Public access to Indian Geographical Data

In late 1997 the Indian Academy of Sciences set up a Panel on Scientific Data of Public Interest to examine all issues concerning scientific data available in the country. The members of the Panel are R. Narasimha (Chairman), S. Dhawan, M. Gadgil, L. Nath, S. Shetye (Secretary). In early 1998 the Panel issued a public announcement outlining its concerns and inviting suggestions on how it might conduct its work (Current Science, 25 February 1998). The Panel also wrote to several individuals seeking their suggestions.

Based on the inputs received, the Panel decided to hold discussion meetings focusing first on particular types of data. For the first meeting in the series, geographical data was chosen. The choice was based on two considerations: (i) usefulness of the data in a number of areas – research, commerce, security; (ii) role of the data in newly emerging areas such as Geographical Information Systems (GIS) and remote sensing.

Geographical data also happen to mark modern India’s first organized effort to collect scientific data. The Survey of India (SOI), the agency responsible for collecting, storing, and disseminating Indian geographical data, is the oldest among the country’s present scientific organizations, having been founded well over two centuries ago. During this period SOI has collected a wealth of internationally respected information, and made the country one of the best mapped in the world.

In spite of this pioneering effort, citizens of independent India have been grumbling about the lack of public access to the data collected by SOI (see, for example, Srikanthia, S. V., J. Geol. Soc. India, 1999, 53, 367–371). The objective of the discussion meeting on Public Access to Indian Geographical Data, held on 14–15 July 1999 at the Indian Academy of Sciences, was to examine where the country stands and where it would like to be with regard to gathering and dissemination of geographical data for the greatest national benefit. The meeting provided a platform for sharing and discussing the concerns and requirements of a wide variety of professionals: scientists, users of GIS, public administrators and lawyers. This special section includes an overview of the meeting and seven articles (pages 450–503) based on presentations made during the meeting.

The purpose of this note is to identify a problem that we feel is central not only to the issues regarding geographical data, but to the entire regime of public access to scientific data collected with public funds in the country. The meeting provided a venue to articulate the problem.

The deliberations during the meeting made four important points:

- India’s collection of geographical data is substantial, and largely adequate to meet the needs of the country.
- The quality of the data is excellent.
- There are certain restrictions on access to the data, but there is considerable uncertainty, sometimes confusion, about what precisely the restrictions are.
- It is appreciated that some of these restrictions are necessary from the security angle, but there are others whose rationale is not clear, and still others which are patently unnecessary, and they hurt the interests of the country in general, and the scientific community in particular.

It is indeed a matter of pride that we possess such a wealth of geographical information about our land. This wealth has been created by the toil of the officers and men of the SOI during the last 230 years. The matter of concern now is that restrictions on access to this information may well make a large fraction of the data irrelevant in the near future, although they are currently more valuable than ever before. National policy makers should be seriously concerned.

It became clear at the meeting that scientists are generally very unhappy at the way that the availability of data generated at public expense is restricted. Even where access is in principle possible, the procedures involved are confusing and cumbersome, and many scientists often find it more convenient to use data banks more freely available elsewhere in the world.

In commerce, GIS has today emerged as an important tool with applications ranging from research to consumer product marketing. Geographical data form a critically important database for GIS packages, hence their high market value. What makes the data doubly valuable is that GIS is an important tool of Information Technology, which is emerging as one of the country’s major sources for creating new wealth in the near future. During such times SOI’s toposheets (maps with resolution of 1:50,000) should have been the resource to cash in on; such exploitation is, however, being hindered, because (1) almost 60% of the toposheets fall in the restricted category, and (2) private companies are not allowed to digitize information from SOI toposheets, even the unrestricted ones.

Very soon the data on toposheets might turn irrelevant for a large number of applications. Two new technologies – remote sensing, and image processing – are reaching a state of maturity where they can
produce maps that are good enough for these applications. With one-
metre resolution remote sensing data from anywhere in the world
now commercially available, we may soon have a situation whereby
maps of areas within India could be more easily purchased from outside
the country.

The regulations that restrict ac-
cess to data from SOI stem from
decisions made by the Ministry of
Defence (MOD) out of concern for
national security. However, the ra-
tionale behind the decisions has
never been explained. In the exist-
ing system it is generally taken for
granted that MOD can restrict data
without explaining the rationale for
such restrictions. The need for a
scientific dialogue with the user
community before imposing restric-
tions on data access has not been
recognized. This we believe is the
central problem in the present re-
gime of public access to scientific
data. The problem is not restricted
to geographical data alone, but en-
cumares all data collected using
public funds.

A large majority of the users of
Indian scientific data feel that this
tendency to ignore the user commu-
nity within the country while re-
stricting access to data on the
grounds of national security stems
from two features of the system:

- The system either lacks the
  mechanism for or does not pos-
sess confidence in the technical
analysis that should lead to de-
cisions to restrict access to data.
In this situation playing safe in
the face of a fear of unantici-
pated uses of the data deter-
mines policy, at the expense of
hard technical analysis.
- The agencies charged with the
task of distribution of data have
no incentive to encourage them,
and the restrictions in force
seem to serve only to hinder
dissemination.

The solutions to these problems
are in more, not less, technical
analysis, and in encouraging the
emerging band of entrepreneurs to
exploit the wealth of data the coun-
try is fortunate to possess. We be-
lieve that there will be no
qualitative change in the regime of
public access to scientific data in
the country unless this central prob-
lem, i.e. lack of technical analysis
to convince the user community
of the need for restricting access to
data collected with public funds, is
addressed effectively. We urge the
Government to follow a policy of
conditional classification, rather
than that of case-to-case clearance
that is now the norm; i.e. all data
acquired at public expense should
be conveniently accessible to the
public, except where clearly un-
derstood security considerations
demand that access be restricted. Any
other policy will, we believe, dam-
age the national interest rather than
protect it, by discouraging the cre-
ative exploitation of the data for sci-
entific, commercial and cultural
purposes. We urge the Depart-
ment of Science & Technology to take up
this issue at the highest levels of
Government on behalf of the users
of scientific data collected with pub-
lic funds.

The problem defined above is not
restricted to geographical data alone.
It is however most urgent in this case,
because the country may well end up
converting a valuable national
resource into irrelevant historical
material, instead of using it to foster
the growth of technologies that bear
the promise of science that can reveal
new truths, and of creating wealth for
the country.

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