

**BGD/96/007/A/01/99**  
**SUSTAINABLE ENVIRONMENT MANAGEMENT PROGRAMME**

**COMPONENT 4.4.5**  
**SUSTAINABLE DEVELOPMENT NETWORKING PROGRAMME (SDNP)**

**PROJECT IMPLEMENTATION PLAN**

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## **A. THE CONTEXT**

### **1. Preamble**

Bangladesh is overwhelmingly dependent on environmental and natural resources, but the economic and societal forces at work coupled with other natural and technical factors, may have already seriously eroded the natural resource base of the country which could have serious adverse impact on output, income and employment.

In the present state of development in Bangladesh, the overriding considerations are eradication of poverty and the assurance of basic needs and employment for all. Over time, the awareness has been generated, however, that on a longer-term perspective, the development process must be environmentally sound for the other goals to be achieved on a sustainable basis. This issue has gained more prominence because the Bangladesh economy is characterized by an almost total dependence on the extraction, use and management of natural resources and the physical environment.

In Bangladesh, widespread poverty, low land-man ratio, recurring natural hazards, illiteracy, lack of environmental awareness and the lack of appreciation of the linkage between the natural resource base and human action - be it for economic, social, or cultural - have already put enormous pressure on the natural resource (capital) stock. Environmental degradation on a large scale, in such a situation, is therefore likely to slow down the pace of economic growth and development. Such an outcome has a greater probability to affect the poor more adversely than the rich by exacerbating the existing economic and social inequities in the society. Environmental issues, thus, assume a critical role for the future development prospects and poverty eradication in Bangladesh and social harmony.

Many of these problems are long-term in nature. However, measures taken in earnest, such as investment in analysis of the underlying processes, awareness raising and developing institutional frameworks including community participation for management of the environment, can help to better address the problems that the country faces in various sectors of economic and social activity including land, fisheries, forestry, water, natural hazards, health and sanitation, and climate change.

To address these problems, over time the Government has taken various steps. A major step has been the approval of the National Environment Policy in 1992. A second major landmark has been the initiation of a National Environment Management Action Plan (NEMAP). The NEMAP was approved by the Government in 1996.

The four types of major issues that have been highlighted by NEMAP are:

1. Institutional/Policies relating to inter-sectoral issues.
2. Sectoral issues for which fourteen different sectors have been identified.
3. Regional issues e. g. regarding the coastal zone and the Wetlands.
4. Long term issues e. g. urbanization, climate change and sea level rise.

In 1997, as a follow-up to NEMAP, the Government approved the UNDP-assisted Sustainable Environment Management Programme (SEMP). There are five sub-programmes under SEMP: Policy and Institutions, Participatory Eco-System Management, Community Based Environmental Sanitation, Awareness and Advocacy, and Training and Education.

One of the strategies for promoting Awareness and Advocacy is enabling easy access to information and knowledge. To effectively implement such a strategy, the Sustainable Development Network (SDN) aims to capitalise on the revolution in electronic communications technology and provide a new set of tools to achieve sustainable human development through a sharing of vital information, experience and expertise both within the country and globally. It may be noted that the SDN is an existing global programme of the UN under the Agenda 21.

To date UNDP has assisted several countries, including China, Indonesia, India, Korea, Pakistan, the Philippines, Jamaica, Benin, Cameroon, Lebanon, Angola, Chad, Tunisia, Poland, Bolivia, Guatemala, and the Honduras in setting up pilot SDNs.

The Bangladesh Institute of Development Studies (BIDS) is the implementing agency for two of the 26 components in SEMP - The Policy Analysis Studies which falls under the Policy and Institutions Sub-Programme, and the Sustainable Development Network (SDN) under the Awareness and Advocacy Sub-Programme.

The current activities until the revision include establishment of the BIDS LAN, connectivity to all SIAs, connectivity to selected non-SIAs including the National Press Club, Export Promotion Bureau, Mymensingh Press Club, and arrangement for connectivity to Dhaka Chamber of Commerce and Industry, Asiatic Society, Shandhany, IEB, BMA, and other development partners. Web sites have been developed for BIDS, SDNP, Wasteconcern, IUCN Bangladesh, HIV/AIDS project, and several other institutions. Other activities are being discussed in current status.

## **2. Challenges**

The main challenge of SDN is to keep track of the development processes in general and monitor development indicators and activities and their consequences in particular, and make these information freely available to all stakeholders including the Government, civil society, business community, professional and other organizations, development partners and the people at large.

The reach and effectiveness of SDN shall critically depend upon resolution of other challenges successfully. These are:

*Technology:-* Keeping track of modifications regarding innovations in the field of information technology and adapt them for implementation within the network;

*Social:-* An overriding consideration for SDN is that no strata in society should be debarred from information. The social challenge is to create awareness among all social elements and remove as far as possible the digital divide within the country, target the potential beneficiaries through proper techniques to improve their access to information technology;

*Manpower:-* The original project profile seems lacking in adequate manpower provisions and hence needs to be upgraded it with additional manpower both at the central node and regional nodes, including Public Access Centres (PACs) (see later);

*Resources:-* Other than manpower, logistics and resources also need to be upgraded for future to technological updating. Most of the equipment need to be upgraded at three years interval; and

*Sustainability:-* The most important aspect of the project for its continuity in future. A sustainability plan needs to be made and operationalised. (Sustainability Plan attached later).

### **3. The Implementing Agency**

The Bangladesh Institute of Development Studies (BIDS) is the implementing agency for the component, which falls under the Awareness and Advocacy Sub-Programme (4.4.5) of Sustainable Environment Management Programme (SEMP).

The BIDS is a multi-disciplinary organization that conducts policy-oriented research on development issues mainly in the context of Bangladesh. BIDS frequently offers training in socioeconomic analysis and research methodology for its own professional staff as well as for members of other organizations concerned in development and other related topics. BIDS also serves as a conduit for information dissemination through its publications, library services and regular seminars and workshops.

The BIDS mandate is therefore:

- ❑ To function as an agency for undertaking and promoting study, research and dissemination of knowledge in the field of development economics, demography, and other social sciences related to planning for national development and social welfare;
- ❑ To collect information and generate data, conduct investigations, and undertake research projects for purposes of planning, formulation and implementation of plans and policies;
- ❑ To provide facilities and training in economics, development issues, demography, and other social sciences; and
- ❑ To provide information and offer advice on modern research techniques and methodology in economics, demography, and other social sciences.

There are five Research Divisions within BIDS - the Agriculture and Rural Development Division, the General Economics Division, the Human Resources Development Division, the Industries and Physical Infrastructure Division, and the Population Studies Division.

However, as the academic areas of interest as well as the expertise of the researchers are cross-sectoral, membership to a Division does not preclude a researcher from participating in research activities and projects under other Divisions. A case in point is SEMP in which research staff from several Divisions are participating.

Several support services assist the staff in conducting research. These include:

- The **BIDS Library** that is the largest library in Bangladesh specializing in the social sciences.
- The **Publications Section** which publishes and disseminates BIDS research output, including the Bangladesh Development Studies, the quarterly journal of the Institute; the *Bangladesh Unnayan Samikkhya* which is published annually in the vernacular; Research Monographs; and Research Reports.

The **Computer Unit** which was established in 1982 with the objective of providing data processing support for BIDS research. The SDNP will operate within the BIDS Computer Unit.

## **B. DEVELOPMENT GOAL**

The objective of the Sustainable Development Network Project (SDNP) is to create an appropriate framework for achieving and facilitating exchange of information/knowledge, encouraging increased collaboration, communications and networking among development partners, academia, policy makers and the civil society at national and international level, in order to design and implement plans for sustainable development in Bangladesh.

## **C. IMMEDIATE OBJECTIVES**

The main objective of this programme is to provide an IT-based information, content and service network for Bangladesh that is open, inclusive and participatory so that an increasingly level playing field is created for all. Other broad objectives are

- To help create conditions for civil society, the government, business and individuals to work both together and separately towards facilitating quality and transparent governance through knowledge and information sharing;
- To create an instrument for generation of public opinion on matters of developmental importance and facilitate the exchange of experiences and follow-up of civil society actions;

- To facilitate social, economic, cultural and intellectual development of individuals and groups in society;
- To facilitate the development of the private sector through e-commerce;
- To facilitate proper development of a knowledge management system; and
- To promote the Bengali culture and heritage.

#### Specific objectives

To achieve the broad objectives, the SDNP will

- Design, develop, establish and continuously improve upon the web portal and its database;
- Provide access to information and resources through suitable means to end users for enhancing knowledge and experience;
- Create a common platform of information bench mark for shared materials, making dialogues, problem solving sessions with easy access and faster communication speed;
- Generate, design and disseminate data and information for utilization by the stakeholders;
- Provide links to ideas and success stories, best practice information about development activities and trends, funding sources, and commercial and research opportunities;
- Support the local government, community representatives and NGOs, particularly small ones in their development activities thus increasing transparency, speed of action and better governance.



## **D. REVISED PROJECT DESCRIPTION**

### **1. Current Status and Problems to be addressed**

The project had a late start. Though the LOA has been signed in October 1998, the project activities obtained their momentum only after a UNDP-mission was fielded in mid-1999 and recruitment of the technical staff, sometimes after December 1999 on the basis of the Mission's recommendation. In fact, at the time the project has reached its momentum during the second to third quarters of 2000, it suffered from a long dispute between the government and the UNDP that took 9 months for resolution. Disbursement of the project fund has been resumed only in June 2001 and it is expected that to make the SDNP performance a success in Bangladesh, a whole 5 years life span of the project running period would be absolutely necessary. Therefore, the project should run for at least 15 more months until the end of 2004. Necessary administrative actions need to be initiated for the purpose. A revised financial budget Revision-D is attached in Annex-4 assuming that such an action will be forthcoming.

#### **1.1 The Pilot Phase**

The pilot phase of the project started in October 1998, but the actual work has been started after the appointment of the Project Coordinator in December 1999. Later on during July-August 2000, other SDNP staffs were recruited. On the day of writing this revised PIP (July 2001), still a few of the remaining personnel could not be recruited due to some problems, mainly work stoppage for nine months.

The pilot phase has been completed with the establishment of BIDS LAN, connectivity to all SIAs under SEMP and developing web sites for BIDS, SDNP and a few others. At present the project has 15 telephone line. To optimize the operation of these new telephone lines, the project is looking forward to add more connectivity to the server with the expectation of obtaining revenue to make the project self sustainable.

The policy oversight is provided by a Steering Committee, chaired by Prof. Jamilur Reza Chowdhury and comprises of Secretary, Planning Division, Ministry of Planning; Secretary, Ministry of Post and Telecommunications; Resident Representative of UNDP, National

Programme Director, SEMP; Director General, BIDS and representatives from NGOs, ISPs, journalists and social elite. (The terms of reference of the Steering Committee is attached in Annex-1).

The project is located in BIDS, a government chartered autonomous organization. SDNP Bangladesh has been fortunate to receive all physical facilities, particularly prime space. Also, communications between SDNP and government agencies, NGO bodies and other socio-economic organizations are very congenial and harmonious. Under the overall guidance Steering committee the Project Director is responsible for day to day running of the project.

By curtailing three NPPP posts, IT Trainer of Users, IT Trainer of Trainers and IT Specialist, the SDNP team has taken the challenge of providing of all training programme by themselves and this has saved a lot of fund from the budget. They are providing training and other technical support to BIDS LAN users, all the SIAs (Sub Implementing Agencies) of SEMP (Sustainable Environment Management Programme), selected non-SIAs and other development partners. Efforts are there to provide extended Internet services, web site developments and database services to the stakeholders at a not-for-profit cost basis.

From the inception of the SDNP Bangladesh, the project has attained high reputation in and outside of the country. During July 2000, in an independent survey among 38 country portals of other SDNPs, the SDNP Bangladesh has been given the top rank as per the design of the site, accessibility and availability of content.

