



APPLICATIONS OF CONTOUR IN TOPOGRAPHIC MAP PRODUCTION: A CASE STUDY OF ONITSHA SOUTH- EAST NIGERIA

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ABSTRACT

Contours are very important in the production of topographic map. It shows the various heights which aids planning thereby enhancing development. Topographic maps on the other hand shows manmade and natural features. In this paper administrative map and GPS coordinates was used to produce a small contour map of Onitsha, the procedures for this contour production are explained and the various benefits stated. It is expected that this will assist to those who produce maps, those who teach students topographic map production and also those who make policies concerning the environment.

KEYWORDS: TOPOGRAPHIC, GPS, CONTOUR

INTRODUCTION

Terrain relief is an important feature of Geographic Environment and a major element of topographic maps. Contour lines are widely adopted as a representation of terrain relief in traditional maps. In general, contour maps are still indispensable due to the following reasons: 1) Abundant terrain data are still represented by contour maps; 2) Contour maps contain fewer limits for use in different situations; Lay a et al

Terrain relief is an important feature of the natural environment, influencing human activities and the spatial distribution of many natural and human phenomena. How to represent terrain relief is always a vital theme for discussion in cartography (Imhof, 1982)

Contours can be produced in the GIS environment and these contours can be useful in Onitsha South-East in implementation of policies in the environment, environmental impact assessments, mitigation and so on.

With the advent of Geographic Information System (GIS) over the years, maps can be portrayed in different dimensions such as (3-D) with adequate topological relationships. The policy makers of Onitsha and the entire public if interested can view maps in 3 dimensional which appears easier. The core

of this paper lies in the benefits of producing contours in digital forms which will assist environmental decision makers of Onitsha- Eastern Nigeria in cases of natural disaster. Disasters have been defined and categorized in diverse ways by various scholars. See for instance, Bates (2002), Keane (2004), Hugo (2009) and Naik (2009)

MATERIALS AND METHODS

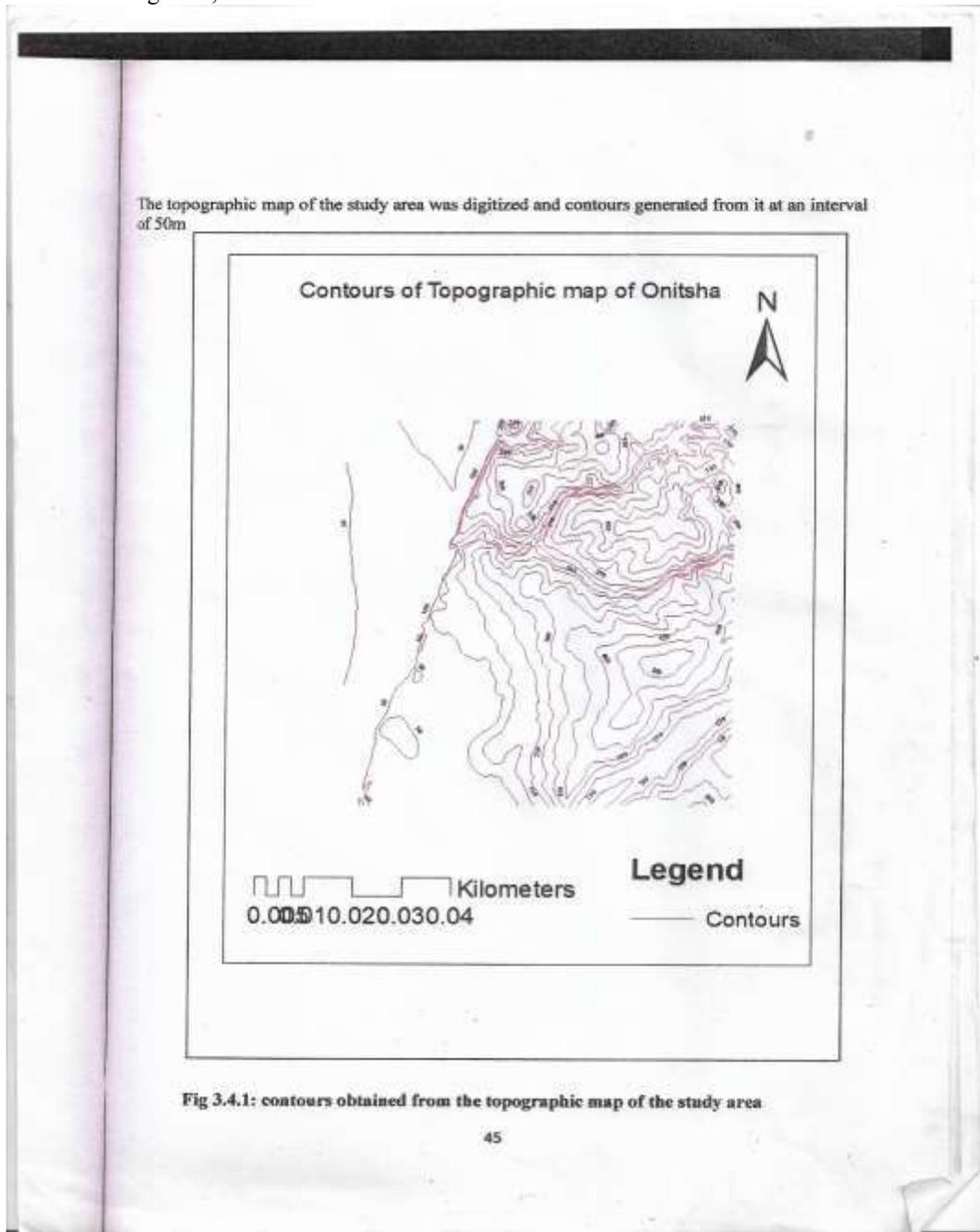
The study was carried out in Onitsha South-East Nigeria, the following were used in the contour production: Administrative Map, GPS coordinates,. The coordinates were obtained in the field using Differential GPS, the base of the Differential GPS was set under the bridge in between Asaba and Onitsha, Nigeria then the rover was used to move around Onitsha East inputting coordinates in the instrument in order to pick the heights which will be used to plot the contours, the topographic map was Georeferenced using geographic coordinates and digitized then referenced to Minna datum on Arc catalogue. From these, contours were created which will be eventually be used in producing topographic map.

RESULTS AND DISCUSSION

It is important for map producers to make use of the readily available modern technology instead of the old means of map production. In the earlier days

contour maps which were produced from Analogue method and has some limitations such as inadequate information and are also subject to wear and tear. But readily available softwares are used to produce maps it can be saved for a long time, it is faster and the users

can readily get information at a glance. This paper has been able to explain how these contour maps can be produced and its benefit to users.



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