

Executive Summary Report

ACPML - MySQL - Farmers Insurance Analysis

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Query#1

Q1. Retrieve the names of all states (srcStateName) from the dataset.

Results –

ANDHRA PRADESH
ASSAM
CHHATTISGARH
GOA
GUJARAT
HARYANA
HIMACHAL PRADESH
JAMMU AND KASHMIR
JHARKHAND
KARNATAKA
KERALA
MADHYA PRADESH
MAHARASHTRA
MANIPUR
ODISHA
PUDUCHERRY
PUNJAB
RAJASTHAN
SIKKIM
TAMIL NADU
TELANGANA
TRIPURA
UTTAR PRADESH
UTTARAKHAND
WEST BENGAL

Insights:

```
SELECT DISTINCT srcStateName -- Unique state names  
FROM FarmersInsuranceData
```

ORDER BY srcStateName;

The query retrieves distinct values which shows -

24 full states + 1 union territory (PUDUCHERRY), total of **25 unique values**.

Query#2

Retrieve the total number of farmers covered (TotalFarmersCovered) and the sum insured (SumInsured) for each state (srcStateName), ordered by TotalFarmersCovered in descending order.

Results –

	srcStateName ▲	total_farmers_covered	total_sum_insured ▲
	ANDHRA PRADESH	1810317	1631182.1099999999
	ASSAM	1577497	806786.7226
	CHHATTISGARH	1846769	1110558.856
	GOA	114	47.89369999999995
	GUJARAT	405	119.00289999999997
	HARYANA	2081990	2268958.5809999984
	HIMACHAL PRADE...	268368	30744.9523
	JAMMU AND KASH...	126687	71154.91000000002
	JHARKHAND	115997	49250.80000000001
▶	KARNATAKA	736375	3.176700000000001
	KERALA	24776	20370.888199999998
	MADHYA PRADESH	9149678	8413198.329999998
	MAHARASHTRA	8939015	4005734.6585999983
	MANIPUR	4572	3368.28
	ODISHA	2586332	1375248.5788999996
	PUDUCHERRY	20982	19944.936999999998
	PUNJAB	37	96.4401
	RAJASTHAN	6822958	5363500.7207
	SIKKIM	2425	416.6349
	TAMIL NADU	3962760	3025519.4400000004
	TELANGANA	407890	355353.36000000004
	TRIPURA	350733	48555.04
	UTTAR PRADESH	7239576	3298970.934399999
	UTTARAKHAND	139599	57415.92270000002
	WEST BENGAL	2054414	842893.12

- Madhya Pradesh has the highest number of farmers covered followed by Maharashtra and then Uttar Pradesh
- Punjab has the lowest number of farmers covered (37), which seems like an outlier. Could there be missing or incorrect data for Punjab?

Total Sum Insured varies significantly:

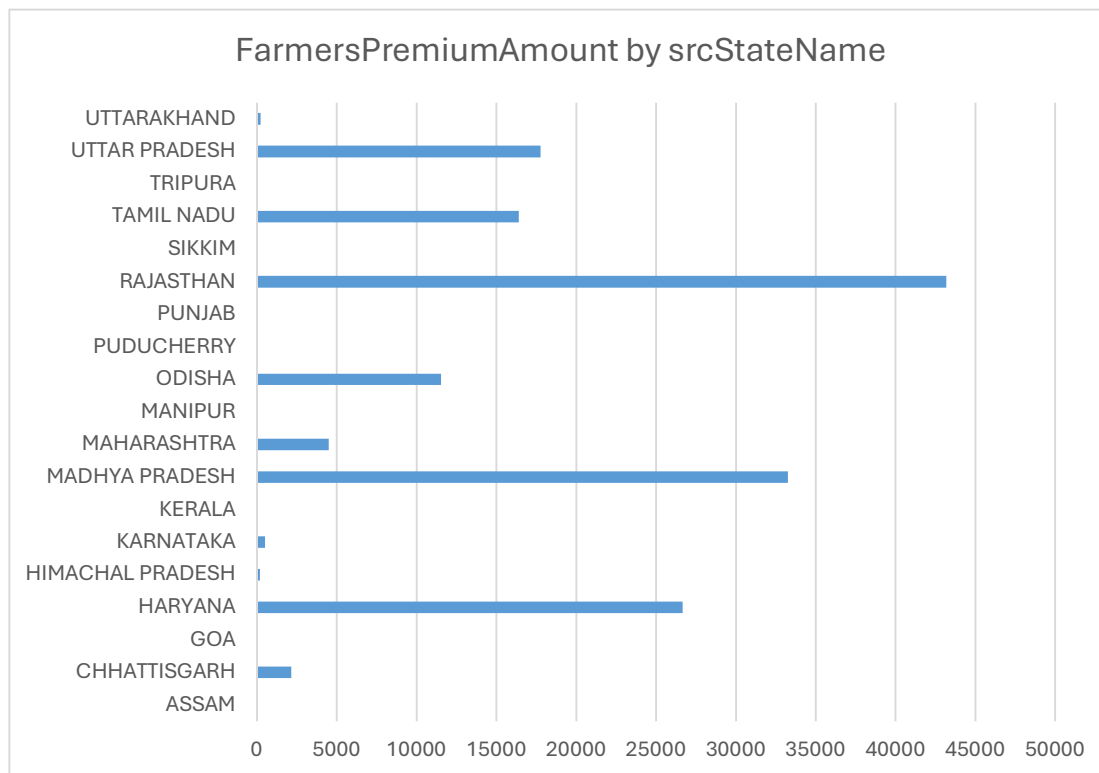
- Madhya Pradesh has the highest Total Sum Insured (8,413,198.33).

- Karnataka has an extremely low Total Sum Insured (3.1767), which looks like a potential data issue.

Query#3 - Insights

```
SELECT *  
FROM FarmersInsuranceData  
WHERE YearCode = '2020';
```

Leveraged the WHERE to filter records according to a particular year.

