

**ASSESSMENT OF SEVERITY OF THE METEOROLOGICAL DROUGHT OVER  
DODOMA REGION**

**By**

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**I45/84339/2012**

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A dissertation submitted in partial fulfillment of the requirements for the

**Postgraduate Diploma in Meteorology**

University of Nairobi, Kenya

**JULY, 2013**

**DECLARATION**

I declare that this is my original work and has not been presented for a degree in this or any other University.

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## **ACKNOWLEDGEMENTS**

I wish to extend and express heartfelt gratitude to my Heavenly Father JEHOVAH, for giving me life, that enabled me to write this project. My sincere thanks to my supervisors Prof F.M. Mutua and Dr Opijah for their counsel and advice in the development and preparation of this dissertation, and all other colleagues whose ideas/comments were incorporated in making this project, especial Mr. Joseph Karianjahi for his help in R- program for analysis.

I am most grateful to the Government of Tanzania through Tanzania Meteorological Agency (TMA) for providing me with the scholarship that made the pursuance of my study successful. I am also grateful to the TMA (Tanzania Meteorological Agency) through the climate section for providing me the data for this study.

Special thanks to my lecturers, the class of 2012/2013 and my friends and colleagues who we have been cooperating together throughout this course, may God bless them abundantly.

## **ABSTRACT**

Most drought studies have been dependent on limited rainfall data that is available in most parts of Tanzania. The new development in space technology, especially satellite derived products now provide new opportunities that can be used to study space- time characteristics of drought. Thus the main objective of this study is to assess meteorological drought severity using various indices over Dodoma region.

Rainfall data used in this study was obtained from the Tanzania meteorological agency and was from 1985 to 2012 for Dodoma meteorological station and Hombolo agro meteorological station.

The method used in this study includes the calculation of drought indices such as standardized precipitation index (SPI) from R- program and the drought severity index (DSI) derived from rainfall records using some standardized statistical methods. The two indices were compared for improving early warning system.

The study has shown that drought indices based on SPI and DSI can provides realistic estimates of drought conditions. There were however some challenges in using these indices because they are mostly rainfall dependent.

The study has provided a way of assessing the worse drought periods by means of SPI as well as DSI that could be used for regional drought monitoring in order to improve the early warning system.

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