

# Mosaico de México en GEE

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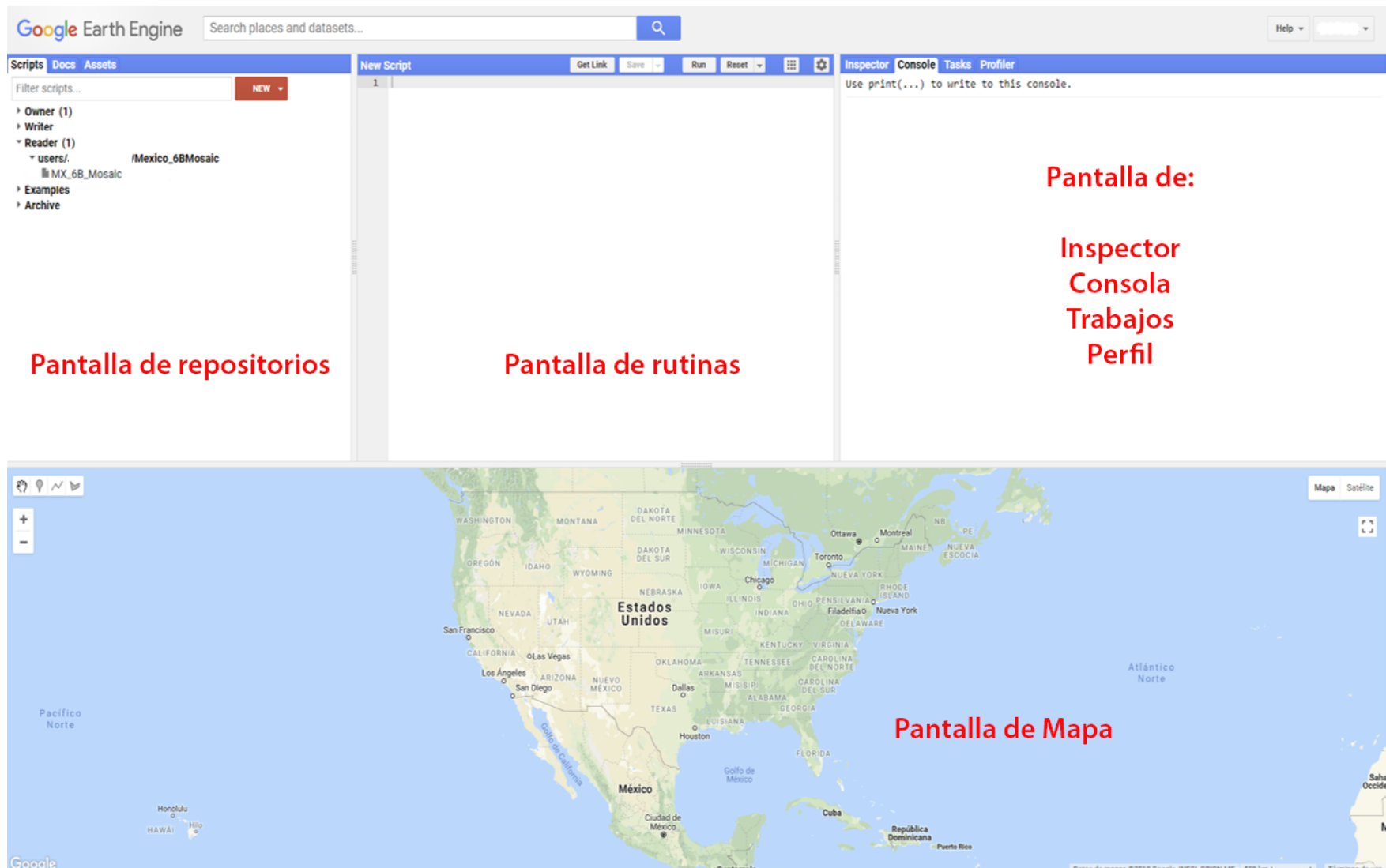
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# Tutorial uso rutina GEE para hacer mosaicos

