



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH  
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD  
**COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-I (CEIP-I)**

Financed by World Bank with  
Grant Contribution of PPCR - Climate Investment Fund

**Baseline Survey Report cum Midline Survey Report**  
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v2

Submitted to:

Project Management Unit  
CEIP-1

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(CONTRACT PACKAGE NO. CEIP-1/ C2/S3)



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## 1. Background of CEIP-1

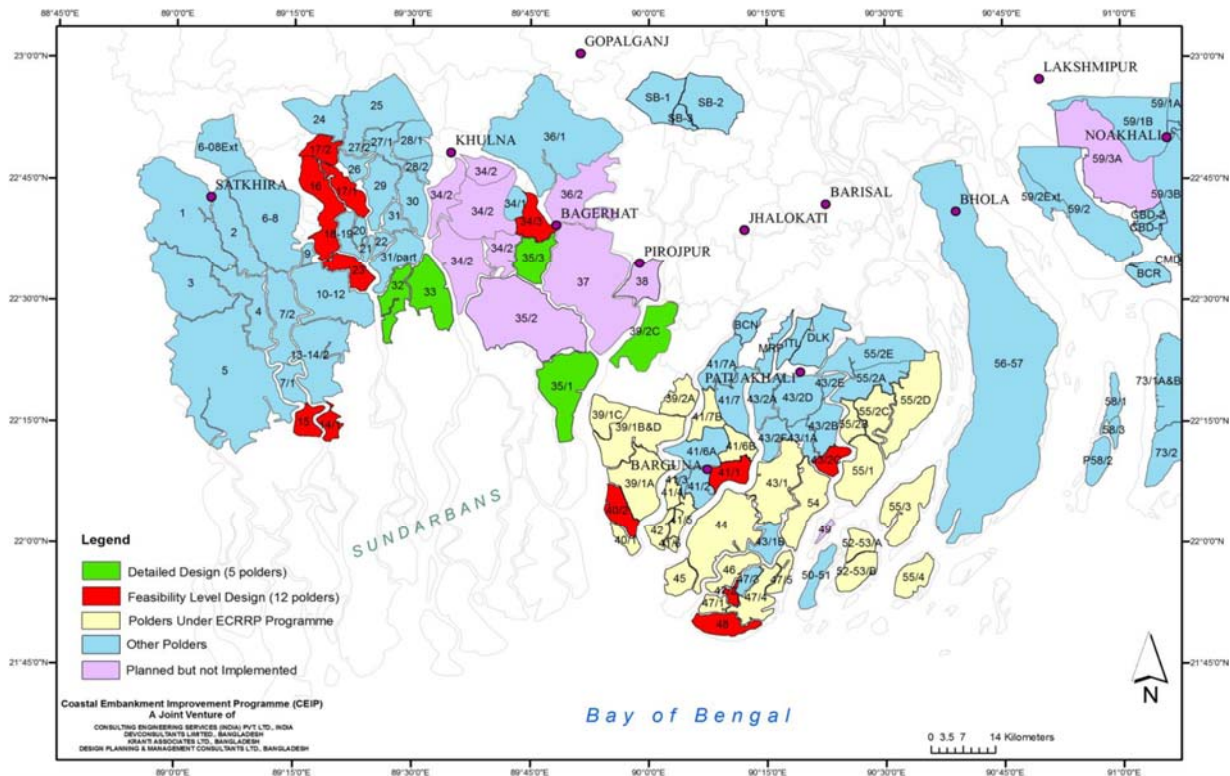
The goal of the Coastal Embankment Improvement Project – Phase I (CEIP-1) is to sustainably improve the well-being and resilience of communities in a particular part of the coastal zone of Bangladesh. The Project Development Objective is to increase the area protected from flooding, storm surges and salinity and this will be accomplished by rehabilitating polder embankments and strengthening their long-term durability through heightened embankments, improved water control structures, and foreshore afforestation. The project aims at restoration of the agriculture sector within the polder areas and rehabilitation of infrastructure with “build back better” designs that can guard against both tidal flooding and frequent storm surges.

The project will organize the mobilization of Water Management Organizations (WMOs) to provide coordination among the competing needs of various users and to ensure sustainability by assigning maintenance responsibility to the WMO.

The project will also provide long term monitoring of the coastal zone, technical assistance, and strategic studies and training to strengthen the role of the polder infrastructure in protection of human lives, physical assets, the environment and agricultural productivity. Most importantly it will support the initial implementation of the first slice of a fifteen to twenty-year program for polder scheme rehabilitation and upgrading.

The Project initially covered 17 polders in the six coastal districts – Khulna, Bagerhat, Satkhira, Patuakhali, Barguna and Pirojpur (see Figure 1).

Figure 1: Map of the 17 CEIP-I Polders



## Coastal Embankment Improvement Project, Phase I (CEIP-I)

These were organized into three Packages as shown below. Packages 01 and 02 are under construction, while Package 03 has proceeded only through design. Construction of Package 03 has been deferred to the planned second phase of CEIP which is in the feasibility study phase at present.

Package 01
Polder 32
Polder 33
Polder 35/1
Polder 35/3
Package 02
Polder 39/2C
Polder 40/2
Polder 41/1
Polder 42/3C
Polder 47/2
Polder 48
Package 03
Polder 14/1
Polder 15
Polder 16
Polder 17/1
Polder 17/2
Polder 23
Polder 34/3

The area and estimated population covered by each polder in Package 01 and 02 is presented below.

Polder No. and Package No.	Total Polder Area (ha)	Total Polder Population (BBS 2011 with assumed 1.4% annual growth rate)
Pkg 01	36,545	330,303
32	8,097	59,258
33	8,600	86,503
35/1	13,058	142,714
35/3	6,790	41,828
Pkg 02	29,467	393,899
39/2C	10,748	136,404
40/2	4,453	84,931
41/1	4,048	80,330
42/3C	2,753	27,501
47/2	2,065	7,277
48	5,400	57,457
<b>TOTAL, Protected</b>	<b>66,012</b>	<b>724,202</b>

The polders that made up the comparison group are shown in the table below, with their classification as to whether it is in a high, medium or low-risk zone (HRZ, MRZ, LRZ) and, most importantly, the degree of vulnerability (most vulnerable is MV, medium vulnerable is MDV) which reflects the physical condition of the polder embankments and water control structures. The selected control polders also span the geographic location of CEIP-1. The Third-Party M&E Consultants have strived to select comparison polders that are as similar as possible to the set of 17 polders that have been selected to be rehabilitated and improved under CEIP-1.

Risk and Vulnerability Classification	Number of CEIP-1 polders	Number of Comparison Polders	Comparison Polders
HRZ, MV	5	3	50/51, 47/1*, 47/4*
MRZ, MV	2	1	40/1*
LRZ, MV	6	4	7/1, 13-14/2, 29**, 55/1*
HRZ, MDV	1		
LRZ, MDV	3	4	21, 34/1, 41/2, 43/2E
<b>Total</b>	<b>17</b>	<b>12</b>	

- \* These are ECRRP Polders
- \*\* This is a Blue Gold Polder

Given Bangladesh’s high level of vulnerability to natural disasters and climate change, and the large population residing in the coastal zone, this project is vital to its development.

The project was conceived by the BWDB and is being undertaken in partnership with the World Bank who are providing a loan of \$375 million and the Pilot Program for Climate Resilience (PPCR) of the Climate Investment Fund (CIF) who provided a grant of \$25 million.

While investments over the last 50 years usually addressed damage caused by previous disasters, CEIP is the first comprehensive program to address flooding and storm surge risk strategically.

The project development objectives (PDOs) as approved and agreed upon by the GoB and the World Bank are to:

- “(a) increase the area protected in selected polders from tidal flooding, salinity intrusion and frequent storm surges, which are expected to worsen due to climate change;*
- (b) improve agricultural production by reducing saline water intrusion in selected polders; and*
- (c) improve the Government of Bangladesh’s capacity to respond promptly and effectively to an eligible crisis or emergency.”*

As stated, these objectives will be achieved by strengthening and upgrading embankments as part of an integrated approach to improve the polder system in the coastal area and through the building of local institutional arrangements to ensure the sustainable O&M of the polder schemes. The project also provides for assistance for any persons that must be resettled, with special livelihood restoration support for the vulnerable.

These PDOs have been adopted as a means to contribute to the higher-level goal of improving the well-being of polder residents on a sustainable basis by preserving their lives, assets and livelihoods and improving resilience to climate and weather-related shocks.

## 2. CEIP-1 Baseline and Mid-line Data Sampling Approach

Baseline data was collected for Packages 01, 02 and 03 in 2016 in anticipation of the work on these packages proceeding with minimal phasing. Package 01 commenced in January of 2016, but Package 02 commenced mobilization in July of 2017 with no physical works until 2018. Since there was such a substantial delay, the baseline for Package 02 needed to be updated to serve as a true baseline. Thus 2017 agricultural data were collected for Package 02 polders in 2018. In order to allow some point of comparison that would capture the influence of non-project factors (weather, agricultural policy, general economic conditions, etc.), data were also collected from a group of non-CEIP polders as well; these are referred to as the comparison group. Finally, data were collected by sampling households from two groups: 1) the entire polder (perimeter as well as interior) and this is referred to as the General Population survey; and 2) the Project-Affected Households (PAH) which pulled the survey sample from the persons who would lose land, residence or business due to the works on the embankments.

Since data was collected from PAH households in both 2016 and 2018, the Package 01 PAH households underwent both baseline and mid-line surveys.

A sampling of households was drawn using probability-proportional-to-size with the sample sizes as follows:

Group	2016	2018
Package 01 General Population	644	nil
Package 02 General Population	732	732
Package 03 General Population	864	nil
<b>CEIP-1 Total (Pkgs 01, 02, 03)</b>	<b>2,240</b>	<b>Not available</b>
Package 01 PAH	661	640
Package 02 PAH	782	777
Comparison	1,152	1,152

## 3. Survey Development and Administration

The approach to the development and administration of the surveys followed an established and proven methodology.

### **Step 1. Develop the sampling frame and select the sample**

As the first step in preparing for the studies, a sampling frame was developed. Since polders do not correspond to any administrative boundaries and no prior list or map of villages by polder exists, the M&E Consultants invested a great deal of effort to finalize the list of villages. The data on number of households and population in these villages was then drawn from the BBS census of 2011 to arrive at the total number of households in the CEIP-1 polders.

Once the full list of villages inside the Project's 17 polders was established, a sample of villages was selected randomly with probability proportional to size (PPS). The sampling frames for each of these randomly selected villages was prepared and households were randomly selected – again based on the principle of PPS.

## **Step 2. Design and pre-test the survey**

The next step in the process was to draft the contents of the survey instruments based on indicators to be tracked and other required information. The M&E Consultants developed structured questions to capture information on the indicators of interest. All questions were grouped into modules based on the common themes or components to ensure that the administration of the survey would have a clear and logical flow and that it would comply with other proven survey design principles.

Copies of the draft survey instruments were forwarded to PMU for review and any feedback was incorporated. The finalized beta versions of the survey instruments were then translated into Bengali and back-translated to confirm that questions remained clear and retained all original meanings and contexts to capture the required information.

In developing the instruments, the following survey design principles were followed:

1. Always begin with an informed consent form
2. Questions should be clear and concise
3. Only one topic per question
4. For categorical questions, answer options should generally be mutually exclusive
5. For categorical questions, answer options should be exhaustive<sup>1</sup>
6. Questions/sections should be ordered from easiest to answer to the hardest
7. Questionnaires should not be too long to avoid survey fatigue
8. A unique identifier to be assigned for each survey

## **Step 3. Hire and train enumerators, and supervisors and field test survey instruments**

Enumerators and supervisors were hired and trained. The training involved a series of sessions before going to the field in which the M&E Consultants explained how each question of the survey should be asked, when to skip questions based on responses received to earlier questions and what protocol to follow if someone does not wish to participate or is not available. Participants were allowed to ask for clarifications or give feedback based on prior experience or knowledge of local conditions. The training also included mock surveys and similar exercises so that enumerators would be more familiar with the instruments. Following the classroom-type sessions, the M&E and survey teams then pilot tested the instruments on a small sample of respondents with a similar profile to the actual survey sample. This allowed the testing of “skips”, confirmed the intent of the questions is understood, allowed ambiguities to be caught and corrected and ensured important nuances would be conveyed. The pilot test provided an initial assessment of the questions, responses, instructions, and administration times of the entire survey. The final survey instrument, which was used in both rounds of data collection in 2016 and 2018 is provided in Appendix 1.

## **Step 4. Collect the data**

This phase of the study involved the actual administration of the surveys. The M&E Consultants oversaw all day-to-day activities to ensure all tasks were carried out according to the design. The M&E Consultants conducted initial check-ins with survey supervisors and managers to assess how the first days of data collection were progressing. Supervisors and managers reviewed the data collected on a daily basis and gave regular updates to the senior M&E team on how the survey is progressing.

The M&E Consultants also oversaw the data entry on a rolling basis to verify that data entry systems were being followed.

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<sup>1</sup> Answer options may include “Other, please specify” but the frequency of this response is expected to be low.

**Step 5. Enter and validate/clean data**

The M&E Consultant’s Information Management Specialist and Data and Information Analysts conducted logic checks and other quality assurance tasks to review the data prior to the analysis phase.

A data entry team developed data templates where survey returns were entered as they come in from the field. The team entered returns on a periodic basis so that errors could be caught and corrected early. The survey manager and supervisors conducted field audits and random spot checks of surveys as a quality control measure. The data entry team then conducted the necessary tasks such as coding and running tests to develop validated data sets.

**Step 6. Analyze results**

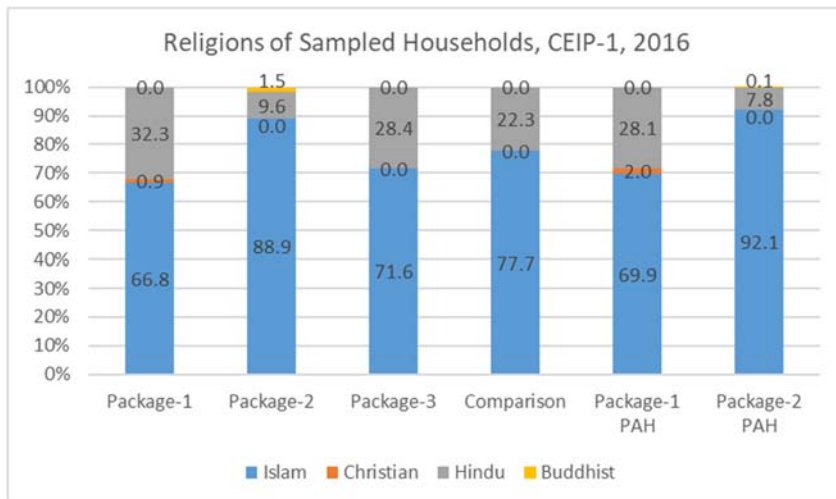
The M&E Consultants conducted the analyses of the validated data to identify significant findings and results. Analysis of the data was done including gender disaggregation, comparison between types of PAHs, package and all other sub-groups as appropriate.

**Step 7. Develop and finalize the study reports**

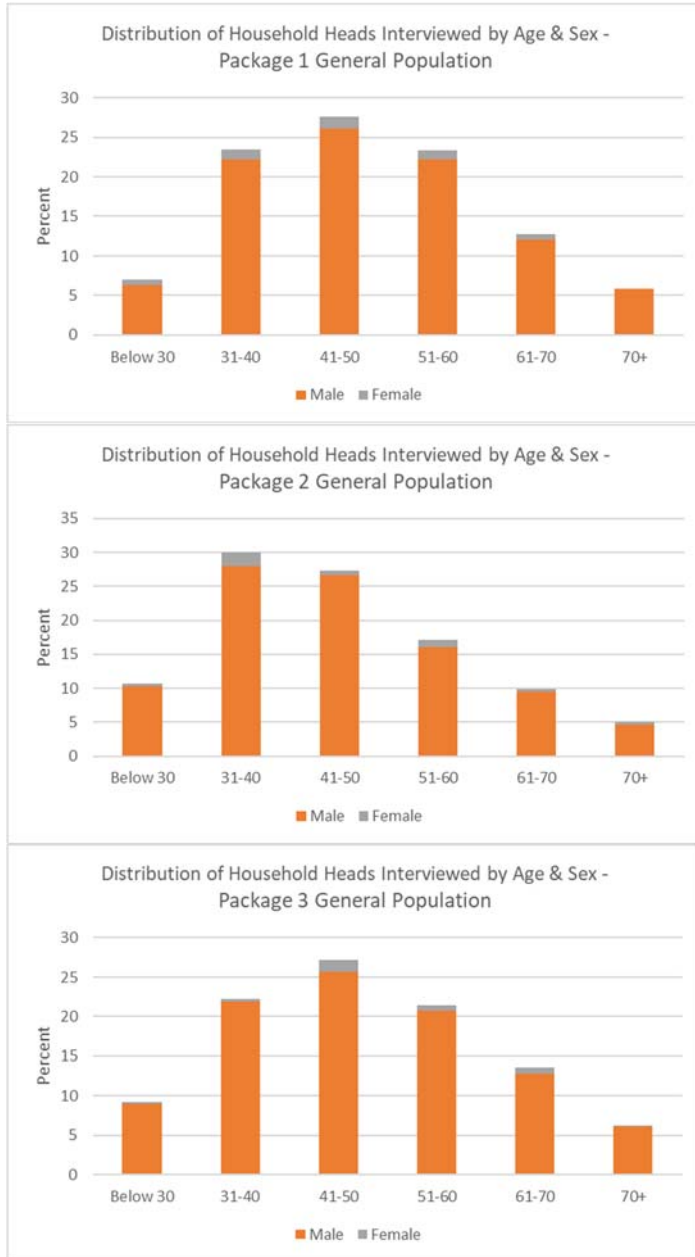
The M&E Consultants develop the draft report and will present findings and recommendations based on survey results. The draft report will be revised if required, incorporating stakeholders’ comments and feedback.

## 4. Demographics

The percentage of the sampled households by religion is presented in the figure below. Islam is the predominant religion in all sampled groups, ranging between 66.8% of Package 01 households to 88.9% of Package 02 households. The prevalence of Muslim households among the respective PAH populations in each package is roughly comparable to the respective package’s general population (69.9% and 92.1% respectively). Hindu households make up most of the balance of the population with Christian and Buddhist households coming in between zero and two percent of the total.

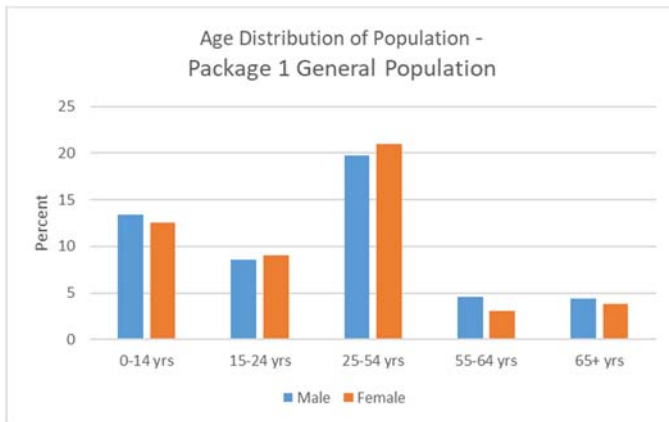
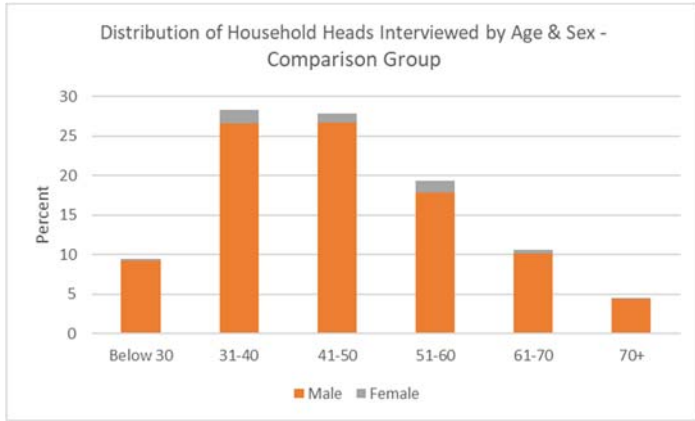






The age and sex distribution of household heads are shown on the charts on this page. The age distribution is skewed to the right as expected, especially in Package 02, meaning that there are more heads of household in the younger age categories than the older ones. Heads of household up to 50 years of age represent 58.1%, 68.0% and 58.7% percent of total household heads of Packages 01, 02 and 03 respectively. The share of household heads up to 50 years of age in the comparison group is 65.6%.

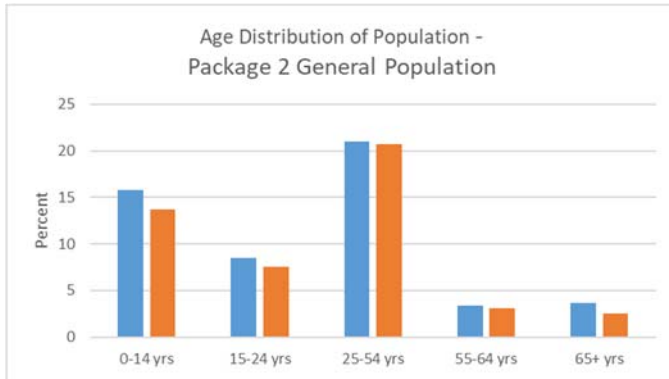
The percentage of female-headed households in the sample was 5.1% for both Packages 01 and 02, 3.7% for Package 03 and 5.3% for the comparison group.



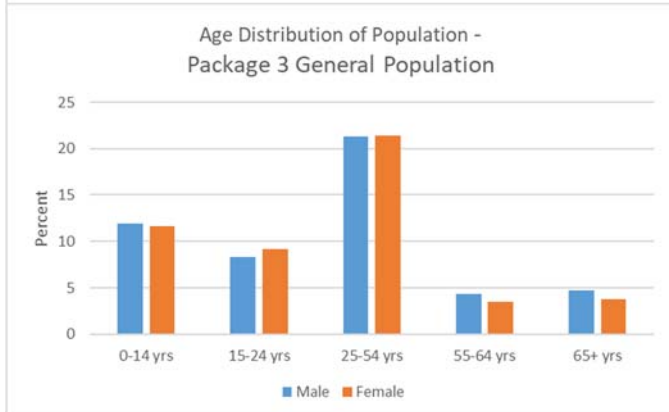
The age distribution of the entire sample population (all household members) as of 2016 is shown in the charts to the left. There are minimal differences among the package populations.

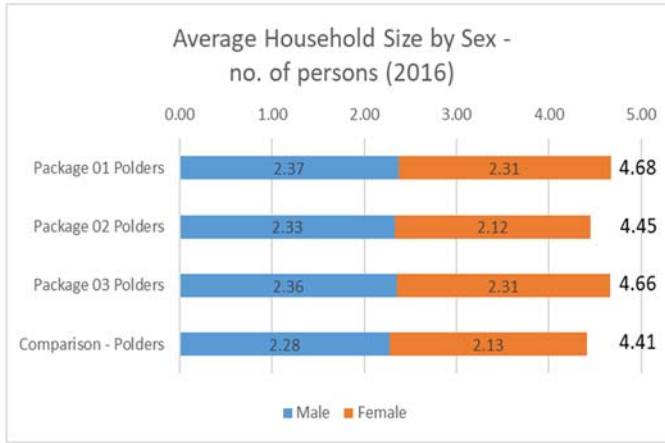
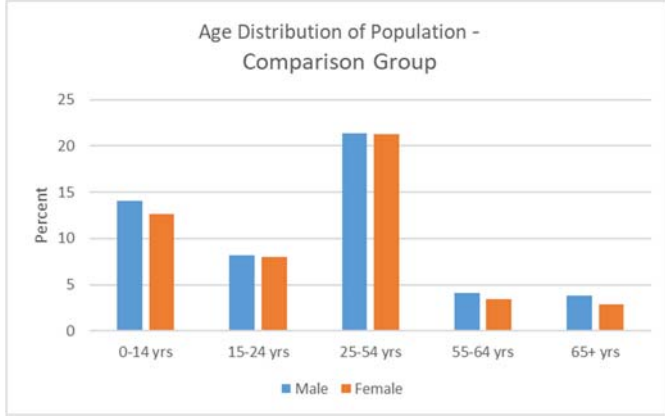
The sex ratio, defined as the number of males per 100 females, for the packages are:

Package 01	102.6
Package 02	110.1
Package 03	102.1
Comparison Group	106.8



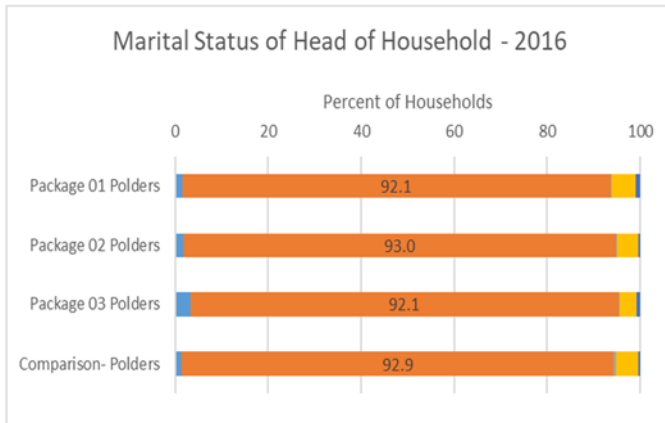
Package 02 demonstrates a substantially higher proportion of males in the population than the other two packages.



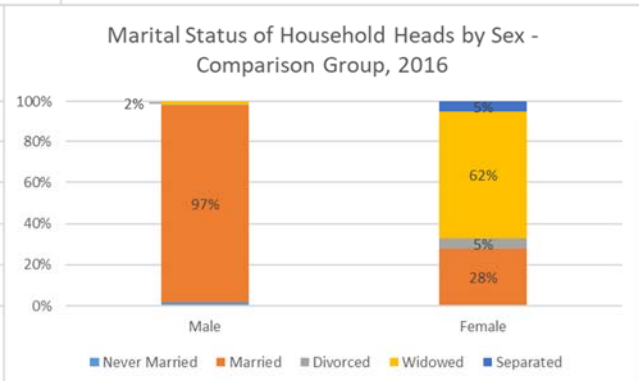
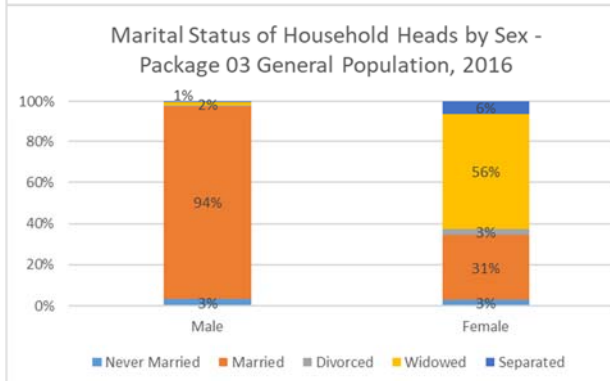


The average household size ranges between 4.45 persons (Package 02) and 4.68 persons (Package 01) with Package 03 households at 4.66 persons. The comparison group comes in at 4.41 persons per household.

As far as marital status of the heads of households, the vast majority (92-93%) are married and there is little difference among the groups. Package 03 has a 3.2% level of household head who have never been married compared to 1.6% and 1.8% in Packages 01 and 02 respectively. And Package 01 has a larger percentage of widowed heads of household (5.3%) compare to Packages 02 and 03 which have 4.5% and 3.6% who are widows.



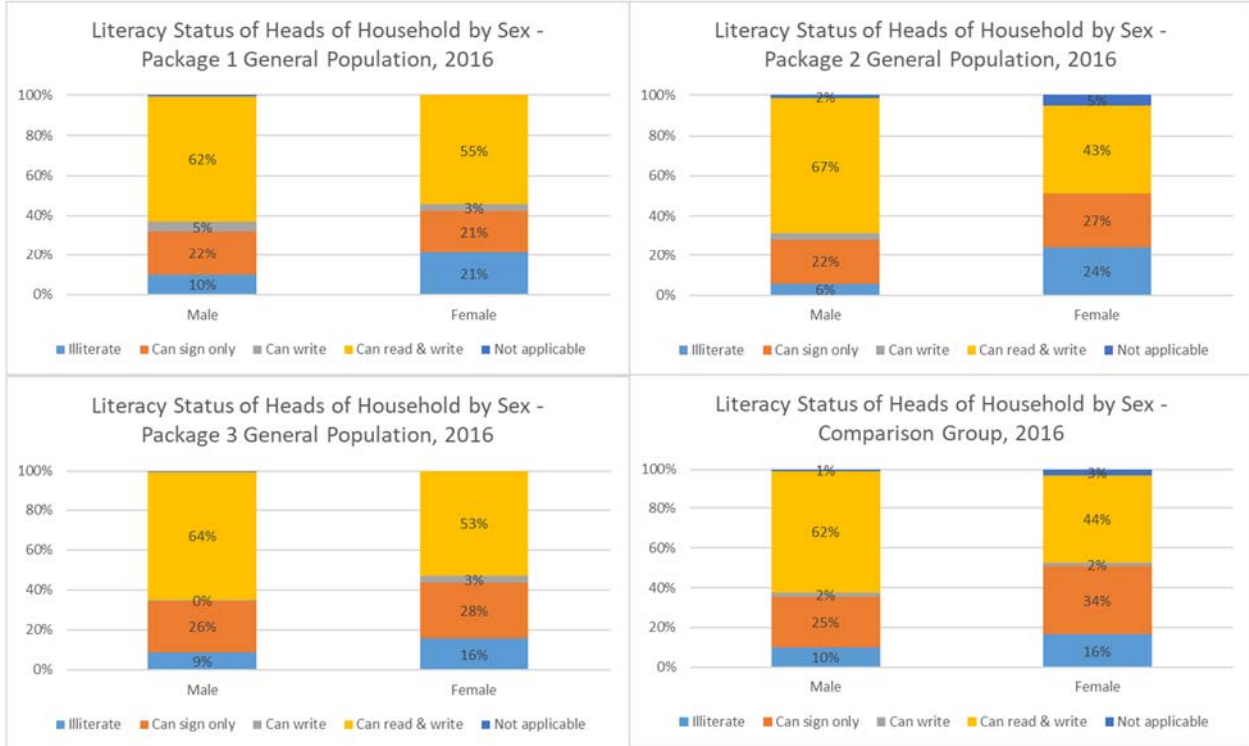
When disaggregating marital status of the head of household by sex, there is a stark difference. The heads of female-headed households are predominantly widowed (54-58%), followed by married (24-35%), separated (5-12%), divorced (3-5%) and never married (less than 3%). The heads of male-



headed households are 94-96% married, 1-3% never married, 2% widowed and less than 1% separated or divorced.

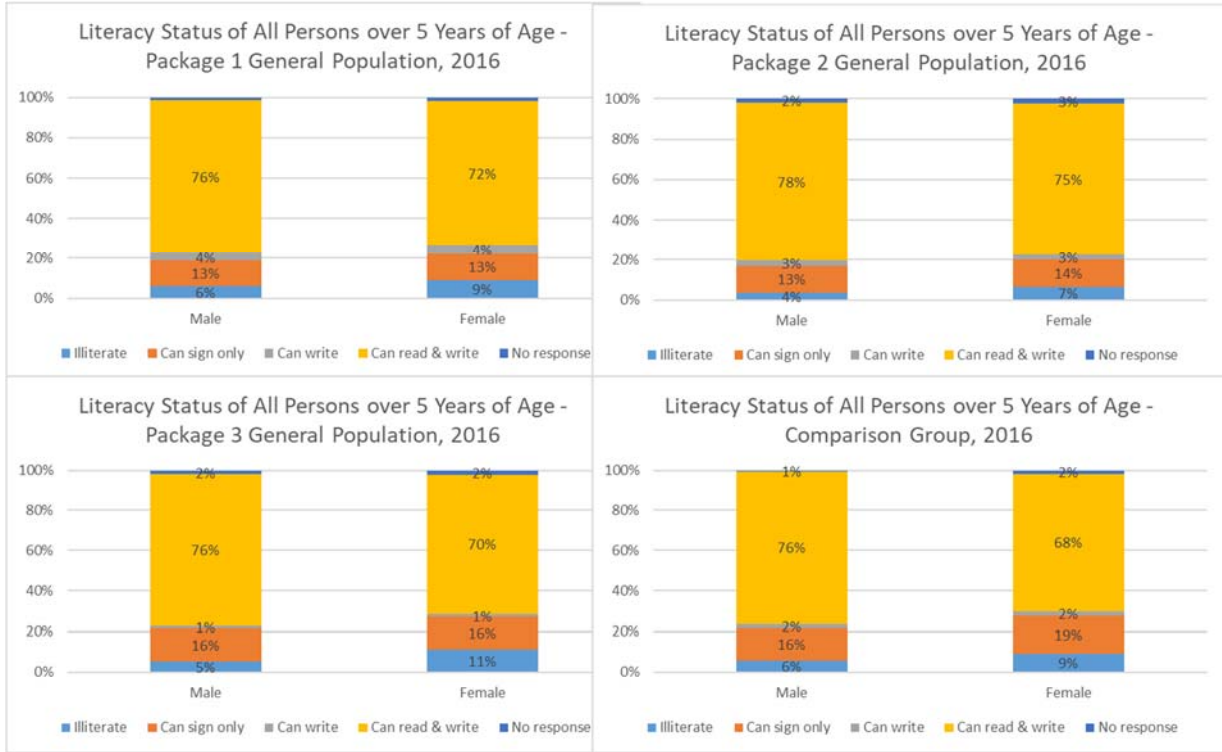
## 5. Literacy and Education

The literacy levels among male heads of household, measured as being able to read and write, are between 62% and 67% with the Package 02 population at the high end of this range. Literacy among female heads of household is much lower, ranging from a low of 43% in Package 02 to 53% in Package 03 and 55% in Package 01 households.

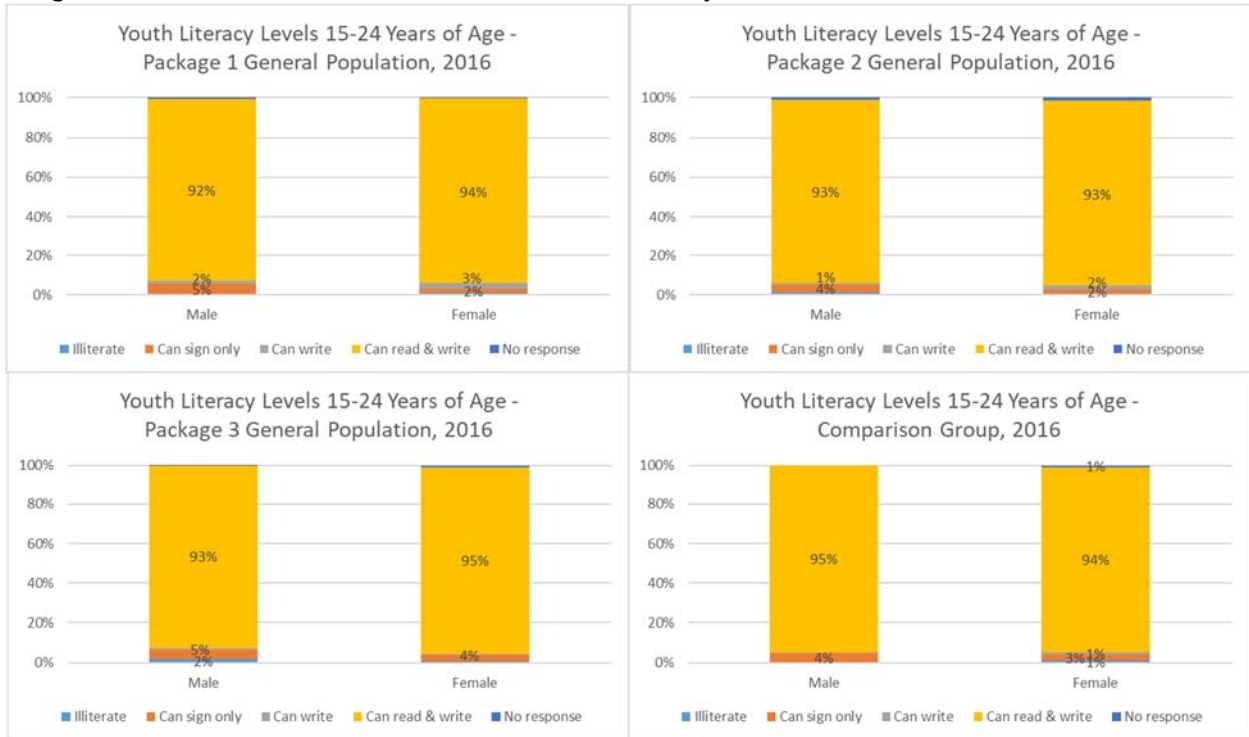


With respect to all persons in the household (over 5 years of age), the literacy rates for males range from 76% to 78% and for females from 70% to 75% (with 68% in the comparison group). The lowest literacy rates for girls and women are in Package 03 households while Package 01 and 02 households are 72% and 75% respectively. Among boys and men, Package 02 households show somewhat higher literacy rates than Package 01 and 03.

