

Evaluation of Public Green Space Placement Plans as Indicator of Urban Density of Three Major Metropolitan Areas in Japan

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Most large cities in Asia are extraordinarily high-density compared with their counterparts in Europe and North America. An acute lack of green spaces in the metropolitan areas in Japan, in particular, has given rise not only to problems in land use but also to deterioration of the quality of the urban environment. Quite apart from the problem of environmental conservation, green spaces fulfill a number of diverse functions for recreation, disaster prevention and local topography, and are thus one of the most important elements in urban areas. Furthermore, in Japan, the potential danger of high-density cities was made very real in people's minds in the Great Hanshin Earthquake in 1995, and several proposals have since been made strongly arguing for the necessity of disaster prevention city planning based on the provision of green spaces. This is because the weak areas have increased in disaster since and the flexibility of construction is large as compared with the advanced nations of others in Japan. This study aims to evaluate, as an indicator of urban density, plans for placement of green spaces in Japan's three major metropolitan areas, focusing on public green spaces such as parks and urban green areas among various kinds of green spaces.

The findings of this study can be summarized into the following three points:

(1) Lack of green spaces is more acute in Japan's metropolitan areas than in those in other parts of Asia and other developed countries. In the Chubu metropolitan area, urban density is not as high as those in the Tokyo and Keihanshin metropolitan areas but urbanization may accelerate in the future due to the economic growth and further concentration of industrial activities in the region. Yet, the Chubu metropolitan area features the city center that still accommodates several major open spaces and wide roadways, while the suburban areas in the region enjoy greater presence of forests and farmlands than in the other two metropolitan areas.

(2) It is observed that among the three major metropolitan areas of Japan, the Tokyo metropolitan area has a particularly high urban density, as measured in public green spaces, with its city areas characterized by an extremely high population density and extremely low per capita urban park area. It is thus necessary for Tokyo to rigorously reexamine its plans for placement of public green spaces along with other relevant plans such as those concerning the use of land and spaces.

(3) Urban density is particularly high in the central parts of Japan's three major metropolitan areas and it is extremely difficult to create new green spaces within the existing urban districts there. It is thus necessary and important as a way to alleviate the heat island phenomenon and to conserve urban environment to promote the greening of urban areas, not only public land but also land under private ownership, by means of rooftop and wall gardening of buildings. As a subject for future study, a more detailed analysis of the areas evaluated in this study is needed to identify the areas where public green space are scarce, and then to propose a set of viable reform measures.