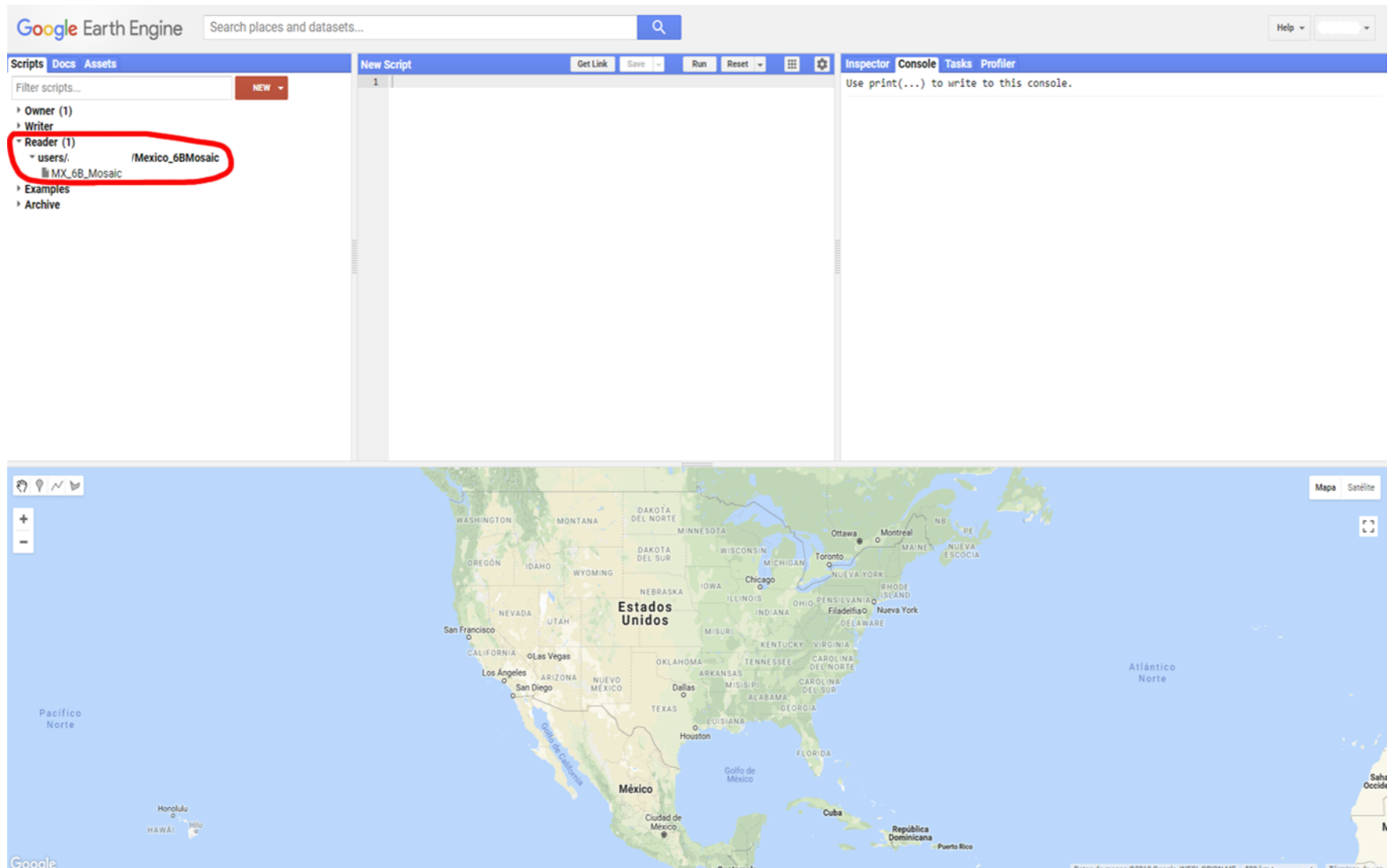
## Pantalla de inicio

Elementos básicos son: - Pantalla de rutinas - Pantalla de repositorios - Inspector, Consola, Trabajos - Mapa



## Abrir el código

Dentro de la pantalla de repositorios irse a la sección “Reader” y seleccionar MX\_6B\_Mosaic. Dar click y debería aparecer lo siguiente:



## Correr la rutina

Irse al ícono de polígono.

The screenshot displays the Google Earth Engine interface. At the top, there is a search bar and a 'Help' button. Below the search bar, the 'Scripts' tab is active, showing a list of scripts under the 'Owner (5)' section. The script 'MX\_6B\_Mosaic' is selected. The script editor shows the following code:

```
1 Imports (5 entries)
2
3 > var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
4 > var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
5 > var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
6 > var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
7 > var geometry: Polygon, 4 vertices
8
9 //-----
10 //Definición de constantes del usuario
11 //Carpeta corresponde al nombre de la carpeta en tu google drive
12 //donde va a guardar la imagen
13 var carpeta = 'MosaicoMx',
14 //Definir el nombre con el que se va a guardar la imagen
15 nombreImag = 'MosaicoLandsat',
16 //Polygon define el área de interés
17 polygon = areaInteres,
18 //Máxima de cobertura de nubes sobre superficie terrestre deseada
19 maxCCL = 70,
20 //Fecha de interés
21 //Año inicial
22 y1 = 2015,
23 //Mes-día inicial
24 m1 = '-01-01',
25 //Año final
26 y2 = 2016,
27 //Mes día final,
```

The map shows Mexico and surrounding regions. A green polygon is drawn over the southern part of Mexico, representing the area of interest. The 'Geometry Imports' button is circled in red. The map includes labels for various states and cities, and a scale bar at the bottom right.



Aparece el siguiente menú:

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the 'Scripts' tab is active, showing a script named 'MX\_6B\_Mosaic'. The script editor contains the following code:

```
Imports (5 entries)
var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
var geometry: Polygon, 4 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
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10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
19 //Mes día final,
```

The right side of the interface shows the 'Inspector', 'Console', and 'Tasks' tabs. The 'Console' tab is active, displaying the instruction: "Use print(...) to write to this console."

At the bottom, a map of Central America and the Gulf of Mexico is shown. A green polygon is overlaid on the map, covering a portion of Mexico and Guatemala. The 'Geometry Imports' panel on the left shows the polygon layer is checked and named 'geometry (1 poly)'. The map includes labels for various countries and cities, and a scale bar at the bottom right indicates 500 km.

Dar click en new layer.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic'. The script editor contains the following code:

```
1 //-----  
2 //Definición de constantes del usuario  
3 //Carpeta corresponde al nombre de la carpeta en tu google drive  
4 //donde va a guardar la imagen  
5 var carpeta = 'MosaicoMx',  
6 //Definir el nombre con el que se va a guardar la imagen  
7   nombreImag = 'MosaicoLandsat',  
8 //Polygon define el área de interés  
9   polygon = areaInteres,  
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada  
11   maxCCL = 70,  
12 //Fecha de interés  
13 //Año inicial  
14   y1 = 2015,  
15 //Mes-día inicial  
16   m1 = '-01-01',  
17 //Año final  
18   y2 = 2016,  
19 //Mes día final,
```

The console on the right shows the instruction: "Use print(...) to write to this console." Below the script editor, the map shows a green polygon layer over a region in Mexico. The 'Geometry Imports' panel on the left shows a list with 'geometry (1 poly)' and a '+ new layer' button circled in red. The map includes various geographical labels such as 'Los Angeles', 'San Diego', 'Dallas', 'Houston', 'Ciudad de México', 'Guatemala', 'Honduras', 'Nicaragua', 'Cuba', 'República Dominicana', and 'Puerto Rico'. The bottom of the map shows a scale bar for 500 km and a copyright notice for 2018 Google.

y aparece geometría nueva (p.ej. 2).

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the 'Scripts' tab is active, showing a script named 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometry: Polygon, 4 vertices
  var geometry2: MultiPoint, 0 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = areaInteres,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The map view shows a satellite image of Mexico and surrounding regions. A green polygon is drawn over a portion of Mexico. The 'Geometry Imports' panel on the left shows two layers: 'geometry (1 poly)' and 'geometry2'. The 'Polygon drawing' toolbar is visible above the map. The map includes labels for various states and cities in Mexico and Central America, as well as the Gulf of Mexico and the Caribbean Sea.

Apagar la capa de arriba (flechita de la izquierda).

