

An aerial photograph of a lush green landscape. The foreground and middle ground are dominated by terraced rice fields, which are filled with vibrant green rice plants. The fields are separated by narrow, winding paths and small, dark, rectangular structures that appear to be irrigation canals or small ponds. In the background, a dense, dark green forest covers a hillside, with a few palm trees visible. The overall scene is a typical rural landscape from a tropical region.

# Is 21 years of Foreign Aid Enough to Mature a Poorer Country?

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# The Hypothesis



## Foreign Aid

If enough Foreign Aid is given to a poorer country, it will give residents money to buy more goods and services



## Gross Domestic Product

Gross Domestic Product should increase over time as Foreign Aid stimulates the domestic economy

# Foreign Aid + 5 More Xs to Predict GDP



## **CO2**

With aid, poorer countries would be able to jump start production capacity and subsequently consumption which will drive up CO2 output



## **Population**

Poorer countries with large population need greater aid



## **Neonatal Mortality**

Foreign aid will increase spending on health services and improve neonatal mortality



## **Agriculture**

Poorer countries have smaller areas of agricultural land to feed their population, which is one reason they need aid



## **Employment**

Foreign aid should stimulate the economy and increase business thus improving employment levels



## Data Source:

The World Bank, FAO,  
WHO, UN, OECD, ILO,  
UNICEF

- Trust the government
- Data used spans 21 years 1995 to 2015
- 180 countries
- Poor countries = 138 (77%)
- Richer Countries = 42 (23%)
- Foreign Aid = \$1.3 trillion 21 years

# GDP Combined

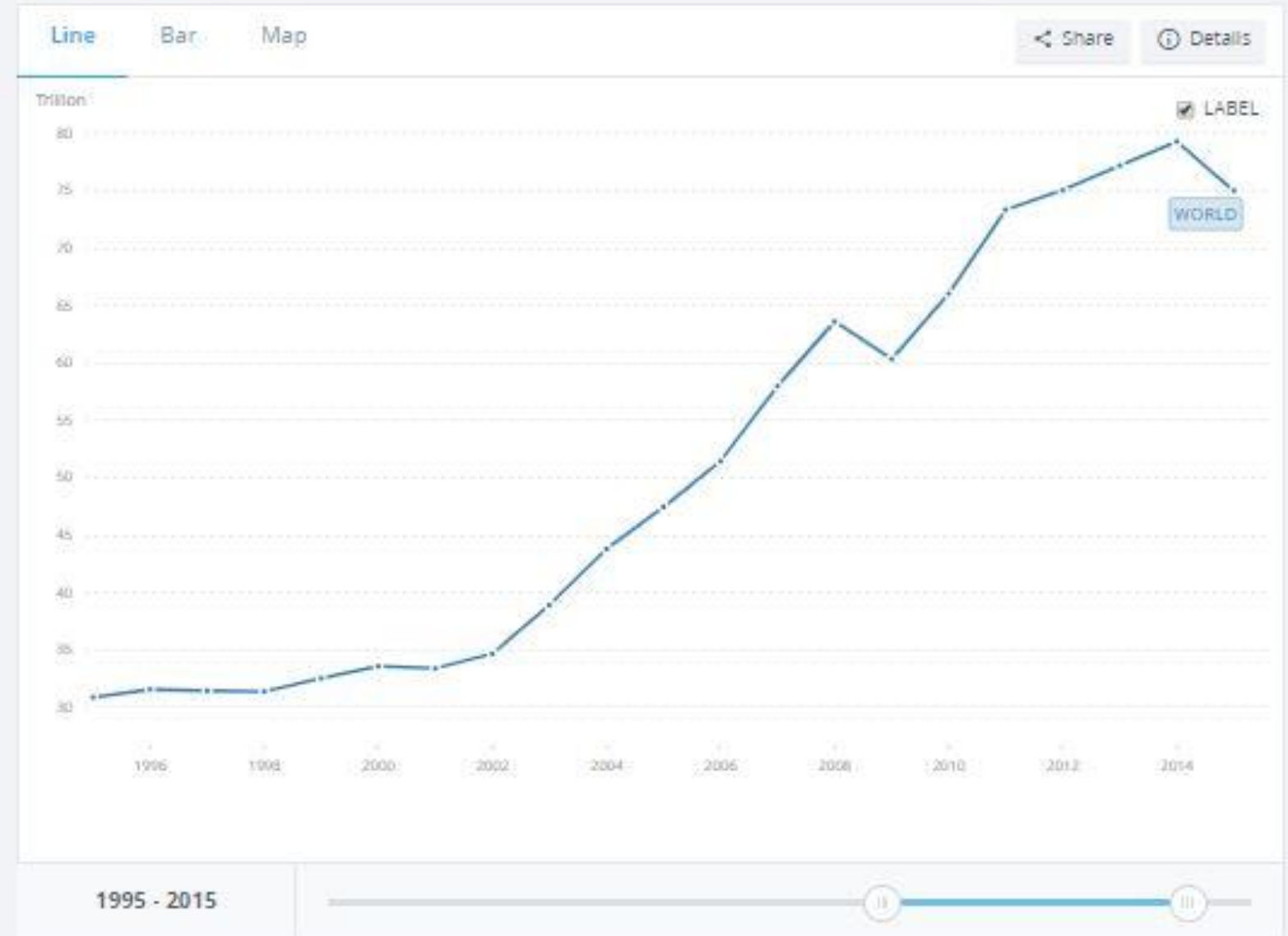
Gross Domestic Product is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies

Measured \$USD

## GDP (current US\$)

World Bank national accounts data, and OECD National Accounts data files.