## 2. Outlook and Features of SDNP upon Full Development

- i) To make the project a complete success and nationally effective, it is supposed to run for a full period of five years. Due to the late start in 1998 (nearly 10 months) and the disruptions during September 2000 to June 2001 (nearly 10 months), it is expected that the project would run for at least 15 months more to the end of year 2004. Necessary adjustment of fund may made in the budget an idea of which is given Revision-D in Annex - 4.

- ii) At the end of the project period, provided funding and other constraining factors (manpower, technological upgradation) are removed, SDNP Bangladesh will be completely operational at the national level at BIDS premises as the HQ node, in Mymensingh (Bangladesh Agriculture University), in Rajshahi (possibly Rajshahi BIT), in Khulna (possibly Khulna BIT/Engineering University), in Chittagong (possibly Chittagong University/ BIT), in Sylhet (possibly Shahjalal Engineering University), and in Barisal (location to be decided later) as the regional nodes offering the following services to the stakeholders:
- e-mail services through SDNP server,
  - e-group on sustainable development, environment, ICT and SDI,
  - Internet connectivity to individual, organizational and corporate clients,
  - Web and BBS (Bulletin Board Service) services to the development partners, and
  - Database services to all connected clients.
- iii) Required training and technical assistance will be provided to each of the regional node, PACs and other information centres so that they would be in a position to facilitate the training of their users on their own with minimum support from the central node staff. Eventually all the users will be given connectivity to the central server via regional servers.
- iv) The SDNP will extend its services to UNDP by providing necessary technical support and services. The Resident Coordinator's office can utilize the existing and extended infrastructure of SDNP for information dissemination to the grass root level of their projects throughout the country and similarly the technical team of SDNP can be utilized to perform support services, like web site development, UUCP connections, leased lines and corporate connectivity. These services can be extended to other UN organizations in Bangladesh.
- v) The SDNP may act as a focal point of national IT policy issues and implementation by providing necessary technical support to national bodies.

- vi) Through collaboration with similar initiatives the SDNP will make a network of institutionalized collaborations by offering services to other international agencies like, infoDev ICT of World Bank, Asia-ITC of EU, Global Gateway of World Bank, Greenstar of UK, CoL of Canada, ECDC of ITU, etc.
- vii) Compiling the SDI on a continuing basis, these will be stored annually in CD in multimedia format and circulated among the project participants, national and international bodies within and outside the country. Efforts will be made to exhibit new releases on nationally important days through media circulation and events.
- viii) Government organizations and corporations will be encouraged to create their information and databases to be put in the SDNP server and this may become the national electronic directory of Bangladesh.
- ix) Periodically updated Bulletin Board Services can be extended to regional nodes through fast and dedicated SDNP infrastructures providing instant information resources for potential clients.

### **3. Project strategy and institutional arrangements**

#### **3.1 Technological:**

The telecommunications sector in Bangladesh has been characterized by a very low level of penetration, limited capability to meet the growing demand, low level of investment and old outdated systems and technologies necessitating reactive remedial measures. In order to develop a national sound telecommunication infrastructure to support the economy and welfare of the country by providing telecommunication facilities on demand, assuring satisfactory quality of service and ensuring value to the customers, a sound National Telecommunication Policy is essential. The strategic vision of the government is to facilitate Universal Telephone Service throughout the country and where there is a demand, all those value added services such as cellular mobile telephone paging, data service, access to Internet, voice mail and video conferencing- all at an affordable cost without compromising performance.

Sustainable Development Networking Programme (SDNP) emerges in Bangladesh throwing a challenge to provide networking support through IT media using the available infrastructure, which could at most meet a minor demand of the contemporary period. Lack of a defined national communication backbone similar to many other developing countries remains the prime factor among numerous existing constraints.

SDNP aims to develop a unique tool set at the national level for establishing communications network among development partners in the country capitalizing innovative methodologies and adoptive policies. The project would also like to contribute in the national IT policy consensus by devoting knowledge, experience, expertise and collaboration.

The strategy of SDNP depends on building information infrastructure, institutional collaborations and strategic alliances with all the stakeholders as development partners. The outreach programme should include the community at large and could be reached through not only the digital media, but also through other available technologies. The essence of SDNP is to offer the services to all linked organizations and extend the linkages by assisting in setting up multi-directional interactive communications.

The methodology for developing the SDNP is to establish a non-profit internet service provider (ISP) having a central hub in Dhaka city at the Bangladesh Institute of Development Studies (BIDS), which is the implementing agency of SDNP. Six regional nodes will be established in Mymensingh, Chittagong, Khulna, Barisal, Sylhet, and Rajshahi, through a combination of systems that include Local Area Networking, Wide Area Networking, Radio Modem, Microwave links, Online networking or any other available technologies.

Subscribers to the SDNP will be given access to standard Internet services as well as to a database maintained at the central server in BIDS. By demand the data base can also be downloaded or stored in regional servers. The subscribers will include Ministries of the Government of Bangladesh and other agencies that are implementing the various components of SEMP. These agencies may also contribute to the database, and/or through the SDN, set up web sites which will disseminate information on their activities and achievements.

In addition the SDNP will cater to other corporate users wishing to access the database and to standard Internet services. Such users may include national assembly, international airports, railway stations, national and regional press clubs, public important places, cyclone shelters, information kiosks, local government offices (ward commissioner's offices), academic and research institutions, and public libraries.

SDNP will furthermore, network with:

- All UN agencies working in Bangladesh;
- Earthwatch and Environment Information Networking/INFOTERRA of UNEP;
- The Sustainable Development Commission of UNCED;
- The Advisory Committee for Coordination of Information Systems (ACCIS) which helps users gain access to UN databases and information resources;
- The Global Environment Facility (GEF);
- The Asia-Pacific Development Information Programme of UNDP.

To assist in the establishment of the SDN, UNDP is providing BIDS with a starter kit comprising computer hardware and software, key databases, management and training tools, decision support tools, and other resources which will meet individual needs and ensure long-term compatibility with SDNs operating in other developing countries.

The Technology strategy is divided in three criteria:

- Base stations:- Establishment of the information infrastructure in main node, regional node, information centres, cyber centres, Public Access Centres, Press clubs, and other important places;
- Organizational linkage:- Efforts will be given to develop at least 100 active users at each nodal point of SDN. Beside SEMP components, SDN will connect environment and forestry, agricultural, science and technology, water resources

and similar activity related government, non-government, UN and international agencies to establish a digital information network;

- Outreach programme:- By the extension of SDN's nationwide network, activities would involve offering of
  - information dissemination processes through egroup, web site and BBS;
  - web site design, development and hosting;
  - database access;
  - email and Internet connectivity;
  - UUCP connectivity;
  - Leased line connectivity;
  - WAP connectivity;
  - Training facility;
  - School Programme;
  - Institutional Collaboration Programmes
  - Establishment of Cyber centres and Public Access Centres and
  - Other human resources development programmes.

### **Necessary Steps**

For successful implementation of the SDNP emerging as a not-for-profit ISP devoted to sustainable development, a few key steps have to be taken:

- To enhance outreach programmes of SDNP through Tele-centre/Information Centres throughout the country, need thorough outsourcing and adequate allocation of resources;
- To Initiate and assist in school programme activities by offering Internet connectivities and technical assistance may necessitate inclusion of adoptive technologies and bandwidth sharing with institutes engaged in similar activities;
- To adopt and accommodate financial and technical assistance related to the development of IT infrastructure in Bangladesh using national/international financing through

negotiations need inclusion of such provisions within the revised PIP (PIP needs continuous update by observing global and national IT situation);

- To strengthen and reallocate technical, administrative and financial components for future collaborations further modification on allocation of resources is needed; and
- To formulate policies for integrating similar initiatives in Bangladesh and elsewhere for strengthening the benefit of ICT (Information and Communications Technologies) to common masses living in remote regions need further budgetary improvement provisions (UNDP and others).

The experience so far has indicated that

- i) the present level of resources for the SDNP is not adequate;
- ii) the manpower and HRD needs more rethinking (reflected in Budget Revision-D);
- iii) the SDNP has to be as much administratively independent as possible with only general guidelines and oversight provided by UNDP and Government to avoid critical delays particularly in acquisition of equipment and recruitment of personnel;
- iv) SDNP to be sustainable as soon as possible and be completely independent entity would require serious thinking from right now. This has happened in quite a few countries.

A beginning should be made by delinking SDNP from SEMP and from the Government. It should be noted that BIDS' charter allows it to receive grants directly. Hence, SDNP's immediate relocation outside BIDS is not necessary, but may be so after the project life is over.

### **3.2 Social**

#### **Target Beneficiaries**

The programme will focus on the specific target audiences like, line ministries, community leaders, policy makers, civil society, official donor communities, local government officials,



municipal offices, non-government organizations, private sectors, investors, professional bodies, chambers, academics and academic institutes, press clubs, medical institutes, public libraries, and individuals as development partners.

### **3.3 Manpower**

The project started with only four technical resource personnel including the Project Director. The project has provision for recruitment of about 20 personnel and they will be recruited as soon as possible. However, it has been felt that to run the regional nodes and public access centres, it might necessitate recruitment of additional manpower.

### **3.4 Resources**

BIDS has been provided with space and other logistics support. Library of BIDS has sufficient resource materials for social studies. However, resource sharing with similar institutes and organizations will be necessary during the project period for data and information collection.

### **3.5 Sustainability**

A sustainability model has to be implemented for revenue generation and make the project sustainable beyond the project period.

## **4. *Reasons for further assistance from UNDP/other donor agencies***

Agenda 21 recognizes the powerful role of information sharing and dissemination on issues and actions related to sustainable development and formulate action plans to deal with fundamental problems caused by inadequate availability, analysis and use of information in the field of development and in relation with the environment.

UNDP mandate for capacity building through Capacity 21 programme to assist developing countries in formulating economic, social and environmental goals, plans, programmes, and policies that lead to sustainable development.

The Sustainable Development Networking Programme (SDNP) is a global initiative of the United Nations Development Program (UNDP), which articulated pursuant to Rio Summit of 1992, for establishment of improved information dissemination systems to support sustainable development in developing countries. UNDP was identified by the international community during the Earth Summit as the lead organization of the United Nations to assist developing countries acquire the capacity through capacity building projects for implementing Agenda 21. Technology transfer and access to information and knowledge was identified as a cross cutting issue and a separate chapter UNCED was devoted to developing the means to facilitate access to information, as well as assisting developing nations to bridge the digital divide (data gap) they experience with the industrialized nations.

Bangladesh Government is totally committed towards adopting strategies and policies that would ensure sustainable development. This commitment is reflected through Government's effective participation in the RIO Summit, the ratification and signing of Conventions. Implementation of National Environment Management Action Plan (NEMAP) and Sustainable Environment Management Programme (SEMP) are the key instruments for promoting sustainable development in Bangladesh.

The SDNP aims to capitalize on the revolution in electronic communications and provide a new set of tools to achieve sustainable human development through sharing information, experience and expertise both within the country and globally. UNDP has assisted several countries in Asia, including China, Indonesia, India, Korea, Pakistan, the Philippines, and Bangladesh. The main objective of the Bangladesh SDNP is similar to other SDNPs and aims at facilitating exchange of information/knowledge among development partners, academia, policy makers and the civil society at national and international level to design and implement unique plans for sustainable development in Bangladesh.

BIDS is the Sub-Implementing Agency (SIA) for the component (4.4.5), which falls under the Awareness and Advocacy Sub-Programme of Sustainable Environment Management Programme (SEMP).

To implement the component, a Letter of Agreement has been signed on August 19, 1998 by the NPD, Ministry of Environment and Forest and the Director General, Bangladesh Institute of Development Studies. The initial PIP was an immediate response to the request from

MoEF. Subsequently a UNDP mission was fielded in mid-1999, the recommendations of which have been followed in the actual scheduling of events under SDNP. At the same time, various problems arose in the implementation of SDNP. As a result, it has been felt that a new PIP/Work plan needs to be prepared.

