CODEBOOK FOR REPLICATION DATA SET:
hh_survey_data.dta

Pathways to Smallholder Food and Water Security: Climate Variability in the Context of Multiple Livelihood Hazards

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Data format: Stata data set (v. 14)
Last saved: 27 Nov 2020 16:38

Data structure: Household x year panel for households surveyed in June/July 2014 and/or June/July 2017. 364 unique households were surveyed in 2014; 334 in 2017. Of these, 311 were definitively matched across years.

num_resp	Year of survey 2014	2017	Total
1	53	23	76
2	311	311	622
Total	364	334	698

```
-------------------------------------------------------------------------------
hh_hash                                                        HH hashed ID code
-------------------------------------------------------------------------------

                 type:  string (str64)

         unique values:  387                      missing "":  0/698

              examples:  "30c70515339ea10fa508d0b5065721537dc0d3eb263569278d80
                         65d697eda17a"
                         "646e8146dfdcfad354938a3a3e964361f66a398fc8adc7c6d81a
                         80639050529b"
                         "972ed602b1147fbe7674e766c955a27a2d6b73383fada02b579a
                         8aa201ec9f65"
                         "ccc9c79dfd028b63fdf5fb43fc2e63280bf4ed6e3f07b1c6bf06
                         60a77db9626d"

hh_hash:
  1.  Hashed household identifier for matching household responses across years
```

```
-------------------------------------------------------------------------------
year                                                            Year of survey
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [2014,2017]                 units:  1
         unique values:  2                        missing .:  0/698

            tabulation:  Freq.  Value
                           364  2014
                           334  2017
```

```
-------------------------------------------------------------------------------
time                                                    0 = 2014, 1 = 2017
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  0/698

            tabulation:  Freq.  Value
                           364  0
                           334  1

time:
  1.  0 for 2014 survey responses, 1 for 2017
```

```
-------------------------------------------------------------------------------
female                                                  Respondent is female
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,1]                        units:  1
         unique values:  2                    missing .:  0/698

            tabulation:  Freq.  Value
                           468  0
                           230  1

female:
  1.  Respondent is female (binary)
```

```
-------------------------------------------------------------------------------
respondent_age                                          Respondent age (years)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [17,93]                     units:  1
         unique values:  66                       missing .:  334/698

                  mean:   51.1484
             std. dev:   14.0128

           percentiles:        10%       25%       50%       75%       90%
                                34        41        50        60        71

respondent_age:
  1.  Respondent age (years)
```

```
-------------------------------------------------------------------------------
num_hh_tot                                              Total number in household
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [1,13]                       units:  1
         unique values:  13                       missing .:  1/698

                  mean:   4.73314
             std. dev:   1.98282

           percentiles:        10%       25%       50%       75%       90%
                                 2         3         5         6         7
```

num_hh_tot:

1. Number of persons living in household at time of survey

```
-------------------------------------------------------------------------------
num_hh_under_15                          Number in household under 15 years old
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,9]                       units:  1
         unique values:  9                        missing .:  0/698

            tabulation:  Freq.  Value
                           231  0
                           186  1
                           163  2
                            87  3
                            21  4
                             6  5
                             1  7
                             2  8
                             1  9

num_hh_under_15:
  1.  Number of persons under 15 years old living in household at time of survey
```

```
-------------------------------------------------------------------------------
dependency_ratio                                HH dependency ratio (<15 or >=65)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,8]                        units:  1.000e-08
          unique values:  32                       missing .:  1/698

                  mean:   .320664
             std. dev:   .376867

           percentiles:        10%       25%       50%       75%       90%
                                 0   .111111   .333333        .5        .6
```

dependency_ratio:

1. Number of persons in HH <15 years old plus those at least 65 as fraction of tot number of persons

```
-------------------------------------------------------------------------------
org_1                                                    Farmer organization 1
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                    missing .:  26/698

            tabulation:  Freq.  Value
                           375  0
                           297  1
                            26  .

org_1:
  1.  Member of farmer organization 1
```

```
--------------------------------------------------------------------------------
org_2                                                    Farmer organization 2
--------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                          missing .:  26/698

            tabulation:  Freq.  Value
                           473  0
                           199  1
                            26  .

org_2:
  1.  Member of farmer organization 2
```

```
-------------------------------------------------------------------------------
educ_years_head                                  Respondent approx years education
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,16]                       units:  .1
         unique values:  8                        missing .:  334/698

            tabulation:  Freq.  Value
                           58  0
                           31  .5
                          159  2
                           61  6
                           24  9
                           15  11
                            6  13
                           10  16
                          334  .

educ_years_head:
  1.  Respondent's approximate years of education completed as of 2014 survey
```

```
-------------------------------------------------------------------------------
educ_sec_plus_head            Respondent education: at least some secondary (binary)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  334/698

            tabulation:  Freq.  Value
                           309  0
                            55  1
                           334  .

educ_sec_plus_head:
  1.  Respondent has completed at least some secondary education as of 2014 survey
      (binary)
```

```
-------------------------------------------------------------------------------
educ_years_max_hh                  Years of education of most educated person in HH
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,16]                       units:  .1
         unique values:  8                        missing .:  334/698

            tabulation:  Freq.  Value
                            5  0
                            2  .5
                           44  2
                           54  6
                           71  9
                          107  11
                           26  13
                           55  16
                          334  .

educ_years_max_hh:
  1.  Approximate years of education of most educated person in household as of 2014
      survey (binary)
```

```
-------------------------------------------------------------------------------
ppt_14_mo                                              14-month total ppt May-June
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [997.63698,1904.9337]        units:  1.000e-06
         unique values:  52                       missing .:  53/698

                  mean:   1384.81
             std. dev:    212.12

           percentiles:        10%       25%       50%       75%       90%
                            1027.34   1242.27   1448.59   1525.93   1594.94


ppt_14_mo:
  1.  14-month total precipitation (mm), May of preceding year through June of
      survey year
```

```
-------------------------------------------------------------------------------
farm_size_calc_ha                      Farm calculated land area summing plots (ha)
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,70.422501]               units:  1.000e-08
        unique values:  208                      missing .:  0/698

                 mean:   5.53764
             std. dev:   6.92248

          percentiles:        10%       25%       50%       75%       90%
                           1.05634   1.88732   3.57042   6.33803   11.5282

farm_size_calc_ha:
  1.  Farm calculated land area (ha) summing plots
```

```
-------------------------------------------------------------------------------
coffee_pos                              Coffee production positive in latest cycle
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                          missing .:  0/698

            tabulation:  Freq.  Value
                           320  0
                           378  1

coffee_pos:
  1.  Coffee production positive in latest annual cycle (binary), 0 if coffee
      production missing
```

```
-------------------------------------------------------------------------------
sells_coffee                                              Sells coffee (binary)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  0/698

            tabulation:  Freq.  Value
                           286  0
                           412  1

sells_coffee:
  1.  Household sells coffee (binary)
```

```
-------------------------------------------------------------------------------
coffee_prod_or_dev              Grows coffee or has land with coffee in development
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  0/698

            tabulation:  Freq.  Value
                           55  0
                          643  1
```

coffee_prod_or_dev:

1. HH growing coffee at time of survey or has land with coffee in development (binary)

```
-------------------------------------------------------------------------------
coffee_prod_dev_cat                          Coffee production and/or development
-------------------------------------------------------------------------------

                 type:  numeric (float)
                label:  coffee_pdc_l

                range:  [0,3]                        units:  1
        unique values:  4                          missing .:  0/698

           tabulation:  Freq.   Numeric  Label
                           93         0  Neither
                          227         1  Dev only
                          143         2  Prod only
                          235         3  Both

coffee_prod_dev_cat:
  1.  Coffee production and/or development factor variable: neither, development
      only, production only, both only
```

```
-------------------------------------------------------------------------------
coffee_organic                                  Produces certified organic coffee
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,1]                       units:  1
        unique values:  2                        missing .:  0/698

           tabulation:  Freq.  Value
                          398  0
                          300  1

coffee_organic:
  1.  Produces certified organic coffee (binary)
```

```
-------------------------------------------------------------------------------
coffee_kg_z                              Coffee production(kg) missing set to 0
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,6900]                    units:  .01
         unique values:  117                      missing .:  0/698

                  mean:   198.374
             std. dev:   509.506

           percentiles:        10%       25%       50%       75%       90%
                                 0         0        23       161       552

coffee_kg_z:
  1.  Coffee production(kg) in latest annual cycle (binary), missing values set to 0
```

```
-------------------------------------------------------------------------------
coffee_kg_p                                Coffee production(kg) 0 set to missing
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [4.6,6900]                   units:  .01
         unique values:  116                      missing .:  320/698

                  mean:    366.31
             std. dev:   646.733

           percentiles:        10%       25%       50%       75%       90%
                                23        46       138       391       920
```

coffee_kg_p:

1. Coffee production(kg) in latest annual cycle (binary), 0 set to missing value

```
-------------------------------------------------------------------------------
roya_impact_perc_num                  Percentage coffee affected by CLR (numerical)
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,87.5]                     units:  .1
        unique values:  6                        missing .:  198/698

           tabulation:  Freq.  Value
                           20  0
                           31  12.5
                           54  37.5
                           60  50
                           97  62.5
                          238  87.5
                          198  .

roya_impact_perc_num:
  1.  Percentage coffee plantation affected by coffee leaf rust estimated using
      midpoints of response ranges; non-responses are largely households not
      currently producing coffee and are coded as zero
```

```
-------------------------------------------------------------------------------
roya_impact_gt_half_miss                Greater than half of coffee affected by CLR
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  198/698

            tabulation:  Freq.  Value
                           165  0
                           335  1
                           198  .

roya_impact_gt_half_miss:
  1.  Greater than half of coffee plantation affected by coffee leaf rust (binary)
```

```
-------------------------------------------------------------------------------
grows_basic_grains                              Grows corn and/or beans (binary)
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,1]                       units:  1
        unique values:  2                        missing .:  0/698

           tabulation:  Freq.  Value
                          188  0
                          510  1

grows_basic_grains:
  1.  Household grows corn and/or beans (binary)
```

```
-------------------------------------------------------------------------------
sells_corn                                                  Sells corn (binary)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  0/698

            tabulation:  Freq.  Value
                           545  0
                           153  1

sells_corn:
  1.  Household sells corn (binary)
```

```
-------------------------------------------------------------------------------
sells_beans                                                 Sells beans (binary)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  0/698

            tabulation:  Freq.  Value
                           400  0
                           298  1

sells_beans:
  1.  Household sells beans (binary)
```

```
-------------------------------------------------------------------------------
corn_kg_z                       Production of corn last 12 mo. missing set to 0 (kg)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,18400]                    units:  1
         unique values:  78                       missing .:  0/698

                  mean:   953.808
             std. dev:    1890.4

           percentiles:        10%       25%       50%       75%       90%
                                 0         0       414      1012      2300
```

corn_kg_z:

1. Production of corn (kg) last 12 months, missing values set to 0

```
-------------------------------------------------------------------------------
corn_kg_p                        Production of corn last 12 mo. 0 set to missing (kg)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [46,18400]                  units:  1
         unique values:  77                       missing .:  207/698

                  mean:   1355.92
             std. dev:      2130

           percentiles:        10%       25%       50%       75%       90%
                               230       368       690      1380      3174

corn_kg_p:
  1.  Production of corn (kg) last 12 months, 0 set to missing value
```

```
-------------------------------------------------------------------------------
beans_red_kg_z             Production of beans_red last 12 mo. missing set to 0 (kg)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,9200]                    units:  1
         unique values:  55                       missing .:  0/698

                  mean:   404.872
             std. dev:   715.326

           percentiles:        10%       25%       50%       75%       90%
                                 0         0       184       552      1012

beans_red_kg_z:
  1.  Production of red beans (kg) last 12 months, missing values set to 0
```

```
-------------------------------------------------------------------------------
beans_red_kg_p              Production of beans_red last 12 mo. 0 set to missing (kg)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [23,9200]                   units:  1
         unique values:  54                       missing .:  265/698

                  mean:   652.658
             std. dev:   814.545

           percentiles:        10%       25%       50%       75%       90%
                               138       230       460       736      1380

beans_red_kg_p:
  1.  Production of red beans (kg) last 12 months, 0 set to missing value
```

```
-------------------------------------------------------------------------------
trees_total_sum_z   Sum of all fruit trees inc. bananas and plantains, miss set to 0
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,5056]                     units:  1
         unique values:  432                      missing .:  0/698

                  mean:   366.599
             std. dev:   610.143

           percentiles:        10%       25%       50%       75%       90%
                                39        85     175.5       369       813

trees_total_sum_z:
  1.  Number of all fruit trees, inc. bananas and plantains, missing values set to 0
```

```
-------------------------------------------------------------------------------
food_grown_gt_half                  Produced more than half of food on farm (binary)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  4/698

            tabulation:  Freq.  Value
                           531  0
                           163  1
                             4  .

food_grown_gt_half:
  1.  Household produced more than half of food on farm (binary)
```

```
-------------------------------------------------------------------------------
income_sum_dol        Sum of gross income from top five sources last 12 months (US$)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,22475.934]                units:  1.000e-07
         unique values:  505                      missing .:  0/698

                  mean:   1293.07
             std. dev:   1865.87

           percentiles:        10%       25%       50%       75%       90%
                            106.353   279.669   680.527   1435.91   3164.45

income_sum_dol:
  1.  Household sum of gross cash income from top five sources last 12 months (US$
      at average official exchange rate)
```

```
-------------------------------------------------------------------------------
income_sum_dol_pc                          Sum dollar income per adult equivalent
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,9175.7617]                units:  1.000e-07
         unique values:  634                       missing .:  1/698

                  mean:   644.901
             std. dev:   952.007

           percentiles:        10%       25%       50%       75%       90%
                            52.1918   136.105   320.044   741.222   1625.27
```

income_sum_dol_pc:

1. Household sum of gross cash income from top five sources last 12 months (US$) per adult equivalent, calculated as income/sqrt(number of household members)

Income source ranking variables: inc_srce_*

These are binary variables with the following interpretation:

inc_srce_N_S = 1 if income source activity S ranks as the household's #N cash income source (for the top five sources), 0 otherwise

For example, inc_srce_1_coffee = 1 indicates that sale of coffee was this household's top income source.

Values of N: 1-5
Values of S:

coffee	sale of coffee
grains	sale of basic grains
fruit	sale of fruit
animal	sale of animal products
ag_other	sale of other agricultural products
labor	earnings from wage or salaried labor
store	revenue from running a store or market
remit	remittances from migrant household member
other	other

Income from source variables: inc_total_*_dol

These are variables in units of US dollars with the following interpretation:

inc_total_S_dol = household's total gross cash income from the source activity S over the last 12 months (measured in US$ at average official exchange rate between Nicaraguan cordobas and US$ during those 12 months), for the household's top five sources.

For example, inc_total_coffee_dol = 350 indicates that the household had gross income of $350 from sale of coffee over the past year.

Values of S:

coffee	sale of coffee
grains	sale of basic grains
fruit	sale of fruit
animal	sale of animal products
ag_other	sale of other agricultural products
labor	earnings from wage or salaried labor
store	revenue from running a store or market
remit	remittances from migrant household member
other	other

```
-------------------------------------------------------------------------------
wage_sal_worker                              Has labor or salaried job (binary)
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,1]                        units:  1
         unique values:  2                       missing .:  0/698

            tabulation:  Freq.  Value
                           404  0
                           294  1

wage_sal_worker:
  1.  Respondent earns income working as day laborer or for salary (binary)
```

```
-------------------------------------------------------------------------------
food_lean_mo                                  Number of lean months (food scarce)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,12]                       units:  1
         unique values:  9                        missing .:  0/698

            tabulation:  Freq.  Value
                           15  0
                           17  1
                          193  2
                          334  3
                          106  4
                           27  5
                            3  6
                            1  9
                            2  12

food_lean_mo:
  1.  Count of named months in year in which difficult to feed family
```

```
-------------------------------------------------------------------------------
food_coping_score                          Total food insecurity coping score
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,192]                      units:  .01
         unique values:  284                      missing .:  0/698

                  mean:   10.8323
             std. dev:   17.5642

           percentiles:        10%       25%       50%       75%       90%
                                 0         0      5.75     14.05     26.95

food_coping_score:
  1.  Total food insecurity coping score: sum of frequency of coping responses
      weighted by severity scores
```

```
-------------------------------------------------------------------------------
dietary_berry                       Dietary diversity Berry index = 1 - sum(share^2)
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [.34567901,.91503906]        units:  1.000e-08
         unique values:  514                      missing .:  0/698

                  mean:   .833626
             std. dev:   .055837

           percentiles:        10%       25%       50%       75%       90%
                            .770975   .813149   .844938   .870123     .8864
```

dietary_berry:

1. Dietary diversity Berry index = 1 - sum(share^2), where share is proportion of total meals of each food type

```
-------------------------------------------------------------------------------
water_any_lean_mo                    Number of lean months for water for any HH use
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,12]                       units:  1
         unique values:  10                       missing .:  364/698

                  mean:   2.11078
             std. dev:   2.10027

           percentiles:        10%       25%       50%       75%       90%
                                 0         0         2         3         4
```

water_any_lean_mo:

1. Count of named months in year without sufficient water for household use: drinking, cooking, cleaning, bathing

```
-------------------------------------------------------------------------------
water_lean_mo                        Number of months last year without enough water
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,12]                       units:  1
         unique values:  13                       missing .:  13/698

                  mean:   3.34599
             std. dev:   3.15649

           percentiles:        10%       25%       50%       75%       90%
                                 0         0         3         6         8
```

water_lean_mo:

1. retrospective report of number of months during preceding year without enough water

```
-------------------------------------------------------------------------------
water_coping_score                                  Water insecurity coping score
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,36]                       units:  1
         unique values:  22                       missing .:  364/698

                  mean:   3.82934
             std. dev:   6.21228

           percentiles:        10%       25%       50%       75%       90%
                                 0         0         0         6        12
```

water_coping_score:

1. Total water insecurity coping score: sum of frequency of coping responses weighted by severity scores

```
-------------------------------------------------------------------------------
food_cope_dum_eat_dislike          HH reports eat_dislike response to food shortage
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,1]                       units:  1
        unique values:  2                        missing .:  364/698

           tabulation:  Freq.  Value
                          243  0
                           91  1
                          364  .

food_cope_dum_eat_dislike:
  1.  In response to food shortage, household reports eating less preferred food
      during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_tortilla_supp       HH reports tortilla_supp response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           306  0
                            28  1
                           364  .

food_cope_dum_tortilla_supp:
  1.  In response to food shortage, household reports supplementing corn in
      tortillas during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_eat_taro                HH reports eat_taro response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           289  0
                            45  1
                           364  .

food_cope_dum_eat_taro:
  1.  In response to food shortage, household reports eating malanga (taro), a less
preferred food, during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_sell_fruit            HH reports sell_fruit response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           273  0
                            61  1
                           364  .

food_cope_dum_sell_fruit:
  1.  In response to food shortage, household reports selling fruit during last 30
      days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_beans_last            HH reports beans_last response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           265  0
                            69  1
                           364  .

food_cope_dum_beans_last:
  1.  In response to food shortage, household reports making food go further during
      last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_borrow_aid            HH reports borrow_aid response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           304  0
                            30  1
                           364  .

food_cope_dum_borrow_aid:
  1.  In response to food shortage, household reports borrowing food or receiving
      help from friends or family during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_buy_credit            HH reports buy_credit response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           262  0
                            72  1
                           364  .

food_cope_dum_buy_credit:
  1.  In response to food shortage, household reports buying food on credit during
      last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_wild_food              HH reports wild_food response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           319  0
                            15  1
                           364  .

food_cope_dum_wild_food:
  1.  In response to food shortage, household reports foraging for wild foods during
      last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_sell_store_seed   HH reports sell_store_seed response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           309  0
                            25  1
                           364  .

food_cope_dum_sell_store_seed:
  1.  In response to food shortage, household reports consuming or selling seed
      stock during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_eat_elsewhere       HH reports eat_elsewhere response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                          missing .:  364/698

            tabulation:  Freq.  Value
                           313  0
                            21  1
                           364  .

food_cope_dum_eat_elsewhere:
  1.  In response to food shortage, household reports children eating elsewhere
      during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_smaller_portions         HH reports smaller_portions response to food
                                       shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           255  0
                            79  1
                           364  .
```