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometry: Polygon, 4 vertices
  var geometry2: MultiPoint, 0 vertices

//
//Definición de constantes del usuario
//Carpeta corresponde al nombre de la carpeta en tu google drive
//donde va a guardar la imagen
var carpeta = 'MosaicoMx',
//Definir el nombre con el que se va a guardar la imagen
nombreImag = 'MosaicoLandsat',
//Polygon define el área de interés
polygon = areaInteres,
//Máxima de cobertura de nubes sobre superficie terrestre deseada
maxCCL = 70,
//Fecha de interés
//Año inicial
y1 = 2015,
//Mes-día inicial
m1 = '-01-01',
//Año final
y2 = 2016,
```

The left sidebar shows a tree view with 'Owner (5)' and 'Writer (1)'. The 'Writer (1)' section includes 'Reader', 'Examples', and 'Archive (1)'. The map view at the bottom shows a satellite view of Mexico and Central America, with a green polygon drawn over the Yucatán Peninsula. The 'Geometry Imports' panel on the left shows two layers: 'geometry (1 poly)' and 'geometry2'. The map includes a scale bar (500 km) and a 'Condiciones del servicio' link.

Google Earth Engine

Search places and datasets...

Help

Scripts Docs Assets

Filter scripts...  NEW

Owner (5)

- users/ /Mexico\_6B...
  - MX\_6B\_Mosaic
- Writer (1)
- Reader
- Examples
- Archive (1)

MX\_6B\_Mosaic \*

Get Link Save Run Reset

Inspector Console Tasks

Use print(...) to write to this console.

```

Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometry: Polygon, 4 vertices
  var geometry2: MultiPoint, 0 vertices

1 //-----
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
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5 var carpeta = 'MosaicoMx',
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7 nombreImag = 'MosaicoLandsat',
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9 polygon = areaInteres,
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11 maxCCL = 70,
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13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,

```

Geometry Imports

- geometry (1 poly)
- geometry2
- + new layer

Polygon drawing. Exit

Mapa Satélite

Datos del mapa ©2018 Google, INEGI, ORION-ME 500 km Condiciones del servicio

Ir a la pantalla del mapa.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script editor for a file named 'MX\_6B\_Mosaic'. The script contains several lines of JavaScript code for defining variables and a polygon. The code is as follows:

```
Imports (6 entries)
var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
var geometry: Polygon, 4 vertices
var geometry2: MultiPoint, 0 vertices

1 //-----
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = areaInteres,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The right side of the interface shows the 'Inspector' and 'Console' tabs. The 'Console' tab is active, displaying the instruction: 'Use print(...) to write to this console.' Below the script editor, the map view shows a satellite image of North America. A yellow polygon is drawn over the state of Texas. The map includes labels for various states and countries, such as 'México', 'Guatemala', 'Honduras', 'Nicaragua', 'Cuba', 'República Dominicana', and 'Puerto Rico'. The map also shows the Gulf of Mexico and the Caribbean Sea. The Google logo is visible in the bottom left corner of the map area.

Dar click sobre el área de interés, aparece un punto blanco.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and navigation options. The left sidebar shows a file tree with a script named 'MX\_6B\_Mosaic'. The main area is a code editor for this script, containing JavaScript code for defining variables and a polygon. The right sidebar shows the Inspector, Console, and Tasks panels. The bottom panel is a map of Mexico and surrounding regions, with a white dot placed on the southern coast of Mexico. The map includes a scale bar and map controls.

```
Imports (6 entries)
  > var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  > var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  > var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  > var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  > var geometry: Polygon, 4 vertices
  > var geometry2: MultiPoint, 0 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
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7 nombreImag = 'MosaicoLandsat',
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10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```



Mover el cursos para delimitar el área de interés.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
  > var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  > var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  > var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  > var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  > var geometry: Polygon, 4 vertices
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11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The left sidebar shows the 'Assets' panel with a tree view containing 'Owner (5)', 'users/' (with sub-item '/Mexico\_6B...'), and 'Writer (1)'. Below the script editor, the 'Inspector' and 'Console' tabs are visible. The main map area shows a satellite view of Mexico and surrounding regions, with a yellow polygon drawn over the Yucatán Peninsula. The map interface includes a toolbar with a 'geometry2' layer selected, a 'Polygon drawing' tool, and a scale bar at the bottom right.



Dar click en otro vértice.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the interface is divided into three main sections: Scripts, Code Editor, and Inspector/Console.

- Scripts Panel:** Shows a tree view of the user's workspace. Under 'Owner (5)', there is a folder 'users/' containing a script 'MX\_6B\_Mosaic'. Below this, there are sections for 'Writer (1)', 'Reader', 'Examples', and 'Archive (1)'.
- Code Editor:** The script 'MX\_6B\_Mosaic' is open. It contains the following code:

```
Imports (6 entries)
  > var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  > var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  > var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  > var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  > var geometry: Polygon, 4 vertices
  > var geometry2: MultiPoint, 0 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = areaInteres,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```
- Inspector/Console Panel:** Shows the message: "Use print(...) to write to this console."
- Map View:** Displays a map of Mexico and surrounding regions. A yellow polygon is drawn over the southern part of Mexico. The map includes labels for various states and cities, and a scale bar at the bottom right.

Continuar con el mismo procedimiento colocando vértices.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
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var geometry2: MultiPoint, 0 vertices

1 //
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9 polygon = areaInteres,
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11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The left sidebar shows a tree view of assets under the user 'Owner (5)', with a folder named 'users/' containing a sub-folder '/Mexico\_6B...' and a script 'MX\_6B\_Mosaic'. Below this, there are sections for 'Writer (1)', 'Reader', 'Examples', and 'Archive (1)'. The right sidebar has tabs for 'Inspector', 'Console', and 'Tasks', with the 'Console' tab selected and a message: 'Use print(...) to write to this console.'

The bottom part of the interface shows a map of Central America and the Gulf of Mexico region. A yellow polygon is drawn on the map, and a toolbar above it shows 'geometry2' selected. The map includes labels for various countries and cities, and a scale bar at the bottom right indicates 500 km.