The present revised PIP reflects more than one concern/consideration. These are (a) the forced low level of activities of the last 9-10 months, (b) the correction of initial under designing of the project and (c) making SDNP administratively and financially independent and sustainable as soon as possible. The revisions also have to be understood against the backdrop of achievements made so far.

Therefore, it is expected that if the project could run for at least until the end of 2004, it will reach a justified position to run the project with sustainability. This would need a further financial support with an additional amount of US\$ 560,434 (about 38% increment) from the allocated budget of US\$ 1,461,000.

#### *5. Other support possibilities*

SDNP is looking forward to make efforts of collaboration with the World Bank, ITU, ADB, and several others internationally reputed organizations for contributory fund raising programmes.

## **E. OUTPUTS AND ACTIVITIES**

### **1. Current Achievement**

- Establishment of BIDS LAN
- Connectivity to SIAs and non-SIAs
- Web page development for SIAs and non-SIAs
- Connectivity to National Press Club, Export Promotion Bureau, Mymensingh Press Club, Bangabandhu Sheikh Mujibur Rahman Agriculture University, Bangladesh Rice Research Institute, etc.
- Publication of a CD on World Environment Day 2001
- Organizing a temporary cyber café at press club on World Environment day 2001
- Cyber café at BIDS

## **2. Project Provisions and future plans**

In Bangladesh, SDNP has literally started functioning from October 1999 after the recruitment of the LAN Consultant and geared up from December 1999 after the Project Coordinator joined the project. Subsequently rest of the team has been recruited as per the PIP. The calendar of events depicts the various activities initiated by the project. A programme like SDNP has three essential elements, viz., (a) the set up of an infrastructure/hardware to allow electronic communication, (b) the collection/management of relevant database and (c) creation of an enabling environment for access to and exchange of these information. While all three can simultaneously operationalised, the first one is more a matter being in the forefront of technology while the other two constitute the essence of SDNP in terms of outcome.

### **1. Infrastructure development**

The task of SDNP is to build a robust infrastructure for the project on which the connectivity and gateway to the Internet could be established. At present a LAN/WAN comprising of more than 50 LAN user and more than 50 dial-up users are running and it is expected that within the project period more than 100 users will be connected to the central server. The various infrastructure development processes are detailed below:

#### **1.1 Establishment of BIDS LAN**

BIDS has earmark about 3000 sft of prime space to SDNP. This premise has been converted into a highly accessible and technically sound working enclosure comprising of telephones, Local Area Network, Hubs, Switches, Servers (Linux and NT), proper illumination, emergency electric back up and air conditioning by using most modern available facilities. The designated SDNP space of BIDS consists of one server room, three office rooms and one cyber café. In future one training room will be included as and when necessary.

#### **1.2 Preparation of the Server Room**

It took quite a few months to obtain a proper pilot phase server. The SDNP team, however, managed to convert ordinary PCs and configure them to begin immediate e-mail and Internet

services. After the pilot phase servers were delivered, these were configured to provide the service without any interruption. The server room of SDNP has two Linux servers and one Windows NT server offering networking and Internet services to more than 50 LAN users and 50 dial-up remote users. At present the pilot phase of the project is run through 3 servers, 5 hubs, 1 switch and more than 60 PCs (SDNP and BIDS) and UPSs for smooth operation of the network. Within an appropriate time, this pilot phase servers will be shifted to the first regional node at Mymensingh and main phase of the project will be started. Already feasibility analysis of the first regional node and requisition plan for the main phase have been completed by the SDNP technical team. Setting up of rest of the regional nodes will be carried out as per the work plan (Annex-3). Figure-1 and 2 are showing the VSAT link to Singtel (proposed) and Figure-3 is illustrating the tentative locations of Regional nodes.

### **1.3 Connectivity to SIAs**

All the 26 sub-components of the SEMP have to be given email connectivity through SDNP server using dial up protocol or any other available technology. All the SIAs will be given uninterrupted Internet connectivities after the availability of VSAT or a dedicated 64/128 Kbps Internet link.

### **1.4 Connectivity to Non-SIAs**

Towards the goal of connecting 100 users to each node, nationally important institutes will be given connectivity through the SDNP servers. Necessary arrangement has to be taken for giving connectivity to or arranged for connection to the National Press Club, Export Promotion Bureau, Asiatic Society, Bangladesh Muktiyoddhya Punorbashan Kendra, IEB, BMA, and several eminencies/important personalities, including other development partners.

### **1.5 Radio Modem Link**

Inside Dhaka, a few selected SIA/Non-SIA including one or more regional nodes may need to be connected through radio modem for speedy database interaction in future. Provisions are there to make them operational. However, long-term operation and maintenance will need major adjustment in the manpower provisions and allocation of necessary funds.

## **1.6 Broadband Connectivity**

The introduction of this new technology is being studied closely by the technical team of SDNP. It is expected that this will become a major component of the Internet technology in 2/3 years' time, or even earlier. SDNP must remain prepared for such a transition. This will necessitate resource sharing and re-allocation of funds. There may be provision of connecting the main node of SDNP to the Internet if bandwidth and cost of the services permits.

## **2. Information Generation**

Generation of data/content is the next important aspect of SDN. After the building of the infrastructure, efforts would be made within the available means to generate data/information as much as possible. Given the information base that SDNP wishes to create, it appears that the project is very much under-designed in terms of manpower, especially specialized manpower and finance. However, work has been continuing throughout the week even on weekly holidays to gather a large amount of data from the web, publications, journals, research papers and personal collections. This activity has two aspects, creation and development of the web page and the enrichment of the database accessed through the SDNP web site.

### **2.1 Design and Hosting of web sites**

SDNP technical team comprising the Project Director, Project Coordinator, Web Designer, Assistant System Analyst and Research Officer along with help from the lone UNV, has successfully designing several web sites and hosting them since March 2000. Among them web site of the BIDS, Ministry of Agriculture, Waste Concern and SDNP itself are noteworthy. Recently SDNP has been given offer to develop the web sites of HIV/AIDS project of UNDP, IUCN and a few other international agencies. Scopes are there to develop more web sites and host them in the SDNP server. (It may be noted that, the web site of SDNP has been ranked highest among 38 other SDNPs throughout the world in an international evaluation done by the SDNP HQ at NY in July 2000.)

### **2.2 Design and development of database**

With the help of one research officer, preliminary data accumulation tasks have been carried out and after recruitment of the Database Manager, one database programmer and one more research officer, the work would be further enhanced. Already part of the work has been started with the creation of the database in about 71 categories (<http://www.sdnbd.org>). Note that this is the real avenue of SDNP and must be a continuous process with adequate support from competent database manager, programmers and research officers.

### **3. Information Dissemination and services offered**

Information dissemination is the core process and outcome of the project. To gather the information and outreach them to exact user is the ultimate target of the project. In this regard the SDNP team has to take measures in setting up its own tele-centre/cyber café, taking part in observing national and international days, contributing to important national contemporary issues and building a large web based database. These are detailed below:

#### **3.1 Establishment of Cyber Cafe**

A Tele-centre/Cyber cafe has been established at the premises of BIDS since July 2000 and every day student from schools and colleges are coming to browse the Internet for knowledge building and information gathering at free of cost. The cyber cafe is open five days a week and groups of students are coming here in two shifts, from 10:00-01:00 P.M. and 02:00-05:00 P.M. In each group, there are ten students and this way ten colleges can be served each week through this tele-centre and overall operation of the tele-centre is run by the SDNP personnel. At present only 3 PCs are provided in the Cyber café. After obtaining the PCs as per requisition, 10 PCs will be given to the cyber centre.

Similar cyber cafes will be established in other parts of the capital and eventually in other parts of the country.

#### **3.2 Observation of National and International Days**

Since the web site has been hosted in April 2000, the SDNP is observing all national and international days relevant to sustainable development, education, environment, culture and heritage. These included World Environment Day, International Mother Language Day,

Universal Children's Day, Biodiversity Day, HIV/AIDS Day, World Poverty Day and COP-6 (Climate Change Convention). Observation of relevant national and international days by launching new web pages and accumulating them in the Sustainable Development Information (SDI) page is a routine activity of the SDNP web team.

### **3.3 Observation of nationally important issues**

To raise the awareness and disseminate information on issues of national importance, SDNP web site hosted several issues, like, pollution in Buriganga river, Arsenic contamination, flood forecasting, dengue fever, etc. These were updated in some cases such as flood and dengue almost daily. Similar issues are being tracked each and every day and necessary actions are taken to disseminate them through SDNP's web site and egroup.

### **3.4 Development of CD**

A programme has been taken to develop special CDs on different important occasion (Examples are June 4- World Environment day; February 21- the International Mother Language Day; March 26- the Independence Day, etc.). The CD shall include issues related to sustainable development in Bangladesh. Similar efforts of developing off-line CD on other relevant issues related to sustainable and human resource development are also in consideration.

### **3.5 Publication**

Publication of brochures at regular interval showing the development and achievements of SDNP should be carried out and eventually a few of important issues related to sustainable development will be delivered to the end users in published form. For that reason the formation of a desktop publishing unit is under serious consideration.

### **3.6 Public Access Centres**

SDNP will provide computers, accessories and Internet connectivity to important public places like, National Assembly lobby, ZIA, Kamalapur railway station, Bangladesh secretariat, and other important places in and around the greater Dhaka. There will also be several PACs



to be established outside Dhaka, by choosing venue at a later stage, providing most convenient for users and easy access to central node. Figure-4 shows tentative locations of a few PACs in Dhaka city.

### **3.7 Information Centre at Cyclone Shelter**

Cyclone shelters across the coastal belt of the country will be given computer, accessories and Internet connectivity, which would be acting as the Village Information Centres (VICs). Figure-6 is showing the possible connectivity to cyclone shelters in the northern part of the coastal belt.

### **3.8 Regional Workshops**

Periodical regional workshops will be held at the headquarters of each regional node to raise awareness on the usage of Internet and create positive ambience on overall prospect of SDNP nodes at those places.

### **3.9 Monthly Newsletters**

An international standard monthly newsletter will be published from SDNP covering news on Internet, Sustainable Development Information and other related issues. This would act as the spokesman of SDNP in Bangladesh.

## **4. Human Resource Development**

Training and human resource development are other key issues where the project has been involved. By now the project team has offered initial training on operation under networked environment to all the 50 LAN users and on operation in dial up environment to all the 50 dial up users including training to BIDS technical personnel on installation, configuration and maintenance of the networked devices.

A training programme has been worked out with BUET Computer Science Department and been imparted to SDNP and BIDS technical staff.

Collaborational training programmes with organizations like with CISCO, GTZ and others are in active stage of implementation, and also SDNP team has been preparing to offer specialized courses on web site development, networking and others contents.

## **5. Regional Activities**

To outreach the programme of activities of SDNP at the regional level, already site selection for Mymensingh node and preliminary study on Khulna and Rajshahi nodes have been done. As per the work plan, establishment of rest of the regional nodes will be completed. Figure-3 is showing the tentative locations of six regional nodes and figure-7 is illustrating the pattern of connectivity in Gazipur sub-node.

### **5.1 Establishment of the Mymensingh Node**

Site selection and preliminary works have been completed for establishing the first regional node outside Dhaka. It is expected that after obtaining the requisite equipment for the node it could be launched within three months. Possible linking facilities with the central node has been under consideration, which will offer uninterrupted high speed data interactivity at low cost. The connectivity may be initially through dial-up, then it can be upgraded to X25, DDN, Radio Modem or, VSAT as and when necessary minimizing the cost of the service. A tentative connectivity map is being shown in Figure-5.

### **5.2 Establishment of Khulna and Rajshahi Nodes**

Site selection and related works are in progress. It is proposed that by the end of 2001, one of them will be established for complete operation. Linking facilities may follow the pattern of Mymensingh node.

