Development Economics: Project Analysis

Contents

1 Setup

```
rm(list=ls())
require(tinytex) #LaTeX
require(ggplot2) #plots
require(haven) #load data
require(dplyr) #data management
require(lubridate) #data dates management
require(zoo) #for lagging
require(jtools) #tables
require(huxtable) #tables
require(lmtest) #reg tests
require(data.table) #for data filtering
require(sandwich) #regression errors
require(readxl) #for reading excel data
require(tidyr) #data
require(tidyverse) #data
require(fixest) #TWFE regression
require(purrr) #for looping plots
require(kableExtra) #for nice tables
options(scipen=999)

latex_format = T

getwd()
setwd("...")
set.seed(123)
```

2 Data

2.1 Loading

```
load("final_data.Rdata")
load("final_data_quartiles.Rdata")
load("final_data_deciles.Rdata")
load("final_data_household.Rdata")
```

3 Descriptive Evidence

3.1 Summary Statistics

```
var_names <- c(
  "income"                  = "Household Income",
  "agric_income"            = "Household Agricultural Income",
  "agric_output"            = "Gross Agricultural Output",
  "fdcons"                  = "Household food Consumption",
  "poverty"                 = "Rate of households in poverty",
  "urban"                   = "Rate of households in urban areas",
  "spei"                    = "SPEI (Drought Index)",
  "share"                   = "Share of observations of SPEI above +1",
  "agric_stress"            = "Agricultural Stress",
  "Total_Rainfall"          = "Total Rainfall",
  "output_per_field_fruits" = "Fruits Yield",
  "output_per_field_grains" = "Grains Yield",
  "output_per_field_vegetables" = "Vegetables Yield",
  "output_per_field_potatoes"   = "Potatoes Yield",
  "grains_harvest"          = "Grains Harvest",
  "vegetables_harvest"      = "Vegetables Harvest",
  "fruits_harvest"          = "Fruits Harvest",
  "potatoes_harvest"        = "Potatoes Harvest",
  "temperature" = "Temperature (C)",
  "district" = "District",
  "year" = "Year")

summary_stats_data <- dataset %>%
  pivot_longer(cols = c(income, agric_income, agric_output, fdcons, poverty,
                        urban, spei, share,
                        fruits_harvest, grains_harvest, potatoes_harvest,
                        output_per_field_fruits, output_per_field_grains, output_per_field_potatoes),
               names_to = "Variable",
               values_to = "value")

summary_stats_metric <- summary_stats_data %>%
  group_by(Variable) %>%
  summarize(Mean = mean(value, na.rm = TRUE),
            SD = sd(value, na.rm = TRUE),
            Median = median(value, na.rm = TRUE),
            Min = min(value, na.rm = TRUE),
            Max = max(value, na.rm = TRUE)) %>%
  ungroup() %>%
  mutate(Variable = factor(Variable,
                           levels = names(var_names),
                           labels = var_names)) %>%
    arrange(Variable)

if (latex_format) { format <- "latex"} else { format <- "html" }
summary_stats <- summary_stats_metric %>%
  kable(format = format, digits = 2,
              caption = "Summary Statistics", booktabs = TRUE) %>%
```

```
  kable_styling(
    latex_options = c("striped", "condensed", "hold_position"),
    full_width = FALSE,
    position = "center")
if (latex_format) {save_kable(summary_stats, file = "figures/summary_stats.tex")}
summary_stats
```

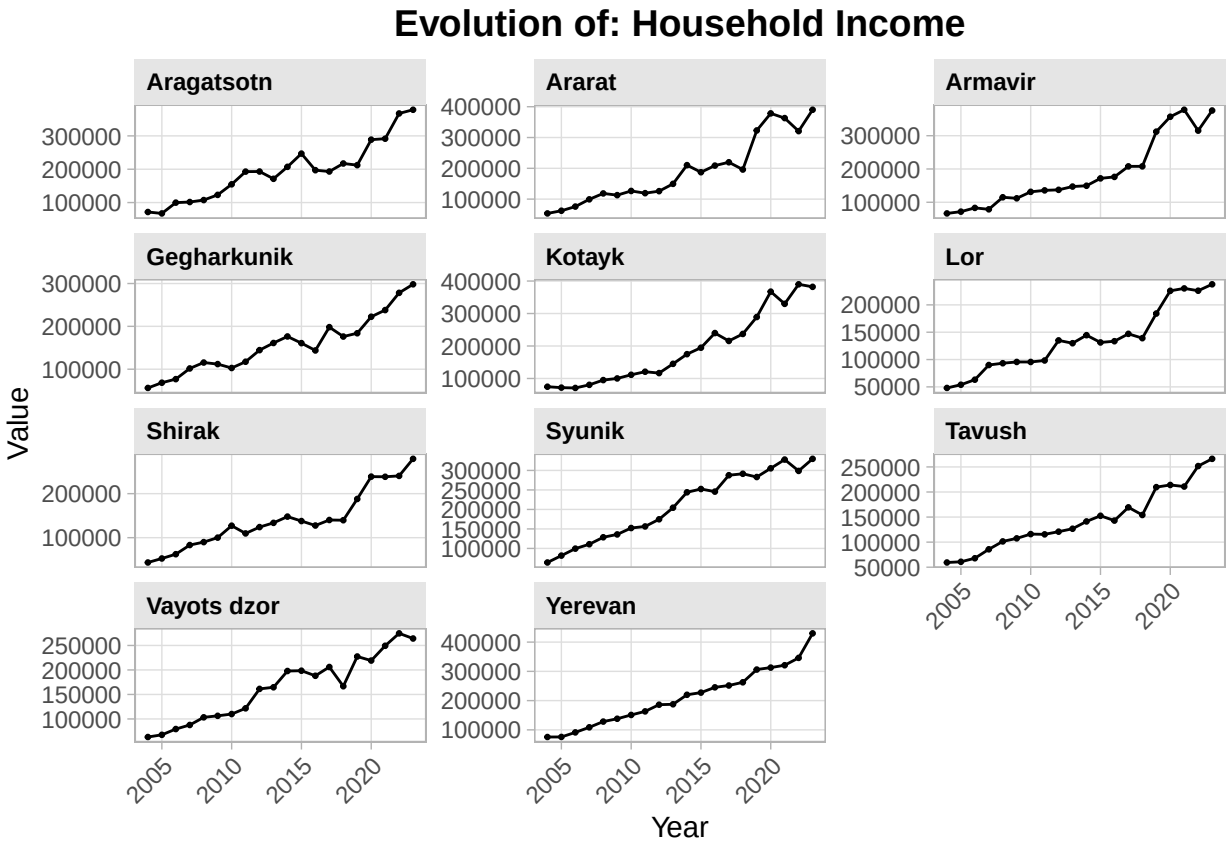
Table 1: Summary Statistics

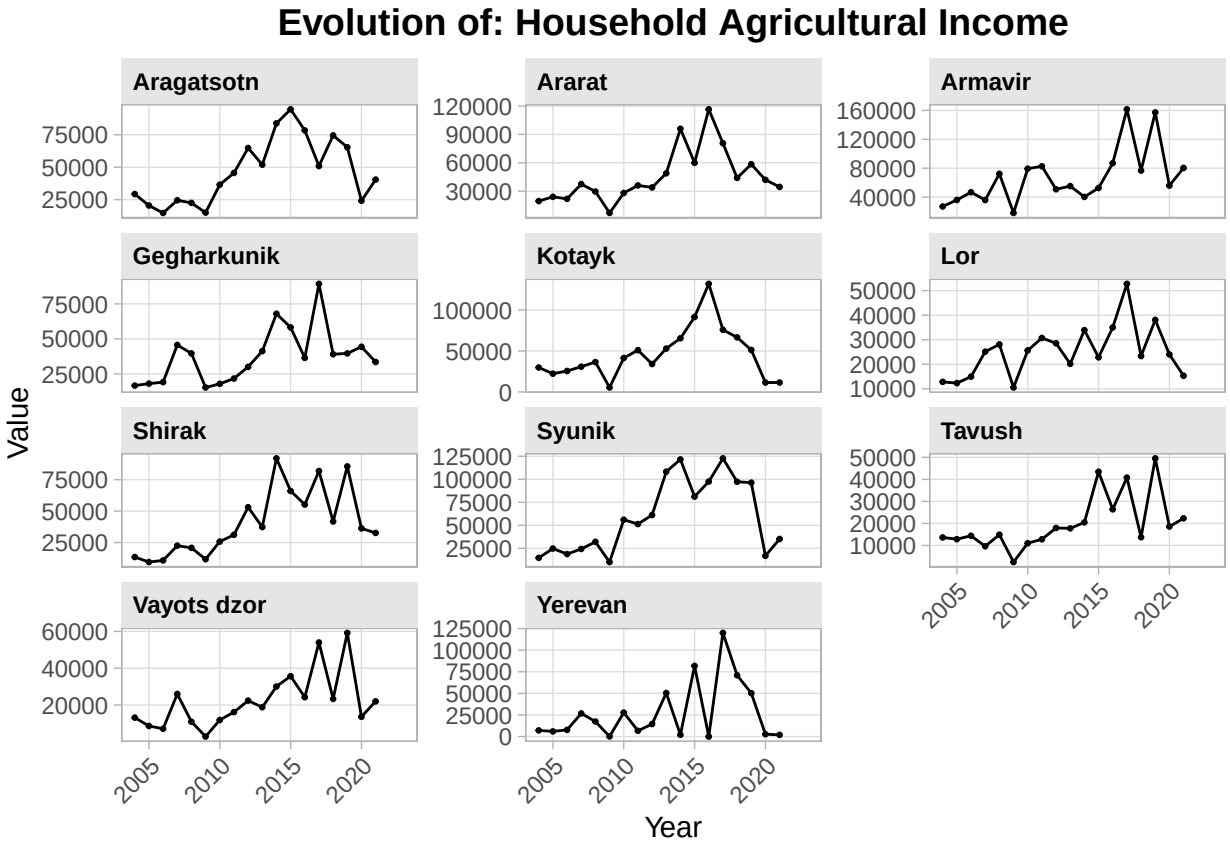
Variable	Mean	SD	Median	Min	Max
Household Income	174691.18	87785.61	151666.73	43655.19	429931.04
Household Agricultural Income	39837.36	30467.86	30956.55	0.00	161496.48
Gross Agricultural Output	75.97	47.23	69.05	4.90	225.10
Household food Consumption	13102.63	6403.40	12615.93	1931.74	40376.19
Rate of households in poverty	0.24	0.09	0.24	0.02	0.43
Rate of households in urban areas	0.59	0.22	0.50	0.31	1.00
SPEI (Drought Index)	0.06	0.51	0.05	-1.03	1.31
Share of observations of SPEI above +1	0.19	0.16	0.15	0.00	0.64
Fruits Yield	6.53	4.19	5.08	0.41	18.16
Grains Yield	2.55	0.98	2.55	0.00	4.87
Potatoes Yield	20.12	7.40	19.02	4.44	39.69
Grains Harvest	35332.81	33626.56	26200.00	0.00	157500.00
Fruits Harvest	27519.59	31090.43	12150.00	1000.00	115100.00
Potatoes Harvest	48996.39	63787.63	28350.00	400.00	325700.00