Continuar colocando vertices.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and navigation tabs for 'Scripts', 'Docs', and 'Assets'. The 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script code is as follows:

```
1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = areaInteres,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The script imports several Landsat datasets (l8sr, l7sr, l5sr, l4sr) and defines a polygon geometry. The map below shows Mexico with a yellow polygon drawing tool active. The map includes labels for various states and cities, and a scale bar at the bottom right.

Hasta cerrar la figura y que aparezca el relleno con color.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
var geometry: Polygon, 4 vertices
var geometry2: Polygon, 5 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = areaInteres,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
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13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The left sidebar shows a folder structure with 'MX\_6B\_Mosaic' selected. The right sidebar contains the 'Inspector', 'Console', and 'Tasks' panels. The 'Console' panel shows the instruction: 'Use print(...) to write to this console.' The bottom panel shows a map of Mexico and Central America with a yellow polygon drawn over the Yucatán Peninsula. The map includes labels for various states and countries, and a scale bar at the bottom right.

Notar que en la parte superior de la pantalla de rutinas, aparece la variable geometry2. Está localizada en la parte inferior de la pantalla de definición de variables.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the interface is divided into several panels:

- Scripts Panel:** Shows a list of scripts under the 'Owner (5)' section. The script 'MX\_6B\_Mosaic' is selected.
- Script Editor:** Displays the code for the 'MX\_6B\_Mosaic' script. The code includes imports for Landsat data and a polygon geometry. The variable 'geometry2' is defined as a polygon with 5 vertices. The script is numbered from 1 to 18.
- Inspector Panel:** Shows the 'Console' tab with the instruction: 'Use print(...) to write to this console.'
- Map Panel:** Shows a map of Mexico and surrounding regions. A yellow polygon is drawn on the map, corresponding to the 'geometry2' variable. The map includes labels for various states and cities in Mexico and Central America.

```
Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometry: Polygon, 4 vertices
  var geometry2: Polygon, 5 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = areaInteres,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

Dar click en el nombre (en morado) y da la opción de renombrar la variable a como uno quiera. En este caso dejaré el nombre igual, como geometry2.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometryv: Polygon, 4 vertices
  var geometry2: Polygon, 5 vertices

//
//Definición de constantes del usuario
//Carpeta corresponde al nombre de la carpeta en tu google drive
//donde va a guardar la imagen
var carpeta = 'MosaicoMx',
//Definir el nombre con el que se va a guardar la imagen
nombreImag = 'MosaicoLandsat',
//Polygon define el área de interés
polygon = areaInteres,
//Máxima de cobertura de nubes sobre superficie terrestre deseada
maxCCL = 70,
//Fecha de interés
//Año inicial
y1 = 2015,
//Mes-día inicial
m1 = '-01-01',
//Año final
y2 = 2016,
```

The left sidebar shows a tree view of the user's workspace, including a folder named 'MX\_6B\_Mosaic'. The right sidebar contains the 'Inspector', 'Console', and 'Tasks' panels. The main map area shows a satellite view of Mexico and Central America, with a yellow polygon drawn over a region in Guatemala. The map interface includes a toolbar with a 'geometry2 (1 poly)' layer selected, a 'Polygon drawing' tool, and a scale bar indicating 500 km.

A continuación, en la parte de la rutina se busca la variable `geometry = areaInteres`.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
  > var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  > var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  > var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  > var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  > var geometry: Polygon, 4 vertices
  > var geometry2: Polygon, 5 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = areaInteres,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The map below the script shows a yellow polygon drawn over a region in Mexico. The map interface includes a toolbar with a 'geometry2 (1 poly)' button, a 'Polygon drawing.' tool, and a 'Mapa' button. The map shows Mexico, Central America, and the Caribbean region.



Se cambia areaInteres por el nombre del polígono que dibujó el usuario, es decir, geometry 2.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometry: Polygon, 4 vertices
  var geometry2: Polygon, 5 vertices

1 //-----
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = geometry2,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The left sidebar shows a tree view with 'Owner (5)' and 'users/' containing a folder '/Mexico\_6B...' with a sub-item 'MX\_6B\_Mosaic'. Below this are 'Writer (1)', 'Reader', 'Examples', and 'Archive (1)'. The right sidebar has tabs for 'Inspector', 'Console', and 'Tasks', with the 'Console' tab selected and the text 'Use print(...) to write to this console.' The bottom panel shows a map of Mexico and Central America with a yellow polygon drawn over the Yucatán Peninsula. The map toolbar includes a 'geometry2 (1 poly)' selection tool and a 'Polygon drawing' button. The map shows labels for various states in Mexico and Central American countries like Guatemala, Honduras, and Nicaragua. The Google logo and map data information are visible at the bottom left and right of the map area.



De esta manera queda así. A continuación le damos click en Run.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script code is as follows:

```
Imports (6 entries)
  > var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  > var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  > var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  > var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  > var geometry: Polygon, 4 vertices
  > var geometry2: Polygon, 5 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = geometry2,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The 'Run' button in the script editor is circled in red. To the right of the script editor is the 'Inspector' and 'Console' tabs. The 'Console' tab is active, showing the instruction: 'Use print(...) to write to this console.' Below the script editor is a map of Mexico and Central America. A yellow polygon is drawn on the map, covering a portion of Mexico. The map interface includes a toolbar with various tools, a scale bar (500 km), and a 'Condiciones del servicio' link.

Durante el proceso en la pantalla del mapa en la esquina superior derecha se verán barritas. cargando.

The screenshot displays the Google Earth Engine interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script code is as follows:

```
Imports (6 entries)
var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
var geometry: Polygon, 4 vertices
var geometry2: Polygon, 5 vertices

//-----
//Definición de constantes del usuario
//Carpeta corresponde al nombre de la carpeta en tu google drive
//donde va a guardar la imagen
var carpeta = 'MosaicoMx',
//Definir el nombre con el que se va a guardar la imagen
nombreImag = 'MosaicoLandsat',
//Polygon define el área de interés
polygon = geometry2,
//Máxima de cobertura de nubes sobre superficie terrestre deseada
maxCCL = 70,
//Fecha de interés
//Año inicial
y1 = 2015,
//Mes-día inicial
m1 = '-01-01',
//Año final
y2 = 2016,
```

The map below the script shows a satellite view of Mexico and surrounding regions. A yellow polygon is highlighted in the southern part of Mexico, covering parts of Chiapas, Guatemala, and Honduras. The map includes various UI elements like 'Geometry Imports', 'Layers', 'Mapa', and 'Satélite' buttons. The Google logo and copyright information are visible at the bottom left.