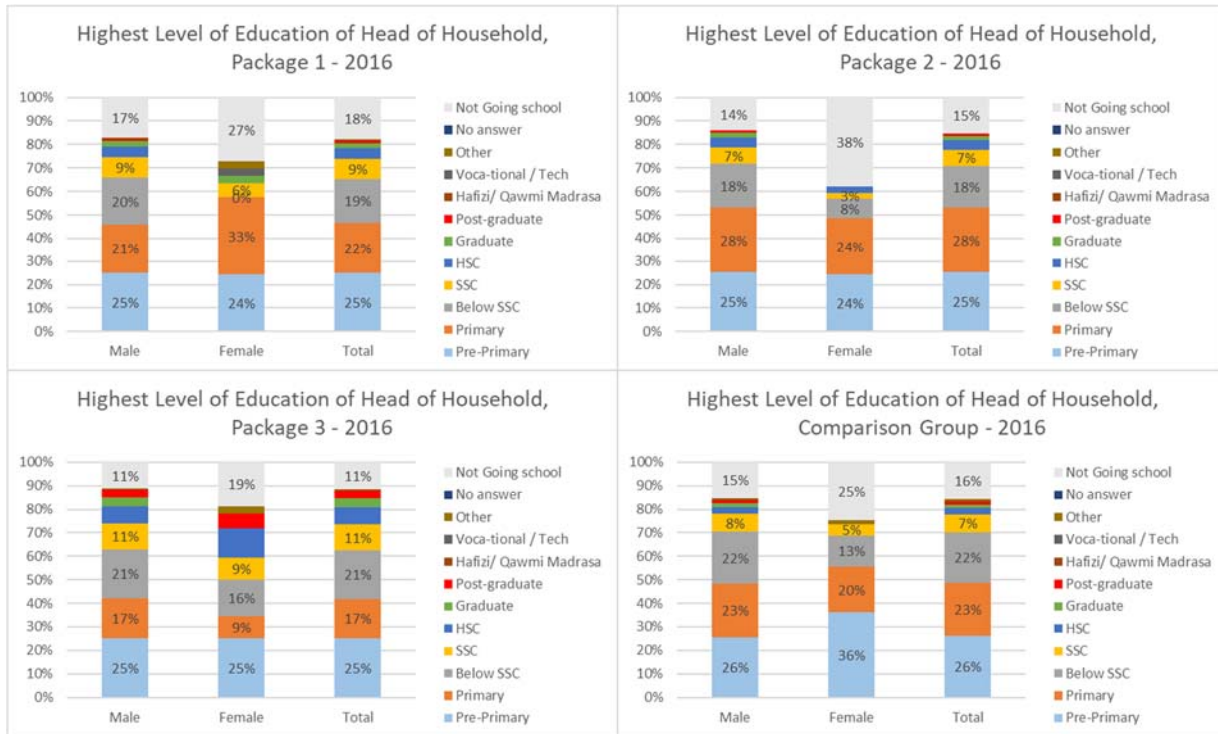
Coastal Embankment Improvement Project, Phase I (CEIP-I)



For youth, defined as those aged 15-24 years, the literacy rates are high at between 92% and 95%. Literacy rates are comparable between males and females. This finding indicates that the project area is transitioning through its younger generation toward achievement of universal literacy, consistent with Bangladesh’s commitment to the UN’s Education for All objective.



The highest educational level of the heads of household is presented in the figures below.



The percentage of households whose heads have had at least some secondary education or vocational or religious education are:

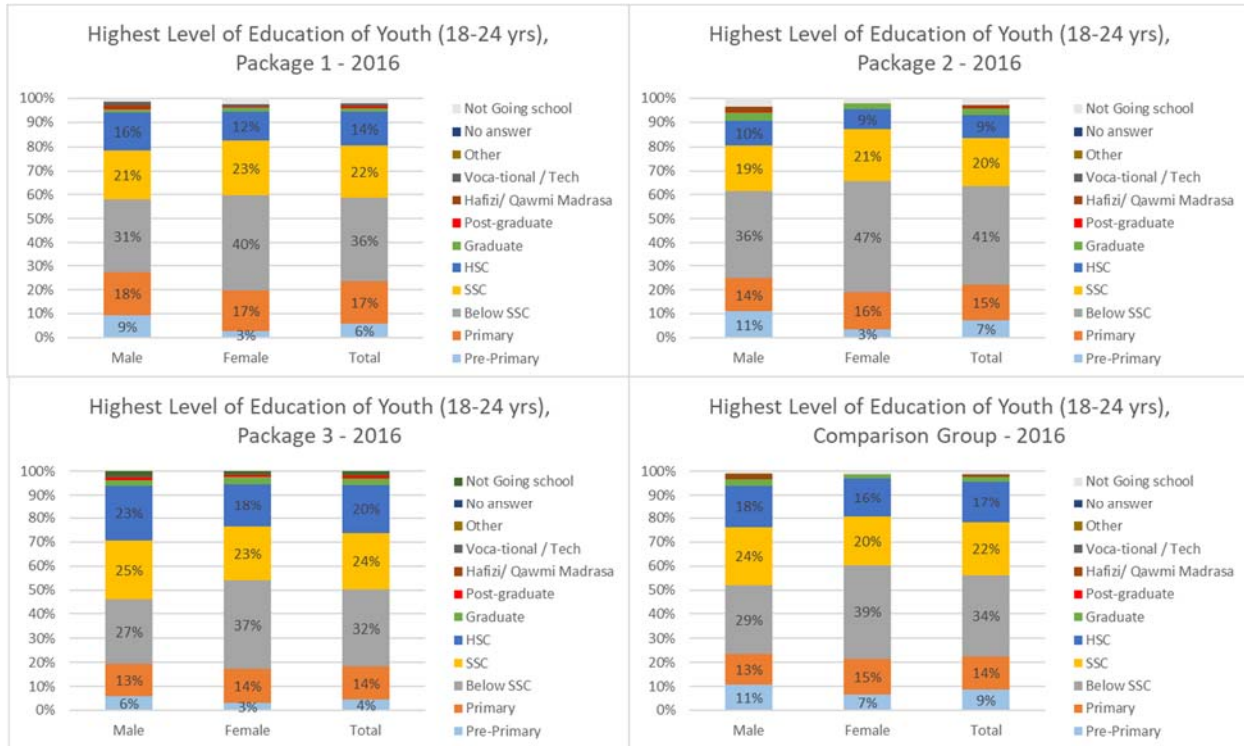
Category	Package 01	Package 02	Package 03	Comparison
Male Heads of HH	37%	33%	46%	36%
Female Heads of HH	12%	14%	44%	18%
All Heads of HH	35%	32%	46%	35%

Package 01 and 02 households have education profiles of household heads that are similar to each other and to the comparison group as well. Package 03 household heads tend to have achieved a higher level of education and the men and women household heads are essentially at par with respect to some measures. There is great disparity between men and women in Package 01 and Package 02 with only 12-14% of women who head households having at least some secondary education (or vocation/religious education) compared to 33-37% for men.

The education profile in the CEIP-1 Project area shows that youth are substantially more educated than the population as a whole. The percentage of youth that have had at least some secondary education or vocational or religious education are:

Category	Package 01	Package 02	Package 03	Comparison
Male Youth	71%	71%	78%	75%
Female Youth	78%	79%	82%	77%
All Youth	75%	75%	80%	76%

Female youth have generally matched and, in some cases, even surpassed male youth in terms of proportion attaining higher levels of education.



## 6. Occupations

The principal occupations of persons 15 years of age or older and household heads are presented for the CEIP-1 Packages and comparison group disaggregated by sex in the figures that follow. It is clear that a higher percentage of males than females are involved in occupations that generate income as shown in the table below. The percent of women engaged in income-generating occupations ranges from 7.3% to 12.1% in the project area while the comparison group stood at 6.5%. For men, the percentage ranged from 78.0% to 82.1% in the project area with the comparison group at 80.3%. As heads of household, females were of necessity much more likely to engage in income-generating occupations than otherwise is the case with the percent ranging between 50.0 and 54.5% in the project area and 54.1% in the comparison group. Males that were heads of their households were also involved in income-generating activities to a higher extent than males in general with the percentage ranging between 93.8 and 95.4% in the project area and 94.9% in the comparison group.

Males in Project-Affected Households (PAH) had similar rates of participation to males in the general polder population, but females in PAH had slightly higher rates of participation at 12.4 to 17.1% compared to 7.3 to 12.1% in the general population for all working age women.

Percentage of Males and Females Engaged in Income Generating Occupations

Group	Category	Males	Females
Package 01 General	All persons 15+ years of age	79.9	12.1
Package 01 General	Household Heads	95.4	54.5
Package 02 General	All persons 15+ years of age	82.1	7.3
Package 02 General	Household Heads	94.2	51.4
Package 03 General	All persons 15+ years of age	78.0	9.2
Package 03 General	Household Heads	93.8	50.0
Package 01 PAH	All persons 15+ years of age	78.0	17.1
Package 01 PAH	Household Heads	94.9	57.5
Package 02 PAH	All persons 15+ years of age	77.2	12.4
Package 02 PAH	Household Heads	93.7	38.5
Comparison Group	All persons 15+ years of age	80.3	6.5
Comparison Group	Household Heads	94.9	54.1

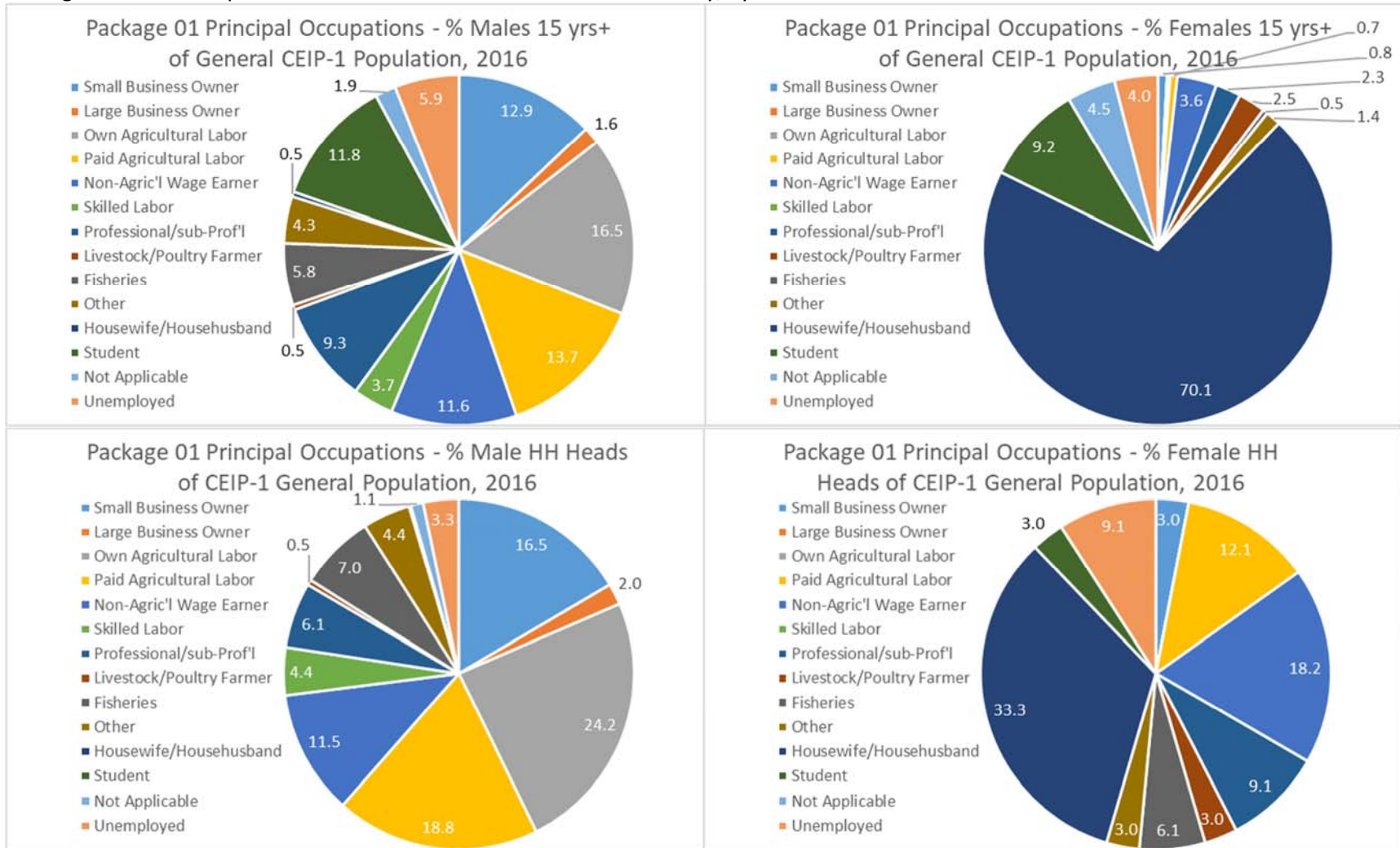
Men are much more likely to own a business, especially if it is a large business, than women. In the CEIP-1 Project area, 14.5% to 23.6% of working-age men owned a business, while only 0.8% to 1.2% of women did so. Heads of household were more likely to own a business with males ranging from 19.8% to 29.8% and females from 3.0% to 8.1%. PAH households were much more heavily engaged in their own business enterprises than the general polder population – 30.7% to 42.3% of male household heads and 12.3% to 15.7% of female household heads owned a business.

Percentage of Males and Females Owning a Business

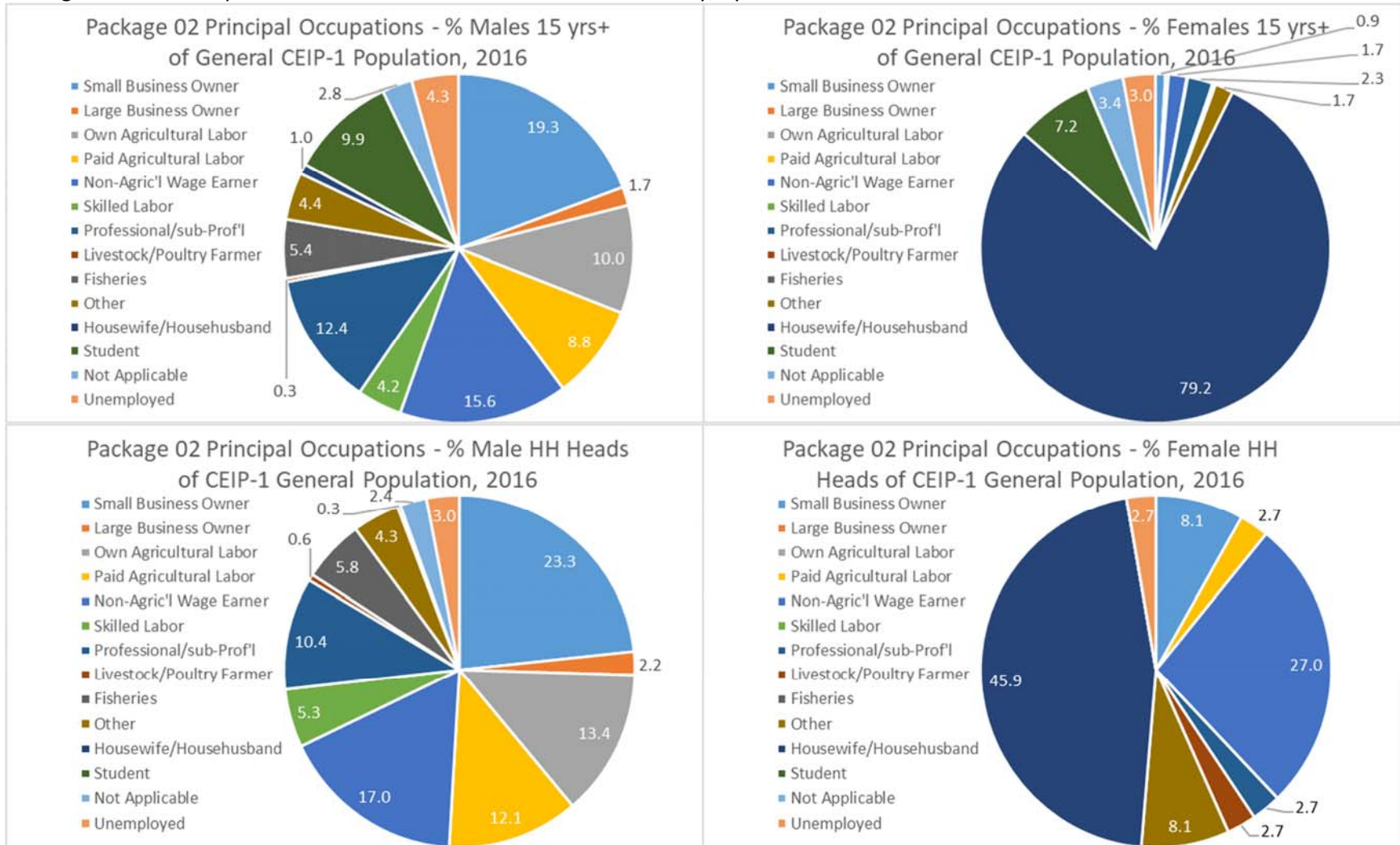
Group	Category	Males	Females
Package 01 General	All persons 15+ years of age	14.5	0.8
Package 01 General	Household Heads	19.8	3.0
Package 02 General	All persons 15+ years of age	21.0	0.9
Package 02 General	Household Heads	25.5	8.1
Package 03 General	All persons 15+ years of age	23.6	1.2
Package 03 General	Household Heads	29.8	3.1
Package 01 PAH	All persons 15+ years of age	21.4	3.7
Package 01 PAH	Household Heads	30.7	15.7
Package 02 PAH	All persons 15+ years of age	27.4	2.8
Package 02 PAH	Household Heads	42.3	12.3
Comparison Group	All persons 15+ years of age	19.7	1.1
Comparison Group	Household Heads	24.3	18.0



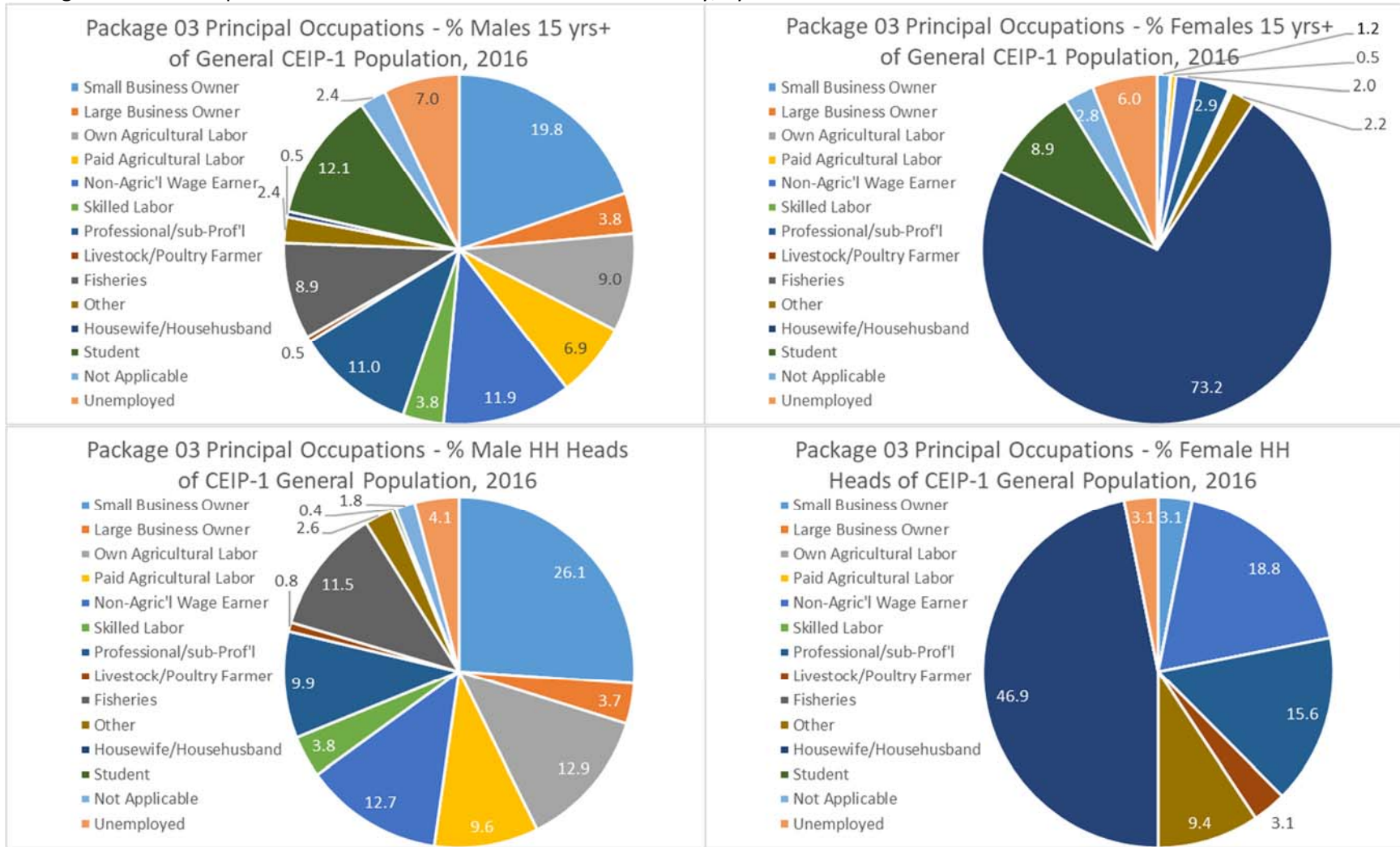
Package 01 General Population – All Adults versus Household Heads Only, by Sex



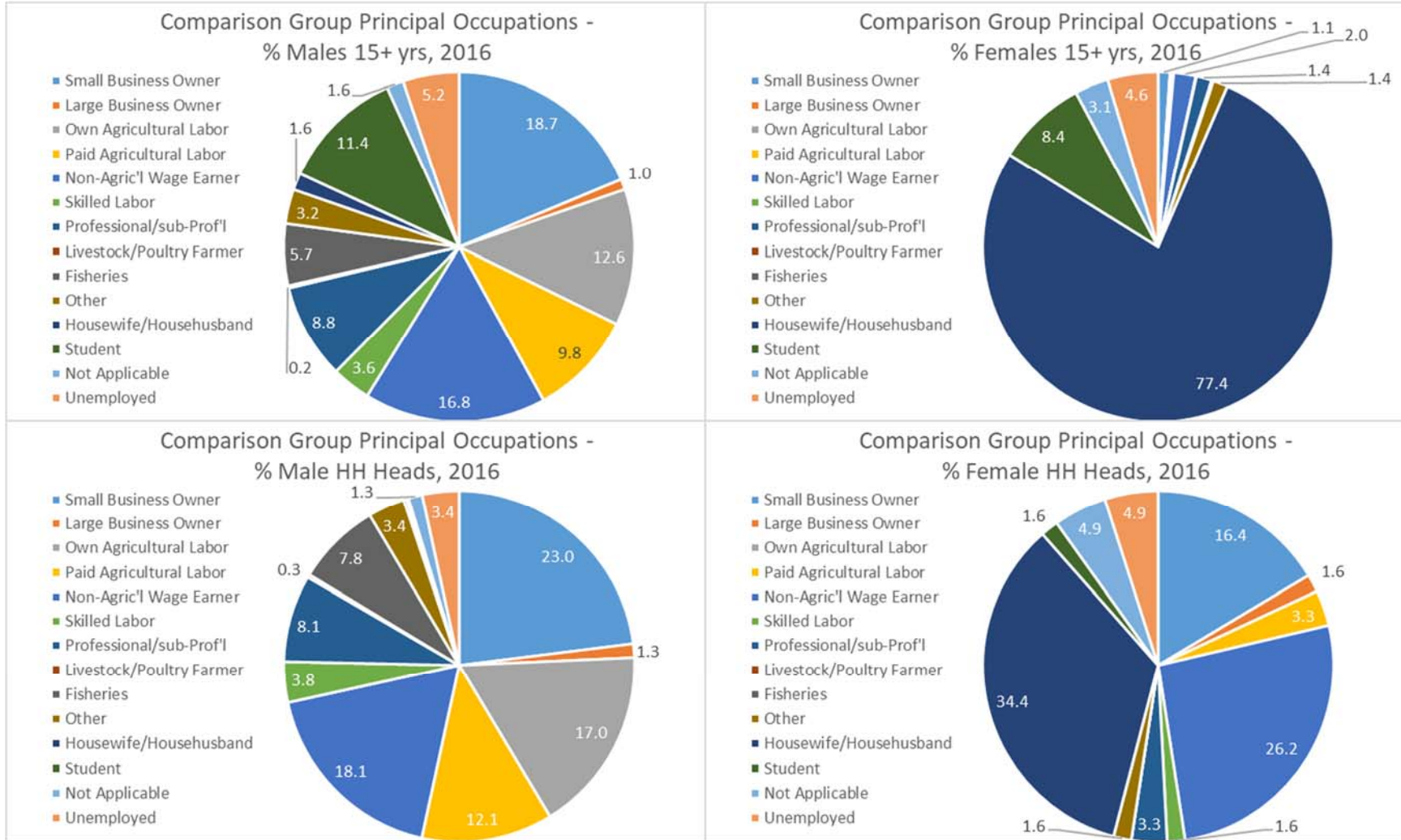
Package 02 General Population – All Adults versus Household Heads Only, by Sex



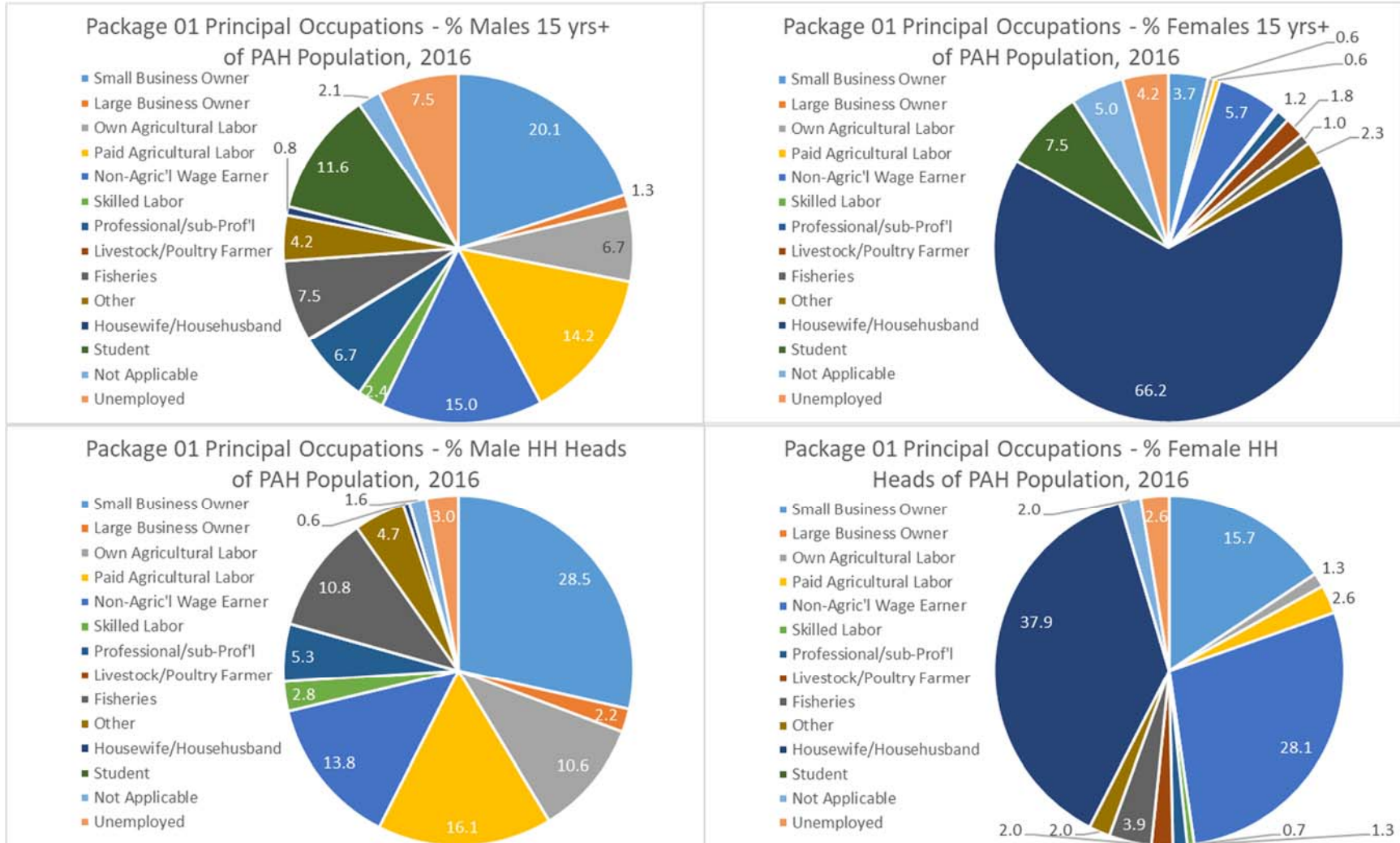
Package 03 General Population – All Adults versus Household Heads Only, by Sex



Comparison Group – All Adults versus Household Heads Only, by Sex

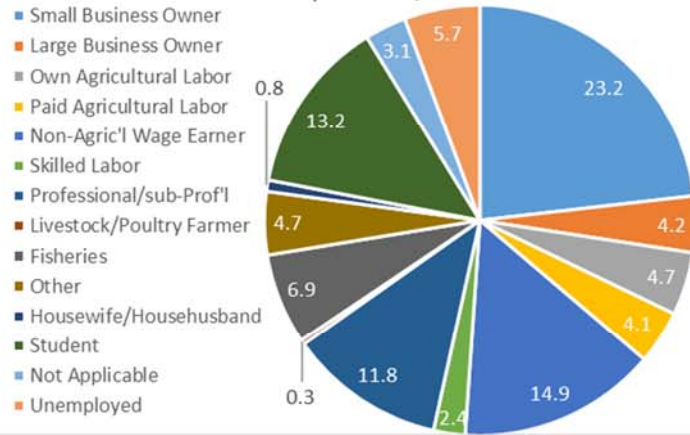


Package 01 PAH – All Adults versus Household Heads Only, by Sex



Package O2 PAH – All Adults versus Household Heads Only, by Sex

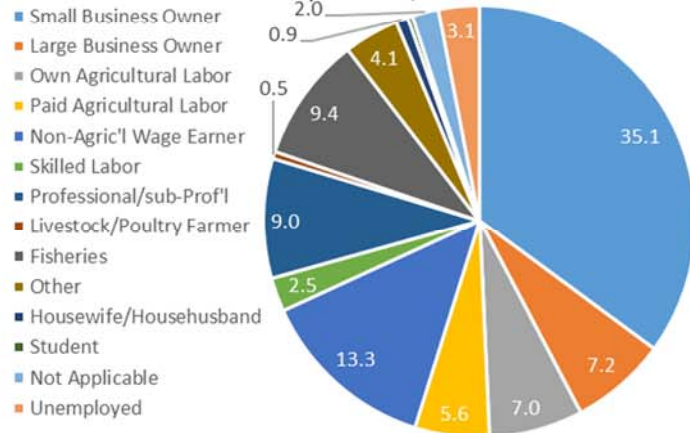
Package O2 Principal Occupations - % Males 15 yrs+ of PAH Population, 2016



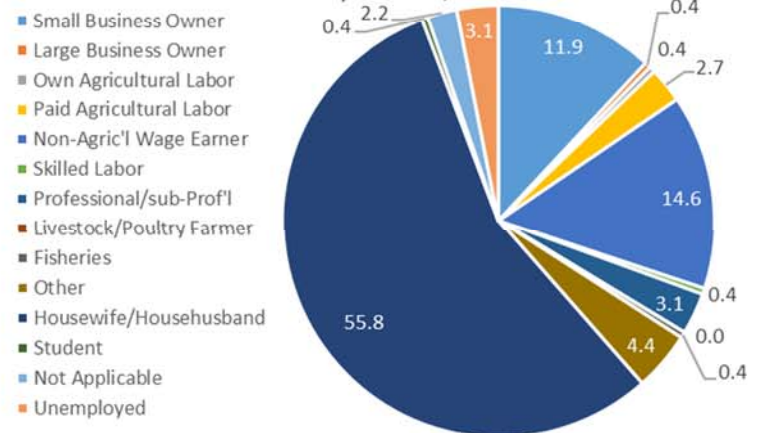
Package O2 Principal Occupations - % Females 15 yrs+ of PAH Population, 2016



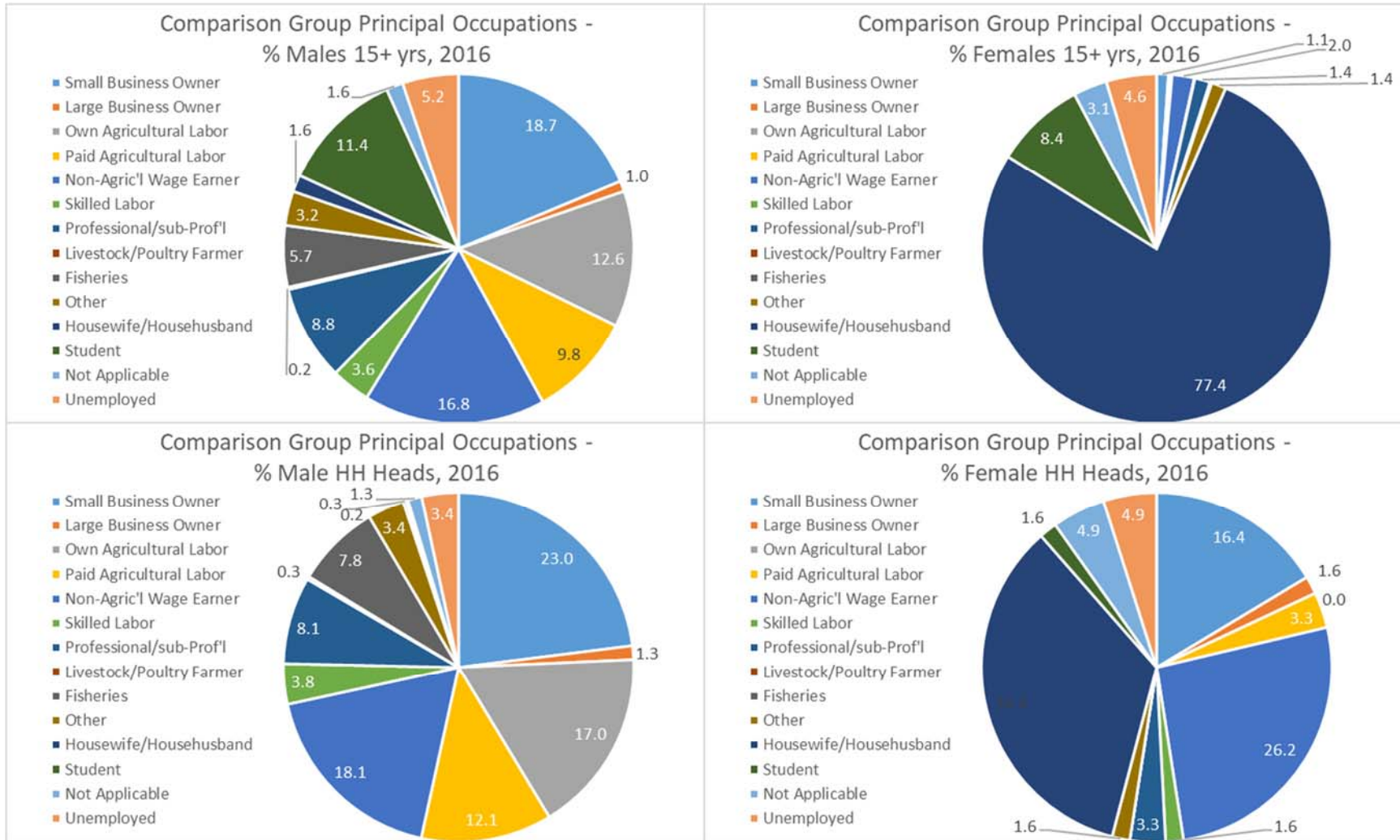
Package O2 Principal Occupations - % Male HH Heads of PAH Population, 2016



Package O2 Principal Occupations - % Female HH Heads of PAH Population, 2016



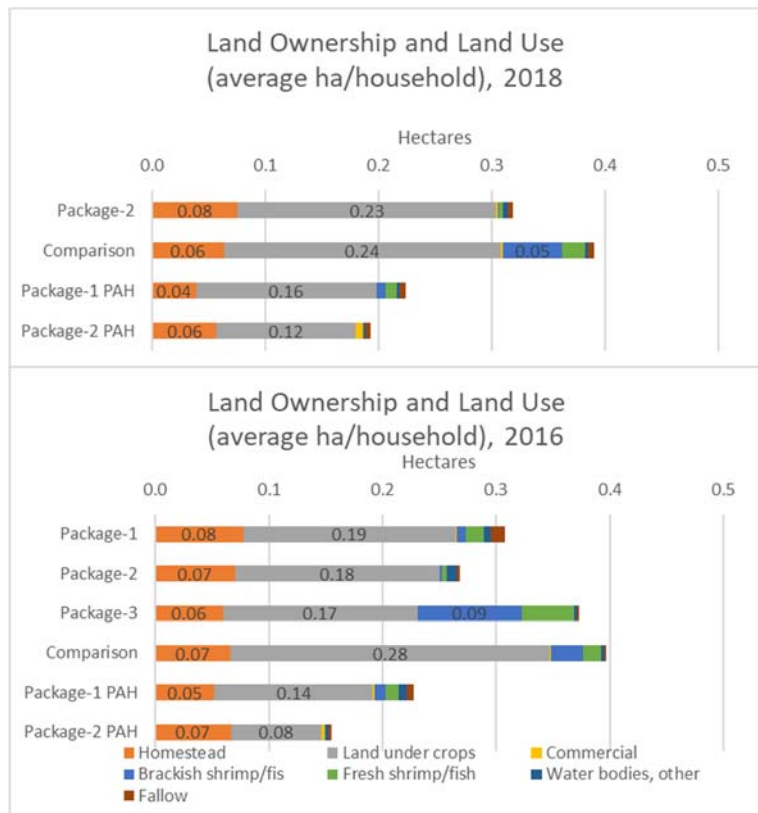
Coastal Embankment Improvement Project, Phase I (CEIP-I)



## 7. Land Tenure and Land Use

Package 01, 02 and 03 households showed some differences in land holdings and land use. In 2016, land under possession was 0.31, 0.27 and 0.37 hectares per household on average for the three packages respectively and in 2018 this increased for Package 02 to 0.32 ha. While land under crops was similar in 2016 (0.17, 0.18 and 0.19 ha respectively), this increased for Package 02 in 2018 to 0.32 ha. The main increase was in land under crops which rose by an average 0.05 ha.