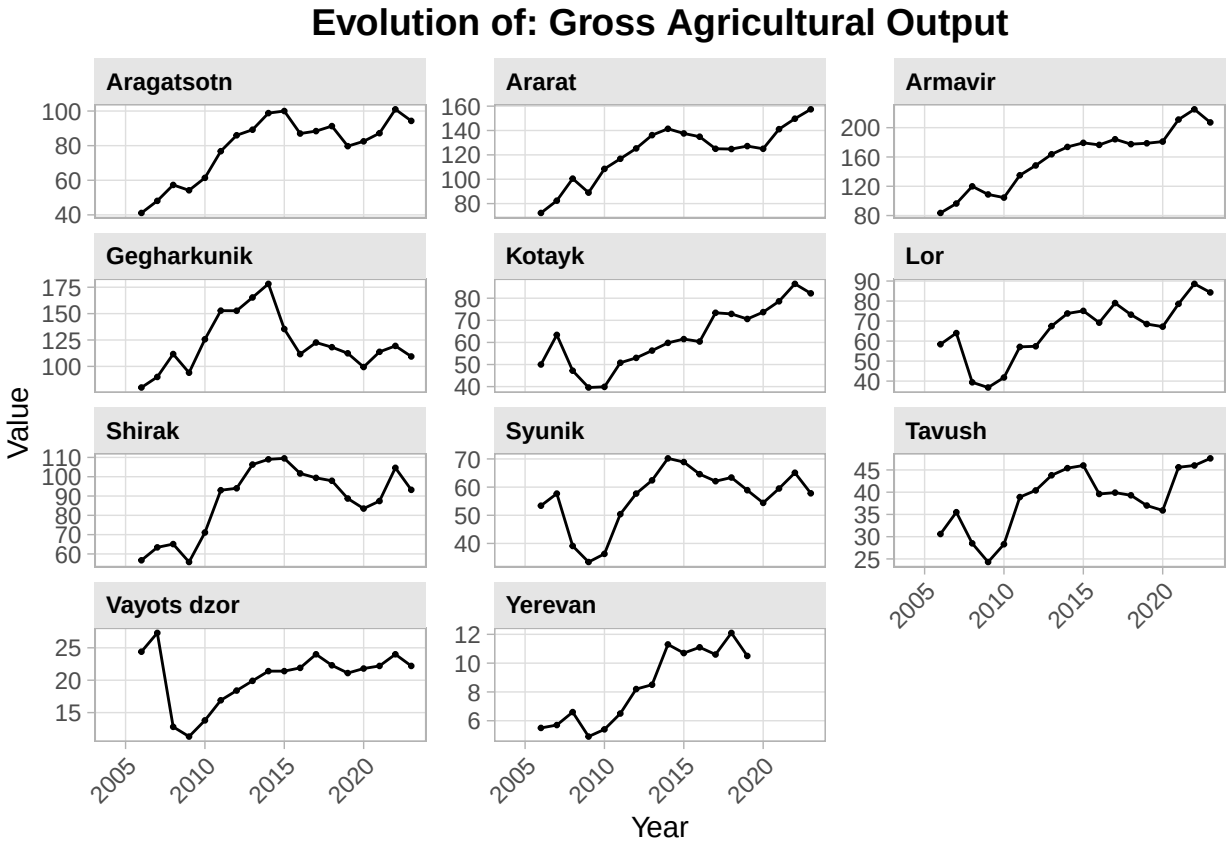
3.2 Raw Data Graphs

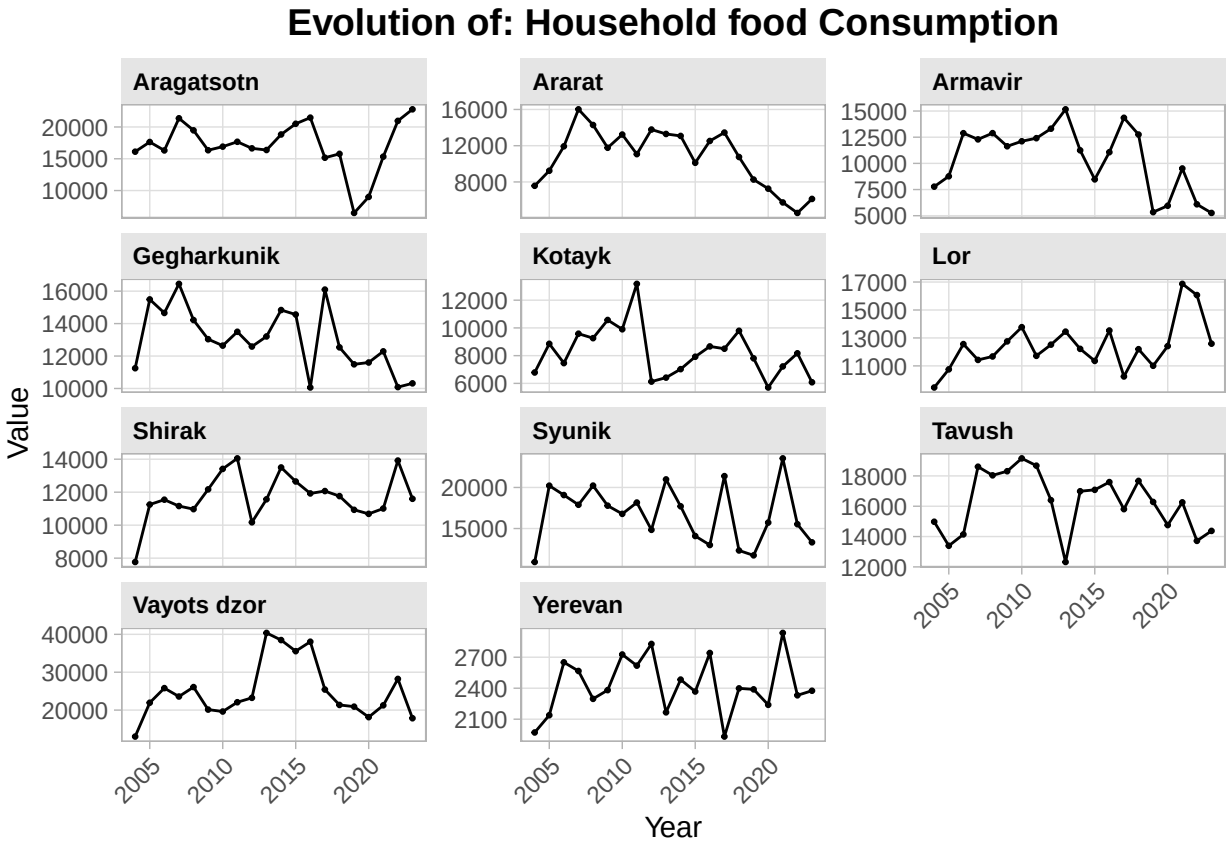
```
plot_data <- dataset %>%
  pivot_longer(cols = c(income, agric_income, agric_output, fdcons, poverty,
                        spei, share, agric_stress, Total_Rainfall,
                        output_per_field_fruits,output_per_field_grains),
    names_to = "metric",
    values_to = "value" )

all_metrics <- unique(plot_data$metric)

plot_list_by_metric <- map(all_metrics, function(met) {
  pretty_name <- var_names[met]
  plot_data <- plot_data %>%
    filter(metric == met)
  p <- ggplot(plot_data, aes(x = year, y = value)) +
    geom_line() +
    geom_point(size = 0.5) +
    facet_wrap(~ district, scales = "free_y", ncol = 3) +
    labs(title = paste("Evolution of:", pretty_name),x = "Year",y = "Value") +
    theme_light() +
    theme(plot.title = element_text(face = "bold", size = 14, hjust = 0.5),
          plot.subtitle = element_text(size = 12, hjust = 0.5),
```

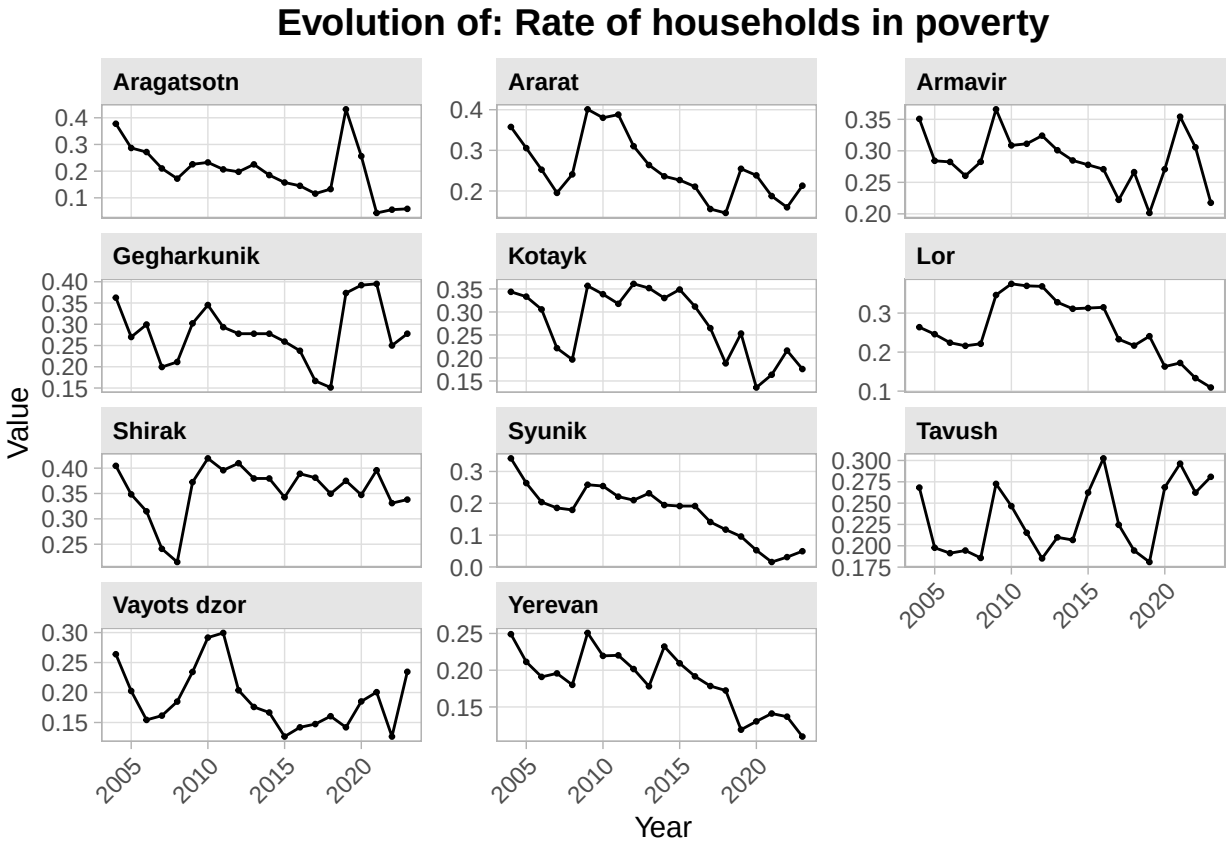
```
        plot.caption = element_text(color = "grey50", face = "italic"),
        strip.text = element_text(face = "bold", color = "black", hjust = 0),
        strip.background = element_rect(fill = "grey90", color = NA),
        axis.title = element_text(size = 11),
        axis.text.x = element_text(angle = 45, hjust = 1, size = 9),
        axis.text.y = element_text(size = 9),
        panel.grid.minor = element_blank() )
  print(p)
if (latex_format) {
  ggsave(filename = paste0("plot_", met, ".png"), path = "figures/",
       plot = p, width = 12, height = 10) }
return(p) } )
```