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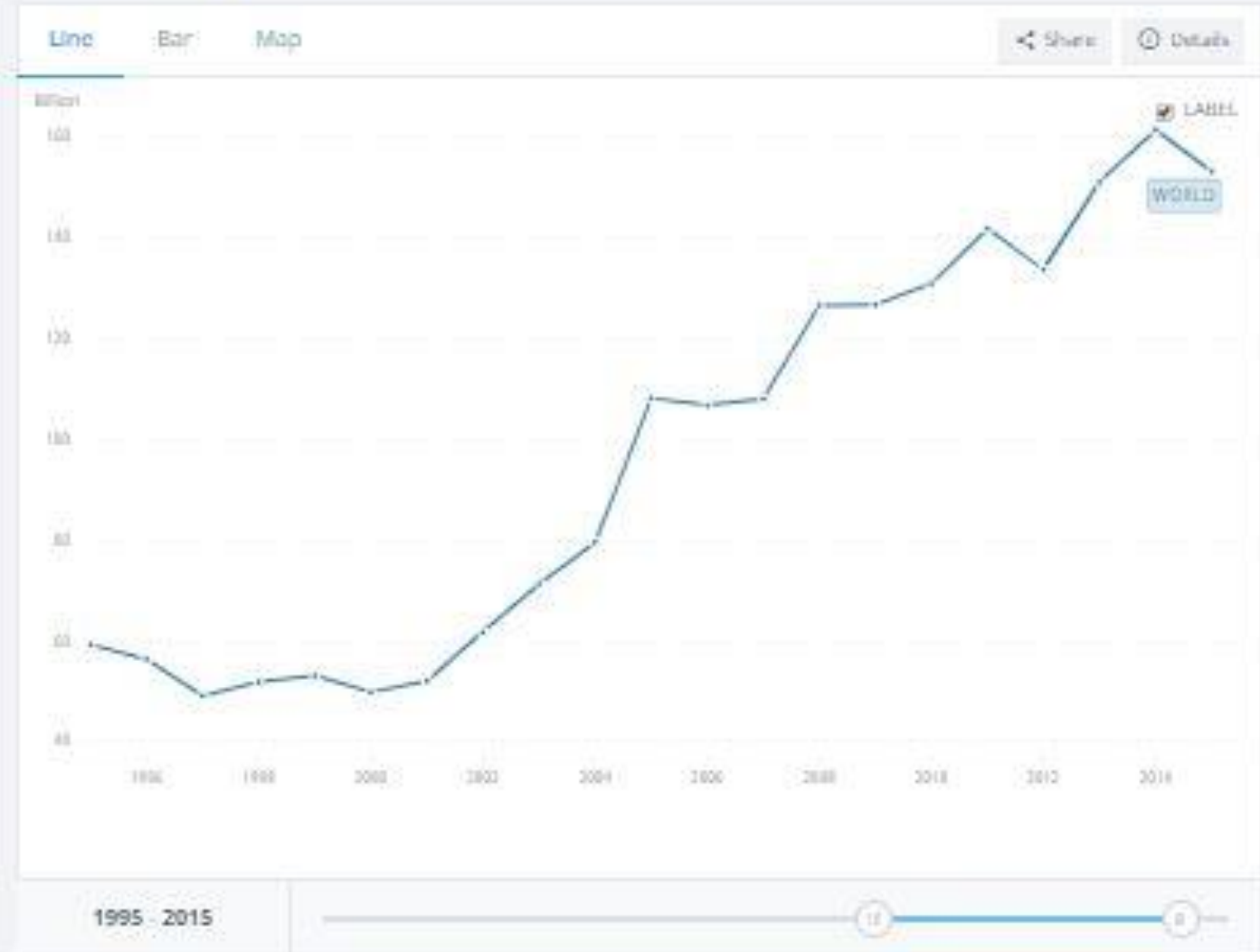
# Foreign Aid Totals

Net official development assistance is disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories

## Net official development assistance received (current US\$)

Development Assistance Committee of the Organisation for Economic Co-operation and Development, Geographical Distribution of Financial Flows to Developing Countries, Development Co-operation Report, and International Development Statistics database. Data are available online at: [oecd.org/dac/stats/ids/online](http://oecd.org/dac/stats/ids/online).

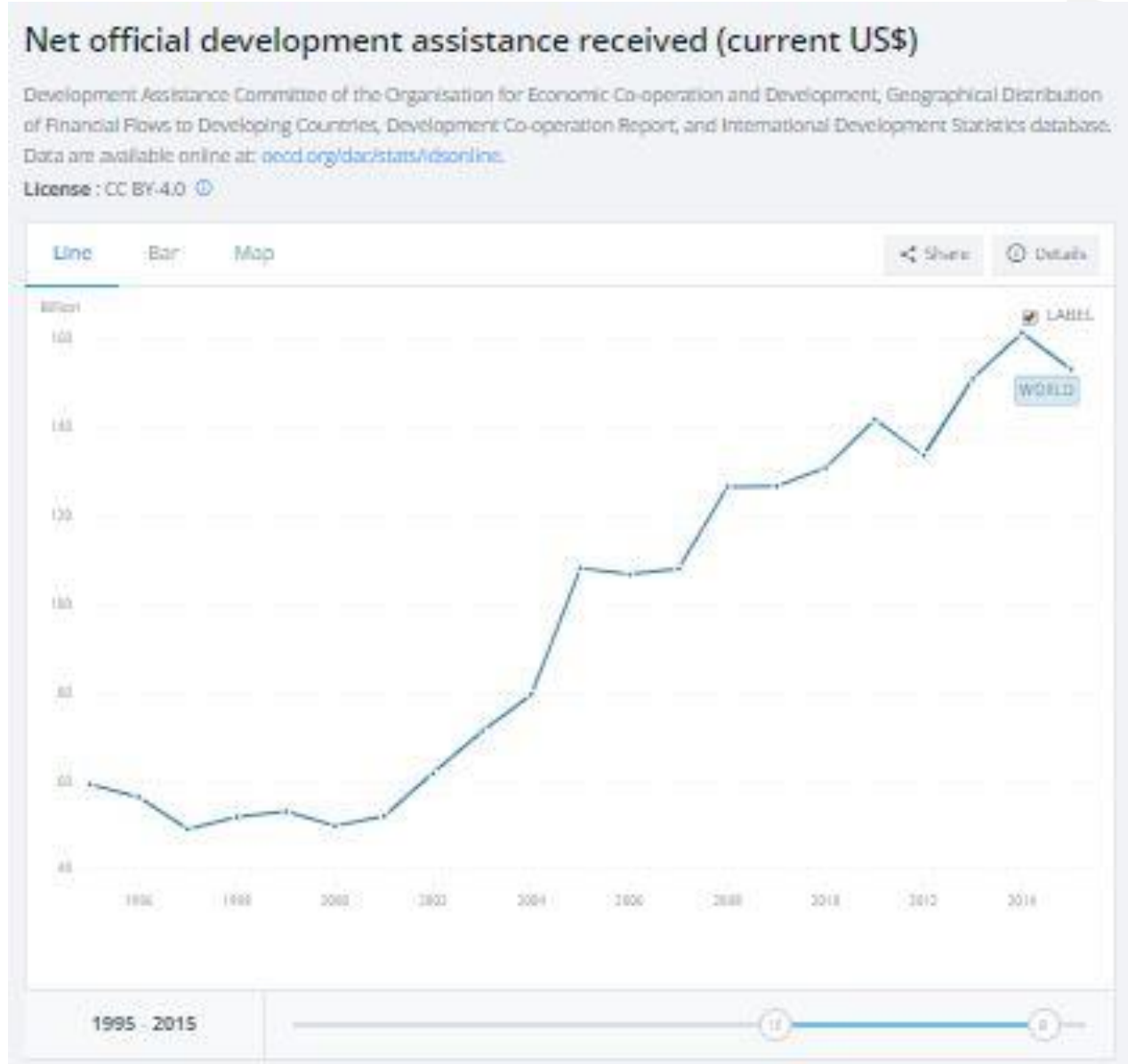
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# CO2

Carbon dioxide emissions are those stemming from the burning of fossil fuels and the manufacture of cement.

Measured as kilo tons ('000)



# World Population

Mid year estimates of all residents regardless of legal status or citizenship.





