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## Traditional capacity for weather prediction, variability and coping strategies in the front line states of nigeria

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### ABSTRACT

This paper is based on the results of a pilot project conducted to strengthen Nigerian Meteorological Agency' s (NIMET) capacity to provide reliable planting date forecast in Nigeria. This aspect of the project aimed at understanding traditional knowledge base and farmers' prediction methods, community perceptions of impacts of rainfall variability, coping strategies and opportunities in Sokoto, Kano, Jigawa, Kaduna, Bauchi states of Nigeria. Based on prevalence of drought, a community was selected for survey in each of the five states. Semi-structured interview and focus group discussion were used to sources for information. The survey indicates that the farmers had good understanding of weather and climatic dynamics of their community. The farmers in the study locations characterize a year into five seasons based on the atmospheric temperature as felt by the body, changes in wind direction, farming activities, and the behavioral changes of some animal and birds and phenological changes in plant species. Rainfall variability in the community has altered the farming systems, either in terms of changes in cropping pattern, elimination/reduction in the level of producing some crops or introduction of new crop varieties that are drought resistant and early maturing, and diversification of source of livelihood (non-farm activities). Impacts of rainfall variability in the communities were asserted to include; poor yield, low prices of crop/livestock, low dowry for their daughters, high cost of labor as a result of migration to urban centers, inadequate water for dry season farming, low income, low standard of living, and high level of poverty. Farmers recommended an integration of traditional proven methods of rainfall prediction with scientific methods to evolve reliable forecast that will reduce risks in their rainfed farming systems.

### KEYWORDS

Traditional Knowledge Base; Rainfall Prediction; Crop Production; Northern Nigeria

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### References

- [1] Hess, T.M., William Stephens and U.M. Maryah (1995) Rainfall trends in the North East arid zone of Nigeria 1961-1990. *Agricultural and Forest Meteorology*, 74, 87- 97. doi:10.1016/0168-1923(94)02179-N
- [2] Nicholson, S.E., Some, B. and Kone, B. (2000) An analysis of recent rainfall conditions in West Africa, including the rainy seasons of the 1997 El Niño and the 1998 La Niña years. *Journal of Climate*, 13, 2628-2640. doi: 10.1175/1520-0442(2000)013<2628:AAORRC>2.0.CO;2
- [3] Dore, M.H.I. (2005) Climate change and changes in global precipitation patterns: What do we know? *Environment International*, 31, 1167-1181. doi:10.1016/j.envint.2005.03.004
- [4] Oluwasemire, K.O., Stigter, C.J., Owonubi J.J. and Jagtap, S.S. (2002) Seasonal water use and water productivity of millet based intercropping systems in the Nigerian Sudan Savanna near Kano. *Agricultural Water Management*, 56, 207-227. doi:10.1016/S0378-3774(02)00008-2
- [5] Nnoli, N.O. (2004) Variability and change in mean onset and cessation dates of rainy season in

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Nigeria. Nigerian Meteorological Journal, 4, 36-49.

- [6] Nnaji, A.O. (2001) Forecasting seasonal rainfall for agricultural decision-making in northern Nigeria. *Agricultural and Forest Meteorology*, 107, 193-205. doi:10.1016/S0168-1923(00)00239-2
- [7] Food and Agriculture Organization (1998) Report on the development of food insecurity and vulnerability. Committee on world food security, Rome. <http://www.fao.org/docrep/meeting/w84970.htm>
- [8] Okorie, F. C. (2002) Studies on drought in Sub-Saharan region of Nigeria using satellite remote sensing and precipitation data. <http://www.mathaba.net/gci/docs/research/nigeria-drought.htm>
- [9] Dietz, A. J., Ruben R. and Verhagen A. (2001) Impact of climate change on dry lands with focus on West Africa. Global air pollution and climate change. Report No. 410200076, Wageningen.
- [10] Fiki, C. and Lee, B. (2004) Conflict generation conflict management and self organization capabilities in drought prone rural communities in north east Nigeria. *Journal of Social Development in Africa*, 19, 25-48.
- [11] Breman, H. and Kessler, J.J. (1995) Woody plants in agro-ecosystems of semi-arid regions with emphasis on the Sahelian countries. Springer-Verlag, Berlin.
- [12] Morton, J.F. (2007) The impact of climate change on smallholder and subsistence agriculture. *Proceedings of the National Academy of Sciences of the United States of America*, 104, 19680-19685. doi: 10.1073/pnas.0701855104
- [13] Mutiso, S.K. (1996) Indigenous knowledge in drought and famine forecasting in Machakos District, Kenya. *Indigenous Knowledge and Change in African Agriculture*. In: Adams, W.M. and Slikkerveer, L.J., Eds., Technology and Social Change Program, Iowa State University, Ames, 67-86.
- [14] Nyong, A., Adesina F. and Elasha B.O. (2007) The value of indigenous knowledge in climate change mitigation and adaptation strategies in the African sahel. *Mitigation and Adaptation Strategies for Global Change*, 12, 787- 797. doi:10.1007/s11027-007-9099-0
- [15] Amanor, K. (1994) *The new frontier: Farmer responses to land degradation: A West African study*. Zeb Books, London.