### **5.3 Establishment of Chittagong, Sylhet and Barisal Nodes**

After proper implementation of the previously mentioned nodes and after effective utilization of resources in terms of technicality and financial capability, they may be taken up, resource permitting, described in the work plan for the year 2003.

## **6. Revision of the Work Plan and Budget**

SDNP is completely a technology depended project and options must be there to adopt innovative and cost effective technologies in future. For these reasons, preferences should be given for periodical revision of work plan and also accommodate additional funding support as and when necessary during the project period.

## **F. INSTITUTIONAL COLLABORATIONS**

Several Collaborations plans are in active consideration by the project and among them School programme, Tele-medicine (Gonoshastha, Shandhani), Country Development Gateway (World Bank), Media centre (Press clubs), Information infrastructure in the North-West region (infoDev) are in progress. To make the SDNP programme successful and sustainable all out efforts will be taken by making collaboration with development partners/agencies working in similar sectors.

Collaborations among development partners and organizations are continuous processes and will be carried out throughout the project period.

- **Institutional Collaborations for education and human resource development**

Bangladesh Open University (BOU) and SDNP are in the process of making a collaborative effort to enhance networked communications through BOU's Regional Resource Centres (RRCs) to outreach network users throughout the country. A Memorandum of Understanding can be prepared for effective utilization of these equipment and a collaborative news letter can be developed by these extended users to raise knowledge, information-platform, education level and networked interactivity. All the users will be given email account and will be connected to the central node of SDNP. This effort in a way would also act towards the human resource development throughout the country.

- **Institutional Collaborations for Information Centres at the cyclone shelters**

Substantial progress of work has been performed to establish information centres at the cyclone shelters across the coastal belt of the country in collaborations with organizations

working in the field of sustainable development. These information centres would ultimately become the focal point of information resources, from where local communities will be able to obtain updated information from daily livelihood to disaster management. They would offer added media of communication during emergency natural disaster period. By downloading information from the SDNP server, they will be disseminated to the local communities through radio transmission. By upgrading these cyclone shelters, they can be transformed into learning centres through collaboration with other distance educators in Bangladesh.

- **Institutional Collaborations for School Programme**

SDNP Bangladesh has taken initiative to distribute PCs donated by different donors through SDNP HQ. The activity will offer technical assistance, network connectivity and guidance of operation throughout the project period.

## **G. SUSTAINABILITY OF THE PROJECT**

A strategic plan to make the project sustainable has been prepared and after approval of the Steering Committee it will be implemented. The SDNP Technical Team can support development partners through offering training, consultancy and networking support at not-for-profit cost sharing basis. The chart for the Sustainability Plan is attached in Annex-5.

## **H. INPUTS**

### **1. *Manpower***

As indicated in the Revised PIP, March 1999 and Budget Revision C includes 19 NPPP personnel, 7 administrative support personnel and UNV provision with a budget allocation of 575,557 US\$. However, to run the project smoothly and manage the extended network, there should be provision of recruitment for more manpower as and when necessary with consultation with the Chairperson of the Steering Committee and with additional fund allocation (Revision-D has kept US\$ 843,729 for this portion). TOR of NPPP and IT Consultants have been prepared by the UN SDNP Mission and attached in Annex-2.

## 2. Equipment

An amount of US\$ 807,000 (Revision-D) has been suggested in the budget as non-expendable fund, indicating about the numbers of PCs and other equipment for the main node and regional nodes.

Since the project profile was prepared at the early stage of the project inception, the equipment allocation and technical specifications are quite inadequate as compared to the current provisions. Table below shows the equipment provisions under this PIP revision.

Description of Equipment	Budget provision in Revision C (Allocated)	Modification in revised budget (Revision-D)	Remarks
VSAT equipment	None	One set	For main node
Server for HQ and region	12	12 (2+2+5+3)	2 terminal servers 2 main servers 5 regional servers 3 backup server
Desktop PC for HQ and region	31	95 (15+50+20+10)	15 main node 50 regional nodes 20 training room 10 cyber café
Desktop PC for Public Access Centres (PACs)	--	130	20 Press clubs 50 PAC Dhaka 50 PAC outside Dhaka 10 Cyclone shelter
Laser printer	31	31 (6+5+20)	6 main node 5 regional nodes 20 PACs
Laptop PC	1	3	1 in station usage 2 out station usage
LCD/OHP	6	6	1 LCD in Central node 5 OHP in regions
Scanner	6	7	2 at central node 5 in regions
Telephone	31	75	3 official use 47 ISP service and PACs 25 Regions
Generator	6	6 (1+5)	1 HQ 5 regions
Slide Projector	1	1	
UPS	31	50 (15+35)	15 HQ 35 regions

External Modem	31	55	5 HQ 50 regions
Hub	--	10	5 HQ 5 Regions
Network Switch	--	03	HQ
GSM Modem	--	10	For PACs
Modem Pool	--	02	HQ
Network Interface Card	--	200	100 HQ 100 Regions
Networking Toolkit	--	02	
Air Blower	--	01	
CD writer	--	02	
Fax Machine	--	01	
De-humidifier	--	01	
CD Duplicator	--	01	
Web camera	--	10	PACs and Regions
Digital Camera	--	01	
Network Web camera	--	02	HQ
Color Laser Printer	--	01	HQ
Router	--	01	Backup at HQ
Bandwidth Manager	--	01	
21" Color Monitor	--	01	
Wireless Router	--	04	
Parabolic Directional Antenna	--	10	Dhaka, Mymensingh, Salna, Bhaluka
Omni-directional Antenna	--	04	Dhaka, Mymensingh, Salna, Bhaluka
Wireless LAN PCI Card	--	05 (1+4)	
Wireless gateway	--	01	
Global Modem PCMCIA Card	--	01	
ADSL Modem	--	04	
Photocopier	--	01	
Additional Equipment	--	As and when necessary	Provision of fund extension for non- expendable.

### 3. Finance

Revised Budget Revision D is attached with the PIP in Annex-4.

## **I. WORKPLAN**

### **The Five-Year Work Plan**

SDNP is a five-year project, and although the Letter of Agreement between BIDS, the Ministry of Environment, and the UNDP was signed on 19 August 1998, this component faced some initial delay in take-off and for all practical purposes has come into effect since 1 February 1999. The broad Work Plan is envisaged as follows (Details of the Work Plan are attached in Annex - 3). However, due to suspension of fund from September 2000 to June 2001, the project period is expected to extend up to December 2004.

#### **Year 1 (1 February 1999 – December 1999):**

- Prepare Project Implementation Plan;
- Prepare Five -Year Work Plan;
- Set up Steering Committee and define its terms of reference;
- Contract National Consultant with IT expertise;
- Request UNDP for an SDNP Expert Mission to BIDS to assist in an advisory capacity for SDNP installation and operation;
- With assistance from UN SDNP Expert Mission:
  - identify Internet Service Provider (ISP) in Bangladesh to engage as consultant for setting up, operationalising and providing maintenance services for SDN;
  - Define terms of reference of consultant ISP;
- Contract selected ISP;
- Recruit project staff;
- Train project and other BIDS staff;
- Procure necessary hardware and software for SDN;
- Prepare site and arrange communication systems and other necessary facilities such as electricity, a stand-by generator, UPS, etc.;
- Install and operationalise central hub in BIDS, including LAN, intranet, etc.;
- Develop database
  - Recruit consultant (see Annex 2 for terms of reference);
  - Design database.
- Develop BIDS policy for SDNP usage by BIDS staff;

- Develop Inception Report;
- Recast/revise budget with approval of UNDP and the Ministry of Environment;
- Operationalise desktop publication section of SDNP for printing/publishing brochures/reports for information dissemination on SDN;
- Conduct a workshop to introduce the concept of SDNP to potential subscribers. Participants will include relevant Government representatives, SEMP implementing partners, representatives from academic/research institutions, representatives of donor agencies, representatives from information technology sector, and representatives from the private sector and the civil society.

## **Year 2 (January 2000 – December 2000)**

- Develop database:
  - retrieval system;
  - data sources;
  - data entry.
- Develop terms of agreement with SEMP partners and others for subscribing to SDN;
- Develop terms of agreement between SDNP and SEMP partners, BIDS projects, GOs, NGOs, private sector, individuals and others for contributing to the database;
- Actively search for subscribers to SDN;
- Search for institutions as potential candidates for the regional nodes;
- Test run the central hub on pilot basis.

(Due to some delay for the procurement of equipment as scheduled in 2000, the requisition has been prepared for submission to NPD and UNDP in July 2001 and henceforth, much of the activities have been shifted to the next year of operation.)

## **Year 3 (January 2001 – December 2001)**

- Identify one partner institution for setting up the first regional node;
- Set up *modus operandi* for the regional node, including terms of agreement and monitoring system;
- Search for subscribers to SDN
- Finalize the pilot phase of central node and prepare for the main phase.
- Procure hardware and software for the first regional node;



- Recruit and/or train staff for the first regional node;
- Operationalise the first regional node on a pilot basis;
- Tentatively select institutions for second and third regional nodes;
- Hold workshops, seminars, and release publications for information dissemination on SDN in and outside of Dhaka;
- Identify and Public Access Centres inside greater Dhaka,
- Programme with Press Clubs, Chamber of Industries, and others outside of Dhaka;
- Place major focus on making SDNP financially sustainable through increased memberships, improved services, and enhanced database and access to information.

#### **Year 4 (January 2002 – December 2002)**

- Setting up the second and third regional nodes;
- If necessary, procure hardware and software for the second and third regional nodes;
- If necessary, recruit and/or train staff for the second and third regional nodes;
- Operationalise the second and third regional nodes on pilot basis;
- Promote first regional node from pilot to main phase;
- Continue efforts to increase memberships to SDN;
- Identify institutions for fourth and fifth regional nodes;
- Identify and establish PACs inside Dhaka and outside of Dhaka;
- Institutional Collaborations;
- School Programme;
- Establish Information Centre in Cyclone Shelter;
- Programme with Press Clubs, Chamber of Industries, and others outside of Dhaka;
- Hold workshops, seminars, and release publications for information dissemination on SDN;
- Continue to focus on making SDNP financially sustainable.

#### **Year 5 (January 2003 – December 2003)**

- Contract national ISP for setting up the fourth and fifth regional nodes;
- If necessary, procure hardware and software for the fourth and fifth regional nodes;
- If necessary, recruit and/or train staff for the fourth and fifth regional nodes;
- Operationalise the fourth and fifth regional nodes on pilot basis;

- Promote the second and third regional nodes from pilot to main phase;
- Continue efforts to increase memberships to SDN;
- Hold workshops, seminars, and release publications for information dissemination on SDN.
- Identify and establish PACs inside Dhaka and outside of Dhaka;
- Institutional Collaborations;
- School Programme;
- Establish Information Centre in Cyclone Shelter;
- Programme with Press Clubs, Chamber of Industries, and others outside of Dhaka.

#### **Year 6 (January 2004 – December 2004)**

- Contract national ISP for setting up the fourth and fifth regional nodes;
- If necessary, procure hardware and software for the fourth and fifth regional nodes;
- If necessary, recruit and/or train staff for the fourth and fifth regional nodes;
- Operationalise the fourth and fifth regional nodes on pilot basis;
- Promote the second and third regional nodes from pilot to main phase;
- Continue efforts to increase memberships to SDN;
- Hold workshops, seminars, and release publications for information dissemination on SDN.
- Identify and establish PACs inside Dhaka and outside of Dhaka;
- Institutional Collaborations;
- School Programme;
- Establish Information Centre in Cyclone Shelter;
- Programme with Press Clubs, Chamber of Industries, and others outside of Dhaka.

## J. BUDGET

Detail budget provision has been attached in Annex-4. The table below gives the synopsis of the revision.

