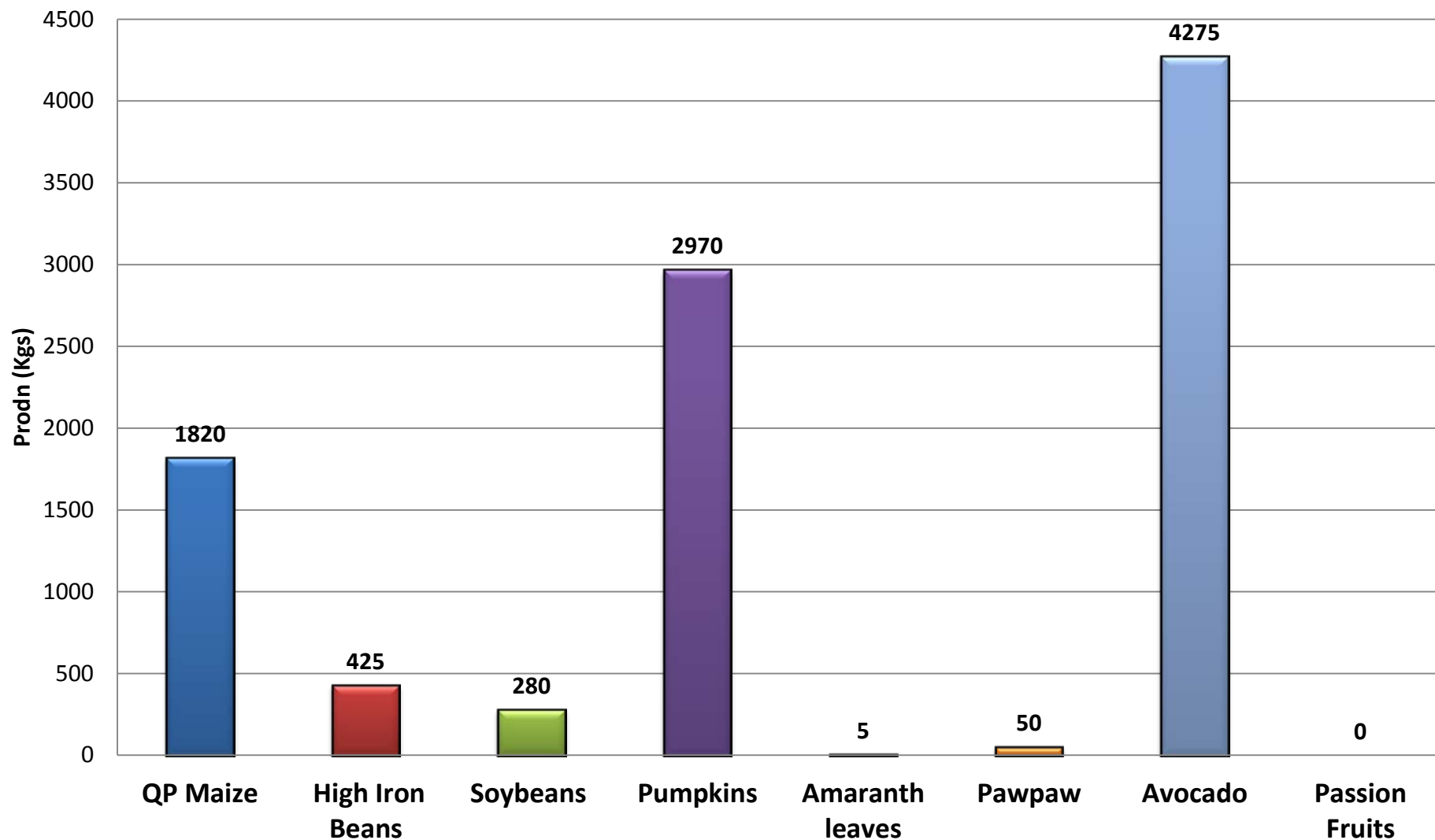
Social Participation, Access To Info. , Program Exposure