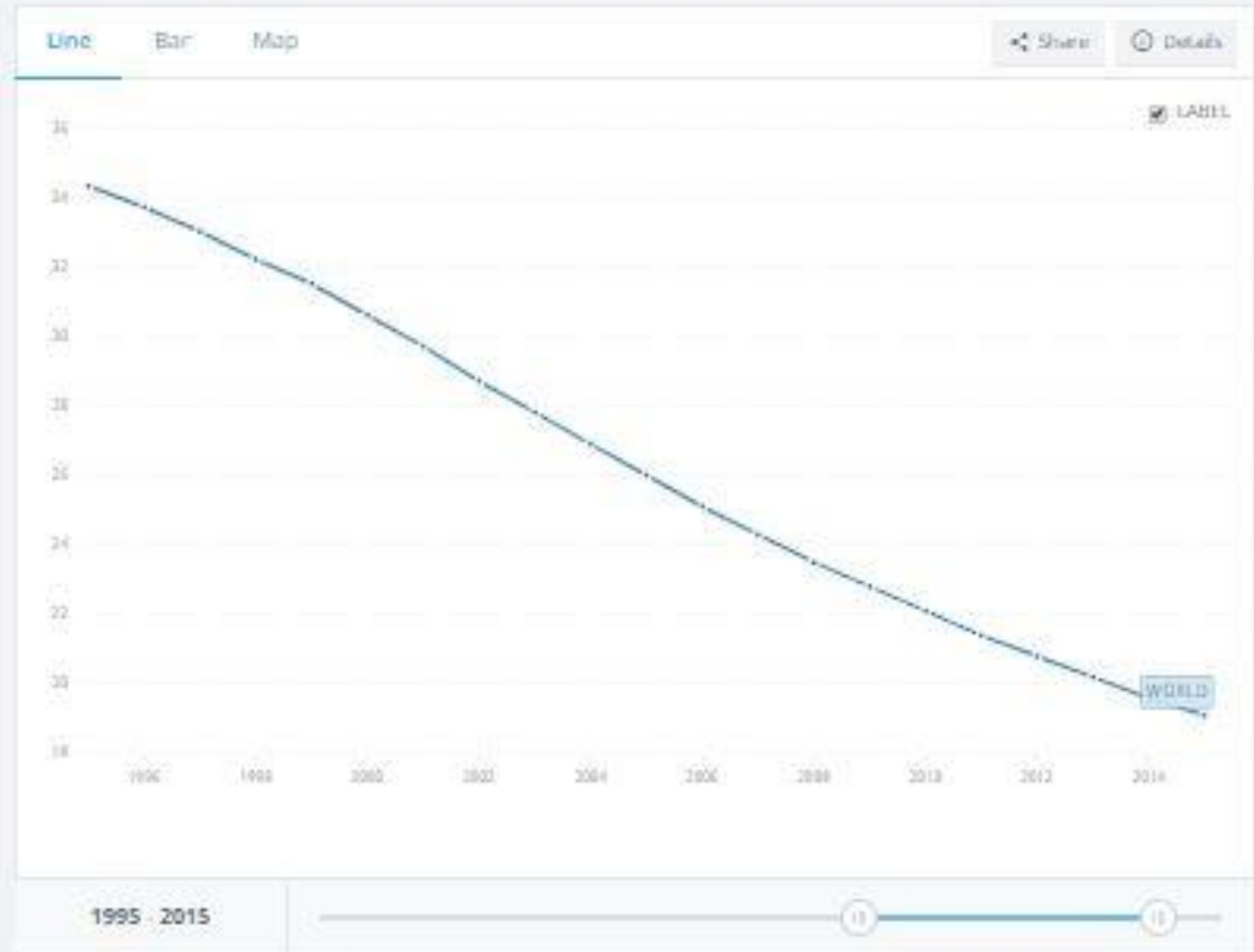
# Neonatal Mortality

The number of babies dying before reaching 28 days of age, per 1,000 live births in a given year

## Mortality rate, neonatal (per 1,000 live births)

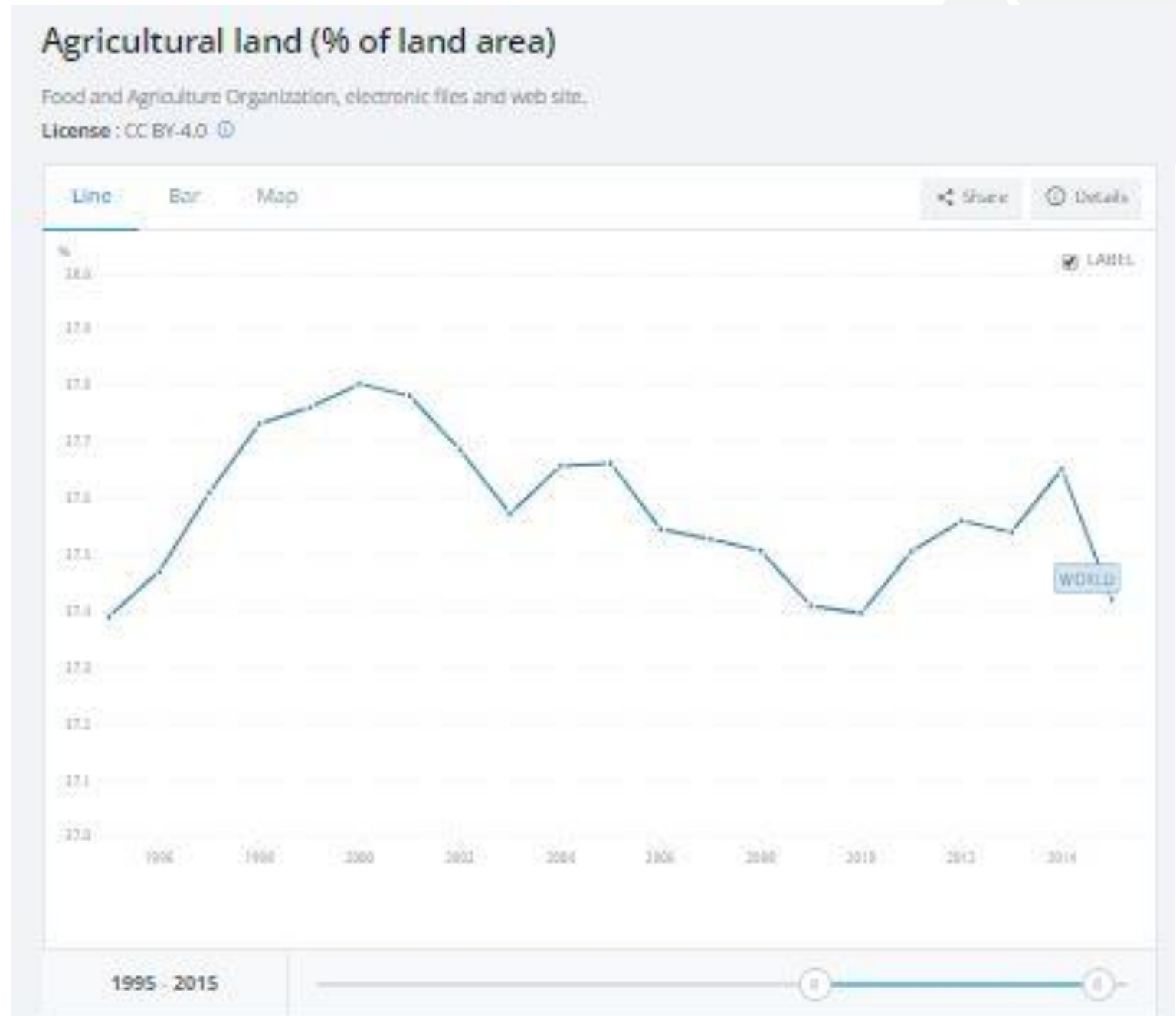
Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation ( UNICEF, WHO, World Bank, UN DESA Population Division ) at [childmortality.org](http://childmortality.org).

