Mapping Philippine Agro-Ecological Zones (AEZS)

COMMENT 1

Method

The conceptual framework (figure 1) is a novel and enriched representation of AEZ definition by HDN, to wit: "... Agroecological zones (AEZs) provide consolidated information on climate (including radiation, rainfall, temperature, and humidity) •." though the approach is simplistic and linear. However, one is tempted to ask the following questions:

1. Is climate derived from temperature only?
2. How about rainfall?
3. Is this included in the Moisture Index?

The study did use temperature and precipitation (i.e. rainfall) through the CRU TS3.l 'gridded at a 0.5°xO.5° resolution with climatic data from 1901 to 2009 and the GDD developed for the Philippines.

Unfortunately, the framework is not clear on these although these were dealt with sufficiently.

It would be preferable to show the left side of the framework (i.e. derivation of the agroclimatic zones) to show the base inputs i.e. radiation, rainfall, temperature, and humidity, as contained n the HDN definition. The next tier should then show how these were processed and consolidated to generate the agroclimatic zones.

The right side containing the biophysical factors to come up with agro-edaphic zones is an enrichment of the AEZ definition. However, it lacks a consideration of aspect and geology. Aspect is equally an important factor in plant growth. Similarly, geology is an important consideration as well.

Technical Details

The use of downloadable and open source datasets is convenient, to say the least. However, efforts should have been exerted to gather local datasets. I can understand the attempt to use SRTM to generate elevation values in the absence of digital shapefiles from NAMRIA which would have been preferable. Moreover, for consistency, one would expect that the slope categories should have been derived from the SRTM DEM. Additionally, the slope categories should have followed the standard used in the Philippines as contained in the prescriptions of he Technical Working Group on Geographic Information based at NAMRIA.

The definition of Philippine soil orders based on Wikipedia and Britannica is problematic. There are datasets available at BSWM. It is possible, however, that these are in analog format and m y take more than the project period to finish digitizing. Nevertheless, the report should have set

this as part of the literature review and explained it as a limitation. There are other digital soil datasets available on the Internet.

Given this SRTM dataset, one would expect that slope can easily be derived using GIS.

General

The study reports that ''... only agro-climatic and agro-edaphic zones were cross-tabulated and analyzed, under the premise that land use/ cover depend highly on both. …' is again problematic. The implication of this approach dilutes the contribution of land use/land cover and there is n direct attribution due to the resulting secondary treatment. As a result, the analysis misses the contribution of land use/ cover as a factor for agricultural productivity.

The study also reports that ''... maps cannot be perfectly overlaid, having come from different sources ... ' ' This is a common problem for the Philippines. However, I noticed that the study used Luzon 1911 but in other maps, it just indicates geographic projection without specifying whether it is Luzon 1911 or not.

The study can enhance the results by removing the critical areas not fit for agricultural production e.g. forests, existing urban areas and other unsuitable areas.

Lastly, a final definition of AEZ was not formally offered as required in the second objective f the TOR.

Nathaniel C. Bantayan, Ph.D.

March 22, 2012