Budget Code and description	Revision C (Allocated)	Revision D (Revised)	Remarks
19: Personnel	575,557	843,729	Extended period up to December 2004 and inclusion of PAC personnel involves additional funding (46% increment)
29: Sub-Contracts	66,000	108,085	Technical installations and IT demonstrations require additional fund (63% increment)
39: Training	40,229	80,229	Regional Workshop and other root level workshops need additional fund (99% increment)
49: Equipment	695,000	807,000	Technological changes may create the possibility to use alternate methods and substantial modifications in all the nodes, which requires additional funding (16% increment)
59: Miscellaneous	84,214	182,391	This portion of budget includes sundries from where Internet bill (VSAT rent will have to be paid @USD2500 per month (116% increment)
<b>99: UNDP and cost sharing (if any)</b>	<b>1,461,000</b>	<b>2,021,434</b>	<b>38% increment</b>

## **K. BEYOND SDNP**

To make the project sustainable the following areas of activities will be taken after the completion of the project period.

### **1. Infrastructure Development**

The central node and similarly regional nodes need to be developed and upgraded through infrastructure development to take advantage of technological development and to cope up with the rapidly increasing databases and interactivity between Internet users. These will include the following:

#### **1.1 Up-gradation of equipment at central node**

The central node of SDNP needs to operate as an independent ISP providing quality services for which purpose the node needs necessary up-gradation on equipment. It should be noted that usually such equipment become obsolete in 3 years' time and provisions should, therefore, be made for major upgradation every three years. These upgradations are needed to keep SDN's quality services and keep the project status at the cutting edge technology. Necessary resources and fund allocations will be needed for these purposes.

#### **1.2 VSAT Link to Regional Nodes**

Depending on demand and accessibility all the regional nodes may need to be connected to the Internet through VSAT.

#### **1.3 Radio Modem Link to other places of the country**

Towards the establishment of a robust information network throughout the country, along with the traditional LAN/WAN, radio modem and similar connectivity need to be adopted in the project policy beyond the project provision.

## **1.4 Broadband Connectivity to other places in Dhaka**

SDNP can provide support to other organizations through this service by taking a chunk of bandwidth from a service provider and distributing to the development partners of SDN at not-for-profit basis.

## **2. Database Development and Management**

Design, development and management of the database are continuous processes for the project. Information accumulation, designing of the database for web usage and rapid interactivity in the Internet needs highly skilled database manipulation and interpolation, which ultimately involves inclusion of experienced database managers and a team of web designers and research officers with knowledge of web based database in the SDNP team. Beyond SDN period forecasts inclusion of a larger group of personnel providing services for national demand. There can be provision of selling of databases from SDN's data store-house with or without processing.

## **3. Information Dissemination**

Dissemination of information is also a continuous process and in this part regional nodes (and even sub-regional/district level nodes/upazilla level nodes/information kiosks at union level) would be increasingly considered as the targeted focal points. Technical personnel would have to be deployed in sequence to handle these challenging issues for thorough and efficient dissemination of information at the grass root level.

### **3.1 Publication**

Publication of brochures/journals not only for SDNP, but also for other organizations at not-for-profit cost from the publication unit could be sustainable venture in future.

### **3.2 CD**

As stated earlier from time to time specific parts of the web page will be transferred to CDs to be used as ready references on various issues related to sustainable development. They will be available at SDNP library at a price of cost.

### **3.3 Information Kiosks/Centres**

A large part of the information dissemination and exchange shall take place through organizations and persons connected to SDNP. This will still have a very large group of people outside the scope of ready-connectivity. Peasants, for example, may need immediate information on what pesticides to apply in case there is a particular pest infestation. Similarly students may need various information. Many such information can be stored in more than one servers of SDNP at central and regional nodes and may be accessed through information/tele-centres specially designed and set up under central and regional nodes. It should be noted that several SDNPs in other countries have similar information centres.

The resources of similar institutes/ organizations will be taken under collaborative umbrella for setting up information kiosks at the grass root level.

## **4. Sustainability of the Programme**

More programmes can be taken in consideration for making the project sustainable beyond the project period.

### **4.1 Training**

Offering of internationally acceptable training facilities in collaboration with international agencies could be another integral part of the project over longer period. Through outsourcing knowledge and information for human resource development this could be a major source of earning for the project leading to sustainability of the overall programme.

### **4.2 Design, Development and Hosting of web sites**

To offer quality services to development partners and agencies, the SDNP team can sustain by charging for its services.

### **4.3 UUCP, FTP and other Internet Services**

UUCP, FTP, Corporate connectivity, Leased line and other Internet services can continue at not-for-profit basis.

#### **4.4 Networking Consultancy**

By providing professional networking consultancy the project team can sustain for longer period beyond SDN.

#### **5. Regional Centres and Activities**

After successful completion of the project period, the operation of regional nodes will be of prime importance. It will be needed thorough manpower deployment, resource sharing, training and motivation. It is always expected that these regional nodes would be the gateway of information for the rural communities and can be envisioned as the independent information storehouse at regional levels. Information on agriculture, agricultural products, marketable general commodities, soil condition, harvesting plan, GIS and even day to day news could be stored in the regional servers for daily usage and dissemination.

#### **L. PROJECT OVERSIGHT REVIEW, REPORTING AND EVALUATION**

Annual reports will be submitted individually from the central hub and from each of the regional nodes, starting from the pilot phases. The reports will attempt to cover the following issues:

- Technical set up including hardware, software, and manpower;
- Details of procurement such as items, sources and cost;
- Details of training provided to project and other staff;
- Lists of users/subscribers;
- Details/pattern of usage of users/subscribers e.g. number of times database is accessed;
- An assessment of needs requirements of database users based on information collected through discussions, workshops, and if necessary, questionnaires;
- Problems faced in operationalising/running SDNP;
- Solutions found;
- Performance of consultant ISP, including maintenance and troubleshooting capability;
- Income/expenditure accounts;
- Status of the database;
- Workshops/seminars held;
- Publications released;
- Other relevant issues not mentioned above;
- Suggestions and recommendations for improving the performance of SDNP.

## **ANNEX 1**

### **TERMS OF REFERENCE OF THE SDNP STEERING COMMITTEE**

The SDNP Steering Committee is an integral part of the overall implementation process of the project. The role of the Steering Committee is to provide advice, direction and support to the SDNP Implementing Unit (SDNPIU) on an ongoing basis. The Committee will comprise IT specialists as well as representatives of the Government, of the SEMP partners, of the media, of academic/research institutions, of the private sector, and other stakeholders. The Steering Committee thus ensures stakeholder participation in the management and operation of the SDNP, without being directly responsible for any aspects of project implementation such as financial management.

The Committee will seek consensus on decisions, and where consensus is not possible, a majority vote will carry weight with any dissenting notes recorded in the minutes if so desired.

The Chairperson of the Committee will be selected from among the members and will be appointed for a period of one year. The Secretary of the Committee will be the SDNP Administrator from within BIDS. Quorum for a meeting of the Committee is 50 percent of membership and meetings will initially take place quarterly which may later be reduced to half-yearly if SDNP progresses satisfactorily. Extra-ordinary meetings may be called as and when necessary.

The Steering Committee will advise on:

- Plans, activities and achievements with the SDNP Coordinator;
- Long-term planning measures;
- Sustainable operation of the SDNP on a non-profit basis;
- Contents of database;
- Policy issues regarding operation of SDN;
- Resolving conflicts between SDNP users/members;
- Sensitising and promoting actual and potential user groups;
- Any other relevant issues that may arise from time to time.



## **Annex 2**

### **Terms of Reference for SDNP/SEMP NPPS and IT Consultants**

(Source- UNDP/SDNP Mission Report, July 1999)

#### **SDNP Co-ordinator:**

Under the supervision of the Project Director and in consultation with the Steering Committee and UNDP, with the assistance of SDNP\_NY, the SDNP Co-ordinator will be responsible for all aspects of implementing and managing the SDNP project.

- The SDNP Co-ordinator will be expected to have a very good understanding of the issues related to and main players involved in promoting sustainable development in Bangladesh and otherwise, a demonstrated understanding of the use of information technology for computer mediated communications, demonstrated and strong managerial skills, have good writing skills, and have good interpersonal and communication skills along with initiative and drive.
- The SDNP Co-ordinator will be responsible for helping to develop, adapt and implement the program of work and a detailed budget based on the approved project document. He or she will be responsible for managing the small SDNP Co-ordination Unit, for undertaking and/or supervising the ongoing tasks of research and analysis, for making recommendations regarding priorities and the expenditure of funds, and for doing this in consultation with members of the SDNP Steering Committee and others mentioned above.

The Co-ordinator will also be responsible for developing marketing and business plan and/or other plans for the ongoing operation of the SDNP with the objective of placing the operation of a self-sustaining basis.

The SDNP Co-ordinator will be an entrepreneur for the SDNP.

The SDNP Co-ordinator will work closely with the SDNP Steering Committee, the UNDP Resident Representative and his/her staff and consult with the Technical Advisor SDNP in New York.

In consultation with other SDNP staff, the SDNP Steering Committee and partners in the SEMP programme, as appropriate. The SDNP Co-ordinator will:

- Help develop the main programme areas for the SDNP to focus on. This will include identifying local and other sources of information and expertise on issues related to sustainable development in Bangladesh, and developing a variety of information products and service to disseminate and communicate this information.
  - A key component of this will be marketing information products and services, which do not impinge on its mission to provide access to important Sustainable Development information. The SDNP Co-ordinator, with the help of the Steering Committee will develop and implement a marketing plan and eventually, the business plan for the SDNP.
- 

### **Database Programmer**

To design, implement, and support Web-oriented database applications as well as off-line modes of adding to SDNP databases for those without internet connectivity.

#### Requirements:

- At least two years of experience in database application development based on Oracle and SQL compliant database software.
  - Advanced Programming knowledge in Java, CGI, and Perl.
  - Experience in Database integration for the Web.
  - Basic administrative skills in UNIX, Linux and TCP/IP network protocols.
  - HTML, Java, JavaScript, Server-Side Development, Servlets, and XML
  - An university degree in computer science or a related field.
  - An excellent command of English.
- 

### **Web & General System Administrator**

Responsible for providing general systems administration and support for Solaris and Linux servers running Apache (including support electronic mail, news, ftp server and WWW

server directory); maintain internal network equipment of routers, servers and network hubs and support, tuning, maintenance, and uptime of network equipment linking a number of separate facilities; maintain secure, reliable Internet connection along with Internet related services; maintain remote access network equipment configuration of CISCO Routers, switches DNS and load balancing systems; firewall deployment, maintenance and auditing; system level security issues; backup management.

**Requirements:**

- Requires 3+ years experience installing and configuring Solaris and Linux (TCP/IP, NFS, DNS/NIS, etc.), automating administrative tasks with Perl, shell scripts and conducting security audits;
  - Experience with a variety of communications equipment, LAN/WAN including modems, routers, switches, etc; experience troubleshooting and distinguishing between network and system problems, performance monitoring and tuning.
  - Familiar with backup strategies, disaster recovery strategies, remote management and administration, networking over TCP/ IP, Raid Systems. Sun or Linux Cluster Experience would be a plus.
  - A university degree in computer science or a related field.
  - Must be willing to be on call, carry a mobile phone and respond during off hours
- 

**Assist System Administrator**

Responsible for providing backup to the general systems administrator involving support for Solaris and Linux servers running Apache (including support electronic mail, news, ftp server and WWW server directory); maintain and troubleshoot internal network equipment of routers, servers and network hubs and; maintain and troubleshoot Internet connection along with Internet related services and monitor security of services; maintain remote access network equipment; backup management

Requirements:

- Requires 2 years experience installing and configuring Solaris and Linux (TCP/IP, NFS, DNS/NIS, etc.), automating administrative tasks with Perl, shell scripts and conducting security audits;
  - Experience with a variety of communications equipment, LAN/WAN including modems, routers, switches, etc.
  - Familiar with backup strategies, disaster recovery strategies, remote management and administration, networking over TCP/IP
  - A university degree in computer science or a related field.
- 

**IT Trainers for Training of Partners/General Users (2)**

Responsible for providing IT training and training other trainers to provide telephone and onsite training and support for software installation, configuration, internet application use, website production and use of forms.

