

A trial of interface development for the practical use of GIS information
which enables participatory research for local residents:
For the analysis of land use in the Ethiopian farming village

Year: 2008

Place of fieldwork: Ethiopia

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KeyWords: P3DM (Participatory 3 Dimension Model), GIS

- Research background

The research location, Dordora village of South Omo zone at an altitude of more than 2800m above sea level was formerly covered by forest, but the area of a neighboring village beyond the river, which is a village boundary, is now extensively cultivated. I investigated the methods and techniques for the purpose of studying forest use by residents as well as the reason why the forest had been left only in the highlands of the village area.

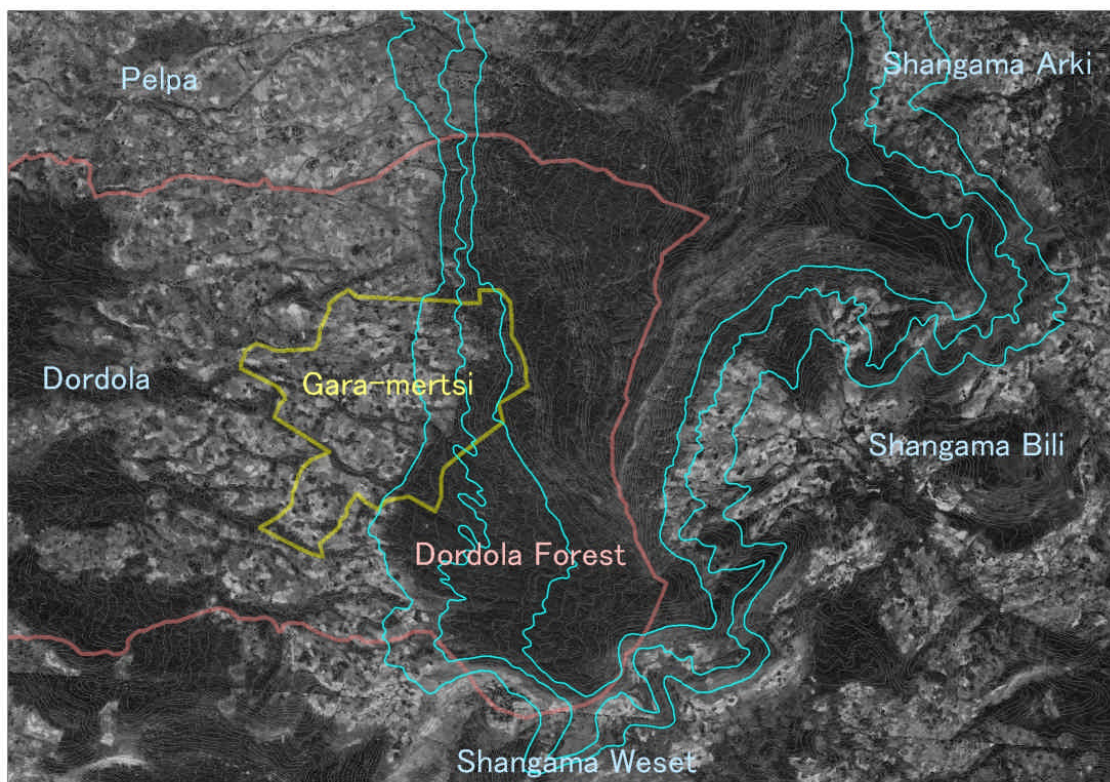


Fig.1: Aerial photo in 1984. Yellow line represents research area. Red line shows research village. Blue line in the middle is the contour line, 2800m above sea level.

- Research purpose and aim

In this research, I suggest the technique of practical area studies which utilizes P3DM as an interface between researchers and local residents, and investigate the possibility for the practical use of GIS information which enables participatory research for the local resident. In particular, I will test whether P3DM interfaces can be utilized in the present conditions for the analysis of land uses that often create problems for the protection of forest resources and the securing of farmland / grazing land.

- Results and achievements of fieldwork

It was found that the students from the 13 to 18-year-old (4th-8th grade students) age group can create a solid geographical feature model (6km square, scale 1/3000) within 11 days. Since there is no high-school (10th-12th grades) in the research area and they have various economical and geographical (such as distance from school to home) reasons for not attending, the ages of the students are higher than normal.



Fig.2: Students from the 13 to 18-year-old (4th-8th grade students) are making a solid geographical feature model.

From the investigation of all households (165 in total) it became clear how many livestock (e.g. cow, horse, mule, goat and sheep) were pasturing in the forest. As a result, I found out that there are 16 division and area names in the forest. It can be surmised that this forest has been used and managed by adjacent residents. They have got geographical and spatial information of the forest and they are using such knowledge for pasturing there.

- Implications and impacts on future research

In further research it is necessary to inspect what the positive factors of the forest having been left have had on the research area. If the effectiveness of P3DM could be verified in such an area, it would contribute towards a deepening understanding as to how the local resident is recognizing and using geographical and spatial information for their daily life.



Fig.3: Presentation of a solid geographical feature model construction at Primary and Secondary School (1st to 8th grades).