

## 5. APPENDIX: SQL Queries Used

### 1. GLOBAL SITUATION

To create view, I used following queries

```
CREATE VIEW forestation
```

```
AS
```

```
(
```

```
SELECT fa.country_code,
```

```
fa.country_name,
```

```
fa.year,
```

```
fa.forest_area_sqkm,
```

```
la.total_area_sq_mi,
```

```
r.region,
```

```
r.income_group
```

```
FROM forest_area AS fa
```

```
JOIN land_area AS la
```

```
ON fa.country_code = la.country_code
```

```
AND fa.year = la.year
```

```
JOIN regions AS r
```

```
ON r.country_code = fa.country_code
```

```
);
```

Forgot to add percentage\_forest

```
DROP VIEW IF EXISTS forestation;
```

```
CREATE VIEW forestation
```

```
AS
```

```
(
```

```
SELECT fa.country_code,
```

```
fa.country_name, ROUND((forest_area_sqkm/(total_area_sq_mi*2.59)*100)::NUMERIC,2) as
```

```
fp,
```

```
fa.year,
```

```
fa.forest_area_sqkm,
```

```
la.total_area_sq_mi,
```

```
r.region,
```

```
r.income_group,
```

```
fa.forest_area_sqkm /(la.total_area_sq_mi * 2.59)*100 AS percentage_forest
```

```
FROM forest_area AS fa
JOIN land_area AS la
ON fa.country_code = la.country_code
AND fa.year = la.year
INNER JOIN regions AS r
ON r.country_code = fa.country_code
);
```

Total area of the World in 1990

```
SELECT forest_area_sqkm AS fa_1990
FROM forestation
WHERE year= 1990 AND country_name = 'World'
ORDER BY country_name DESC;
```

Total area of the World in 2016

```
SELECT forest_area_sqkm AS fa_2016
FROM forestation
WHERE year= 2016 AND country_name = 'World'
ORDER BY country_name DESC;
```

I got the difference

```
SELECT
(SELECT forest_area_sqkm AS fa_2016
FROM forestation
WHERE year= 2016 AND country_name = 'World'
ORDER BY country_name DESC)
```

-

```
(SELECT forest_area_sqkm AS fa_1990
FROM forestation
WHERE year= 1990 AND country_name = 'World'
ORDER BY country_name DESC) AS difference;
```

Difference in percentage

```
WITH areas_2016
AS (SELECT forest_area_sqkm AS a_2016,
year
FROM forestation
WHERE country_name = 'World'
```

```

AND year = 2016),
areas_1990
AS (SELECT forest_area_sqkm AS a_1990,
year
FROM forestation
WHERE country_name = 'World'
AND year = 1990),
difference
AS (SELECT a_2016,
a_1990,
a_2016 - a_1990 difference,
( a_2016 - a_1990 ) / a_1990 * 100 AS difference_percentage
FROM areas_2016,
areas_1990)
SELECT a_2016,
a_1990,
difference,
ROUND (difference_percentage:: NUMERIC,2) AS Difference_percentage
FROM difference
Forest lost was more than the area of PERU
SELECT country_name,
ROUND ((total_area_sq_mi*2.59)::NUMERIC,2) AS ta_sqkm
FROM forestation
WHERE year= 2016 AND total_area_sq_mi <'1324449'
ORDER BY total_area_sq_mi DESC
LIMIT 13;

```

## 2. REGIONAL OUTLOOK

Selected percentage

```

SELECT SUM(forest_area_sqkm)/
(SUM(total_area_sq_mi)*2.59) *100 AS forest_percentage, region
FROM forestation
WHERE year = 2016 AND country_name ='World'
GROUP BY region
ORDER BY 1 DESC;

```

```

SELECT SUM(forest_area_sqkm)/
(SUM(total_area_sq_mi)*2.59)*100 AS forest_percentage, region
FROM forestation
WHERE year = 2016
GROUP BY region
ORDER BY 1 DESC;

```

```

SELECT SUM(forest_area_sqkm)/
(SUM(total_area_sq_mi)*2.59)*100 AS forest_percentage, region
FROM forestation
WHERE year = 1990 AND country_name ='World'
GROUP BY region
ORDER BY 1 DESC;

```

```

SELECT SUM(forest_area_sqkm)/
(SUM(total_area_sq_mi)*2.59)*100 AS forest_percentage, region
FROM forestation
WHERE year = 1990
GROUP BY region
ORDER BY 1 DESC;