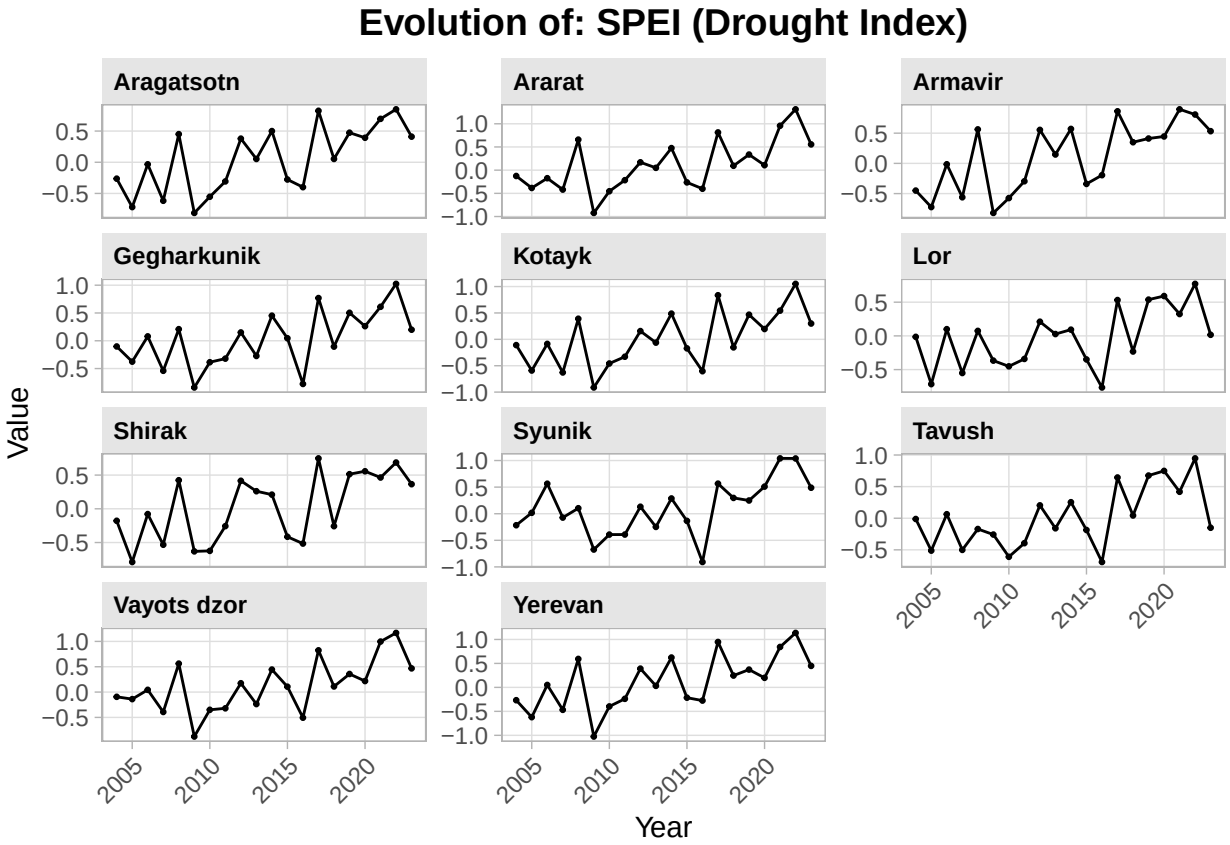


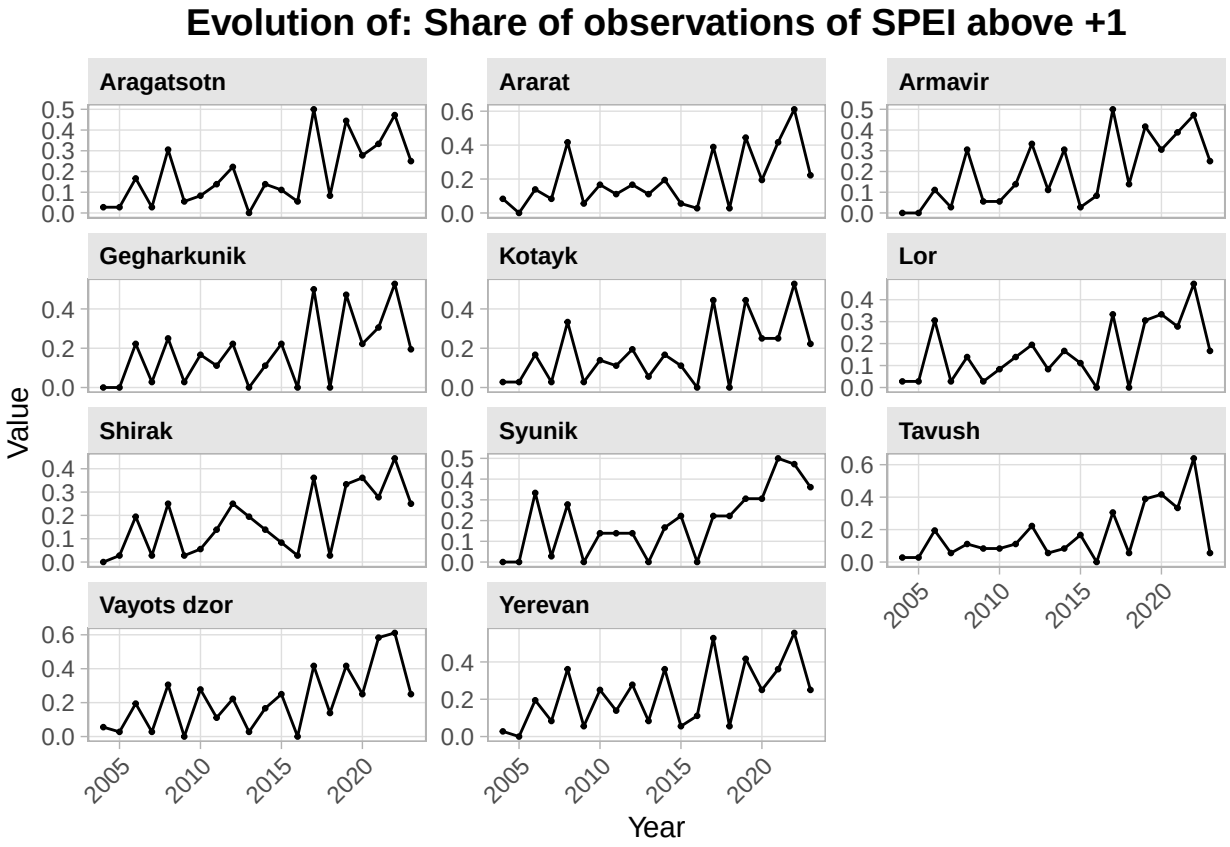

Evolution of: Household Agricultural Income
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020

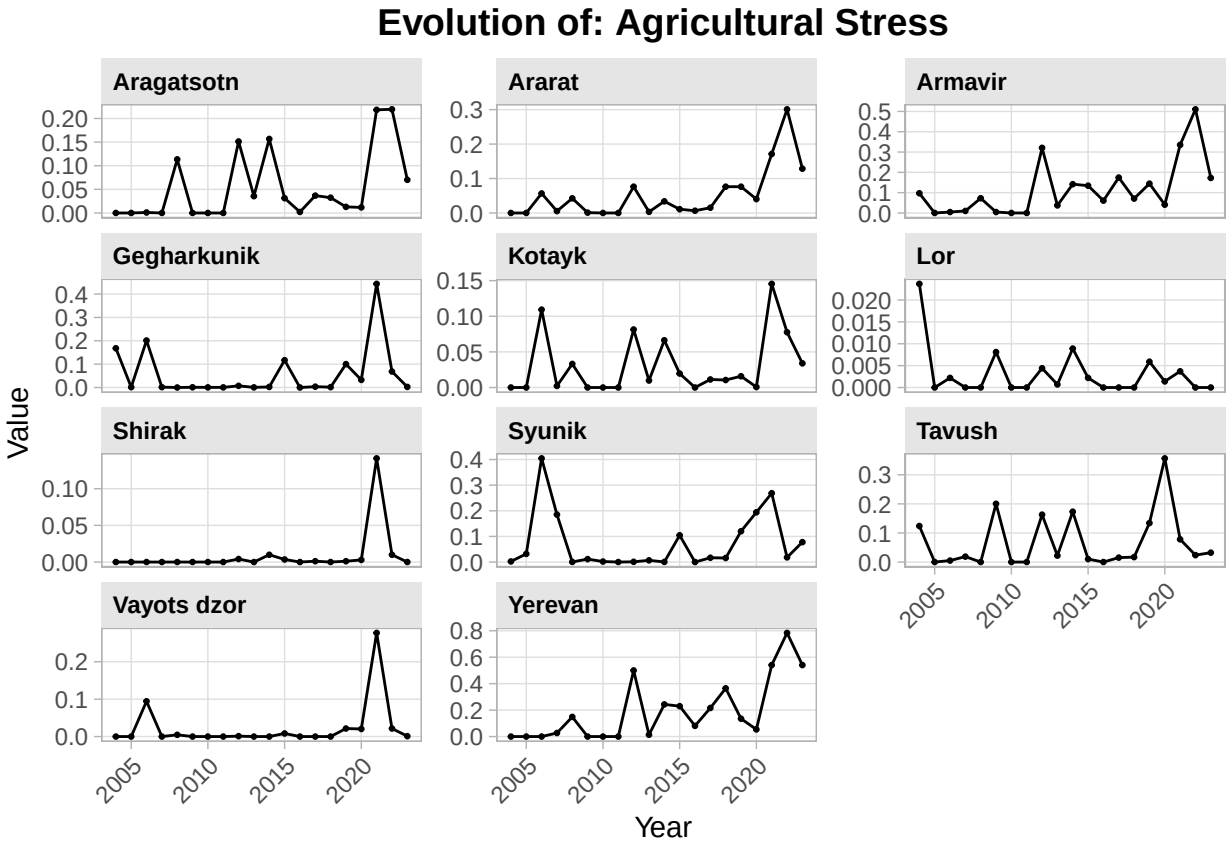

Evolution of: Gross Agricultural Output
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020