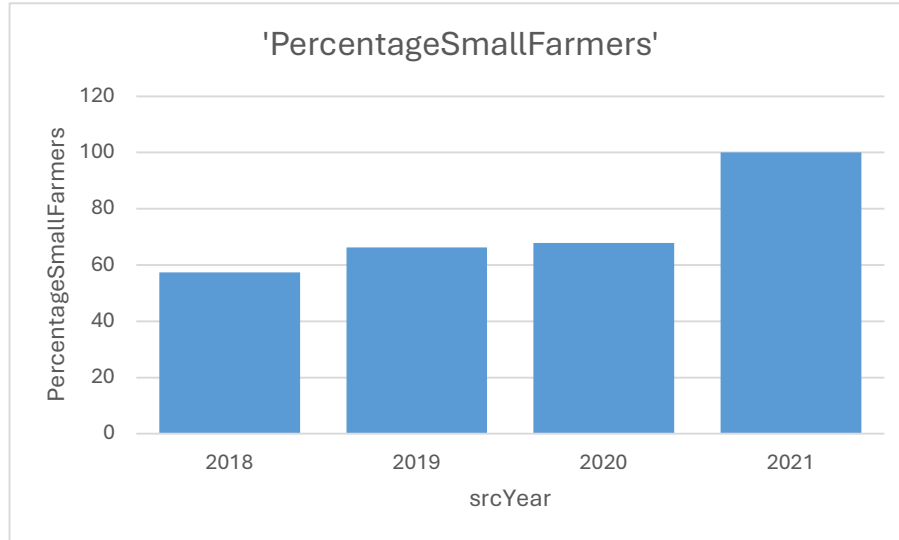


The FarmersPremiumAmount was highest in Rajasthan followed by MadhyaPradhesh in the year 2020

Query#4

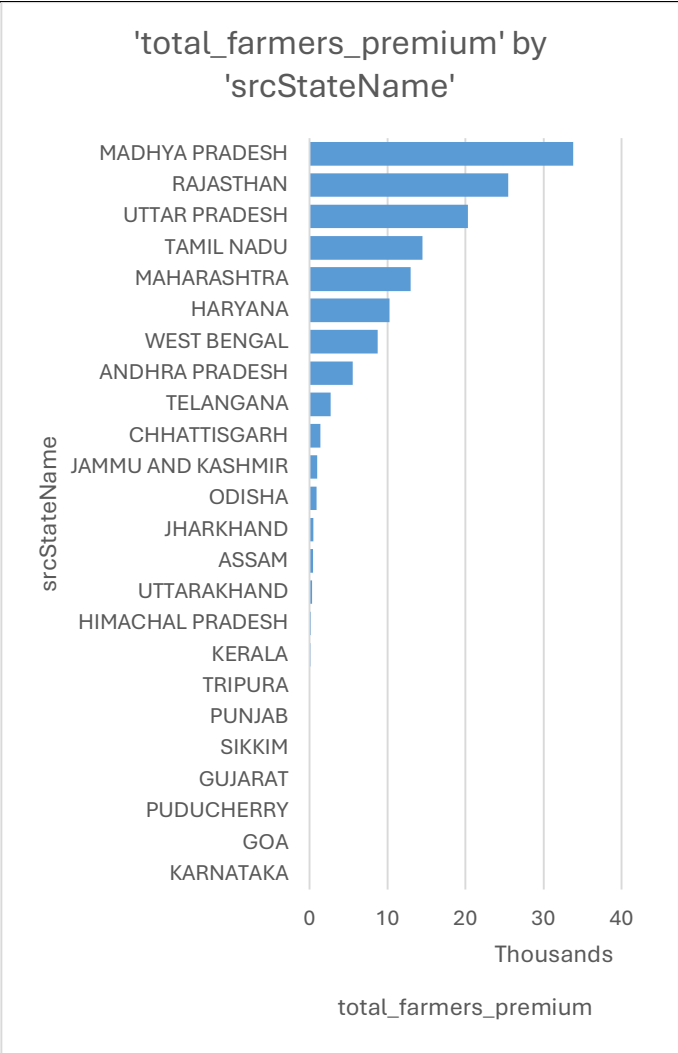
With the focus on Kangra district –

You can notice that the percentage of small farmers is on a steady rise and we can see the peak in 2021



```
SELECT *  
FROM FarmersInsuranceData  
WHERE  
    TotalPopulationRural > 1000000  
    AND srcStateName = 'HIMACHAL PRADESH';
```