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# Agriculture

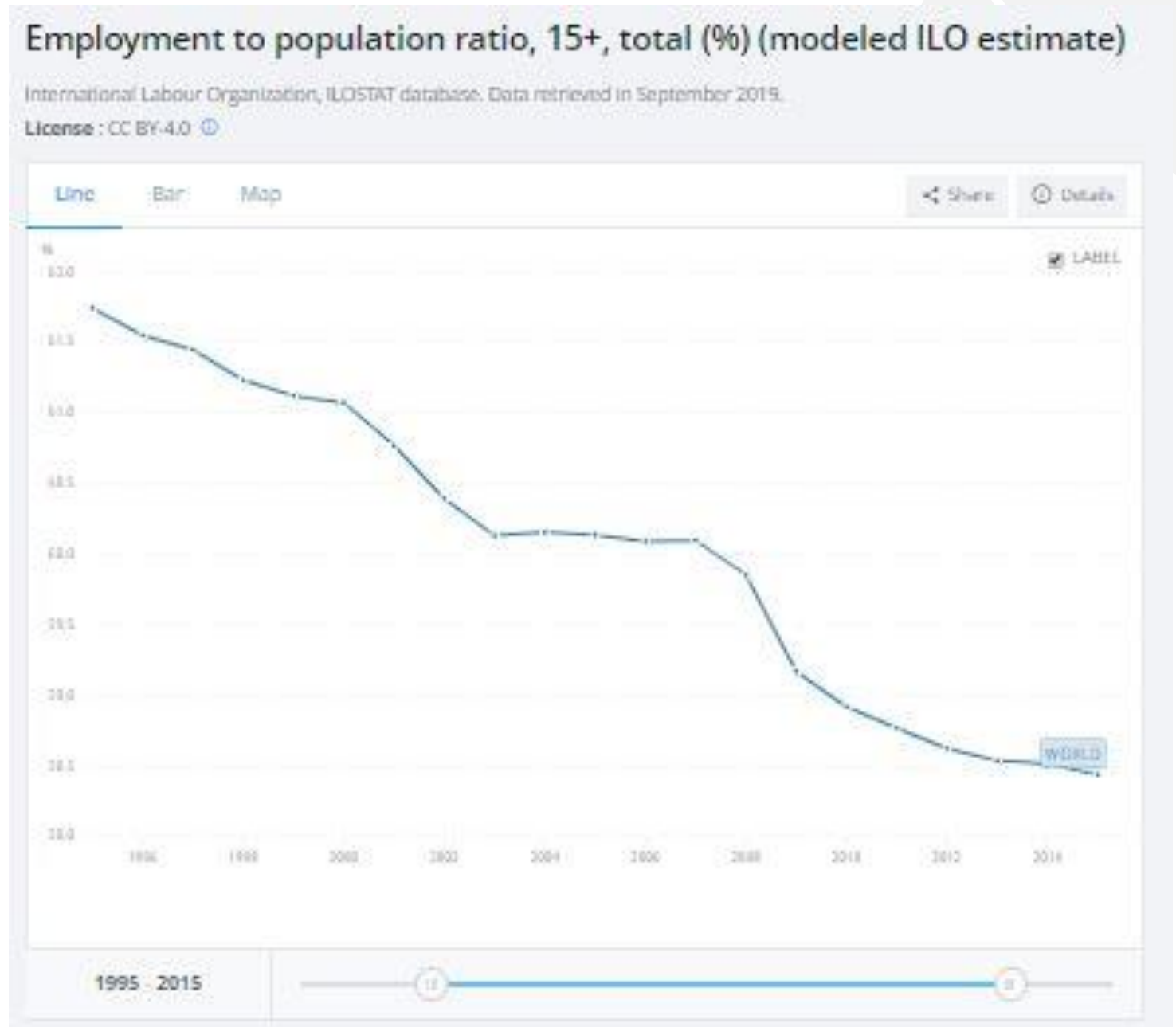
The share of land area that is arable, under permanent crops, and under permanent pastures.