Package 01 PAH saw little change between 2016 and 2018 in average land under possession (0.23 to 0.22 ha). Package 02 PAH saw an increase over this period from 0.16 ha in 2016 to 0.19 ha in 2018 – and this was principally due to an expansion of area under crops by 0.04 ha.

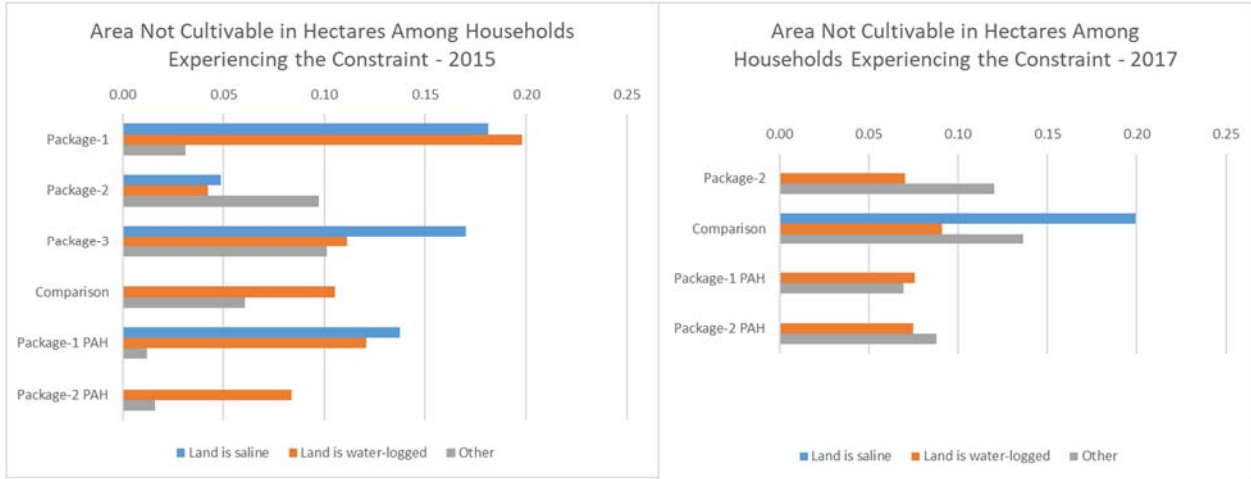


Some farmers have experienced water-logging and/or salinity of their land and sometimes this has made part of their land uncultivable. The average area not cultivable – per household suffering some loss of cultivable land due to waterlogging or salinity (or other condition such as rocky area) – is presented in the figures below. Given the average land area under crops in the previous section, the nearly 0.20 hectares affected among suffering households in Package 01 represents almost the entire land area planted to crops. Package 02 is less affected with waterlogging and salinity in terms of average land area at about 0.05 ha in 2015 rising to 0.07 ha in 2018. Package 03 shows an intermediate extent of land area affected with 0.17 ha being saline and 0.11 waterlogged.

Interestingly, the land area affected by waterlogging and salinity among Package 01 PAH households declined from 2015 to 2017 from 0.12 ha down to 0.08 ha. The change was not appreciable either way in Package 02 PAH households.

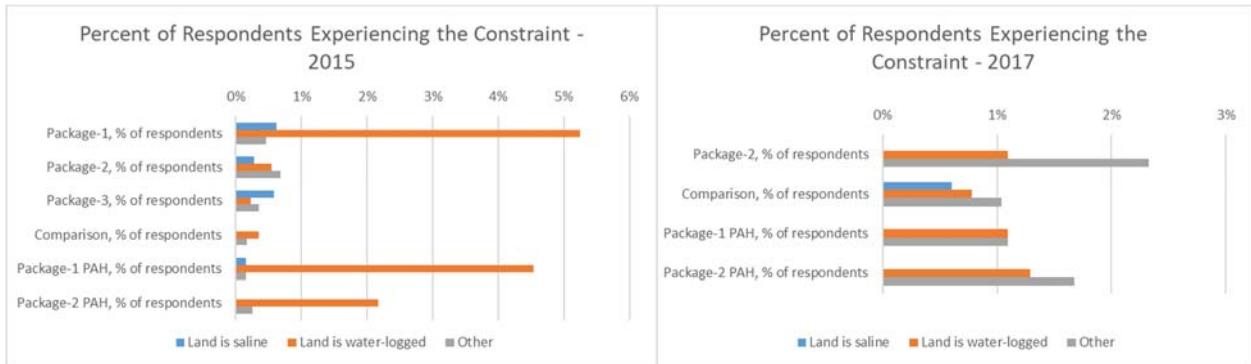


Coastal Embankment Improvement Project, Phase I (CEIP-I)

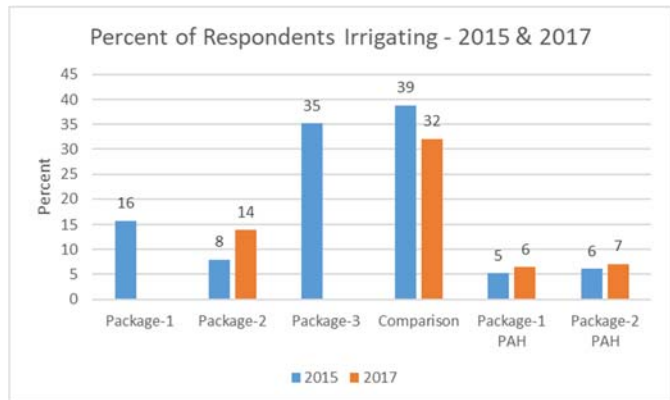


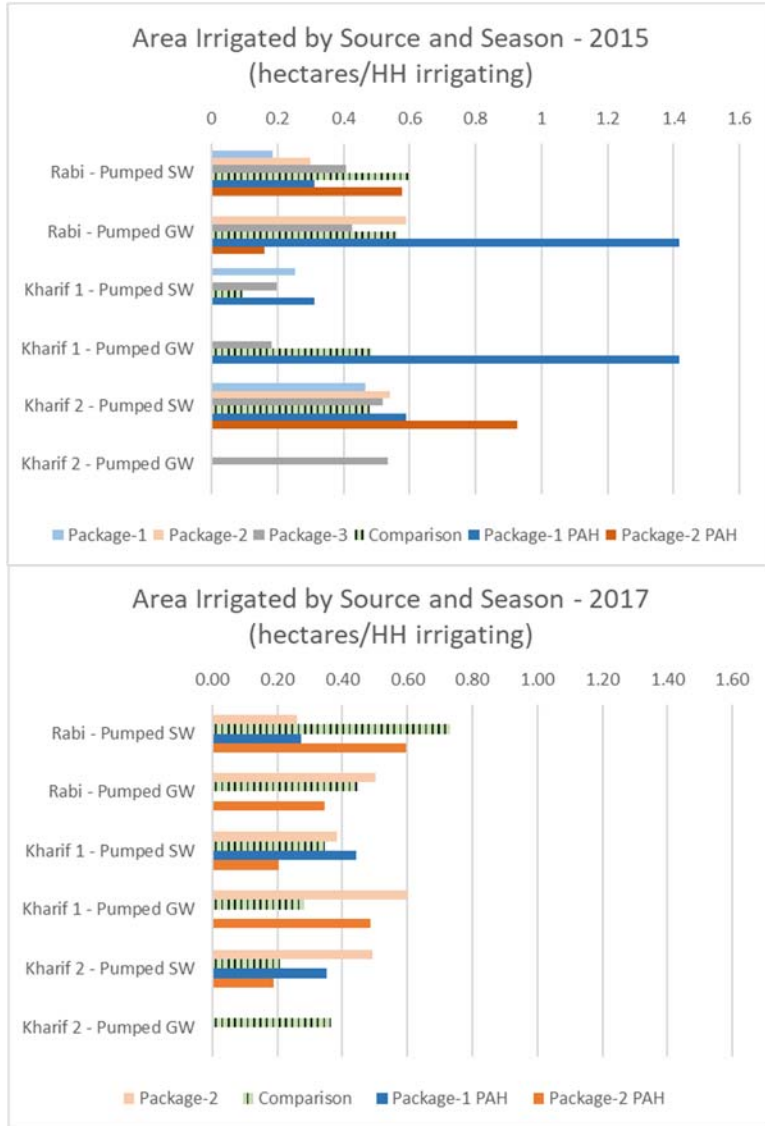
Aside from extent of land area affected, the incidence of waterlogging and salinity – i.e., the percent of households affected – is worth monitoring. In 2015, waterlogging affected more than 5% of households in Package 01, 0.7% in Package 02 and 0.3% in Package 03. By 2017, the percentage of Package 02 households thus affected rose to 1.1% - more than a 50% increase from two years earlier.

In contrast, Package 01 PAH saw a decline in percent of households affected by waterlogging between the two survey years – from 4.5% to 1.1%. Some of this could have been due to the ongoing resettlement operation. Package 02 PAH also saw a decline from 2.2% to 1.3%.



The percent of households irrigating their land varies substantially from package to package. In 2015, 16% of Package 01 households irrigated their land. The figures were 8% and 35% respectively for Package 02 and 03. Only Package 02 as a whole was sampled in 2018 and the percent of households irrigating rose from 8% to 14%. The percentage of households irrigating their crops among Package 01 and 02 PAH increase slightly from 2015 to 2017.





Among those households irrigating, the area irrigated by source and by season in both 2015 and 2017 is depicted in the figures to the left. During rabi season, Package 01 pumps only surface water, while Package 02 and 03 households use both surface water and ground water for irrigation. During kharif 1 season, the same pattern is observed. During kharif 2 season, all packages pump surface water, but only Package 03 pumps groundwater.

The average area irrigated using surface water during Rabi, Kharif-1, and Kharif-2 for Package 1 irrigators is 0.18, 0.25 and 0.47 hectares respectively. The average area irrigated using surface water in Package 2 in these three seasons is 0.26, 0.38 and 0.49 in 2017 (changed from 0.30, none and 0.54 in 2015).

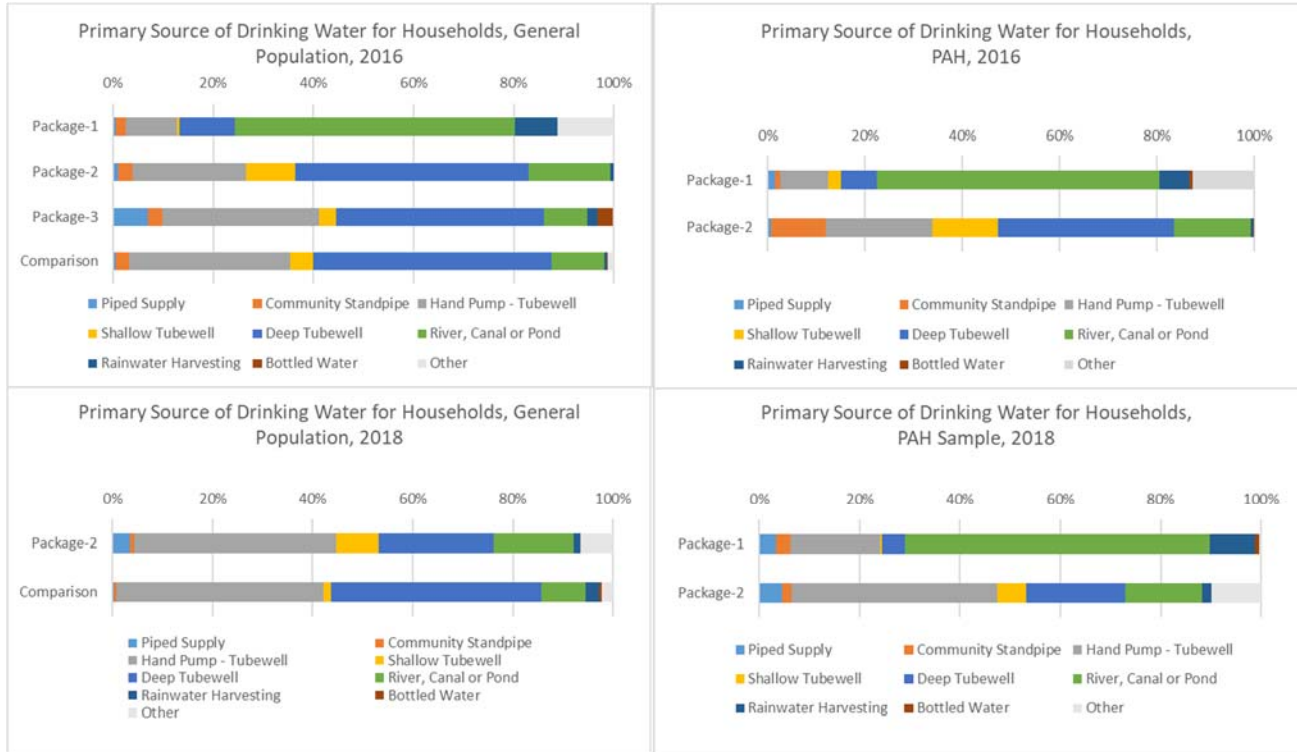
The average area irrigated in Package 02 using pumped groundwater during the three seasons is 0.45, 0.60 and none in 2017 (changed from 0.59, none and none respectively in 2015).

## 8. Amenities

Primary sources of drinking water were ascertained by Package. In 2016, 55.9% of Package 01 households relied on river, canal or pond water as their primary source of drinking water, 21.7% on wells, 8.4% on rainwater harvesting, 2.2% on a community standpipe and 0.5% had a piped supply. Package 02 and 03 are much more reliant on well water (79.0% and 76.0% respectively in 2016) than on river, canal or pond water (16.4% and 8.7% respectively) and rainwater harvesting was a primary source for only 0.7% of Package 02 households and 2.1% of Package 03 households. Both Package 02 and 03 households relied on community standpipes to a similar extent (2.9% and 3.0% respectively), but Package 03 had a relatively high incidence of piped water supply (6.9%) compared to Package 02 (1.1%).

Comparing Package 02 in 2016 versus 2018, there is little change except:

- piped supply increased from 1.1% to 3.6% while community standpipe reliance dropped from 2.9% to 0.8% of households;
- the “other” category increased; and
- within the category of wells, there was an apparent shift toward hand pumps.

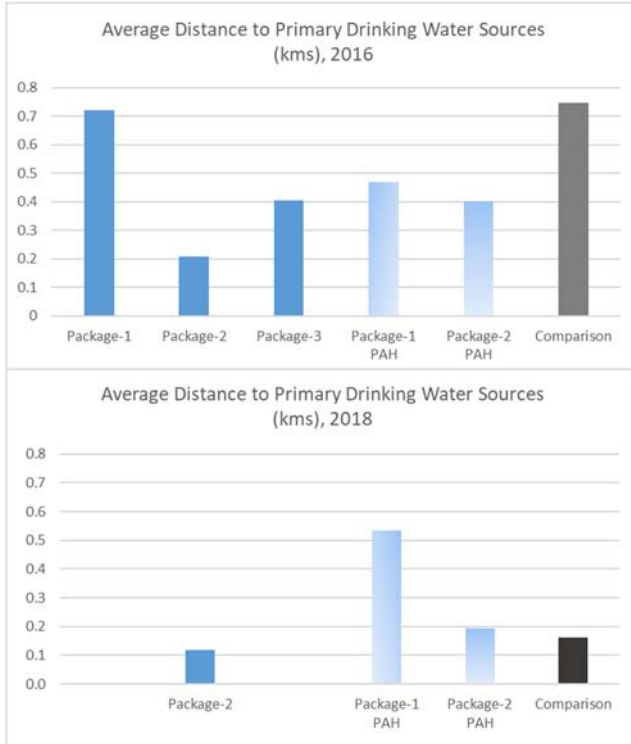


With respect to PAH households, in 2016, Package 01 PAH were slightly more reliant on river, canal or pond water than the general Package 01 population – 57.9% versus 55.9%. That year, Package 02 PAH households showed much greater reliance on community standpipes (11.1% vs. 2.9%), lower reliance on wells (71.7% vs. 79.0%) than the general population. Package 02 PAH reliance on river, canal or pond water as the primary source of drinking water stood at 15.7% of these households which was very close to the 16.4% for the general population of Package 02.

By 2018, Package 01 PAH reliance on river, canal or pond water increased from 57.9% to 60.8%; reliance on rainwater harvesting increased from 6.2% to 8.9%; and piped or community standpipe reliance increased from 2.6% to 6.3% of households. For Package 02 PAH, reliance on community standpipes decreased from 11.1% in 2016 to 1.9% in 2018 while reliance on river, canal or pond water remained essentially unchanged.

One important indicator of well-being is how much effort must be expended in getting a household’s drinking water and distance to the primary source is a major factor. In 2016, households in the Package 01 area of CEIP-1 needed to travel 0.72 kms on average to their primary source of drinking water (whatever the source). Those of Package 02 and 03 needed to travel 0.21 kms and 0.41 kms respectively (each way). In 2018, Package 02 residents reported an average distance of 0.12 kms.

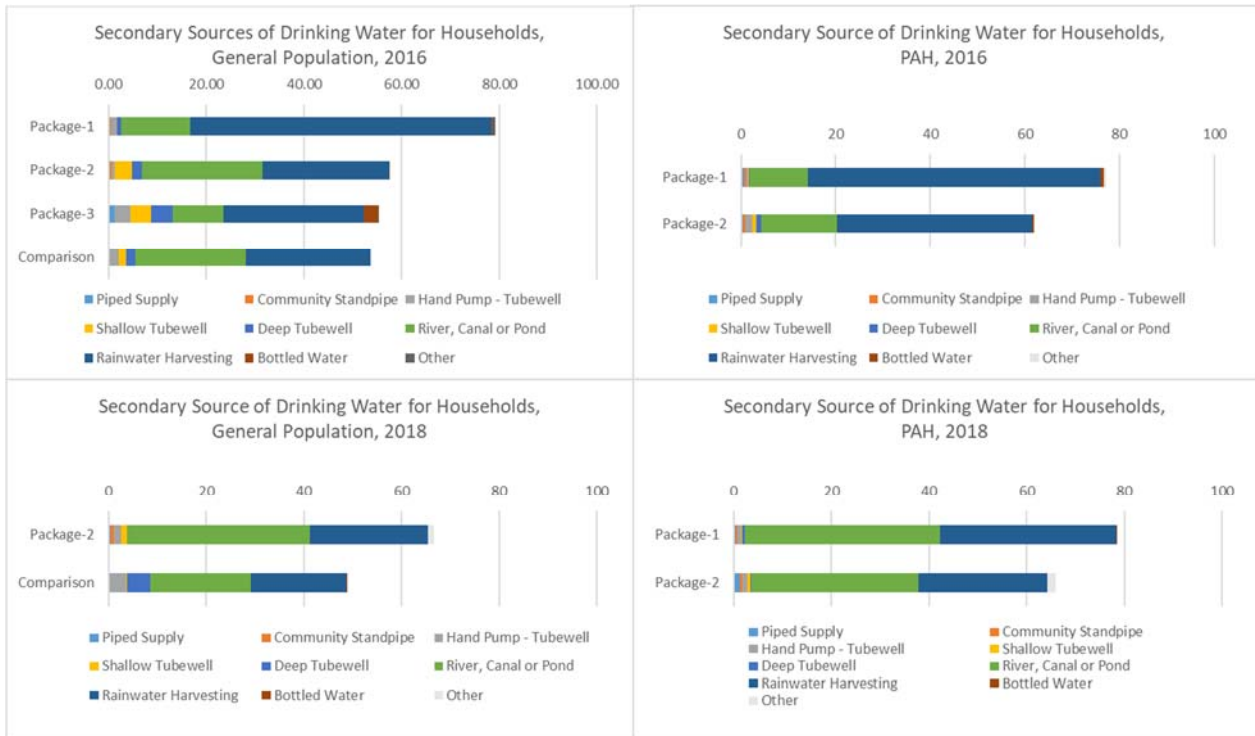
Coastal Embankment Improvement Project, Phase I (CEIP-I)

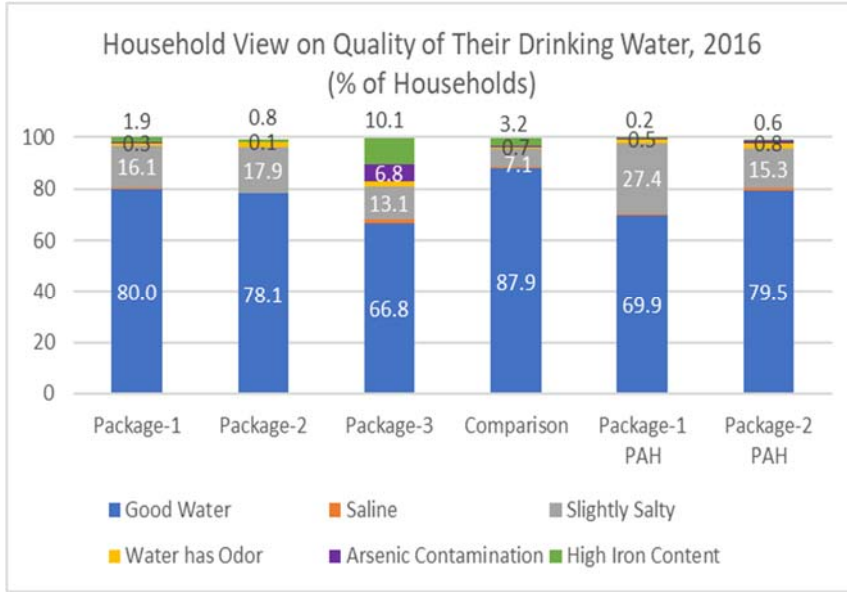


In 2016, PAH households of Package 01 reported an average distance to their primary source of drinking water to be 0.47 kms which is about 2/3rds of the distance for the general population and this was essentially unchanged in 2018. In 2016, Package 02 PAH households reported their primary drinking water source to be an average of 0.40 kms away which is almost double the distance for the general population, but in 2018 the reported distance was 0.19 kms which is more than 50% higher than the general population.

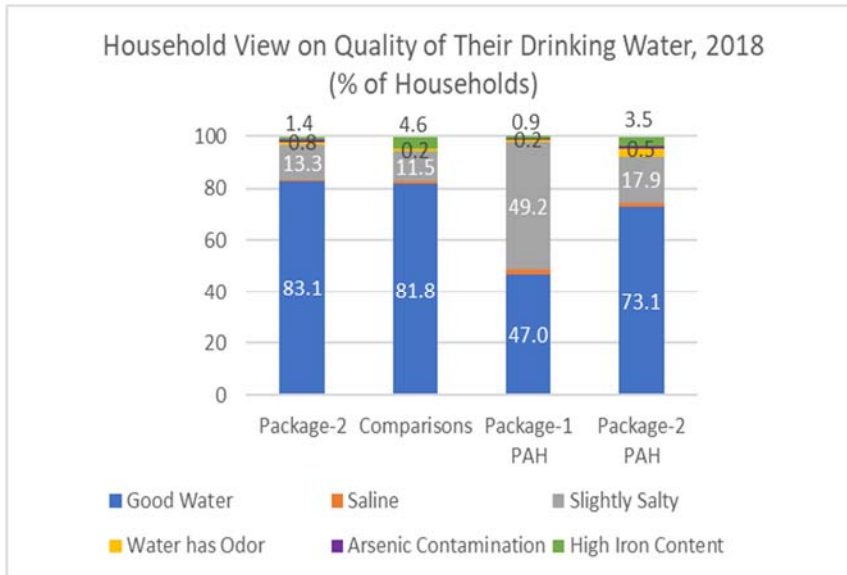
CEIP-1 households were further asked as to their secondary source of drinking water. In 2016, the most common secondary source for both the general population and PAH households was rainwater harvesting followed by river, canal or pond water. But in 2018 – for Package 02 general population, for the PAH households and the comparison group – this was reversed.

Well water was a secondary source for a small share of Package 01 (2.3%), Package 02 (6.3%) and Package 03 (11.9%) households.



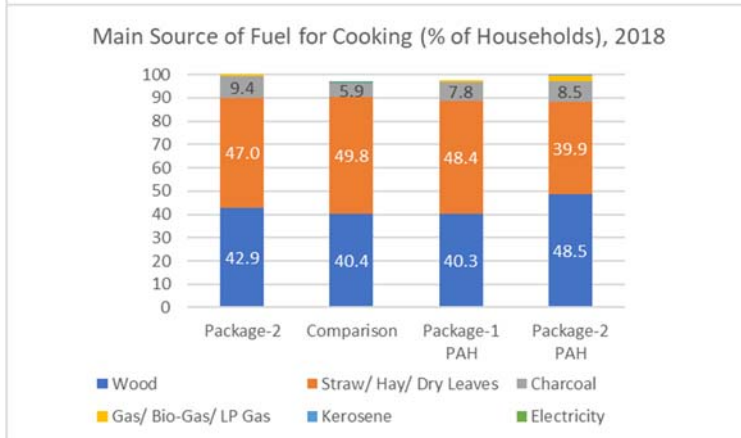
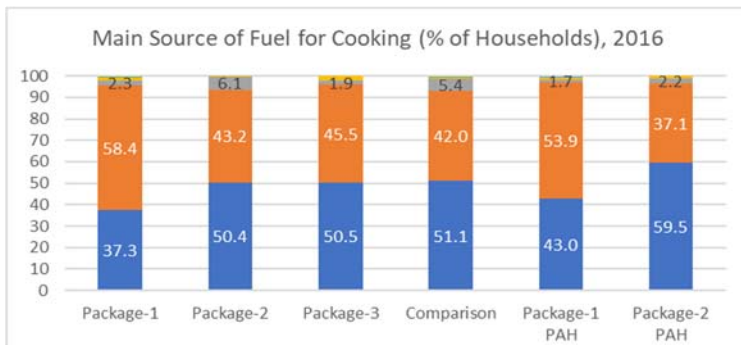
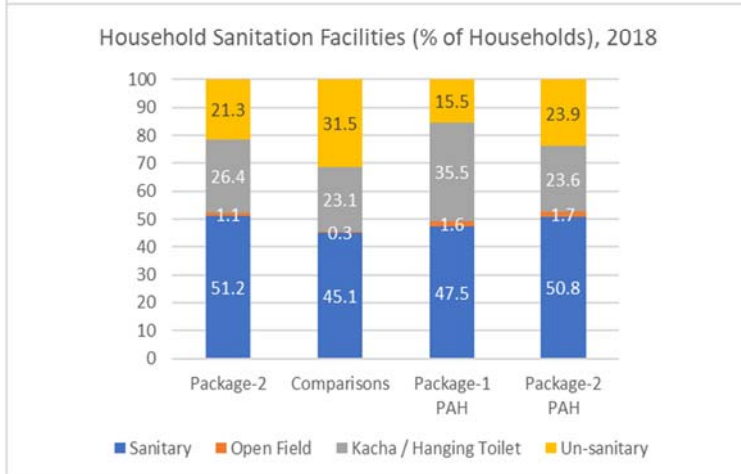
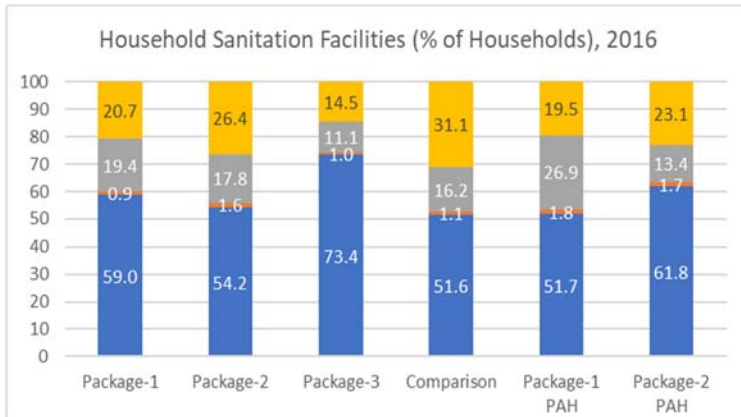


Generally, the majority of households reported having “good quality” drinking water, though it must be noted that this is not necessarily based on objective criteria. Nevertheless, in 2016, slight salinity in the water affected 16.1% of Package 01 households, 17.9% of those in Package 02 and 13.1% of those in Package 03. A small percentage (0.3% and 0.1%) of households reported arsenic contamination in Package 01 and 02 respectively, but a very significant 6.8% of Package 03 households reported arsenic in their water supply.



In 2018, Package 02 households were interviewed again and the percentage of households reporting good water increased from 78.1% in 2016 to 83.1% then with a concomitant decrease in the cases of saline water. This may be contrasted with the comparison households where the percent reporting good quality water declined from 87.9% to 81.8%.

PAH households in Package 01 saw a substantial decline in water quality between 2016 and 2018 as the percentage reporting “good water” declined from 69.9% to 47.0%. PAH households of Package 02 also declined in “good water” from 79.5% to 73.1% over this same period. This deterioration of water quality was attributed to salinity in both cases, but also to an increase in high iron content with the percent of PAH households reporting this quality issue rising from 0.2% to 0.9% for Package 01 PAH and from 0.6% to 3.5% for Package 02 PAH.

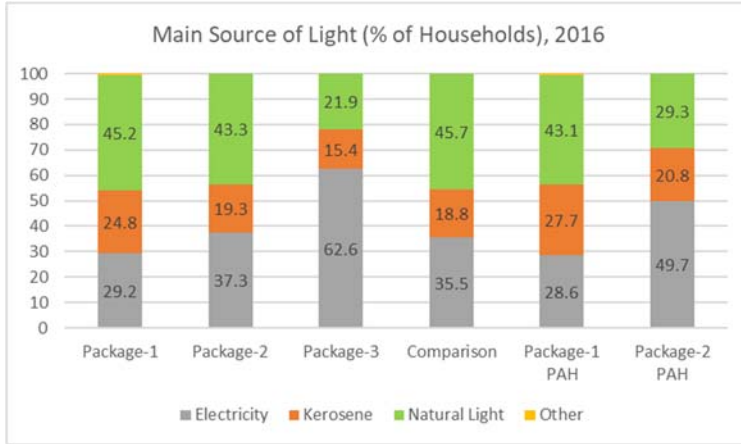


The majority of households report they have sanitation facilities that they consider sanitary such as a properly constructed latrine. Open field defecation is not generally practiced though hanging toilets are common and tantamount to the practice.

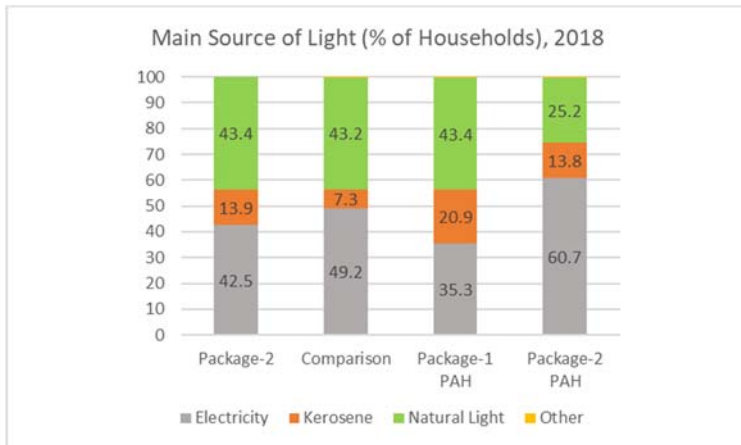
In 2016, Package 01, 02 and 03 saw 59.0%, 54.2% and 73.4% reporting the use of sanitary toilet facilities respectively. In 2018, there was a slight decline in the percentage reporting sanitary facilities among Package 02 households – from 54.2% to 51.2% and this may just be due to the sample. The comparison group saw a similarly small decline. Package 02 PAH saw a more substantial decline from 61.8% to 50.8% of households having sanitary toilet facilities and Package 01 PAH declined from 51.7% to 47.5%.

