Inception and Training Workshop on Establishment of Environmental Data and Information Management System for South Asia

Colombo, Sri Lanka 09 – 10 February 2010

Workshop Report





Organised by

South Asia Co-operative Environment Programme (SACEP)

In collaboration with

United Nations Environment Programme (UNEP)

Inception and Training Workshop on Establishment of Environmental Data and Information Management System for South Asia

Date: 09 – 10 February 2012

Venue: Galadari Hotel, Colombo, Sri Lanka

Day One - February 09

1. Introduction

South Asia Co-operative Environment Programme (SACEP) in collaboration with United Nations Environment Programme (UNEP) organized a two day Inception and Training Workshop on Establishment of Environmental Data and Information Management System for South Asia on 9-10 February 2012 at Colombo Sri Lanka.

2. Attendance

The workshop was attended by two participants from each member countries of SACEP namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. It was also attended by resource persons from UNEP – Nairobi, Development Alternatives – India, UNEP-RRCAP and National Environmental Information Management System Project of Pakistan.

The List of Participants is in Annex I.

3. Inauguration

- 3.1. An opening ceremony was held in the morning of 1st day with the participation of Hon. Anura Priyadarshana Yapa, Minister of Environment, Government of Sri Lanka as the Chief Guest. A number of invitees representing, government agencies, diplomatic missions, media, workshop participants, etc. attended to the opening ceremony.
- 3.2. At the opening ceremony, Ms. Jacintha S. Tissera, Officiating Director General of SACEP welcomed participants and introduced SACEP. On behalf of UNEP, Dr. Subrata Sinha, Environmental Affairs Officer of UNEP ROAP delivered opening remarks and also welcomed the gathering. This was followed by the welcome address of Mr. M. M. U. D. Basnayake, Secretary, Ministry of Environment, Sri Lanka on behalf of host government.
- 3.3. Hon. Anura Priyadarshana Yapa, Minister of Environment, Government of Sri Lanka in his keynote address stated that this activity is a timely one as the new world order is converting and changing towards green revolution, sustainable development, ecofriently development practices vis a vis to counter climate change impacts. He

also mentioned that the global leaders will review the progress of last 20 Years at the up-coming Rio+20 Summit and the proposed Environmental Data and Information Management System would assist immensely to the South Asian leaders to understand the position of the sub-region.

3.4. The opening ceremony was ended with the vote of thanks delivered by Mr. W. K. Rathnadeera, Senior Programme Officer of SACEP.

4. Technical Sessions

- 4.1. After the self introduction of the participants and the resources persons, Dr. Subrata Sinha, Environmental Affairs Officer of UNEP ROAP briefly outlined the objectives of the workshop and introduced the agenda. The agenda is in Annex II
- 4.2. Country Presentations: Each country was given 10 minutes to present their country status including Environmental Monitoring Systems/Networks, Data availability and data gaps. There was a discussion followed by each presentation. Country presentations are in Annex III.
- 4.3. Case Study Presentations by Resource Persons
 There were three case studies presented by three resources persons followed by a discussion.

Mr. Anand Kumar, Senior Programme Manager of Development Alternatives, India presented the case study on Environmental Information System of India.

Mr. Tim Aung Moe, Head, Knowledge Support Component of the UNEP RRC.AP presented a case study on data harmonization and he explained the example of UNEP e-KH.

Mr. Mahboob Elahi, National Project Manager of National Environmental Information Management System Project of Pakistan presented a case study of ongoing National Environmental Information Management System Project of Pakistan.

Presentations are in Annex IV.

4.4. Presentation on Summary of the Questionnaire

A questionnaire was circulated among all member countries of SACEP in order to get the basic idea of the ground situation with regards to the environmental monitoring and statistics in each country. All countries responded well and SACEP summarized the information provided. Mr. W. K. Rathnadeera, Senior Programme Officer of SACEP presented the findings which followed by a discussion. The summary of the analysis is in Annex V.

- 4.5. Elements of Regional Data and Information Management System Mr. Johannes Akiwumi, Head, Data and information Management Section, Division of Early Warning and Assessment, UNEP gave a presentation on Elements of Regional Data and Information Management System. In his presentation, he explained importance of data harmonization/standardization, data sharing mechanisms, use of state-of-art ICT and regional coordination and national level activities which are essential part of an information management system. Annex VI
- 4.6. Mr. W. K. Rathnadeera of SACEP introduced the project proposal on Establishment of Environmental Data and Information Management System for South Asia and explained the elements of the proposal. He stated that it was a member countries request at the 9th Governing Council of SACEP which requested SACEP Secretariat to include Environmental Data and Information Management to its work plan. He further stated that the draft proposal was circulated among member countries for comments. The proposal was approved by the 11th GC of SACEP. Annex VII
- 4.7. Mr. Johannes Akiwumi of UNEP introduced the UNEP-Live web platform which aligns with initiatives being undertaken at global, regional and national levels to improve data availability, quality and accessibility. He said, it is being prototyped to create and share the knowledge needed for future assessments. It focuses on leveraging partnerships to enable countries to better collect, manage and analyze their environmental knowledge, information and data. It also seeks to harness emerging technologies that are changing the way in which environmental data can be collected and used for example mobile phones measuring environmental conditions or being used for reporting environmental destruction and crime as they happen, make it possible for citizens to influence environmental decision-making.
 Annex VI
- 4.8. The first day of the workshop closed with a discussion session.

Day Two – February 10

- 4.9. Mr. W. K. Rathnadeera gave a brief summary, highlighting the topics and lessons learned from the first day.
- 4.10. Mr. W. K. Rathnadeera presented the draft project plan in which he briefly explain on scope, objectives, project deliverables and a time frame. Annex VIII
- 4.11. Group discussion on draft project plan

The participants were divided into 2 groups. As there were two participants from each country, both groups had a participation of all SACEP member countries.

Both groups were told to come up with possible road map for the implementation of the project.

Resources persons were ask to facilitate the discussion of two groups.

5. Workshop Recommendation

- 5.1. Each group gave a brief presentation on the recommendations which should consider to draw a Road Map. Annex IX
- 5.2. There was a plenary discussion, leading to the eventual approval of a consolidated list of recommendations which will go to the Road Map. Annex X
- 5.3. All participants were thanked for their lively and informative participation, and the workshop was officially closed.

Inception and Training Workshop on Establishment of Environmental Data and Information Management System for South Asia

09 - 10 February 2012, Colombo, Sri Lanka

LIST OF PARTICIPANTS

AFGHANISTAN

Name Eng. Mohd Yasin Noori Mr. Waheedullah Ibrahimi

Designation Multilateral Environmental Agreements Environmental Impact Assessment Officer

Officer

Address National Environmental Protection Agency National Environmental Protection Agency

Kabul Kabul

Islamic Republic of Afghanistan Islamic Republic of Afghanistan

Telephone +93 77 57 433 67 +93 77 85 870 63

Fax -

Mobile - +93 700 166 223

E-mail yaseen.noori@yahoo.com ibrahimi.wahid@gmail.com

BANGLADESH

Name Mr. Syed Nazmul Ahsan Mr. Mohammad Khabir Uddin Khan

Designation Deputy Director Programmer

Address Department of Environment Ministry of Environment and Forests

E-16, Agargaon

Bangladesh Secretariat

Dhaka-1207

1309; Building No. 6

Bangladesh

Dhaka-1000, Bangladesh

Telephone +880 28 121 793 - **Fax** +880 29 118 682 -

Mobile +880 18 19 427 358 +880 18 19 090 688

E-mail syednazmulahsan@yahoo.com mdkhabir@gmail.com

BHUTAN

Name Mr. Tshering Tashi Mr. Rinchen Penjor

 Designation
 Information and Media Officer
 Asst. Environment Officer

AddressNational Environment CommissionNational Environment CommissionP. O. Box 466, Thimphu, BhutanP. O. Box 466, Thimphu, Bhutan

 Telephone
 +975 2 323384
 +975 2 323384

 Fax
 +975 2 323385
 +975 2 323385

 Mobile
 +975 17 119082
 +975 17 610053

 E-mail
 tsheringtt@nec.gov.bt
 rinchenp@nec.gov.bt

INDIA

NameMr. Nilkanth GhoshMr. Alok AgarwalDesignationStatistical AdviserDeputy Secretary

