

URBAN SPRAWLING DELHI NCR

(1971-2023)

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INTRODUCTION

URBAN SPRAWLING IS THE GRADUAL PROCESS OF HAPHAZARD EXPANSION OF CITY URBAN AREAS EXPAND BECAUSE OF POPULATION EXPANSION, MORE DEMAND OF AMENITIES, INCREASED MOBILITY, INCREASED CONGESTION AND INCREASING LAND PRICES IN THE MAIN CITY. DELIBERATE PLANNING OF URBAN CITY. URBAN SPRAWL IS MORE EVIDENT IN RURAL URBAN FRINGE EVOLVES AND SLOWLY CONVERTS INTO URBAN LANDSCAPE.

URBAN SPRAWL IS ALSO REFERRED TO AS DEURBANIZATION OR REVERSE URBANIZATION BECAUSE PEOPLE LEAVING THE MAIN CITY AND OCCUPYING THE OUTSKIRTS AND DEVELOPING URBAN AMENITIES.

IN INDIA THERE WERE 53 URBAN AGGLOMERATIONS WITH OVER 1 MILLION PEOPLE IN 2011 AS COMPARED TO 35 IN 2001 (CENSUS OF INDIA 2011). OUT OF THESE URBAN AGGLOMERATIONS, THREE MEGACITIES, NAMELY, **DELHI, MUMBAI, AND KOLKATA**, CAN BE IDENTIFIED AS HAVING POPULATION GREATER THAN 10 MILLION. CHENNAI, BANGALORE, HYDERABAD, AHMEDABAD, AND PUNE ARE THE CURRENT INCIPIENT MEGACITIES (POPULATION BETWEEN 5 AND 10 MILLION).

THE NATIONAL CAPITAL TERRITORY (NCT) OF DELHI COVERS AN AREA OF 1483 KM² AND LIES BETWEEN THE COORDINATES OF 28.41°N, 76.84°E BY 28.88°N, 77.35°E. IT IS SITUATED IN THE CORE OF THE NATIONAL CAPITAL REGION (NCR) FLANKED BY THE GHAZIABAD, GAUTAM BUDDHA NAGAR, BAGH PAT, SONIPAT, JHAJJAR, FARIDABAD, AND GURGAON DISTRICTS AT ITS ADMINISTRATIVE BOUNDARY.

THE NCR REGION ALSO INCLUDES THE PANIPAT, ROHTAK, REWARI, ALWAR, BULANDSHAHAR, AND MEERUT DISTRICTS.

FEATURES OF URBAN SPRAWL

1. EXTENSIVE LAND USE PATTERN
2. SINGLE OR DOUBLE STOREYED CONSTRUCTION LARGELY
3. SINGLE FUNCTION LAND USE (THIS INCLUDES COMMUTING FOR BASIC NECESSITIES ALSO).
4. LACK OF BASIC NECESSITIES LIKE POWER SUPPLY, BUS SERVICES ETC.