```

### 3. COUNTRY-LEVEL DETAIL

To get the Sq- Km difference between 1990 & 2016

WITH f1

```

AS (SELECT DISTINCT country_name,
region,
ROUND(forest_area_sqkm::NUMERIC, 0)fa_1990
FROM forestation
WHERE year ='1990'

```

```

AND country_name NOT LIKE 'World'
AND forest_area_sqkm IS NOT NULL
ORDER BY country_name),

```

f2

```

AS (SELECT DISTINCT country_name,
region,
ROUND(forest_area_sqkm::NUMERIC,0) fa_2016
FROM forestation

```

```

WHERE year ='2016'

AND country_name NOT LIKE 'World'

AND forest_area_sqkm IS NOT NULL

ORDER BY country_name)

SELECT f1.country_name, f1.region,

fa_1990,

fa_2016,

ROUND((f1.fa_1990 - f2.fa_2016):: NUMERIC,0) AS Difference,

ROUND(( (f1.fa_1990 - f2.fa_2016) / f1.fa_1990*100) :: NUMERIC, 2) AS Percentage

FROM f1

INNER JOIN f2

ON f1.country_name = f2.country_name

ORDER BY Difference DESC;

```

To get the Percentage difference between 1990 & 2016

```

WITH f1

AS (SELECT DISTINCT country_name,

region,

ROUND(forest_area_sqkm::NUMERIC, 2)fa_1990

FROM forestation

WHERE year ='1990'

AND country_name NOT LIKE 'World'

AND forest_area_sqkm IS NOT NULL

ORDER BY country_name),

f2

AS (SELECT DISTINCT country_name,

region,

ROUND(forest_area_sqkm::NUMERIC,2) fa_2016

FROM forestation

WHERE year ='2016'

AND country_name NOT LIKE 'World'

AND forest_area_sqkm IS NOT NULL

ORDER BY country_name)

SELECT f1.country_name, f1.region,

fa_1990,

```

```

fa_2016,
ROUND((f1.fa_1990-f2.fa_2016):: NUMERIC,2) AS Difference,
ROUND(( (f1.fa_1990-f2.fa_2016) / f1.fa_1990*100) :: NUMERIC, 2) AS Percentage
FROM f1
INNER JOIN f2
ON f1.country_name = f2.country_name
ORDER BY Percentage DESC;

To get the output difference for para 2 for Iceland.

WITH f1
AS (SELECT DISTINCT country_name,
region,
ROUND(forest_area_sqkm::NUMERIC, 0)fa_1990
FROM forestation
WHERE year ='1990'
AND country_name NOT LIKE 'World'
AND forest_area_sqkm IS NOT NULL
ORDER BY country_name),
f2
AS (SELECT DISTINCT country_name,
region,
ROUND(forest_area_sqkm::NUMERIC,0) fa_2016
FROM forestation
WHERE year ='2016'
AND country_name NOT LIKE 'World'
AND forest_area_sqkm IS NOT NULL
ORDER BY country_name)
SELECT f1.country_name, f1.region,
fa_1990,
fa_2016,
ROUND((f2.fa_2016 - f1.fa_1990):: NUMERIC,0) AS Difference,
ROUND(( (f2.fa_2016 - f1.fa_1990) / f1.fa_1990*100) :: NUMERIC, 2) AS Percentage
FROM f1
INNER JOIN f2
ON f1.country_name = f2.country_name

```

```

ORDER BY percentage DESC;

QUARTILES

WITH qr

AS (SELECT region,

country_name, ROUND((forest_area_sqkm/(total_area_sq_mi*2.59)*100)::NUMERIC,2) AS

fp,

CASE

WHEN fp <= 25 THEN '1st Quartile'

WHEN fp >25 and fp <= 50 THEN '2nd Quartile'

WHEN fp >50 and fp <= 75 then '3rd Quartile'

ELSE '4th Quartile'

END AS Percentile

FROM forestation

Where fp IS NOT NULL

AND country_name NOT LIKE 'World'

AND year =2016

Order by fp )

SELECT Percentile,

count(*) AS COUNT

FROM qr

GROUP BY Percentile

ORDER BY Percentile desc ;

TOP NINE COUNTRIES

SELECT country_name,

region,ROUND((forest_area_sqkm/(total_area_sq_mi*2.59)*100)::NUMERIC,2) AS fp

FROM forestation

WHERE percentage_forest > 75

AND country_name NOT LIKE 'World'

AND year =2016

Order by fp DESC;

The END

```