Requirement:

- Someone with a strong combination of customer service and technical skills.
  - 2 to 3 years software support training or help desk experience,
  - configuration knowledge and experience of Windows NT/98/95.
  - advanced Internet skills.
  - experience of scanning documents and conversion of documents to pdf
- 

**IT Trainer: Trainer of Trainers**

Responsible for providing IT training of technical staff in the regional nodes and partner organisations. This training could also be offered at a price to unrelated organisations.

Requirement:

- Someone with a strong combination of customer service and technical skills.

- Requires 2 years experience installing and configuring Solaris and Linux (TCP/IP, NFS, DNS/NIS, etc.), automating administrative tasks with Perl, shell scripts and conducting security audits, configuring and maintaining of UNIX services such as HM, Sendmail, FTP, UUCP, News and UNIX networking TCP/IP and related network protocols.
  - 2 to 3 years software support, training
  - Familiarity with configuration and experience of Windows NT/98/95 and NT server a plus.
  - Programming knowledge of Java, CGI, and Perl.
  - An university degree in computer science or a related field.
- 

## **Web Developer**

The Web Developer is responsible for designing and maintaining the SEMP/SDNP Portal Web site as well as helping to design related partner sites; create new pages, design and maintain clear navigation and site organisation; the developer will also need to work with the designer in creating presentations and other graphic design projects for promotion; co-ordinate integration of site components and test links, scripts, and CGI programs before moving site to production servers.

### Requirements

- Candidates should have a minimum of 2 years experience in web design and be highly knowledgeable in HTML, XML, JavaScript and CGI programming; Experience of database web integration would be a plus.
  - Have some experience and skills with image creation and manipulation software such as Adobe PhotoShop and Adobe Illustrator,
  - Capable of understanding design; technical, scheduling and platform issues relevant to deployment of large, multi-disciplinary Internet-based projects, including web medium and browser restrictions/capabilities, such as color palette issues; file optimisation, and multi-platform testing.
-

## Web Designer

The Web Designer is responsible for designing and maintaining the look and feel of the SEMP-SDNP Portal web site as well as designing and publishing content for our other related partner sites; creating new pages, translating content into HTML; the designer will also need to work with the developer to create presentations and other graphic design projects for promotion.

### Requirements:

- The successful candidate must also possess an eye for design
  - Have a high level of proficiency in graphics design programs such as PhotoShop and Illustrator.
  - Have a minimum of 2 years experience in web design and be highly knowledgeable in HTML, JavaScript
  - Capable of understanding design, technical, scheduling and platform issues relevant to deployment of large, multi-disciplinary Internet-based projects, including web medium and browser restrictions/capabilities such as colour palette issues; file optimisation and multi-platform testing.
- 

## Management Consultant on Business Plan for SDNP (1 consultant for 3 months)

Building on the TOR for the Preparatory Assistance for Organising Workshop on Implementation of SDNP, the consultant is expected to: survey SEMP partners and related organisations to

- **Identify target users of SDNP's services** such as connectivity, training etc. Are there target users outside of the SEMP partners and UN agencies and NGOs. How can the expatriate Bangladeshi community and private sector be a market for SDNP?
- **Identify target services** that can be sold by SDNP: explore alternatives to selling connectivity and data such as value added services; technical support to partners; training; application and project development for UNDP, the UN system and other partners; facilitation of reporting via IT for related national and sub-regional projects;

and web page design, hosting and maintenance; research and information searches on related concerns; and advertising.

- **Evaluate Comparative Advantage of SDNP in providing these services:** Survey ISPs, training institutes and other private sector providers of SDNP type services.

Prepare a business plan for SDNP's operations and evaluate whether it can occupy the niche of value added Internet service provider for presentation by SDNP co-ordinator to the Steering Committee.

Requirement:

- The consultant is expected to have both a managerial background and some familiarity with survey methods and business plan formulation.
  - The consultant should also have an understanding and experience of IT services and technology, and their deployment in the service of sustainable development.
- 

### **Management Consultant on Needs & Resource Assessment of SDNP Partners & Related Agencies**

This survey can be done in combination/co-ordination with the organisation of the survey for the formulation of a business plan for SDNP, the consultant is expected to undertake a Needs and Resource Assessment of Partners so as to compile an inventory of resources that need to be put on-line:

- Survey SEMP partners and determine the extent, nature and format of their data
- Compile profile information (basic contact, description of organisation, description of on-going work, current projects, areas of expertise, areas of concentration) to facilitate development of SEMP/SDNP contacts and partners database.
- Determine priority of information to be put on-line
- Determine whether web development and hosting services are required.

Requirement:

- The consultant is expected to have a familiarity with survey methods and conducting of interviews.
- The consultant should also have an understanding and experience of IT services and technology, and their deployment in the service of sustainable development.

## ANNEX - 3

### PLANNED PHASES OF THE CENTRAL HUB AND THE REGIONAL NODES OF SDN

<b>SDN</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Central hub</b>	Pilot	Pilot	Main	Main	Main
<b>Regional node 1</b>	-	-	Pilot	Pilot	Main
<b>Regional nodes 2 &amp; 3</b>	-	-	-	Pilot	Main
<b>Regional nodes 4 &amp; 5</b>	-	-	-	-	Pilot



**ANNEX-3/1**  
**COMPONENT 4.5 – SUSTAINABLE DEVELOPMENT NETWORKING PROJECT**  
**ANNUAL WORK PLAN (1999– 2004)**

Year 1:1999

Activity	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Preparation of the Project Implementation Plan for the years 1998, 1999 and 2000											
Preparation of the Five-Year Work Plan											
Discussion with various ISPs and IT firms regarding setting up of SDNP central node											
Requisition for Hardware and Software for the Pilot Phase Recruit Administrative Project Staff											
Recasting/revision of Budget with approval of UNDP and the Ministry of Environment											
Appointment of Consultants for preparation of Inception Workshop related affairs											
Vacancy Announcements for IT Specialist/Coordinator											
Identify partner ISP for setting up, operationalising and providing maintenance services for SDNP											
Formation of the Steering Committee and its TOR											
Request UNDP for a Mission to help select ISP and ensure appropriate hardware and software procurement for SDNP Visit by UN Mission											
First Meeting of the Steering Committee											
Inception Workshop											
Submission of UN Mission Report											
Finalisation of Inception Report											
Finalise contract agreement with ISP and explore new ideas after consultation with a selected ISP as per UNDP Mission											
Appointment of the Web Designing Consultant											
Designing and hosting of BIDS Web Site											
Recruitment of LAN Consultant											
Recruitment of Project Coordinator											
Recruitment of Consultant for Needs and Resources Assessment											
Training of Project Personnel											
Procurement of necessary hardware and software for SDNP Pilot Phase Designing and hosting of SDNP Web Site											
Preparation of site and arrangement of communication systems and other necessary facilities such as electricity, a stand-by generator, UPS, etc.											

## Year 2: 2000

Activity	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Preparation of site and arrangement of communication systems and other necessary facilities such as electricity, a stand-by generator, UPS, etc.												
Workshop by the Consultant (Needs and Resources Assessment)												
Finalisation of the Report on Needs and Resources Assessment												
Installation of five telephone connections												
Install and operationalise Central Hub in BIDS, including LAN, Internet, Generator, Emergency Electric Line, etc.												
Contract with the ISP for Lease Line and operationalise the Central Node												
Provide Connectivity to the SIAs												
Provide training to SIAs												
Web Designing, development and hosting for SIAs												
Explore the possibility of alternate connectivity to important SIAs and UN agencies within Dhaka and installation of VSAT/Broadband connectivity to SDNP server room												
Training of BIDS staff on the use of LAN and Internet												
Joining of the UNV and participation in the Project												
Visit to successful SDN Projects abroad												
Appointment of Web Designer and Assistant Systems Administrator												
Identify institution for first regional node and develop <i>modus operandi</i>												
Training of SDNP and BIDS staff in BUET												
Appointment of Research Officer for Data Collection												
Designing of the Database												
Data Entry for the Database												
Development of Database												
Recruitment of Database Consultant												
Development of policy for SDNP usage by BIDS staff												
Operationalise desktop publication section of SDNP for printing/publishing brochures/reports for information												
Increase the number of T&T telephone connections to SDNP server												
Install and operationalise the Cyber Cafe at BIDS premises												
Preparation of Business Plan												
Second meeting of the Steering Committee												
Central Hub Pilot Phase												
Annual Report of the Central Hub												

**Year 3: 2001**

Activity	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Contract the VSAT service provider and operationalise the central node												
Provide connectivity to non-SIAs and other agencies												
Provide training to non-SIAs and other agencies												
Web designing, development and hosting for SIAs and non-SIAs												
Identify institution for first regional node and develop <i>modus operandi</i>												
Contract executing agency/institution for setting up first regional node												
Recruitment of Database Consultant												
Designing of the Database												
Development of the Database												
Database development/data entry												
Operationalise desktop publication section of SDNP for printing/publishing brochures/reports for information												
Operationalise the Information Centre/Cyber Café at BIDS premises												
Visit to successful SDN projects abroad												
Procure/install equipment for first regional node												
Recruit and/or train staff for first regional node												
Operationalise first regional node on pilot basis												
Procurement of equipment for central hub												
Establish PACs												
School Programme												
Operationalise main phase of central hub												
Identify institutions for 2 <sup>nd</sup> and 3 <sup>rd</sup> regional nodes												
Institutional Collaborations												
Sourcing of alternate funding												
Steering Committee meetings												
Visit of UN SDNP Expert Workshops/seminars												
Publications												
Annual reports of central hub and first regional node												

**Year 4: 2002**

<b>Activity</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
Database development/data entry												
Contract organization/ institution for installation of 2 <sup>nd</sup> and 3 <sup>rd</sup> regional nodes												
Procure/install equipment for 2 <sup>nd</sup> and 3 <sup>rd</sup> regional nodes												
Recruit/train staff for 2 <sup>nd</sup> and 3 <sup>rd</sup> regional nodes												
Operationalise pilot phase of 2 <sup>nd</sup> and 3 <sup>rd</sup> regional nodes												
Operationalise main phase of 1 <sup>st</sup> regional node												
Institutional Collaborations												
Sourcing of alternate funding												
Central hub main phase												
Provide connectivity to non-SIAs and other agencies												
Establish PACs												
School Programme												
Provide training to non-SIAs and other agencies												
Web designing, development and hosting for SIAs and non-SIAs												
Operationalise information centres/ tele-centres at outreach programmes												
Steering Committee meeting												
Workshop/seminar												
Publications												
Identify 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Annual reports of central hub, 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> regional nodes												

**Year 5: 2003**

Activity	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Database development/data entry												
Contract organization/ institution for installation of 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Procure/install equipment for 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Recruit/train staff for 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Operationalise pilot phase of 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Operationalise main phase of 2 <sup>nd</sup> and 3 <sup>rd</sup> regional nodes												
1 <sup>st</sup> regional node main phase												
Institutional Collaborations												
Sourcing of alternate funding												
Provide connectivity to non- SIAs and other agencies												
Provide training to non-SIAs and other agencies												
Web designing, development and hosting for SIAs and non- SIA s												
Central hub main phase												
Establish PACs												
School Programme												
Operationalise information centres/ tele-centres at outreach programmes												
Steering Committee meeting												
Workshop/seminar												
Publications												
Annual reports of central hub, and 5 regional nodes												

## Year6:2004

Activity	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Contract organization/ institution for installation of 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Procure/install equipment for 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Recruit/train staff for 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Steering Committee meeting												
Workshop/seminar												
Publications												
Operationalise pilot phase of 4 <sup>th</sup> and 5 <sup>th</sup> regional nodes												
Operationalise main phase of 2 <sup>nd</sup> and 3 <sup>rd</sup> regional nodes												
1 <sup>st</sup> regional node main phase												
Central hub main phase												
Institutional Collaborations												
Provide connectivity to non-SIAs and other agencies												
Provide training to non-SIAs and other agencies												
Web designing, development and hosting for SIAs and non-SIAs												
Sourcing of alternate funding												
Establish PACs												
School Programme												
Database development/data entry												
Operationalise information centres/ tele-centres at outreach programmes												
Annual reports of central hub, and 5 regional nodes												