The main source of cooking fuel for each group is shown on the left. Wood and straw/hay/leaves are the two predominant sources throughout CEIP-1 areas and in the comparison group as well accounting for over 88% to 97% of households, depending on the package. Charcoal is the main source of cooking fuel for a small percentage of households as reported in 2016 – 2.3% in Package 02, 6.1% in Package 02 and 1.9% in Package 03, while it was 5.4% in the comparison group.

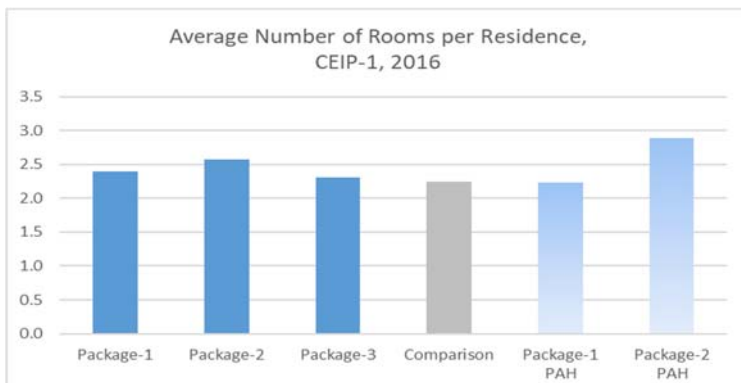
In 2018, the importance of wood in the Package 02 area declined somewhat as 42.9% of households claimed it was their main source of fuel for cooking compared to 50.4% in 2016. Straw/hay/leaves picked up most of the slack. The PAH households and the comparison households exhibited a similar pattern so the change may have been secular.



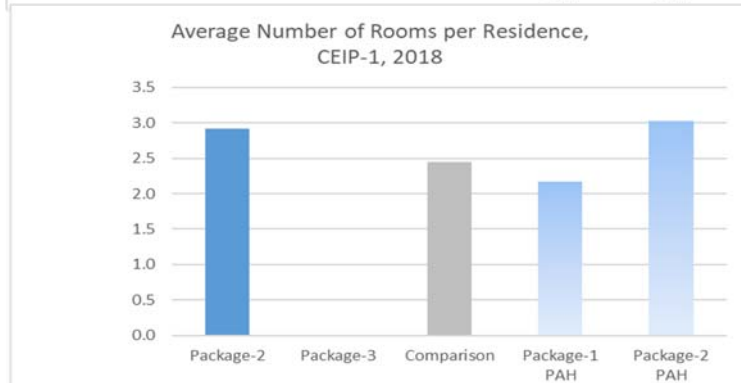
Package 01, 02 and 03 households progressively have a higher extent of electrified households – 29.2%, 37.3% and 62.6% respectively. Conversely, they have progressively lower extent of households dependent primarily on natural light with 45.2%, 43.3% and 21.9% of households for Packages 01, 02 and 03. The balance of households in each package depend on kerosene as their main source of light – 24.8%, 19.3% and 15.4%.

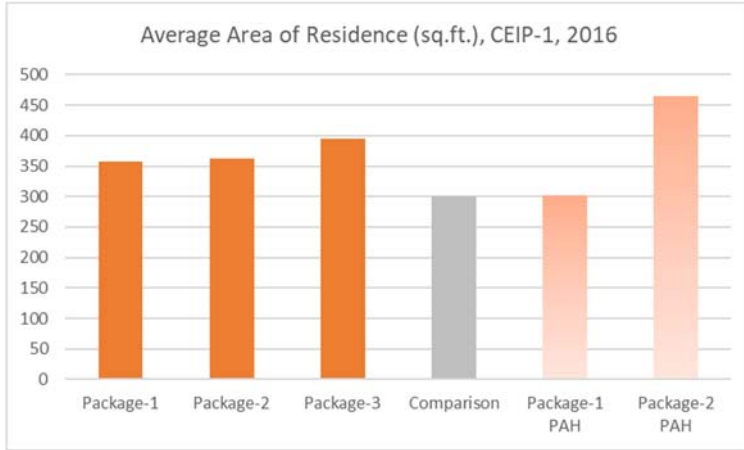


Between 2016 and 2018, Package 02 households have seen another 5% of households electrified to reach 49.2% of households in 2018 with a concomitant decrease in reliance on kerosene. Package 01 PAH and Package 02 PAH have also seen increases in electrification of another 7% and 11% of households over this time period. The comparison group had the highest increase in electrified households, equal to about 14%.

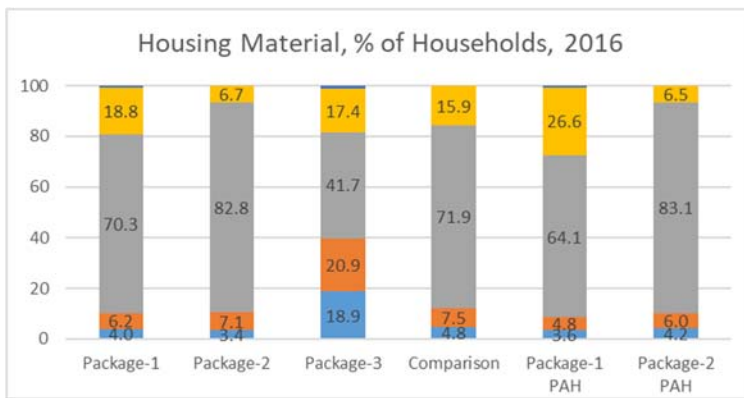


The average number of rooms per residence is roughly equivalent across the packages ranging from 2.3 in Package 03 to 2.6 rooms in Package 02. Package 01 PAH have 2.2 rooms and Package 02 PAH have around 3 rooms per residence – with essentially no change between 2016 and 2018.

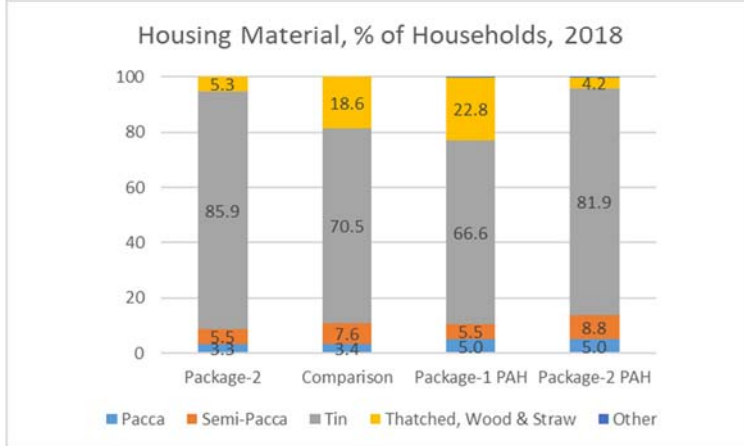




The average area of the residences of CEIP-1 range from about 350 square feet in Package 01 and Package 02 to 395 square feet in Package 03. Package 01 PAH come in at about 300 square feet while Package 02 PAH at just over 450 square feet of residential space.



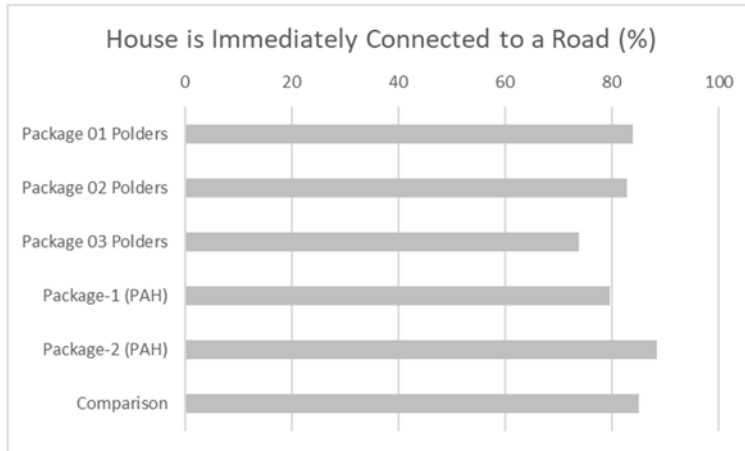
In 2016, both Package 01 and 02 had 10.5% of their houses as either “pacca” or “semi-pacca”, which means at least part of the house was built with bricks, cement or stucco. Package 03 had 39.8% of their houses in these two categories, but also had 17.4% of houses made of thatched material and wood. Generally, Package 01 had the poorest type of house construction material with a low level of pacca houses and 18.8% of thatched material and wood and Package 03 the more expensive-material houses. The comparison group was in between Package 01 and 02.



There was some difference between 2016 and 2018 but it was minimal. This is expected as housing stock changes only gradually.

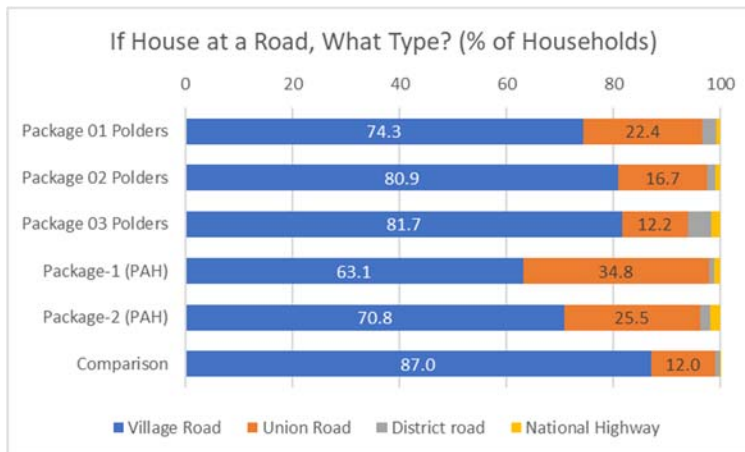


## 9. Road Connectivity

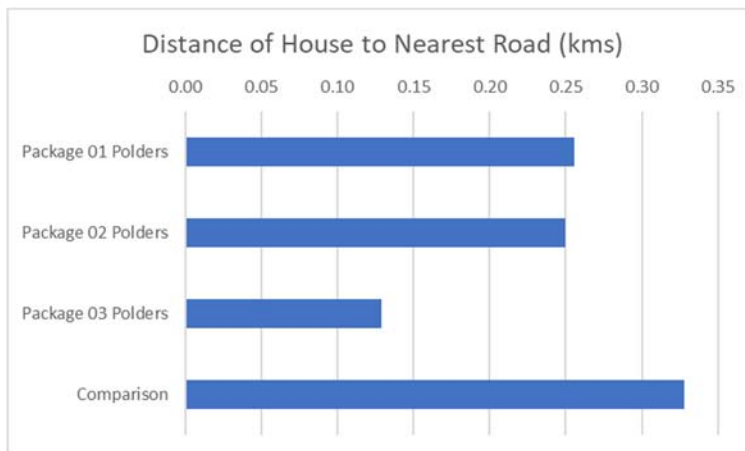


The majority of households have immediate connectivity to a road, though roughly 20% are at some distance from any road.

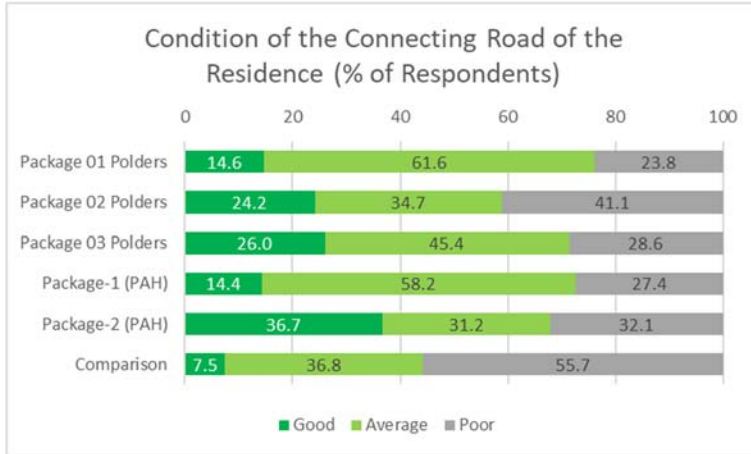
Of those houses located at a road, the majority are located at a village road (74.3%, 80.9% and 81.7% for Packages 01, 02 and 03) or a union road (22.4%, 16.7% and 12.2%). Very few houses are located at district roads or highways.



PAH-1 has 34.8% of its road-side houses on union roads (compared to 22.4% for the Package 01 general population) while PAH-2 has 25.5% (compared to 16.7 for Package 02 general population). This is not surprising considering that PAH households are along the embankments.

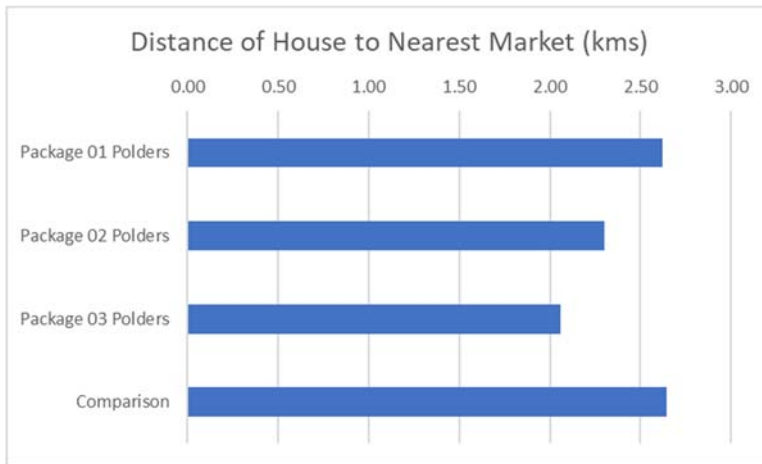


The average Package 01 and Package 02 household is located about 0.25 kms from the nearest road, while for Package 03 the distance is half that number at about 0.13 kms.



Respondents rated the condition of the nearest road to their residence. Package 02 roads were rated as poor by 41.1% of households, Package 03 by 28.6% and Package 01 by 23.8%. While Package 01 had the lowest percentage of households rating the road as poor, they also had the lowest percentage rating it as good. On balance, Package 02 would seem to have poorer condition roads than Package 01.

As far as PAH households, PAH-1 reported road conditions roughly in line with the Package 01 general population, but PAH-2 reported substantially better road conditions than the Package 02 general population.



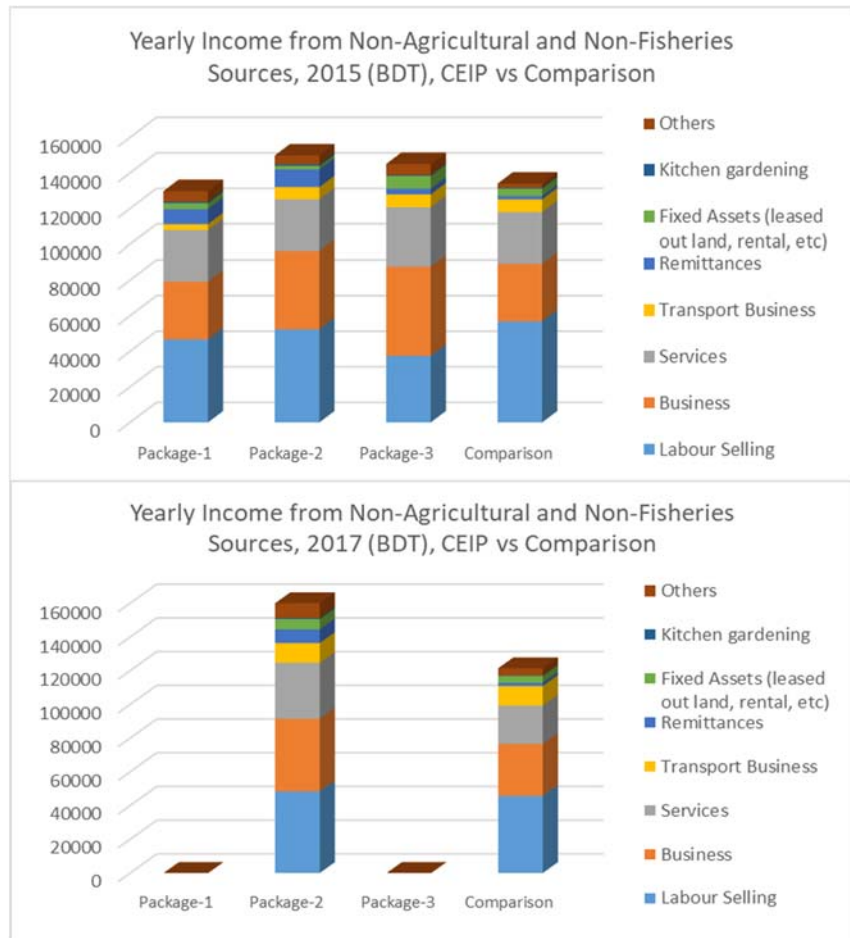
The distance to the nearest market varies between about 2.1 kms for Package 03 residents to 2.6 kms for Package 01. Those of Package 02 come in at 2.3 kms.

## 10. Income

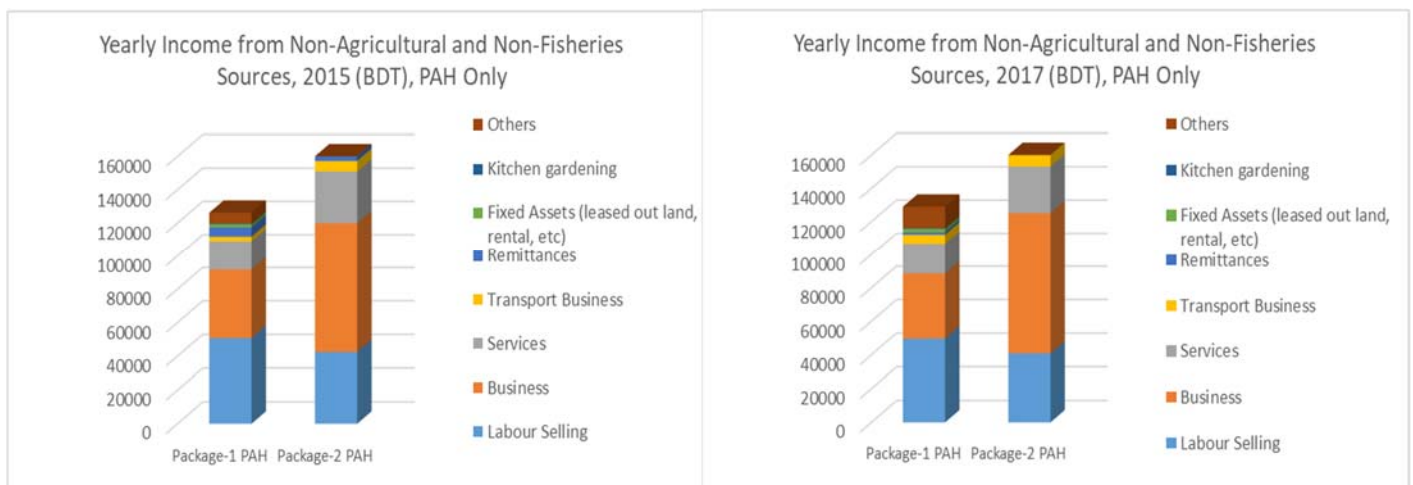
Yearly income from non-agricultural and non-fisheries source during 2015 stood at about:

- BDT 130,000 in Package 01
- BDT 150,000 in Package 02
- BDT 145,000 in Package 03
- BDT 134,000 in the comparison group.

In the 12 month-period of 2017, Package 02 showed a nominal increase, reaching BDT 160,000. Given that this was two years later and with an assumed average inflation rate of approximately 6%, this represents a decline of 5% in real terms. The comparison group decline in nominal terms to BDT 121,000 or a 19% decline in real terms suggesting a secular declining trend beyond CEIP boundaries.

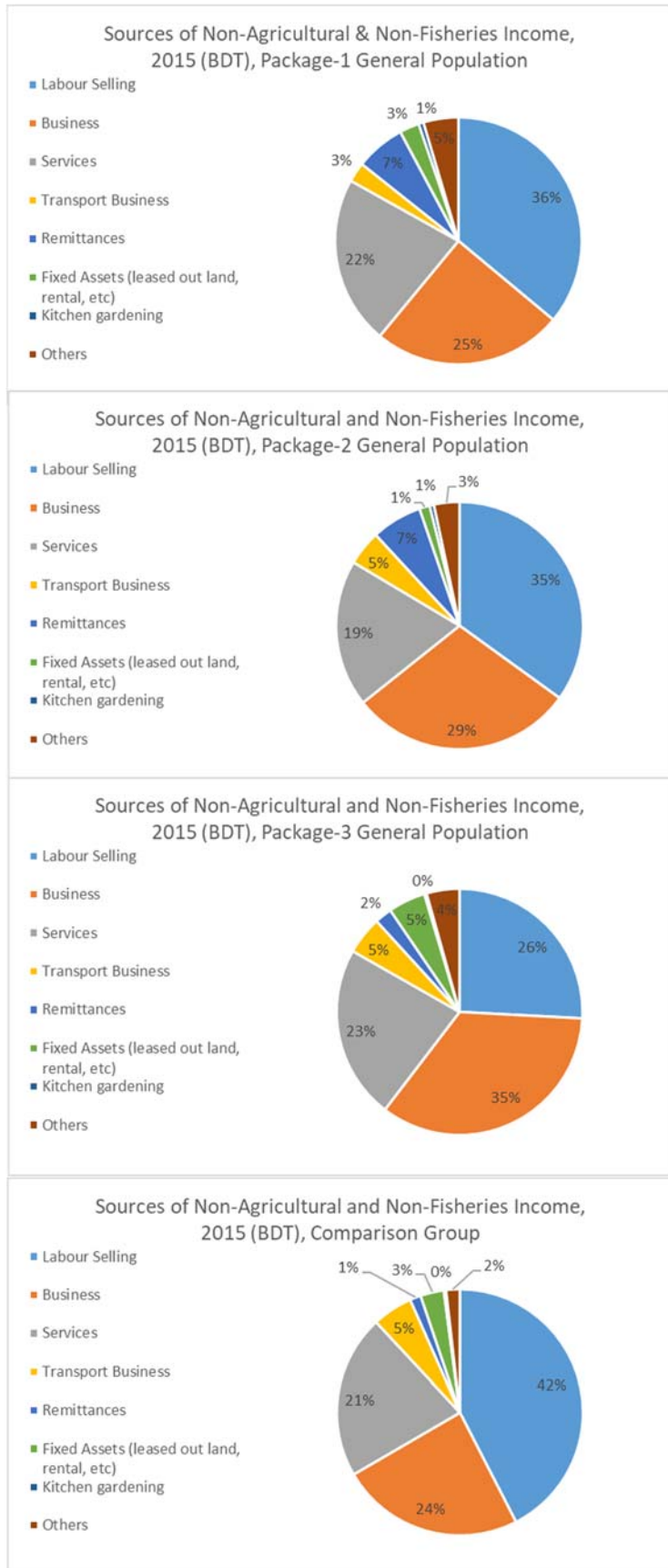


The PAH of Package 01 saw a nominal increase from BDT 126,000 to BDT 129,000, but this is equivalent to BDT 115,000 in real terms and represents a decline of 9%. The PAH of Package 02 saw a nominal increase from BDT 178,000 to 192,000 which is equivalent to 171,000 in real terms, or a 4% decline.

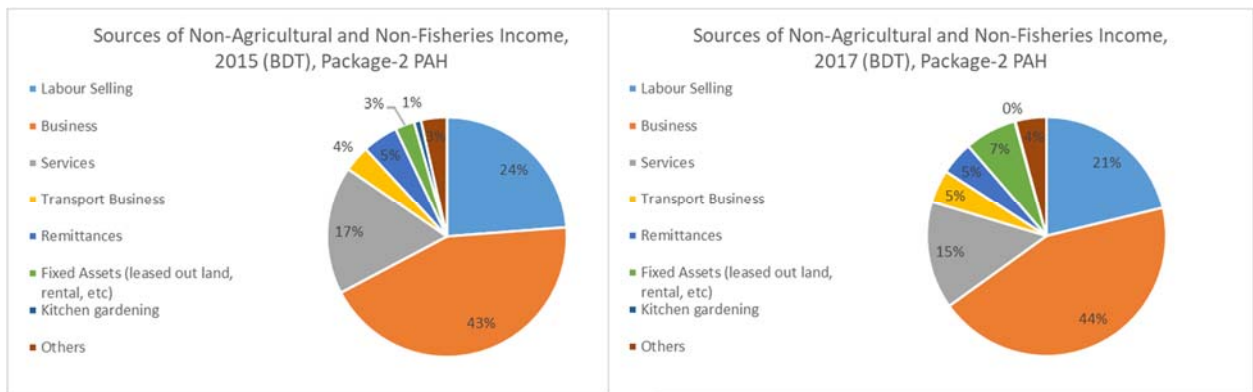
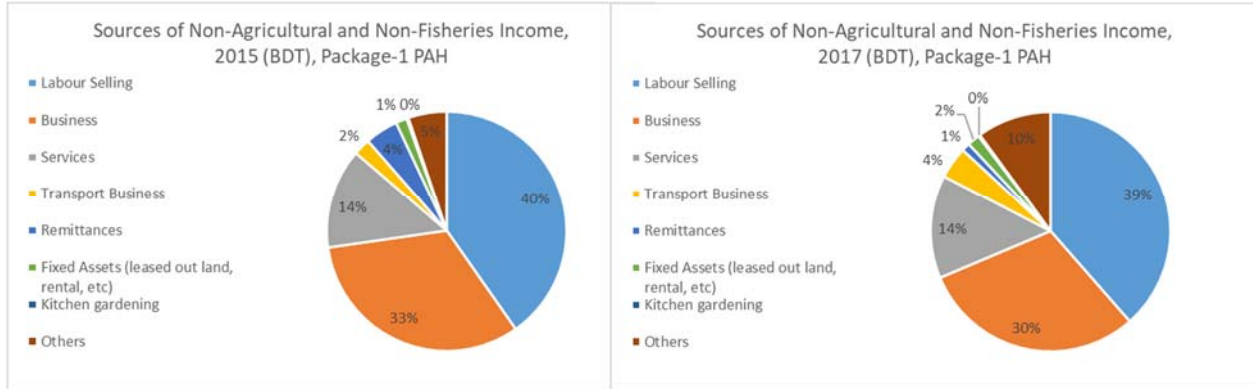


Labor selling, businesses and services represent the three largest sources of non-agricultural and non-fisheries income in the CEIP area and in the comparison group as well accounting in the aggregate for 83%, 83% and 84% of such income for Package 01, 02 and 03 respectively. Package 02 households have a slightly greater percentage of income coming from business (29%) than Package 01 (25%) and Package 03 have an even greater percentage (35%) of income from a business source.

Remittances are a substantial share of the income in Packages 01 and 02 at 7% each and a much lower share in Package 03 at 2%. Income from fixed assets (such as land rent) is minimal for Packages 01 and 02 at 3% and 1%, but more substantial as an income source in Package 03 at 5%.



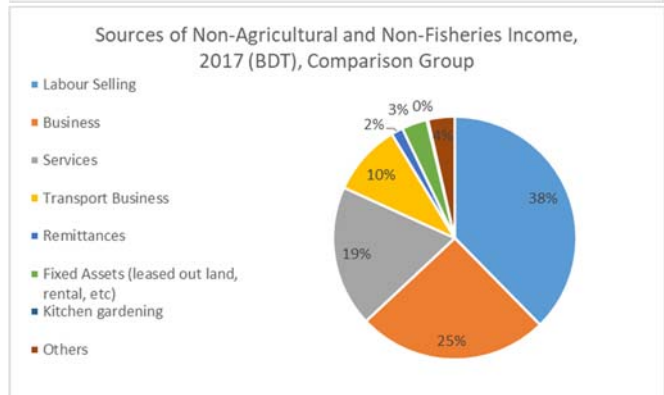
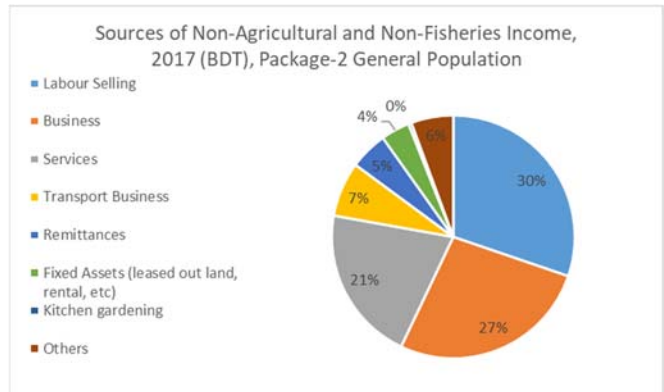
## Coastal Embankment Improvement Project, Phase I (CEIP-I)



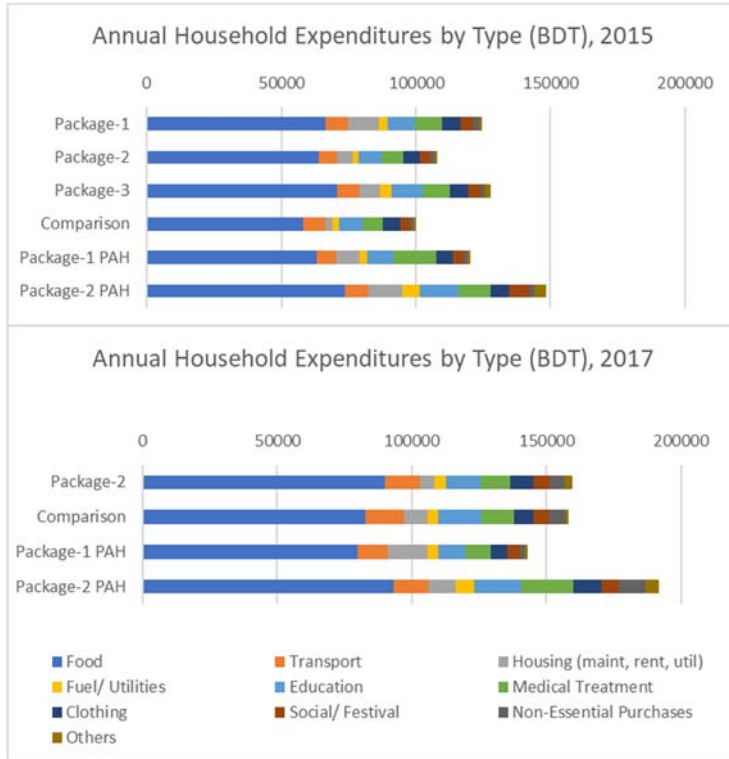
In 2015, Package 01 PAH have a slightly higher share of their income from labor selling (40% vs 36%) and substantially higher from business (33% vs 25%) than the Package 01 general population. Income from services is substantially lower (14% vs 22%).

In 2015, Package 02 PAH have a substantially lower share of their income from labor selling (24% vs 35%) but substantially higher share from business (43% vs 29%) than the Package 02 general population. Income from services is slightly lower (17% vs. 19%).

In 2017, Package 01 PAH share of income from business declined slightly (to 30% from 33% in 2015) and remittances also declined in importance from 4% to 1%. That same year, Package 02 PAH share of income from business was steady, but the share from labor and services declined slightly. The share of income from fixed assets increase dramatically from 3% in 2015 to 7% in 2017.



By 2017, Package 02 households saw a relative decrease in the share of labor selling as a source of income (down to 30% from 35% in 2015) and an increase in income from fixed assets (up to 4% from 1% in 2015). The comparison group also saw a relative decrease in the importance of labor selling (down to 38% from 42%) over this period.



Average annual household expenditures were assessed. Food expenditures represent the largest share as follows:

	<u>2015</u>	<u>2017</u>
Package 01	53%	
Package 02	59%	56%
Package 03	55%	
Comparison	58%	52%
Pkg 01 PAH	53%	56%
Pkg 02 PAH	50%	49%

A larger share of household expenditures going to food generally indicates greater poverty.

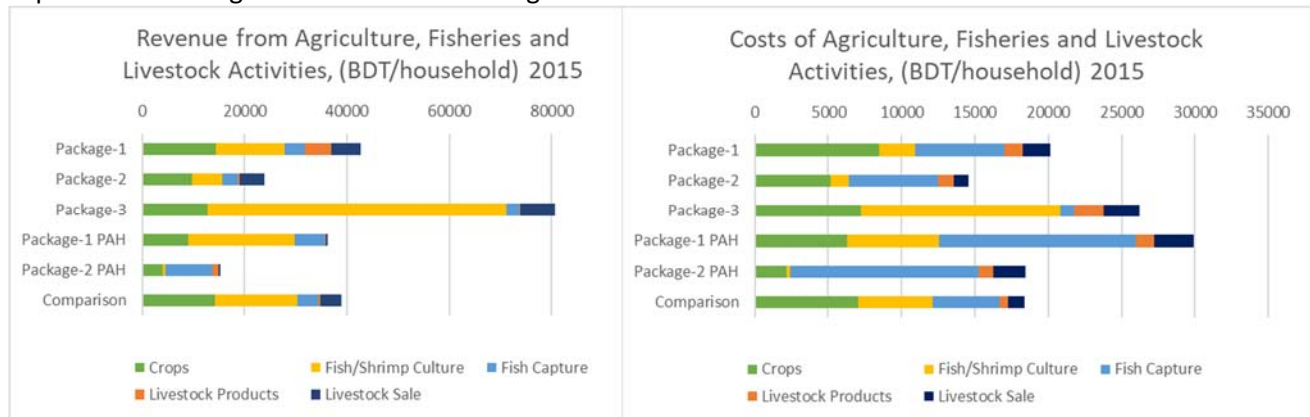
In 2015, after food, the largest share of expenses in Package 01 were housing, medical expenses and education at 9%, 8% and 8% of expenses respectively. For

Packages 02 and 03, education, medical expenses and transport were next with 8%, 7% and 7% of expenses in Package 02 and 9%, 8% and 7% in Package 03. In 2017, Package 02 saw a modest decline in the percentage of expenditures dedicated to food (56% compared to 59% in 2015) and the next three most important categories of expenditure were as in 2015.

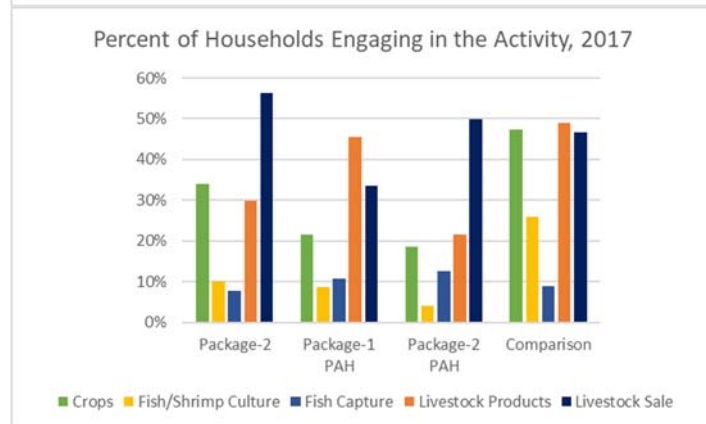
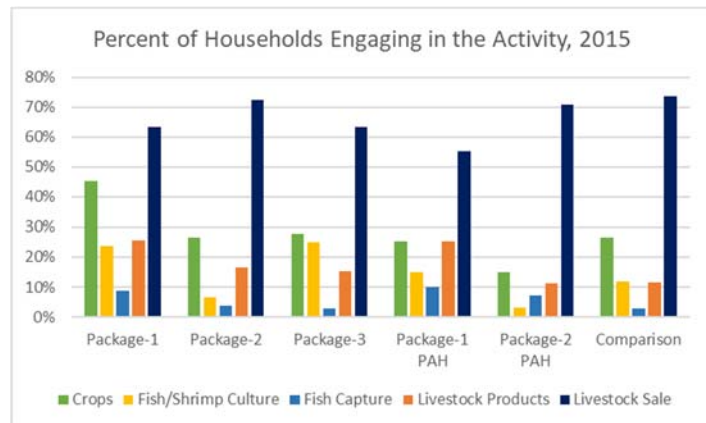
Package 01 PAH have shown a slight increase in food expenses as a share of the total between 2015 and 2017 while for Package 02 PAH this was essentially unchanged.

