

ABSTRACT

Nurdin, Fauzan Zakaria. 2011. Charracteristic and land potency of Dularnayo garden farming for maize development.

Upland is an agriculture areas that it used with primery water source from rain. It have potentially for food yielding from wide and suitability aspects. The hillslopes have much limiting factors for agriculture development i.e. maize crops. The aimed of this research was to: (1) identify the land charracteristic as base of upland management sustainability, (2) determining of up land suitability for maize comodity development, and (3) determining technology packet of hillslopes management that it may implemented based on lahan characteristic and its potency. This research conducted at six month in Dularnayo garden farming of Gorontalo State University. This research consists of two parts, namely the study of soil characteristics with soil survey carried out on sample location pedon with adaptive grid, and second part was to assess of land potency based on soil charracteristics from soil surveys and laboratories data with land suitability analysis. Assesment of land suitability classes using the framework of land evaluation and root square land index as methods. The result of this research showed that the soil charracteristics of soil physics was dominantly of brown colour, angular blocky of soil structure, slightly sticky of soil consistency, and loamy as soil textures. The soil chemistry was dominantly of moderately acid, the C-organic dan base exchangeable content was lower, kation exchange capacity was lower, but base saturation was highly. The easily mineral weathering of sand fraction was small amount and kaolinite clay minerals dominantly. Therefore, the low soil fertility status. The soil family that found was *Typic Kanhaplustalf, fine, kaolinitic, isohypertermic* and *Typic Kanhaplustults, coarse loamy, kaolinitic, isohypertermic*. The land suitability classes showed that land utilization type (LUT) Local Maize of patterns A (none fertilizing) + B (national fertilizing dosage) were dominantly of moderately suitable with nutrient availability as limiting factors (S2na), while for pattern C (prescription fertilizing dosage) was very suitable but any a few of nutrient availability as limiting factors (S1na). The LUT Composite Maize to pattern A was marginally suitable with nutrient availability as limiting factors (S3na), pattern B same as LUT Local Maize limiting factors, but pattern C with very suitable classes but differences of limiting factors (S1wa). For LUT Hybrids Maize dominantly of marginally suitable with water availability as limiting factors (S3wa) to pattern A+B, but pattern C dominantly of moderately suitable with water availability as limiting factors (S2wa). The full recommended of LUTs was LUT Local Maize to patterns A+B+C, LUT Composite Maize to pattern A+B+C, and LUT Hybrids Maize to pattern C. while, for LUTs that requiring recommended was LUT Hybrids Maize to pattern A+B. The technology package that can be done as techniques aspect consists of water and soil conservation i.e. bench terracing, mulching, minimum tillages, rorak, pitcher irrigation and channel clogged on terrace. Besides, for crops intensification with panca usaha tani implementing, crops diversification between Maize and Peanut or Maize and Green Bean. Socio-culture aspect way of huyula and combinations of panggoba and crop calendars. While mean, for institution aspect with improvement status of garden farming becomes a university farm.

Keywords: Charracteristic, suitability class, upland, maize