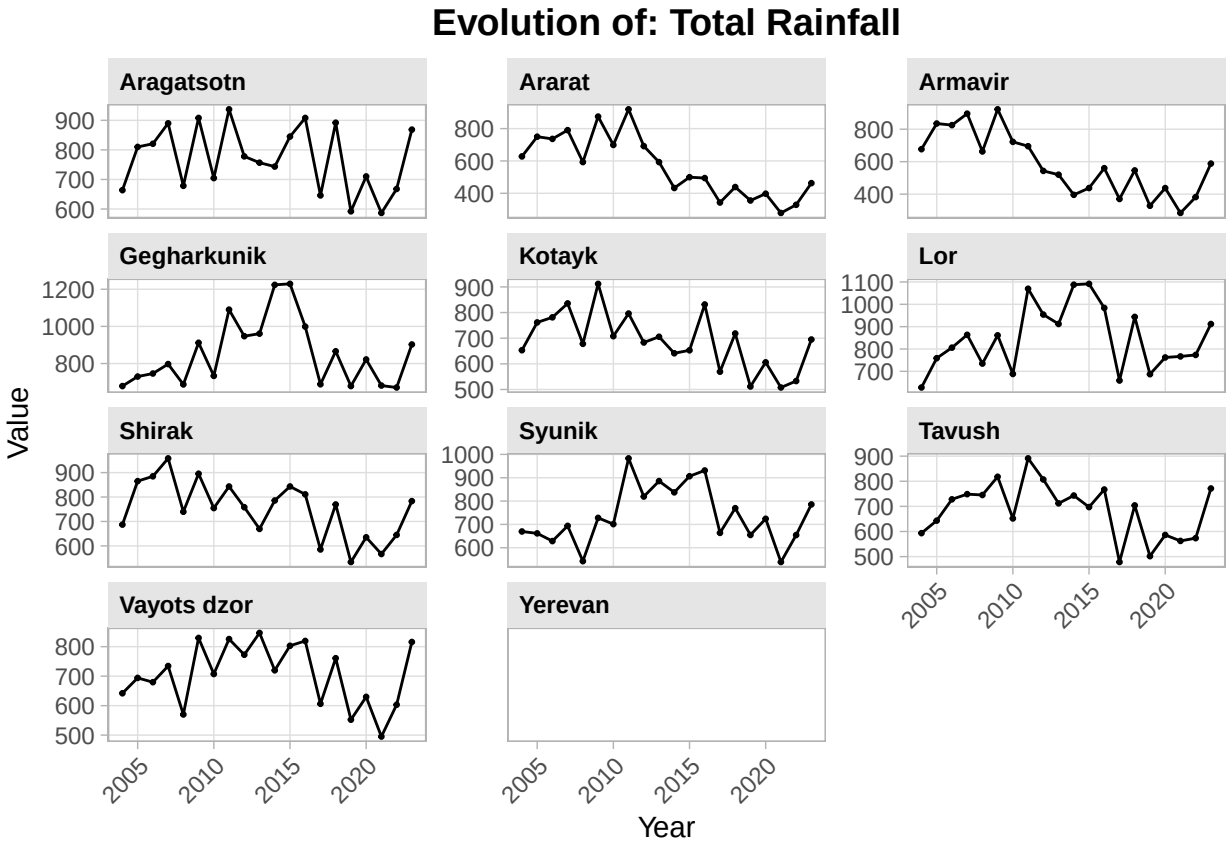

Evolution of: Household food Consumption
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020

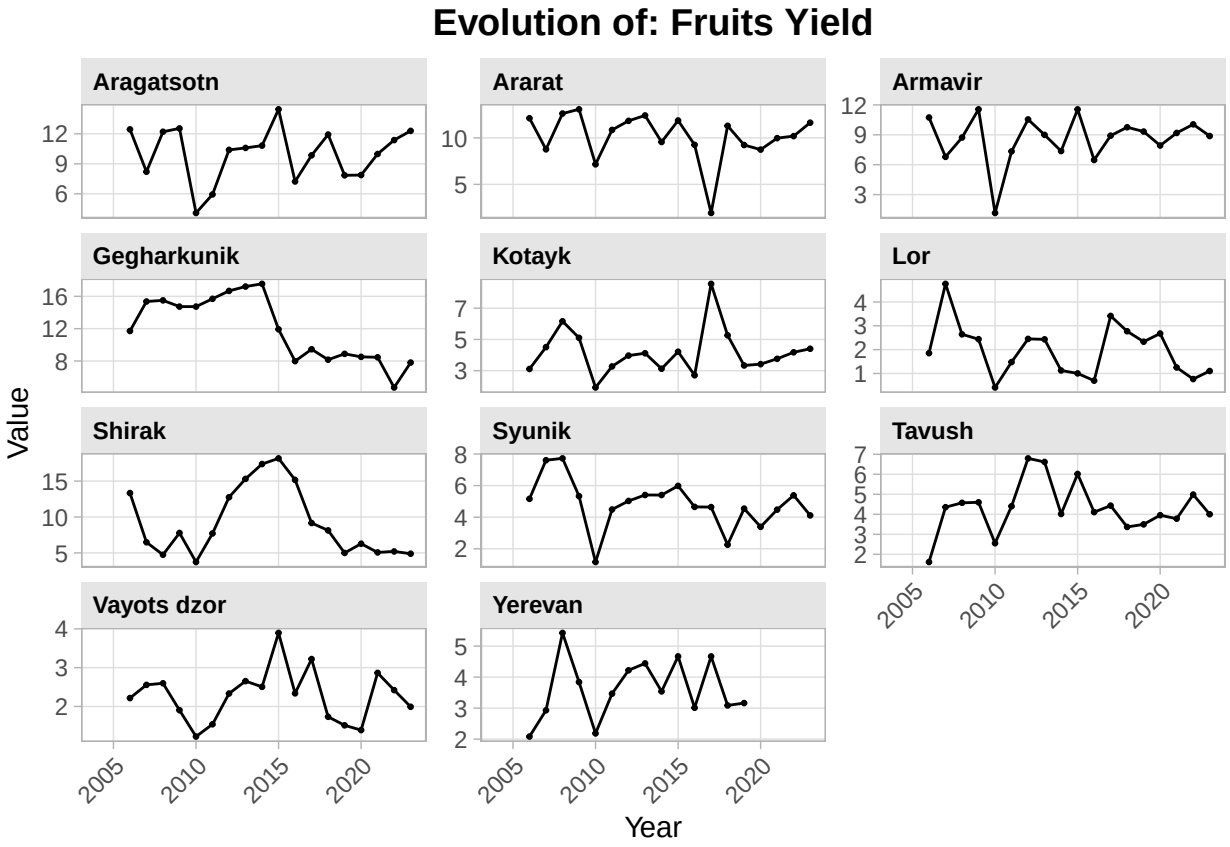

Evolution of: Rate of households in poverty
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020

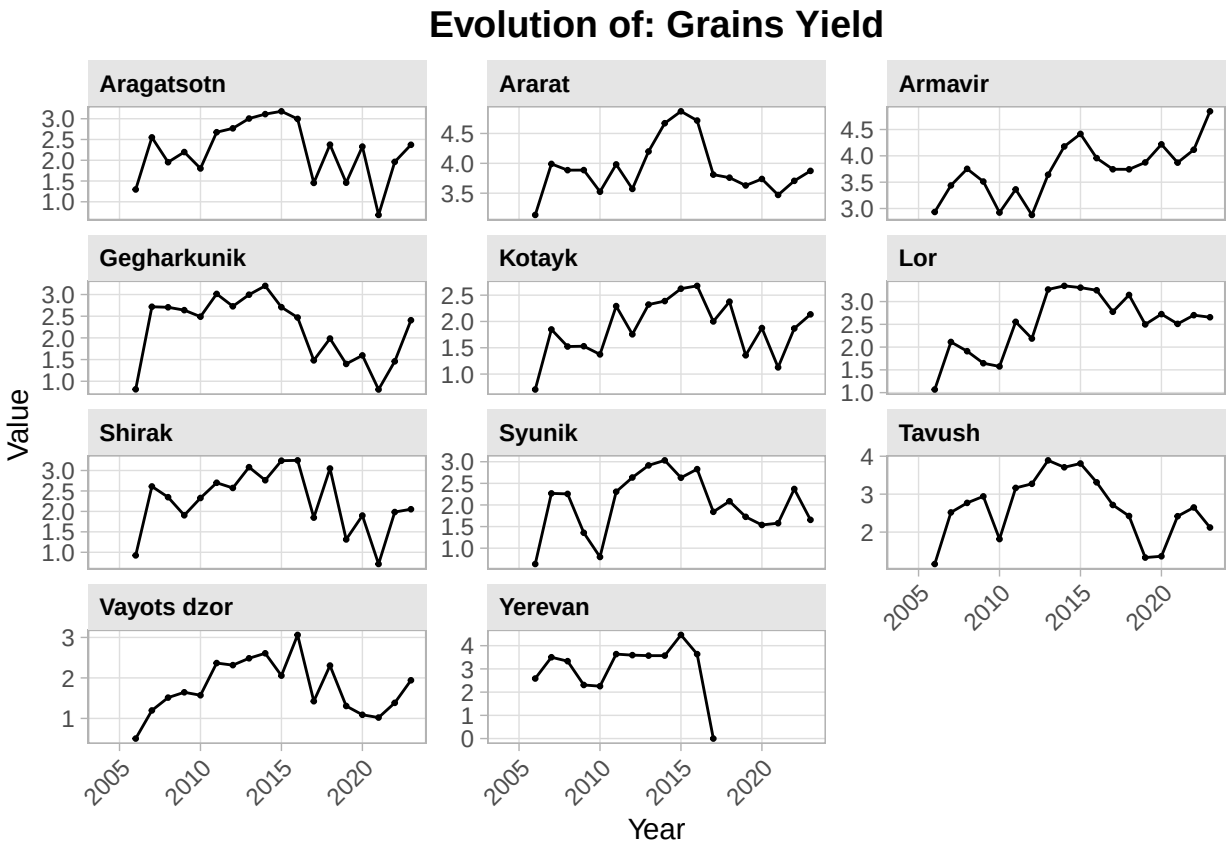

Evolution of: SPEI (Drought Index)
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020


Evolution of: Share of observations of SPEI above +1
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020


Evolution of: Agricultural Stress
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020

