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Analysis of regional conditions of cultivation abandonment by grid square statistics using GIS

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The author composed grid square statistics using GIS to reveal the distribution of cultivation abandonment more precisely than ready-made regional statistics. The statistics is also suitable for analyses in combination with other ready-made social and environmental grid-square statistics. The agricultural grid square statistics was composed by allocating the value of the rural community statistics of Agricultural Census of Japan into the standard grid cell of Japan. Using the statistics he examined the spatial pattern of cultivation abandonment and the relationship between the abandonment and physical conditions, population, and agricultural production rural environment in Kanto Area, central Japan. The author examined the distribution of cultivation abandonment, agricultural production, population and topographic condition.

The result showed a slightly strong positive correlation between slope angle and ratio of cultivation abandonment. In steep slope areas worse situation for cultivating, decline in the production of special crops, decayed economic condition, and decrease in population resulted in high ratio of abandonment. In plain areas weak positive relationship between population density and abandonment was observed. Urbanizing impact on farmers' attitude might increase the abandonment in high-density areas.

Keywords: cultivation abandonment, grid square statistics, rural environment, GIS, cultivated land