## 11. Revenue and Cost of Agriculture, Livestock and Fisheries Activities

Crops contributed the greatest amount of revenue to the typical household of Packages 01 and 02 of all agricultural sector activities. Package 03 was much different in this respect with fish/shrimp culture outstripping the contribution of crops by far. The Package 01 PAH households differed from the general population of Package 01 households in that fish/shrimp culture was a greater source of revenue than crops. The Package 02 PAH households also differed from the area’s general population with fish capture dominating the revenue from the agricultural sector.

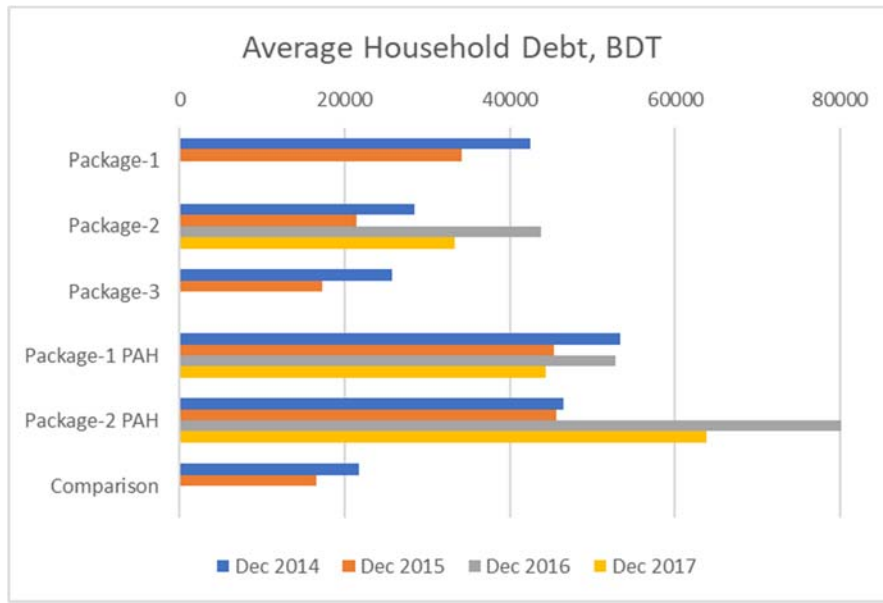


The percent of households engaging in crop production is highest in Package 01, though this percentage declined between 2015 and 2017 (from 45% to 34%). In 2015, Packages 01 and 03 had roughly equal percentages engaged in fish/shrimp culture (24-25%), but Package 02 had on 6%; this rose to 10% in Package 02 by 2017. By far, the most common agricultural sector activity was livestock sale with more than 60% of households participating in all 3 packages in 2015 and 56% of Package 02 households engaged in the activity in 2017.

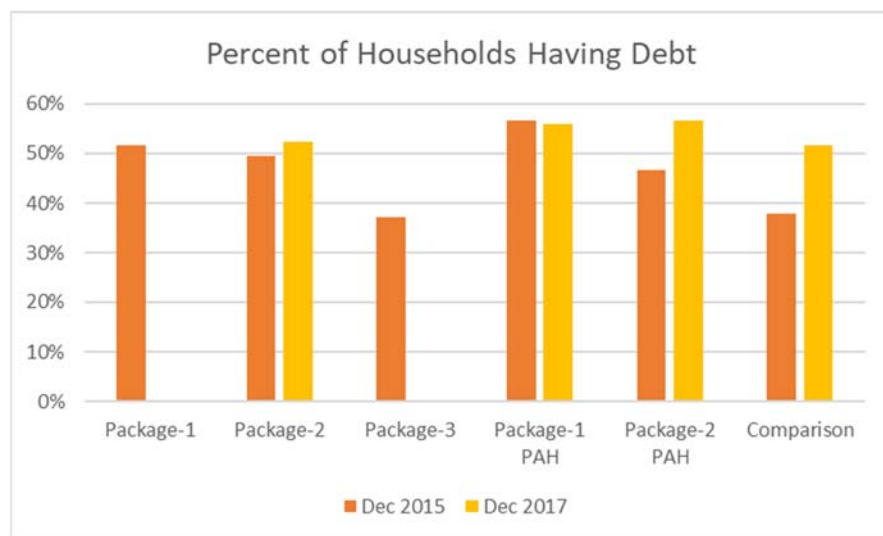


## 12. Household Debt

The average household debt level fluctuates from year to year, but tends to increase. The year 2015 saw slightly lower debt levels, but 2016 increased before retreating to lower levels in 2017. Package 01 seems to have higher debt per household than Package 02 and 03. The PAH households have higher debt levels than the general population and Package 02 PAH have higher debt levels than Package 01 PAH.



Package 01 and 02 not only have similar average debt levels, but also similar incidence of households carrying debt (52% and 50% respectively in 2015). Package 03 has fewer households in debt at 37%. PAH households have a higher incidence of debt at 56% of households. It is notable that a greater proportion Package 02 PAH households were indebted in 2017 than in 2015 – 56% vs. 47%. The percent of Package 01 PAH households was essentially unchanged over this period.





### 13. Cropping Intensity and Yields

#### Cropping Intensity – General Population

Package	2015 baseline		2017 updated baseline for Package 02	
	area weighted CI	producers n	area weighted CI	producers n
CI Pkg 01	113.1	282	Not surveyed	
CI Pkg 02	121.3	194	138.4	244
<b>Pkg 01 &amp; 02</b>	<b>116.6</b>	<b>476</b>		
CI Pkg 03	141.6	227	Not surveyed	
Comparison Polders	121.1	299	110.0	548

Source: M&E Consultants Household Survey, 2016 & 2018

#### Summary Yields (t/ha) - Package 01 and 02

Crop	2015 baseline			2017 updated baseline	
	Package 01	Package 02	Pkg 01 & 02 combined	Package 01	Package 02
Aman HYV paddy	3.38	3.63	3.46	Not surveyed	3.49
Aman LV paddy	3.06	3.63	3.36	Not surveyed	2.85
Aus HYV paddy	4.40	2.86	3.04	Not surveyed	4.60
Aus LV paddy	4.72	3.92	4.58	Not surveyed	4.45
Boro HYV paddy	5.45	6.95	6.74	Not surveyed	5.48
Boro LV paddy	4.53	5.45	5.31	Not surveyed	4.09
Potato	14.81	--	14.81	Not surveyed	15.45
Pulses	0.69	0.64	0.66	Not surveyed	0.50
Sunflower	1.46	0.94	1.18	Not surveyed	1.62

Source: M&E Consultants Household Survey, 2016 & 2018

The cropping intensity is depicted graphically in the figures below comparing the 2015 calendar year with the 2017 calendar year for the general population (Figure 1) and Project-Affected Households (Figure 2).

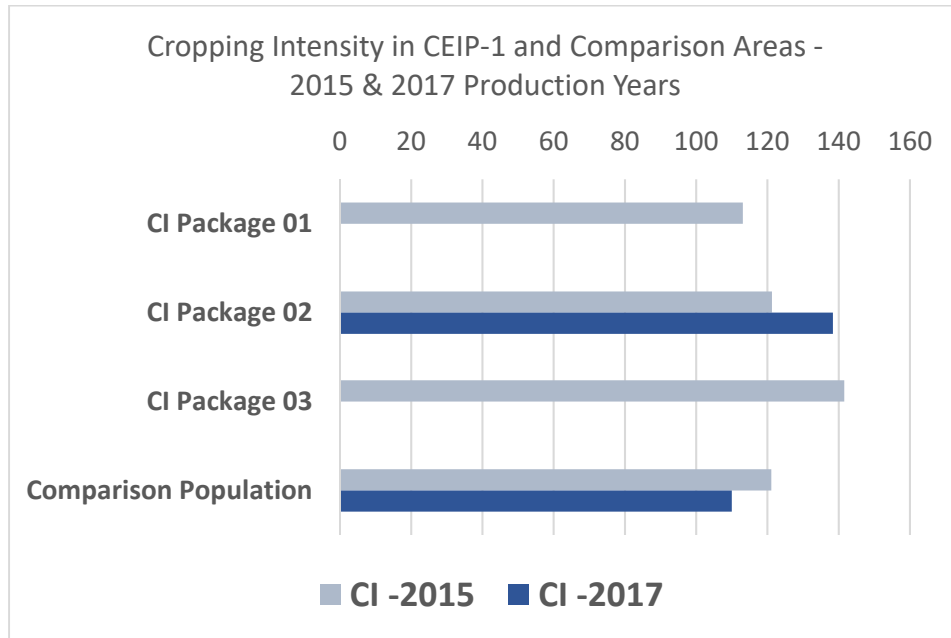


Figure 2: Cropping Intensity - General Sample

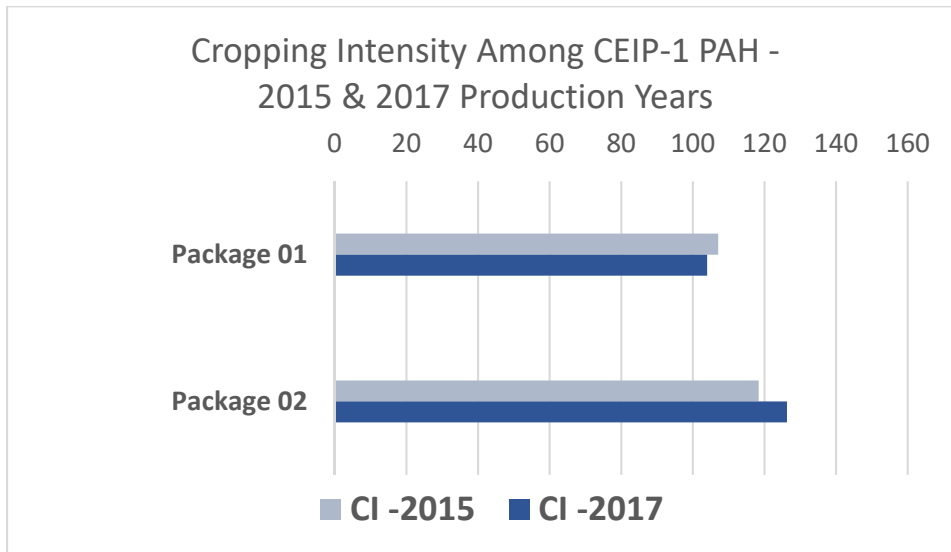


Figure 3: Cropping Intensity - Project Affected Households

Important note: The Baseline Survey of CEIP-1 was designed to provide data that is valid at the Package level. Stratified, clustered random sampling was employed applying the Probability Proportional to Size principle, which means that each and every household had an equal chance of being selected. The sample size was determined that would allow statistically valid inference about the population of each package as a whole. Data at the polder level cannot be taken as conclusive estimates of polder conditions since the sample size at polder level is generally too small to produce statistically significant results. This becomes especially apparent when examining variables that were not applicable to most respondents, such as pulse production. Note the small number of valid observations “n” in many of the cells in the tables below.

Nevertheless, it can be instructive to view the polder level data as it may indicate trend or position on a particular indicator relative to the other polders, but primarily for larger differences in the calculated values reported.

**Cropping Intensity by Polder – General Population  
Baseline Years of 2015 and 2017 (see note above)**

Package	2015		2017	
	Area wtd. CI	n	Area wtd. CI	n
Polder 32	100.0	47	Not surveyed	
Polder 33	104.8	74	Not surveyed	
Polder 35/1	127.0	126	Not surveyed	
Polder 35/3	100.0	39	Not surveyed	
<b>Package 01</b>	<b>113.1</b>	<b>286</b>	Not surveyed	
Polder 39/2C	101.2	73	113.8	89
Polder 40/2	125.8	39	140.2	55
Polder 41/1	157.7	33	209.3	45
Polder 42/3C	186.8	11	131.6	18
Polder 47/2	105.3	17	120.0	32
Polder 48	105.7	21	191.6	9
<b>Package 02</b>	<b>121.3</b>	<b>194</b>	<b>138.4</b>	<b>248</b>
Polder 14/1	166.7	2	Not surveyed	
Polder 15	100.4	14	Not surveyed	
Polder 16	139.8	80	Not surveyed	
Polder 17/1	165.1	37	Not surveyed	
Polder 17/2	174.5	51	Not surveyed	
Polder 23	100.0	2	Not surveyed	
Polder 34/3	101.3	49	Not surveyed	
<b>Package 03</b>	<b>141.6</b>	<b>235</b>	Not surveyed	
<b>Comparison Group</b>	<b>110.9</b>	<b>298</b>	<b>114.4</b>	<b>548</b>

**Yields of Major Crops by Polder - Baseline 2015 (t/ha)**

(see note above)

Package	Major Crops					
	Aman HYV paddy	n	Aman LV paddy	n	Pulses	n
Polder 32	3.40	47				
Polder 33	3.34	54	4.16	20	0.65	3
Polder 35/1	4.04	38	2.85	76	0.69	26
Polder 35/3	2.86	28	3.42	3		
<b>Package 01</b>	<b>3.38</b>	<b>167</b>	<b>3.06</b>	<b>99</b>	<b>0.69</b>	<b>29</b>
Polder 39/2C	2.87	42	3.08	31		
Polder 40/2	4.86	9	3.50	24	0.79	13
Polder 41/1	4.47	23	4.52	4	0.46	6
Polder 42/3C	3.42	11			0.74	4
Polder 47/2	3.12	5	3.00	12	0.43	2
Polder 48	4.71	5	5.15	16	0.45	1
<b>Package 02</b>	<b>3.63</b>	<b>44</b>	<b>3.63</b>	<b>87</b>	<b>0.64</b>	<b>26</b>
Polder 14/1	3.99	2				
Polder 15	3.74	1	3.83	12		
Polder 16	3.91	29	4.24	9	0.13	1
Polder 17/1	4.39	14	3.34	10		
Polder 17/2	4.42	20	4.41	13		
Polder 23	4.51	2				
Polder 34/3	2.21	7	2.25	14		
<b>Package 03</b>	<b>3.89</b>	<b>43</b>	<b>3.42</b>	<b>58</b>	<b>0.13</b>	<b>1</b>

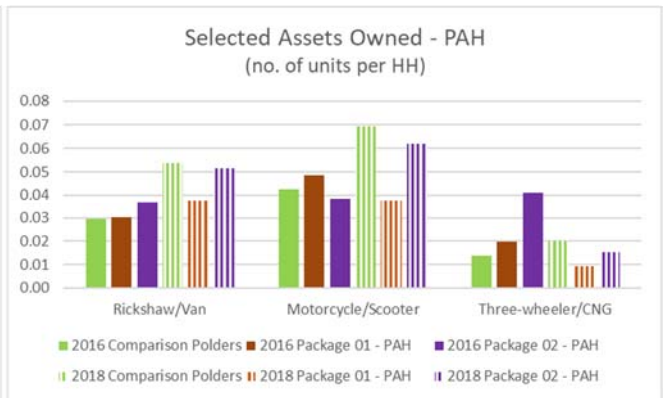
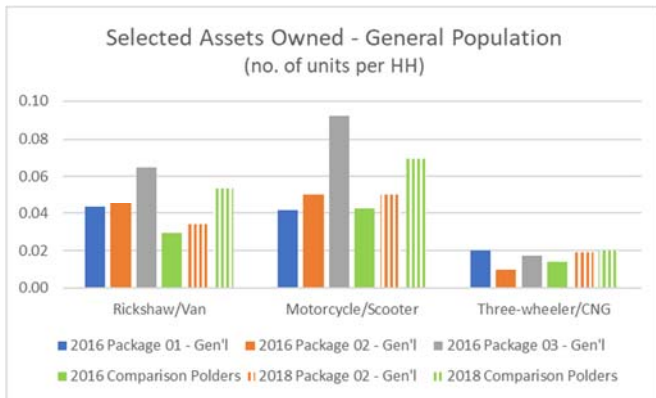
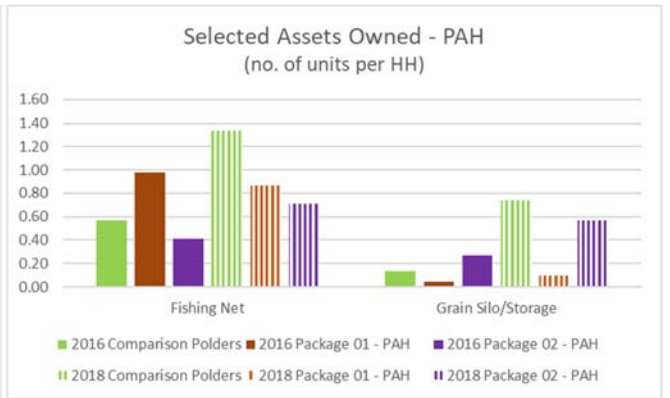
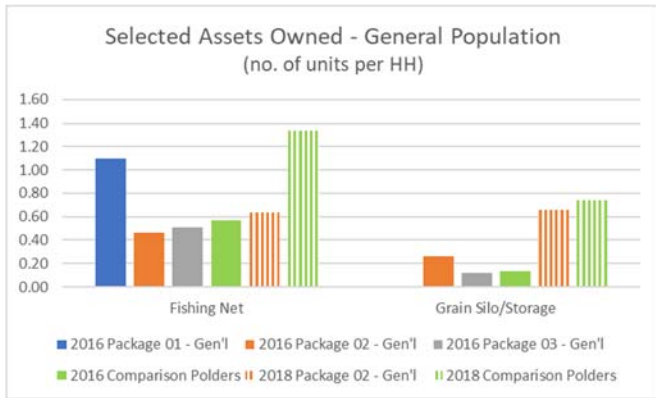
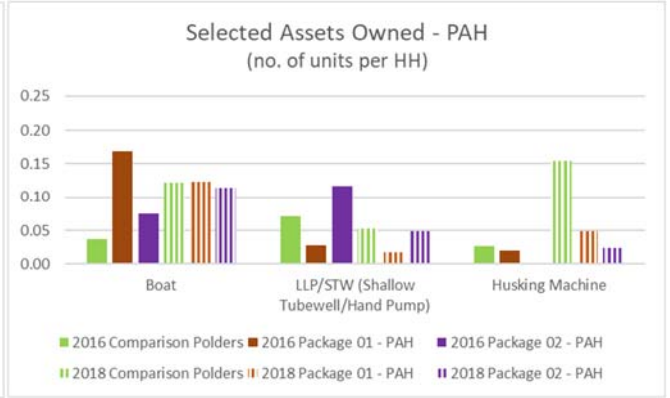
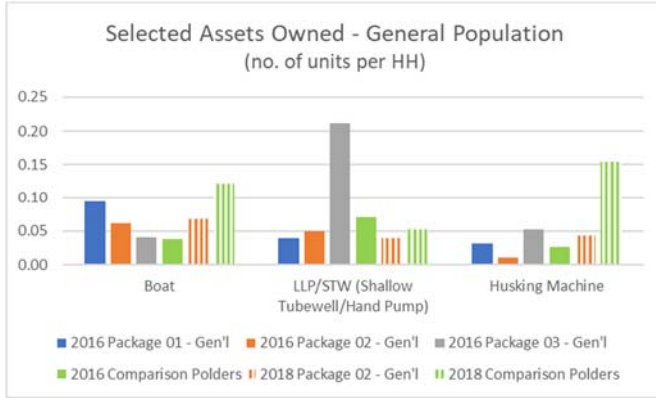
**Yields of Major Crops by Polder - Baseline 2017 (t/ha)**

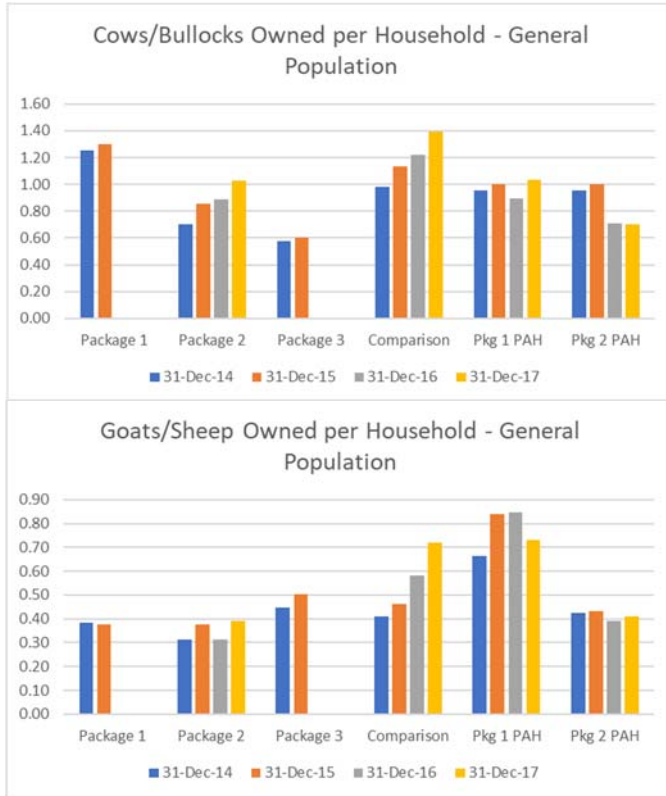
(see note above)

Package	Major Crops					
	Aman HYV paddy	n	Aman LV paddy	n	Pulses	n
<b>Package 01</b>	<b>Not surveyed</b>		<b>Not surveyed</b>		<b>Not surveyed</b>	
<b>Package 02</b>						
Polder 39/2C	2.90	79	2.64	5	0.66	3
Polder 40/2	2.81	20	2.44	36	-	
Polder 41/1	4.47	22	2.57	15	0.40	13
Polder 42/3C	3.99	11	5.54	5	-	
Polder 47/2	3.42	32	-		-	
Polder 48	5.94	4	4.25	2	-	
<b>Package 02 Total</b>	<b>3.28</b>	<b>168</b>	<b>2.69</b>	<b>63</b>	<b>0.42</b>	<b>16</b>
<b>Package 03</b>	<b>Not surveyed</b>		<b>Not surveyed</b>		<b>Not surveyed</b>	

## 14. Possession of Assets

The figures below are presented in pairs with the first of each pair depicting the number of a particular asset held by each household in the general population and the second of each pair showing the same for the Project-Affected Households (PAH).



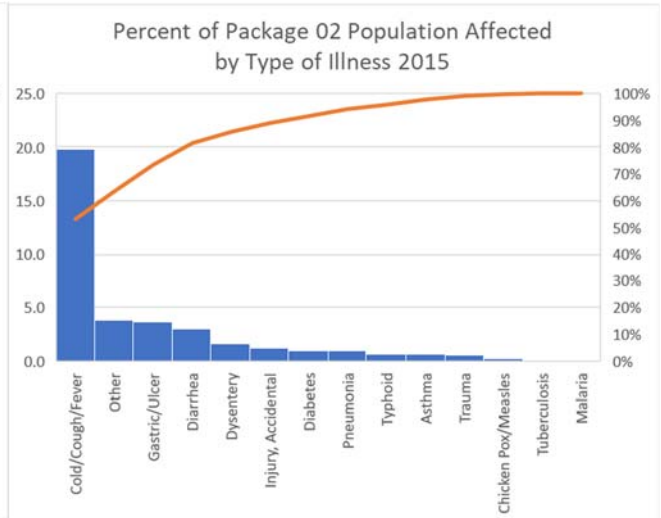
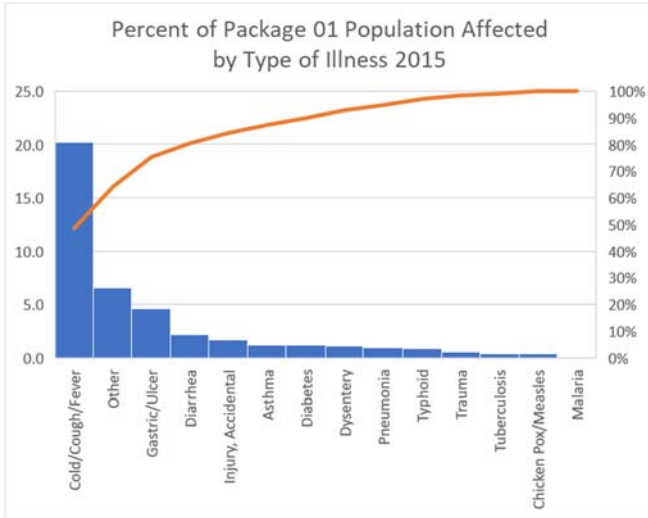


Ownership of livestock is an important means of savings and constitutes a productive asset as well. The average number of cows/bullocks owned by Package 01 households is higher than among Package 02 households and Package 03 households own the fewest of these animals (1.30 vs 0.86 vs 0.60 respectively at the close of 2015). PAH households tend to own fewer draft animals than their respective general populations though, again, Package 01 PAH have more such animals on average than Package 02 PAH (1.04 vs 0.70 in December 2017).

Goats and sheep are essentially owned in equal numbers between Package 01 and Package 02 households (at 0.38-0.39) with Package 03 households owning 0.50 in 2017. Package 01 PAH owned substantially more of these animals at 0.73, while Package 02 PAH owned an average of 0.41.

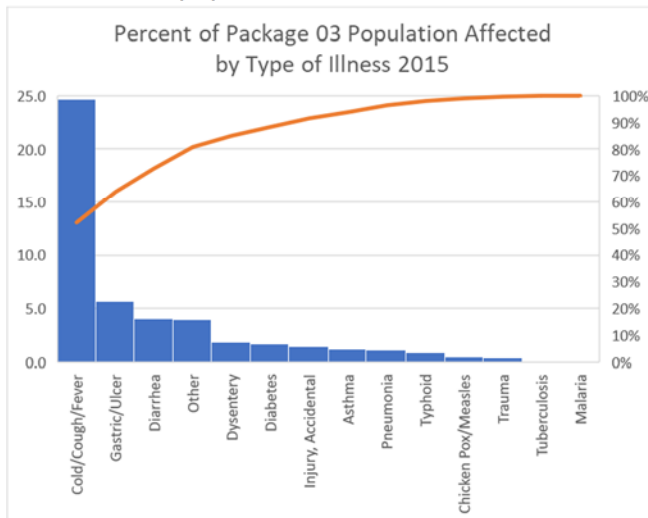
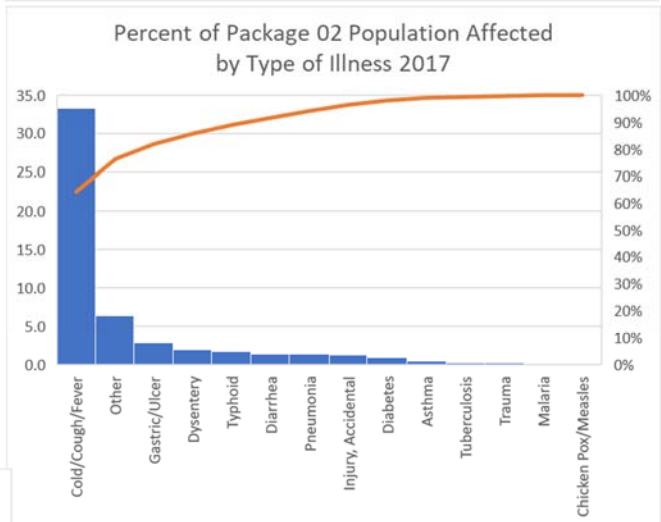
## 15. Health and Nutrition

In the charts that follow, the left axis is the percent of the total population having the given illness as show by the blue bars. The right axis is the cumulative percent of those falling ill affected by the illness indicated from most to least prevalent.



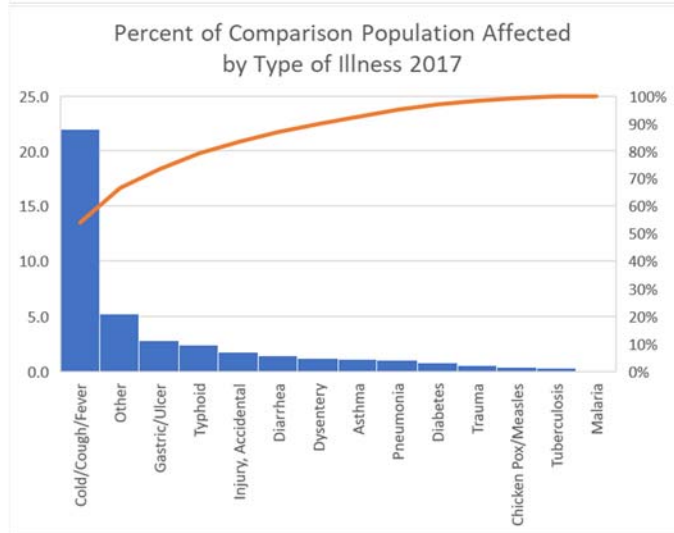
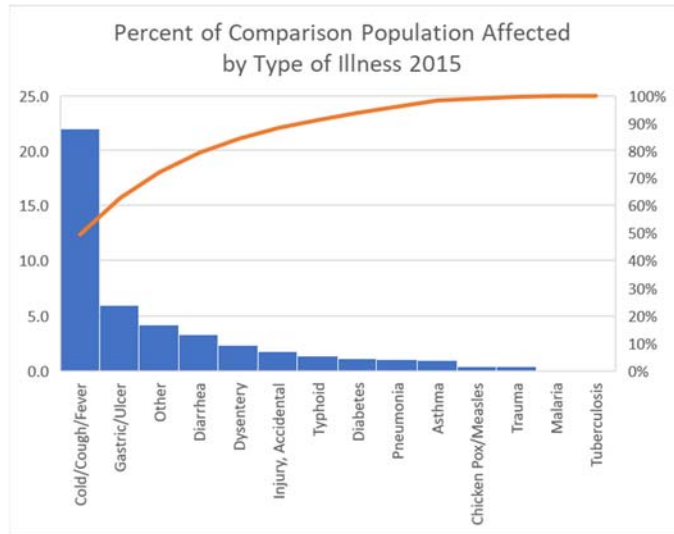
Package 01 and 02 population had the same top four causes of illness – cough/cold/fever, other, gastric/ulcer and diarrhea. In both packages, roughly 20% of the population had cough/cold/fever in 2015, but gastric/ulcer was slightly higher in Package 01 (4.5% vs 3.7%).

Between 2015 and 2017, in Package 02, the prevalence of cough/cold/fever increased by 68%, dysentery by 20% and typhoid cases by 165% from 0.6% to 1.7% of the population. Cases of diarrhea however decreased from 3.0% to 1.3% of the population.



As for Package 03, the top four illnesses in 2015 were the same as for Packages 01 and 02, in the following order of importance - cough/cold/fever, gastric/ulcer, diarrhea and other.

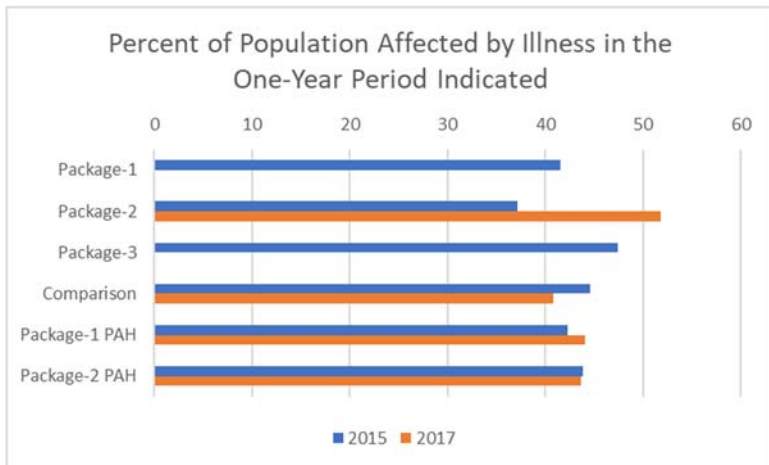
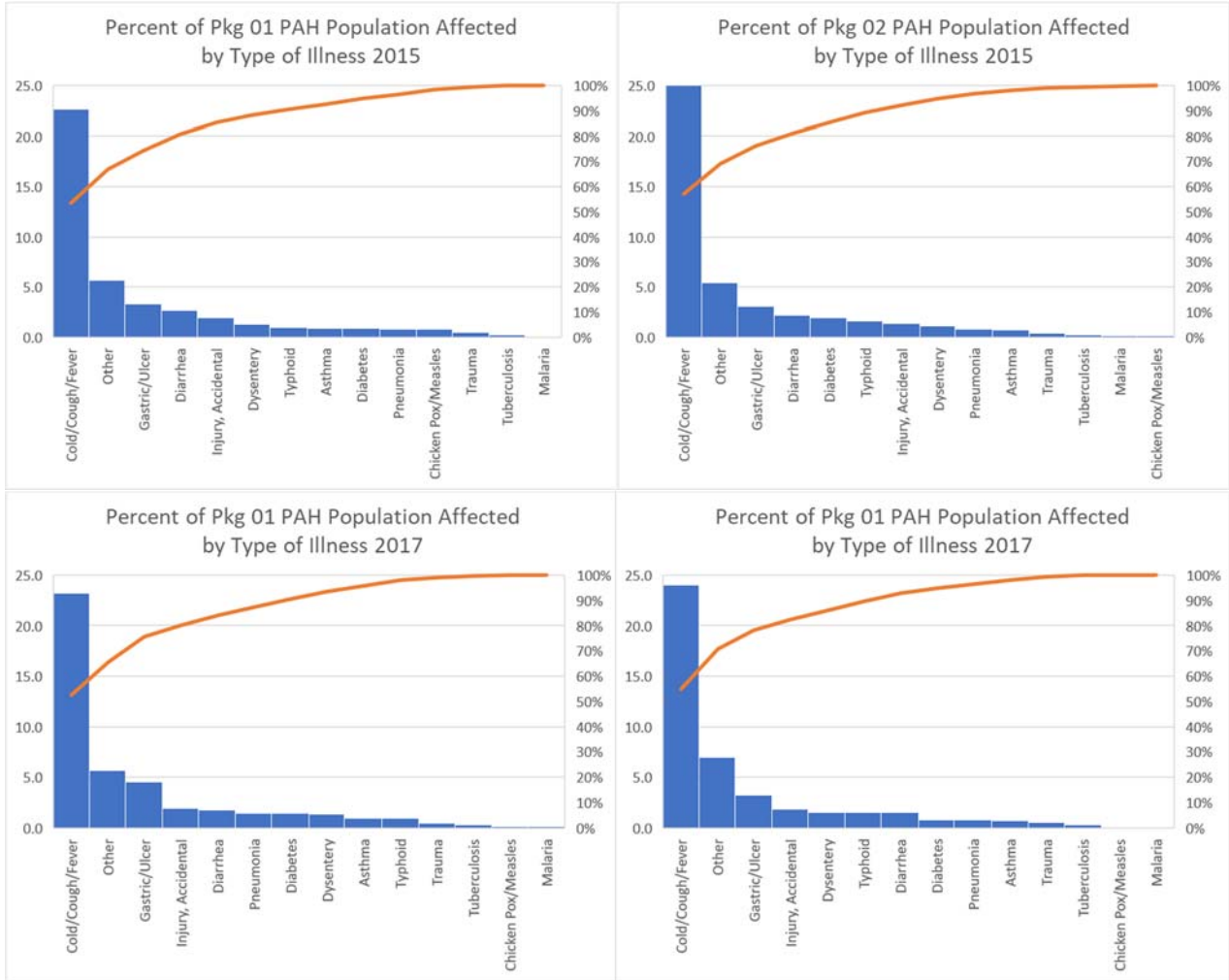
The top four illnesses in the comparison group were again the same as for Packages 01, 02 and 03 in 2015, but in the following order of importance - cough/cold/fever, gastric/ulcer, other and diarrhea. By 2017, typhoid rose to the fourth most common disease replacing diarrhea whose incidence had declined from 3.2% to 1.4% of the population.





