

# Nigeria Agricultural Policy Project Highlights

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## A CHANGING PERSPECTIVE TO DATA ANALYSIS: MY JOURNEY WITH R STATISTICAL PROGRAMMING.

My background is in soil science with a specialty in soil physics and conservation. Usually my research in Nigeria takes the form of Laboratory experiments and or a combination of Laboratory experiments and Field work. One is fully involved in the design and experimental layout of the research question in the field, participates in all the agronomic practices from land preparation to harvest, and data collection, ensuring that error is minimized.

During my M.Sc. and Ph.D. studies I was engaged in all these aspects of research but did not use statistics. Statistics was taught but not put into practical use the way I did at Michigan State University (MSU). For us in the life sciences back home in my University in Nigeria, the practice is to collect your data at the field level and enter the data into Microsoft excel and you are done. The analysis of the data with any statistical package is done by an expert and you can then interpret results and draw inferences. The line of thought is: *“I am engaged at the level of the field why add statistics to my plate?”* Usually **IF** you have any issues with the analyzed data, you run back to the statistician. Another twist, is that your research supervisory team could include a professor or senior colleague with statistical analysis expertise from or outside the department. You are then required to liaise with this senior colleague for all your data analysis. At the end, you still don't get to learn how to use the analytical package, and you infer the results with guidance and assistance from colleagues. And did I emphasize you pay in cash for the services provided by the statistician? It isn't free.

My first contact with a statistical software was with GenStat (please don't ask about the version) during graduate seminar in the college seminar series. The “expert” who analyzed my M.Sc. project data simply told me he used GenStat. Did I object? Why was he using this package? I didn't have the slightest idea, and the norm was to ask no questions since you didn't know any better.

Here at MSU the story is so different! Every student (undergraduate and graduate) I had contact with, analyzed their own data or used one form or the other of a statistical



package. Using statistics for data analysis is a skill that they all had to master. Aside from the conventional statistical courses taken at undergraduate and graduate levels, the research design and modelling classes, there are other free short programs and courses, on campus to help you develop data science skills. When I came to MSU, I struggled with the need to learn, as I already had a negative mindset. Therefore it took some time before I resolved to learn. The



workshops on R programming language I had attended earlier were helpful, but I thought they were not relevant to my field. So I had a huge challenge at hand. I then started with Stata but moved back to R before I could fully grasp Stata. Then I had to delve into SAS. It was all so confusing!

My experience here at MSU, under the Nigerian Agricultural Policy Project (NAPP), has changed my perspective on data science. You are constrained to acquire the skill of using software packages at MSU. No excuses!! Even when I tried making what I felt was a “genuine case” for not doing so, I was calmly but firmly told I had to learn both R and SAS. I lost some marks... and after that loss, my mind was made up. Then came the R manual I had to be a part of creating so it could be field specific– Girl, it was time to wake up!! You don’t give what you don’t have.

I had countless sleepless nights. Thank God for the internet and the on -line R-tutorial videos. I have been able to re-analyze my data in R all by myself. I am not quite there yet, but I bet you, I am not where I used to be! Something changed –My view of the world of data analysis.

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