CAUSES THAT LEAD TO URBAN SPRAWLING

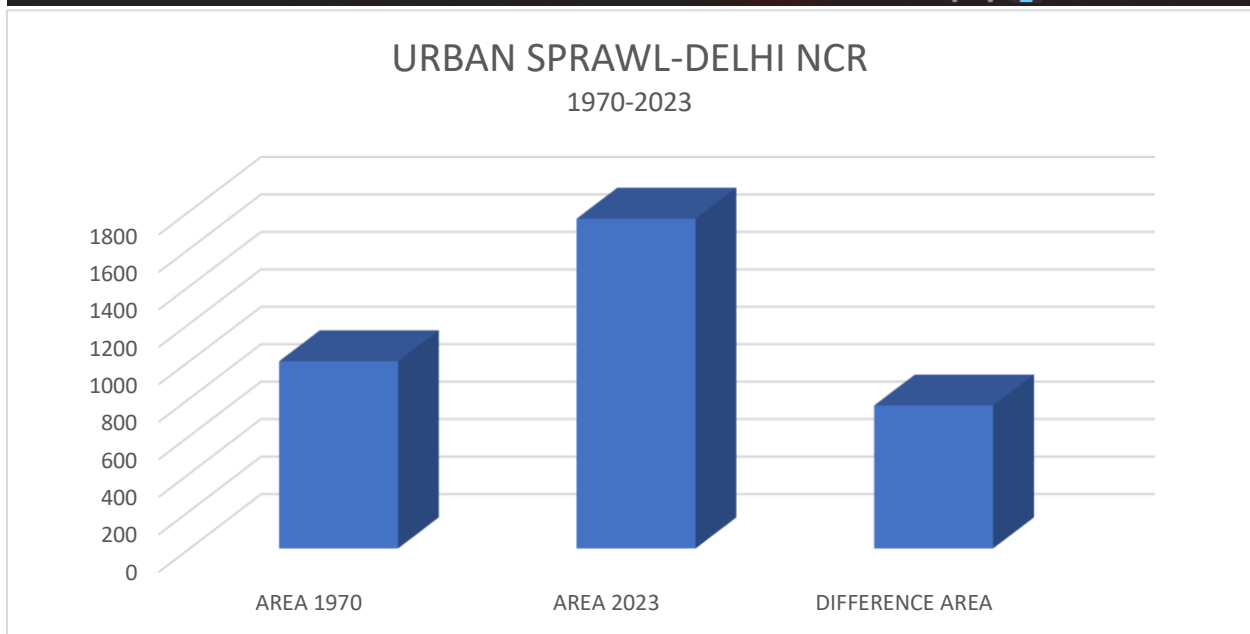
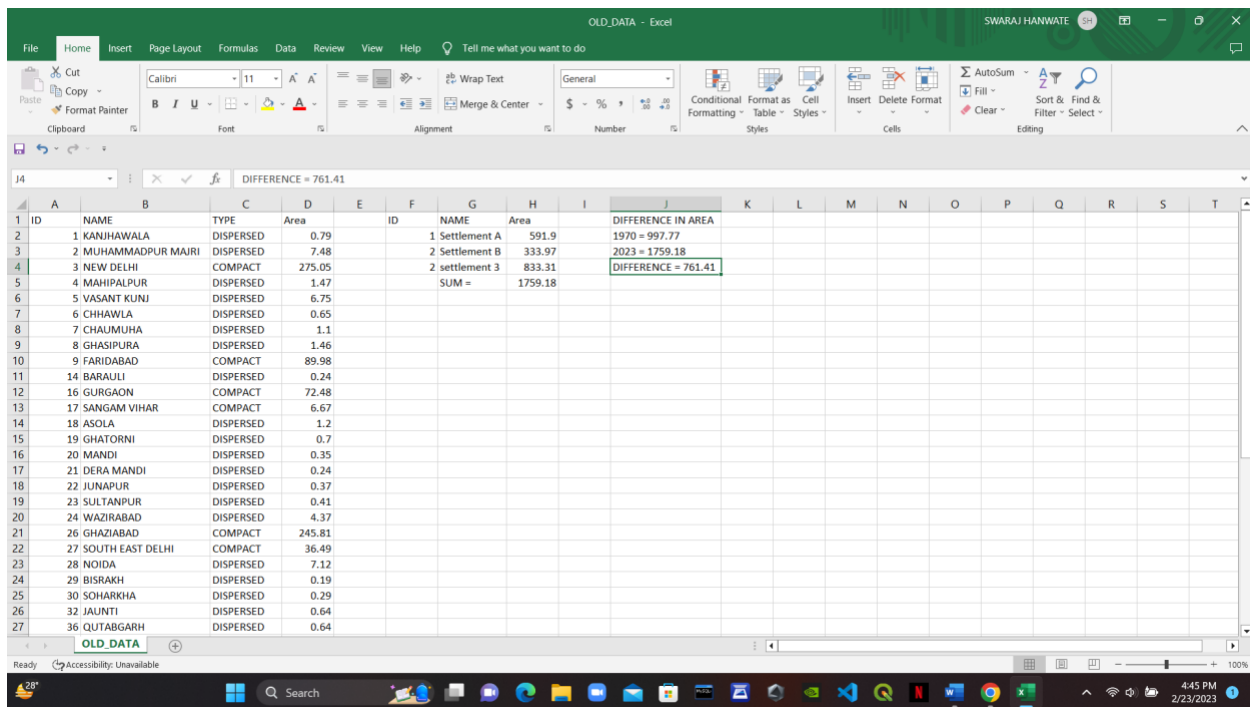
THE MAJOR DRIVING FACTOR FOR INCREASED URBAN SPRAWLING IS INCREASE IN THE POPULATION , BUT THERE ARE OTHER FACTORS TO THAT CONTRIBUTES IN DEVELOPMENT OF URBAN SPRAWLING:-