Address Ministry of Environment & Forests, Ministry of Environment & Forests,

Government of India Government of India

Parayavaran Bhavan, C. G. O. Complex, Parayavaran Bhavan, C. G. O. Complex,

Lodhi Road Lodhi Road

New Delhi 110 003 New Delhi 110 003

India

Telephone +91 11 2436 0783 +91-11-2436 1487

Fax +91 11 2436 0783 -

India

 Mobile
 +91 98 6815 1201
 +91 98 998 185 83

 E-mail
 nilkanth.ghosh@nic.in
 alokagarwal63@nic.in

MALDIVES

NameMr. Mohamed Hamdhaan ZuhairMr. Hassan AzharDesignationEnvironment AnalystEnvironment Analyst

Address Environment Protection Agency Environment Protection Agency

Ameenee Magu
Mal é , 20392
Republic of Maldives
+960 333 5949

Ameenee Magu
Mal é , 20392
Republic of Maldives
+960 300 4312

 Telephone
 +960 333 5949
 +960 300 4312

 Fax
 +960 333 5953
 +960 300 4301

 Mobile
 +960 763 3166
 +960 793 0403

E-mail mohamed.hamdhaan@epa.gov.mv hassan.azhar@mhe.gov.mv

NEPAL

E-mail

Name Mr. Ritu Pantha Mr. Narayan Bahadur Kunwar

Designation Statistical Officer Section Officer

Address Ministry of Environment Ministry of Environment

Singhdurbar Singhdurbar

 Kathmandu, Nepal
 Kathmandu, Nepal

 Telephone
 +977 1 4211 663
 +977 1 4211 641

 Fax
 +977 1 4211 954
 +977 1 4211 954

 Fax
 +977 1 4211 954
 +977 1 4211 954

 Mobile
 +977 98 4126 3346
 +977 98 4916 6899

ritupantha@hotmail.com

narayanknwr40@gmail.com

PAKISTAN

NameMr. Muhammad Irfan TariqMr. Zia-ul IslamDesignationDirector (Environment)Director

Address Ministry of Disaster Management, Pakistan Environmental Protection Agency

LG & RD Complex (Ministry of National Disaster

G - 5/2 Management)
Islamabad 311, Margalla Road, F-11/3
Pakistan Islamabad 44000, Pakistan

Pakistan Islamabad 44000, Pakistan

 Telephone
 +92 51 924 5545
 +92 51 924 5624

 Fax
 +92 51 924 5533

 Mobile
 +92 300 420 2554
 +92 333 510 7422

 E-mail
 mirfantariq@gmail.com
 rmamazia@gmail.com

 rmamazia@hotmail.com

SRI LANKA

Name Mr. K. Ajith I. D. Silva Mr. Gamini Subasinghe

Designation Director Policy & Planning and Director Environment Management Officer 1

Biodiversity

Address Ministry of Environment, Ministry of Environment,

'Sampathpaya' 'Sampathpaya'

82, Rajamalwatte Road Battaramulla, Sri Lanka Battaramulla, Sri Lanka

Telephone +94 11 288 7068 +94 11 288 7061

Fax +94 11 288 7061 -

Mobile +94 71 442 1506 +94 77 237 5643

E-mail koralage2001@yahoo.com lakshmansuba@yahoo.com

Name Mr. Ruwan Weerasooriya Ms. Champika Weerasekare

DesignationEnvironment Management OfficerProgramme Assistant**Address**Air Resource Management CenterMinistry of Environment

Ministry of Environment, 'Sampathpaya'

'Sampathpaya' 82, Rajamalwatte Road

82, Rajamalwatte Road Battaramulla Battaramulla, Sri Lanka Sri Lanka

Telephone +94 11 288 8248 +94 11 288 7061

Fax +94 11 441 0236, 288 8248 -

Mobile +94 71 440 3015, 777 900 950 +94 71 316 3286

E-mail dammika100@yahoo.com, sulakshibala@yahoo.com

airmac@sltnet.lk

SRI LANKA (Contd..)

NameMs. Saranga JayasundaraDesignationProgramme AssistantAddressMinistry of Environment

'Sampathpaya'

82, Rajamalwatte Road Battaramulla, Sri Lanka

Telephone +94 11 310 6219

Fax

Mobile +94 71 112 8441

E-mail sarangajay@gmail.com

NameMs. I. M. W. GunasekaraMs. T. K. D. U. GunasenaDesignationMarine Environment OfficerMarine Environment Assistant

Address Marine Environment Officer Marine Environment Assistant

Marine Environment Assistant

Marine Environment Protection Authority Marine Environment Protection Authority

No. 758, 2nd Floor, Baseline Road No. 758, 2nd Floor, Baseline Road

Colombo 09, Sri Lanka Colombo 09, Sri Lanka

 Telephone
 +94 11 268 7520

 Fax
 +94 11 268 7451

 Malified by the state of the s

 Mobile
 +94 71 321 5636
 +94 71 685 4462

E-mail imalka84@gmail.com dinithi.gunasena@yahoo.com

RESOURCE PERSONS

Name Mr. Mahboob Elahi Mr. Anand Kumar

Designation National Project Manager Senior Programme Manager

Address National Environmental Information Development Alternatives

Management System ProjectB-32, TARA Crescent96 - B, Main Nazim-Ud-Din RoadQutub Institutional Area

F-8/4, Islamabad New Delhi - 110 016

Pakistan India

 Telephone
 +92 51 285 5362
 +91 11 3268 5980

 Fax
 +92 51 258 5363
 +91 11 2613 0817

 Mobile
 +92 300 9567 511
 +91 98 9988 2390

E-mail elahimahboob@hotmail.com akumar3@devalt.org

RESOURCE PERSONS (Contd..)

Name Mr. Tin Aung Moe

Designation Head, Knowledge Support Component Address Regional Resource Center for Asia and the

Pacific (RRC.AP)

Asian Institute of Technology (AIT)

P.O.Box. 4, Khlong Luang Pathumthani, 12120, Thailand

Telephone +66 2 524 6236 (Direct),

516 2124 (Secretary)

Fax +66 2 516 2125 / 524 6233

Mobile +66 81 827 0184

E-mail Tin.Moe@rrcap.unep.org,

tinaungmoe1@gmail.com

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

Mr. Johannes Akiwumi Name Dr. Subrata Sinha

Designation Environmental Affairs Officer Head, Data and Information Management

Section

Address *United Nations Environment Programme* Division of Early Warning and Assessment

Regional Office for Asia and the Pacific

(UNEP ROAP)

2nd Floor, Block-A, United Nations

Building

Rajdamnern Nok Avenue Banakok 10200, Thailand

Telephone +66 2 288 2259 Fax +66 2 280 3829 Mobile +66 81 906 6581

E-mail subrata.sinha@unep.org

(DEWA)

United Nations Environment Programme

P. O. Box 30552 Nairobi-00100

Kenya

+254 20 762 4214 +254 20 762 4315 +254 72 252 2305

Johannes.Akiwumi@unep.org

SOUTH ASIA CO-OPERATIVE ENVIRONMENT PROGRAMME (SACEP)

No. 10, Anderson Road, Off Dickman's Road, Colombo 05, Sri Lanka

NameMs. Jacintha S. TisseraMr. W. K. RathnadeeraDesignationOfficiating Director GeneralSenior Programme Officer

 Telephone
 +94 11 250 4708
 +94 11 250 0546

 Fax
 +94 11 258 9369
 +94 11 258 9369

 Mobile
 +94 77 311 4362
 +94 71 643 6307

 E-mail
 sacep@eol.lk
 rd_sacep@eol.lk

 Name
 Ms. C. P. Alexander
 Ms. N. M. P. Perera

 Designation
 Programme Officer
 Programme Officer

 Telephone
 +94 11 255 2761
 +94 11 536 2851

 Fax
 +94 11 258 9369
 +94 11 258 9369

 E-mail
 po_sacep@eol.lk
 po_sacep@eol.lk

SUPPORT STAFF

Name Mr. W. M. Dinendra Thilaka Ms. K. H. Wijayawardhana

Designation Database Assistant Secretary

 Telephone
 +94 11 536 2851
 +94 11 258 9787

 Fax
 +94 11 258 9369
 +94 11 258 9369

 E-mail
 dba_sacep@eol.lk
 sacepsec@eol.lk

Name Ms. D. M. Sudarshani

Designation Secretary

 Telephone
 +94 11 259 6443

 Fax
 +94 11 258 9369

 E-mail
 sacepsec@eol.lk







Inception and Training Workshop on Establishment of Environmental Data and Information Management System for South Asia 9 – 10 February 2012, Colombo, Sri Lanka