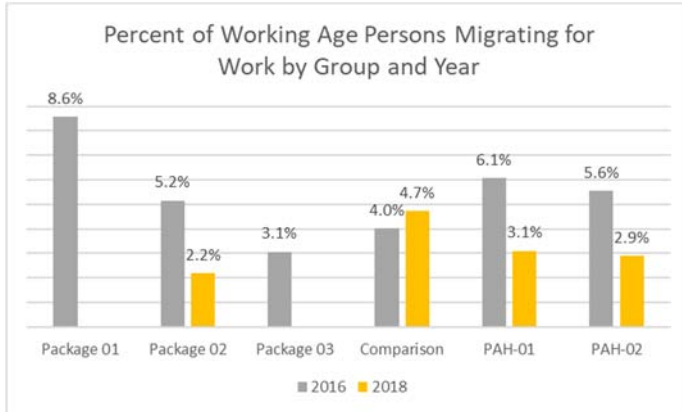
Coastal Embankment Improvement Project, Phase I (CEIP-I)

Package 01 PAH profile with regard to the top four illnesses in 2015 was the same as for the general population of Package 01. The same held true for the Package 02 PAH population. Between 2015 and 2017, there were some changes but they were not major. Gastric/ulcer condition increased in incidence in Package 01 PAH, but diarrhea declined among PAH population in both packages.

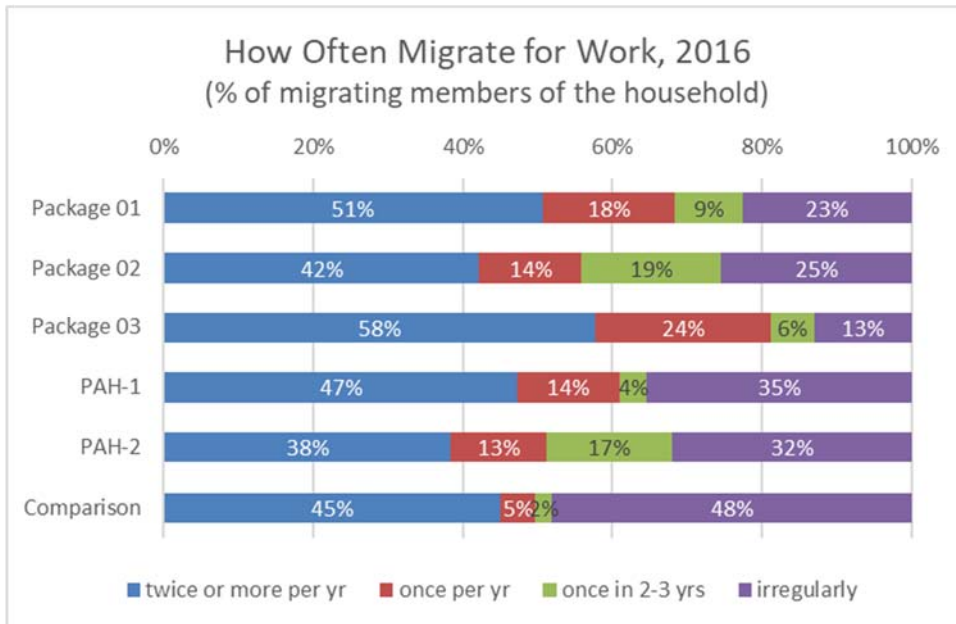


In summary, the percent of each group's population that fell ill during 2015 and 2017 is depicted in the figure to the left. Package 02 saw an increase in persons suffering from illness between 2015 and 2017 (37% rising to 52%) while the comparison group rate of illness declined from 45% to 41%. Package 01 PAH and Package 02 PAH had similar rates of persons suffering any illness at 42-44%.

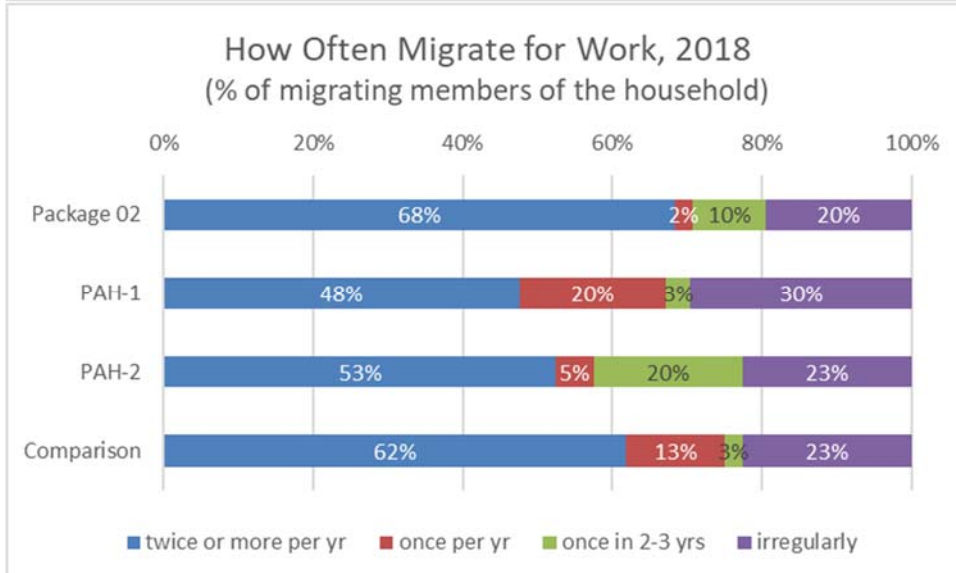
## 16. Migration for Work



Package 01 households had the largest share of working age individuals (taken as 16-65 years of age) migrating for work at 8.6%, followed by Package 02 at 5.2% and Package 03 at 3.1%. PAH households from both Package 01 and 02 had approximately 6% migrating for work.



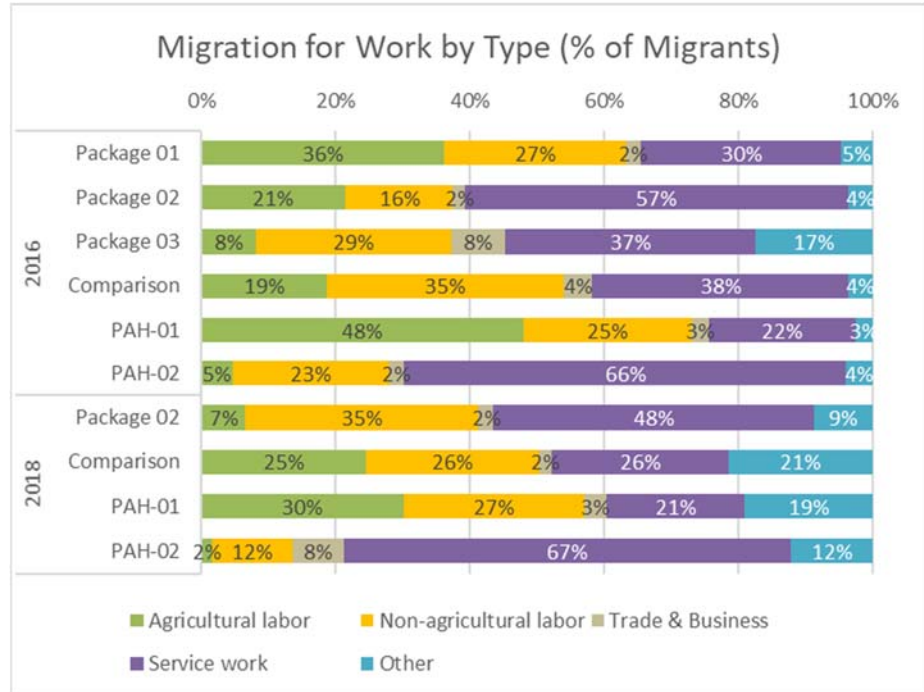
In both 2016 and 2018, the survey showed that the majority of those migrating for work, migrated at least once per year. This percentage was 69%, 56% and 82% for Packages 01, 02 and 03 respectively in 2016 increasing to 70% for the general population of Package 02 in 2018. The same measure was 68% for PAH households of Package 01 in both 2016 and 2018 and 51% of PAH-2 households in 2016 rising to 58% in 2018.



The type of work the migrants engaged in could be classified as agricultural labor, non-agricultural labor, trade & business, service work and a category “other”. The figure below shows the shares in type of work pursued by migrants by group and by year.

In 2016, Package 01 migrants were much more heavily engaged in agricultural labor at 36% than those of Package 02 (21%) or Package 03 (8%). Migrants of PAH-1 households were even more involved in agricultural labor at 48%, though for PAH-2, agricultural labor was a very small share at 5% in 2016 and 2% in 2018.

The most dominant type of work migrants engaged in was service work. It was particularly important in Package 02 with 57% of workers in 2016 (dropping to 48% in 2018 as non-agricultural labor took on a larger share). Service work represented a 30% and 37% share for Package 01 and 03 respectively in 2016. Among PAH-1 migrants, non-

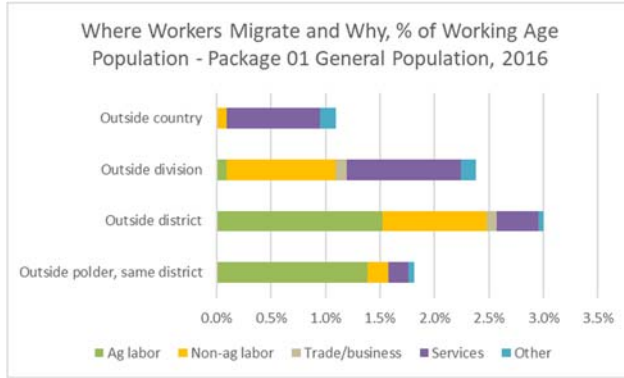


agricultural labor and service work were of similar proportion in both 2016 and 2018, with the non-agricultural labor going from 25% to 27% and service work from 22% to 21% over the period. Among PAH-2 migrants, service work was by far the most important at 66% in 2016 and 67% in 2018.

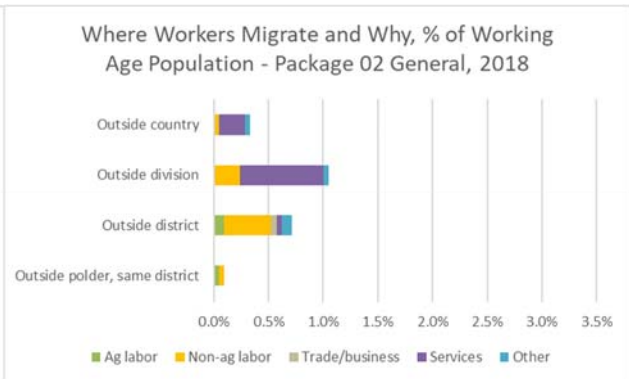
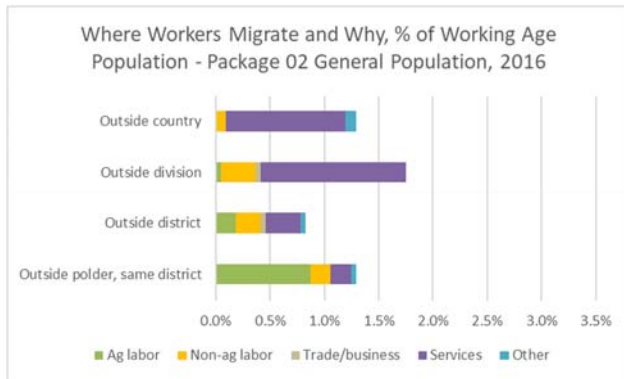
Workers migrate outside their own polder remaining in the same district or they proceed further going outside the district, outside the division or outside Bangladesh. These data are presented in the table and the figures below.

Where Workers Migrate by Group

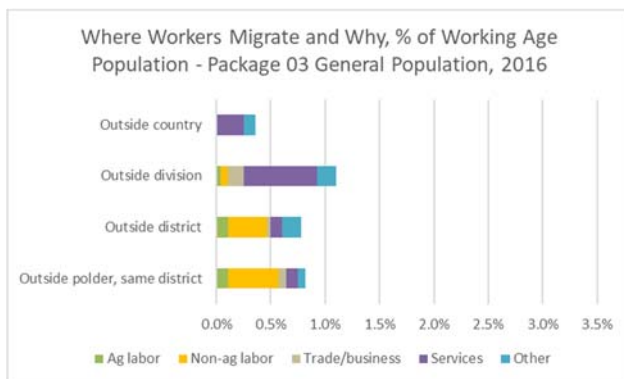
	2016						2018			
	Pkg 01	Pkg 02	Pkg 03	Comparison	PAH-01	PAH-02	Pkg 02	Comparison	PAH-01	PAH-02
Outside polder, same district	22%	25%	27%	35%	31%	8%	4%	34%	38%	6%
Outside district	36%	16%	26%	22%	39%	7%	33%	18%	27%	8%
Outside division	29%	34%	36%	40%	24%	60%	48%	41%	30%	64%
Outside country	13%	25%	12%	3%	7%	26%	15%	7%	5%	23%



In 2016, similar percentages of migrant workers went overseas in Package 01 and 03 (13% and 12%), while Package 02 saw a much higher proportion at 25%. A similar proportion of PAH-2 migrants went overseas to work while those going outside their division represented 60% of that group’s migrants compared to 34% for the Package 02 general population. In contrast, Package 01 migrants tended to migrate further than PAH-1 migrants.



Comparing across survey periods, Package 02 saw a drop in the percentage of migrants migrating outside Bangladesh from 25% in 2016 to 15% in 2018. This was compensated by an increased proportion in the outside division category. Also, there was a much-decreased share in the same district category from 25% in 2016 to 4% in 2018 which was compensated by an increased share outside district from 16% in 2016 to 33% in 2018.



Package 03 saw a smaller percentage of migration for work as of 2016 compared to Packages 01 and 02, especially migration out of the country.

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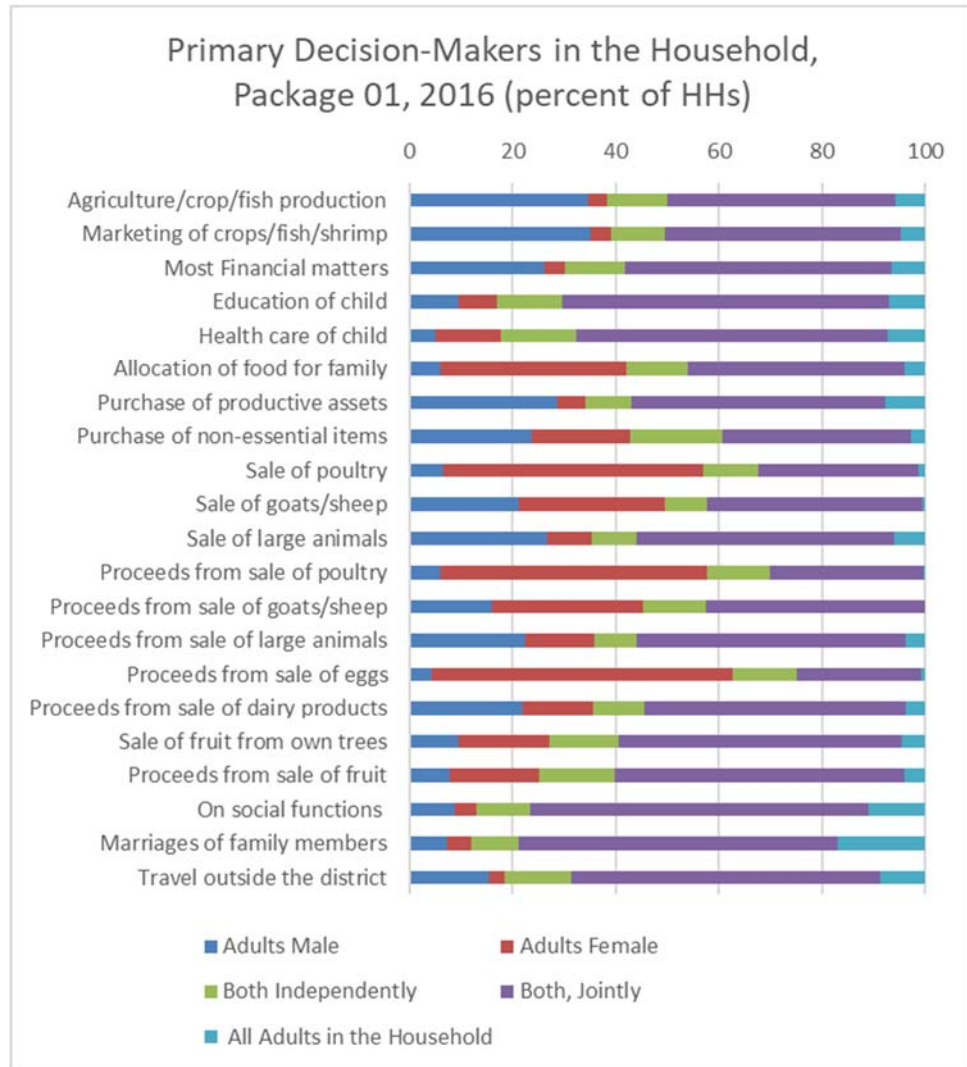
Between 2016 and 2018 among PAH-1 migrants, there was an increase in “same district” share of migrants from 31% to 38% and “outside division” share from 24% to 30%, while “outside district” share declined from 39% to 27%. A similar trend, though much less pronounced occurred among PAH-2 migrants.



## 17. Status of Women

Respondents were asked how decisions are made in their households with respect to 21 family matters. The options included:

- adult males as the decision-makers;
- adult females;
- both independently (meaning any adult could decide);
- both jointly (meaning that at least one male and one female adult would have to agree); and
- all adults in the household (meaning that a consensus among adults would be needed).



The Package 01 responses are presented above for a number of family matters. It is notable that joint decision-making is prevalent in most matters exceeding 40% of the respondents in 17 of 21 areas of decision-making and exceeding 50% of the respondents in 11 of 21 cases. Adult males are more frequently the decision-makers than adult females in 12 of 21 cases, particularly in agricultural/crop production, marketing of agricultural/fish/shrimp production, financial matters, purchase of productive assets, sale of large animals and travel outside the district. Adult females are more frequently the decision-makers with respect to health care of children, allocation of food for the family, sale of poultry/eggs and use of the proceeds from that sale and sale of fruit from own trees and use of the proceeds.

Consensus among all household adults was generally used by well below 10 percent of households in all cases except for decisions on social functions and marriages where 11.1% and 17.0% of households made decisions by consensus among all adults in the household.

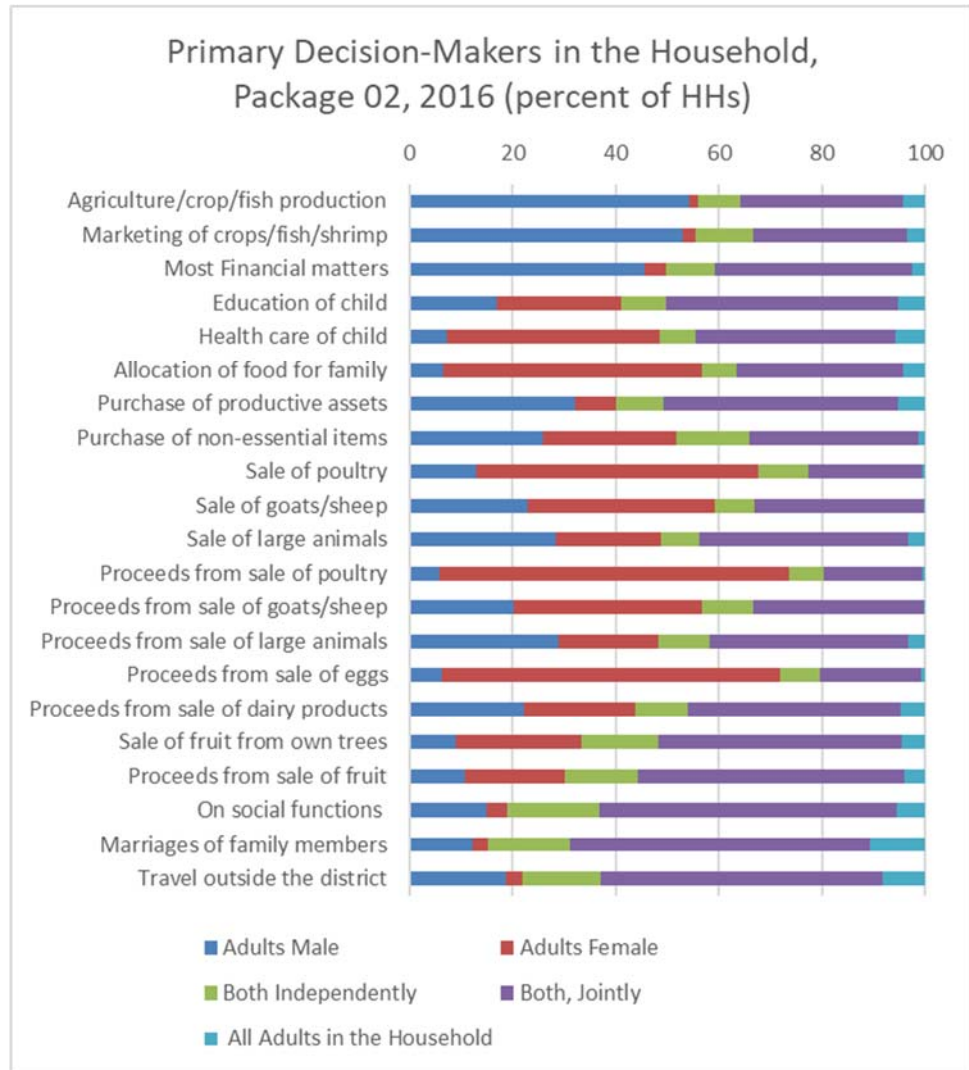
In Package 02, joint decision-making was important as well, but less prevalent in general than in Package 01. Compared to Package 01, a much greater proportion of households in Package 02 have the male adults as the decision-makers for agriculture/crop/fish production (54% vs. 35%), marketing of agricultural/fish production (53% vs. 35%), financial matters (46% vs 26%) and social matters (15% vs 9%).

Female adults are decision-makers of a larger proportion of households in Package 02 than they are in Package 01

with respect to children’s education (24% vs 8%), health care of a child (41% vs 13%), allocation of food for the family (50% vs 36%), sale of large animals (20% vs 9%) and proceeds from the sale of livestock and livestock products.

Joint decision-making exceeds 40% of the respondents in 9 of 21 areas of decision-making and exceeding 50% of the respondents in 4 of 21 cases. Adult males are more frequently the decision-makers than adult females in 9 of 21 cases, particularly in agricultural/crop production, marketing of agricultural/fish/shrimp production, financial matters, purchase of productive assets, sale of large animals, social functions, marriage of family members and travel outside the district. Adult females are more frequently the decision-makers with respect to education of children, health care of children, allocation of food for the family, sale of poultry/eggs/goats/sheep and use of the proceeds from that sale and sale of fruit from own trees and use of the proceeds.

Consensus among all household adults was generally used by well below 10 percent of households in all cases except for decisions on marriages where 10.8% of households made decisions by consensus among all adults in the household.



In Package 03 as in the other two packages, joint decision-making is important, with the extent being less than in Package 01 and on a par with Package 02.

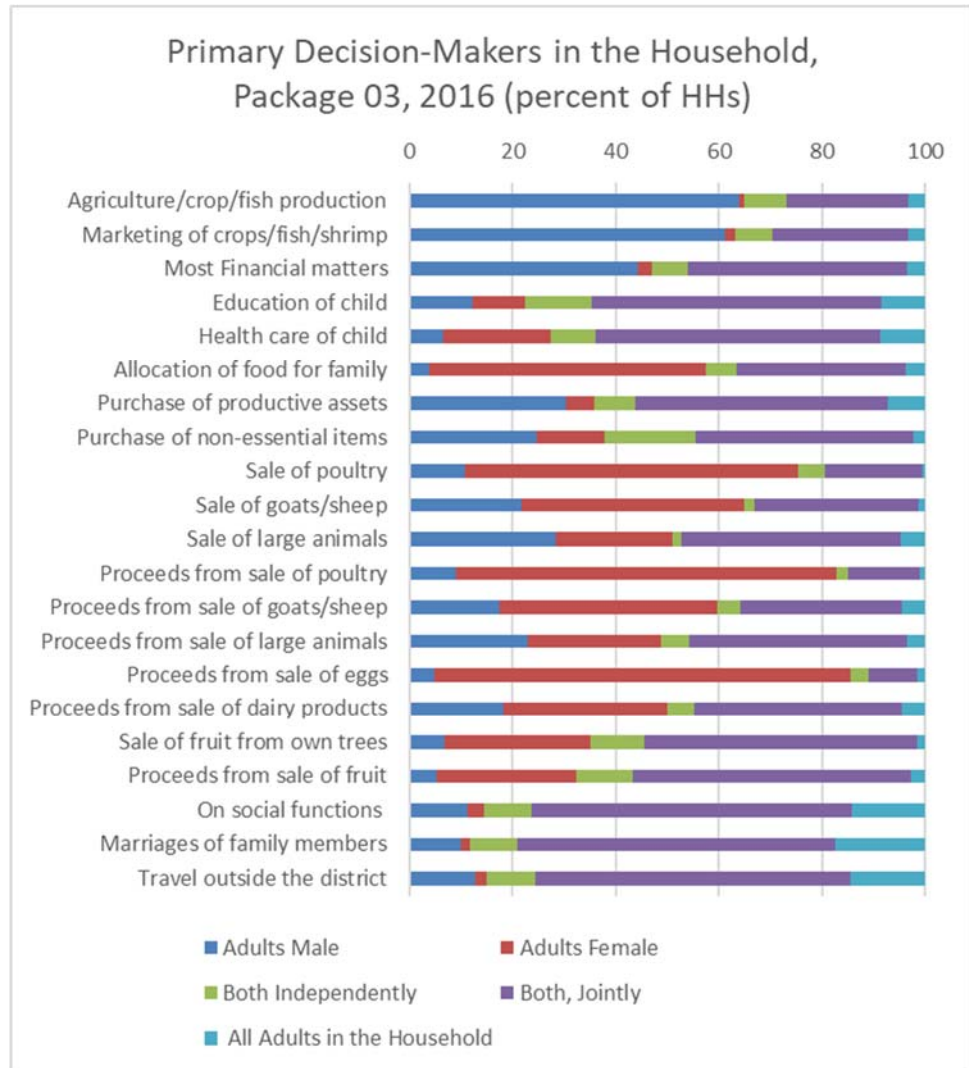
In Package 03, the matters for which the proportion of households where male adults are decision-makers are greatest among all packages are in the areas of agriculture/crop/fish production and marketing of crops/fish.

Female adults are decision-makers of a larger proportion of households in Package 03 than they are in Package 01

with respect to health care of a child (21% vs 13%) and allocation of food for the family (53% vs 36%). They are also a larger proportion of households in both Packages 01 and 02 in the sale of large animals (22% vs 20% for Package 02 vs 9% for Package 01) and proceeds from the sale of large animals, other livestock and livestock products.

Joint decision-making exceeds 40% of the respondents in 11 of 21 areas of decision-making and exceeding 50% of the respondents in 7 of 21 cases. Adult males are more frequently the decision-makers than adult females in 10 of 21 cases, particularly in agricultural/crop production, marketing of agricultural/fish/shrimp production, financial matters, purchase of productive assets, sale of large animals, social functions, marriage of family members and travel outside the district. Adult females are more frequently the decision-makers with respect to health care of children, allocation of food for the family, sale of poultry/eggs/goats/sheep and use of the proceeds from that sale and sale of fruit from own trees and use of the proceeds.

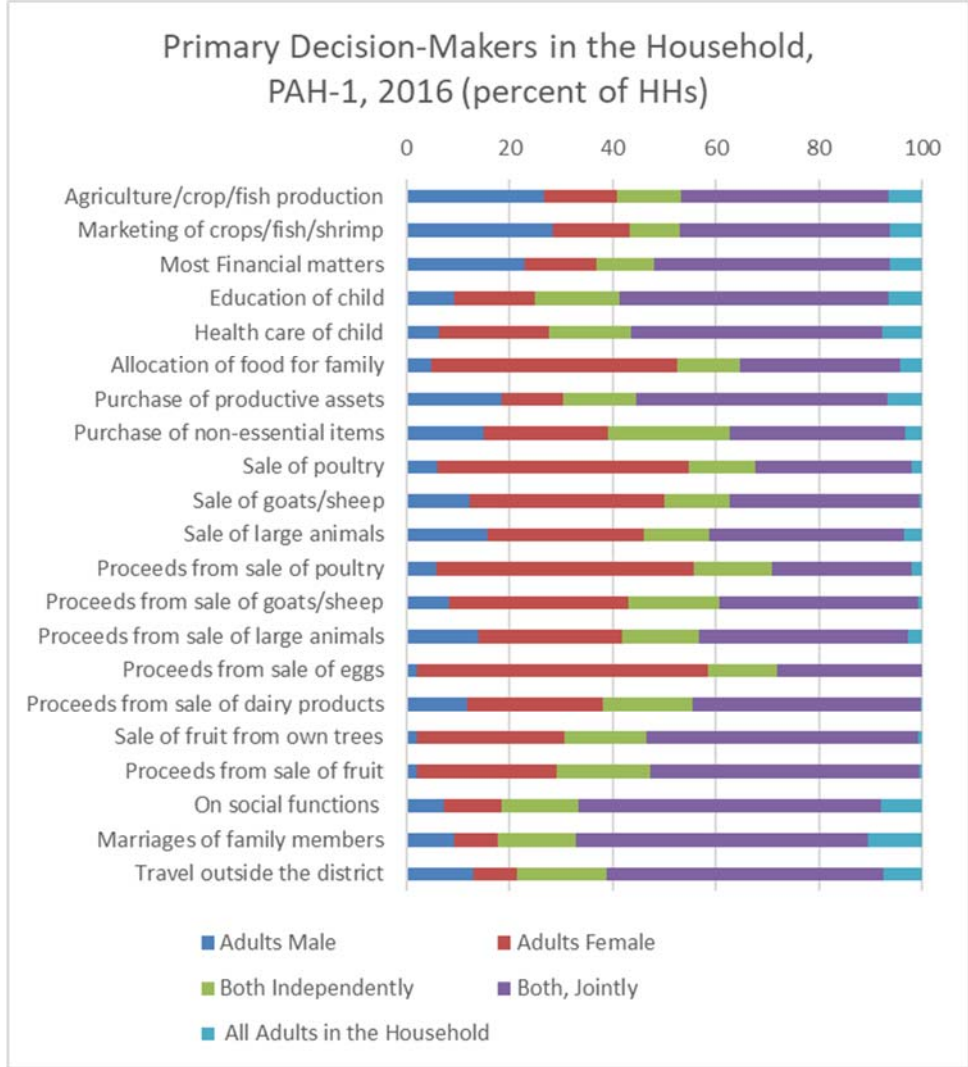
Consensus among all household adults was generally used by well below 10 percent of households in all cases except for decisions on social functions, marriages and travel outside the district where 14.1%, 17.4% and 14.4% of households made decisions by consensus among all adults in the household respectively.





PAH-1 households have a greater tendency toward adult female decision-making compared to the Package 01 general population in agriculture/crop/fish production (14% vs 4%), marketing of crops/fish (15% vs 4%), financial matters (14% vs 4%), sale of large animals (30% vs 9%), use of proceeds from sale of large animals (28% vs 13%), social functions (11% vs 4%), travel outside the district (9% vs 3%) and quite a few other matters.

Joint decision-making exceeds 40% of the respondents in 13 of 21 areas of decision-making and exceeds 50% of the



respondents in 6 of 21 cases. Adult males are more frequently the decision-makers than adult females in only 6 of 21 cases, particularly in agricultural/crop production, marketing of agricultural/fish/shrimp production, financial matters, purchase of productive assets, sale of large animals and travel outside the district. Adult females are more frequently the decision-makers than adult males with respect to 15 of the matters listed – most notably on education of children, health care of children, allocation of food for the family, purchase of non-essential items, sale of poultry/eggs/goats/sheep and use of the proceeds from that sale, sale of fruit from own trees and use of the proceeds and social functions.

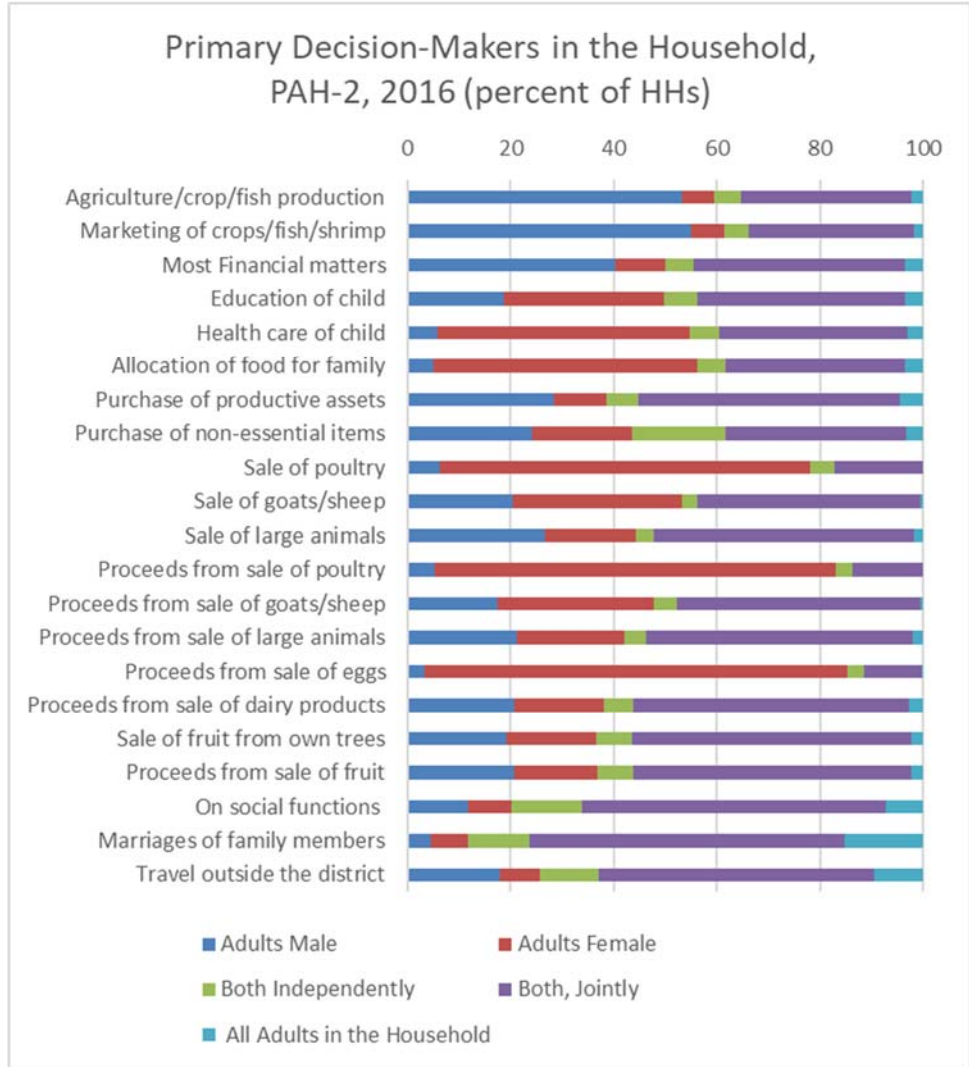
Consensus among all household adults was generally used by well below 10 percent of households in all cases except for decisions on marriages where 10.5% of households made decisions by consensus among all adults in the household.