1. LOWER LAND RATES
2. IMPROVED INFRASTRUCTURE
3. RISE IN STANDARD OF LIVING
4. LACK OF URBAN PLANNING
5. BENEFITS FROM GOVERNMENT POLICIES

THESE ALL FACTORS PLAY A SIGNIFICANT ROLE AT THE LEVEL OF AN INDIVIDUAL.

DATABASE AND METHODOLOGY USED

WE HAVE USED THE DELHI TOPOSHEETS OF 1970 FROM SURVEY OF INDIA GOVERNMENT SOURCE AND HAVE OBSERVED THE URBAN SPRAWL OVER THE AREA. ALSO, WE HAVE USED MICROSOFT EXCEL TO CALCULATE THE DIFFERENCE BETWEEN THE URBAN AREA EXPANSION IN 1970 AND 2023(CURRENT SCENARIO).



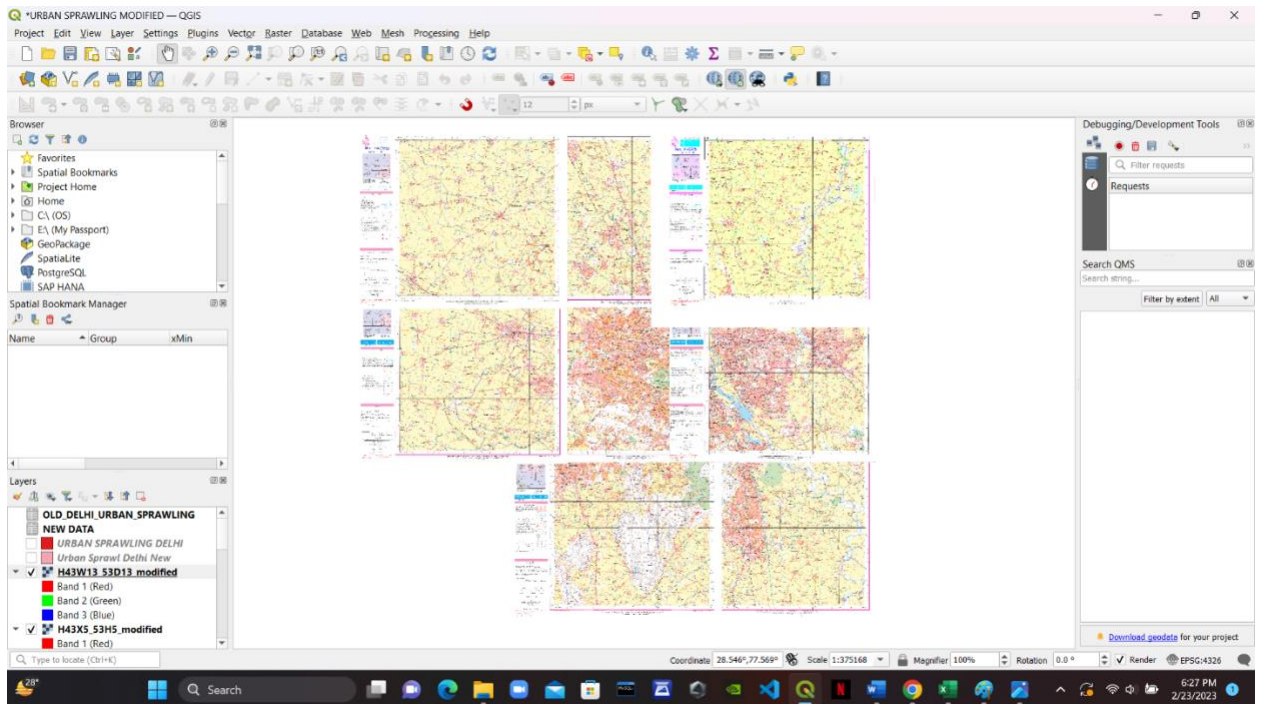
ALSO, WE HAVE USED QGIS SOFTWARE FOR DOING COMPARISON AND ANALYZING THE URBAN AREA IN 1970 AND THE URBAN AREA EXPANSION HAPPENED TILL NOW.