## Annex -4





## Sustainability Plan

### Tariff for Special Packages at not-for-profit basis

#### 1) Email

Services	Client Group	Fee	Remarks
Email	SIA	Free	600 minutes free. For additional minutes accounts will be charged at Tk. 0.25
Email	Non-SIA	Free	400 minutes free. For additional minutes accounts will be charged at Tk. 0.20
Email and Internet (Individual user from Home)	SIA	T.k. 0.25/- per minute (minimum 50 hrs slot @ Tk. 750/-)	Setup charge-300/- on site

#### 2) Internet Browsing

Services	Client Group	Fee	Remarks
Email, Internet and LAN	BIDS	1000/- (5000 minutes slot)	Setup charge-Free
Email, Internet and LAN	BIDS	1500/- (8000 minutes slot)	Setup c charge-Free

#### 3) UUCP Account

Services	Client Group	Fee	Remarks
UUCP	SIA/ Hosted by SDNP	10,000/- per year	Setup Charge- Free Minor maintenance- free
UUCP	SIA/ Not hosted by SDNP	15,000/- per year	Setup Charge- 1000/- Minor maintenance- free
UUCP	Non-SIA	20,000/- per year	Setup Charge- 2000/- Minor maintenance- 200/- per call

#### 4) Web Site Hosting

Services	Client Group	Fee	Remarks
Web Hosting (USA)	SIA	25,000/- per year	Package includes 2 year's domain registration, 1 year's 20 MB hard disk space and hosting at a reliable server in USA.
Web Hosting (SDNP)	SIA	5,000/- per year	Package includes 2 year's domain registration, 1 year's 20 MB hard disk space and hosting at the SDNP server in Dhaka (Excellent as a mirror server).

#### 5) Corporate Lease Line

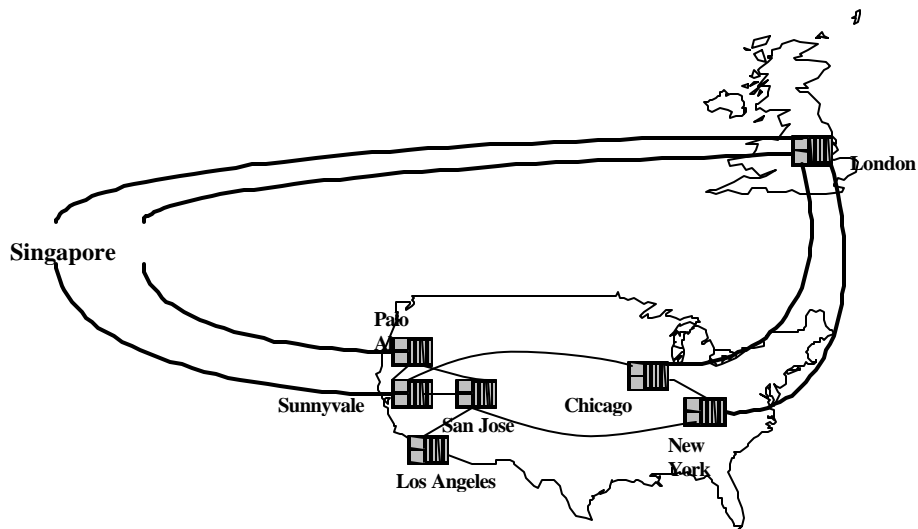
Services	Client Group	Fee	Remarks
With Telephone	SIA	15,000/- per month	
Without Telephone	SIA	10,000/- per month	

#### 6) WAP Services (Planned)

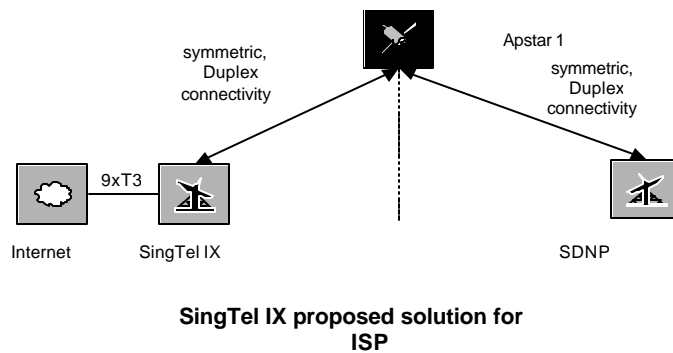
Services	Client Group	Fee	Remarks
Radio Modem	SIA	Fixed at later stage	Services will be offered as per availability
Alternate Technologies	SIA	Fixed at later stage	Services will be offered as per availability

#### Terms and Conditions

- All payments have to be made in advance.
- One month free maintenance after installation.
- Above tariffs are made on single user basis.
- No security deposits.
- No monthly line charge.
- No hidden charge.
- Above charges do not include any Government taxes and SDNP reserves the right to accommodate such charges, if applicable.
- SDNP reserves the rights to change the tariffs and Terms and Conditions any time for the benefit of the project.



