

Geospatial information for disaster mitigation

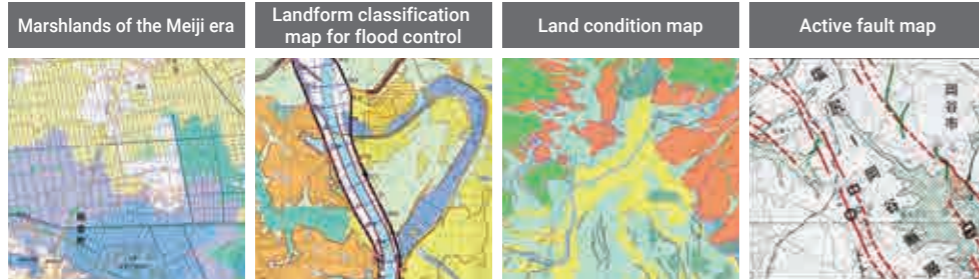
Three axes of activities for disaster-prevention preparedness

Geospatial information for disaster mitigation as preparedness

GSI has compiled **Geospatial Information for Disaster Mitigation (GIDM)** from **topographic characteristics information** related to land origins, land uses, etc., and **Disaster history information** from historical records. This enables us to obtain a good understanding about the risks of disasters in local areas.

Geospatial Information for Disaster Mitigation (GIDM)

Topographic characteristics information



Disaster history information



Providing geospatial information for protecting human lives from disasters

"GSI Maps" which is a web map, provides geospatial information (i.e. topographic maps, photographs, elevation, landform classification and disaster information) compiled by GSI and have various functions that are useful for disaster prevention. GSI Maps is provided for considering disaster prevention measures and raising residents' awareness about disasters through disaster education.

For example, "Volcanic Base Map" shows volcano topography in detail. By overlaying this with "Volcanic Land Condition Map", which shows the distribution of the ejecta and terrain formed by past volcanic activities as one type of topographic characteristic information to produce 3D images, we can more easily get a visual understanding of the relation between the topography of the volcano and its origin and nature.

Volcanic Base Map and Volcanic Land Condition Map



3D representation (Mt. Hakone)

Providing greater support for disaster and geographic education to improve local disaster prevention capabilities

~ Aiming to make comprehensive geographic education compulsory in high schools in FY 2022 ~

We are engaged in various activities to support disaster and geographic education by, for example, improving interdisciplinary contents of the Toolbox for Geography Education, holding seminars with textbook publishers, providing instruction in schools, and holding events such as the "Exhibition of All Japan School Children's Excellent Mapping Work".

Toolbox for Geography Education



Classroom instruction in elementary schools



Online education support seminars



Programs
- How we are working to support geographic education
- Introduction to geospatial information, contents, etc., that are provided

Exhibition of All Japan School Children's Excellent Mapping Work



Hazard Map Portal Site Providing useful natural disaster risk information



Natural disaster risk information superimposed on topographic maps

Visit the portal website:
<https://disaportal.gsi.go.jp/>



GSI is operating its Hazard Map Portal Site to provide easily accessible information on local natural disaster risks and evacuation sites. The functions available at this site include superimposing natural disaster risk information such as flood and landform classification maps showing topographic features on maps or photographs (left figure) and searching desired hazard maps created by municipalities (right figure).

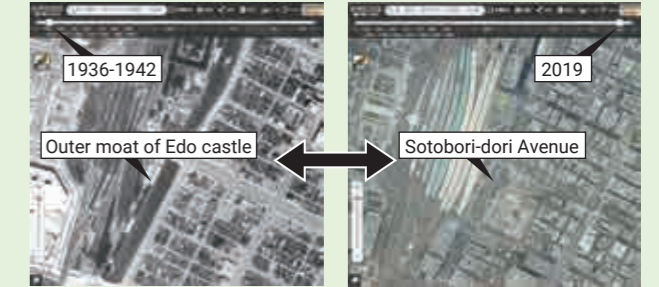
You can use GSI Maps at such times!

Comparison of various types of information —"Side-by-side comparisons" (Split display)



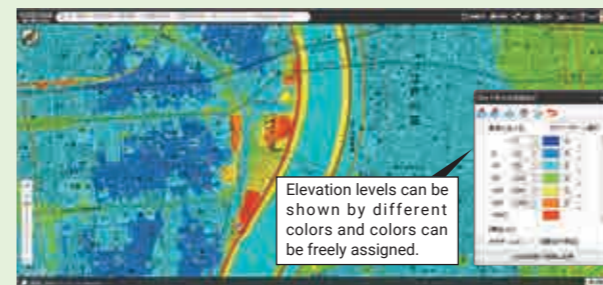
In "Side-by-side comparisons", different types of information for the same location can be lined up side-by-side. For example, by lining up maps that show topographic classifications with maps that show estimated inundation areas during a disaster, we can understand what types of terrain are in inundated areas.

