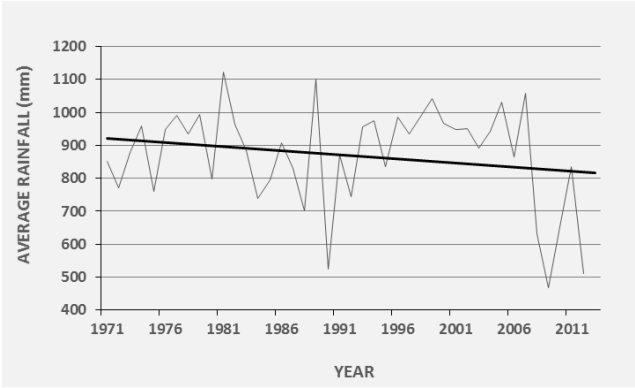

Figure 8. Mean annual rainfall total in Yola from 1971-2012

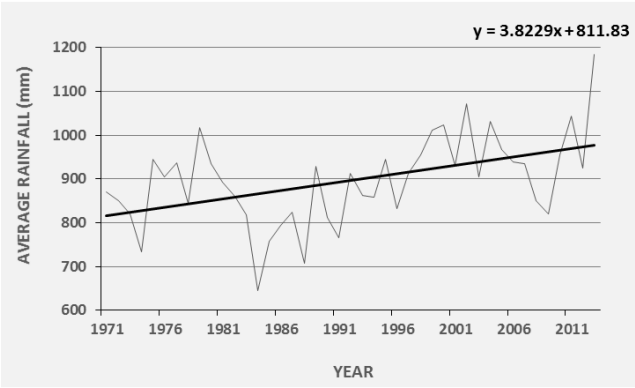

Figure 9. Mean annual rainfall total in the study area from 1971-2012

4.3.2 Mean annual rainfall forcast from 2013 to 2030

The forecasted linear equation of the time series was obtained as y=205.25x-412170. The trend line shows a continuous rise from 2013 to 2030 (figure 10). This was an evidence that there will be an improved rainfall amount across the study area for the forecasted years.

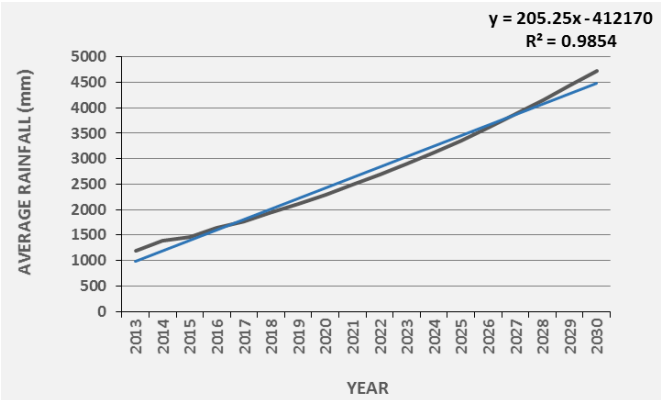

Figure 10. Mean annual rainfall in the study areas from 2013-2030 (forecast)

5. CONCLUSIONS

This study provides valuable insight into various degrees of rainfall as well as variability over the study area. The results revealed that Nguru recorded the least mean annual rainfall over the years, while the highest mean annual rainfall was recorded in Jos, it also has the minimum value of 12% of coefficient of variation. Kano has the highest rainfall variation of 38%, followed by Nguru and Katsina with 30% each respectively. However, rainfall (both the observed and predicted) shows an increase within the study area. Further studies should be carried out using rainfall and temperature base on climatic zones of the northern region.

REFERENCES

[1] Oladipo EO. (1987). Some features of growing season precipitation fluctuations in the interior plains of North America. Journal of Climatology 7: 531-540.

[2] Hyuwa GN. (2005). Statistical Analysis of Daily Rainfall Characteristics at Jos (1930-2003). B.Sc. Dissertation, Department of Geography. Ahm.adu Bello University, Zaria.

[3] Kipkorir EC. (2002). Analysis of rainfall climate on the njemps flats, baringo district, Kenya. Journal of Arid Environments 50(3): 445–458. http//doi.org/10.1006/jare.2001.0917

[4] Herath S, Ratnayake U. (2004). Monitoring rainfall trends to predict adverse impacts—a case study from Sri Lanka (1964–1993). Global Environmental Change 14: 71–79.

[5] Ayoade JO. (1973). Annual rainfall trends and periodicities in Nigeria. Nigerian Geographical Journal 16: 167-172.

[6] Ati OF. (1996). A comparison of methods to detect the onset of growing season and its trends for some stations in the sudan savanna in Northern Nigeria. M.Sc, Thesis, Department of Geography, Ahmadu Bello University, Zaria. http//doi/abs/10.1002/joc.712

[7] Hulme M, Osborn TJ, Johns TC. (1998) Precipitation sensitivity to global warming: Comparison of observations with HADCM2 simulations. Geophysical Re-search Letters 25: 3379-3382. http//doi.org/10.1029/98GL02562

[8] Kayano MT, Sansígolo C. (2008). Interannual to decadal variations of precipitation and daily maximum and daily minimum temperatures in southern Brazil. Theoretical and Applied Climatology 97: 81-90.

[9] Oguntunde PG, Abiodun BJ, Gunnar L. (2012). Spatial and temporal temperature trends in Nigeria, 1901–2000. Meteorology and Atmospheric Physics 118:95–105. http//doi.org/10.1007/s00703-012-0199-3

[10] Oladipo EO. (1993). Is the climate of Northern Nigeria becoming more arid. Paper Presented at the 36th Annual Conference of the Nigerian Geographical Association, Federal University of Technology Minna, pp. 13.

[11] Ati OF, Stigter CJ, Oladipo EO. (2002). A comparison of methods to determine the onset of the growing season in northern Nigeria. Int. J. Climatol. 22: 731-742.

[12] Adefolalu DO. (1986). Rainfall trends in Nigeria. Theoretical and Applied Climatology 37: 205-219. http//doi.org/10.1007/BF00867578

[13] Eludoyin (2009). Monthly variation in the 1985-1994 and 1995-2004 rainfall distribution over five selected synoptic stations in western Nigeria. Journal of Meteorology and Climate Science 7: 11-22.