GIS FOR CONTROL OF COMMUNICABLE DISEASES

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INTRODUCTION

• The existence of precise disease tracking was highlighted from 1854 when John Snow located cholera cases in London.
• Geospatial information system (GIS) is one of the effective tool to mitigate and control the spread of vector borne, water borne and airborne diseases.
• It cannot only provide a platform for preparation of geospatial mode but by using other mathematical models, can be used for development of predictive model using various climatic and environmental factors.
METHODOLOGY

- The linelisting of the diseases like Malaria, Chikungunya, Dengue was taken from state Headquarter, NVBDCP.
- GIS Mapping of diseases like Dengue, Malaria, Chikungunya, Hepatitis, Cholera and Seasonal Influenza was made using ARCGIS 10.x software.
- Transmission pattern of disease was mapped.
RESULTS

USE OF GIS IN VECTOR BORNE DISEASES

LINKING TOPOGRAPHY WITH DISEASE

BREEDING SITES

TRANSMISSION PATTERN

GIS MAP

COMPARITIVE ANALYSIS OF DISEASES

DENGUE

MALARIA

CHIKUNGUNYA

RESULTS

TRANSMISSION PATTERN

CHIKUNGUNYA

DENGUE

MALARIA

GIS MAP

USE OF GIS IN VECTOR BORNE DISEASES

LINKING TOPOGRAPHY WITH DISEASE

BREEDING SITES

COMPARITIVE ANALYSIS OF DISEASES
GIS MAP

DENGUE

CHIKUNGUNYA
COMPARATIVE ANALYSIS OF DISEASE ACROSS YEARS

MALARIA CASES 2016

MALARIA CASES 2015
DISEASE TRANSMISSION

MALARIA TRANSMISSION IN 2016
IDENTIFICATION OF BUFFER ZONE

Buffer zone for Avian influenza
Mapping of breeding points
LINKAGES OF DISEASES WITH TOPOGRAPHY

- GREEN BELTS
- WATER BODIES

DENGUE CASES IN 2016
RESULTS....

USE OF GIS IN WATER BORNE DISEASES

HEPATITIS E
HEPATITIS A
CHOLERA

TUBEWELL MAPPING
GIS MAP
TRANSMISSION PATTERN
TRANSMISSION PATTERN OF CHOLERA
GIS MAP

CHOLERA

HEPATITIS
GIS MAPPING: TUBEWELLS
IMPLICATIONS

• Various airborne, water borne and vector borne diseases can be predicted in advance which can help policy makers to effectively plan out strategies for control of spread of diseases especially in case of Vector borne diseases.

• Geospatial modelling of diseases can led to robust application of analytics to track the geographical distribution and transmission pattern of disease.
IMPLICATIONS....

• More precise disease tracking can also illuminate causes and spark opportunities for prevention and control strategies.