SPATIAL INFORMATION MANAGEMENT FOR SUSTAINABLE DEVELOPMENT, DISASTERS AND RISKS IN EKITI STATE, NIGERIA

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ABSTRACT

Spatial information management is an essential pivot for the sustainable development of our noble country and such must be upheld in Nigeria as environmental problems are becoming menaces to the society. Environmentalists are cognizant of the fact that without current Spatial Information management the sustainable development may be hampered and this is one of the key catalysts of environmental disaster and risks, and that spatial information management is becoming an increasing technology, so its application is inevitable. This paper focuses on spatial information management on sustainable development, disaster s and risks management in Nigeria using spatial information to manage, prevent and monitor the environmental problems such as flood disaster, soil erosion, air pollution, fire disaster and global warming through forestry management so as to enhance good Sustainable Development in Nigeria. Factors responsible for these disasters were discussed and the methodologies for providing panacea to the problems are proffered. Spatial information management will go a long way to enhance Sustainable Development, combat environmental problems such as disasters and risks that that may hamper socio-economic development is this Twenty-first century in Nigeria.

Key Words: Sustainable Development, Environmental Problems, Disaster, Risk, Drainage Facilities, Wastes, Buildings, Industries, Flooding, Global Warming, Greenhouse effect and climate change.

INTRODUCTION

There is the need to correct and advance in technology because of the varying challenges facing the country such as risks, disasters that have impact on the socio-economic lives of man in Nigeria including Ekiti State.

• using GIS, Remote Sensing GPS are Spatial information technology to alleviate risks and disasters.
•Environmental problems are natural and man-made in which the spatial information management serves as eye-opener.

1.1 STATEMENT OF THE PROBLEM

- Developer's presumption on projects execution without considering the resultant/ adverse effects on the people, environment and ecosystem.
- There is the need for the government ,communities, individuals to take care of the environment to avert possible danger and future embarrassment.
- A number of environmental developments and projects are becoming problems and are disastrous.
- Most of the problems that involve management of disaster and risks are already very serious and require urgent attention. Humanity's stake in environmental conservation, preservation and protection is enormous, and environmental values have been neglected too often in the past.
- The cost of disasters, hazards and risk management in Nigeria is high and the impact of these environmental problems are principally loss in health or life, poverty, crimes, less productivity and amenity.
- Also, we must ensure that the current need of the present does not have negative impact on the future generation.

1.2 AIM

The main objective of this paper focuses and explore the Spatial Information management for sustainable development, disasters and risks in Nigeria.

1.3 OBJECTIVES: The specific objectives are to:

- examine the sustainable development projects and their impact on socio-economic lives in Nigeria.
- describe various disasters and risks' strategies and proffer solution to them for sustainability's sake.

2.0 RESEARCH METHODS

2.1 HARDWARE NEEDED FOR SUSTAINABILITY DEVELOPMENT, DISASTERS AND RISKS MANAGEMENT

The following Satellite images and imageries were used in gathering the required datasets in an integrated Geographic Information System (GIS) environment. They are: SPOT5, IKONOS, Nigeria Sat 1; metrological records, Global Positioning System (GPS), Topographical map and administrative maps of Ekiti State, Nigeria and HP Printers.

2.2 SOFTWARE NEEDED

Arc GIS, IL WIS 3.2a and attribute data were used in data processing, analysis and generation of thematic maps for Spatial information management in Nigeria. These satellite images were subjected to Image processing technique, such as enhancement, geometric correction and image classification.

3.0 BASIC DEFINITIONS

GIS

- Sustainable development
- Environment
- Land
- Disaster and risks management
- Data
- CAD (Computer Assisted Drafting)
- DBMS (Data Base Management System)
- Database
- Data structures

4.0 DISCUSSION AND FINDINGS

4.1 Spatial information operations on sustainability development shows that:

- ✓ Spatial Information (data) is the basis for a meaningful development in any place.
- ✓ Sustainable development draws the attention of people to the urgent need and agree on a range of measure to reduce the global poverty through job opportunity/ provision.
- ✓ Advocacy focuses on how nations and corporate bodies could hold on to sustainable development.

Hold to the tenent of Sustainable Development which stresses the balance between socio-economic development and the environment on daily basis through Spatial information management**.**

4.2 Disasters, risks and their spatial information management strategy

4.2.1 Importance of spatial information management as panacea to risk management in Nigeria are:

- o It enables us to know the causes of flood disaster- metrological, natural and man-made factors
- o Management of flooding- through municipal GIS , hazard maps that takes care of the whole community

Factors responsible for flooding :flash, levees ,mudflows new development and uncontrolled development

4.3.0 Erosion disaster

Erosion as defined- rubbing of the surface through agent of denudation

4.3.1 Causes are:- climate, climate change, topography, soil materials and human activities in the area

4.3.2 Types/Effects:

- Truncation of road, collapsing of building
- Diminution of range lands and buildings
- Damage of electric poles and the consequence effects.

4.4.0.Fire disaster.

- Fire disaster is caused by man through carelessness and non-challant attitude of not putting off electrical appliances and matches

4.4.1Spatial Information required for curtailing fire disaster .

Applying GIS techniques by creating. Fire management sub-modern likely to the area to which could spread most rapidly and , determine the relative potential intensity of a fire within which area of the need to be burnt without having effect on the society.

4.5.0 HAZARDOUS MATERIALS:

- ✓ Hazardous are quite enormous
- ✓ Causes pollution.

4.5.1 SPATIAL INFORMATION REQUIRED.

- ✓ Need to carry out land-capability analysis by identifying the relevant constraint on locating disposal facility. Nigeria should review the National Policy to accommodate survey content.
- ✓ There should be adequate funding for environmental management projects

5.0 RECOMMENDATIONS

(i)Nigeria should review the National Policy to accommodate survey contents to be carried out separately and independently in any project for execution.

(ii) There should be adequate funding for environmental management projects so as to yield the expected results.

6.0 CONCLUSION

Spatial Information management provides an up-to-date and cost-effective-data for geospatial

mapping for all areas of sustainable development, disaster and risk managements are discussed.

REFERENCES

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