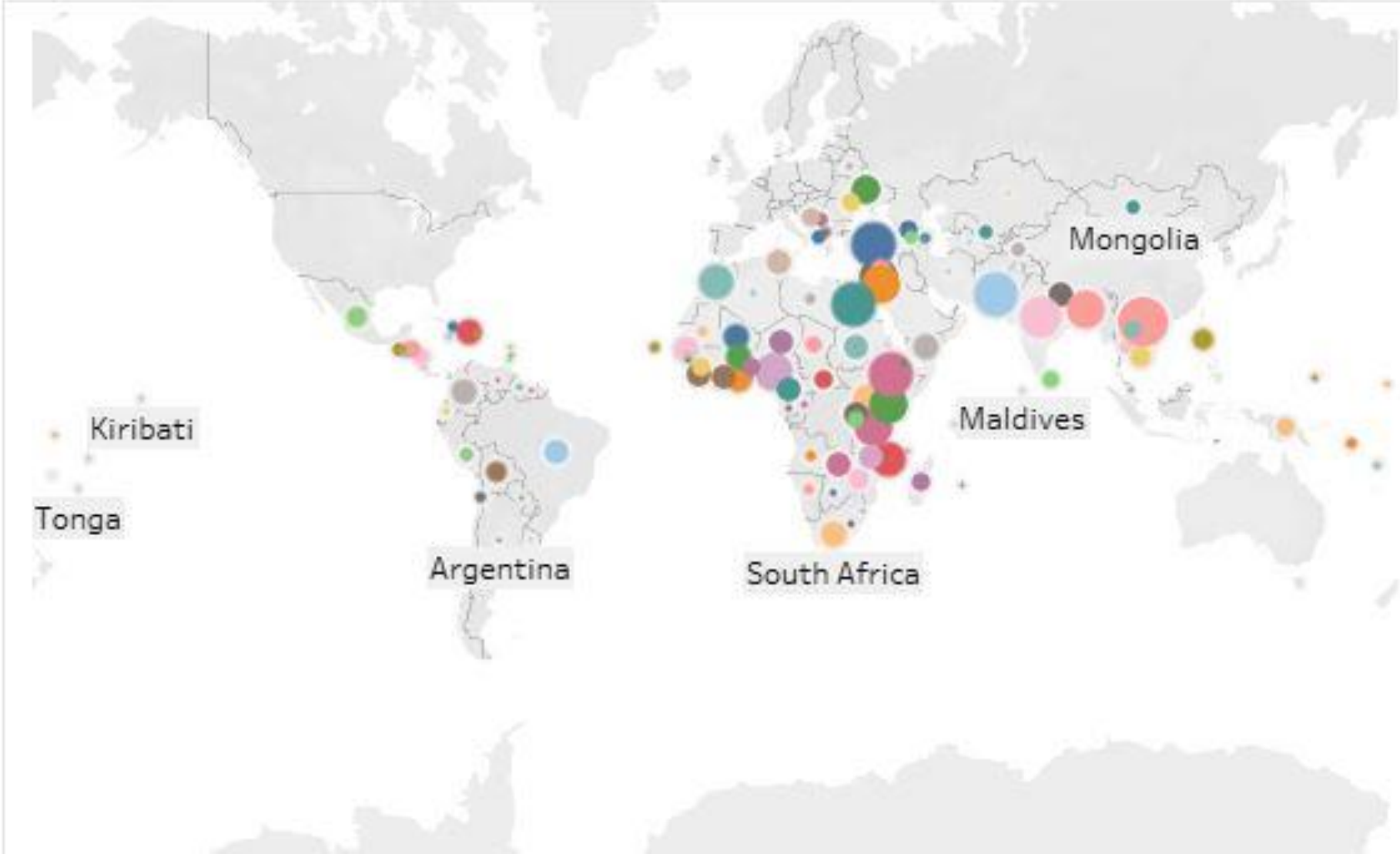
# Employment

Ratio of the number of people aged 15 years and older who are employed as a proportion to a country's Employment means workers were engaged in any activity to produce goods or provide services for pay or profit



