

# **Mapping out social change in South India**

## **A geographic information system and its applications**

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#### 4 CONCLUSION

The intention of this collective volume was deliberately more descriptive than analytical because we have wanted to reconstitute the integrality of a geomatic approach. It is rare today that geographers would be led to cover the whole of this itinerary, extending from the measurements of georeferencing on the basis of public maps of uncertain quality to attempts at spatial or geostatistical modelling. The tasks are often disconnected and the technical parts ignored, as being superfluous, or are indeed abandoned to engineers. This path of research, although necessarily much longer than this volume would perhaps lead one to believe, has several virtues for disciplinary study.

In the first place, it calls to mind that numerous regions suffer from a glaring lack of modern cartography, for an entire range of reasons stemming by and large from the technical under-equipping of the local administrative or scientific apparatus, which is paradoxically held back by the rapidity of, often geographic, changes. In the India that we study here, the frequency and magnitude of the redrafting of borders, whether of urban territories or of political units such as districts or states, very certainly tend to discourage large cartographic investments that a few years of reform threaten to render obsolete. The studies are most often conducted on the basis of satellite imagery, which has the advantage of being indifferent to the continuous redrawing of administrative borders. The task of local digitization has, of course, begun in India, but it is concentrated more in the advanced regions than in the rural world: the large cities thus benefit from the ambitious “Urban Mapping Scheme” project (combining aerial photographs, satellite imagery and GIS) conducted by the Ministry in charge of urban affairs. But the coverage of the Indian countryside is particularly inadequate.

The volume of information collected in India is also prohibitive for an undertaking that would want to be exhaustive: we have devoted several years to the cartography of villages in southern India, but there remain four times as many villages in the rest of the country. However, the work to be undertaken cannot be ignored and investments made towards this end by researchers must quite naturally contribute to the enrichment of the public domain. The most significant venture thus far has been embarked upon under the aegis of the National Spatial Data Infrastructure (NSDI), which intends to facilitate and coordinate the compiling and sharing of spatial data. It concerns both the dispersed suppliers of spatial information (hydrological, geographic, geological, agricultural, etc.) and the potential users by

offering new formats of exchange.<sup>52</sup> At this time, these different projects have not yet been given tangible form, but without doubt a new era of geographic information in India has been announced.

In the second place, the results briefly presented in our article for the most part confirm the logic of the project. We assumed that the spatial approach would shed new light on the knowledge pertaining to numerous phenomena and this seems, in fact, to be confirmed. On the one hand, small-scale mapping sometimes reveals the magnitude of local or sub-regional phenomena that the usual format of available data often conceals. One now observes the very fine geographic differentiations that make it possible to more clearly discern the phenomena concerned, their constraints and their actors. It can even be a matter of phenomena that are by their nature dissimulated, as in the case of infanticide. On the other hand, the GIS enables one to cross information from diverse sources and thus to make good use of the large choice of available data. It is similar to a statistical approach, to the extent that one can systematically compare the phenomena to each other by comparing the layers of cartographic information. But it goes further by making it possible to create new information by gathering together different sources of information.

Finally, new research themes find here sustenance, for the very strong spatial patterning of the phenomena of social change conveys numerous elements of response to the study of their origins and, above all, to their mode of propagation in space and time across different layers of society. More theoretical questions, such as the origin of the high spatial compactness of the fertility decline in India or the geography of pilgrimage, thus find solid bases for analysis. The examples reviewed in this volume are revealing as they confirm that South India is built on both old and new spatial networks that the process of social change tends to reactivate and to reshape. It henceforth appears to be indispensable to take into account the spatial dimension both in the analysis of the conditions in which the examined phenomena emerge and in the consideration of the future implications of social change.

In conclusion, our trajectory also indicates that technological development takes place not only to the advantage of formal tools of scientific treatment as illustrated by geostatistical calculations. Powerful tools for the reconstitution of information are now available to make more readable information that perhaps existed earlier, but was infrequently used outside circles of university specialists because of its chronic inaccessibility. The GIS does promote

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<sup>52</sup> The ambitious mission of the NSDI includes: “encouraging collection and distribution of spatial data on different themes in common defined standards and formats by different mapping agencies in India [and providing] metadata of all the data available with various participating agencies and facilitat[ing] users to obtain data with simple and smooth procedure”. ([www.idsiindia.org](http://www.idsiindia.org))

the use of spatialized information to a new range of casual users in the public. In the era of decentralized management (*Panchayati Raj*), the need for disaggregated information is becoming increasingly felt in India, in order to locally administer operations of resource development. Moreover, some more advanced regions, such as Kerala, have long ago integrated a local cartography in the first development plans of the *panchayats* (Chattopadhyay *et al.*, 1999). It is therefore important to have tools so as to be able to deliver information to highly varied users, from administrators to students, by way of NGOs and businesses which, moreover, appear to have been the only ones to have competed with us in this domain. Among these tools, CD-ROMs have the advantage of offering low-cost support, replacing atlases, the production and printing costs of which make them hardly publishable in developing countries. The possibility to use interactive modes of questioning with cartographic consultation software makes this tool even more attractive and the access to information easier. On-line publications, via the web, represent additional assets, notably in terms of updating and delocalized accessibility. The non-scientific repercussions of a project, endowed with an active policy of development and diffusion, can thus be significant and silence the sometimes prevailing opinion regarding the relatively pointless character of fundamental research projects in developing countries.

## **WEB SITES :**

### *General*

Cybergeo (European journal of geography): <http://www.cybergeo.presse.fr>

GIS tutorials: <http://sunsite.berkeley.edu/GIS/gistuts>

Spatial analysis in social sciences: <http://www.csiss.org>

### *Maps and GIS in India*

Census of India: <http://www.censusindia.net>

GIS at development: <http://www.gisdevelopment.net>

Indian statistics: <http://www.indiastat.com>

Map store: <http://www.mappls.com/mapstore>

Maps of India: <http://www.mapsofindia.com>

Maps, Census of India: <http://www.censusindiamaps.net>

Maptell: <http://www.maptell.com/>

National Atlas & Thematic Mapping Organisation: <http://www.natmo.org>

National Spatial Data Infrastructure: <http://www.nsdindia.org>

South India Population Information System: <http://www.demographie.net/sipis>

Survey of India: <http://www.surveyofindia.gov.in>

### *Topic-related web sites*

Andhra Pradesh: Health department: <http://gist.ap.nic.in/health>

Department of Women and Child Development: <http://wcd.nic.in>

Indian Girl Child and Women Welfare Society: <http://www.girlchildwelfare.org>

Ministry of Health and Family Welfare: <http://mohfw.nic.in>

Ministry of Urban Development and Poverty Alleviation: <http://urbanindia.nic.in>

Ministry of Water Resources : <http://wrmin.nic.in>

National Family and Health Survey: <http://nfhsindia.org>

Sabarimala web site: <http://www.achichu.com/temples/sabarimala.htm>

Tamil Nadu Ministry of Rural Development: <http://www.rural.tn.gov.in>

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