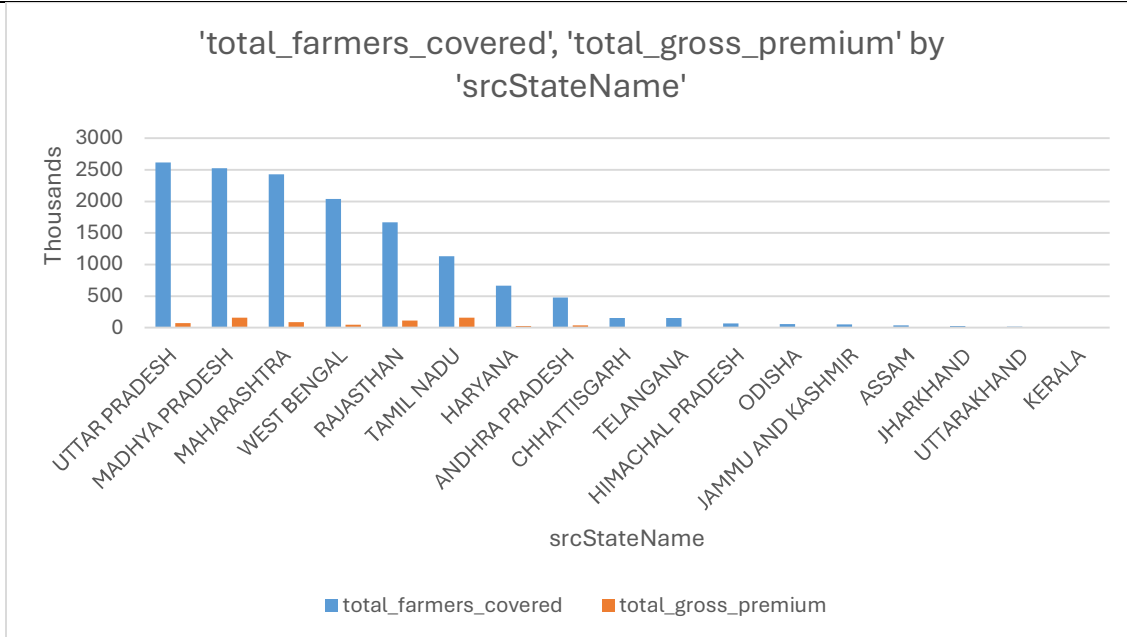
Query#5



Madhya Pradesh leads the total farmers

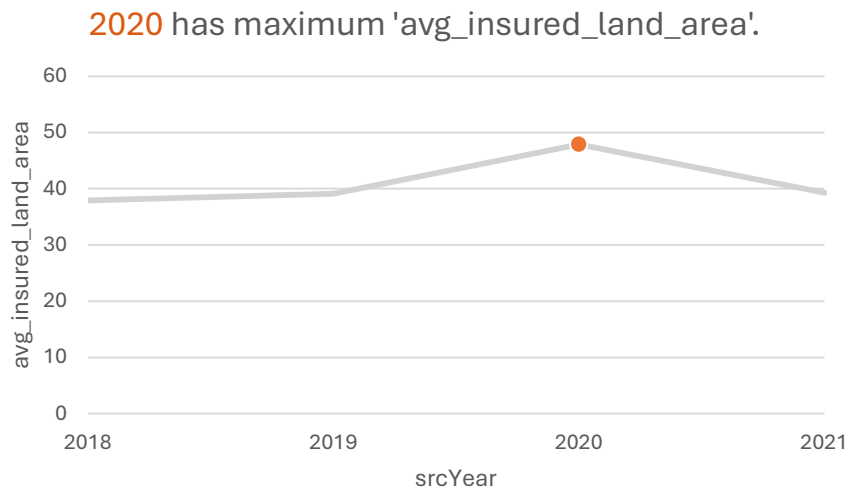
premium followed by Rajasthan.

Query#6



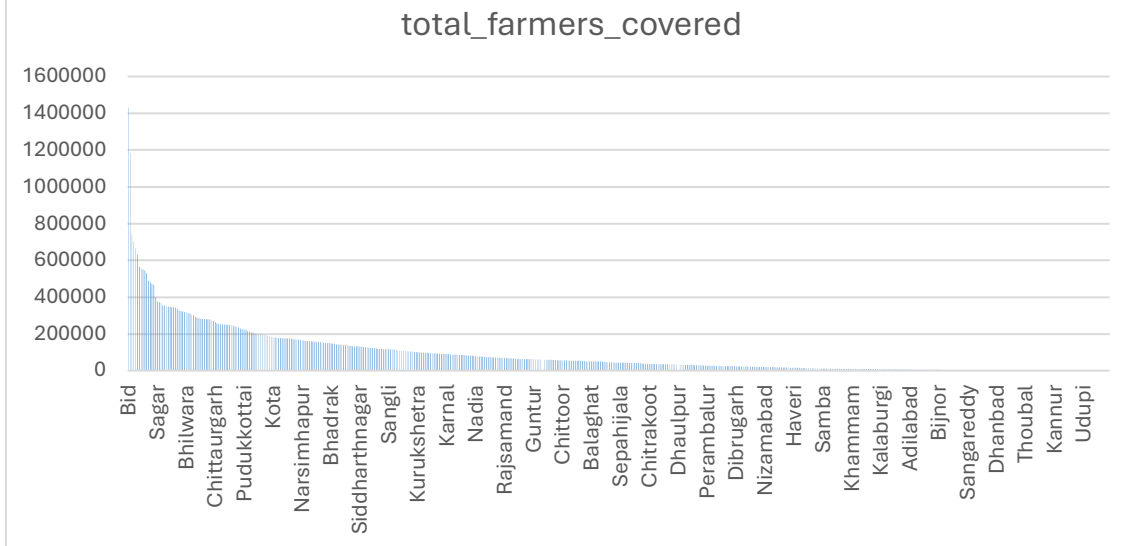
Uttar Pradesh and Madhya Pradesh followed by Maharashtra have most farmers covered and have the total gross premium.

Query#7



The result of the query indicates that during 2020, average insured land area peaked.

Query#8



Bid district has the highest total number of farmers covered.

```
SELECT
    srcStateName,
    SUM(TotalFarmersCovered) AS total_farmers_covered,
    SUM(GrossPremiumAmountToBePaid) AS total_gross_premium
FROM
```