# Countries Aided

Countries Aided in 2014



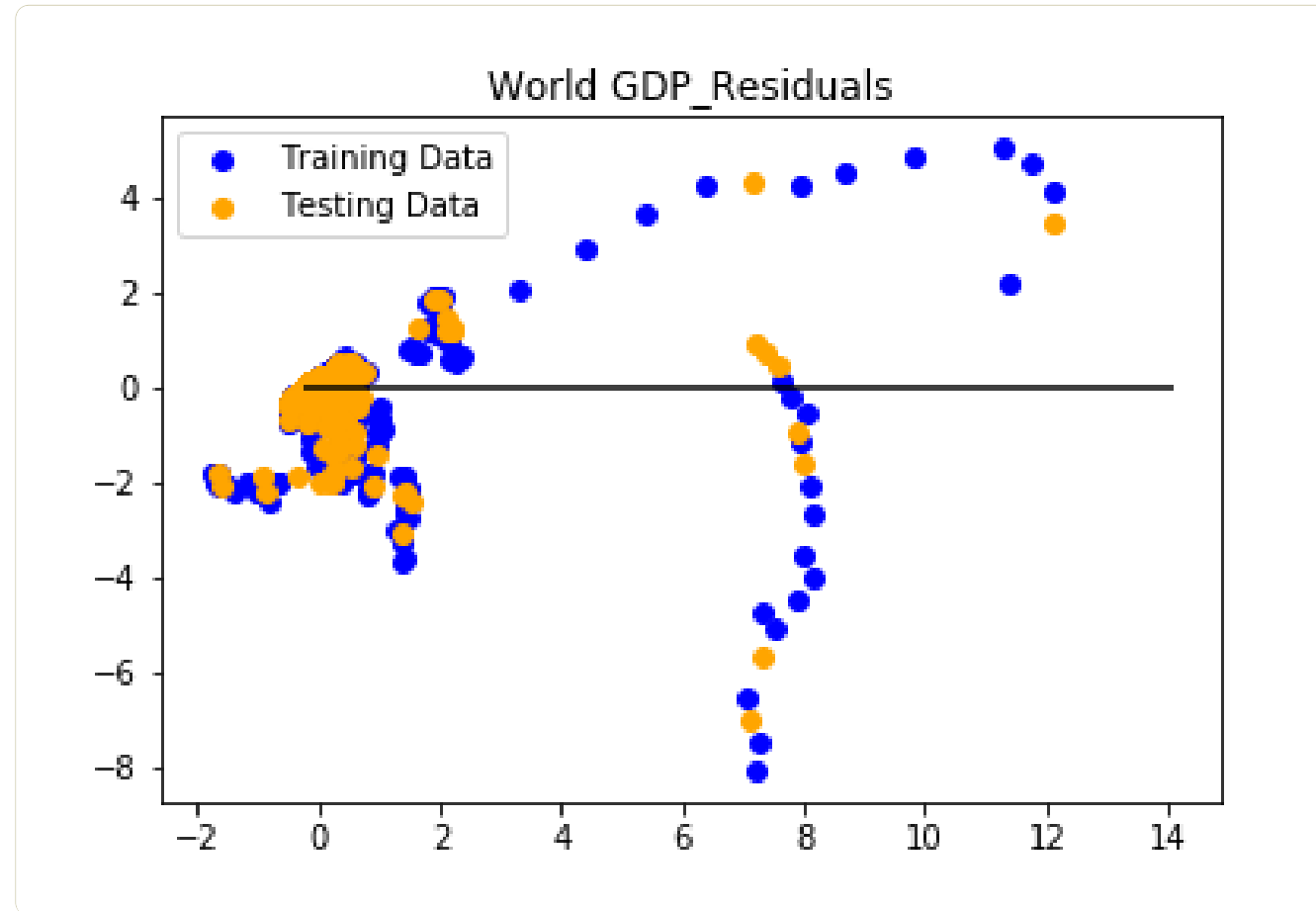


# Countries Gave Aid

Countries Not Aided in 2014



# Multiple Linear Regression Model



Train Score = 70% Test Score = 75%





# The Xs Weightings

1.072

**CO<sub>2</sub>**

.017

**Agriculture**

.017

**Aid**





## Negative Weights

-0.001

**Employment**

-0.046

**Neonatal  
Mortality**

-0.395

**Population**



# Regression Results

Testing



**$R^2 = 75\%$**

No Aid  
Countries



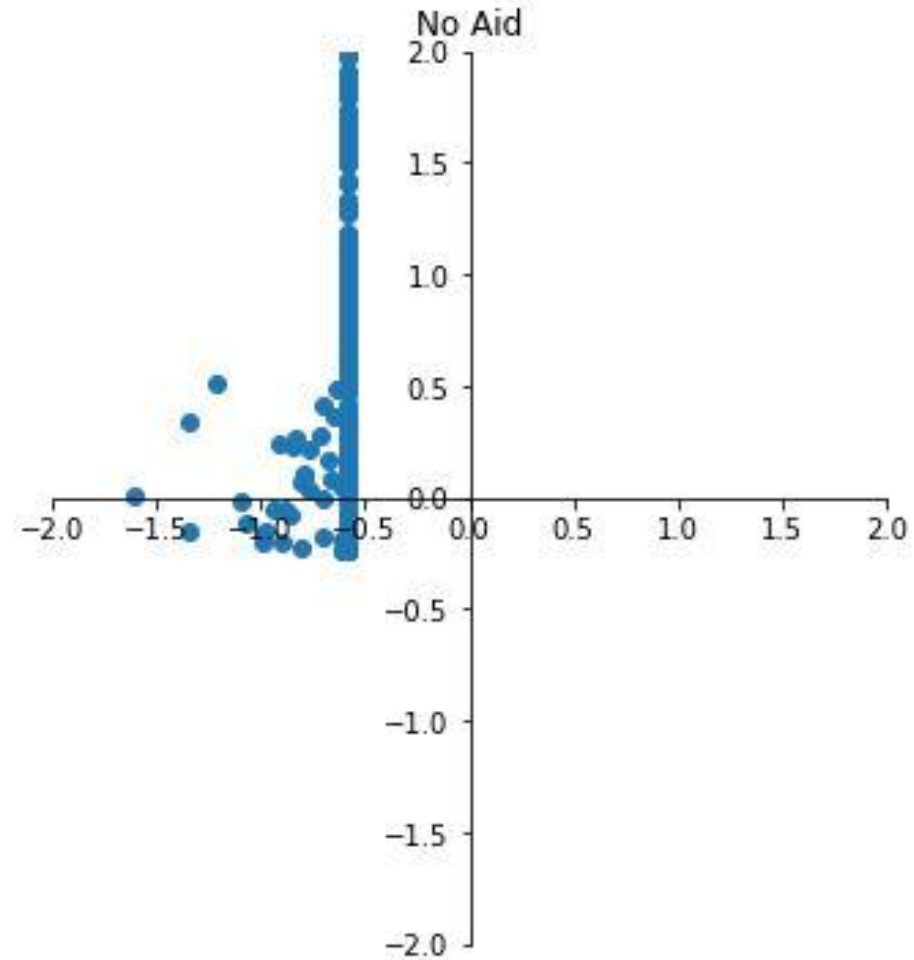
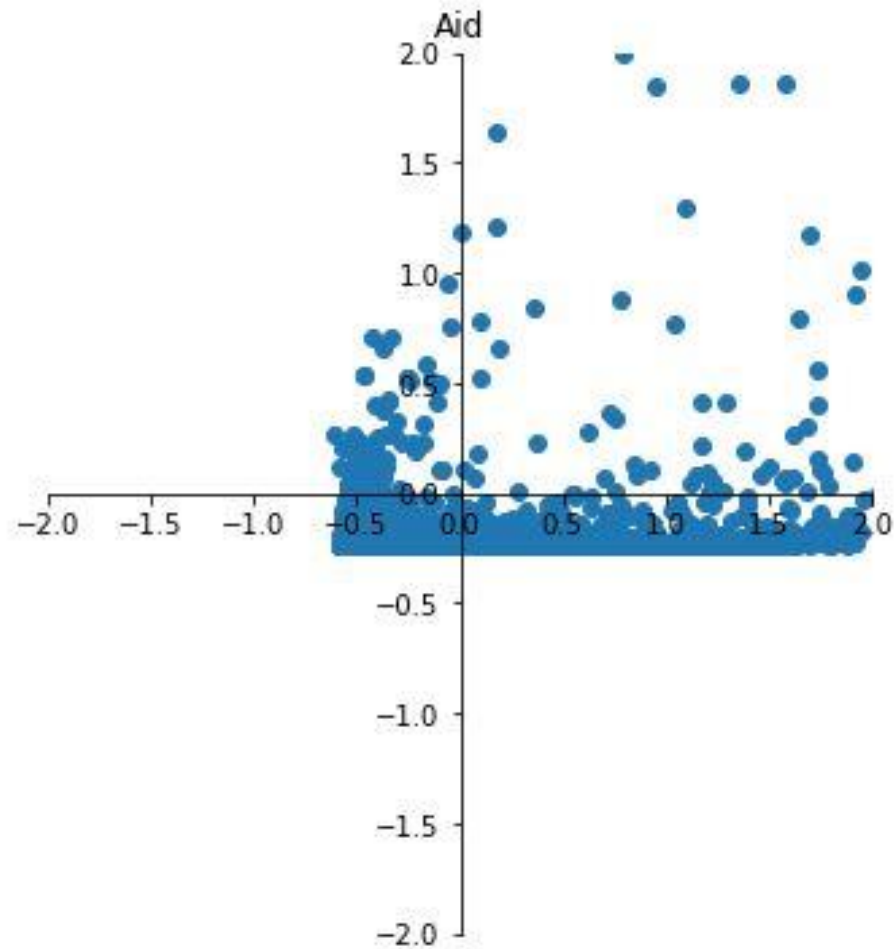
**$R^2 = 77\%$**

