

UNEP and the Next Steps in Evolving the GSDI

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UNEP as best GSDI customer: The UN Environment Programme stands to be one of the first and most visible customers for the methods and philosophies being developed as the Global Spatial Data Infrastructure.

UNEP's task is assessment: The first of the five key strategic tasks assigned to UNEP is creating comprehensive policy-relevant assessments of the state of the environment. The authors of the Nairobi Declaration suffered no delusions of UNEP going off and becoming an operational monitoring service. What we are tasked to do is work with and – where mutually-agreeable – provide targets for those who are building and operating the data and information systems that embody environmental information.

UNEP is not data driven: However, the Assessment process is and represents a significant data consumer. It is therefore obvious that UNEP's need goes beyond the data (spatial or otherwise). The Assessment methods to distill oceans of data into the drops that inform knowledgeable debate and decision-making concerning the environment represents a distributed and co-ordinated global UNEP effort. As noted in Doug's paper in April, the term GSDI tells only part of the story of our interest. UNEP needs to tell the story of what these data are telling us, and what on earth our social and political mechanisms might possible choose to do about it.

Environment is inherently spatial: You don't need to be a Nobel laureate to appreciate the self-evident fact that "the environment" is inherently spatial – a sentiment embodied most explicitly in the term *el medio ambiente*. However, it is far from equally self-evident that spatial thinking underlies environmental debate, much of which remains is fixed on considerations of magnitude, not distribution, nor spatial relationships, nor trends in distribution.

Environment is inherently dynamic: for, yes, the presence of environment on the global political agenda is largely the result, not of concern about the state of environment *per se* but, of the *change* in the state of the environment. UNEP therefore not only seeks methods for aggregating spatial data but for doing so repeatedly, rapidly and reliably. Demolition of the barriers is therefore even more crucial.

Spatial leadership required: UNEP faces the need for cultural education in order to tell the full story of the environment. I firmly believe – and have won the backing and support of UNEP's directors and political masters on this – that it is crucial to UNEP success in its role of convener of international environmental debate to fully use the power of spatial media, analysis and presentation to communicate graphically and gain full appreciation of environmental dynamics at government policy levels.

Assessment needs aggregated national data: Assessment of the state of the environment at national and regional levels is fueled by aggregation of data and information originating from these sources. UNEP's task is to broker agreement on the methods and practices underlying meaningful aggregation; the existence of a GSDI will

ease this task by eliminating (or reducing) many operational barriers to accessing underlying data.

Intro UNEP-dot-Net: Earlier this year, UNEP's Division of Assessment and Early Warning – DEWA – started putting its money where its mouth ought to be with the launch of an environmental information portal under the heading of “unep-dot-net”.

Characteristics of unep.net:

Spatial idiom: A number of characteristics separate unep.net from similar and complementary efforts. One of these is the selection of the spatial idiom as a central pillar of presentation of environmental debate. This is, in itself, a radical and ambitious undertaking in a culture that is dominated by narrative prose and the written word. It may perhaps surprise or shock you that the UN Security Council is rarely presented with maps depicting the locations (let alone the shifts) of forces or resources at the heart of the conflicts they're called upon to resolve. Such maps as are presented are primarily cartographic drawings lacking geographic rigor.

Decentralized: A second distinguishing characteristic is unep.net's explicit adoption of a decentralized, peer-based management model. The network meshes the assets and capabilities of numerous custodians into a service environment adding value to the underlying data originating in monitoring and scientific institutions. This approach is unusual in the UN world, where the majority of apparently-decentralized services are in fact rigidly hierarchical.

Standards-based: Achieving this mesh brings us to the third distinguishing characteristics, namely a standards-based approach incorporating the principles of open-system design with the practical developments of the Open GIS Consortium. The service model we use derives directly from the standards being evolved in the web mapping testbed activities of the OGC and the Committee on Earth Observation Satellites Working Group on Information Systems and Services. The metadata models derive directly from FGDC and ISO.

UNEP as testbed for GSDI principles: UNEP.net is therefore becoming a ready environment demonstrating the value of the principles of the GSDI within an international framework. To whom might this value be demonstrated? Surely, to some degree at least, the same constituency of national mapping authorities and scientific bodies making the GSDI community. However, and more particularly, the opportunity exists to leverage significant and meaningful change in the international civil service.

UN integration – UNGIWG: The UN in year 2000 initiated a geographic information working group, which met most recently in Rome in March. Over 35 UN bodies were sufficiently motivated to represent themselves and their geographic information needs, and to seek added value through integration and cohesion of their services. Yet, the reservations against engaging in meaningful, operational services was palpable. There is a desperate need for demonstrations of cost-effective interoperability for this community, for demonstrating the utility of distributed ISO-compliant catalogues, and the feasibility of serving high-level integrated spatial products via the internet. There is need for education in the purpose and impact of the evolution of the GSDI on UN activities. UNEP.Net can well be one element of such demonstrators, and a vehicle for transporting

the ideas of the GSDI into the midst of what *should* be one of the world's most spatially-oriented institutions.

A “global environment spatial information infrastructure”: I am sure we will see GSDI underpinning equivalent spin-off specialized, complementary and over-lapping “commercial spatial information infrastructures”, “humanitarian assistance spatial information infrastructures”. UNEP’s aim is, I guess, to lead development of what might be referred to as a *global environment spatial information infrastructure*. This is not to imply establishment of any new institution, entity or administrative structure. Rather, it is for UNEP and its assessment partners to take the best and most productive efforts bridging the spatial data divides and apply these vigorously to the task of global environmental management.

Digital earth: UNEP will keynote at the upcoming 2nd International DE Conference in June, to announce UNEP.Net as the operational implementation of the DE blueprint. The blueprint was of course designed from the GSDI framework and community. UNEP will also be collaborating with the DE Secretariat in Beijing on the furtherance of this implementation.

ISCGM: Content and co-ordination are requests for UNEP.Net and the UNEP mission. The ISCGM effort represents the strongest multinational signal for co-operation, content maintenance, and standards related to a specific set of spatial data layers. UNEP will work towards a UN acceptance and support of ISCGM, and if none can be found we will gladly host this important content activity.

Summary: UNEP is a serious and committed GSDI customer. Where we deviate, correct us. Where we succeed applaud us. Our successes will represent your successes.