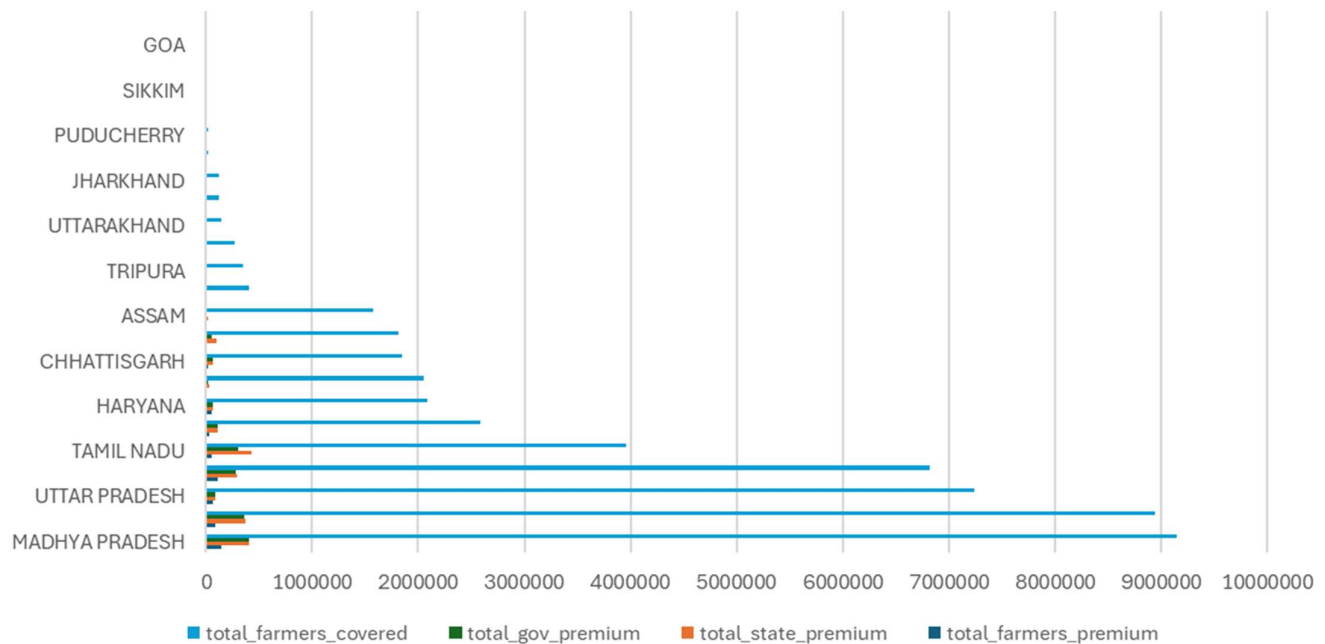
```

FarmersInsuranceData
WHERE
  InsuredLandArea > 5.0
  AND YearCode = 2018
GROUP BY
  srcStateName
ORDER BY
  total_farmers_covered DESC;

```

Query#9

State Specific Details



```

SELECT
  srcStateName,
  SUM(TotalFarmersCovered) AS total_farmers_covered,
  SUM(GrossPremiumAmountToBePaid) AS total_gross_premium
FROM
  FarmersInsuranceData
WHERE
  InsuredLandArea > 5.0
  AND YearCode = 2018
GROUP BY
  srcStateName
ORDER BY

```



```
total_farmers_covered DESC;
```

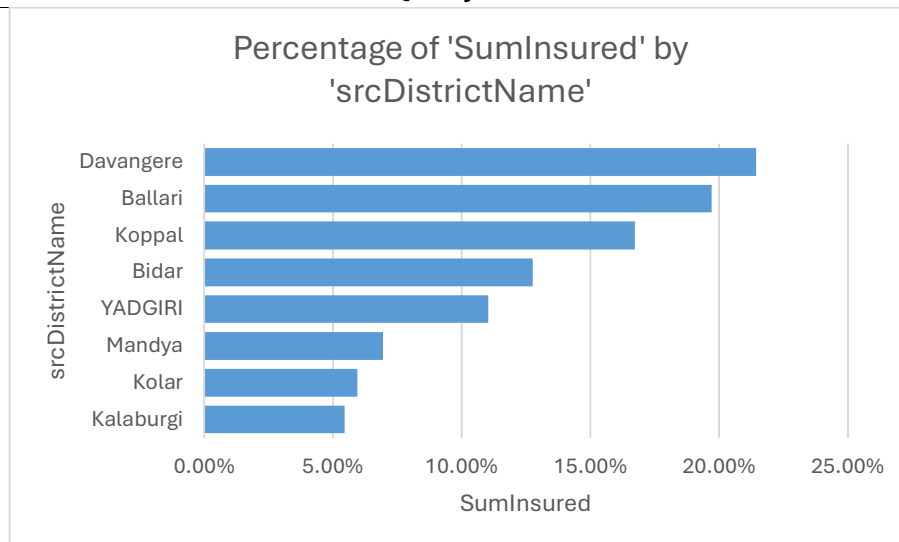
Query#10

srcDistrictName	TotalPopulation
Bengaluru Urban	9621551
Jaipur	6626178
Nashik	6107187
Pune	9429408
Thane	8070032

The Top 5 districts with highest TotalPopulation

```
Query –  
SELECT  
    srcDistrictName,  
    TotalPopulation  
FROM  
    FarmersInsuranceData  
WHERE  
    YearCode = 2020  
ORDER BY  
    TotalPopulation DESC  
LIMIT 5;
```

Query#11



All the 10 districts with lowest non-zero FarmersPremiumAmount are from Karnataka.

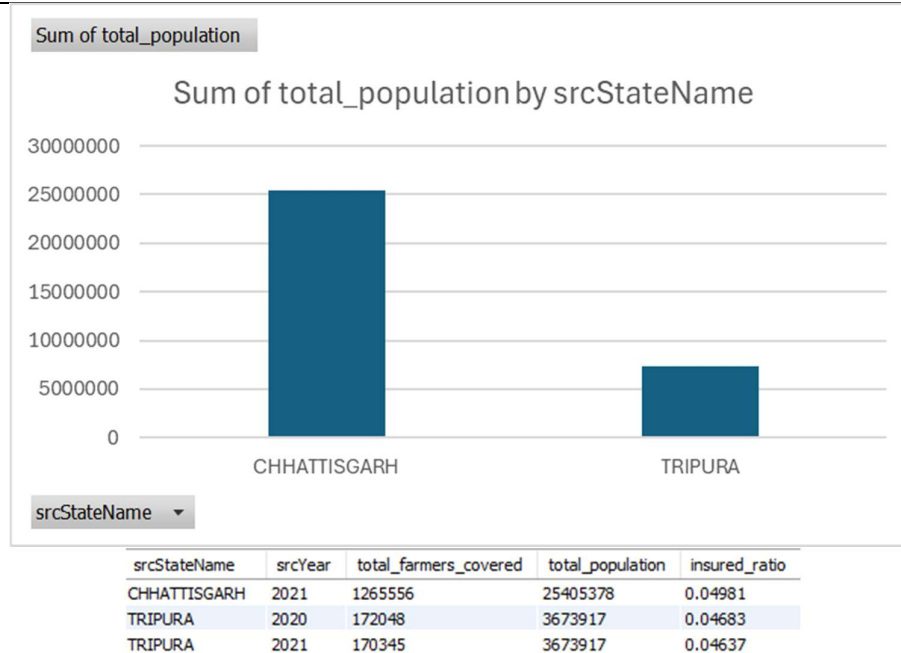
```
SELECT  
    srcStateName,
```

```

srcDistrictName,
SumInsured
FROM
FarmersInsuranceData
WHERE
FarmersPremiumAmount > 0 -- Excluding zero values
ORDER BY
FarmersPremiumAmount ASC,
SumInsured ASC
LIMIT 10;

