Developing 3D Marine Cadastre Data Model within Malaysian LADM Country Profile – Preliminary Result

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SUMMARY

Cadastre in the marine environment is still quite unclear due to separate working systems between land and marine areas. Coastal and maritime spaces with multiple usages often lead to conflict in overlapping rights in the water surface, water column, and seabed as well as conflict in technical, legal, and stakeholder management. 3D marine cadastre may improve the governance and information system of coastal and marine areas by portraying an accurate representation of rights. Currently, most publications address the concept of three dimensional (3D) marine cadastre, however, the real implementations are still lacking. This concept of 3D marine cadastre has been applied by several countries such as Canada and Greece. The same concept could be developed for Malaysia where marine cadastre data model could help marine administration. In this particular research, a 3D marine cadastre data model will be developed. The model consists of three (3) major components, namely, spatial, ownership, and administrative. The spatial component – data and attributes for marine parcels or resources including fishing sites, resorts and, aquaculture areas. The ownership component – people and organizations. The administrative component - responsibilities, restrictions, and rights. The proposed model will be linked with the Malaysian LADM Country Profile. This 3D marine cadastre data model illustrates the classes of marine resources (within the coastal zone), the integration of data between legal spaces, and spatial unit feature through external classes as well as administrative sources. We attempt to develop the database for this 3D marine cadastre data model. In the near future, this marine cadastre data model would facilitate coastal space for 2D and 3D applications and management needs in the country.