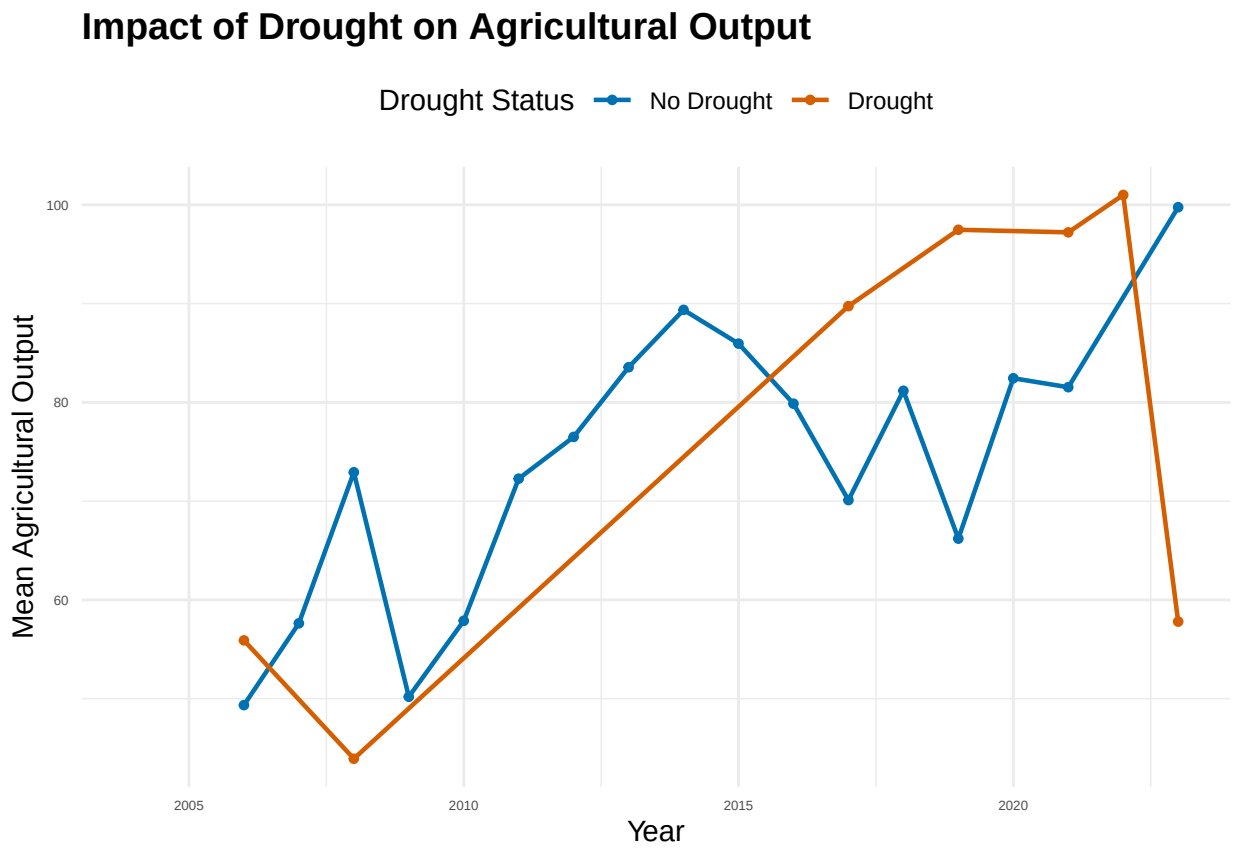

Evolution of: Total Rainfall
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020


Evolution of: Fruits Yield
Aragatsotn
Ararat
Armavir
Gegharkunik
Kotayk
Lor
Shirak
Syunik
Tavush
Vayots dzor
Yerevan
Value
Year
2005
2010
2015
2020



3.3 Graphs with Drought Dummy

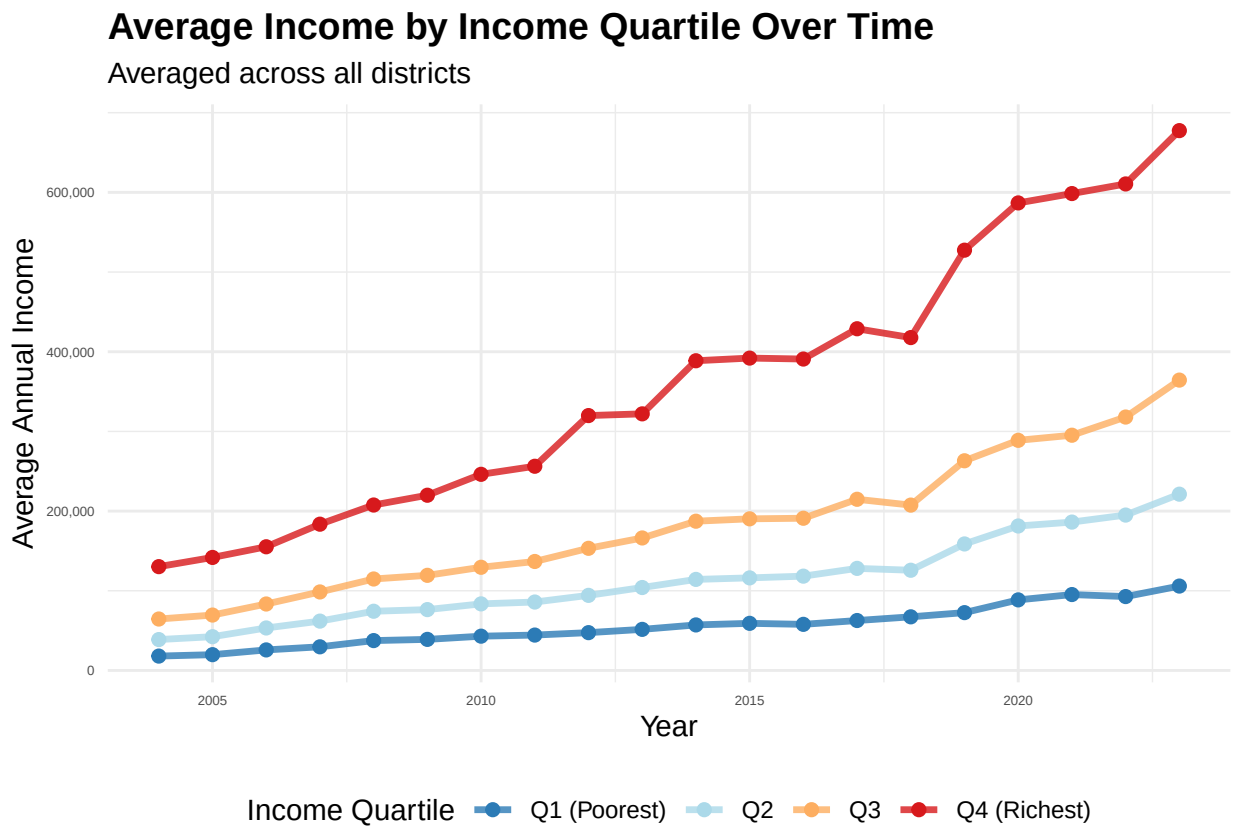
```
# Compute, for each years, the mean of agricultural output between districts
#  that experience drought vs no drought
agric_plot <- dataset %>%
  group_by(year, drought_dummy) %>%
  summarise(mean_agric = mean(agric_output, na.rm = TRUE), n_district = n())

ggplot(agric_plot, aes(x = year, y = mean_agric,
                       color = factor(drought_dummy), group = factor(drought_dummy))) +
  geom_line(linewidth = 0.8) +
  geom_point(size = 1.2) +
  scale_color_manual(values = c("0" = "#0072B2", "1" = "#D55E00"),
                     labels = c("No Drought", "Drought")) +
  labs(x = "Year", y = "Mean Agricultural Output", color = "Drought Status",
       title = "Impact of Drought on Agricultural Output") +
  theme_minimal() +
  theme(legend.position = "top",
    axis.text.x = element_text(size = 5),
    axis.text.y = element_text(size = 5),
    plot.title = element_text(size = 14, face = "bold"),
    strip.text = element_text(size = 4, face = "bold"))
```



3.4 Graphs with Drought Dummy and Quartiles

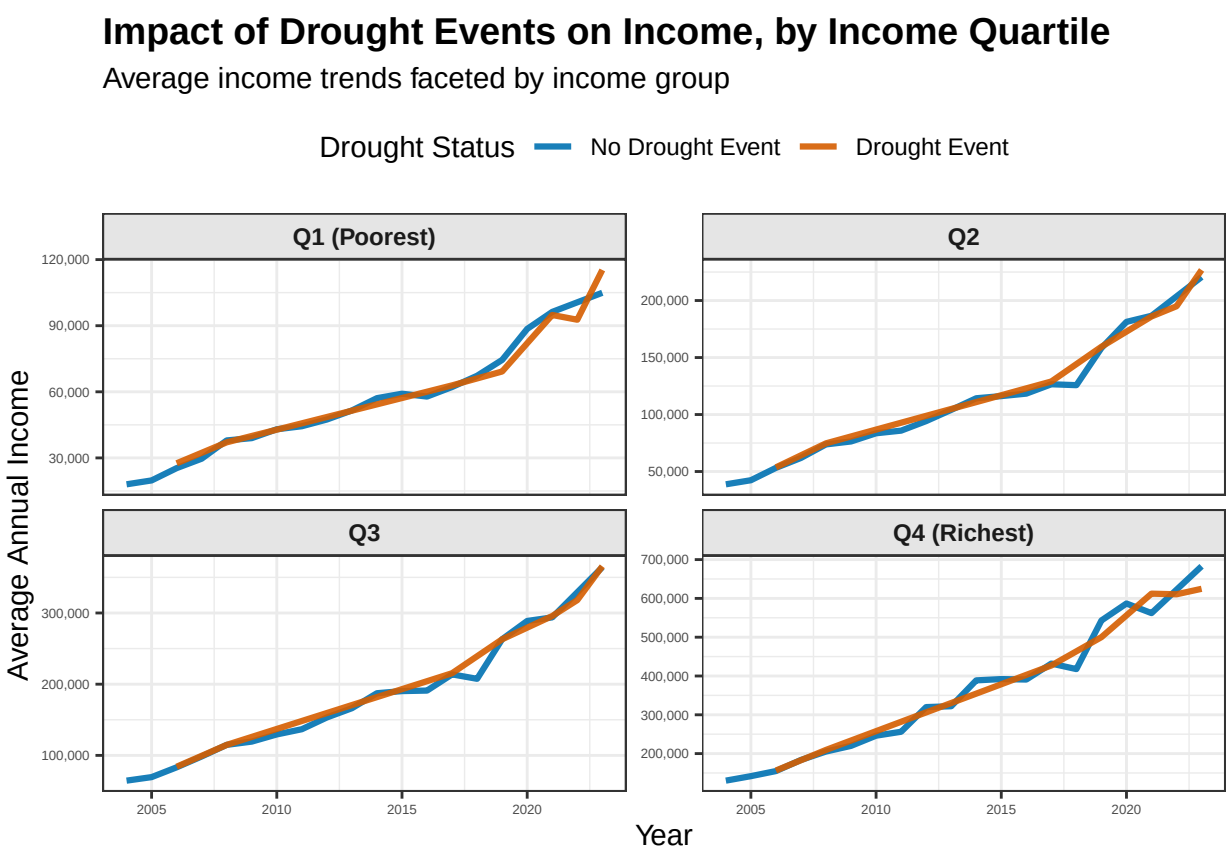
```
# Data Prep
dataset_prepped_q <- dataset_quartiles %>%
  mutate(drought_status = factor(drought_dummy,
                                 levels = c(0, 1),
                                 labels = c("No Drought Event", "Drought Event")),
         income_quartile = factor(national_quartile,
                                  levels = c(1, 2, 3, 4),
                                  labels = c("Q1 (Poorest)", "Q2", "Q3", "Q4 (Richest)")))

# A1. Aggregate the data: Find the mean income for each year and quartile
plot1_data_q <- dataset_prepped_q %>%
  group_by(year, income_quartile) %>%
  summarize(avg_income = mean(income, na.rm = TRUE),
            avg_agr_income = mean(agric_income, na.rm = TRUE), .groups = 'drop')


# A2. Create the plot q
ggplot(plot1_data_q, aes(x = year, y = avg_income, color = income_quartile, group = income_quartile)) +
  geom_line(linewidth = 1.2, alpha = 0.8) +
  geom_point(size = 2) +
  scale_y_continuous(labels = scales::comma) +
  scale_color_brewer(palette = "RdYlBu", direction = -1) +
```

```
  labs(title = "Average Income by Income Quartile Over Time",
       subtitle = "Averaged across all districts",
       x = "Year",
       y = "Average Annual Income",
       color = "Income Quartile") +
  theme_minimal() + theme(legend.position = "bottom",
    axis.text.x = element_text(size = 5),
    axis.text.y = element_text(size = 5),
    plot.title = element_text(size = 14, face = "bold"),
    strip.text = element_text(size = 4, face = "bold"))
```




```
# B1. Aggregate data: Mean income by year, quartile, AND drought status
plot2_data_q <- dataset_prepped_q %>%
  group_by(year, income_quartile, drought_status) %>%
  summarize(avg_income = mean(income, na.rm = TRUE),
            avg_agr_income = mean(agric_income, na.rm = TRUE), .groups = 'drop')


# B2. Create the faceted plot q
ggplot(plot2_data_q, aes(x = year, y = avg_income, color = drought_status, group = drought_status)) +
  geom_line(linewidth = 1.1, alpha = 0.9) +
  # Create 4 separate plots, one for each 'income_quartile'
  facet_wrap(~ income_quartile, scales = "free_y") +
  scale_y_continuous(labels = scales::comma) +
  scale_color_manual(values = c("No Drought Event" = "#0072B2", "Drought Event" = "#D55E00")) +
```

```
labs(title = "Impact of Drought Events on Income, by Income Quartile",
       subtitle = "Average income trends faceted by income group",
       x = "Year",
       y = "Average Annual Income",
       color = "Drought Status") +
theme_bw() +
theme(legend.position = "top",
       axis.text.x = element_text(size = 5),
       axis.text.y = element_text(size = 5),
       plot.title = element_text(size = 14, face = "bold"),
       strip.background = element_rect(fill = "grey90"),
       strip.text = element_text(face = "bold") )
```