**Figure-1: Proposed SingTel IX POPs in LINX and the East Coast of US**



**Figure-2: Proposed Singtel-SDNP Link**

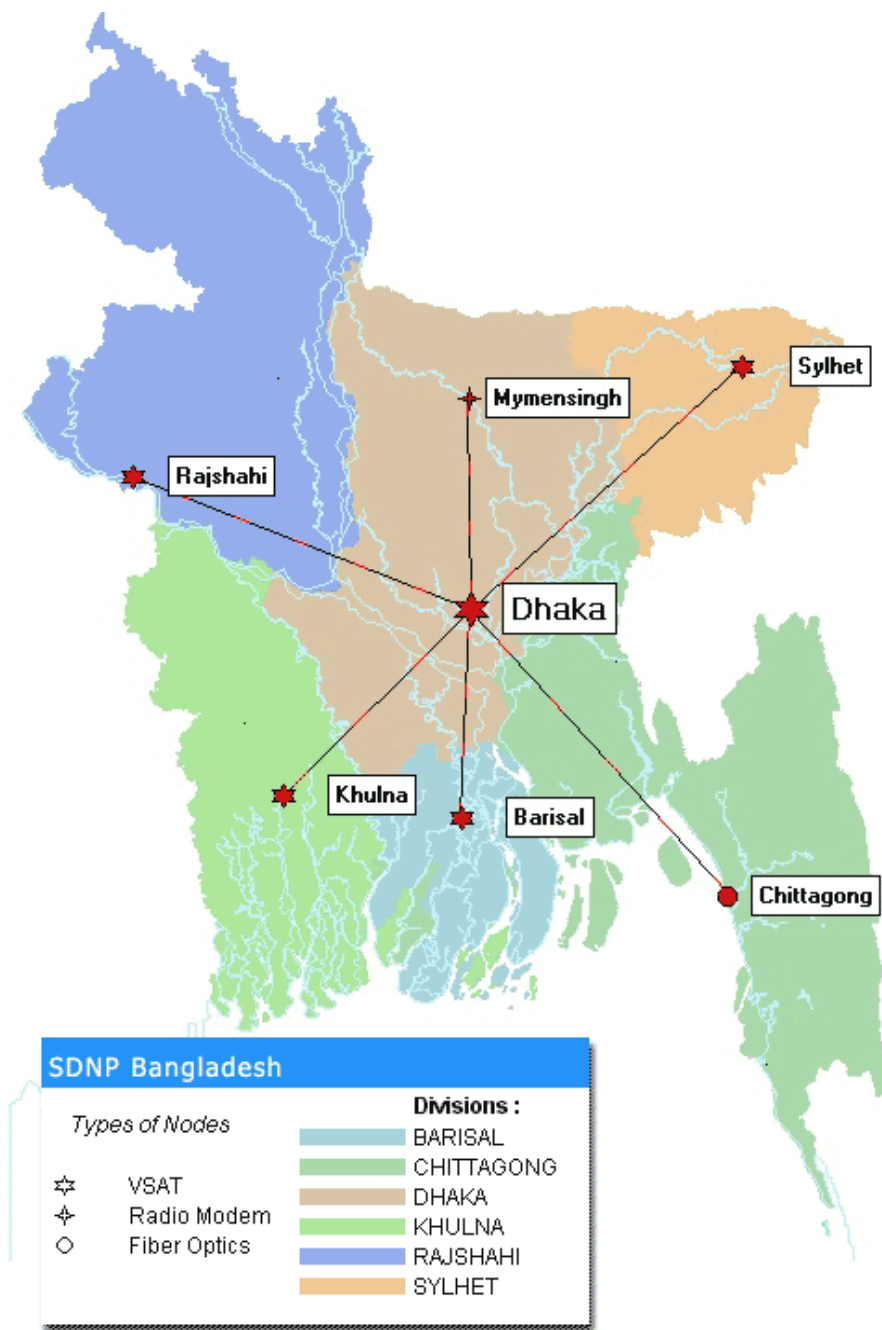


Figure-3: Six regional nodes of SDNP

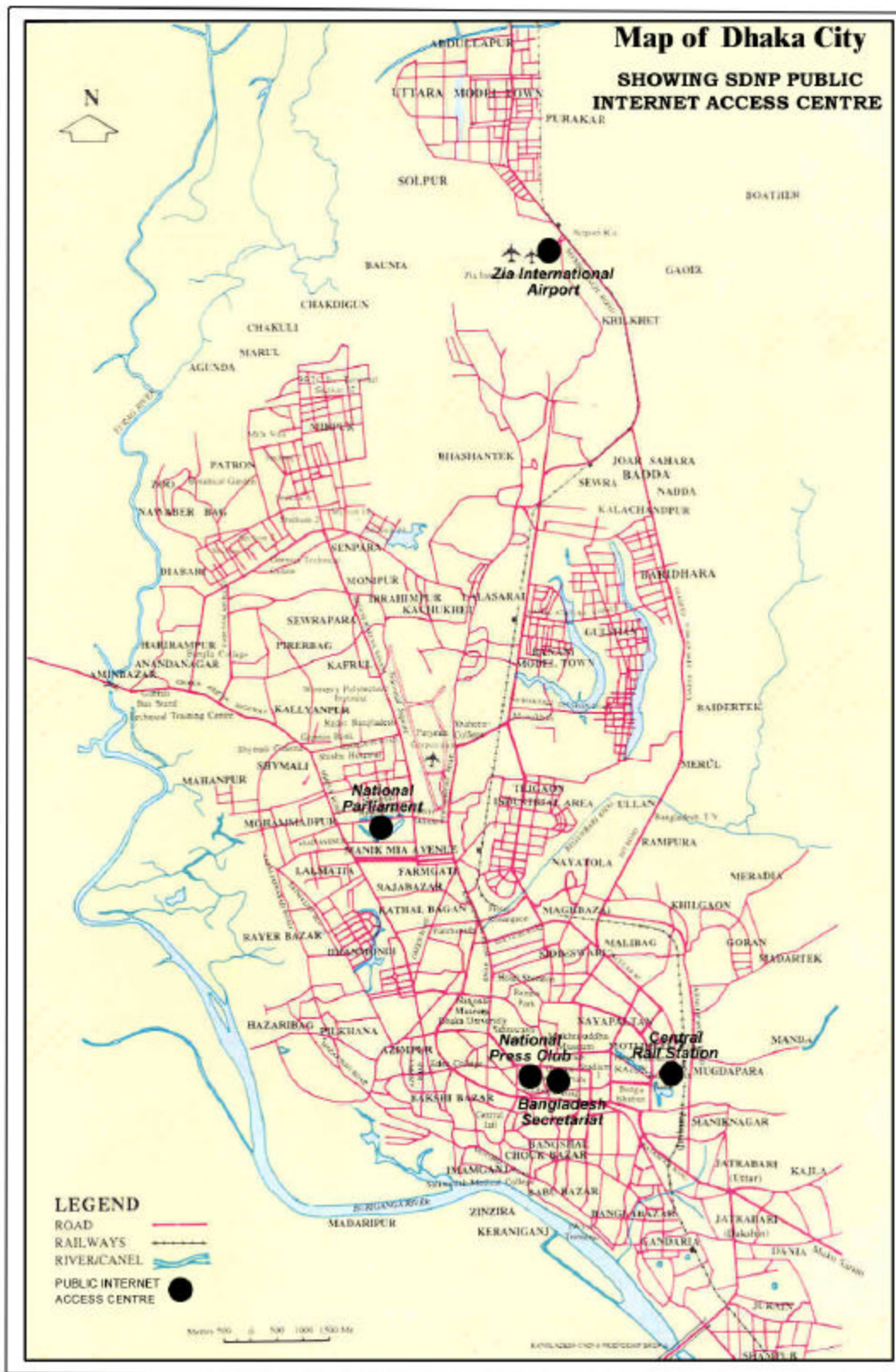


Figure – 4: Locations of the Public Access Centres in Dhaka

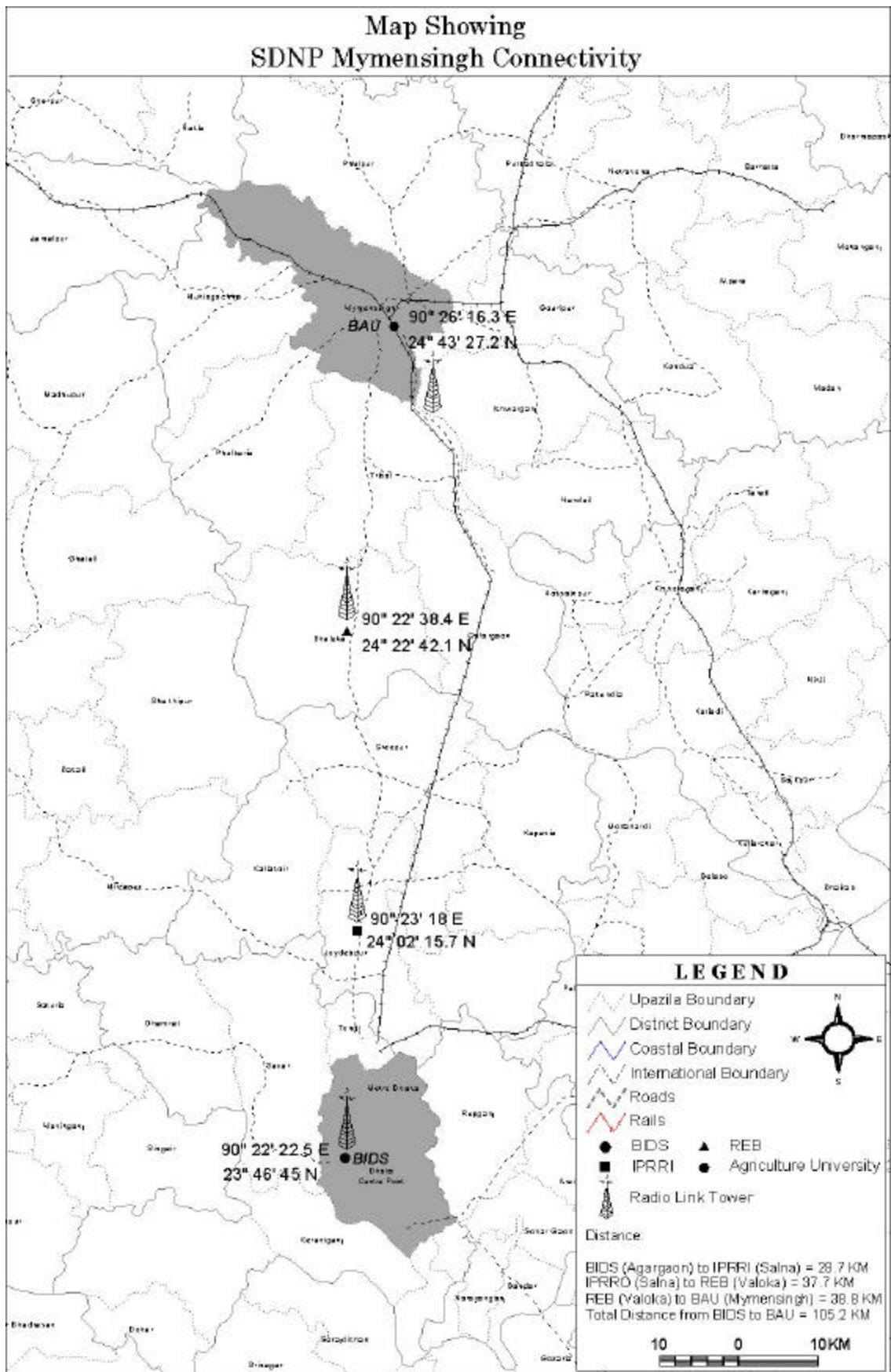


Figure – 5: Connectivity to SDNP Mymensingh node by using radio modem

### Connectivity in the Cyclone Shelters

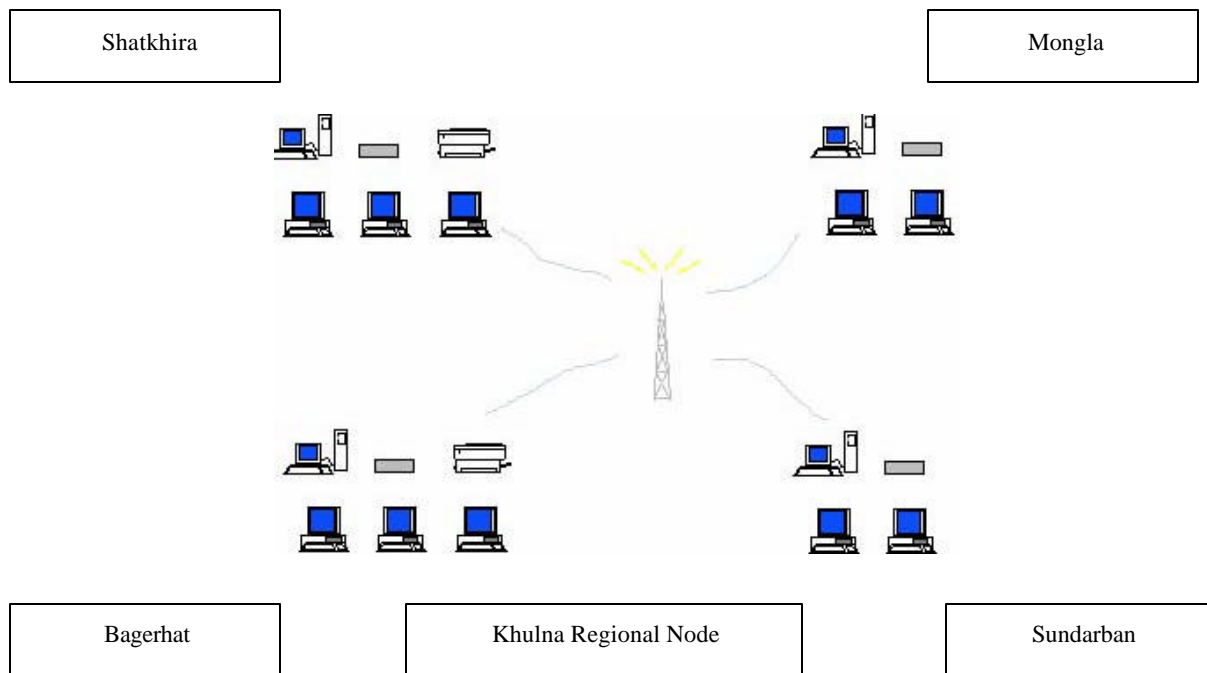


Figure – 6 : Connectivity to information centres based in Cyclone shelter through Khulna Regional Node.



## Connectivity of Gazipur Sub-node

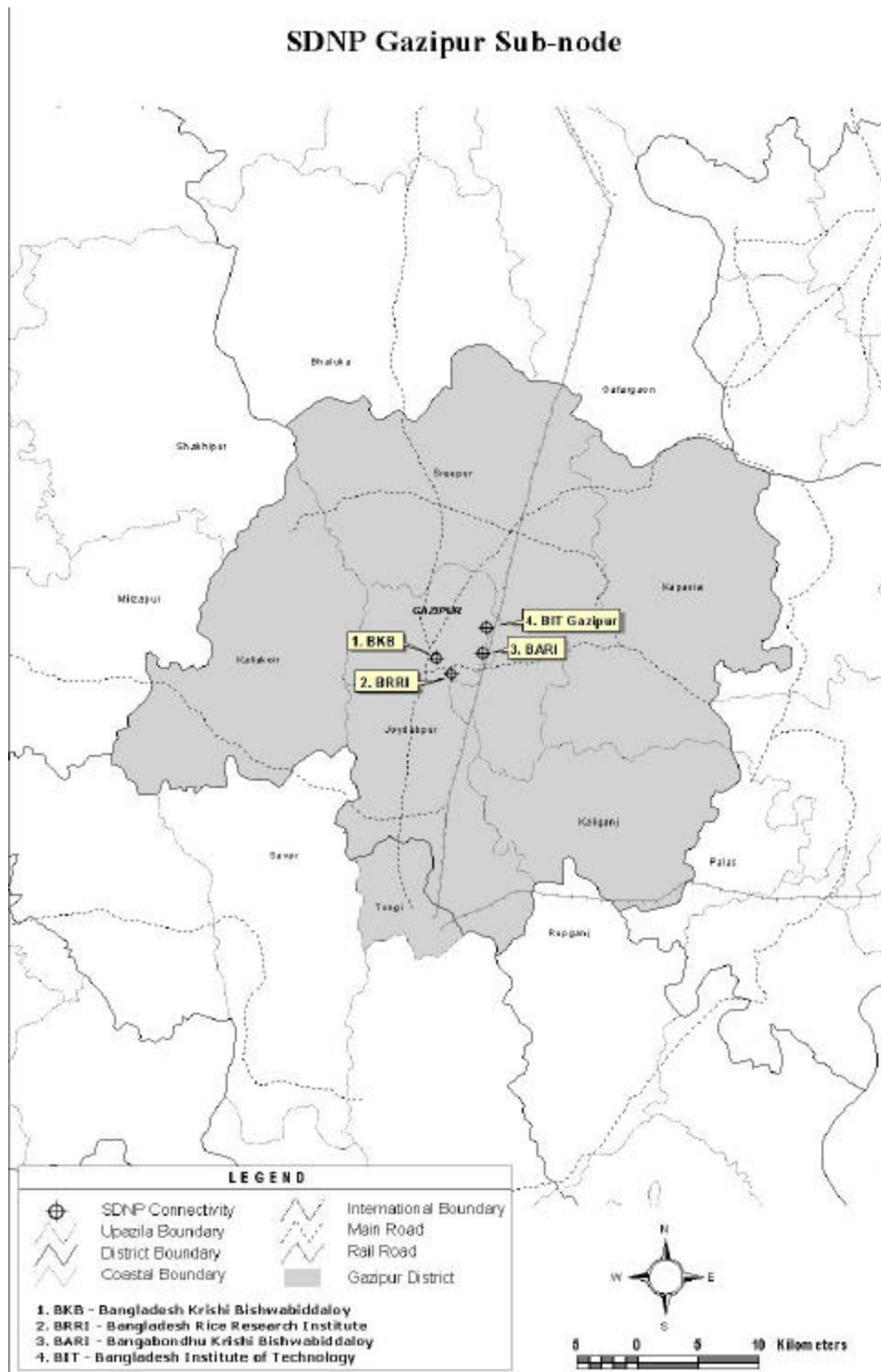


Figure -7: Gazipur sub-node providing connectivity to various research organizations