Provisional Agenda

Day One

Opening Session Facilitator SACEP

08.30 - 09.00 : Registration of the participants

09.00 - 10.00 : Inauguration

National Anthem

• Lighting of Oil Lamp

Welcome Address by SACEP

• Opening Remarks by UNEP

Speech by Secretary, Ministry of Environment, Sri Lanka

• Keynote Address by Chief Guest, Hon. Minister of Environment,

Sri Lanka

• Vote of thanks by SACEP

10.00 - 10.30 : Tea Break

Session I

Facilitator SACEP

10.30 – 10.40 : Self introduction of participants

10.40 - 11.00 : Introduction to the workshop by UNEP

Objectives

Agenda

Discussions

11.00 - 12.30 : Country Presentations - 10 minutes each country, focusing on

Environmental Monitoring Systems / Network

Data availability

Data gaps

12.30 - 13.30 : Lunch







Session II

Facilitator Mr. Ajith Silva, Director Policy & Planning and Director Biodiversity,

Ministry of Environment, Sri Lanka

13.30 - 14.15 : Case Study Presentations by Resource Persons

• Case Study Presentation by DA on India Environment

Information system

· Case Study presentation by UNEP-RRC-AP on data

harmonization

Case Study presentation by National Environmental

Information Management Systems, Pakistan

Session III

Facilitator Mr. Nilkanth Ghosh , Statistical Adviser, Ministry of Environment &

Forests, Government of India

14.15 - 15:05 : Presentation by SACEP on Summary of the Questionnaire :

30 Minutes

Discussions

15.05 - 15.45 : Presentation by UNEP on Elements of Regional Data and

Information Management System (30 minutes presentation)

• Data harmonization/standardization

• Data sharing mechanisms

• Use of state-of-art ICT

• Regional coordination & National level Activities

15.45 - 16.15 : Tea Break

Session IV

Facilitator Mr. Mahboob Elahi, National Project Manager, National

Environmental Information Management System Project, Pakistan

and Former Director General of SACEP

16.15 - 16.55 : Introduction to the Project Proposal by SACEP and UNEP

16.55 - 17.15 : Introduction of UNEP-Live and Outcome of Eye on Earth Summit

17.15 - 17.45 : Discussion

17.45 : Close of the Day







Day Two

Session V

Facilitator UNEP

09:00 - 09.10 : Recap of previous day work, by SACEP

09.10 - 09.30 : Introduction of the Draft Project Plan by SACEP

09.30 - 10.15 : Group Discussion on Draft Project Plan (2 -3 Groups)

10.15 - 10.45 : Tea Break

10.45 - 12.30 : Continuation of Group work

12.30 - 13.30 : Lunch

Session VI

Facilitator SACEP

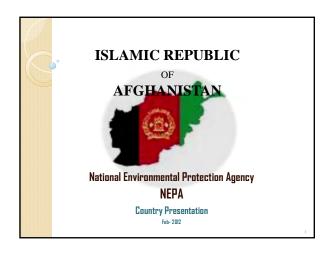
13.30 - 15.00 : Discussion on funding options and way forward

15.00 - 15.15 : Tea Break

15.15 - 16.30 : Views / Comments by countries and proposed follow up action

16.30 : Close of the workshop

ANNEX III





AFGHANISTAN Geographic setting: Afghanistan is mountainous country. And rugged, land-locked country in south central Asia it is bordered by Pakistan, Iran, Turkmenistan, Uzbekistan, Tajikistan, and china is dominated by the majestic Hindu Kush whose peaks rise to over 7000m, and associated mountain ranges extending across the country in a northeast to southwest arc. Traversed deep valleys these mountain separated plains north and Southwest.





NEPA Achievements - Environment law - Environment Strategy - Environment Policy - EIA Policy - Draft of Pollution Regulation - Protected Area Action Plan - EIA Regulations - EIA Guideline - Draft of Air Pollution Regulation

Continue....

> EIA Implementation

> Implementing Some Sustainable Development Programs

> Get International Environmental Conventions Membership

> Kabul Air Quality Strategy

> Establishment of Public Awareness Department

> Establishment of Environmental Coordination Committee.

> Establishment of High Commission Combat Air Pollution

> National Climate Change Impact Assessment Committee

Continue....

- > Vehicles emissions standards
- > National Environmental Action Plan
- > Protected Areas Regulation,
- > National Environmental Advisory Council
- Controlled of Air Pollution
- > Installed of Air Quality Control Machines
- > Stopped Polluted Factories Activities

Continue....

- ><u>National Biodiversity Strategy</u>
- > National Biodiversity Action Plan
- > National Waste Management Policy
- > Ozone Depletion Substances Regulation
- NAPA, NCSA Reports
- > INC Report (under process)

8

NEPA Monitoring Network

This Network Activities Genrally Effect these area:

- 1. Air and Water Quality
- 2. Sewage Management
- 3. Inorganic and Toxic Waste Management
- 4. Detection of Environmental Policy and Strategy
- 5. Biodiversity
- 6. Sustainable Development

Continue....

Biodiversity:

- NEPA Announced In Afghanistan more than 48 kinds of Flora and Fauna are endangered Species.
- More than 90 kinds of Flora and Fauna are ready to add in this list by NEPA in the next.
- More than 800 kinds of Flora and Fauna or under the yellow list.

10



Continue....

Kinds of Factories

- > Food products factory
- > Bakery
- > Beverage products factory
- > Make up materials factory
- > Salt products factory
- > Washing materials products factory

12

Continue....

- Oil factory
- Therm (Bathrooms)
- > Hotels and Restaurants
- > Water materials products (water and hand pumps) factory
- > Liquid Gas installation and distribution factory
- > Stone crash factor
- > Cement products factory
- > Asphalt products factory
- > Mineral products factory
- > Oil pump station
- > Maine products factory
- > and also more than 294 different Factories else.

Afghanistan Protected Area

- 1. Ab-e- Estada (Ghazni) National Park
- 2. Ajar Valley National Park
- 3. Bamiyan National Park
- 4. Darqad (Takhar) Wildlife Management Reserve
- 5. Hamun-i- Puzak Waterfowl Sanctuary
- 6. Band-e- Amir National Park
- 7. Imam Sahib (Kunduz) Wildlife Managed Reserve

14

Continue....

- 8. Khulm Landmark Protected Area
- 9. Dasht-e- Nower Waterfowl Sanctuary
- 10. Kole Hashmat Khan Waterfowl Sanctuary
- 11. Northwest Afghanistan Game Managed Reserve
- 12. Nuristan National Park
- 13. Pamir-i-Buzurg Wildlife Reserve
- 14. Registan Desert Wildlife Managed Reserve
- 15. Zadran National Reserve

Future Plane

- > Implementation of environment law, strategy and polices.
- > Climate Change Project.
- > Training and Capacity Building
- Legal and Regulatory Frameworks
- Environmental Education, Awareness and Outreach
- > Environmental Database (EDBMS)
- >Air & Water Quality Equipments
- > Establish Environmental Experts Committee
- > Capacity building and Public Awareness
- > Soil Erosion and Desertification Programs
- > Joint to International Environmental Conventions

12

Continue....

- 1. Overall review of the national state of Environment
- 2. Human Environment
- Harmonization of Environmental Standards
- Environmentally Sounds Technology
- Cleaner Production
- Urban Environmental Managements (in relation to air quality, water quality and solid wastes,
- Establishment of Environmental Management Systems in production and Service Units
- Environmental Impact Assessments
- 3. Natural Environment and Biodiversity

Continue....

- Joint efforts for Conservation of Trans- boundary Wetlands and Water bodies
- Con Preservation and Management of water resources.
- Ducting Joint Studies on Wildlife Migration Patterns, Mortality rates and contagious Diseases.
- Well coordinated Management of Ecosystems relating to endangered species.
- Sustainable Development of Ecotourism
- Restriction on the introduction and international trade of Alien Fauna and Flora
- Exchange of Taxidermy specimens.
- $\bullet \ Combating \ Description, \ Deforestation, \ land \ Erosion \ and \ protection \ of \ mountain \ Ecosystem.$
- Ozone layer Protection and to stop the use of CFCs, etc.
- Capacity building and Institutional Developmental programs for Afghanistan.
- Synergies and interlink age between related International Environmental Agreements

18

Continue....

- 4. Cooperation on Climate Change and Global Warming issues
- 5. Environmental education, Training research and Development
- 6. Research and Development on Environment friendly sources of Energy
- 7. Regional Cooperation
- 8. Establishing an Environmental Monitoring legal framework
- 9. International Cooperation
- 10. Obstacles on the implementation of the Plan of Action in ECO Members States.
- 11. Major achievements of implementation of the Plan of Action in ECO Region.