Una vez cargadas las barras grises aparece la imagen dentro del área de interés.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script code is as follows:

```
Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometry: Polygon, 4 vertices
  var geometry2: Polygon, 5 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = geometry2,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The left sidebar shows a tree view with 'Owner (5)', 'users/' containing '/Mexico\_6B...' and 'MX\_6B\_Mosaic', 'Writer (1)', 'Reader', 'Examples', and 'Archive (1)'. The right sidebar has 'Inspector', 'Console', and 'Tasks' tabs. The 'Console' tab is active, displaying the instruction: 'Use print(...) to write to this console.' The main map area shows a map of Mexico and surrounding regions, with a yellow polygon highlighting an area of interest in the southern part of Mexico. The map includes labels for various states and cities, and a scale bar at the bottom right.

Se hace zoom al área de interés con el scroll del mouse o utilizando los botones de + y - de la pantalla del mapa en la esquina superior izquierda.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this, the 'Scripts' tab is active, showing a script named 'MX\_6B\_Mosaic'. The script editor contains the following code:

```
Imports (6 entries)
var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
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var geometry: Polygon, 4 vertices
var geometry2: Polygon, 5 vertices

//-----
//Definición de constantes del usuario
//Carpeta corresponde al nombre de la carpeta en tu google drive
//donde va a guardar la imagen
var carpeta = 'MosaicoMx',
//Definir el nombre con el que se va a guardar la imagen
nombreImag = 'MosaicoLandsat',
//Polygon define el área de interés
polygon = geometry2,
//Máxima de cobertura de nubes sobre superficie terrestre deseada
maxCCL = 70,
//Fecha de interés
//Año inicial
y1 = 2015,
//Mes-día inicial
m1 = '-01-01',
//Año final
y2 = 2016,
```

The map below the script shows a view of Mexico and surrounding regions, including the Gulf of Mexico and the Atlantic Ocean. A yellow polygon is overlaid on the map, indicating the area of interest. The interface includes navigation controls like zoom in (+) and zoom out (-) buttons, and a 'Layers' panel on the right.

Google Earth Engine

Search places and datasets...

Help

Scripts Docs Assets

MX\_6B\_Mosaic \*

Get Link Save Run Reset

Inspector Console Tasks

Filter scripts... NEW

Owner (5)

- users/ /Mexico\_6B...
- MX\_6B\_Mosaic

Writer (1)

Reader

Examples

Archive (1)

```

Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometry: Polygon, 4 vertices
  var geometry2: Polygon, 5 vertices

1 //-----
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = geometry2,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,

```

Use print(...) to write to this console.

Geometry Imports

Layers Mapa Satélite

Google

Datos del mapa ©2018 Google, INEGI 50 km Condiciones del servicio Informar un error en el mapa



Le damos click en donde dice geometry imports.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and navigation options. The main area is divided into three panels: a left sidebar with a file browser, a central script editor, and a right sidebar with an inspector and console. The script editor shows a JavaScript script for a mosaic operation. The map view at the bottom shows a geographical area in Mexico and Central America, with two polygon layers overlaid: 'geometry (1 poly)' in green and 'geometry2 (1 poly)' in orange. A 'Geometry Imports' dialog box is open over the map, showing the selected layers.

**Google Earth Engine** Search places and datasets... Help

**Scripts** Docs Assets **MX\_6B\_Mosaic \*** Get Link Save Run Reset Inspector Console Tasks

Filter scripts... NEW

Owner (5)

- users/ /Mexico\_6B...
- MX\_6B\_Mosaic

Writer (1)

Reader

Examples

Archive (1)

```
Imports (6 entries)
var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
var geometry: Polygon, 4 vertices
var geometry2: Polygon, 5 vertices

//
//Definición de constantes del usuario
//Carpeta corresponde al nombre de la carpeta en tu google drive
//donde va a guardar la imagen
var carpeta = 'MosaicoMx',
//Definir el nombre con el que se va a guardar la imagen
nombreImag = 'MosaicoLandsat',
//Polygon define el área de interés
polygon = geometry2,
//Máxima de cobertura de nubes sobre superficie terrestre deseada
maxCCL = 70,
//Fecha de interés
//Año inicial
y1 = 2015,
//Mes-día inicial
m1 = '-01-01',
//Año final
y2 = 2016,
```

Use print(...) to write to this console.

**Geometry Imports**

- geometry (1 poly)
- geometry2 (1 poly)

+ new layer

Layers Mapa Satélite

Google

Datos del mapa ©2018 Google, INEGI 50 km Condiciones del servicio Informar un error en el mapa

Apagamos las capas que tengamos activadas (dar click en la felchita del lado izquierdo).

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' button. Below the search bar, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script editor contains the following code:

```
Imports (6 entries)
  var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
  var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
  var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
  var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
  var geometry: Polygon, 4 vertices
  var geometry2: Polygon, 5 vertices

1 //
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = geometry2,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
15 //Mes-día inicial
16 m1 = '-01-01',
17 //Año final
18 y2 = 2016,
```

The left sidebar shows a tree view with 'Owner (5)', 'users/' (expanded), and 'MX\_6B\_Mosaic'. Below that, there are sections for 'Writer (1)', 'Reader', 'Examples', and 'Archive (1)'. The right sidebar has 'Inspector', 'Console', and 'Tasks' tabs. The 'Console' tab is active, showing the instruction: 'Use print(...) to write to this console.'

The bottom portion of the image shows a map view of Central Mexico and Central America. A 'Geometry Imports' panel is open, showing two layers: 'geometry (1 poly)' (green) and 'geometry2 (1 poly)' (orange). The map shows a satellite view of the region, with a large green polygon overlaid on the terrain. The map includes labels for states like Oaxaca, Veracruz, and Chiapas, and cities like Tehuacán, Palenque, and Chetumal. A scale bar and map controls are visible at the bottom.

Podemos ver el mosaico.

The screenshot displays the Google Earth Engine interface. At the top, there is a search bar and navigation options. The left sidebar shows a project structure with a folder named 'MX\_6B\_Mosaic'. The main panel shows a JavaScript script for creating a mosaic of Landsat images. The script includes imports for Landsat 4, 5, 7, and 8 surface reflectance data, and defines a polygon geometry for the area of interest. The script also sets parameters for cloud cover, date range, and output format. The right sidebar shows the Inspector and Console panels. The bottom panel shows a map view of the region, with a 'Geometry Imports' panel on the left and a 'Layers' panel on the right. The map shows a mosaic of Landsat images over a region in Mexico, with labels for states like Puebla, Veracruz, Oaxaca, and Chiapas, and cities like Tehuacán, Oaxaca, and Palenque. A scale bar and map controls are visible at the bottom of the map view.