PAH-2 households have a slightly greater tendency toward adult female decision-making compared to the Package 02 general population in agriculture/crop/fish production (6% vs 2%), marketing of crops/fish (6% vs 3%), financial matters (10% vs 4%), sale of poultry (72% vs 55%), social functions (8% vs 4%), travel outside the district (8% vs 3%) and quite a few other matters.

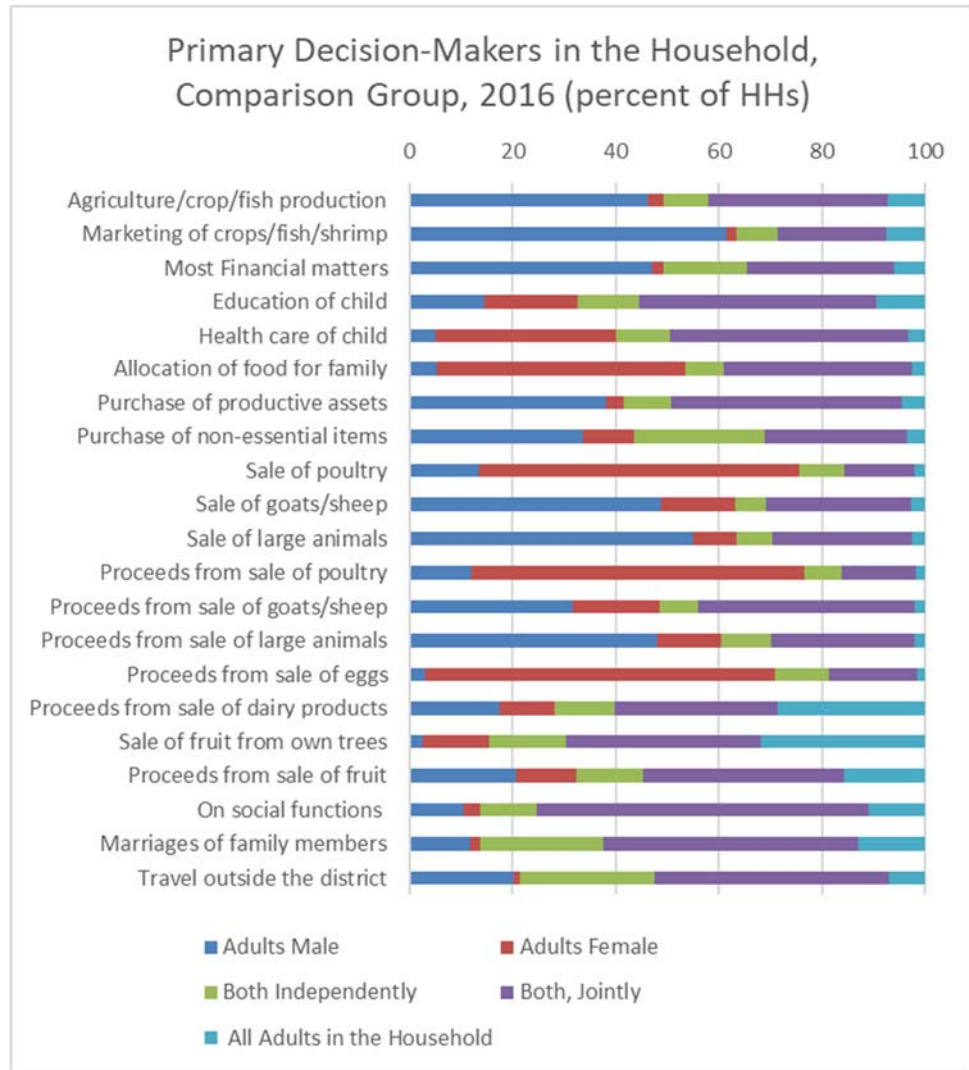
Joint decision-making exceeds 40% of the respondents in 13 of 21 areas of decision-making and exceeds 50% of the respondents in 8 of 21 cases. Adult males are more frequently

the decision-makers than adult females in only 12 of 21 cases, particularly in agricultural/crop production, marketing of agricultural/fish/shrimp production, financial matters, purchase of productive assets, sale of large animals, proceeds from the sale of dairy products and own fruit and travel outside the district. Adult females are more frequently the decision-makers than adult males with respect to 9 of the matters listed – most notably on education of children, health care of children, allocation of food for the family, sale of poultry/eggs/goats/sheep and use of the proceeds from that sale, and sale of fruit from own trees.

Consensus among all household adults was generally used by well below 10 percent of households in all cases except for decisions on marriages and travel outside the district where 15.2% and 9.5% of households made decisions by consensus among all adults in the household.



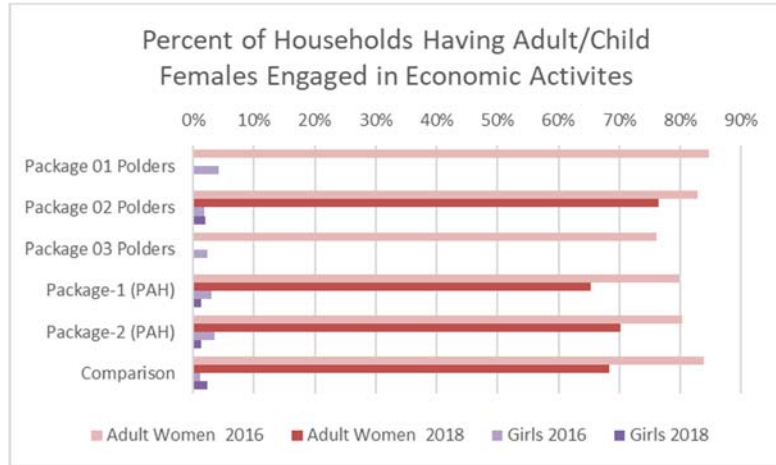
The comparison group results are presented here and the pattern of decision-making is generally consistent with that found in Package 01, 02 and 03. There is a slight trend towards male adults as decision-makers as compared to the CEIP locations, particularly in the purchase of productive assets, purchase of non-essential items and the sale of animals and use of proceeds from these sales. There is also a greater use of decision-making by consensus among all adults in the household in the sale of fruit and use of those proceeds.



Joint decision-making exceeds 40% of the respondents in 7 of 21 areas of decision-making and exceeds 50% of the respondents in only one of 21 cases. Adult males are more frequently the decision-makers than adult females in 14 of 21 cases, particularly in agricultural/crop production, marketing of agricultural/fish/shrimp production, financial matters, purchase of productive assets, purchase of non-essential items, sale of goats/sheep, sale of large animals, proceeds from the sale of dairy products and own fruit, social functions and travel outside the district. Adult females are more frequently the decision-makers than adult males with respect to 7 of the matters listed – most notably on education of children, health care of children, allocation of food for the family, sale of poultry/eggs and use of the proceeds from that sale, and sale of fruit from own trees.

Consensus among all household adults was generally used by well below 10 percent of households in a majority of cases except for decisions on children’s education (9.4%), proceeds from the sale of dairy (28.7%), sale of fruit from own trees (31.9%), use of proceeds from own fruit sales (15.8%), social functions (11.1%), and marriages (12.9%).

Women are approximately half of the population and the majority are engaged in economic activities on which the household depends. In 2016 in Package 01, 85% of households reported adult women were working or engaged in non-paid economic activities. This figure was 83% in Package 02, 76% in Package 03 and 84% among comparison group households. PAH-1 and PAH-2 subgroups were similar to their respective general populations at 80% in both cases.



In 2018, adult women’s participation in economic activities appeared to decreased slightly across all groups surveyed that year.

Girls aged 6-15 were also found to be engaged in economic activities, but in a small minority of households ranging from 2% in Packages 02 and 03 to 4% in Package 01. This percentage tended to be lower in 2018 than in 2016.

A large proportion of women are engaged in poultry rearing and sheep/goat rearing as can be seen from the table below with Packages 01 and 02 having a slightly higher proportion than Package 03. Kitchen gardening is another economic activity that women participate whether in the CEIP area or comparison group, though the PAH subgroup is engaged at less than half the level as the general population in the project area.

Table 1: Percent of Working Age Women Engaged in the Given Economic Activity

	2016						2018			
	Pkg 01	Pkg 02	Pkg 03	Comp	PAH-1	PAH-2	Pkg 02	Comp	PAH-1	PAH-2
Crop production	2%	1%	0%	0%	0%	0%	1%	2%	1%	0%
Crop processing	6%	0%	2%	1%	1%	0%	1%	6%	3%	0%
Kitchen gardening	7%	10%	5%	7%	2%	4%	3%	3%	2%	0%
Fish capture	2%	0%	0%	0%	1%	0%	0%	1%	4%	0%
Fish / shrimp culture	1%	0%	1%	0%	0%	0%	1%	2%	1%	1%
Poultry rearing	46%	51%	36%	51%	18%	20%	46%	40%	25%	24%
Sheep / goat rearing	23%	21%	19%	28%	9%	6%	15%	17%	14%	8%
Trade & Business	0%	0%	0%	0%	1%	0%	1%	1%	2%	1%
Agricultural Labor	1%	1%	0%	1%	0%	0%	0%	2%	1%	0%
Non-Agric'l Labor	1%	0%	1%	1%	1%	1%	1%	2%	3%	2%
Handicrafts/sewing	2%	1%	1%	0%	0%	0%	1%	0%	0%	1%
Service, paid	1%	1%	1%	0%	0%	1%	1%	1%	1%	1%
Others	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%

## Coastal Embankment Improvement Project, Phase I (CEIP-I)

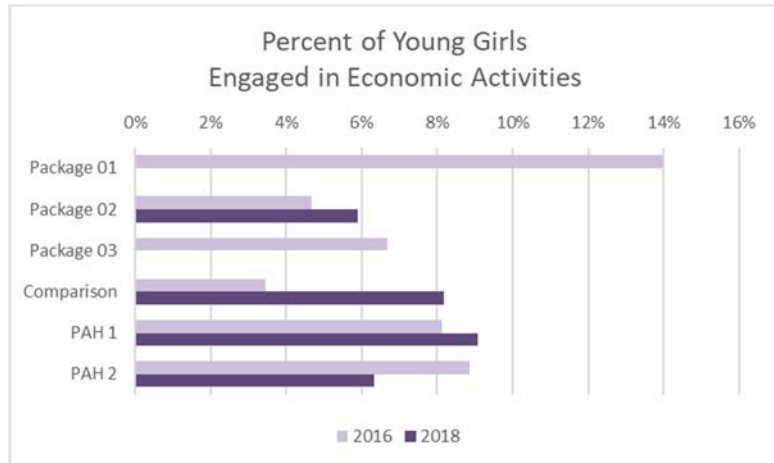
Young girls who are engaged in economic activities are also focused primarily on poultry rearing and sheep/goat rearing though at a much lower percentage among their age group (Table 2).

*Table 2: Percent of Young Girls Engaged in the Given Economic Activity*

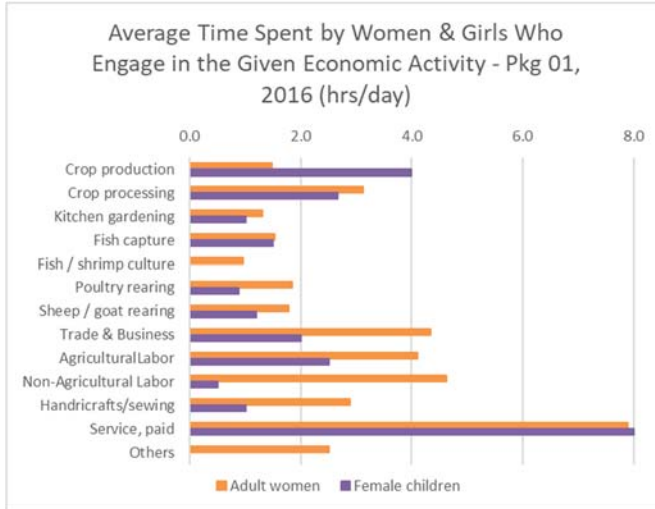
	2016						2018			
	Pkg 01	Pkg 02	Pkg 03	Comp	PAH-1	PAH-2	Pkg 02	Comp	PAH-1	PAH-2
Crop production	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Crop processing	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Kitchen gardening	0%	0%	0%	0%	0%	1%	1%	0%	1%	0%
Fish capture	1%	0%	0%	0%	0%	0%	1%	0%	1%	0%
Fish / shrimp culture	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Poultry rearing	7%	3%	6%	2%	6%	7%	2%	5%	5%	3%
Sheep / goat rearing	2%	1%	1%	1%	1%	1%	1%	2%	1%	2%
Trade & Business	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Agricultural Labor	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Non-Agric'l Labor	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Handicrafts/sewing	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Service, paid	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Others	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

As for girls aged 6-15, Package 01 far exceeded the other project areas with 14% being engaged in economic activities. Package 02 and 03 had 5% and 7% in 2016 with Package 02 increasing slightly by 2018 to 6%.

PAH-1 and PAH-2 were 8% and 9% in 2016 with PAH-1 showing a slight increase to 9% in 2018, while PAH-2 showed a decrease to 6%.

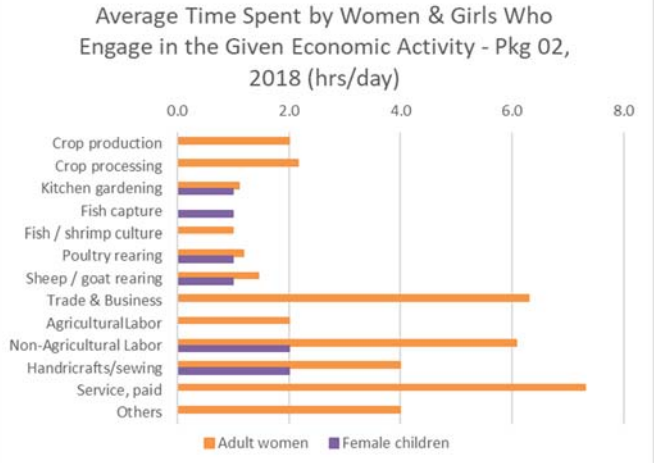
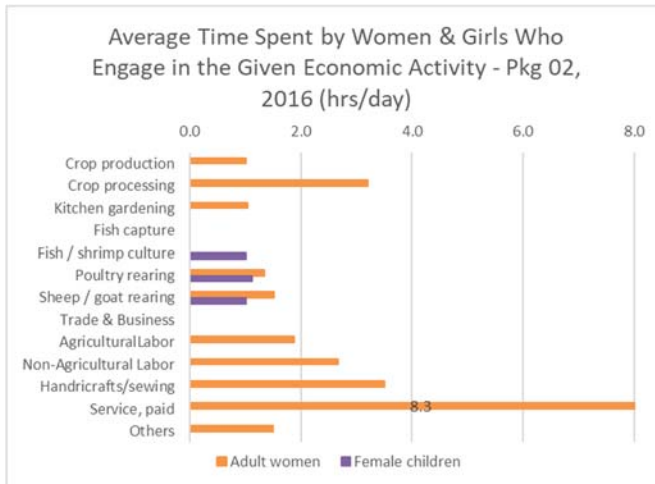


Coastal Embankment Improvement Project, Phase I (CEIP-I)

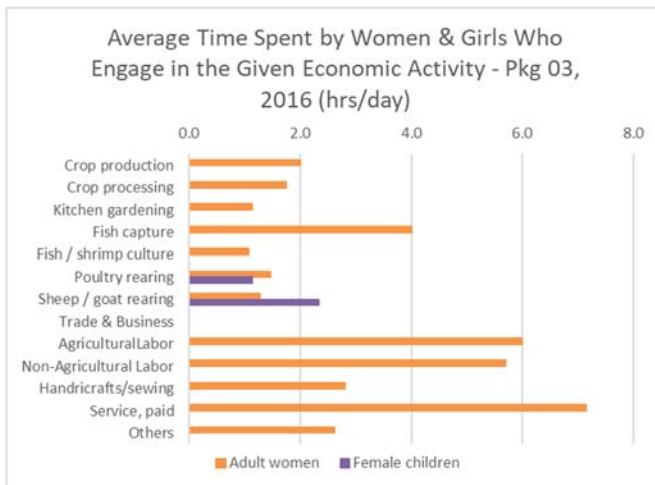


Time spent by women and young girls on the particular activities (if engaged in them), is depicted in the figures here. It should be borne in mind that these activities are in addition to the major uncompensated activities women already tend to undertake with respect to child-rearing, cooking, cleaning, managing family welfare, etc.

Package 01 shows a higher level of reliance on young girls than the other Packages with as many as 4 hours per day of work in those cases where girls aged 6-15 are engaged in economic activities.



With poultry rearing and sheep/goat rearing being relatively common in all three packages of CEIP-1, this means that many women are burdened with nearly 2 hours of work each day for this purpose in Package 01, and about 1.5 hours in Packages 02 and 03.



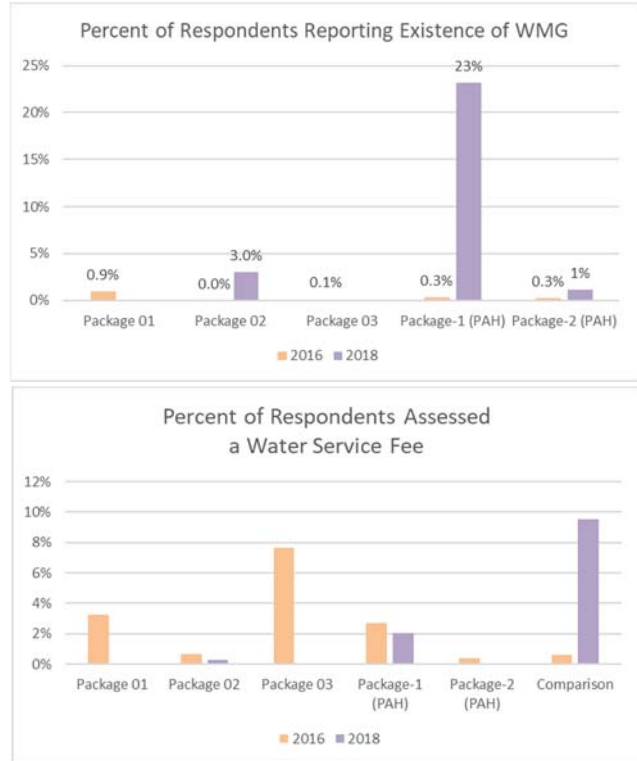
Comparing across years in Package 02, we see that women are getting engaged in a more diverse set of economic activities, but the percentages are small so while the burden is real, it falls on a small number of working age women.

## 18. Institutional Aspects

During the initial survey round in 2016, very few respondents reported the existence of any Water Management Group (WMG) – 0.9% of those in Package 01, none at all in Package 02 and 0.1% in Package 03. A negligible percentage of PAH-1 and PAH-2 households reported there was a WMG. These few respondents were most likely recalling an earlier time when there was an organization to manage, operate and maintain the water control structures.

By 2018, 23% of Package 01 PAH households reported a WMG, reflecting awareness raising by CEIP-1. Three percent of Package 02 general population and 1% of Package 02 PAH households reported a WMG, up from 0% and 0.3% respectively. It is to be recalled that Package 01 and 03 General Populations were not surveyed in 2018.

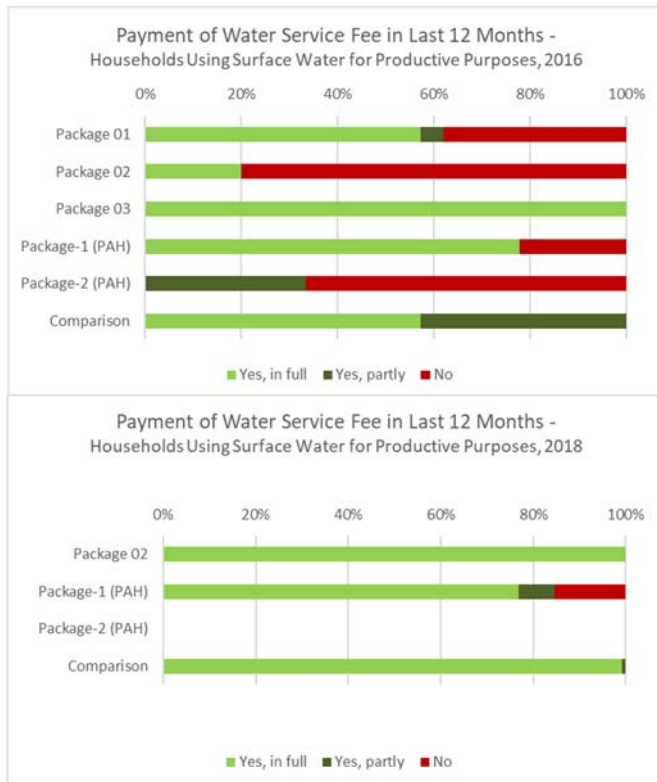
Surface water levels and quality (whether fresh or brackish) must be managed for productive uses such as irrigated crop production, fish production or shrimp production. Sustainable O&M of water control structures and water supply and drainage systems requires financial resources. Only a small



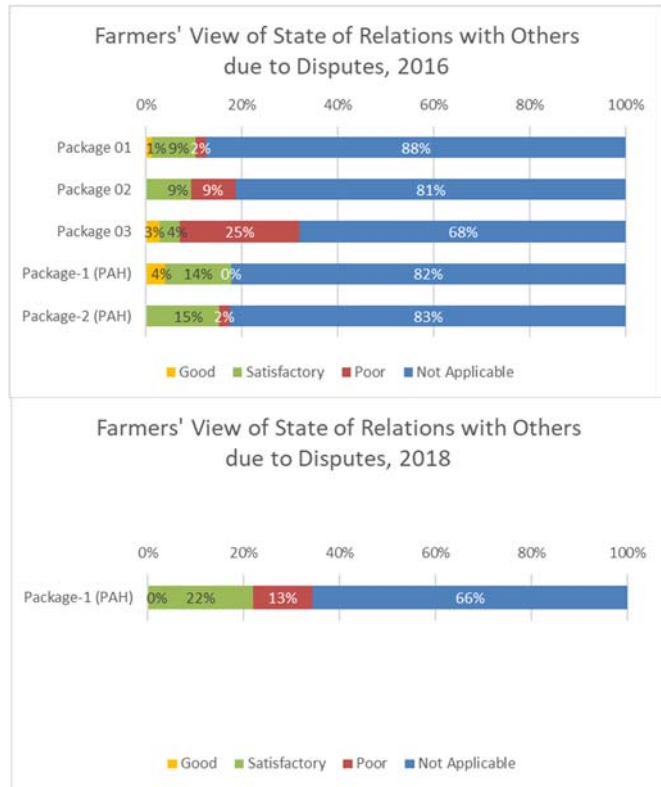
share of total households has been assessed a water service fee for productive-use water (see chart above) and, in 2016, a substantial share of these were not meeting their financial obligation. Package 02 were least compliant with 80% not having paid their fees, Package 01 was in the middle with 38% and Package 03 was fully paid up (0% not paying).

Package 01 PAH were somewhat better than their corresponding general population with 22% not having paid (versus 38%) and the same for Package 02 PAH with 67% not having paid compared to 80%.

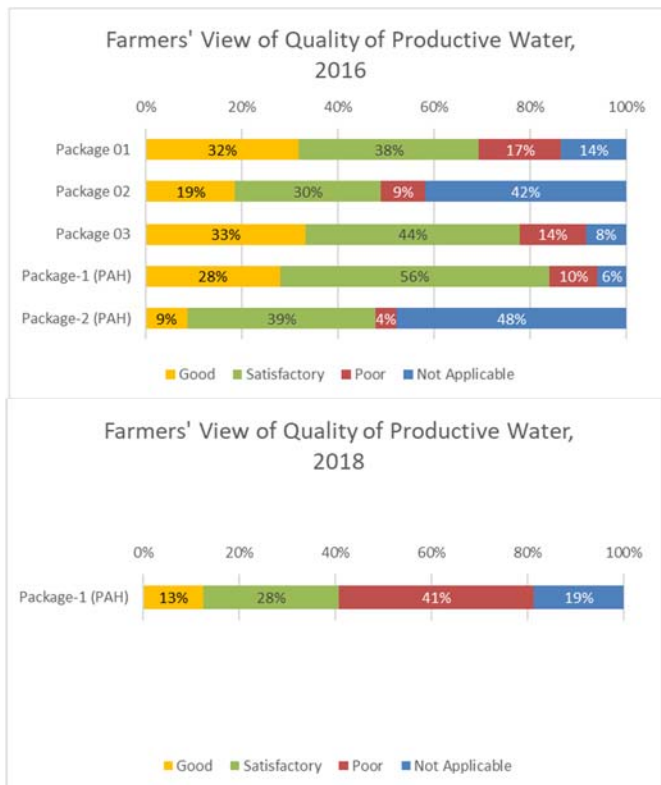
In 2018, Package 01 PAH improved with only 15% not having paid compared to 22% in 2016. Package 02 shows no cases of not paying in 2018, but there were only two households reporting so this is not definitive.



Households were asked regarding the state of relations with others with respect to disputes, which include disputes regarding water management. The majority of households had no disputes (not applicable). In 2016, only 2% of Package 01 respondents indicated they had poor relations with others due to disputes, but this percentage was 9% for Package 02 and 25% for Package 03. No PAH-1 households reported poor relations in 2016, but this rose to 13% in 2018. Only 2% of PAH-2 households reported poor relations in 2016 and the sample was too small in 2018 to report.



In 2016, on the quality of productive water – whether fresh or brackish – 17% of Package 01 users of productive water viewed it as “poor”. This percentage was 9% among Package 02 users and 14% among those of Package 03. Ten percent (10%) of PAH-1 users and four percent (4%) of PAH-2 users considered the water quality poor in 2016. By 2018, a surprisingly high 41% of PAH-1 users found it so. The number of Package 02 and PAH-2 users in the 2018 sample was too small to report the results.



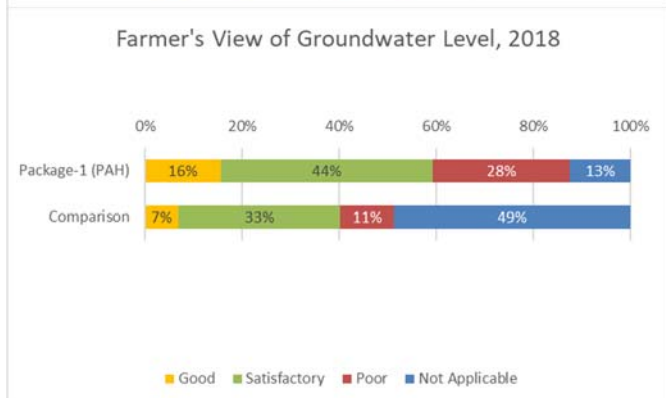
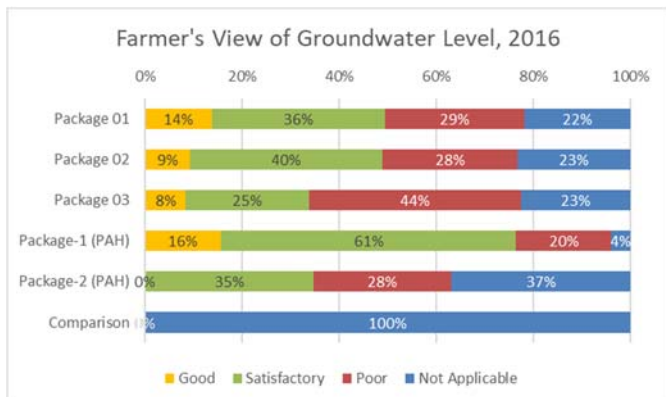
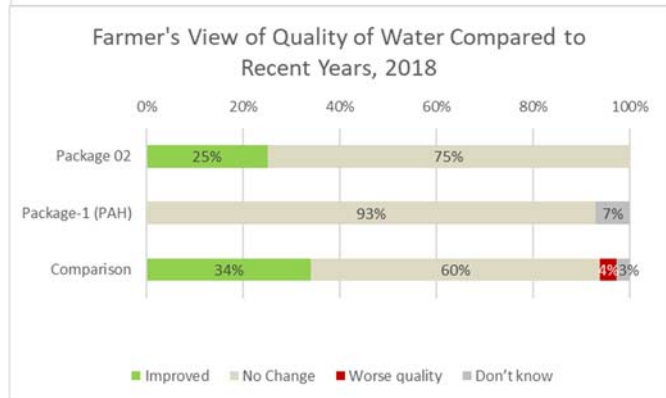
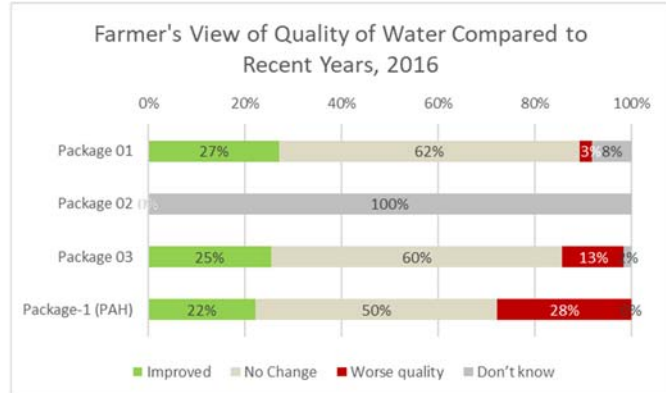


## Coastal Embankment Improvement Project, Phase I (CEIP-I)

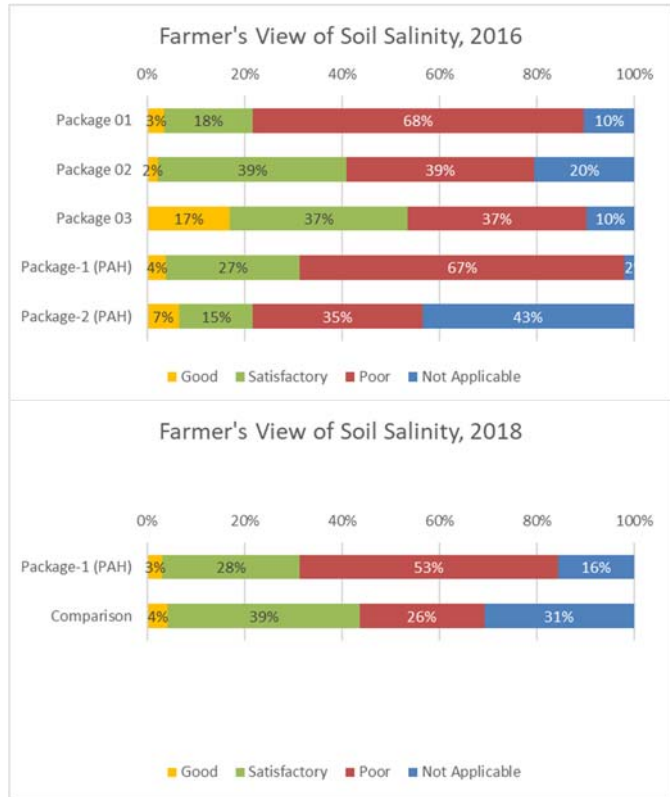
In 2016, 27% of Package 01 farmers believed water quality had improved in recent years and a very small percentage (3%) believed it had deteriorated. Package 02 farmers did not know and when resurveyed in 2018 25% reported improvement against 75% reporting no change. 25% of Package 03 farmers reported improvement while 13% reported a decline in water quality.

In 2018, 93% of PAH-1 farmers reported no change, but since this comes after some improvement, but more importantly substantial deterioration in 2016, this result shows that water control and management objectives of CEIP-1 are not yet being fulfilled as of 2018.

In 2016, 29% of Package 01 users of water for productive purposes considered groundwater level to be a problem. This percentage was 28% for Package 02 (and PAH-2) and 44% for Package 03. Somewhat fewer PAH-1 users as a subgroup of the Package 01 general population considered groundwater to be an issue at 20% in 2016, but this rose to 28% in 2018.

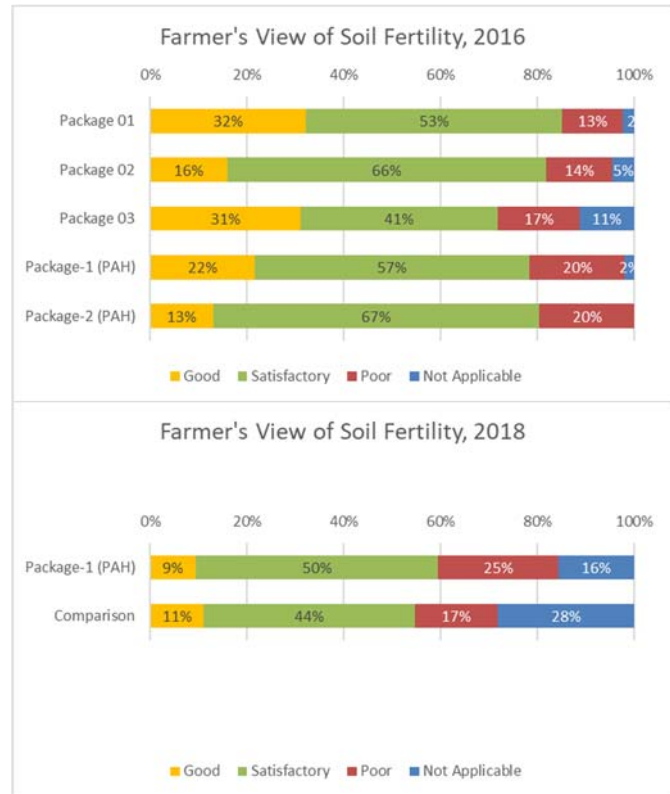


Soil salinity was a serious concern among farmers in the project area with 68% of Package 01 farmers rating the soil as “poor” in this respect in 2016. This percentage was 39% and 37% respectively for Package 02 and 03. The numbers for the PAH subgroup were roughly similar to their general populations with 67% of PAH-1 and 35% of PAH-2 farmers rating the soil quality as poor with respect to salinity. In 2018, 53% of PAH-1 farmers rated soil as poor due to salinity, which was an improvement.



Soil fertility is also rated as a challenge by farmers. In 2016, 13% of Package 01 farmers considered their soil to be “poor” with respect to fertility. Similar percentages were seen in Package 02 and 03 with 14% and 17%. PAH-1 and PAH-2 had the same percentage of poor soil fertility at 20% of farmers.

By 2018, 25% of PAH-1 farmers rated their soil as having poor fertility.