The National Environmental Protection Agency (NEPA) of the Islamic Republic of Afghanistan presents its ideas, commitments, and suggestions to the Economical Cooperation Organization to cooperate the Government of Afghanistan in the field of Environment among member states.

Environmental Overview

Before NEPA Establishment

Three decades of war combined with seasonal drought resulted in:

- > Deforestation.
- > Range land destruction.
- > Air pollution.
- > Soil erosion
- > Water shortage and pollution.
- > Land slides.

20

Continue....

- Extinctions of species.
- > Destruction of infrastructures.
- > Improper waste management
- > Wild life endanger
- > Under ground water pollution and shortage
- > Low environmental awareness
- Poverty

Environmental Public Awareness

- > Public Awareness
- > Magazine
- > Brochures
- > Media (video clips)
- > Environmental Events News
- > Seminars and Workshops
- > School and University

22

Environmental Challenge

- Insecurity
- ✓ Lack of Public Awareness.
- ✓ Inadequate Funding.
- ✓ Inadequate technical capacities.
- ✓ Poverty.
- ✓ Weak inter-institutional coordination mechanisms.
- ✓ Lock of Governmental ,Private Sectors Cooperation.
- ✓ Weak environmental institutions

Continue....

- The scarcity of qualified, trained and experienced human resources in the field of environmental management.
- ✓ Low allocation of funds to the development of environmental management.
- Enforcement of legislation is a challenge in a country that has not known rule of law for decades.

24





Thanks for Your Attention



Environmental Monitoring and Networking System in Bangladesh

Syed Nazmul Ahsan

Deputy Director Department of Environment (DoE)

Md. Khabir Uddin Khan

Programmer

Ministry of Environment and Forest (MoEF) Govt. of Bangladesh

Environmental Monitoring

- **□** Water Quality Monitoring
- **□** Air Quality Monitoring
- ☐ Compliance Monitoring & Enforcement

Water Quality Monitoring



- ☐ Water quality monitoring is key to management planning and policy feedback
 - Water pollution is harmful for human health and other living beings/ecology
 - National Data Base for development

Monitoring Statistics, 2010

River - 31 Monitoring Points - 102

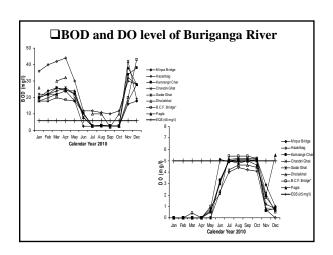
Monthly Monitoring - 42 points (cover 13 rivers)

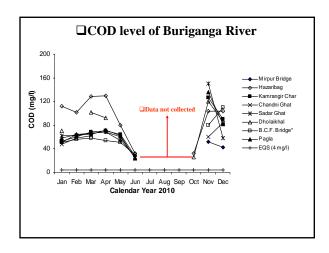
Division wise monitoring

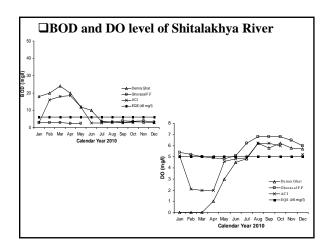
Dhaka - 9 rivers (25 points)
Chittagong - 3 rivers (10 points)
Rajshahi - 2 rivers (8 points)
Khulna - 8 rivers (36 points)
Sylhet - 2 rivers (8 points)
Barisal - 1 rivers (2 points)

Water Quality Parameters

- 12 parameters (physical & chemical) monitored but inconsistently
- 7 parameters (pH, DO, BOD, COD, TDS, Chloride, Turbidity used for analyses







Summery

- Water quality of Padma, Meghna, Jumuna,
 Dhaleshwari, Surma, Korotoa river was within EQS
- Rivers around greater Dhaka were highly polluted during the first four or five months of 2010 in terms of DO, BOD and COD. No dissolved oxygen was found from January to May at different location of Buriganga, Balu, Shitalakhya and Turag River.

Recommendations

- ☐ Centralize Database (all region from a single database)
- ☐ Web based Database
- ☐ Fully Online
- ☐ Judicious selection/redefine the sampling locations.
- ☐ Use Global Positioning System (GPS) to represent monitoring results in global context.
- ☐ Undertake capacity building programme of the laboratory (both human and logistics capacity)

Air Quality Monitoring

- ☐ 07 Continuous Monitoring Stations (Dhaka-2, Chittagong-1, Rajshahi-1, Khulna-1, Sylhet-1, Barisal-1)
- ☐ Satellite Monitoring Stations at different district offices
- ☐ 01 Transboundary Air Quality Monitoring Station-Satkhira district

Air Quality Scenario in Bangladesh (At a Glance)

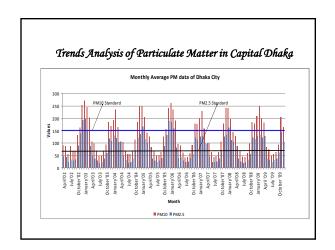
- Major cities are highly polluted despite major efforts has been taken.
- PM is the most significant problem pollutant, especially during the winter season
- Known sources of pollution:
 - Older, smoke-emitting diesel buses and trucks
 - Dense, congested traffic that is growing worst.
 - Industrial emission sources including brick kilns (uncontrolled)

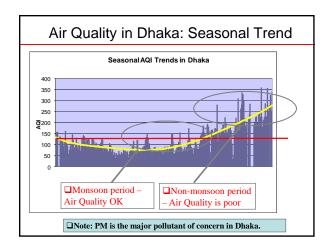


Percentage of Major Pollutants Percentage of Major Pollutants 2% 16% 82% BPM 2.5 III PM 10 | Others

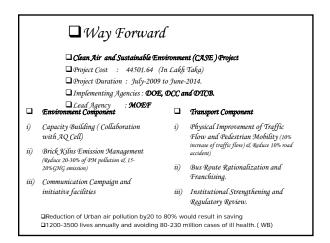
Major Sources of Air Pollution (PM) in Dhaka

- Vehicular Air Pollution (More than 80% from diesel vehicles)
- Biomass Burning and Brick Kilns (Quantification work being undertaken)
- Re-suspended Road dust
- Fugitive Emission (Different Industries)





Recommendations Centralize Database (all region from a single database) Web based Database Fully Online Undertake capacity building



Compliance Monitoring and Enforcement drive at a glance From July 2010 to October 2011

Nature of Environmental Pollution/Degradation found in Enforcement Drive Illegal construction of brick field by damaging agro land. Damaging water bodies by discharging toxic effluents. Emission of hazardous smokes by using undersize chimney in brick fields. Destroying ecology by illegal hill cutting. Developing housing projects by filling water bodies and rivers. Sound pollution by power generators/ vehicles/ workshops/ machineries Sound pollution by heavy piling works. Water pollution by oil spillage from ships in the Bay of

Continued... Throwing solid garbage into rivers/water bodies from industries. Illegal construction of buildings by damaging hills. Releasing hazardous smokes from still mills by keeping off chimneys. Releasing untreated chemical effluents from dyeing factories through by pass lines. Construction of brick fields by encroaching rivers/ water bodies. Supplying impure drinking water in hotels and restaurants. Using residential houses as chemical godowns/industries. Manufacturing poultry feeds by using toxic waste of tanneries. Obstructing water flow of canals and rivers by erecting illegal structures. Constructing illegal brick fields by damaging mangrove forest.

Compensation

Compensation imposed : 52 crore taka

Compensation realized : 23.98 crore taka

Experiences from Enforcement drive

- Conditions in the Clearance Certificates given by DoE remain non-complied/undercomplied.
- Industries having ETP's are found non-functional
- Owners start functioning of ETPs when the Enforcement team enters the factory.
- Weaker follow up action/monitoring by DoE after issuance of environment Clearance Certificate due to lack of manpower and logistics.
- Factory owners' conceal the incident of using by pass line even after detection by Enforcement team.

