

3D Cadastres for Sustainable Development

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SUMMARY

With increasing uncertainty facing countries around the world due to climate change, rapid urbanization, and shifting economic demands, 3D economic cadastres and associated technical methodologies can support countries' sustainable development challenges and realities. 3D economic cadastres can provide better and more accurate valuation and urban and rural planning. More precise property valuation can increase a country's tax-based capital, while holistic planning can contribute to more prepared and resilient communities.

Economic cadastres provide for the administration of property tax policies, underpins land values, and primarily considers land markets. The addition of 3D information to an existing 2D economic cadastre, or even the creation of a new economic cadastre with 3D in-mind allows countries to plan for a more sustainable future by increasing the number of potential sources of tax revenue. The 3D valuation of an urban property is a holistic approach, taking into account elevation, viewshed, and volumetric calculations, while 2D valuation of the same urban property would generally rely on less holistic measures of area. 3D valuation provides for finer grained tax assessments by considering a single location of a property in all dimensions rather than applying a blanket-rate for the entire building complex.

More accurate property valuation can expand tax revenue providing for a more sustainable economic landscape for a country. This paper will focus on the application of 3D economic cadastres for increased sustainable development through country-specific examples. Advanced 3D analytical techniques and the use of GIS will be outlined.