Viewing the transition of towns —"Time series display" of aerial photos



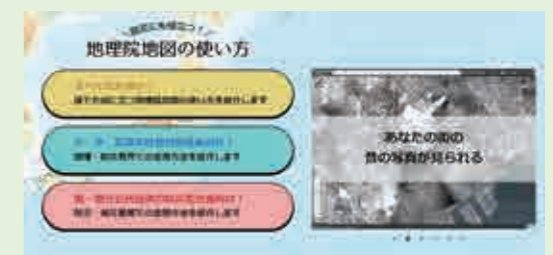
By moving the slider in the upper part of the screen, users can produce time-series displays of aerial photos by switching to different years. This is an easy-to-use method to understand the transition of towns.

Understanding the heights of surrounding areas —"Self-made colored elevation map"



"Self-made colored elevation map" function allows the user to freely set the colors and ranks of colors to show different elevations. Even for areas where there is only a small difference in relief, the function can still create maps where relief easy to understand.

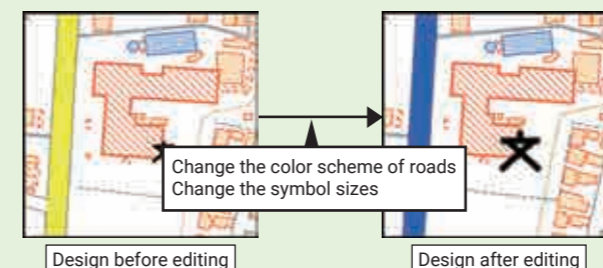
For more information on using GSI Maps, please go to the "Ways of Using GSI Maps" site.



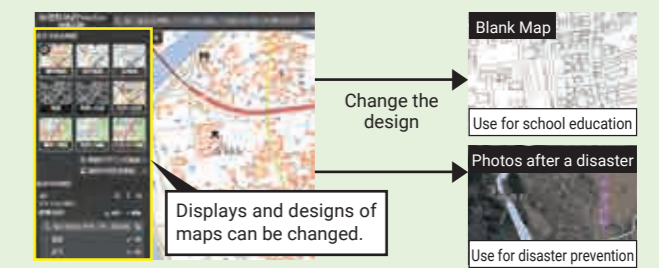
There are many other functions in GSI Maps which can be used for a variety of purposes. "Ways of using GSI Maps" that are useful for school education, disaster prevention, etc., and examples of utilization, are explained in an easy-to-understand format.



Vector tiles and GSI Maps Vector (tentative name) that can freely set map designs



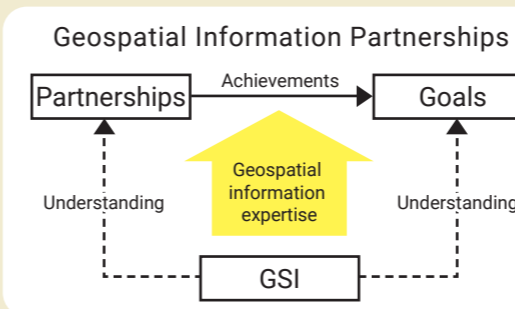
"Vector tiles" are map data in vector format that are divided into tiles. Because vector tiles include information for setting appearance, users can design maps to suit their purposes. GSI provides vector tiles on an experimental basis.



GSI has released "GSI Maps Vector (tentative name)", which uses vector tiles in a web map, on an experimental basis. "GSI Maps Vector" can be utilized in various fields to create blank maps, overlaying information such as rivers on photos of disaster areas, and so on.



Making maps with the world—Geospatial Information Partnerships



GSI Maps Vector (tentative name) is being created by GSI and others using the open source software "UN Vector Tile Toolkit" as part of the UN's Open GSI Initiative. The UN Vector Tile Toolkit is also listed in the "White Paper on Land, Infrastructure, Transport and Tourism in Japan, 2021" column, and is regarded as a policy for promoting innovation in those fields.

Through such innovations as the "UN Vector Tile Toolkit", GSI is promoting a "partnership based on geospatial information" to provide geospatial information expertise to help partners achieve their goals.