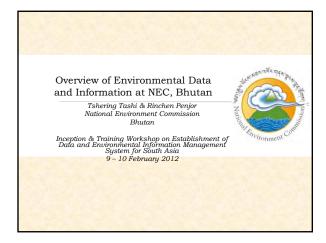
Positive Impact of Enforcement drive

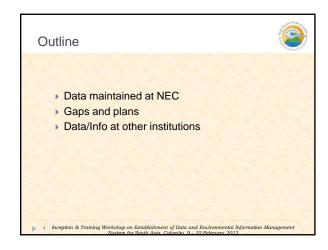
- $\hfill \square$ Trend to install ETP has seen increased.
- ☐ Non-functional ETP's are made functional to avoid penalty.
- $\hfill\square$ Environmental awareness among owners has been increased
- ☐ Desperate river grabbing and pollution has gradually decreased
- ☐ Influential businessmen / industrialists frequently visit DoE and seeking guide lines on environmental management, which has been neglected earlier.
- ☐ Indiscriminate pollution by industries has come down following imposition of compensation.
- □ New ETP consulting companies have been emerging to meet up the demands of Industries lacking proper environmental management.

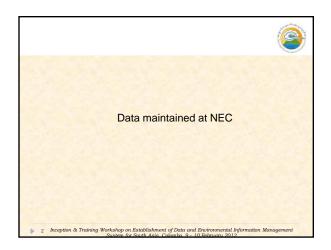
Recommendations

- ☐ Develop online Environmental Information System
- ☐ Undertake capacity building

Thank you







1. Env. Information Mgmt. System

Based on framework in BEO 2008

Indicators for: Pressure State Response

Domains: Land Air, Water Biodiversity

Data from BEO assessment

Data collection

Personal visit to collect from sources

For updates, considered direct submission by partners into EIMS

But, need verification and monitoring

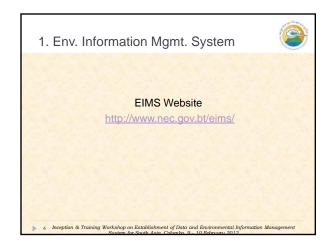
Storage:

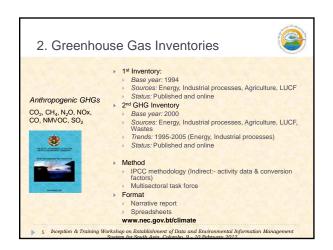
Local Storage

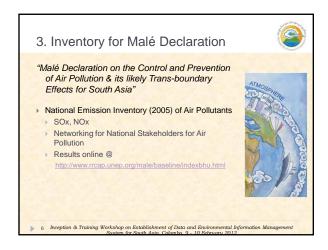
MS Excel worksheets

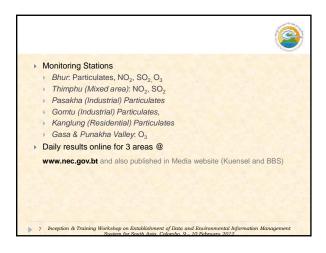
Online

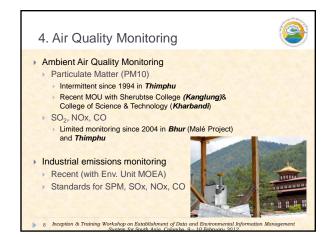
Microsoft, ASP, SQL, & Crystal Reports

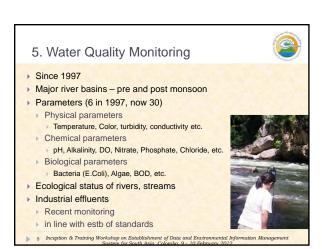


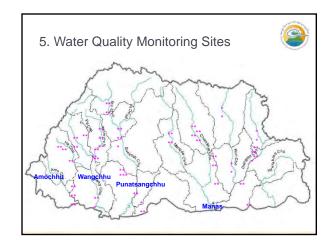


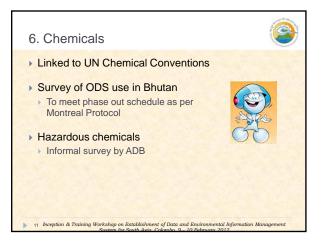


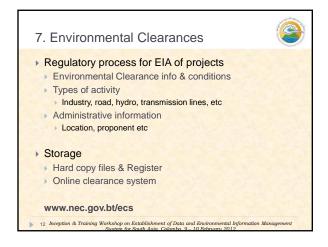


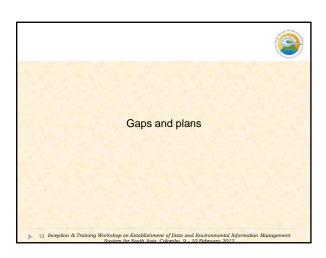




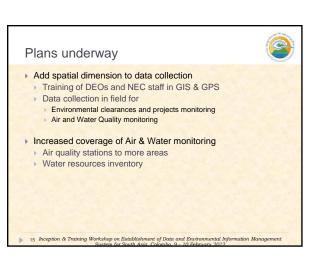


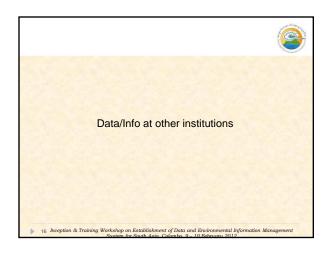




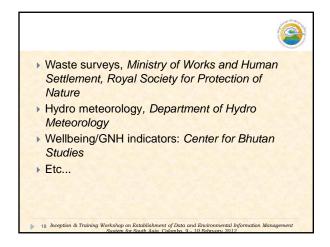


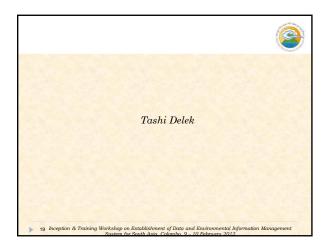














Institutional framework of environment programme.

- National Committee of Environment Planning Coordination in 1970s after Stockholm Conference on Environment held in1972.
- Department of environment-1980
- MoE&F in 1985.
- Ministry also acts as nodal agency for country for United Nations Environment Programme (UNEP) and other international /multilateral agencies/ programme on environment

Ministry of Environment & Forests (MOE&F)

- Broad Objectives-
- Conservation and survey of flora, fauna, forests and wildlife
- Prevention and control of pollution
- Afforestation and regeneration of degraded areas
- Protection of environment and ensuring the welfare of animals.

- Set of regulatory and legislative measures for preservetion, conservation and protection of environment.
- National Forest Policy,1988
- Statement on Abatement of Pollution, 1992
- National Environment Policy,2006
- National Conservation Strategy and Policy Statement on Environment and Development,1992

Initiatives By CSO

- Environment issues- multi-disciplinary subject.
- Biodiversity, Atmosphere, Water, Land and human settlements.
- Difficult to collect, analyse and study relationship with them.
- Conference of centre and State Statistical Organisations(COCSSO)-1985
- Provisional list of variables suggested in 1990.
- Steering committee on Environment Statistics was constituted under chairmanship of DG, CSO in 296.

- 1997 Draft framework for Environment statistics discussed, Items for data collection identified, source agencies also identified.
- 1997 Compendium on Environment Statistics Brought Out.
- Since then it regularly being brought out by the CSO.

- Contents-present scenario of environment degradation, causes and concern.
- Bio-diversity, Land/soil, Water and human settlements.
- State Govts-similar publication.

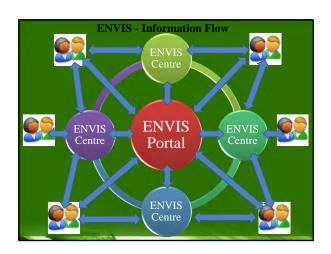
• Environmental Information System (ENVIS)-1983 –Plan Scheme • Comprehensive network in environmental information collection, collation, storage, retrieval and dissemination-stakeholders. • Distributed information network • Subject-specific centers-thematic areas'

Objectives (Long-term)

- Science and Engineering;
 To gear up the modern technologies of acquisition, processing, storage, retrieval and dissemination of information of environmental nature;
- To support and promote research, development and innovation in environmental information technology.

- present needs and capable of development to meet the future needs of the users, originators, processors and disseminators of information; To promote, national and international cooperation and liason for exchange of environment related information;
- To promote, support and assist education and personnel training programmes designed to enhance environmental information processing and utilization capabilities;
 To promote exchange of information amongst developing countries.