```

Query#12



Query –

```

SELECT
srcStateName,
srcYear,
SUM(TotalFarmersCovered) AS total_farmers_covered,
SUM(TotalPopulation) AS total_population,
(SUM(TotalFarmersCovered) * 1.0 / SUM(TotalPopulation)) AS insured_ratio
FROM
FarmersInsuranceData
WHERE
TotalPopulation > 0 -- Avoiding division by zero

```

GROUP BY

srcStateName, srcYear

ORDER BY

insured_ratio DESC

LIMIT 3;

Query#13

srcStateName	StateShortName
KARNATAKA	KAR
JAMMU AND KASHMIR	JAM
HIMACHAL PRADESH	HIM
UTTARAKHAND	UTT
HARYANA	HAR
GUJARAT	GUJ
RAJASTHAN	RAJ
TELANGANA	TEL
JHARKHAND	JHA
UTTAR PRADESH	UTT
TRIPURA	TRI
ASSAM	ASS
WEST BENGAL	WES
ODISHA	ODI
CHHATTISGARH	CHH
MADHYA PRADESH	MAD
MAHARASHTRA	MAH
ANDHRA PRADESH	AND
GOA	GOA
KERALA	KER
TAMIL NADU	TAM
PUDUCHERRY	PUD
PUNJAB	PUN
SIKKIM	SIK
MANIPUR	MAN

SELECT

DISTINCT srcStateName,

LEFT(srcStateName, 3) AS StateShortName

FROM

FarmersInsuranceData;

Query#14

srcDistrictName

Bengaluru Urban

Bilaspur

Bageshwar

Bhiwani

Banswara

Baran

Barmer

Bharatpur

Bhilwara

Bikaner

Bundi
Baghpat
Bahraich
Ballia
Balrampur
Banda
Bara Banki
Bareilly
Basti
Bhadohi
Bijnor
Budaun
Bulandshahr
Baksa
Barpeta
Bongaigaon
Bankura
Birbhum
Bokaro
Balangir
Baleshwar
Bargarh
Baudh
Bhadrak
Balod
Baloda Bazar
Bastar
Bemetara
Balaghat
Barwani
Betul
Bhind
Bhopal
Burhanpur
Banas Kantha
Bharuch
Bhavnagar
Bhandara
Bid
Buldana
Bagalkot
Ballari
Belagavi
Bengaluru Rural
Bidar
Bhadravadi
Barnala
Bathinda

Bijapur
Bishnupur

```
SELECT DISTINCT srcDistrictName
FROM FarmersInsuranceData
WHERE srcDistrictName LIKE 'B%';
```

Query#15

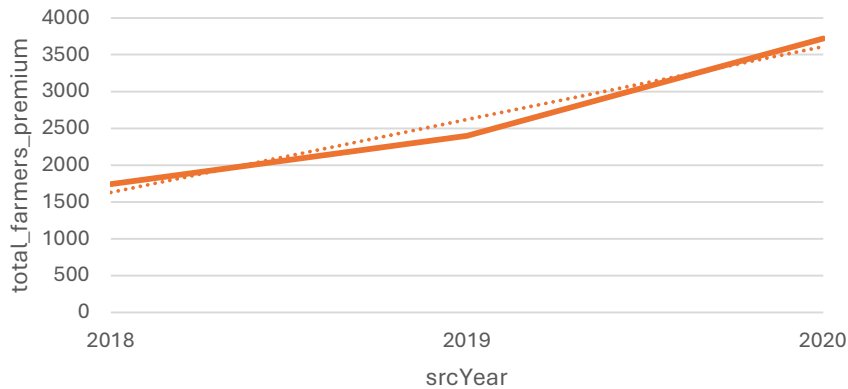
srcStateName	srcDistrictName
UTTAR PRADESH	Sitapur
UTTAR PRADESH	Sultanpur
ASSAM	Lakhimpur
ASSAM	Sonitpur
WEST BENGAL	Dakshin Dinajpur
WEST BENGAL	Paschim Medinipur
WEST BENGAL	Purba Medinipur
WEST BENGAL	Uttar Dinajpur
ODISHA	Jagatsinghapur
ODISHA	Jajapur
ODISHA	Nabarangapur
ODISHA	Sambalpur
ODISHA	Subarnapur
CHHATTISGARH	Balrampur
CHHATTISGARH	Bilaspur
CHHATTISGARH	Jashpur
CHHATTISGARH	Raipur
CHHATTISGARH	Surajpur
MADHYA PRADESH	Alirajpur
MADHYA PRADESH	Anuppur
MADHYA PRADESH	Burhanpur
MADHYA PRADESH	Chhatarpur
MADHYA PRADESH	Jabalpur
MADHYA PRADESH	Narsimhapur
MADHYA PRADESH	Shajapur
MADHYA PRADESH	Sheopur
MAHARASHTRA	Chandrapur
MAHARASHTRA	Kolhapur
MAHARASHTRA	Nagpur
MAHARASHTRA	Solapur
ANDHRA PRADESH	Anantapur
KARNATAKA	Chikkaballapur
TAMIL NADU	Tiruppur
CHHATTISGARH	Bijapur
MANIPUR	Bishnupur

```
SELECT DISTINCT srcStateName, srcDistrictName
FROM FarmersInsuranceData
WHERE srcDistrictName LIKE '%pur';
```

Query#16

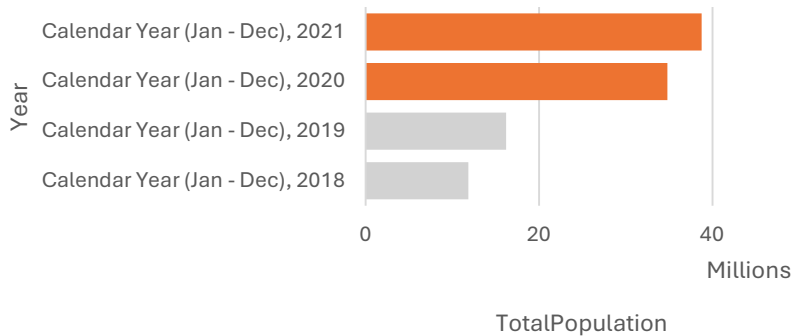
Post the query, it is interesting to see that the premium for Jodhpur farmers is on the rise.

