**GRADING ACCORDING TO THE PRIORITY SCORE OF AGE GROUP OF UTTRAKHAND**

1. **Software Used: QGIS 3.16 (**[**https://qgis.org/en/site/**](https://qgis.org/en/site/)**)**
2. **ISRO Data Used**: BHUVAN (<https://bhuvan.nrsc.gov.in/>), Government Data (<http://data.gov.in/>), Indian Boundary Maps (<https://static.fossee.in/mapathon/Mapathon2020_Data>).
3. **Methodology:**
4. Firstly, we entered the shape files of the state and the entered the shape file of the districts.
5. Then, we deleted the rest of the state other than Uttarakhand. Using the “EDIT” option.
6. Then we downloaded the data of district wise age group and subsequently the Ranked the age group according to the urgency of vaccination.
7. Then, we individually calculated the Priority Score of each district according to the age group and divided it into Green, Orange and Red Zones.
8. Then we used the Properties command for editing the colors and fonts on map.
9. **Map Description and Usage:** Due to ongoing pandemic of COVID-19 our scientist & research team are continuously trying to fabricate the vaccine for it & so our govt. are busy in scheduling & mapping a proper channel through which the vaccine are provided to everyone in a hassle free manner. This map describes one of the way through which the city according to priority can be marked. The marking are done following this simple step.

*Step 1*: Age group wise population of district of Uttarakhand according to census of 2001 is taken.

*Step 2*: The total population of each district according to 2011is taken & their % growth is taken.

*Step 3*: Assuming to be linear growth rate, the data of 2021 is estimated from the data of 2001.

*Step 4*: The assumed data for each age group divided by total assumed population of that district.

*Step 5*: Marking of each age group is done according to their priority and multiplied with their respective ratio. After this their cumulative rank is found out (district wise).

*Step 6*: The rank is ranged and marked as red, orange & green where red represent most needed vaccine area with highest falling rank range and then comes orange and last is green.

Coming to the usage part as we know that vaccine needs to be first given to 60+ & then to 0-4 years & so on. So this map would be very helpful to know how the distribution of different age group is there in different district and which district is in urgent need of vaccine.

Also for the census data of 2001 (<http://gbpihedenvis.nic.in/District%20wise%20age%20group%20population%20of%20Uttarakhand%20-%20Census%20of%20India,%202001.html>).

SOME CALCULATION PARTS:

|  |  |  |  |
| --- | --- | --- | --- |
| TOTAL 2001 | TOTAL 2011 | % INCREASE | |
|  |  |  |  |
| 630567 | 622506 | 0.987216 | ALMORA |
| 249462 | 259898 | 1.041834 | BAGESHWAR |
| 370359 | 391605 | 1.057366 | CHAMOLI |
| 224542 | 259648 | 1.156345 | CHAMPAWAT |
| 1282143 | 1696694 | 1.323327 | DEHRADUN |
| 1447187 | 1890422 | 1.306273 | HARIDWAR |
| 762909 | 954605 | 1.25127 | NAINITAL |
| 697078 | 687271 | 0.985931 | PAURI |
| 462289 | 483439 | 1.045751 | PITHORAGARH |
| 227439 | 242285 | 1.065275 | RUDRAPRAYAG |
| 604747 | 618931 | 1.023454 | TEHRI GARHWAL |
| 1235614 | 1648902 | 1.33448 | U. S. NAGAR |
| 295013 | 330086 | 1.118886 | UTTARKASHI |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2021 WITH SAME INCREASE % | | |  | TOTAL 2021 |
|  | 0-4 YRS | 5-14 YRS | 15-59 YRS | 60+ YRS |  | WITH SAME INCREASE % |
| ALMORA | 133777.7 | 317871.8 | 665522 | 127840.6 |  | 1245012 |
| BAGESHWAR | 59590.82 | 129566.6 | 280401.3 | 50237.24 |  | 519796 |
| CHAMOLI | 79818.44 | 196619.3 | 432445.8 | 74326.48 |  | 783210 |
| CHAMPAWAT | 63999.07 | 138810 | 277428 | 39059.02 |  | 519296 |
| DEHRADUN | 307477.6 | 783496.7 | 2052927 | 249486.8 |  | 3393388 |
| HARIDWAR | 460001.6 | 1019930 | 2048710 | 252202.2 |  | 3780844 |
| NAINITAL | 193088.4 | 472154.2 | 1115027 | 128940.9 |  | 1909210 |
| PAURI | 138363.6 | 328867.2 | 760543.4 | 146767.7 |  | 1374542 |
| PITHORAGARH | 102586 | 238694.7 | 536723.1 | 88874.16 |  | 966878 |
| RUDRAPRAYAG | 52592.61 | 122513 | 264463 | 45001.46 |  | 484570 |
| TEHRI GARHWAL | 136852.2 | 321039.2 | 671662.4 | 108308.1 |  | 1237862 |
| U. S. NAGAR | 392104.9 | 912458.6 | 1789129 | 204111.4 |  | 3297804 |
| UTTARKASHI | 74367.9 | 171167.2 | 366585.2 | 48051.69 |  | 660172 |
|  |  |  |  |  |  | 20172584 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | POP/ TOTAL (PREDICTED) | | |
|  | 0-4 YRS | 5-14 YRS | 15-59 YRS | 60+YRS |
| ALMORA | 0.107451 | 0.255316247 | 0.534551 | 0.102682 |
| BAGESHWAR | 0.114643 | 0.249264417 | 0.539445 | 0.096648 |
| CHAMOLI | 0.101912 | 0.251042907 | 0.552145 | 0.0949 |
| CHAMPAWAT | 0.123242 | 0.267304112 | 0.534239 | 0.075215 |
| DEHRADUN | 0.090611 | 0.230889222 | 0.604979 | 0.073521 |
| HARIDWAR | 0.121666 | 0.26976265 | 0.541866 | 0.066705 |
| NAINITAL | 0.101135 | 0.247303414 | 0.584025 | 0.067536 |
| PAURI | 0.100662 | 0.239255865 | 0.553307 | 0.106776 |
| PITHORAGARH | 0.1061 | 0.246871546 | 0.555109 | 0.091919 |
| RUDRAPRAYAG | 0.108535 | 0.252828231 | 0.545768 | 0.092869 |
| TEHRI GARHWAL | 0.110555 | 0.259349778 | 0.542599 | 0.087496 |
| U. S. NAGAR | 0.118899 | 0.276686732 | 0.542521 | 0.061893 |
| UTTARKASHI | 0.112649 | 0.25927671 | 0.555287 | 0.072787 |

|  |  |
| --- | --- |
| YRS | GRADE POINTS |
| 60+ | 4 (MOST NEEDED) |
| 0-4 | 3 |
| 15-59 | 2 |
| 5-14 | 1 (LEAST NEEDED) |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0-4 YRS | 5-14 YRS | 15-59 YRS | 60+ YRS |  | FINAL RANK | |
| 0.322353 | 0.255316 | 1.069101 | 0.410729 |  | 2.057499 | ALMORA |
| 0.343928 | 0.249264 | 1.07889 | 0.386592 |  | 2.058674 | BAGESHWAR |
| 0.305736 | 0.251043 | 1.104291 | 0.379599 |  | 2.040669 | CHAMOLI |
| 0.369726 | 0.267304 | 1.068477 | 0.300861 |  | 2.006369 | CHAMPAWAT |
| 0.271832 | 0.230889 | 1.209957 | 0.294086 |  | 2.006764 | DEHRADUN |
| 0.364999 | 0.269763 | 1.083731 | 0.266821 |  | 1.985314 | HARIDWAR |
| 0.303406 | 0.247303 | 1.16805 | 0.270145 |  | 1.988904 | NAINITAL |
| 0.301985 | 0.239256 | 1.106614 | 0.427103 |  | 2.074957 | PAURI |
| 0.318301 | 0.246872 | 1.110219 | 0.367675 |  | 2.043066 | PITHORAGARH |
| 0.325604 | 0.252828 | 1.091537 | 0.371475 |  | 2.041444 | RUDRAPRAYAG |
| 0.331666 | 0.25935 | 1.085198 | 0.349984 |  | 2.026198 | TEHRI GARHWAL |
| 0.356696 | 0.276687 | 1.085043 | 0.247572 |  | 1.965998 | U. S. NAGAR |
| 0.337948 | 0.259277 | 1.110575 | 0.291146 |  | 1.998946 | UTTARKASHI |