Main Areas of ENVIS Scheme Chemicals, Wastes and Toxicology **Environment and Energy Management Ecology and Ecosystems** Flora, Fauna and Conservation Media, Environment Education and Sustainable Development

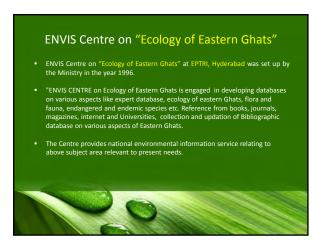




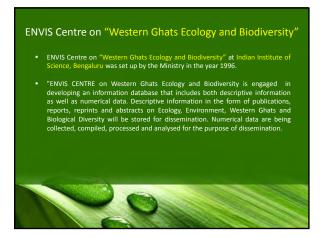
















Indian - State Level Basic Environmental Information
Database (I-SBEID)

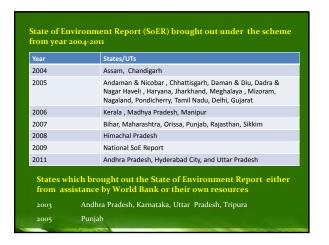
The ISBEID programme has been initiated throughout the country through
State/UT ENVIS Centres. Under this programme, online environmental data in
MIS and GIS model up to district level on ENVIS portal of the Ministry. ISBEID
consist of following 17 modules:

1. Administrative Profile
2. Infrastructure
11. Ecology
3. Energy
12. Sanitation
4. Agriculture
13. Water Pollution
5. Industries
14. Air Pollution
6. Tourism & Heritage
15. Bio-diversity
7. Natural Resource
8. Forest Resource
9. Water Resource
17. Disaster

 Indian State Level Basic Environmental Information Database (ISBEID)
 17 modules-information at district and sub regional level.

- SoER
- State of Environment Atlas- India--on all aspects of green, blue and brown environmental issues in the forms of maps,data,tables, photographs etc-dynamic form.

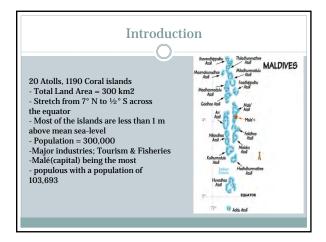




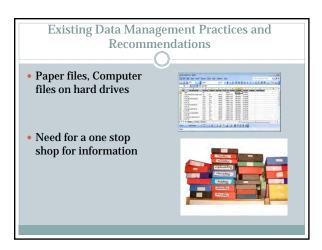


Inception and Training workshop on Establishment of Environmental Data and Information Management System for South Asia

9-10 February 2012



Examples of Sources of Data Data on EIA reports Coastal Monitoring data Data from monitoring of protected are protected species and sensitive areas Water quality data Air quality data State of the Environment reports (most 2011 ongoing)



Data Gaps Lack of expertise and trained staff is one of the key constraints experienced in the Maldives Sparse information and the absence of baseline data Public Access to information lacking







Outlines of Presentation

- Introduction
- Environmental Data and Statistics in Nepal
- Environmental Monitoring Systems/Network
- Data availability
- Data gaps
- Major constraints





Introduction

Geographical Setting

Latitude: 26° 22′ N to 30° 27′ N Longitude: 80° 4′ E to 88° 12′ E Highest Point: 8848 m. (Mt. Everest) Lowest Point: About 70m. from sea level

Border
 North: China

South, East and West: India

NEPAL • Size Area: 147,181 Sq. Km. Average Length: 885 Km. (East to West) Average Width: 193 Km. (North to South)

NEPAL

• Population (2011 Census)

Household: 56,59,984

Total Pop.: 2,66,20,809

Male: 1,29,27,431

Female: 1,36,93,378

Growth Rate: 1.40 % per Annum

Key Environmental Issues

- Agriculture, Soil and Land Degradation
- Loss of Biodiversity
- Haphazard Urbanization
- Deforestation
- Ground Water Depletion
- GLOF
- Energy Crisis
- Waste Management
- Pollution

Environmental Monitoring System/ Network

Laws/ Rules/ Standards

- Environmental Protection Act/ Rules EIA, IEE, Pollution Certificate, Provision of Environmental Inspector
- MoENV has Authority to formulate Environmental Standard

Industry Specific Standard-11, Generic -3 Air Quality Standard-3
Standard of Non Alcoholic Beverage , Pharmaceutical Industries, Sound
Pollution are in formulation process

Air Quality Monitoring Stations in Kathmandu (6)

Environmental Monitoring System/ Network

Management and Institution

- MoENV(Focal Ministry)
- MoFSC
- MoAC
- MoHP
- MoHA
- MoE
- MOPPW
- MoLD
- CBS
- MoLT
- DDCs/VDCs
- NGOs/INGOs/Donor Agencies

Data Availability

- According to Statistical Act Central Bureau of Statistics of Nepal collects the Environmental Data and prepares Environment Statistics of Nepal (Report) annually
- Ministry of Environment prepares the State of the Environment in regular basis

Data on related area

- · data on climate variation
- data on air quality
- land and soil data, land use, livestock, use of fertilizer and pesticides

Data Availability

- data on supply of drinking water provided by various agencies, quality of water, setting standards for water use
- data on other natural resources, extraction of mineral resources, forestry/biodiversity and fuel
- wood consumption and energy consumption, status of renewable energy potential
- solid waste disposal and hazardous waste
- natural disasters
- GLOF

Data Gaps

- Lack of awareness about environmental information's
- There are gaps in terms of desired frequency and desire level of geographic disaggregation
- Many organization use different methods for collecting, processing and analyzing and presenting data on their own purpose so that harmonization of environmental data and information is difficult
- The data sharing culture remains weak and information networking and coordination among the line agencies for effective data sharing is not existent
- Quality of data in many areas are very poor and not available in time series data

Major Constraints

- · Lack of Policy
- Lack of institutional set-up/coordination
- · Lack of financial resources
- Lack of human resources
- Lack of Awareness
- Lack of access to training
- · Quality of data

Conclusion

- Developing policy, plans and programs should be based on accurate data
- There is a need to establish strong data sharing culture, information networking and coordination system among the
- Establish the institutional setup and human resources
 - ✓ Management of financial resources
 - ✓ Capacity building of human resource
 ✓ Strengthen the networking
 ✓ Establish a Data Bank







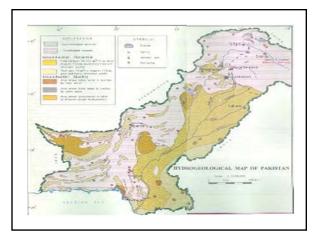
Pakistan Country Presentation

Environmental Monitoring System/ Networking

Inception & Training Workshop on Establishment of Environmental Data & Information Management System for South Asia 9-10 February 2012, Colombo, Sri Lanka

Sequence

- Basic Facts
- Legal Requirements
- Existing Facilities
- Data Availability
- Data Gaps





Languages:

BASIC FACTS

Area: 796,095 Sq.Km **Population:** 177 Million

Rural: 65% Urban: 35%
Per capital income: US\$ 1085

Export: Cotton, textile goods, rice, leather

items, carpets, sports goods, fruits, handicrafts, Sea Food (Fisheries)

Urdu (National language)

English (Official)

Literacy rate: 53%

Agriculture: Major crops are cotton, wheat, rice

and sugarcane
25.01 million hectares

Total cropped area: 25.01 m **Forest Area:** 4.8%

Mean Annual Precipitation 760 and 1270 mm.

Legal Requirements

- Under Pakistan Environmental Protection Act'1997 (PEPA'97), Pak-EPA has to:
 - Publish annual National Environmental Report;
 - Provide baseline data to proponent of new project;
 - Public disclosure

Existing Facilities

- Environmental Monitoring System has been established. Objectives includes:
 - To Establish the Monitoring Laboratory Network
 - To Grasp the present environmental situation through environmental monitoring network
 - To Compare the Analytical Data with the National Environmental Quality Standard (NEQs)
 - To secure the scientific knowledge improving the deteriorated water/air quality

Analytical Laboratories

- Central Laboratory for Environmental Analysis & Networking (CLEAN) has been established at Federal EPA.
- CLEAN is equipped with the latest analytical water quality monitoring equipments.
- Laboratories of Four Provincial EPAs have also been upgraded with analytical equipment.

Continuous Air Quality Monitoring System

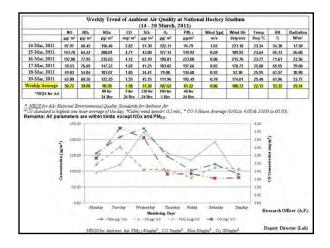
Location	Fixed Monitoring Stations	Mobile Monitoring Stations	Data Collecting & Analyzing Equipment	National Data Surveillance Centre
Islamabad	1	1	-	1
Karachi	1	1	1	-
Lahore	1	1	1	-
Peshawar	1	-	1	-
Quetta	1	-	1	-

Fixed Air Quality Monitoring Station

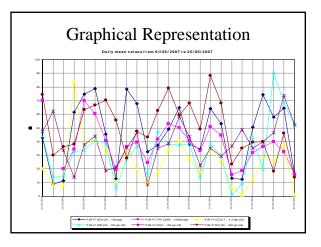
- Seven Fixed Air Quality Monitoring Stations have been installed in Federal & Provincial EPAs
- These are equipped with analytical ambient air quality analyzers to generate a real-time data on air quality at a fixed location.