4 TWFE Regressions

4.1 Data

4.1.1 Data Choice Selection

```
# Select TRUE for having dependent variables in logs
dependent_in_logs <- TRUE

# Select TRUE to exclude "Yerevan" district from analysis
exclude_yerevan <- FALSE

# Select TRUE to focus on, on average, more rural districts
more_rural <- FALSE

# Select TRUE to focus on, on average, districts with more poverty
more_poverty <- FALSE

# Select TRUE to have up to 10 lags for all independent variables
more_lags <- FALSE
```

```
# Base case
twfe_data = dataset

# Dependent variables
dependent_vars <- c("income", "agric_income", "agric_output", "fdcons",
                    "grains_harvest", "vegetables_harvest", "fruits_harvest",
                    "potatoes_harvest", "output_per_field_grains",
                    "output_per_field_vegetables", "output_per_field_fruits",
                    "output_per_field_potatoes")

# Logs implementation
if (dependent_in_logs) {
  for (col in dependent_vars) {
    twfe_data[[col]] <- log(twfe_data[[col]]) }
  cat("Dependent variables are in logs.") }
```

```
## Dependent variables are in logs.
```

```
# Excluding Yerevan implementation
if (exclude_yerevan) {
  twfe_data = subset(twfe_data, district != "Yerevan")
  cat("Excluding Yerevan district from sample.") }

# Selecting majority-rural districts implementation
if (more_rural) {
  twfe_data = subset(twfe_data, urban < 0.5)
  cat("Focusing on districts with higher rural population, on average.")}

# Selecting poorer regions implementation
if (more_poverty) {
```

```
  twfe_data = subset(twfe_data, poverty > 0.3)
  cat("Focusing on districts with higher rates of poverty, on average.") }

# Selecting a certain timeframe
#twfe_data = subset(twfe_data, year > 2015)

# Selecting the poorest income decile
#twfe_data = subset(dataset_deciles, national_decile == 1)

# Selecting the poorest income quartile
#twfe_data = subset(dataset_quartiles, national_quartile == 1)
```

4.2 Regression

4.2.1 Estimation Loop

```
# For numbering of captions to make it easier to find ourselves in latex
section_base <- 4
dv_counter <- 2

# Define independent variables as a list of groups
if (more_lags) {
  iv_groups <- list(
    "SPEI" = c(
      "spei",
      "spei + spei_lag1",
      "spei + spei_lag1 + spei_lag2",
      "spei + spei_lag1 + spei_lag2 + spei_lag3",
      "spei + spei_lag1 + spei_lag2 + spei_lag3 + spei_lag4",
      "spei + spei_lag1 + spei_lag2 + spei_lag3 + spei_lag4 + spei_lag5",
      "spei + spei_lag1 + spei_lag2 + spei_lag3 + spei_lag4 + spei_lag5 + spei_lag6"),
    "Share" = c(
      "share",
      "share + share_lag1",
      "share + share_lag1 + share_lag2",
      "share + share_lag1 + share_lag2 + share_lag3",
      "share + share_lag1 + share_lag2 + share_lag3 + share_lag4",
      "share + share_lag1 + share_lag2 + share_lag3 + share_lag4 + share_lag5",
      "share + share_lag1 + share_lag2 + share_lag3 + share_lag4 + share_lag5 + share_lag6"),
    "AgricStress" = c(
      "agric_stress",
      "agric_stress + agric_stress_lag1",
      "agric_stress + agric_stress_lag1 + agric_stress_lag2",
      "agric_stress + agric_stress_lag1 + agric_stress_lag2 + agric_stress_lag3",
      "agric_stress + agric_stress_lag1 + agric_stress_lag2 + agric_stress_lag3 +
        agric_stress_lag4",
      "agric_stress + agric_stress_lag1 + agric_stress_lag2 + agric_stress_lag3 +
        agric_stress_lag4 + agric_stress_lag5",
      "agric_stress + agric_stress_lag1 + agric_stress_lag2 + agric_stress_lag3 +
        agric_stress_lag4 + agric_stress_lag5 + agric_stress_lag6"),
     "Temperature" = c(
```

```
      "temperature",
      "temperature + temperature_lag1",
      "temperature + temperature_lag1 + temperature_lag2",
      "temperature + temperature_lag1 + temperature_lag2 + temperature_lag3",
      "temperature + temperature_lag1 + temperature_lag2 + temperature_lag3 +
        temperature_lag4",
      "temperature + temperature_lag1 + temperature_lag2 + temperature_lag3 +
        temperature_lag4 + temperature_lag5",
      "temperature + temperature_lag1 + temperature_lag2 + temperature_lag3 +
        temperature_lag4 + temperature_lag5 + temperature_lag6") )
  model_names <- c(
  "Model 1: 0 Lags",
  "Model 2: 1 Lag",
  "Model 3: 2 Lags",
  "Model 4: 3 Lags",
  "Model 5: 4 Lags",
  "Model 6: 5 Lags",
  "Model 7: 6 Lags")
} else {
  iv_groups <- list(
    "SPEI" = c(
      "spei",
      "spei + spei_lag1",
      "spei + spei_lag1 + spei_lag2"),
    "Share" = c(
      "share",
      "share + share_lag1",
      "share + share_lag1 + share_lag2"),
    "AgricStress" = c(
      "agric_stress",
      "agric_stress + agric_stress_lag1",
      "agric_stress + agric_stress_lag1 + agric_stress_lag2"),
    "Temperature" = c(
       "temperature",
       "temperature + temperature_lag1",
       "temperature + temperature_lag1 + temperature_lag2") )
  model_names <- c(
  "Model 1: 0 Lags",
  "Model 2: 1 Lag",
  "Model 3: 2 Lags") }

# Pretty names
create_lag_labels <- function(base_code, base_pretty, n_lags = 6) {
  labels <- setNames(base_pretty, base_code)
  for (i in 1:n_lags) {
    code <- paste0(base_code, "_lag", i)
    pretty <- paste0(base_pretty, " (Lag ", i, ")")
    labels[code] <- pretty}
  return(labels)}

var_dict <- c(
  var_names,
  create_lag_labels("spei", "SPEI"),
```

```
  create_lag_labels("share", "SPEI Share"),
  create_lag_labels("agric_stress", "Agric. Stress"),
  create_lag_labels("temperature", "Temp."))

# Loop for each dependent variable for each group of independent variables
for (dv in dependent_vars) {
  dv_counter <- dv_counter + 1
  # Create a latex version of the dv name
  dv_safe <- gsub("_", "\\\\_", dv)
  cat(paste0("\n\n\\subsection{Dependent Variable: ", dv_safe, "}\n\n"))
  iv_counter <- 0

  for (group_name in names(iv_groups)) {
    iv_counter <- iv_counter + 1
    section_str <- paste(section_base, dv_counter, iv_counter, sep = ".")
    cat(paste0("\n\n\\subsubsection{Regressed on: ", group_name, "}\n\n"))
    models_list <- list()
    current_iv_formulas <- iv_groups[[group_name]]

    for (i in 1:length(current_iv_formulas)) {
          fml_string <- sprintf("%s ~ %s | district + year",
                                dv,
                                current_iv_formulas[i])
      models_list[[i]] <- feols(
        as.formula(fml_string),
        data = twfe_data,
        cluster = ~ district) }
      names(models_list) <- model_names

      clean_group <- gsub(" ", "", group_name)
    file_path <- paste0("figures/reg_", dv, "_", clean_group, ".tex")
    dynamic_caption <- sprintf("Regression results for %s on %s",
                               dv_safe, group_name)

    if (latex_format) {
    etable(models_list,
      title = dynamic_caption,
      label = paste0("table",section_str),
      fixef_sizes = TRUE,
      fitstat = c("n", "r2", "wr2"),
      tex = latex_format,
      file = file_path,
      dict = var_dict,
      replace = TRUE) }

    print(etable(
      models_list,
      fixef_sizes = TRUE,
      fitstat = c("n", "r2", "wr2"),
      tex = latex_format,
      dict = var_dict))} }
```

4.3 Dependent Variable: income

4.3.1 Regressed on: SPEI

Dependent Variable:	Household Income		
Model:	(1)	(2)	(3)
Variables			
SPEI	0.0260	0.0263	0.0254
	(0.0266)	(0.0252)	(0.0264)
SPEI (Lag 1)		-0.0201	-0.0199
		(0.0505)	(0.0496)
SPEI (Lag 2)			-0.0174
			(0.0522)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (20)	Yes	Yes	Yes
Fit statistics			
Observations	220	220	220
R^2	0.95771	0.95775	0.95778
Within R^2	0.00175	0.00273	0.00344

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.3.2 Regressed on: Share

Dependent Variable:	Household Income		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	-0.1165	-0.1618	-0.1685
	(0.0908)	(0.1105)	(0.1155)
SPEI Share (Lag 1)		-0.2229	-0.2596
		(0.1517)	(0.1846)
SPEI Share (Lag 2)			-0.2104
			(0.1685)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (20)	Yes	Yes	Yes
Fit statistics			
Observations	220	220	220
R^2	0.95781	0.95839	0.95888
Within R^2	0.00413	0.01776	0.02941

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.3.3 Regressed on: AgricStress

Dependent Variable:	Household Income		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-0.0047	-0.0222	-0.0228
	(0.0666)	(0.0622)	(0.0612)
Agric. Stress (Lag 1)		0.0717	0.0743
		(0.0819)	(0.0736)
Agric. Stress (Lag 2)			-0.0202
			(0.1024)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (20)	Yes	Yes	Yes
Fit statistics			
Observations	220	220	220
R^2	0.95764	0.95776	0.95777
Within R^2	1.42×10^{-5}	0.00285	0.00300

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.3.4 Regressed on: Temperature