Kibiito -Source of Information or Encouragement to Rear Livestock



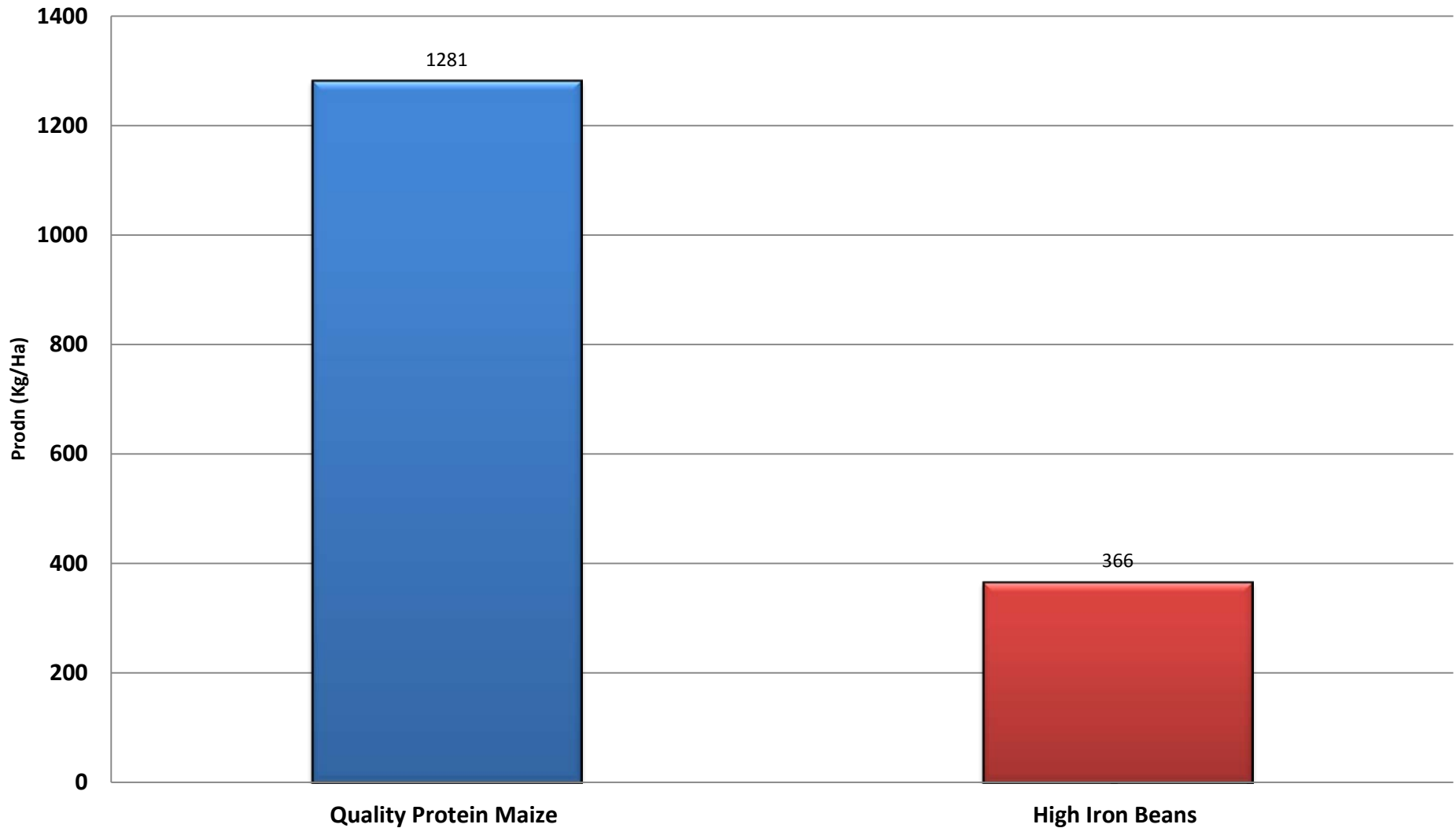
Social Participation , Access To Info. , Program Exposure

Kibiito- Production of Key Nutrient Sensitive Crops



AGRICULTURAL PRODUCTION

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



AGRICULTURAL PRODUCTION

Kibiito - Percentage of Households Using Various Technologies/ Practices

