

Mapping Indigenous Territories
in Desktop and Interactive Mapping Environments:
a Comparative Approach to Multiple Geodata Use

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In conventional cartography, compilation, design and production of complex thematic map series is both labour-intensive and time-consuming. Because of the manual techniques involved, alterations of map features or redesign of complete maps are undoubtedly limited. In comparison, the implementation of digital mapping has substantially increased the creative potential and flexibility of map design and production. Desktop mapping environments now offer a wealth of functions which enable the cartographer to experiment with the spatial data and their visualization by on-screen interaction.

Within the last decade, two thematic map series on indigenous territories in Latin America have been compiled, designed and produced in collaboration with the authors in either mapping environment. While design and production of the first map series for Brazil employed conventional mapping techniques only, a second series currently being developed for Columbia is based on desktop and other digital mapping techniques. Funded by the European Commission, map modelling and production of this Columbian Indigenous Territories map series is part of an ongoing international, interdisciplinary R&D project on the indigenous peoples of Columbia.

Map modelling in this project is based on a two-step strategy, (1) the development and production of large format digital map series (scales 1: 1.5 million and 1: 500,000) documenting status, development and major spatial conflicts in Columbian indigenous territories, and (2) integration of the existing digital map data into a spatial database and extension to an interactive map-based information system. While map models from step (1) will equal conventionally produced paper maps, the adoption of digital technology holds major benefits, including intuitive and flexible map design, multiple data use, high-quality output and cost effectiveness. Step (2) focusses on the development and implementation of a map-based geographic information system for documentation and monitoring of competing spatial developments of indigenous peoples and the Columbian central state. Conceptualized to serve as a reference and decision support system within the framework of development planning by indigenous peoples' organizations as well as state authorities, the Indigenous Territories GIS is to record, visualize and analyse available past, present and potential spatial data relating to indigenous territories. Supplementing existing map information, i.a. from step (1), the system's map-based operation will combine conventional data exploration and analysis familiar from paper map use with electronic map features of interactive visualization, data navigation, and project-specific evaluation and analysis.

Potential and problems of digital map design of complex large format thematic maps will be exemplified and evaluated in this paper which will also discuss selected issues of geocoding existing map data and data visualization in map-based GIS environments.