For 'srcDistrictName: Jodhpur',
total_farmers_premium increases over time.



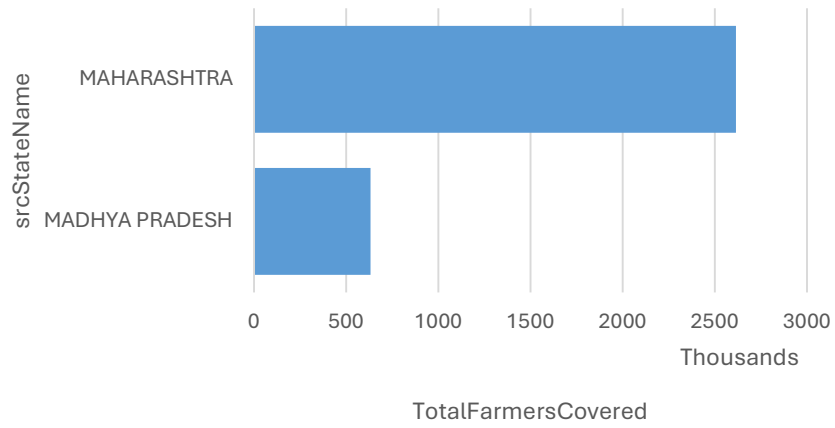
Query#17

'Year': **Calendar Year (Jan - Dec), 2021** and
Calendar Year (Jan - Dec), 2020 have
noticeably higher 'TotalPopulation'.



Query#18

'TotalFarmersCovered' by 'srcStateName'



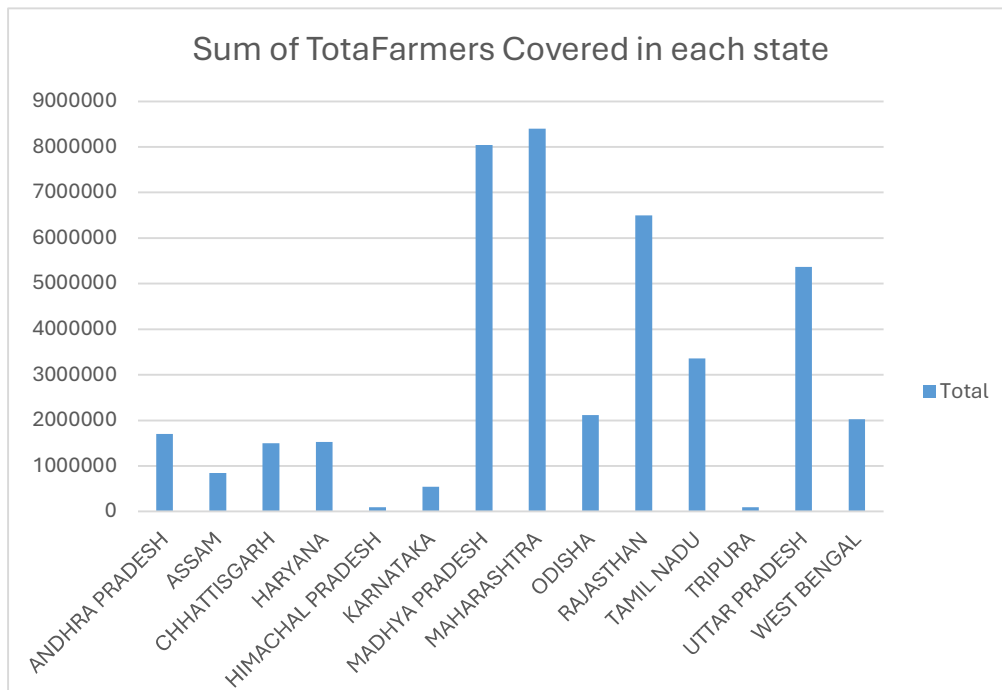
srcStateName	srcDistrictName	TotalFarmersPremiumAmount	AvgPopulation	TotalFarmersCovered	TotalSumInsured
MAHARASHTRA	Bid	1452886000	2583421.00000000	1430532	64228771000.00001
MADHYA PRADESH	Ujjain	1238523000	1986864.00000000	630787	75345217000
MAHARASHTRA	Latur	1170032000	2454196.00000000	1184066	61496693999.99999

Query#19

```

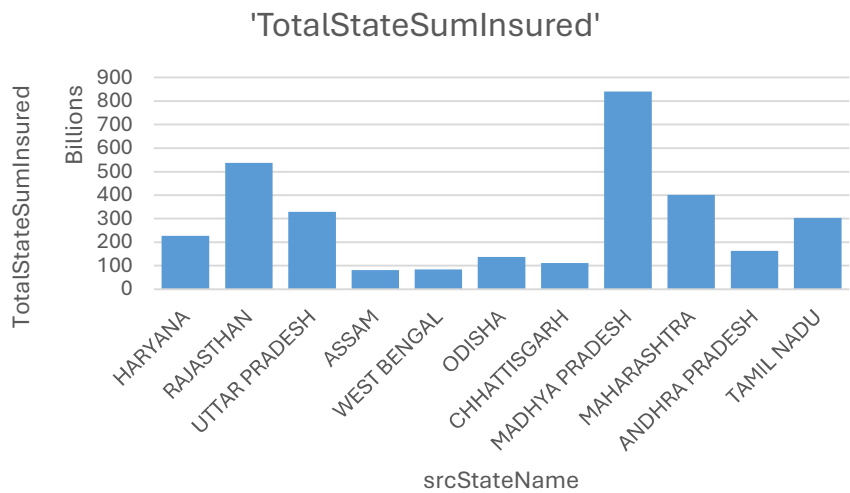
SELECT
    srcDistrictName,
    srcStateName,
    TotalFarmersCovered
FROM
    FarmersInsuranceData
WHERE
    TotalFarmersCovered > (
        SELECT
            AVG(TotalFarmersCovered)
        FROM
            FarmersInsuranceData
    )
ORDER BY
    TotalFarmersCovered DESC;