WE HAVE ALSO USED SOME STATISTICAL TOOLS FOR CALCULATING THE AREA OF HOW MUCH URBAN SPRAWL HAS BEEN OBSERVED WITH THE HELP OF QGIS SOFTWARE.

WE HAVE USED QGIS SOFTWARE 3.28.3 (LATEST VERSION) AND HAVE PERFORMED REQUIRED STEPS TO COMPARE AND ANALYZE THE URBAN SPRAWL BETWEEN TWO DIFFERENT TIME PERIODS.

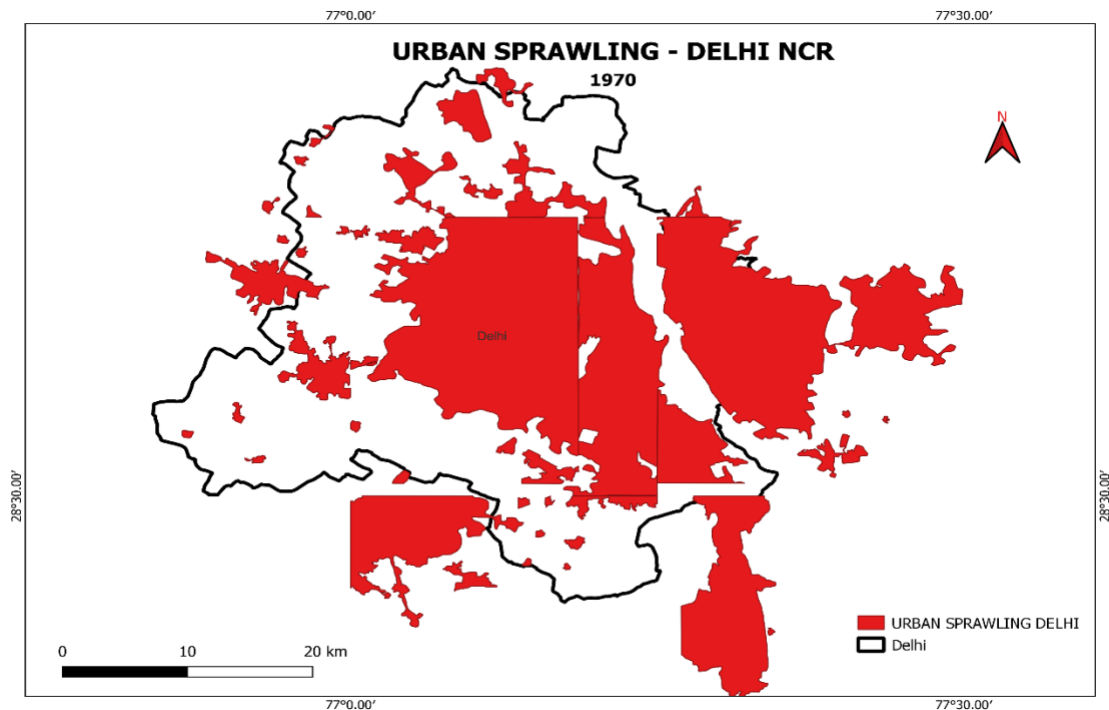
STEPS: -

- 1. OPEN QGIS SOFTWARE 3.28.3 VERSION.**
