

## **The use of upland in Limboto watershed of Gorontalo Province for agriculture sustainability**

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### **ABSTRACT**

Upland agroecosystem has a great potential for agricultural development. Limboto watershed has an upland area that suitable for agricultural development of 37,049 ha. Meanwhile, flat to undulating land that is potential for agriculture is 33,144 ha. In utilizing the land resource, some strategies and technologies for upland management can be implemented, which include: 1) upland farming management, including plant grouping in a landscape following water need, determination of appropriate cropping patterns, and application of mulch, organic matter, wind breaker, and agroforestry, 2) development of economic, social and cultural aspects through extension, provision of production facilities, infrastructure, and capital for farmers, empowerment of farmers' institutions and extensions, and implementation of agribusiness system, and 3) implementation of a pro-agriculture policies, which include provision of subsidies to farmers in upstream areas for land conservation, granting tax subsidy to farmers, filling regulations based on land conservation, and land management based on land rights system. Another most important thing in utilizing upland is synchronization and coordination between government institutions by involving farmers to avoid interest overlapping.

Keywords: Upland, land use efficiency, sustainable agriculture, watershed, Limboto, Gorontalo