Mobile Air Quality Monitoring Station

- Three Mobile Air Quality Monitoring Stations have been provided to the Federal EPA, Punjab-EPA and Sindh-EPA.
- These stations comprise of air monitoring trucks having the same analyzers as in the fixed monitoring stations.
- With the help of these stations, the data on air quality at any location under observation can be obtained.
- By using these stations, some other points with higher pollution level may be identified for installation of fixed air quality monitoring stations in those areas in future.



	Tabular Report												
					Tabl	le of valld m	easuremen	te				-	
Date	Time	BAL-F NO ug/m3	BAL-P NO2 Ug/m3	BAL-F NOx ppb	BAL-F CO ng/n3	BAL-F SO2 Ug/m3	DAL-F 03 ug/m3	BAL-F Wind Spd m/s	BAL-F Wind Dir degrees	BAL-F Temp degC	BAL-F FII	BAL-F Radiation W/m2	,
13/12/2010	00:00-00:10	0.7	39.3	21.1	0.668	10.5	17.2	1.0	83	5.0	10.1	2.0	
	00:10-00:20	-3.8	21.0	8.0	0.431	5.4	24.6	1.3	84	4.9	9.8	2.0	
	00:20-00:30	-4.3	15.5	4.6	0.332	5.9	29.7	1.7	81	5.1	9.1	2.1	
	00:30-00:40	-2.9	16.7	6.4	0.524	6.5	30.1	1.4	81	5.3	8.7	2.1	
	00:40-00:50	-2.6	18.0	7.3	0.443	7.3	31.6	1.3	79	5.3	8.7	2.1	
	00:50-01:00	-3.8	17.5	6.1	0.305	7.1	32.4	1.2	76	5.2	0.6	2.1	
	01:00-01:10	-5.2	10.6	1.4	0.276	5.2	35.2	1.6	86	5.1	2.8	2.1	
	01:10-01:20	-5.5	0.3	0.0	0.276	5.2	36.3	1.5	82	5.1	0.7	2.1	
	01:20-01:30	-5.2	12.6	2.4	0.327	5.1	33.5	1.3	92	4.9	9.1	2.0	
	01:30-01:40	-5.2	12.6	2.5	0.314	6.4	33.0	1.7	90	4.6	9.7	2.0	
	01:40-01:50	-5.2	11.5	1.9	0.313	4.3	32.3	1.4	90	4.3	10.2	2.1	
	01:50-02:00	-5.3	13.3	2.7	0.334	4.3	30.5	1.5	90	3.9	10.2	2.1	
	02:00-02:10	-4.1	15.3	4.7	0.337	6.6	30.8	1.3	83	3.2	11.2	2.0	
	02:10-02:20	-4.7	12.5	2.0	0.302	6.7	33.0	1.2	81	3.8	10.6	2.0	
	02:20-02:30	-4.0	10.4	1.6	0.310	6.4	35.1	1.9	86	3.9	10.1	2.1	
	02:30-02:40	-5.5	9.4	.0.6	0.312	5.9	34.9	1.5	14	4.0	10.0	2.0	
	02:40+02:50	-5.4	11.5	1.7	0.311	5.8	33.8	1.0	78	4.0	10.1	2.0	
	02:50-03:00	-5.6	10.5	1.0	0.322	5.6	34.5	1.0	77	2.9	10.1	2.0	
	03:00-03:10	-5.1	12.1	2.2	0.305	6.3	35.4	1.5	85	3.9	10.0	2.0	
	03:10-03:20	-5.3	6.8	-0.7	0.270	4.5	20.4	1.2	10	3.9	10.0	2.0	
	03:20-03:30	-5.2	8.6	0.4	0.292	4.9	37.3	1.3	64	3.9	10.0	2.0	
	03:30-03:40	-5.5	8.3	-0.1	0.328	4.5	37.6	1.4	89	3.8	10.2	2.0	
	03:40-03:50	55.4	8.1	0.1	0.296	5.0	26.9	1.3	87	3.7	10.4	2.0	
	03:50-04:00	-5.1	11.6	2.1	0.325	5.3	35.0	1.0	92	3.6	10.4	2.0	
	04:00-04:10	-4.1	24.4	4.2	0.342	6.2	35.1	1.1	95	3.4	10.2	2.0	
	04:20-04:20	0.1	34.0	17.9	0.348	12.6	26.0	1.3	102	3.2		1.9	
	04:20-04:30	2.7	39,5	22.8	0.376	16.2	22.2	1.1	96	2.9		2.0	
	04:30-04:40	0.2	31.6	18.3	0.392	21.6	23.2	0.9	5.3	2.6		1.5	

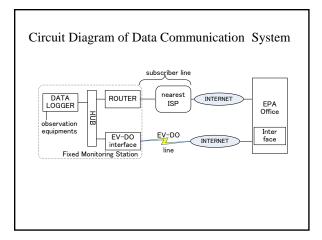


National Data Surveillance Centre

- National Data Surveillance Centre (NDSC) for air quality has been established at Central Laboratory for Environmental Analysis & Networking (CLEAN), Pak-EPA.
- Function of Data Surveillance Centre is to calculate the average data of each parameter received from all the stations.
- The received data is then compared with the Ambient Air Quality Standards.
- At present, Pak-EPA is continuously retrieving data from the provincial EPAs which would be helpful to improve the ambient air quality of Pakistan.

Data Availability

- Two options for data acquisition:
 - Direct from EPAs own surveillance and monitoring
 - Indirect from other organizations in water, energy, agriculture, marine, city governments, international & national agencies etc.



Structure of Data Communication System Output Description Descript

Stack Emission Monitoring

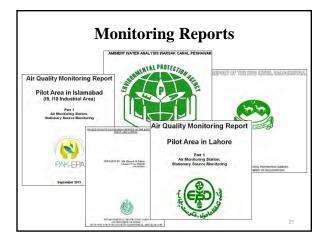
- Five stack emission monitoring vans have been provided to the Federal and Provincial EPAs.
- These monitoring vans are equipped with complete set of stack emission monitoring equipment (PG-250) to be used for sampling and analysis of stack emission of industrial units.

Mobile Water Quality Monitoring Laboratories

- Mobile Water Quality Monitoring Laboratories consist of mobile vans which are also used for stack emission monitoring.
- Five monitoring vans have been provided one each to the Federal and Provincial EPAs.
- · These Laboratories have two functions.
 - First is to collect and carry the water samples to the analytical laboratory
 - Second is to analyze the basic parameters and necessary pretreatment of samples before carrying the samples for laboratory analysis.

Training Facilities

- Under this project, a training centre has been established at CLEAN to provide technical training to the researchers and technical staff of Federal & Provincial EPAs.
- The training component consists of basic concepts of environmental monitoring, initial operational and analytical training and on-job operational trainings.
- Analytical group training course for handling of analytical equipment and sampling apparatus are being organized in CLEAN for Provincial EPA's laboratory, researchers and staff.
- The training course includes the environmental surveillance and actual counter measure technologies for stationary and mobile sources.