- 2. THEN GEOREFERENCE THE TOPOSHEETS OF DELHI.**



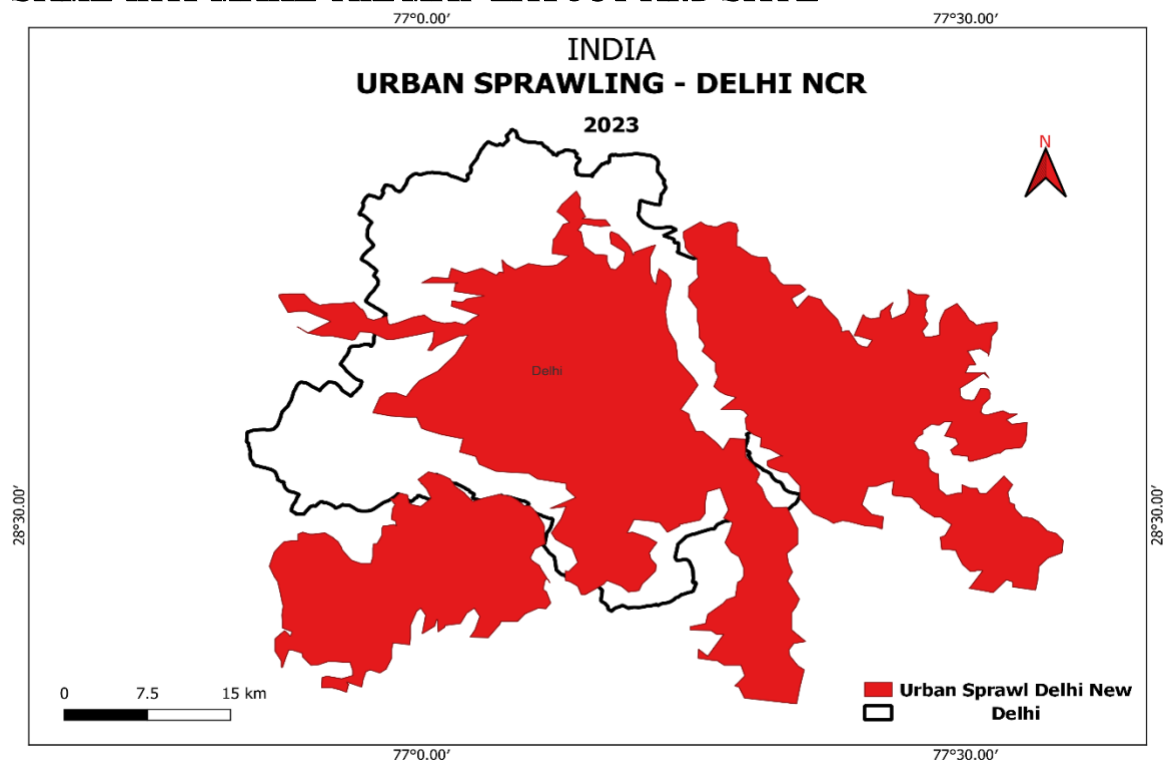
- 3. CREATE A NEW SHAPE FILE LAYER TO DIGITIZE THE AREA WITH THE HELP OF POLYGON.**
- 4. THEN DIGITIZE THE AREA OF URBAN SPRAWL (SETTLEMENTS) WITH THE HELP OF POLYGON.**
- 5. THEN MAKE A MAP LAYOUT AND SELECT THE APPROPRIATE SETTING LIKE COORDINATE REFERENCE SYSTEM (CRS), COORDINATES, NORTH DIRECTION AND MANY OTHER.**