```
var l8sr: ImageCollection "USGS Landsat 8 Surface Reflectance Tier 1"
var l7sr: ImageCollection "USGS Landsat 7 Surface Reflectance Tier 1"
var l5sr: ImageCollection "USGS Landsat 5 Surface Reflectance Tier 1"
var l4sr: ImageCollection "USGS Landsat 4 Surface Reflectance Tier 1"
var geometry: Polygon, 4 vertices
var geometry2: Polygon, 5 vertices

//
//Definición de constantes del usuario
//Carpeta corresponde al nombre de la carpeta en tu google drive
//donde va a guardar la imagen
var carpeta = 'MosaicoMx',
//Definir el nombre con el que se va a guardar la imagen
nombreImag = 'MosaicoLandsat',
//Polygon define el área de interés
polygon = geometry2,
//Máxima de cobertura de nubes sobre superficie terrestre deseada
maxCCL = 70,
//Fecha de interés
//Año inicial
y1 = 2015,
//Mes-día inicial
m1 = '-01-01',
//Año final
y2 = 2016,
```



## Inspeccionar valores de pixeles

En la pantalla superior derecha podemos inspeccionar el valor de los pixeles en el mapa. Dar click en la pestaña Inspector.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the interface is divided into three main sections:

- Scripts:** On the left, there is a 'Filter scripts...' field and a 'NEW' button. Below this, a tree view shows the user's workspace, including a folder named 'users/' containing a sub-folder '/Mexico\_6BMosaic' with a script named 'MX\_6B\_Mosaic'.
- Script Editor:** The central pane shows the code for the 'MX\_6B\_Mosaic' script. It includes imports for Landsat data and a polygon geometry. The code is as follows:

```
1 //-----  
2 //Definición de constantes del usuario  
3 //Carpeta corresponde al nombre de la carpeta en tu google drive  
4 //donde va a guardar la imagen  
5 var carpeta = 'MosaicoMx',  
6 //Definir el nombre con el que se va a guardar la imagen  
7 nombreImag = 'MosaicoLandsat',  
8 //Polygon define el área de interés  
9 polygon = geometry,  
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada  
11 maxCCL = 70,  
12 //Fecha de interés  
13 //Año inicial  
14 y1 = 2015,  
15
```
- Inspector/Console:** On the right, the 'Inspector' tab is active (highlighted with a red circle). It contains the text 'Use print(...) to write to this console.' Below this, the map view is visible, showing a satellite image of a forested area with a red polygon overlaid. The map view includes a 'Layers' panel, 'Mapa' and 'Satélite' buttons, and a scale bar at the bottom.

Se debería ver así:

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar with the text "Search places and datasets...". Below the search bar, the "Scripts" tab is active, showing a list of scripts under the "Owner (5)" section. The script "MX\_6B\_Mosaic" is selected, and its code is visible in the main editor. The code defines several variables for Landsat imagery and a polygon geometry, and includes comments in Spanish. The map view at the bottom shows a satellite image of a forested area with a red polygon overlaid, representing the area of interest. The interface also includes a "Layers" panel, a "Map" panel, and a "Satélite" panel.

```
1 //-----  
2 //Definición de constantes del usuario  
3 //Carpeta corresponde al nombre de la carpeta en tu google drive  
4 //donde va a guardar la imagen  
5 var carpeta = 'MosaicoMx',  
6 //Definir el nombre con el que se va a guardar la imagen  
7 nombreImag = 'MosaicoLandsat',  
8 //Polygon define el área de interés  
9 polygon = geometry,  
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada  
11 maxCCL = 70,  
12 //Fecha de interés  
13 //Año inicial  
14 y1 = 2015,  
15
```



Ir al mapa.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar with the text "Search places and datasets..." and a "Help" dropdown menu. Below the search bar, the interface is divided into three main sections:

- Scripts:** A sidebar on the left showing a file tree. Under "Owner (5)", there is a folder "users/" containing a folder "Mexico\_6BMosaic", which in turn contains a folder "MX\_6B\_Mosaic". Below this, there are sections for "Writer (1)", "Reader", "Examples", and "Archive (1)".
- Script Editor:** The central area shows a script titled "MX\_6B\_Mosaic \*". The script includes imports for Landsat data and a polygon geometry. The code is as follows:

```
1 //-----  
2 //Definición de constantes del usuario  
3 //Carpeta corresponde al nombre de la carpeta en tu google drive  
4 //donde va a guardar la imagen  
5 var carpeta = 'MosaicoMx',  
6 //Definir el nombre con el que se va a guardar la imagen  
7 nombreImag = 'MosaicoLandsat',  
8 //Polygon define el área de interés  
9 polygon = geometry,  
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada  
11 maxCCL = 70,  
12 //Fecha de interés  
13 //Año inicial  
14 y1 = 2015,  
15
```
- Inspector/Console/Tasks:** A panel on the right with the instruction "Click on the map to inspect the layers."

At the bottom of the interface is a map view showing a satellite image of a forested area. A red polygon is overlaid on the map, corresponding to the "geometry" variable in the script. The map includes navigation controls (zoom in/out, pan, etc.) and a scale bar indicating 20 km. The Google logo is visible in the bottom left corner of the map area.

Dar click en alguna región donde haya información de algún pixel.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. The main interface is divided into several panels:

- Scripts Panel:** Shows a project named 'MX\_6B\_Mosaic' under the user 'users/.../Mexico\_6BMosaic'. It lists 'Owner (5)', 'Writer (1)', 'Reader', 'Examples', and 'Archive (1)'.
- Script Editor:** Contains a JavaScript script for 'MX\_6B\_Mosaic \*'. The script defines constants for Landsat data (18sr, 17sr, 15sr, 14sr) and a polygon geometry. It includes comments in Spanish explaining the script's purpose: to calculate the maximum cloud cover (maxCCL) for a specific area of interest (AOI) in 2015.
- Inspector Panel:** Shows the output of the script. It displays a point at coordinates (-94.1211, 17.4511) at 306m/px. Below this, it shows two 'Pixels' objects, each representing an 'Image (6 bands)'. The first pixel has median values: B: 268, G: 607.5, R: 348.5, NIR: 3565, SWIR1: 1667, SWIR2: 699.5. The second pixel has median values: B: 292.5, G: 588, R: 342, NIR: 3551.5, SWIR1: 1736.5, SWIR2: 706.
- Map View:** Shows a satellite image of a forested area. A red polygon is overlaid on the map, corresponding to the 'geometry' variable in the script. The map includes a 'Geometry Imports' panel, zoom controls, and a scale bar (20 km).



Aparece el valor del píxel en las bandas.

The screenshot displays the Google Earth Engine web interface. At the top, the search bar contains "Search places and datasets...". The left sidebar shows a project tree with "MX\_6B\_Mosaic" selected. The central editor shows a JavaScript script for "MX\_6B\_Mosaic" with the following code:

```
1 //-----  
2 //Definición de constantes del usuario  
3 //Carpeta corresponde al nombre de la carpeta en tu google drive  
4 //donde va a guardar la imagen  
5 var carpeta = 'MosaicoMx',  
6 //Definir el nombre con el que se va a guardar la imagen  
7 nombreImag = 'MosaicoLandsat',  
8 //Polygon define el área de interés  
9 polygon = geometry,  
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada  
11 maxCCL = 70,  
12 //Fecha de interés  
13 //Año inicial  
14 y1 = 2015,  
15
```

The right sidebar shows the "Inspector" panel with the following data:

- Point (-93.7475, 17.1705) at 306m/px
- Pixels
  - RGB: Image (6 bands) [ln]
    - B\_median: 370
    - G\_median: 485
    - R\_median: 244
    - NIR\_median: 165
    - SWIR1\_median: 84
    - SWIR2\_median: 53
  - RGB: Image (6 bands) [ln]
    - B\_median: 432.5
    - G\_median: 401
    - R\_median: 223
    - NIR\_median: 173
    - SWIR1\_median: 74.5
    - SWIR2\_median: 51
- Objects

The bottom panel shows a satellite map of a forested area with a red polygon overlay. The map includes a "Geometry Imports" label, a scale bar (20 km), and a copyright notice: "Datos del mapa ©2018 Google, INEGI".

Si se da click en otra área se actualizan los valores.

The screenshot displays the Google Earth Engine web interface. At the top, the Google Earth Engine logo and a search bar are visible. Below the search bar, there are tabs for 'Scripts', 'Docs', and 'Assets'. The 'Scripts' tab is active, showing a script editor for a script named 'MX\_6B\_Mosaic \*'. The script contains several lines of code, including variable declarations for Landsat image collections and a polygon geometry, followed by comments in Spanish. The 'Inspector' and 'Console' tabs are also visible, with the 'Tasks' tab highlighted in orange. The 'Console' shows the output of the script, including a point location and two RGB image objects with their respective median values for B, G, R, NIR, and SWIR bands. The main map area shows a satellite view of a green, forested area with a brownish feature. The bottom of the interface includes a 'Geometry Imports' button, a zoom control, and a scale bar.

```
1 //-----  
2 //Definición de constantes del usuario  
3 //Carpeta corresponde al nombre de la carpeta en tu google drive  
4 //donde va a guardar la imagen  
5 var carpeta = 'MosaicoMx',  
6 //Definir el nombre con el que se va a guardar la imagen  
7 nombreImag = 'MosaicLandsat',  
8 //Polygon define el área de interés  
9 polygon = geometry,  
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada  
11 maxCCL = 70,  
12 //Fecha de interés  
13 //Año inicial  
14 y1 = 2015,  
15
```

Inspector Console **Tasks**

- Point (-93.7475, 17.1705) at 306m/px
- Pixels
  - RGB: Image (6 bands) [ln](#)
    - B\_median: 370
    - G\_median: 485
    - R\_median: 244
    - NIR\_median: 165
    - SWIR1\_median: 84
    - SWIR2\_median: 53
  - RGB: Image (6 bands) [ln](#)
    - B\_median: 432.5
    - G\_median: 401
    - R\_median: 223
    - NIR\_median: 173
    - SWIR1\_median: 74.5
    - SWIR2\_median: 51
- Objects

Geometry Imports

Layers Mapa Satélite

Datos del mapa ©2018 Google, INEGI | 20 km | Condiciones del servicio | Informar un error en el mapa



## Exportar resultados

Ir a la pestaña de Tasks (marcada en naranja) y darle click.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the 'Scripts' tab is active, showing a script titled 'MX\_6B\_Mosaic \*'. The script code is as follows:

```
1 //-----
2 //Definición de constantes del usuario
3 //Carpeta corresponde al nombre de la carpeta en tu google drive
4 //donde va a guardar la imagen
5 var carpeta = 'MosaicoMx',
6 //Definir el nombre con el que se va a guardar la imagen
7 nombreImag = 'MosaicoLandsat',
8 //Polygon define el área de interés
9 polygon = geometry,
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada
11 maxCCL = 70,
12 //Fecha de interés
13 //Año inicial
14 y1 = 2015,
```

The 'Inspector' tab is also visible, showing a point at coordinates (-93.7475, 17.1705) at 306m/px. The 'Console' tab is highlighted in orange and shows the following output:

```
Point (-93.7475, 17.1705) at 306m/px
Pixels
  RGB: Image (6 bands)
    B_median: 370
    G_median: 485
    R_median: 244
    NIR_median: 165
    SWIR1_median: 84
    SWIR2_median: 53
  RGB: Image (6 bands)
    B_median: 432.5
    G_median: 401
    R_median: 223
    NIR_median: 173
    SWIR1_median: 74.5
    SWIR2_median: 51
Objects
```

The map view at the bottom shows a satellite image of a green landscape with a brown polygon overlaid. The 'Layers' and 'Mapa' tabs are visible in the top right corner of the map area.

Aparece esta pantalla, dar click en Run.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the interface is divided into several panels:

- Scripts Panel (Left):** Shows a tree view of scripts. Under 'Owner (5)', there is a folder 'users/...' containing a script named 'MX\_6B\_Mosaic'.
- Script Editor (Center):** Displays the code for 'MX\_6B\_Mosaic'. The code includes imports for Landsat data and a geometry, followed by comments and variable definitions in Spanish. The code is as follows:

```
1 //-----  
2 //Definición de constantes del usuario  
3 //Carpeta corresponde al nombre de la carpeta en tu google drive  
4 //donde va a guardar la imagen  
5 var carpeta = 'MosaicoMx',  
6 //Definir el nombre con el que se va a guardar la imagen  
7 nombreImag = 'MosaicoLandsat',  
8 //Polygon define el área de interés  
9 polygon = geometry,  
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada  
11 maxCCL = 70,  
12 //Fecha de interés  
13 //Año inicial  
14 y1 = 2015,  
15
```
- Inspector/Console/Tasks Panel (Right):** Shows a list of tasks. The 'Tasks' tab is active, displaying a list of tasks with their completion status and duration. Two tasks, 'MosaicoLandsat2016' and 'MosaicoLandsat2015', have 'RUN' buttons highlighted with a red box. Other tasks include 'Mx\_video\_region\_L8\_time' and several 'LC08' tasks.

At the bottom of the interface, there is a map view showing a satellite image of a forested area. The map includes a 'Geometry Imports' label, zoom controls, and a scale bar. The Google logo is visible in the bottom left corner.



Aparece la siguiente pantalla con la información del archivo a guardar en tu Google Drive, nombre del trabajo, tamaño de pixel, folder donde lo va a guardar y nombre del archivo.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. The main interface is divided into several panels:

- Scripts Panel (Left):** Shows a file browser for 'MX\_6B\_Mosaic'. It lists 'Owner (5)', 'users/ /Mexico\_6BMosaic', and 'MX\_6B\_Mosaic'. Below this, it shows 'Writer (1)', 'Reader', 'Examples', and 'Archive (1)'.
- Script Editor (Center):** Displays the code for 'MX\_6B\_Mosaic \*'. The code includes imports for Landsat data and a polygon geometry, followed by comments in Spanish defining constants and variables for the user, folder, image name, and area of interest.
- Inspector Panel (Right):** Shows a list of tasks. The first two are 'MosaicoLandsat2016' and 'MosaicoLandsat2015', both with 'RUN' buttons. Below them is a list of image IDs with their respective sizes and completion status.

The bottom of the interface shows a satellite map of a green, forested area. The map includes a 'Geometry Imports' label, zoom controls, and a scale bar indicating 20 km. The Google logo is visible in the bottom left corner, and copyright information for 2018 is at the bottom right.

Dar click en Run.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below the search bar, the 'Scripts' tab is active, showing a script named 'MX\_6B\_Mosaic'. The script code includes several 'var' declarations for ImageCollection objects and a 'geometry' variable. A modal dialog box titled 'Task: Initiate image export' is open in the center. It contains the following fields and options:

- Task name (no spaces) \*: MosaicoLandsat2015
- Resolution \*: Scale (m/px) 30
- Storage options:  Drive,  Cloud Storage,  EE Asset
- Drive folder: MosaicoMx
- Filename \*: MosaicoLandsat2015
- Buttons: Run (highlighted with a red circle), Cancel

In the background, the 'Tasks' panel on the right shows a list of tasks with their status and completion time. The 'Run' button in the dialog is highlighted with a red circle, indicating the next step in the process.

Task Name	Status	Time
MosaicoLandsat2016	RUN	
MosaicoLandsat2015	RUN	
Mx_video_region_L8_time	✓	50s
LC08_022048_20180810	✓	1m
LC08_022048_20180725	✓	1m
LC08_022048_20180623	✓	1m
LC08_022048_20180522	✓	1m
LC08_022047_20180725	✓	57s
LC08_022047_20180709	✓	58s
LC08_022047_20180623	✓	58s
LC08_022047_20180607	✓	43s



Aparece un engranito al lado del trabajo que se corrió. Dar click en Run.

The screenshot displays the Google Earth Engine web interface. At the top, there is a search bar and a 'Help' dropdown. Below this is a blue header bar with the title 'MX\_6B\_Mosaic \*' and buttons for 'Get Link', 'Save', 'Run', and 'Reset'. The main area is a code editor with a script in Spanish. The script defines variables for Landsat image collections and a polygon geometry, and includes comments in Spanish explaining the parameters like 'maxCCL', 'Fecha de interés', 'Año inicial', and 'Mes-día inicial'. On the right side, there is a 'Tasks' panel with a 'RUN' button next to the 'MosaicoLandsat2015' task. Below the code editor is a map view showing a satellite image of a forested area with a red polygon overlaid. The map includes navigation controls, a 'Layers' panel, and a 'Mapa' button. The bottom of the map shows the Google logo and map data information.

```
1 //-----  
2 //Definición de constantes del usuario  
3 //Carpeta corresponde al nombre de la carpeta en tu google drive  
4 //donde va a guardar la imagen  
5 var carpeta = 'MosaicoMx',  
6 //Definir el nombre con el que se va a guardar la imagen  
7 nombreImag = 'MosaicoLandsat',  
8 //Polygon define el área de interés  
9 polygon = geometry,  
10 //Máxima de cobertura de nubes sobre superficie terrestre deseada  
11 maxCCL = 70,  
12 //Fecha de interés  
13 //Año inicial  
14 y1 = 2015,  
15 //Mes-día inicial
```

Esperar hasta que aparezca una palominta en donde se ve el engrane y aparecerá en tu drive la imagen descargada.

## Errores

En caso de que durante alguno de los procesos ocurra un error, éste será indicado en la pestaña de la consola. Se recomienda leer la sección de Debugging de la plataforma, disponible en la siguiente liga: <https://developers.google.com/earth-engine/debugging>

Algunos de los errores más comunes incluyen:

1. La falta de definición de los nombres de todas las variables (var).
2. Sobrepassar el límite por default de pixeles a descargar.
3. No poseer de suficiente espacio en el Google Drive personal.
4. La falta de ; al final de cada comando.
5. Errores ortográficos.
6. Sobrepassar el límite de procesamiento. a.
7. Sobrepassar el límite de procesamiento. b.

Las soluciones a cada uno de estos problemas son los siguientes:

1. Revisar que todas las variables hayan sido declaradas con la función var.
2. En la línea final de exportación de la imagen cambiar el valor de maxPixels.
3. Borrar archivos que no se utilicen en el Google Drive.
4. Revisar que todos los comandos finalicen con ;.
5. Revisar los nombres de las variables y funciones (cuidando mayúsculas y minúsculas).
6. Cuando ocurre esto normalmente se debe a que se quiere visualizar el resultado de un procesamiento tardado. La solución sencilla es no visualizar el resultado en el visualizador de la plataforma, sino sólo descargarlo. Google Earth Engine permite una mayor capacidad de procesamiento cuando se exportan los resultados que cuando se quiere visualizarlos.
7. A veces se puede sobrepassar el límite de procesamiento por utilizar códigos redundantes. Este tipo de errores se pueden solucionar leyendo cuál es el método más apropiado para la función que el usuario desea realizar.