```



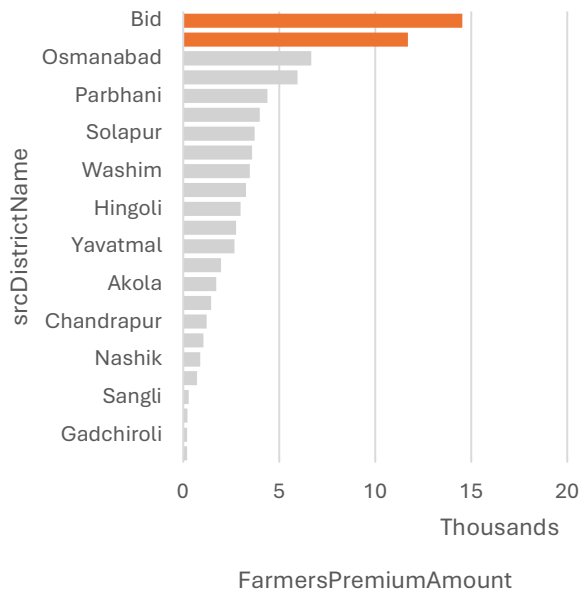
Query#20

srcStateName	TotalStateSumInsured
HARYANA	226895858099.99985
RAJASTHAN	536350072070.00006
UTTAR PRADESH	329897093439.99994
ASSAM	80678672260
WEST BENGAL	84289312000
ODISHA	137524857889.99997
CHHATTISGARH	111055885599.99998
MADHYA PRADESH	841319832999.9999
MAHARASHTRA	400573465859.9998
ANDHRA PRADESH	163118211000
TAMIL NADU	302551944000.00006

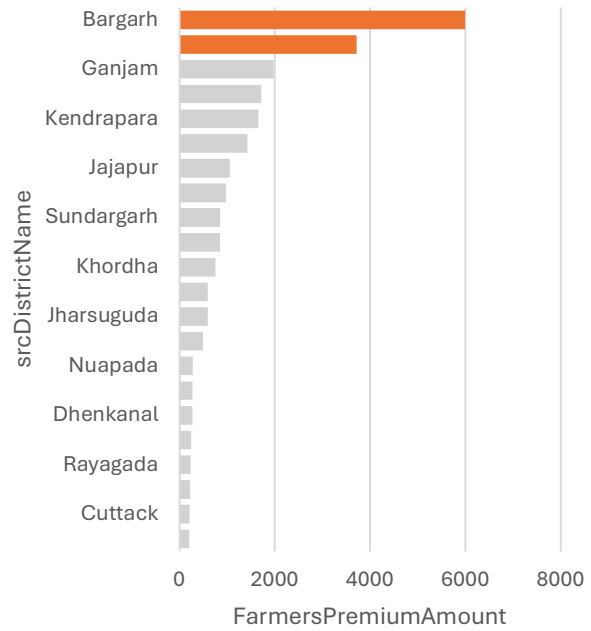


Query#21

For 'srcStateName: MAHARASHTRA',
'srcDistrictName': **Bid** and **Latur**
have noticeably higher
'FarmersPremiumAmount'.

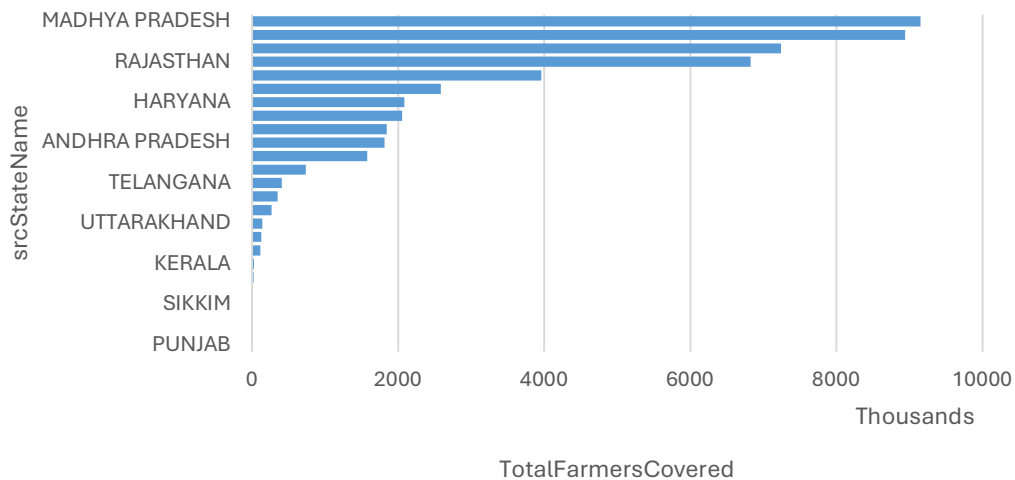


For 'srcStateName: ODISHA',
'srcDistrictName': **Bargarh** and
Balangir have noticeably higher
'FarmersPremiumAmount'.