food_cope_dum_smaller_portions:

1. In response to food shortage, household reports eating reduced portions during last 30 days (binary)

```
-------------------------------------------------------------------------------
food_cope_dum_kids_eat                HH reports kids_eat response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           284  0
                            50  1
                           364  .

food_cope_dum_kids_eat:
  1.  In response to food shortage, household reports adults eating less so children
      have enough during last 30 (binary) days
```

```
-------------------------------------------------------------------------------
food_cope_dum_less_meals            HH reports less_meals response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           272  0
                            62  1
                           364  .

food_cope_dum_less_meals:
  1.  In response to food shortage, household reports reducing number of daily meals
      during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_skip_meals            HH reports skip_meals response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           313  0
                            21  1
                           364  .

food_cope_dum_skip_meals:
  1.  In response to food shortage, household reports skipping meals or going a
      whole day without eating during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_sell_resrc            HH reports sell_resrc response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           313  0
                            21  1
                           364  .

food_cope_dum_sell_resrc:
  1.  In response to food shortage, household reports selling household resources
      during last 30 days (binary)
```

```
-------------------------------------------------------------------------------
food_cope_dum_migrate                  HH reports migrate response to food shortage
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           303  0
                            31  1
                           364  .

food_cope_dum_migrate:
  1.  In response to food shortage, household reports a member migrating during
      last== 30 days (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_bed_thirsty          Past year went to bed thirsty at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           326  0
                             8  1
                           364  .

water_cope_dum_bed_thirsty:
  1.  In response to shortage of potable water, respondent went to bed thirsty at
      least sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_no_all_day             Past year went without drinking water all day
                                      at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                    missing .:  364/698

            tabulation:  Freq.  Value
                           329  0
                             5  1
                           364  .
```

water_cope_dum_no_all_day:

1. In response to shortage of potable water, respondent went without drinking water all day at least sometimes during last year (binary)

```
-------------------------------------------------------------------------------
water_cope_dum_not_wash_food          Past year did not wash food at least sometimes
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,1]                       units:  1
        unique values:  2                        missing .:  364/698

           tabulation:  Freq.  Value
                          322  0
                           12  1
                          364  .

water_cope_dum_not_wash_food:
  1.  In response to shortage of potable water, respondent did not wash food at
      least sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_less_pref_srce    Past year less pref water source at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           294  0
                            40  1
                           364  .

water_cope_dum_less_pref_srce:
  1.  In response to shortage of potable water, respondent used less preferred water
      source at least sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_bathe_less                  Past year bathed less at least sometimes
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,1]                        units:  1
        unique values:  2                    missing .:  364/698

           tabulation:  Freq.  Value
                          269  0
                           65  1
                          364  .

water_cope_dum_bathe_less:
  1.  In response to shortage of potable water, respondent bathed less at least
      sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_bathe_stream                Past bathed in stream at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           246  0
                            88  1
                           364  .
```

```
-------------------------------------------------------------------------------
water_cope_dum_discuss                  Past year discussed water at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                    missing .:  364/698

            tabulation:  Freq.  Value
                           304  0
                            30  1
                           364  .

water_cope_dum_discuss:
  1.  In response to shortage of potable water, respondent discussed water with
      others in community at least sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_borrow                   Past year borrowed water at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                    missing .:  364/698

            tabulation:  Freq.  Value
                           293  0
                            41  1
                           364  .

water_cope_dum_borrow:
  1.  In response to shortage of potable water, respondent borrowed water at least
      sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_take       Past year took water without permission at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           325  0
                             9  1
                           364  .

water_cope_dum_take:
  1.  In response to shortage of potable water, respondent took water without
      permission at least sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_less_wash_cloth         Past year washed clothes less freq at least
                                       sometimes
-------------------------------------------------------------------------------

                 type:  numeric (float)

                range:  [0,1]                       units:  1
        unique values:  2                        missing .:  364/698

           tabulation:  Freq.  Value
                          248  0
                           86  1
                          364  .

water_cope_dum_less_wash_cloth:
  1.  In response to shortage of potable water, respondent washed clothes less
      frequently at least sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_less_wash_hands   Past year washed hands less freq at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                    missing .:  364/698

            tabulation:  Freq.  Value
                           296  0
                            38  1
                           364  .
```

```
-------------------------------------------------------------------------------
water_cope_dum_less_cook_water   Past year cooked with less water at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           248  0
                            86  1
                           364  .

water_cope_dum_less_cook_water:
  1.  In response to shortage of potable water, respondent cooked with less water at
      least sometimes during last year (binary)
```

```
-------------------------------------------------------------------------------
water_cope_dum_clean_home       Past year cleaned home less water at least sometimes
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           237  0
                            97  1
                           364  .

water_cope_dum_clean_home:
  1.  In response to shortage of potable water, respondent cleaned home with less
      water at least sometimes during last year (binary)
```

Water lean month dummies: water_short_*_*

These are binary variables with the following interpretation:

water_short_A_M = 1 if household reports insufficient water for activity A in month M, 0 otherwise

For example, water_short_drink_jan = 1 indicates the household it had insufficient water for drinking in January.

This question was only asked in the 2017 version of the survey.

Values of A: drink cook clean bathe
Values of M: jan feb march april may june july aug sept oct nov dec

```
-------------------------------------------------------------------------------
water_short_drink                          Months with insufficient water for drink
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,12]                       units:  1
         unique values:  10                       missing .:  364/698

                  mean:    1.3503
             std. dev:   1.80591

           percentiles:        10%       25%       50%       75%       90%
                                 0         0         0         2         4


water_short_drink:
  1.  Count of named months in year without sufficient water for household use:
      drinking
```

```
-------------------------------------------------------------------------------
water_short_cook                          Months with insufficient water for cook
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,11]                       units:  1
         unique values:  10                       missing .:  364/698

                  mean:   1.29042
             std. dev:   1.71798

           percentiles:        10%       25%       50%       75%       90%
                                 0         0         0         2         4


water_short_cook:
  1.  Count of named months in year without sufficient water for household use:
      cooking
```

```
-------------------------------------------------------------------------------
water_short_clean                          Months with insufficient water for clean
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,12]                       units:  1
         unique values:  10                       missing .:  364/698

                  mean:   1.60778
             std. dev:   1.93096

           percentiles:        10%       25%       50%       75%       90%
                                 0         0         1         3         4


water_short_clean:
  1.  Count of named months in year without sufficient water for household use:
      cleaning
```

```
-------------------------------------------------------------------------------
water_short_bathe                          Months with insufficient water for bathe
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,12]                       units:  1
         unique values:  10                       missing .:  364/698

                  mean:   1.69162
             std. dev:   2.02331

           percentiles:        10%       25%       50%       75%       90%
                                 0         0         1         3         4



water_short_bathe:
  1.  Count of named months in year without sufficient water for household use:
      bathing
```

Food lean month dummies: lean_month_*_d

These are binary variables with the following interpretation:

lean_month_M_d = 1 if household reports difficulty having enough food to feed family in month M, 0 otherwise

For example, lean_month_jan_d = 1 indicates the household had difficulty having enough food to feed the family in the month in January.