Dependent Variable:	Household Income		
Model:	(1)	(2)	(3)
Variables			
Temp.	0.0971	0.0944	0.0955
	(0.0676)	(0.0684)	(0.0698)
Temp. (Lag 1)		0.0133	-0.0002
		(0.0326)	(0.0205)
Temp. (Lag 2)			0.0150
			(0.0230)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (20)	Yes	Yes	Yes
Fit statistics			
Observations	220	220	220
R^2	0.95785	0.95791	0.95798
Within R^2	0.00499	0.00633	0.00809

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.4 Dependent Variable: agric_income

4.4.1 Regressed on: SPEI

Dependent Variable:	Household Agricultural Income		
Model:	(1)	(2)	(3)
Variables			
SPEI	0.2773	0.2786	0.2814
	(0.2633)	(0.2720)	(0.2893)
SPEI (Lag 1)		0.0586	0.0572
		(0.2790)	(0.2737)
SPEI (Lag 2)			0.0400
			(0.2727)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	197	197	197
R^2	0.71669	0.71680	0.71685
Within R^2	0.00952	0.00992	0.01009

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.4.2 Regressed on: Share

Dependent Variable:	Household Agricultural Income		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	-0.3389	-0.3282	-0.3893
	(0.4318)	(0.4687)	(0.4920)
SPEI Share (Lag 1)		0.0552	-0.1080
		(0.7967)	(0.8750)
SPEI Share (Lag 2)			-0.8570*
			(0.4538)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	197	197	197
R^2	0.71444	0.71445	0.71667
Within R^2	0.00166	0.00170	0.00946

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.4.3 Regressed on: AgricStress

Dependent Variable:	Household Agricultural Income		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-0.1955	-0.2022	-0.1393
	(0.5152)	(0.5525)	(0.6256)
Agric. Stress (Lag 1)		1.055	1.193
		(0.9886)	(0.9930)
Agric. Stress (Lag 2)			-1.510
			(0.8763)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	197	197	197
R^2	0.71419	0.71963	0.72936
Within R^2	0.00080	0.01981	0.05383

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.4.4 Regressed on: Temperature

Dependent Variable:	Household Agricultural Income		
Model:	(1)	(2)	(3)
Variables			
Temp.	0.1293	0.1306	0.1360
	(0.2379)	(0.2456)	(0.2339)
Temp. (Lag 1)		-0.0064	0.1104*
		(0.0712)	(0.0564)
Temp. (Lag 2)			-0.1301**
			(0.0544)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	197	197	197
R^2	0.71409	0.71410	0.71610
Within R^2	0.00045	0.00047	0.00748

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.5 Dependent Variable: agric_output

4.5.1 Regressed on: SPEI

Dependent Variable:	Gross Agricultural Output		
Model:	(1)	(2)	(3)
Variables			
SPEI	0.0578	0.0597	0.0666
	(0.0556)	(0.0519)	(0.0544)
SPEI (Lag 1)		0.0986	0.0994*
		(0.0580)	(0.0545)
SPEI (Lag 2)			0.1435*
			(0.0744)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.97508	0.97550	0.97640
Within R^2	0.00561	0.02268	0.05855

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.5.2 Regressed on: Share

Dependent Variable:	Gross Agricultural Output		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	0.1182	0.1643	0.1763
	(0.1120)	(0.1325)	(0.1352)
SPEI Share (Lag 1)		0.2021	0.2415
		(0.1329)	(0.1372)
SPEI Share (Lag 2)			0.1923
			(0.1527)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.97502	0.97522	0.97540
Within R^2	0.00316	0.01144	0.01864

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.5.3 Regressed on: AgricStress

Dependent Variable:	Gross Agricultural Output		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	0.3104	0.2930	0.2932
	(0.1892)	(0.1719)	(0.1746)
Agric. Stress (Lag 1)		0.2321	0.2317
		(0.1415)	(0.1351)
Agric. Stress (Lag 2)			0.0070
			(0.1898)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.97572	0.97617	0.97617
Within R^2	0.03148	0.04908	0.04909

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.5.4 Regressed on: Temperature

Dependent Variable:	Gross Agricultural Output		
Model:	(1)	(2)	(3)
Variables			
Temp.	0.0568	0.0550	0.1154*
	(0.0720)	(0.0775)	(0.0588)
Temp. (Lag 1)		-0.0235	0.0049
		(0.1200)	(0.1205)
Temp. (Lag 2)			0.2403***
			(0.0733)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.97497	0.97497	0.97548
Within R^2	0.00120	0.00140	0.02182

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.6 Dependent Variable: fdcons

4.6.1 Regressed on: SPEI

Dependent Variable:	Household food Consumption		
Model:	(1)	(2)	(3)
Variables			
SPEI	0.0400	0.0407	0.0393
	(0.0943)	(0.0950)	(0.0952)
SPEI (Lag 1)		-0.0648	-0.0645
		(0.0517)	(0.0522)
SPEI (Lag 2)			-0.0296
			(0.1102)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (20)	Yes	Yes	Yes
Fit statistics			
Observations	220	220	220
R^2	0.90580	0.90611	0.90617
Within R^2	0.00133	0.00465	0.00531

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.6.2 Regressed on: Share

Dependent Variable:	Household food Consumption		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	-0.0860	-0.1811	-0.1932
	(0.1944)	(0.2304)	(0.2334)
SPEI Share (Lag 1)		-0.4673	-0.5340*
		(0.2695)	(0.2667)
SPEI Share (Lag 2)			-0.3819
			(0.3588)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (20)	Yes	Yes	Yes
Fit statistics			
Observations	220	220	220
R^2	0.90574	0.90757	0.90875
Within R^2	0.00073	0.02016	0.03261

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.6.3 Regressed on: AgricStress

Dependent Variable:	Household food Consumption		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-0.0214	0.0082	0.0074
	(0.2026)	(0.1772)	(0.1811)
Agric. Stress (Lag 1)		-0.1217	-0.1182
		(0.1475)	(0.1280)
Agric. Stress (Lag 2)			-0.0270
			(0.1968)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (20)	Yes	Yes	Yes
Fit statistics			
Observations	220	220	220
R^2	0.90568	0.90593	0.90594
Within R^2	9.36×10^{-5}	0.00274	0.00283

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.6.4 Regressed on: Temperature

Dependent Variable:	Household food Consumption		
Model:	(1)	(2)	(3)
Variables			
Temp.	0.0666	0.0762	0.0787
	(0.2338)	(0.2367)	(0.2407)
Temp. (Lag 1)		-0.0469	-0.0776**
		(0.0307)	(0.0302)
Temp. (Lag 2)			0.0341
			(0.0259)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (20)	Yes	Yes	Yes
Fit statistics			
Observations	220	220	220
R^2	0.90574	0.90626	0.90654
Within R^2	0.00076	0.00621	0.00917

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.7 Dependent Variable: grains_harvest

4.7.1 Regressed on: SPEI

Dependent Variable:	Grains Harvest		
Model:	(1)	(2)	(3)
Variables			
SPEI	-0.4503***	-0.4573***	-0.4691***
	(0.1064)	(0.1065)	(0.1071)
SPEI (Lag 1)		-0.2992**	-0.3025**
		(0.1010)	(0.1207)
SPEI (Lag 2)			-0.2425*
			(0.1214)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	191	191	191
R^2	0.94570	0.94719	0.94817
Within R^2	0.05653	0.08245	0.09939

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.7.2 Regressed on: Share

Dependent Variable:	Grains Harvest		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	-0.7772**	-0.9705***	-1.008***
	(0.2690)	(0.2807)	(0.2698)
SPEI Share (Lag 1)		-0.8358**	-1.012**
		(0.3403)	(0.3457)
SPEI Share (Lag 2)			-0.9098**
			(0.4027)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	191	191	191
R^2	0.94375	0.94509	0.94660
Within R^2	0.02257	0.04590	0.07212

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.7.3 Regressed on: AgricStress

Dependent Variable:	Grains Harvest		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-1.178***	-1.127***	-1.148***
	(0.3036)	(0.2822)	(0.2822)
Agric. Stress (Lag 1)		-0.8049*	-0.7895*
		(0.4269)	(0.4338)
Agric. Stress (Lag 2)			-0.5241
			(0.4429)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	191	191	191
R^2	0.94656	0.94848	0.94914
Within R^2	0.07144	0.10475	0.11627

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.7.4 Regressed on: Temperature

Dependent Variable:	Grains Harvest		
Model:	(1)	(2)	(3)
Variables			
Temp.	-0.1116	-0.1260	-0.2292
	(0.2034)	(0.2061)	(0.2332)
Temp. (Lag 1)		-0.1923	-0.2413
		(0.3123)	(0.3223)
Temp. (Lag 2)			-0.4141
			(0.2432)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	191	191	191
R^2	0.94249	0.94262	0.94320
Within R^2	0.00077	0.00298	0.01312

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.8 Dependent Variable: vegetables_harvest

4.8.1 Regressed on: SPEI

Dependent Variable:	Vegetables Harvest		
Model:	(1)	(2)	(3)
Variables			
SPEI	-0.1150	-0.1191	-0.1240
	(0.0697)	(0.0697)	(0.0725)
SPEI (Lag 1)		-0.2078	-0.2084
		(0.1572)	(0.1617)
SPEI (Lag 2)			-0.1035
			(0.0929)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.95674	0.95738	0.95753
Within R^2	0.00428	0.01891	0.02251

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.8.2 Regressed on: Share

Dependent Variable:	Vegetables Harvest		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	-0.1733	-0.2713	-0.2927
	(0.1950)	(0.1901)	(0.1953)
SPEI Share (Lag 1)		-0.4297	-0.5002
		(0.3137)	(0.3758)
SPEI Share (Lag 2)			-0.3438
			(0.2918)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.95661	0.95693	0.95712
Within R^2	0.00131	0.00854	0.01298

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.8.3 Regressed on: AgricStress

Dependent Variable:	Vegetables Harvest		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-0.4713	-0.4391	-0.4430
	(0.4783)	(0.4584)	(0.4604)
Agric. Stress (Lag 1)		-0.4302	-0.4229
		(0.5232)	(0.5081)
Agric. Stress (Lag 2)			-0.1363
			(0.3874)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.95716	0.95767	0.95771
Within R^2	0.01401	0.02568	0.02661

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.8.4 Regressed on: Temperature

Dependent Variable:	Vegetables Harvest		
Model:	(1)	(2)	(3)
Variables			
Temp.	-0.1386	-0.1443	-0.1537
	(0.1596)	(0.1766)	(0.2011)
Temp. (Lag 1)		-0.0755	-0.0799
		(0.2847)	(0.3077)
Temp. (Lag 2)			-0.0372
			(0.2512)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.95662	0.95663	0.95664
Within R^2	0.00138	0.00178	0.00187

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.9 Dependent Variable: fruits_harvest

4.9.1 Regressed on: SPEI

Dependent Variable:	Fruits Harvest		
Model:	(1)	(2)	(3)
Variables			
SPEI	0.2105	0.2145	0.2239
	(0.1612)	(0.1631)	(0.1622)
SPEI (Lag 1)		0.2010	0.2022*
		(0.1169)	(0.1042)
SPEI (Lag 2)			0.1975
			(0.1402)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.91392	0.91480	0.91565
Within R^2	0.01062	0.02073	0.03042