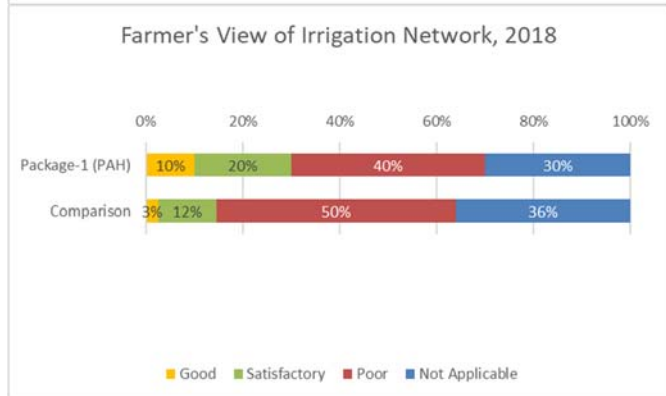
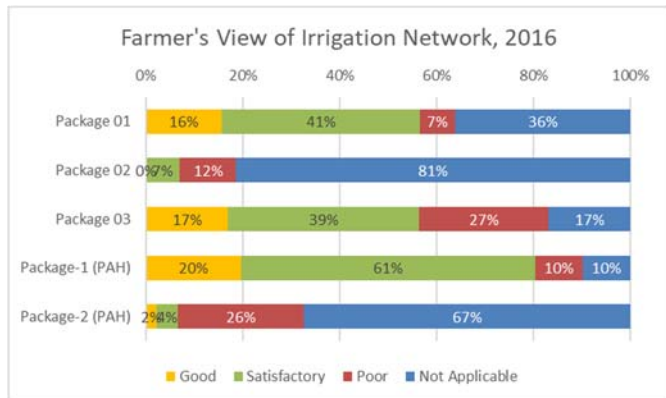
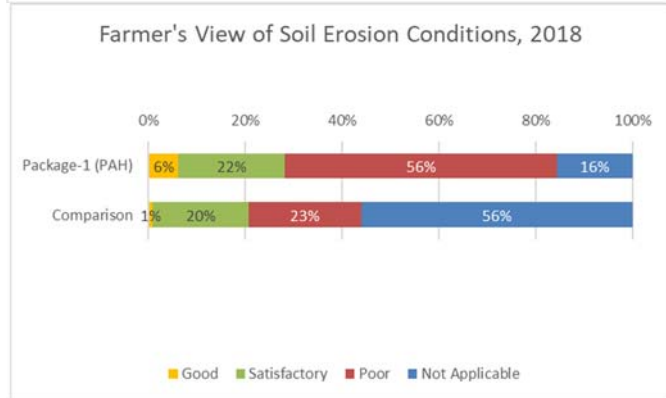
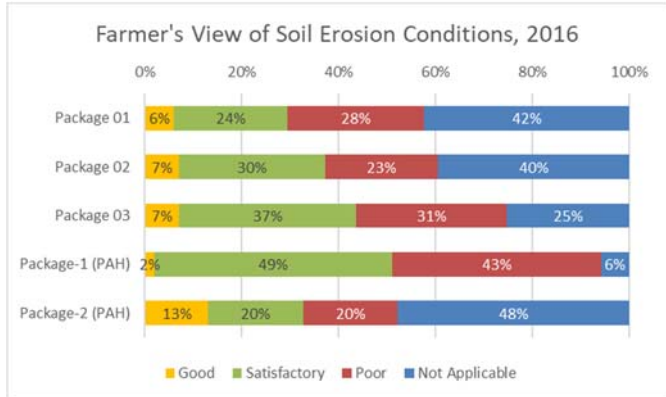


A large percentage of farmers view soil erosion conditions as “poor” with 28% of Package 01, 23% of those in Package 02 and 31% of those in Package 03 giving this rating of poor in 2016. A much larger percentage of PAH-1 farmers viewed soil erosion conditions as poor than the general population of Package 01 at 43% versus 28%. PAH-2 farmers were in line with the Package 02 general population at 20% versus 23%.

By 2018, soil erosion conditions had become more serious among PAH-1 farmers with 56% rating them as poor (up from 43% in 2016).

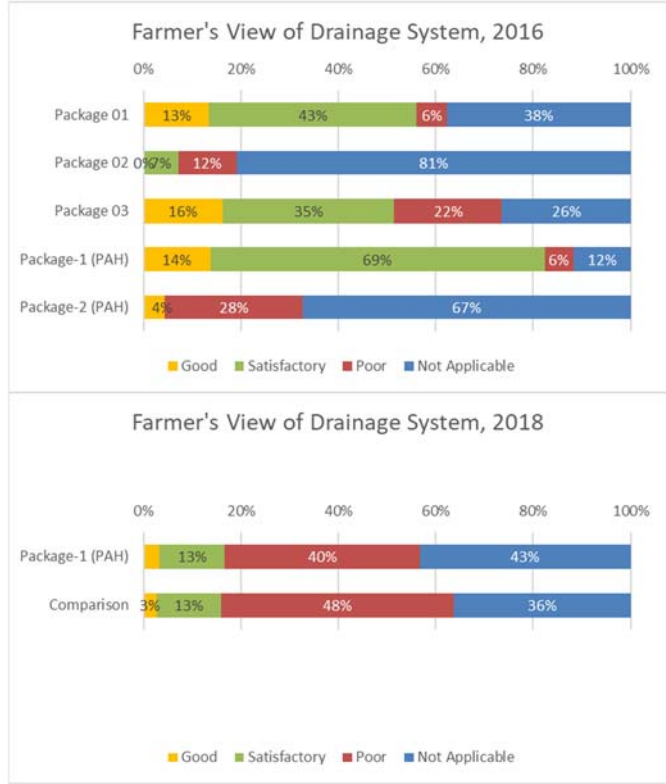
In 2016, 7% of Package 01 farmers viewed the irrigation network as poor. This percentage was 12% and 27% for Package 02 and 03 respectively. PAH had a greater percentage of farmers rated the irrigation as poor than their respective general populations with 10% for PAH-1 and 26% for PAH-2.

By 2018, PAH-1 farmers showed increasing dissatisfaction with 40% rating the system as poor.



In 2016, 6% of Package 01, 12% of Package 02 and 22% of Package 03 farmers viewed the drainage system as poor. While PAH-1 was 6% (same as for Package 01), PAH-2 was 28% (higher than Package 02 general population).

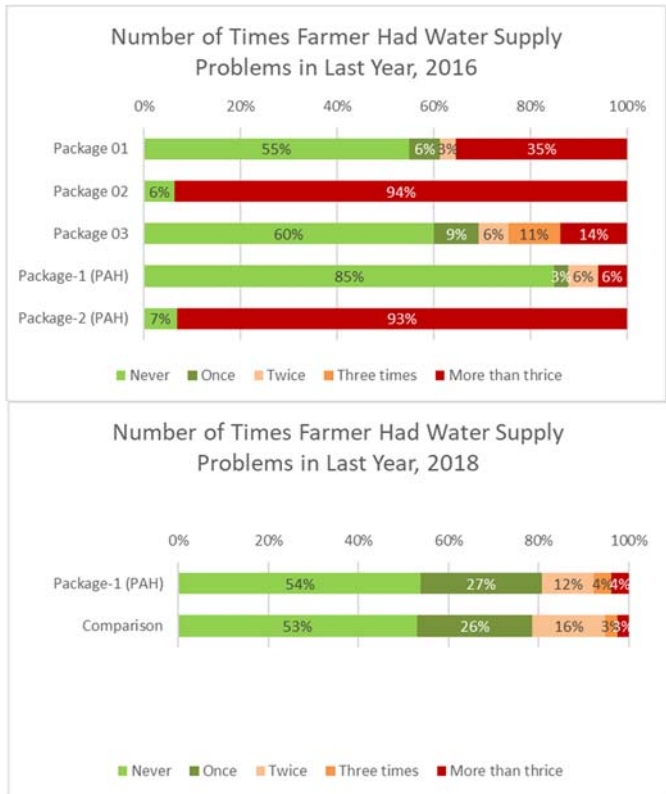
By 2018, the percentage of PAH-1 farmers dissatisfied with the drainage system grew dramatically to 40%.



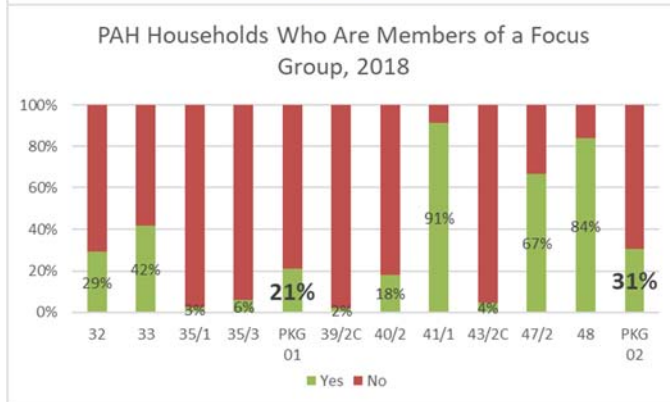
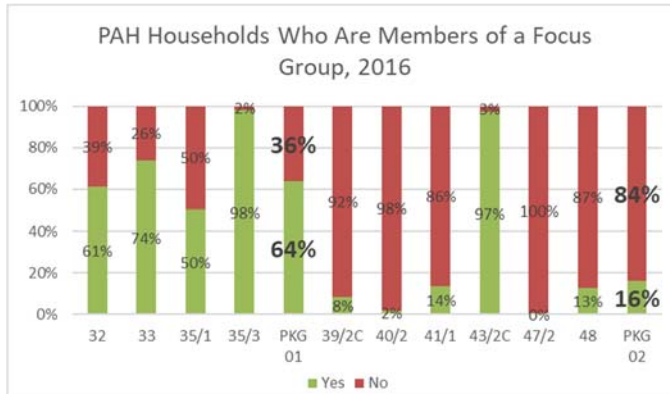
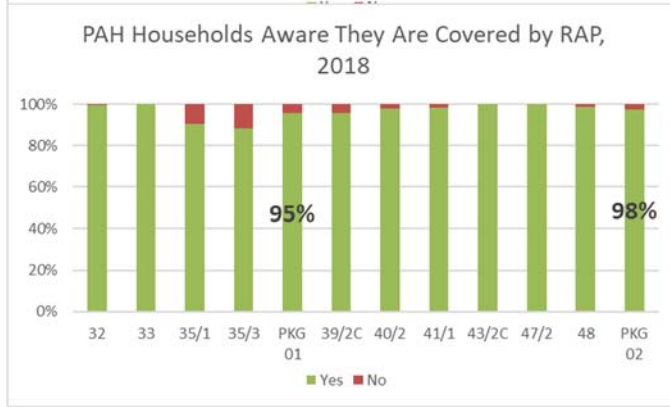
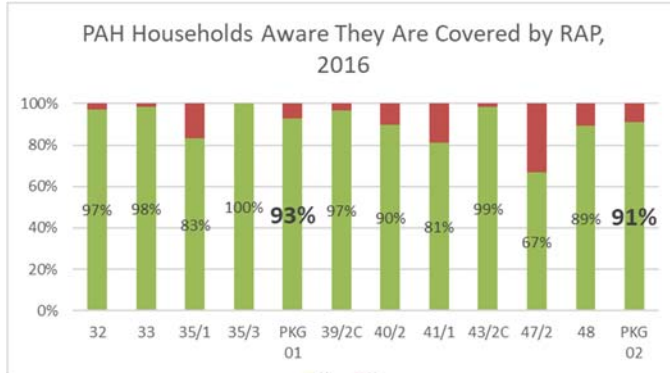
Farmers were asked how many times they encountered problems in getting water for productive use in the prior 12-month period. In 2016, while 55% of Package 01 farmers said never and 35% at the other end of the scale said more than three times, only 6% of Package 02 farmers never had a problem and 94% did so more than three times.

PAH-1 farmers fared very well with 85% saying never and only 6% more than three times. In contrast PAH-2 farmers fared very badly with 7% saying never and 93% more than three times.

Between 2016 and 2018, there was a deterioration for the one subgroup for which there was sufficient data. PAH-1 farmers that never had a problem declined from a level of 85% to 54%.



## 19. Project-Affected Household Module

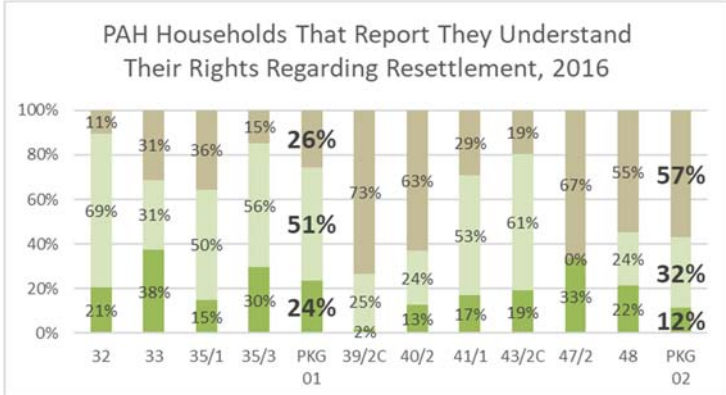


A number of questions specific to Project-Affected Households (PAH) were included in the surveys. The responses are summarized in this section.

In 2016, the majority of Package 01 and 02 PAH households were aware that they are covered under a Resettlement Action Plan – 93% and 91% respectively. By early 2018 when the midline survey was conducted, these percentages had further increased to 95% and 98%.

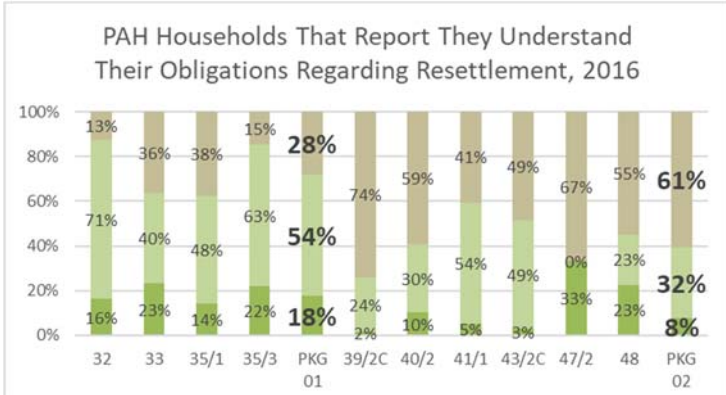
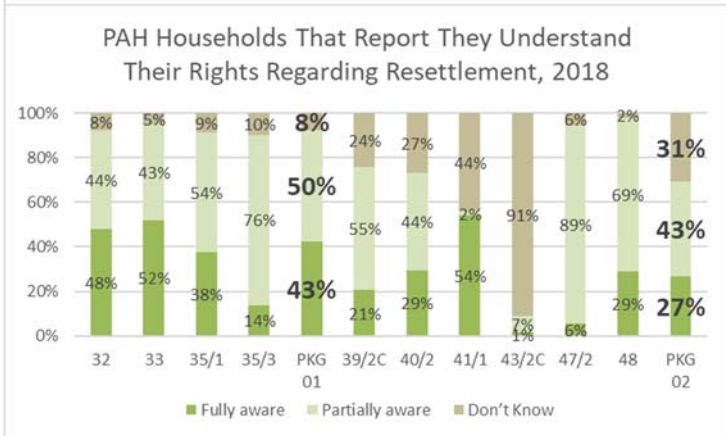
All PAH households were intended to join a focus group which would participate in four rounds of multiple consultations with the RAP Consultants of CEIP-1 to provide key information regarding the rights and obligations of those being resettled, the process, procedures, logistics and timeframe. In 2016, 64% of Package 01 PAH and 16% of Package 02 PAH were members of a focus group by virtue of the efforts of the RAP team of the Design and Supervision Consultants. In 2018, membership in Package 01 PAH declined to 21% as the informational rounds of meetings were largely concluded and the focus group meetings for sustained communication did not take place due to resource constraints.

However, in the Package 02 area the informational rounds were still in process and the percentage of PAHs that reported being members of focus groups rose to 31% from 16% two years earlier.



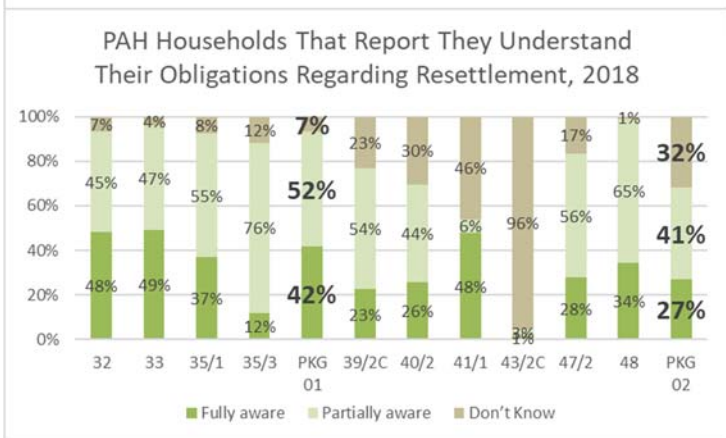
In 2016, 24% of PAH-1 reported that they understood their rights regarding resettlement and 26% were not aware of their rights. By 2018, those fully aware of their rights increased to 43% while those who were not aware declined to 8%.

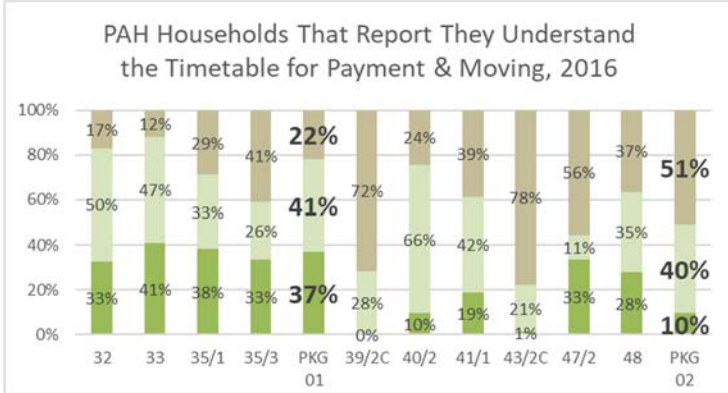
For PAH-2, in 2016 12% reported being fully aware of their rights with 57% not knowing their rights. By 2018, those fully aware of their rights increased to 27% while those who were not aware declined to 31%.



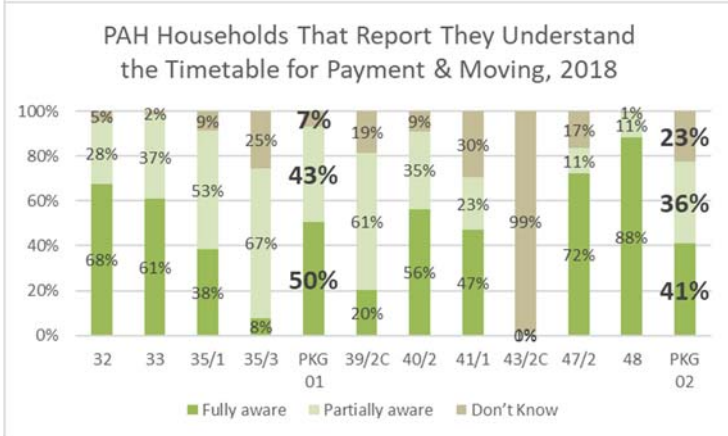
The percentage of PAH-1 households that reported being fully aware of their obligations was 18% in 2016, while those who did not know their obligations at all amounted to 28% percent. By 2018, 42% were fully aware and only 7% didn't know at all.

In the case of PAH-2 households, 8% were fully aware of their obligations in 2016 and this rose to 27% by 2018. Those who did not know their obligation at all declined from 61% in 2016 to 32% in 2018.



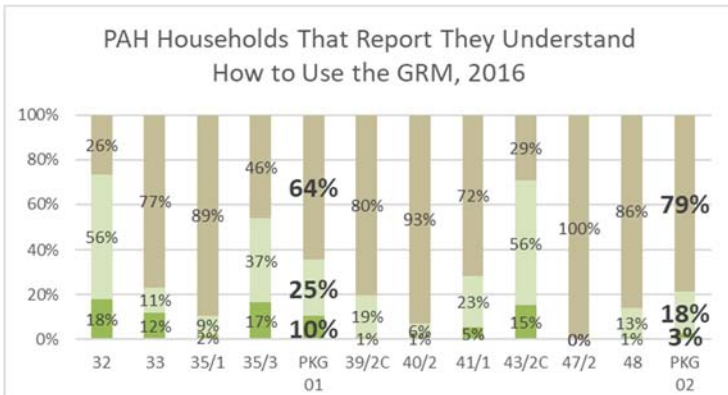


The percentage of PAH households that reported they understand the planned timetable for payment of compensation and for moving in Package 01 was 37% in 2016 and 50% in 2018. The percentage that didn't know anything was 22% in 2016 and only 7% in 2018.

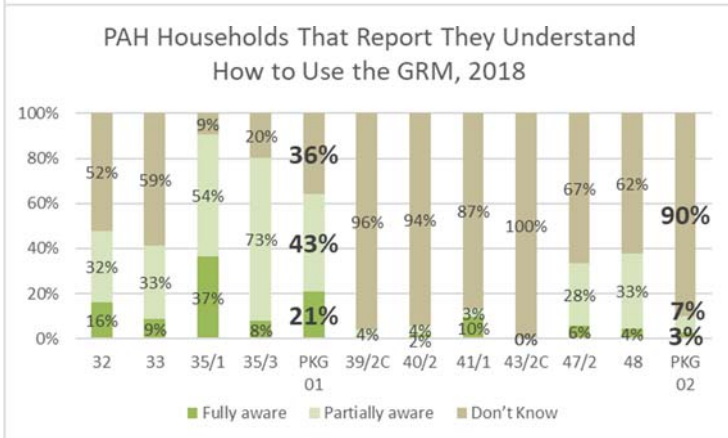


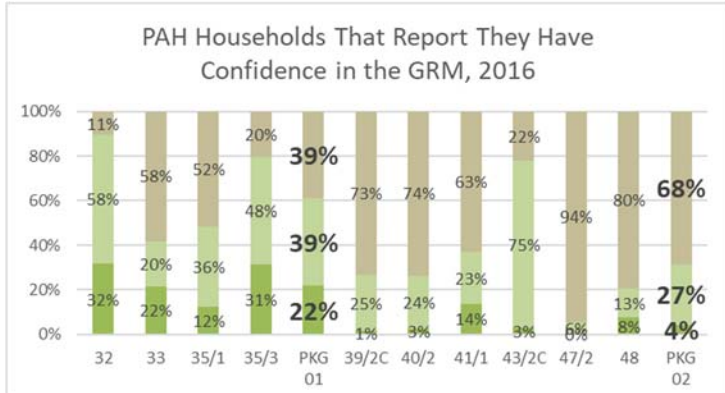
For Package 02 PAH households, 10% said they understood the planned timetable in 2016 and this increased to 41% by 2018. As for those that didn't know anything about the planned timetable for compensation and physical move, the percentage declined from 51% in 2016 to 23% in 2018.

Still, in both PAH groups (Package 01 and 02), substantial percentages felt they were only partially aware of the timetable in 2018 at 43% and 36% respectively.

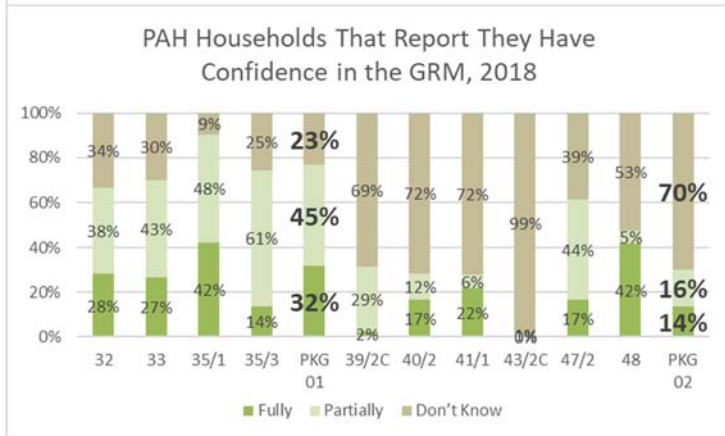


An important aspect of the social safeguards governing CEIP-1 is the Grievance Redress Mechanism. In 2016, only 10% of Package 01 PAH felt they were fully aware of how to use the GRM and this rose to 21% by 2018 while those who did not know dropped from 64% to 36% over this same period. Package 02 PAH were much less knowledgeable about the GRM in 2016 (3% fully aware, 79% not aware) and this actually deteriorated by 2018 (3% fully aware, 90% not aware).

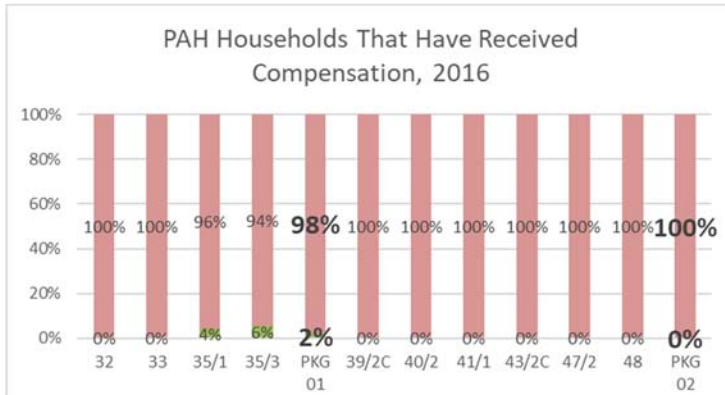




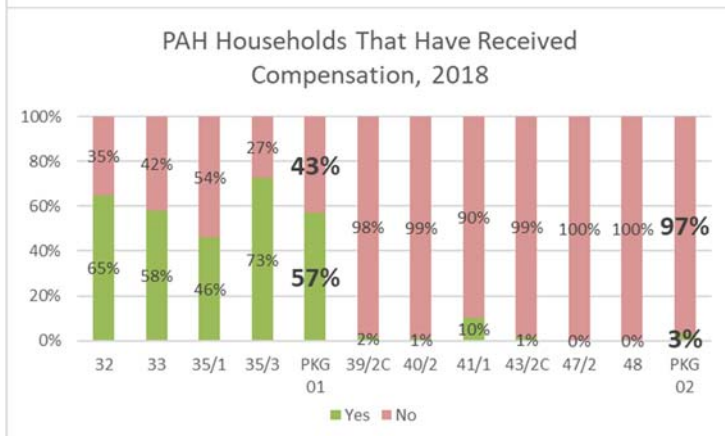
In 2016, 22% of Package 01 PAH felt confidence in the GRM and 39% were partially confident compared to 32% fully confident and 45% partially confident in 2018.



Between 2016 and 2018, the percentage of Package 02 PAH that felt fully confident in the GRM rose from 4% to 14%, drawing from those who were partially confident which declined from 27% to 16%.

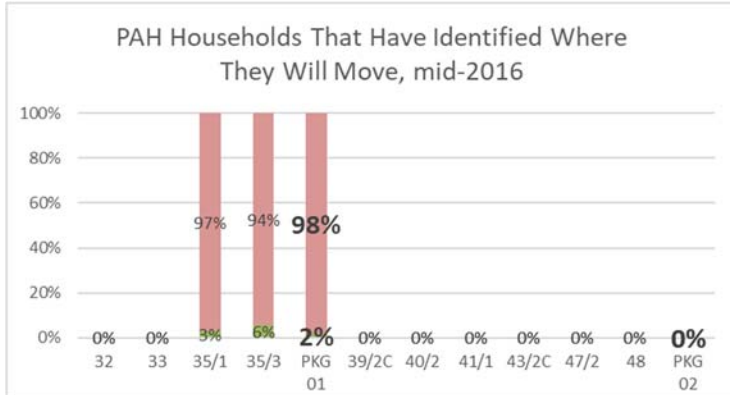


At the time of the survey in early to mid-2016, very few households had received any compensation (2% of Package 01 PAH and none for Package 02 PAH).

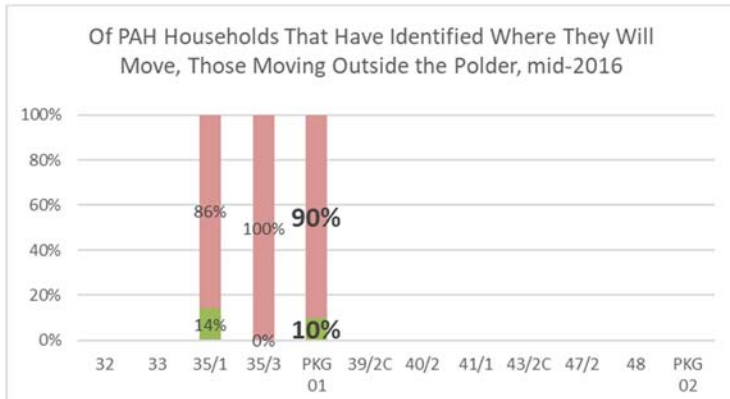
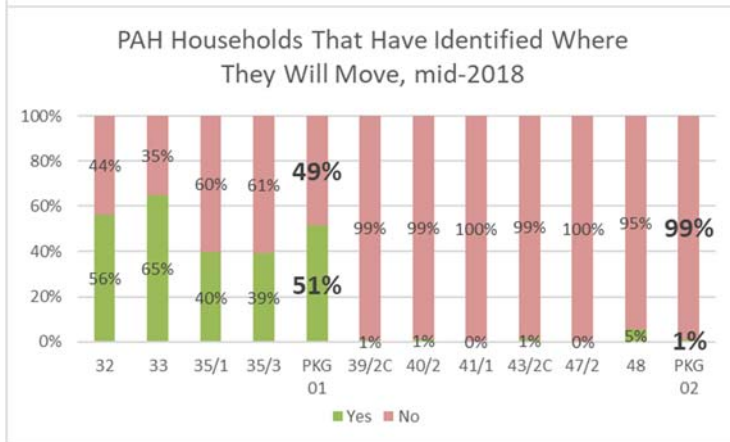


By the time of the 2018 survey, 57% of Package 01 PAH reported being compensated and 3% of the PAH in Package 02.

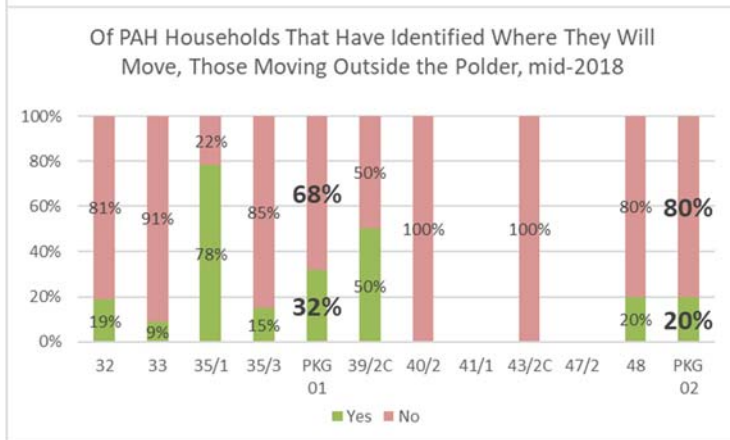


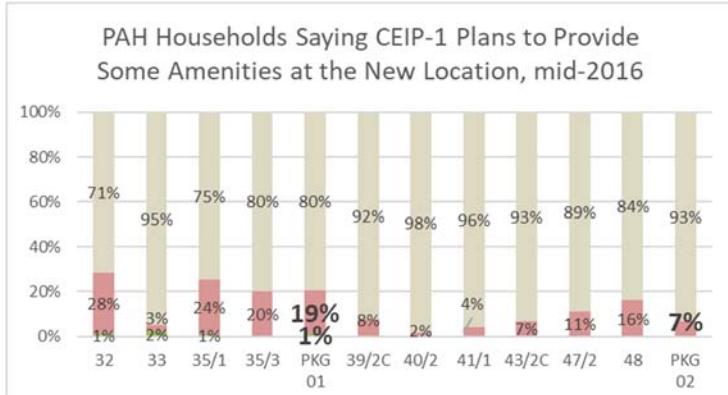


In mid-2016, only 2% of Package 01 PAH identified where they would move. However, by mid-2018, this percentage increased to 51%. Package 01 PAH went from 0% to 1% over this period which is not surprising given that Package 02 Notice to Commence was in July 2017.

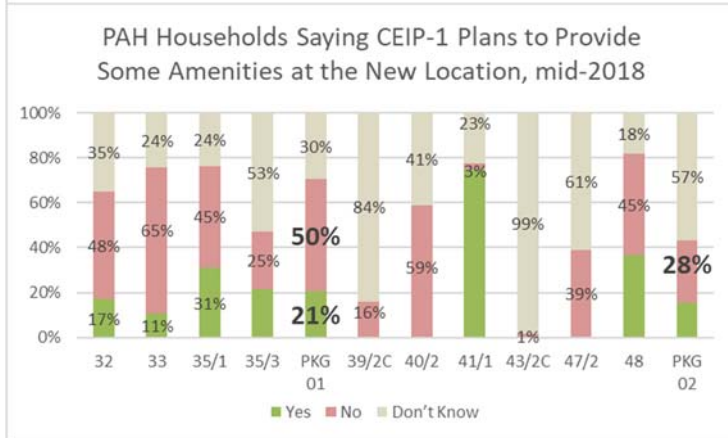


Of those Package 01 PAH that identified where they will move, 10% said they would move outside the polder in 2016 and this rose to 32% in 2018. For Package 02 PAH, the percentage was 20% in 2018.



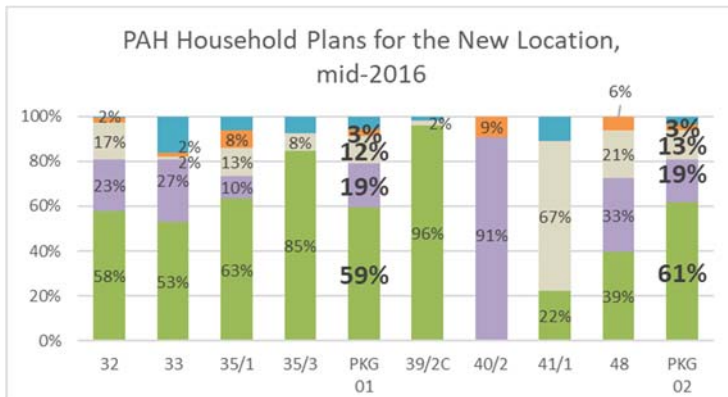


PAHs were asked whether CEIP-1 planned to provide some amenities at the location to which they were moving. In 2016, 1% of Package 01 PAH said “yes”, 19% said “no” and 80% didn’t know. The percentage saying “yes” in 2018 grew to 21% while those saying “no” grew to 50%.

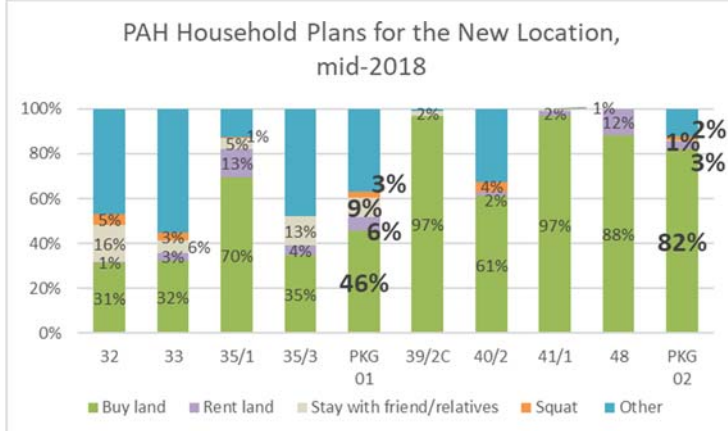


In 2016, Package 02 PAH said “yes” 0% of the time, “no” 7% and 93% didn’t know. The percentage saying “yes” grew to 15% in 2018, “no” grew to 28% and only 57% didn’t know.

In fact, CEIP-1 would provide physical amenities only for group relocation, which was relatively rare. Livelihood restoration training would be conducted as needed and this could be considered as a benefit (actually a mitigating measure).



Respondents of PAH households were asked for their plans regarding relocation. Buying land was the most common response with 59% of Package 01 PAH planning to buy land as of 2016. This declined to only 46% by 2018, possibly because of rising land prices. The percentage of Package 02 PAH planning to buy land increased from 61% in 2016 to 82% in 2018, but with only 3% having been compensated, this could be more of wishful thinking than practical reality.



Renting was planned by a minor percentage as of 2018 – 6% for Package 01 PAH and 3% for those of Package 02. Staying with friends or relatives was the plan for 9% of Package 01 PAH, but only 1% of Package 02 PAH.

It should be noted that for Polders 43/2C and 47/2, the sample size was too small.

