Using Information Technology for Sustainable Development

1A. The development "problem"

The information and knowledge revolution is dramatically changing not only the socio-economic and political processes of most nations, but also the way in which they relate to each other. Indeed, the process of globalization has been fostered—if not driven—by the rapid expansion of the Internet and the extensive use of information technology (IT) for the production, delivery, distribution, and consumption of goods and services, including information. IT has not only become a production factor in their own right, but also an effective tool for advancing sustainable human development in its many facets and, in particular, strengthening national capacities and mechanisms for governance.

The Internet in particular has already promoted a process of "information democratization" by allowing governments, citizens, civil society groups, non-governmental organizations (NGOs) and institutions to capture, publish and distribute information and knowledge resources—including indigenous knowledge and local-language content—and to engage in networking activities irrespective of distance and borders. This, in turn, has made feasible the potential for increased cooperation and collaboration between countries to address regional and global development issues.

In developing countries, the information revolution often dovetails with movements toward political democratization by creating public demand for enhanced government accountability and efficiency. In these countries, the growing independence of legislative branches and local government, the increasing mobilization of civil society and NGOs, and the empowerment of individuals, have all created a demand for more openness and greater responsiveness and decentralisation in government. The Internet and the widespread availability and use of a range of IT tools have provided developing countries with an opportunity meet these demands for increased information, self-reliance, regional autonomy and transparency.

It is evident that the information revolution and the increased use of IT tools have created new issues and challenges for developing countries, which can and should be addressed through development cooperation. The UNDP Administrator has recognized this situation, and has stated that IT is an "enabling tool" for countries to use in addressing their development problems. While all countries now have at least minimal Internet connectivity, there are two interconnected issues in particular which will hamper universal access to and full use of IT: the lack of effective government policies and/or legal and regulatory frameworks for electronic communications and technology; and the unequal access to IT and the Internet by the vast majority of the population. The resolution of the issues will have a broad impact on a number of governance issues such as participatory development, market access, transparency and accountability, and preservation of cultural diversity.

1B. The current situation

The effects of the technology revolution—while significant and growing—have not reached all countries equally. In addition to the traditional economic gap between industrialized and developing countries, recent statistics indicate that another global gap—with respect to IT

infrastructure, access, affordability, use, content, and availability of information and knowledge—has emerged and is growing even faster. The problem is exacerbated in many developing countries by the existence of an internal gap between "haves" and "have nots," which is increasing at an even faster pace. Estimates suggest that the global number of Internet users is currently about 196 million, of which only 12 per cent are in developing countries. Of this number, the African continent comprises about 1.3 million users—of these almost 1 million are in South Africa. In the rest of the continent, there are on average 6,000 users per country. Some analysts have labeled this trend as the emergence of a 4th world in the global economy. It is estimated that by the end of 2003 there will be 500 million Internet users, 15 per cent of whom will be in developing nations. Although this is a hefty increase, it still does not address the issue of "universal access" to IT tools in these countries.

Nevertheless, progress is being made. In 1995, there were only three African nations connected to the Internet. Today, all but one have full Internet connectivity. There are currently multiple ongoing initiatives funded by bi- and multi-lateral organizations which promote the expansion of the Internet in developing countries and the extensive use of IT. For its part, the private sector has become an active player, and is investing in many developing countries, primarily on connectivity and networking. Many governments, however, have as yet been rather reticent to embrace the new technology. This may be largely due to an awareness gap about the impact of the information revolution, its challenges and opportunities.

A similar picture emerges for Internet-based applications. Recent estimates indicate North America has already a substantial lead in deploying and effectively using electronic commerce (e-commerce) tools and systems for both business-to-business and business-to-consumer transactions. Europe is seen to lag behind by two to three years, while developing countries have to cope with at least a five-year lag. Some developing countries are already expressing concern about the negative competitive impact on (non-electronic) local firms of e-commerce firms located in industrialised countries.

In addition, many practical obstacles must be overcome as regards payment and delivery systems appropriate for the developing world. There is also a danger that the present inequities may be codified in new agreements under the auspices of the World Trade Organization (WTO) unless developing countries are empowered to safeguard their interests and options in global governance arrangements, and to strive for a better-adjusted playing field. The same can be said about the on-going ICANN (the Internet Corporation for Assigned Names and Numbers, http://www.icann.org) global discussions.