Aided  
Countries



**$R = -95\%$**

# Do Residuals Explain a Difference Between Countries that got Aid and those that Didn't?



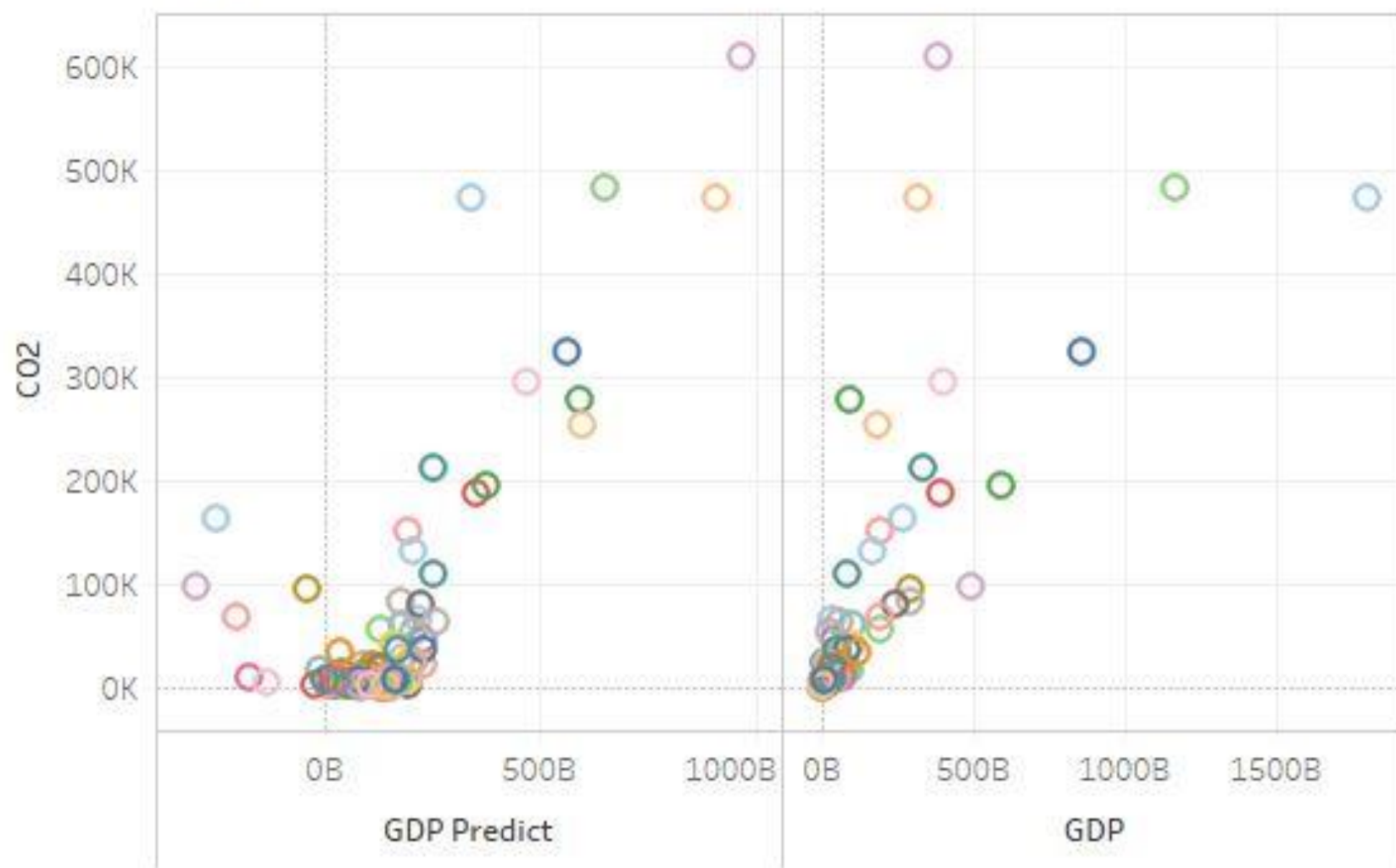
# Visualizations In Tableau





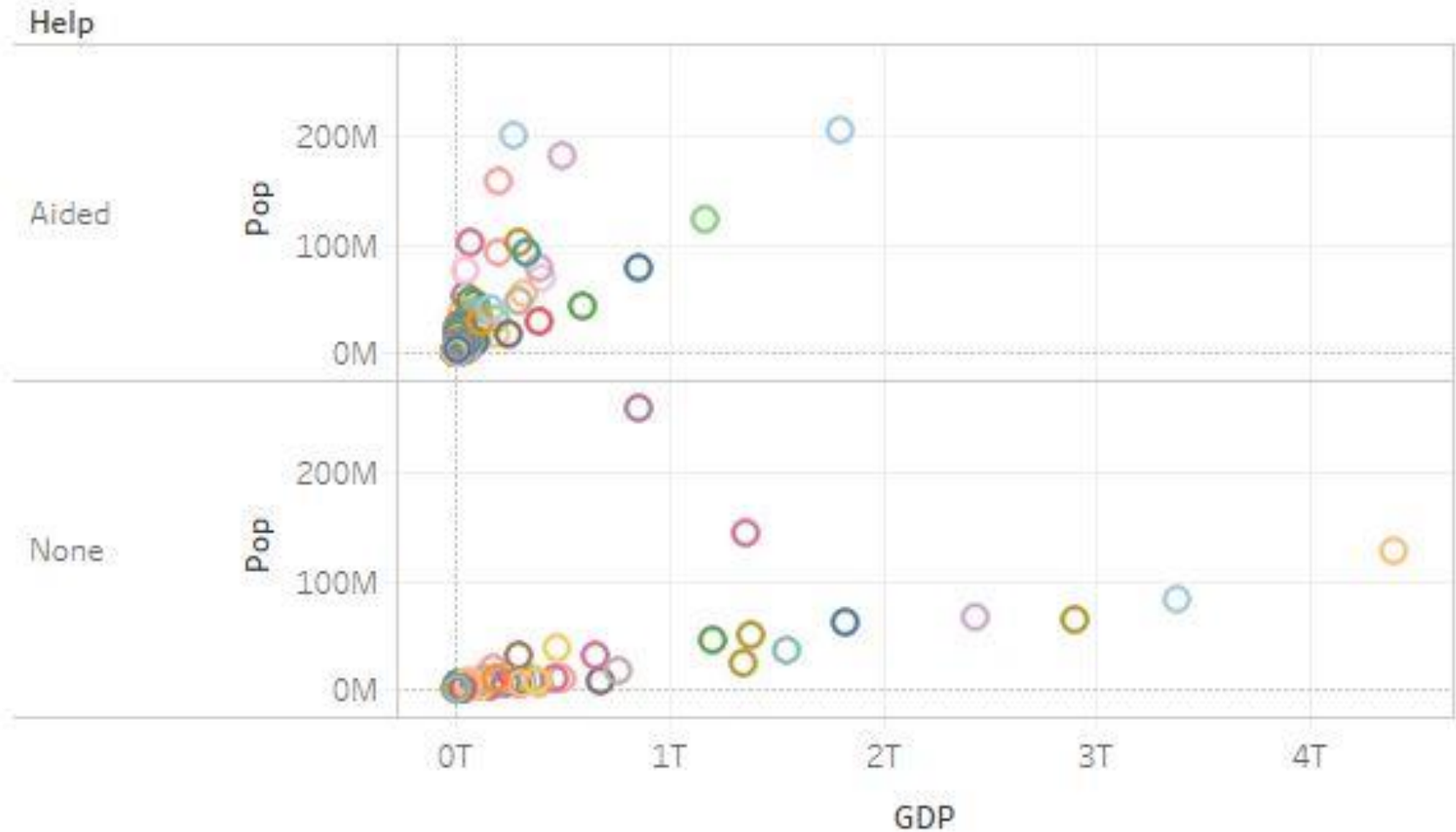
# 21 Years of Aid

Actual and Predicted GDP of Aided Countries vs CO2 (minus India) 2015



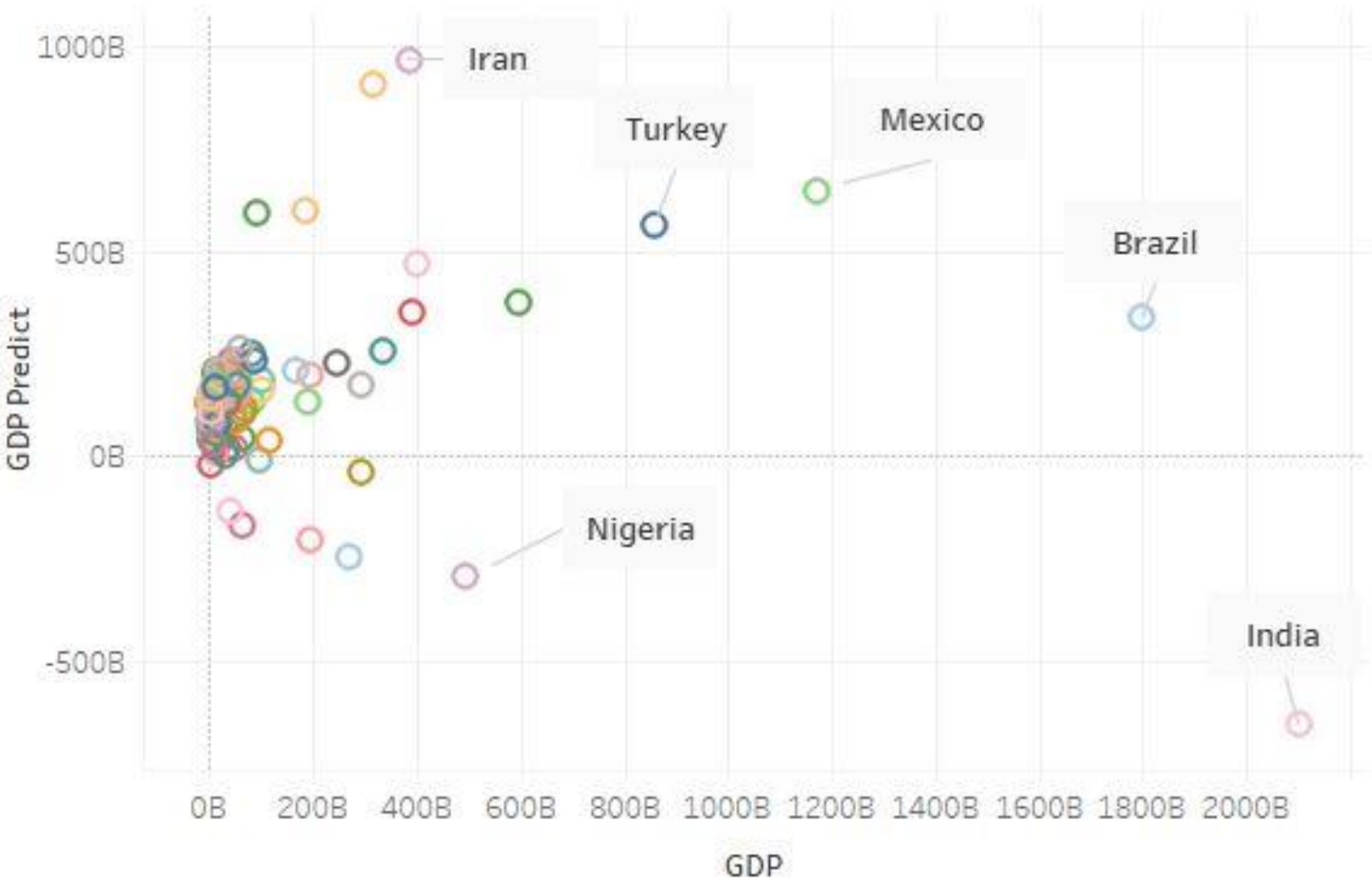
# 21 Years of Aid

Population vs GDP for both Aided and Non-Aided Countries for 2015



# Predictions vs Actual GDP for Aided Countries 2015

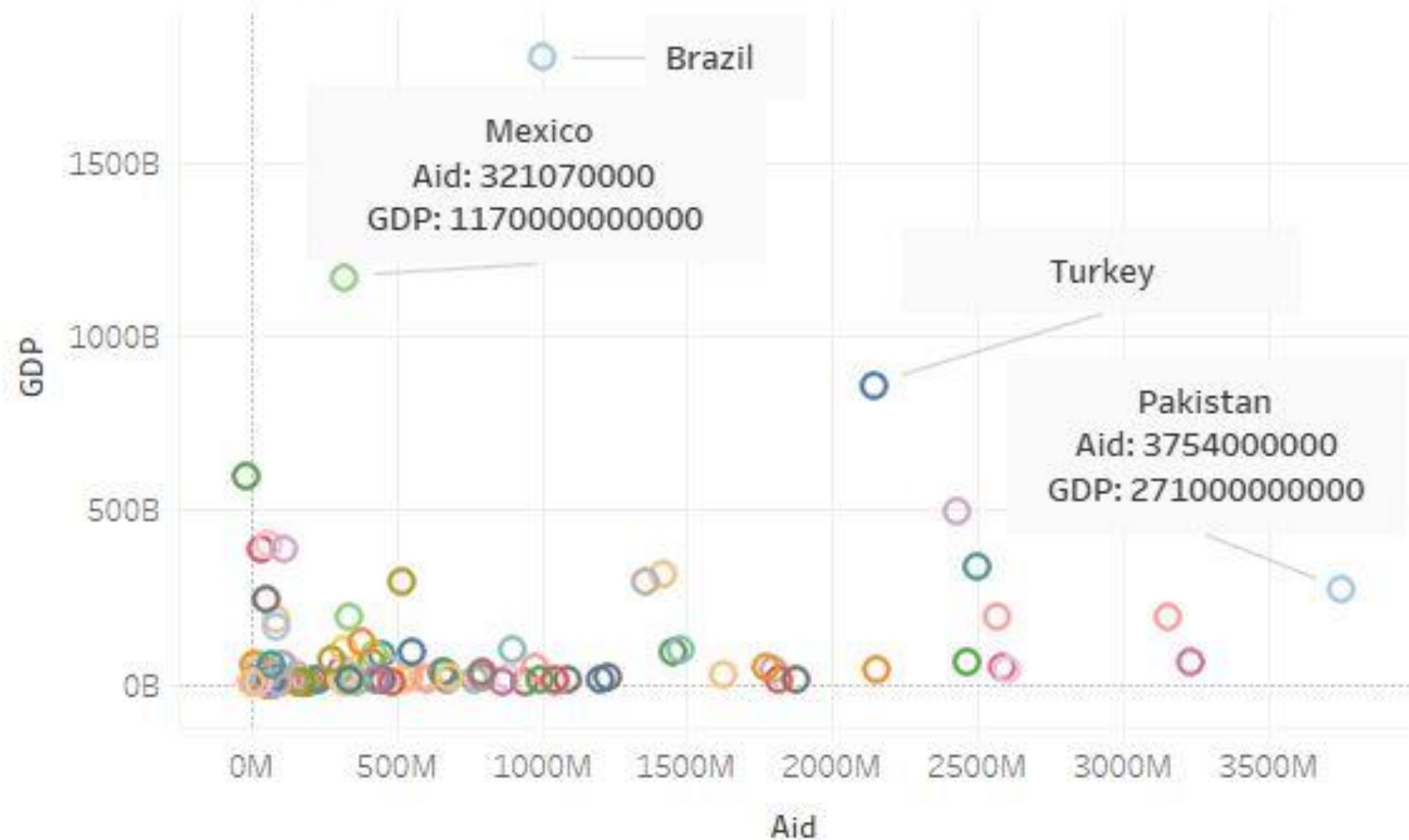
Predicted GDP for Aided Countries vs Actual GDP for 2015





# Comparing GDP to Aid in its 21st year

Aid vs GDP by Country that Received Aid (minus China, India) for 2015



# Summary

## Multiple Linear Regression Model

- Using 7 Xs, a model is trained and tested to predict GDP of countries that receive foreign aid

## Predictive Value of the X Values

- The model was a poor fit for predicting GDP of aided countries
- Only carbon dioxide emissions had relevance in the model

## Takeway

- Foreign Aid is hard. If there were easy to predict futures from poverty would have been solved
- Quantum of foreign aid might be too small



An aerial photograph of a coastal area. On the left, there is a parking lot with several cars and a few small buildings. A path leads from the parking lot towards a sandy beach. The beach is bordered by a line of trees and shrubs. To the right of the beach, there is a large pile of rocks and a rocky shoreline. The water is a clear, light blue-green color. A dark rectangular box with the text "Thank You" is overlaid on the center of the image.

# Thank You