6. AT LAST, SAVE THE MAP LAYOUT OF URBAN SPRAWL IN 1970.

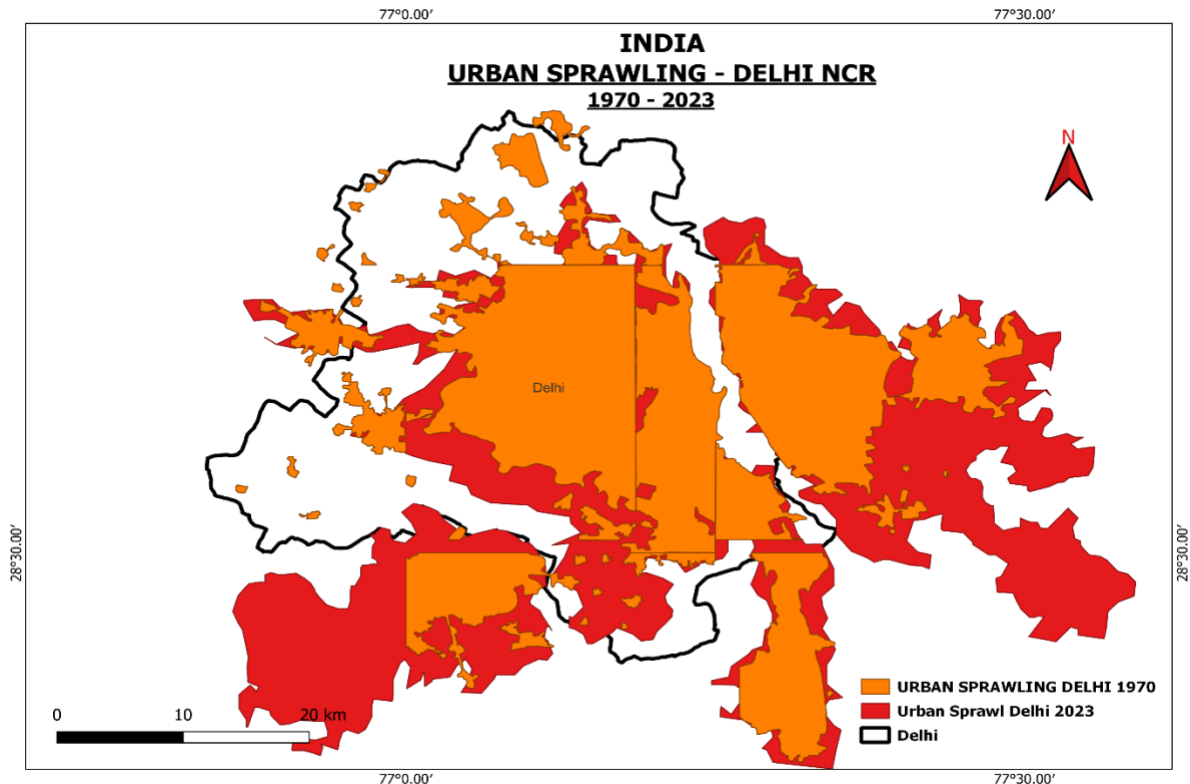


7. IN THE SAME WAY DIGITIZE THE AREA BY CREATING ANOTHER LAYER TO OBSERVE CURRENT URBAN AREA EXPANSION BY DIGITIZING THE AREA ON OPEN STREET MAP.

8. SAME WAY MAKE THE MAP LAYOUT AND SAVE



9. AND MAKE ANOTHER MAP LAYOUT BY COMBINING THESE TWO MAPS OF 1970 AND 2023 TO COMPARE AND ANALYZE THE URBAN SPRAWL EXPANSION.



AS WE CAN OBSERVE IN THE ABOVE MAP THAT THE ORANGE COLOR REPRESENTS THE URBAN SPRAWL AREA IN 1970 AND THE RED COLOR REPRESENTS THE URBAN SPRAWL AREA OF 2023.

INTERPRETATION

AS WE CAN ANALYZE FROM THE GIVEN MAP AND DATA THAT THERE CAN BE NOTICED A HUGE AMOUNT OF URBAN AREA EXPANSION MAINLY IN THE SOUTH-WEST AND EAST AND SOUTH-EAST DELHI. SPATIAL DYNAMICS OF 1970-2023 INDICATES THAT FASTER GROWTH OCCURS IN DEVELOPING CITIES IN LARGE SCALE AS COMPARED TO DEVELOPED CITIES. IN INDIA MEGACITIES LIKE DELHI, SHOWS HIGH URBAN AREA, BUILD-UP DENSITY, LARGE-SCALE MIGRATION ETC. IF WE OBSERVE THIS MAP WE FIND THAT THREE KINDS OF URBAN PATTERNS EXIST IN DELHI ON THE BASIS OF DISTRICTS, THAT ARE :-

HIGHLY SPRAWLED DISTRICTS, MEDIUM SPRAWLED DISTRICTS, LEAST SPRAWLED DISTRICTS.