Query#22

'TotalFarmersCovered' by 'srcStateName'

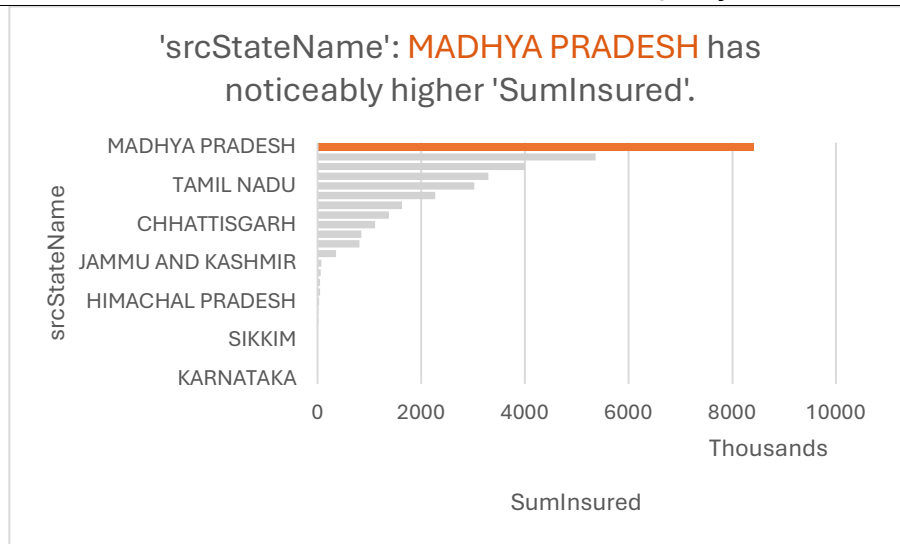


```

SELECT
  ROW_NUMBER() OVER (ORDER BY TotalFarmersCovered DESC) AS row_num,
  srcStateName,
  srcDistrictName,
  TotalFarmersCovered
FROM
  FarmersInsuranceData;

```

Query#23



```

SELECT
  srcStateName,
  srcDistrictName,
  SumInsured,
  RANK() OVER (
    PARTITION BY srcStateName
    ORDER BY SumInsured DESC
  ) AS rank_in_state
FROM
  FarmersInsuranceData
ORDER BY
  srcStateName ASC, rank_in_state ASC;

```

Query#24

```

SELECT
  srcStateName,
  srcDistrictName,

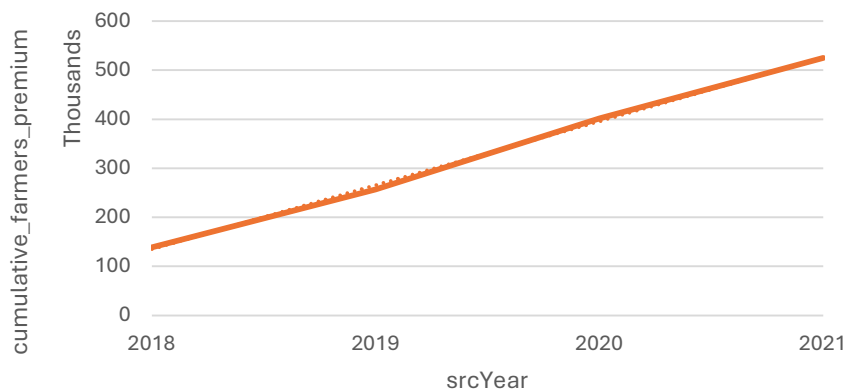
```

```

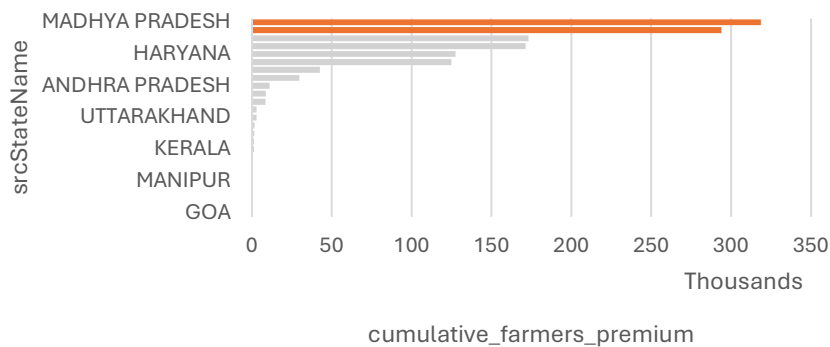
srcYear,
FarmersPremiumAmount,
SUM(FarmersPremiumAmount) OVER (
  PARTITION BY srcStateName, srcDistrictName
  ORDER BY srcYear ASC
) AS cumulative_farmers_premium
FROM
  FarmersInsuranceData
ORDER BY
  srcStateName, srcDistrictName, srcYear;

```

cumulative_farmers_premium increases over time.



'srcStateName': **MADHYA PRADESH** and **RAJASTHAN** have noticeably higher 'cumulative_farmers_premium'.



Query#25

DROP TABLE IF EXISTS districts;

```

DROP TABLE IF EXISTS states;
CREATE TABLE states (
  StateCode INT PRIMARY KEY,
  StateName TEXT NOT NULL
);

CREATE TABLE districts (
  DistrictCode INT PRIMARY KEY,
  DistrictName TEXT NOT NULL,
  StateCode INT,
  FOREIGN KEY (StateCode) REFERENCES states(StateCode)
);

```

Query#26

```

ALTER TABLE districts
ADD CONSTRAINT fk_statecode
FOREIGN KEY (StateCode) REFERENCES states(StateCode);

```

Query#27

```

SET SQL_SAFE_UPDATES = 0;
UPDATE FarmersInsuranceData
SET FarmersPremiumAmount = 500.0
WHERE rowID = 1;
SET SQL_SAFE_UPDATES = 1;

```

Query#28

```

SET SQL_SAFE_UPDATES = 0;
UPDATE FarmersInsuranceData
SET Year = 2021
WHERE srcStateName = 'HIMACHAL PRADESH';
SET SQL_SAFE_UPDATES = 1;

```

Query#29

```

SELECT COUNT(*) FROM FarmersInsuranceData
WHERE YearCode = 2020;

```

Returned 420 rows indicating that there are valid entries in the year 2020.
But **none** of those 420 rows have TotalFarmersCovered < 10,000,
then nothing will be deleted.