Values of M: jan feb march april may june july aug sept oct nov dec

```
-------------------------------------------------------------------------------
water_source_dry_premises           Primary water source dry season pipe to premises
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           73  0
                          261  1
                          364  .

water_source_dry_premises:
  1.  Primary water source during dry season is pipe to premises (binary)
```

```
-------------------------------------------------------------------------------
water_source_dry_system            Primary water source dry season community system
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                       units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           47  0
                          287  1
                          364  .

water_source_dry_system:
  1.  Primary water source during dry season is community system (binary)
```

```
-------------------------------------------------------------------------------
water_source_canic_premises       Primary water source canic season pipe to premises
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                            71  0
                           263  1
                           364  .

water_source_canic_premises:
  1.  Primary water source during mid-summer dry season (canicula) is pipe to
      premises (binary)
```

```
-------------------------------------------------------------------------------
water_source_canic_system         Primary water source canic season community system
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           47  0
                          287  1
                          364  .

water_source_canic_system:
  1.  Primary water source during mid-summer dry season (canicula) is community
      system (binary)
```

```
-------------------------------------------------------------------------------
water_source_rainy_premises       Primary water source rainy season pipe to premises
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           67  0
                          267  1
                          364  .

water_source_rainy_premises:
  1.  Primary water source during rainy season is pipe to premises (binary)
```

```
-------------------------------------------------------------------------------
water_source_rainy_system         Primary water source rainy season community system
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                       units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           46  0
                          288  1
                          364  .

water_source_rainy_system:
  1.  Primary water source during rainy season is community system (binary)
```

```
-------------------------------------------------------------------------------
irrigation_coffee_prod_any              Uses irrigation (ever) for coffee production
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  374/698

            tabulation:  Freq.  Value
                           297  0
                            27  1
                           374  .

irrigation_coffee_prod_any:
  1.  Uses irrigation for coffee production (binary)
```

```
-------------------------------------------------------------------------------
irrigation_coffee_dev_any             Uses irrigation (ever) for coffee development
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  368/698

            tabulation:  Freq.  Value
                           224  0
                           106  1
                           368  .

irrigation_coffee_dev_any:
  1.  Uses irrigation for coffee development (binary)
```

```
-------------------------------------------------------------------------------
irrigation_grains_any                      Uses irrigation (ever) for basic grains
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  375/698

            tabulation:  Freq.  Value
                           309  0
                            14  1
                           375  .

irrigation_grains_any:
  1.  Uses irrigation for basic grain production (binary)
```

```
-------------------------------------------------------------------------------
irrigation_patio_any                              Uses irrigation (ever) for patio
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  374/698

            tabulation:  Freq.  Value
                           208  0
                           116  1
                           374  .

irrigation_patio_any:
  1.  Uses irrigation for food production on patio (binary)
```

```
-------------------------------------------------------------------------------
water_less_food_irr   Reduced food production due to lack irrigation water last year
-------------------------------------------------------------------------------

                  type:  numeric (float)

                 range:  [0,1]                        units:  1
         unique values:  2                        missing .:  364/698

            tabulation:  Freq.  Value
                           213  0
                           121  1
                           364  .

water_less_food_irr:
  1.  Household experienced reduced food production due to lack irrigation water
      last year (binary)
```

Hazard severity ranking variables: sever_*

These are binary variables with the following interpretation:

sever_H_N = 1 if hazard or event H ranks as the household's #N most severe in terms of impact (for the top three) during the past 12 months, 0 otherwise

sever_H_top3 = 1 if hazard or event H ranks in the household's top 3 most severe in terms of impact during the past 12 months, 0 otherwise

For example, sever_drought_1 = 1 indicates that drought was this household's most severe event/hazard.

Values of N: 1-3, top3
Values of H:

roya	coffee leaf rust (CLR or roya)
drought	drought/ lack of rainfall
incr_price_food	increase in prices of food
drop_price_crop	decrease in prices of crops sold
incr_cost_agr	increase in production costs of agriculture
flood	flood
sickness	sickness in family
loss_lvstock	loss of livestock
prop_loss	property loss
death	death in family
damg_home	damage to home
other	other