WE CAN SAY THAT IN HIGHLY SPRAWLED DISTRICTS INCLUDE DISTRICTS LIKE WEST, NORTH, NORTH-EAST AND EAST DISTRICTS ETC.

MEDIUM SPRAWLED DISTRICTS ARE FOUND IN NORTH-WEST, SOUTH, SOUTH-WEST DISTRICTS ETC.

LEAST SPRAWLED DISTRICTS CAN BE FOUND IN CENTRAL AND NEW DELHI DISTRICTS ETC.

AS THROUGH THE DATA WE CAN SEE THAT THERE HAS BEEN A EXPANSION OF URBAN AREA OF ABOUT 800 SQUARE/KM. ALSO PEOPLE ARE MIGRATING HERE IN SEARCH OF JOB OPPORTUNITIES BETTER EDUCATION FACILITY, GOVERNMENT SCHEMES AND POLICIES ALSO BETTER INFRASTRUCTURE. DUE TO THIS THERE IS A LARGE POPULATION EXPANSION OBSERVED AND PROBLEMS RELATED TO POOR STANDARD OF LIVING, EMERGENCE OF SLUMS, ENVIRONMENTAL POLLUTION, EMERGENCE OF NEW DISEASES AND SCARCITY OF BASIC AMENITIES. DUE TO THESE ISSUES PEOPLE ARE PREFERRING TO LIVE IN THE OUTSKIRTS RATHER THAN IN THE MAIN CITY, THIS IS ALSO A REASON WHY WE CAN SEE EXPANSION OF URBAN AREA IN THE OUTSKIRTS. AS THE MAIN MARKET IS IN CENTER THE POPULATION IS HIGH AND IT DECREASES AS WE MOVE TOWARDS THE OUTSKIRTS OF THE CITY. MAINLY THE SOUTH-WEST AREA HAS SHOWN A LARGE EXPANSION DUE TO INFRASTRUCTURE DEVELOPMENT AND BOOST IN THE ECONOMY.

AT LAST THE MAJOR REASON FOR THE EXPANSION OF URBAN AREA IN THE OUTSKIRTS IS INCREASE IN THE MIGRATION RATES FROM VILLAGES TO CITIES AND THE PEOPLE LIVING IN CENTRAL DISTRICT IN THE OUTSKIRTS DUE TO ENVIRONMENT AND HEALTH ISSUES.

SUMMARY

FROM THIS STUDY WE HAVE LEARNT ABOUT THE EXPANSION OF URBAN AREA BETWEEN TIME PERIODS OF 1970 AND 2023. AS CITY PROGRESSES IN DEVELOPMENT OF INFRASTRUCTURE PEOPLE ARE MORE LIKELY TO MIGRATE TO THESE AREAS IN SEARCH OF JOBS AND BASIC NECESSITIES. WHICH LEAD TO HIGH POPULATION

DENSITY AND EMERGENCE OF ENVIRONMENTAL AND HEALTH PROBLEMS WHICH AFFECTS THE LIVES OF PEOPLE. THAT IS WHY IT IS IMPORTANT TO STUDY ABOUT THIS ISSUE. WE ARE ABLE TO ANALYZE THE PROBLEMS AS WELL AS ABLE TO FIND A SUITABLE MEASURE TO SOLVE IT. URBAN SPRAWL IS OBSERVED IN THE AREAS WHERE THERE IS UNPLANNED AND DISORGANIZED DEVELOPMENT.

THROUGH THIS STUDY WE ARE FAMILIAR WITH MANY TOOLS SUCH AS QGIS SOFTWARE, MICROSOFT EXCEL AND ONLINE RESOURCES ETC.