**B.	The strategy**

Capitalizing on the network of UNDP Country Offices, the Sustainable Development Networking Programme (SDNP) is well-positioned to be one of the main actors in promoting the use of IT to improve sustainable human development, and to build and strengthen the local capacities for governance. The main strategic components of SDNP's global programme include:

- assisting stakeholders in developing countries to acquire and build capacity in the use of IT for a broad range of applications and services (health, education, e-commerce, environment management, gender, youth empowerment, participatory mechanisms, etc.);
- contributing to the strengthening of state-society linkages and decision-making through the establishment of electronic networks and digital access points in rural

communities, in order to allow the participation in societal processes of people at every level;

- assisting governments and civil society in utilising IT for transparency and accountability, and promotion of decentralization and local governance of resources and SHD issues;
- assisting various stakeholders in generating and distributing digital content of relevance for state-society interaction, for integration into global markets, and for preserving cultural identity (including indigenous knowledge); and
- promoting public-private partnerships at the global, regional, national and community levels to advance the propositions in the preceding points.
- Supporting the use of Linux and Open Source Software and initiatives as the most sustainable and economically viable alternative for developing countries.

The strategic target is to empower developing nations by means of facilitating the use of IT as an enabling set of tools to accomplish the goals of sustainable human development, and to become self-reliant in the process.

C. The Products

Because the levels of connectivity and the sophistication of user groups are different in each country, it is important that any approach to IT issues be sensitive to the local context. The use of a flexible, strategic approach to addressing connectivity and IT issues is required. Based on past experience and a survey of existing needs, SDNP's main "products" will comprise the following:

1. Addressing connectivity and public "universal" access through
    a. Telecentres/multi-purpose access community centres (MPACCs)
    b. SchoolNet programmes for K-12
2. Addressing capacity-building for and through IT
    a. Distance learning/web-based training
    b. E-commerce for micro-enterprises and cooperatives of producers (both business-to-business and business-to-consumer), certificate authorities, etc.
    c. Technology training for productive capacity building
    d. Business training for small and medium size entrepreneurs
3. Addressing the lack of or lacunae in IT strategies and services
    a. Information dissemination and provision of decentralized electronic services and community-based virtual tools in local languages (content development)
    b. Assisting governments to define IT policies and to provide electronic services
    c. Assisting governments in providing e-government services for better accountability and transparency
    d. Implementation of e-governance tools and facilities to increase democratization and participation of civil society in local and national issues

One or more pilots will be launched for each of these products. Strategic alliances with the private sector,—in particular with IT companies,—will be actively sought for financial support and results dissemination, following the experience of SDNP and its current partners. In addition, developing country proposals will be accepted and approved for funding following guidelines and methodologies that will be developed by the lean and mean central coordinating unit at UNDP headquarters, and based on the above principles.

D. Implementation Strategy

As mentioned before, the rapid development of the Internet has also produced a relative explosions of projects and proposals put forward and implemented by multi-lateral and bi-lateral donors that, in most cases, do not coordinate field activities in an effective manner. This not only has an impact on programme implementation at the country level, but also creates a information void where it is difficult to learn in an rapid way what activities are being implemented in specific countries and regions and, thus, duplication of efforts cannot be avoided.

There is yet another element that is usually overlooked when implementing development programmes -and IT projects also fall under this. In several cases, IT and internet initiatives are supply driven, usually pushed by Internet champions inside donor organizations, and do not seem to take into account the specific realities and/or needs of the target stakeholders. A demand driven mechanism should be implemented to be able to capture the requests of the diverse actor and clients in developing nations that surely have a much better understanding of their local context and can take quick ownership of funded projects and programmes and make them a success. This will also lead to a better tie in between the technical and socio-economic aspects of IT for development.

The implementation strategy will address these issues and provide mechanisms to cater each of these demands. The programme central unit in UNDP headquarters will, first of all, be the facilitating mechanism for coordinating all UNDP IT related activities and programmes, as well as those from other UN agencies and Bretton Woods institutions. Secondly, the programme will seek and developed partnerships with other organizations working on IT and Internet for developing countries. Thirdly, in order to both lead the fields and mainstream programmes in the short run, the programme will launch a series of selected pilot projects for specific regions and countries (with particular emphasis on the least developed nations). Key to success here are good technical and programmatic backstopping as well as dedicated monitoring, reporting and evaluation of all pilots.

Forth, organizations and countries will be invited to submit proposals to the programme for funding and financial assistance; in most cases, national proposals will be required to provide at least 25% of the total funds requested as either cash or cost-sharing. Where appropriate, national programmes will be required to provide detailed business plans that assure the economic sustainability of the funded programme once financial support from headquarters is finalized. And firth, and based of success of both pilots and national programmes, a continuous fund raising effort will be launched in order to replenish funds and increase activities throughout the globe. Here, IT corporations and foundations will be the first target, an activity that SDNP is currently doing with relatively good success.