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.9.2 Regressed on: Share

Dependent Variable:	Fruits Harvest		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	0.6161	0.8515**	0.8986**
	(0.3458)	(0.2807)	(0.2913)
SPEI Share (Lag 1)		1.033**	1.188**
		(0.3621)	(0.4138)
SPEI Share (Lag 2)			0.7552*
			(0.4113)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.91406	0.91675	0.91813
Within R^2	0.01223	0.04308	0.05892

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.9.3 Regressed on: AgricStress

Dependent Variable:	Fruits Harvest		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	0.6220**	0.5760***	0.5885**
	(0.2250)	(0.1782)	(0.1992)
Agric. Stress (Lag 1)		0.6142*	0.5907*
		(0.3383)	(0.3034)
Agric. Stress (Lag 2)			0.4338
			(0.3242)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.91457	0.91610	0.91670
Within R^2	0.01802	0.03561	0.04253

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.9.4 Regressed on: Temperature

Dependent Variable:	Fruits Harvest		
Model:	(1)	(2)	(3)
Variables			
Temp.	0.1117	0.1123	0.1934
	(0.3286)	(0.3298)	(0.3155)
Temp. (Lag 1)		0.0076	0.0458
		(0.1958)	(0.2025)
Temp. (Lag 2)			0.3225*
			(0.1467)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.91306	0.91306	0.91352
Within R^2	0.00066	0.00067	0.00591

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.10 Dependent Variable: potatoes_harvest

4.10.1 Regressed on: SPEI

Dependent Variable:	Potatoes Harvest		
Model:	(1)	(2)	(3)
Variables			
SPEI	-0.0864	-0.0913	-0.0931
	(0.0585)	(0.0683)	(0.0699)
SPEI (Lag 1)		-0.2477	-0.2479
		(0.1406)	(0.1438)
SPEI (Lag 2)			-0.0391
			(0.0848)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.97357	0.97447	0.97449
Within R^2	0.00395	0.03787	0.03871

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.10.2 Regressed on: Share

Dependent Variable:	Potatoes Harvest		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	-0.3500	-0.5348*	-0.5406*
	(0.2041)	(0.2540)	(0.2604)
SPEI Share (Lag 1)		-0.8109**	-0.8300**
		(0.3189)	(0.3329)
SPEI Share (Lag 2)			-0.0928
			(0.2677)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.97369	0.97481	0.97482
Within R^2	0.00872	0.05073	0.05126

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.10.3 Regressed on: AgricStress

Dependent Variable:	Potatoes Harvest		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-0.0492	-0.0179	-0.0237
	(0.2602)	(0.2506)	(0.2470)
Agric. Stress (Lag 1)		-0.4188	-0.4078
		(0.3375)	(0.3346)
Agric. Stress (Lag 2)			-0.2020
			(0.1600)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.97347	0.97395	0.97403
Within R^2	0.00025	0.01831	0.02162

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.10.4 Regressed on: Temperature

Dependent Variable:	Potatoes Harvest		
Model:	(1)	(2)	(3)
Variables			
Temp.	0.0188	0.0361	0.1030
	(0.1026)	(0.1132)	(0.1501)
Temp. (Lag 1)		0.2291	0.2607
		(0.1470)	(0.1665)
Temp. (Lag 2)			0.2664
			(0.1743)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.97346	0.97362	0.97383
Within R^2	4.14×10^{-5}	0.00597	0.01387

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.11 Dependent Variable: output_per_field_grains

4.11.1 Regressed on: SPEI

Dependent Variable:	Grains Yield		
Model:	(1)	(2)	(3)
Variables			
SPEI	-0.2324***	-0.2349***	-0.2379***
	(0.0584)	(0.0563)	(0.0524)
SPEI (Lag 1)		-0.1082	-0.1090
		(0.0719)	(0.0768)
SPEI (Lag 2)			-0.0598
			(0.0758)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	191	191	191
R^2	0.78380	0.78558	0.78612
Within R^2	0.03533	0.04328	0.04569

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.11.2 Regressed on: Share

Dependent Variable:	Grains Yield		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	-0.4843**	-0.4983**	-0.5060**
	(0.2120)	(0.2098)	(0.2134)
SPEI Share (Lag 1)		-0.0607	-0.0972
		(0.2006)	(0.1848)
SPEI Share (Lag 2)			-0.1884
			(0.2824)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	191	191	191
R^2	0.78048	0.78055	0.78114
Within R^2	0.02055	0.02084	0.02348

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.11.3 Regressed on: AgricStress

Dependent Variable:	Grains Yield		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-0.7051**	-0.7082**	-0.7031**
	(0.2239)	(0.2265)	(0.2256)
Agric. Stress (Lag 1)		0.0484	0.0446
		(0.2655)	(0.2562)
Agric. Stress (Lag 2)			0.1299
			(0.2151)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	191	191	191
R^2	0.78933	0.78940	0.78977
Within R^2	0.06004	0.06032	0.06198

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.11.4 Regressed on: Temperature

Dependent Variable:	Grains Yield		
Model:	(1)	(2)	(3)
Variables			
Temp.	0.0868	0.0847	-0.0005
	(0.1574)	(0.1513)	(0.1551)
Temp. (Lag 1)		-0.0277	-0.0682
		(0.2003)	(0.2072)
Temp. (Lag 2)			-0.3419*
			(0.1569)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	191	191	191
R^2	0.77612	0.77615	0.77978
Within R^2	0.00110	0.00121	0.01743

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.12 Dependent Variable: output_per_field_vegetables

4.12.1 Regressed on: SPEI

Dependent Variable:	Vegetables Yield		
Model:	(1)	(2)	(3)
Variables			
SPEI	0.0175	0.0145	0.0092
	(0.0438)	(0.0492)	(0.0508)
SPEI (Lag 1)		-0.1505	-0.1512
		(0.1425)	(0.1481)
SPEI (Lag 2)			-0.1108
			(0.1046)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.81793	0.82015	0.82134
Within R^2	0.00016	0.01235	0.01890

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.12.2 Regressed on: Share

Dependent Variable:	Vegetables Yield		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	0.0835	0.0650	0.0650
	(0.1599)	(0.1552)	(0.1582)
SPEI Share (Lag 1)		-0.0810	-0.0810
		(0.1714)	(0.2072)
SPEI Share (Lag 2)			-5.39×10^{-5}
			(0.2109)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.81799	0.81806	0.81806
Within R^2	0.00048	0.00089	0.00089

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.12.3 Regressed on: AgricStress

Dependent Variable:	Vegetables Yield		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-0.3306	-0.3029	-0.3043
	(0.3666)	(0.3502)	(0.3528)
Agric. Stress (Lag 1)		-0.3705	-0.3679
		(0.4208)	(0.4132)
Agric. Stress (Lag 2)			-0.0483
			(0.2269)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.81989	0.82240	0.82243
Within R^2	0.01094	0.02469	0.02487

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.12.4 Regressed on: Temperature

Dependent Variable:	Vegetables Yield		
Model:	(1)	(2)	(3)
Variables			
Temp.	-0.0371	-0.0314	-0.0282
	(0.1581)	(0.1647)	(0.1701)
Temp. (Lag 1)		0.0757	0.0772
		(0.1271)	(0.1386)
Temp. (Lag 2)			0.0129
			(0.1257)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.81793	0.81804	0.81805
Within R^2	0.00016	0.00079	0.00080

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.13 Dependent Variable: output_per_field_fruits

4.13.1 Regressed on: SPEI

Dependent Variable:	Fruits Yield		
Model:	(1)	(2)	(3)
Variables			
SPEI	0.1856	0.1887	0.1952
	(0.1434)	(0.1457)	(0.1438)
SPEI (Lag 1)		0.1567	0.1575
		(0.1054)	(0.0973)
SPEI (Lag 2)			0.1367
			(0.1568)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.79919	0.80052	0.80152
Within R^2	0.00881	0.01538	0.02034

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.13.2 Regressed on: Share

Dependent Variable:	Fruits Yield		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	0.5624	0.7888**	0.8309**
	(0.3438)	(0.2894)	(0.3019)
SPEI Share (Lag 1)		0.9934**	1.132**
		(0.3737)	(0.4357)
SPEI Share (Lag 2)			0.6764
			(0.4382)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.79960	0.80578	0.80853
Within R^2	0.01088	0.04136	0.05493

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.13.3 Regressed on: AgricStress

Dependent Variable:	Fruits Yield		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	0.5254***	0.4862***	0.4959***
	(0.1508)	(0.1244)	(0.1335)
Agric. Stress (Lag 1)		0.5233*	0.5052*
		(0.2771)	(0.2487)
Agric. Stress (Lag 2)			0.3352
			(0.2826)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.80018	0.80294	0.80384
Within R^2	0.01374	0.02737	0.03178

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.13.4 Regressed on: Temperature

Dependent Variable:	Fruits Yield		
Model:	(1)	(2)	(3)
Variables			
Temp.	0.1055	0.1050	0.1634
	(0.2922)	(0.2914)	(0.2703)
Temp. (Lag 1)		-0.0068	0.0207
		(0.1793)	(0.1890)
Temp. (Lag 2)			0.2323
			(0.1724)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.79753	0.79753	0.79812
Within R^2	0.00063	0.00063	0.00354

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.14 Dependent Variable: output_per_field_potatoes

4.14.1 Regressed on: SPEI

Dependent Variable:	Potatoes Yield		
Model:	(1)	(2)	(3)
Variables			
SPEI	-0.0961*	-0.1006	-0.1018
	(0.0434)	(0.0607)	(0.0622)
SPEI (Lag 1)		-0.2282	-0.2283
		(0.1451)	(0.1473)
SPEI (Lag 2)			-0.0243
			(0.0680)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.80594	0.81511	0.81521
Within R^2	0.00795	0.05479	0.05532

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.14.2 Regressed on: Share

Dependent Variable:	Potatoes Yield		
Model:	(1)	(2)	(3)
Variables			
SPEI Share	-0.1459	-0.2399	-0.2216
	(0.1639)	(0.1776)	(0.1901)
SPEI Share (Lag 1)		-0.4124*	-0.3520*
		(0.2125)	(0.1922)
SPEI Share (Lag 2)			0.2948
			(0.2023)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.80487	0.80833	0.81003
Within R^2	0.00247	0.02015	0.02882

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.14.3 Regressed on: AgricStress

Dependent Variable:	Potatoes Yield		
Model:	(1)	(2)	(3)
Variables			
Agric. Stress	-0.2087	-0.1706	-0.1728
	(0.1711)	(0.1614)	(0.1598)
Agric. Stress (Lag 1)		-0.5089	-0.5048
		(0.3339)	(0.3311)
Agric. Stress (Lag 2)			-0.0758
			(0.1075)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.80581	0.81430	0.81445
Within R^2	0.00730	0.05069	0.05145

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

4.14.4 Regressed on: Temperature

Dependent Variable:	Potatoes Yield		
Model:	(1)	(2)	(3)
Variables			
Temp.	-0.0084	0.0049	0.0456
	(0.0602)	(0.0696)	(0.0968)
Temp. (Lag 1)		0.1761	0.1953
		(0.1118)	(0.1248)
Temp. (Lag 2)			0.1621
			(0.1202)
Fixed-effects			
District (11)	Yes	Yes	Yes
Year (18)	Yes	Yes	Yes
Fit statistics			
Observations	194	194	194
R^2	0.80439	0.80550	0.80644
Within R^2	1.36×10^{-5}	0.00571	0.01047

Clustered (District) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*