Composition of Monitoring Report

- Monitoring Plan
- Data Processing
- Data Analysis

22

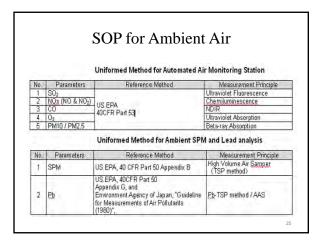
SOP for Effluent Water (1)

	Parameters	Uniform	ed Method	Alter	native 1	Alternative 2		
	Parameters	Reference		Reference		Reference		
San	npling Works							
1	Water Sampling							
	and current measure							
Lah	oratory Analysis							
1	Temperature		Thermometer					
2	pH		pH Meter					
3	BOD ₆		DO Method (submit report)					
4	COD	EPA 0410	Potassium dichromate - titrimetric		Kit Method			
-5	TSS	EPA 0160	Gravimetric					
6	TDS	EPA 0160	Gravimetric (uniform filter)					
7	Oil and Grease		Gravimetric					
8	Phenol compound	EPA 0420	Aminoantipyrine - Spectrophotometry					
9	Chloride compound	JIS K 0102	lon chromatography	JIS K 0102	Titration			
	Fluorine compound	EPA 0340/JIS K 0102	Lantam - alizarin Complexone - Spectrophotometry	JIS K 0102	Kit Method			
11	Total cyanide	JIS K 0102/ EPA 0335	Pytkille-pytazolose - Spectropisotometry	JIS K 0102	lon selective sensor			
12	Anionic surfactant (MBAS)	JIS K 0102	Methylene blue - Spectrophotometry					

SOP for Effluent Water (2)

13	Sulfate	JIS K 0102	lon chromatography		Kit Method	EPA 0375/ JIS K 0102	Barium chromate spectrophotometry
14	Sulfide	EPA 0376			Kit Method	JIS K 0102	Spectrophoto meter
15	Ammonia	JIS K 0102	lon chromatography	EPA 0376	Spectrophoto meter		
16	Pesticide	EPA 0508					
17	Cadmium	EPA 0213	AAS				
18	Total chromium	EPA 0218	AAS				
19	Copper	EPA 0220	AAS				
20	Lead	EPA 0239	AAS				
21	Mercury	EPA 0245	Cold vapor - AAS				
22	Selenium	EPA 0270	Gaseous hydride - AAS				
23	Nickel	EPA 0249	AAS				
24	Silver	EPA 0272	AAS				
25	Total toxic metals		AAS				
26	Zinc	EPA 0289	AAS				
27	Arsenic	EPA 0206	Gaseous hydride - AAS		Kit Method		
28	Barium	EPA 0208	AAS				
29	Iron	EPA 0236	AAS				
30	Manganese	EPA 0243	AAS				
31	Boron	EPA 212.3	Curcumin				
32	Chlorine Residue	EPA 330.3	Titrimetric	EPA 330.5	DPD-Spectro phoyometory		

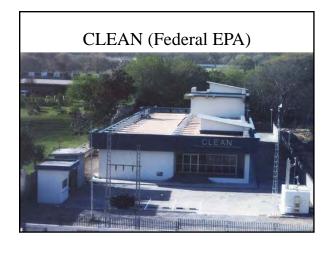
2-7



		Uniformed Method	for Stationary Source Monitoring			
No.	Parameters	Reference Method	Sampling / Measurement Principle			
1	Dust	JIS Z 8808	Isokinetic Filter Sampling / Gravimetric			
2	HCL	JIS K 0107	Absorbing Bottle Sampling / Ion chromatography			
3	Cb	JIS K 0106	Absorbing Bottle Sampling / Spectrophotometry			
4	HF	US, EPA Method 26	Absorbing Bottle Sampling / Ion chromatography			
5	H₂S	JIS K 0108	Absorbing Bottle Sampling / Spectrophotometry			
6	SOx	JIS K 0103	Absorbing Bottle Sampling / Ion chromatography			
7	CO	US EPA Method 10	NDIR			
8	NOx	US EPA Method 7E	Chemiluminescence			
9	SO ₂	US EPA Method 6C	Ultraviolet Fluorescence			
10	Pb		7-0			
11	Hg	.1				
12	Cd	w	Filter Sampling / AAS			
13	As	JIS K 0083 / JIS K 0222				
14	Cu	010 11 0000 7 010 11 0122				
	Sb					
1ń	7n	-				

Data Gaps

- Temporal & Spatial data is not well orchestrated to meet the attributes of environmental parameters;
- Reporting units & recording periods are variable;
- Energy cries in the country affect the quality of data;
- Capacity & financial constraints is an impediment;
- After sale & backup services is an issue;
- Law & order situation



























Thanks



Environment Monitoring? Environmental Monitoring covers the following areas: Processes and activities that are needed to observe the quality of the environment Evaluate the current trends that have an impact on the quality of the environment Actions needed to address the environmental issues

Tools for Monitoring Legal InstrumentsConstitutional provisions Acts, Regulations, Rules and Directives Multilateral Environmental Agreements (MEAs) United Nations Convention on Biological Diversity United Nations Framework Convention on Climate Change Basel Convention on Control of Transboundary Movements of Hazardous Wastes and their Disposal Policies and Institutional set-up Strategies/ Programmes /Action plans



Major National Environment Policies

National Environment Policy
National Solid Waste Management policy
National Watershed Management Policy
National Wetland policy

Major Laws and Regulations

Acts and Regulations
National Environmental Act (NEA) Amended in 2000
Forest Ordinance Amended in 2009
Flora and Fauna Protection Ordinance, Amended in 1988
Coast Conservation Act Amended in 1997
Soil Conservation Act Amended in 1997
Soil Conservation Act Amended in 1996
Environment Regulations under NEA

Multilateral Environmental Agreements (MEAs)

United Nations Convention on Biological Diversity
United Nations Framework convention on Climate Change
Basel Convention on Control of Transboundary Movements
of Hazardous Wastes and their Disposal

Major Plans/ Programmmes Haritha Lanka Program - Short term, Medium term, and long
term activities monitored

National Environmental Act No. 47 of 1980. This is the umbrella law to prevail over the other environmental laws. National Environmental (Amendment) Act Nos. 56 of 1988 & 53 of 2000

The Objectives of the National Environmental Act

- To establish an Authority called the Central Environmental
 Authority.
- To make provisions with respect to the powers, functions and duties of the CEA
- 3) To make provisions for
 - the <u>protection, management and enhancement</u> of the environment
 - the regulation, maintenance and control of the <u>quality of the</u> <u>environment</u>
 - · the prevention, abatement and control of pollution, and
 - · matters connected therewith or incidental thereto

Basic Requirements for Environment Monitoring

Availability of Environmental Data and Information

Sri Lanka Environment Outlook – 2006 Caring for the Environment; Path to Sustainable Development 2008-2012 National Action Plan for Haritha Lanka Programme Ministry Annual Reports

- Institutional Set- up
- Human Resources
- Financial Resources

Environmental Monitoring Gaps in Sri Lanka

- Shortcomings in inter-Agency Coordination on Environmental data sharing
- Absence of an updated Environmental Statistical Compendium (environment data base)
- Inadequacy of Physical, Financial and Human Resources to implement MEAs –

Ex: To prepare an Air Resource Inventory and Air Quality Monitoring system under Male Declaration on Control and Prevention of Air Pollution its likely Transboundary Effects for South Asia

- Absence of a proper National and Regional Environment Data sharing Policy and mechanism
- Absence of a common environment monitoring indicators for the region

Recommendations

- Prepare a mechanism to address the Monitoring of Transboundary Environmental impacts-
- Strengthen the focal implementation institutions to implement MEAs

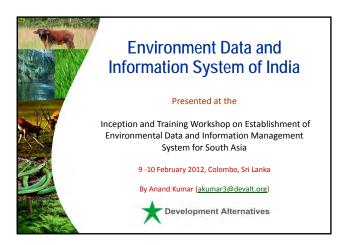
Ex: To prepare Air Resource Inventory and Air Quality Monitoring system under Male Declaration on Control and Prevention of Air Pollution and its likely Transboundary Effects for South Asia

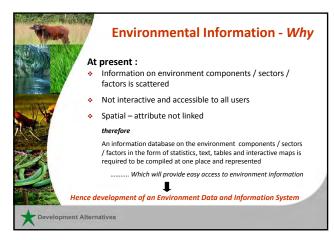
- Address the environmental impacts in international waters
 - Ex: Prevent spreading of Invasive Species due to ballast water discharge
- Prepare an Inter-governmental mechanism to implement the MEAs
 Ex: To prevent transferring of Persistent Organic Pollutants (POPs) among Regional Countries

2. Prepare a proper National and Regional Environment Data Sharing Policy

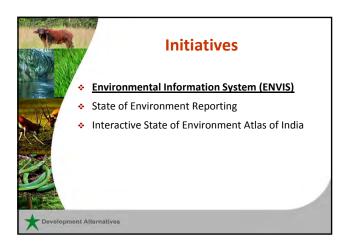
3. Provide advice on the strengthening of linkages between regional and national indicator development and reporting

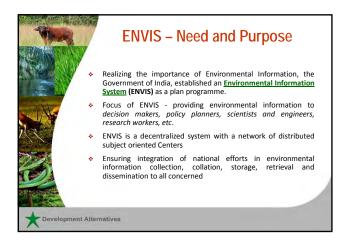


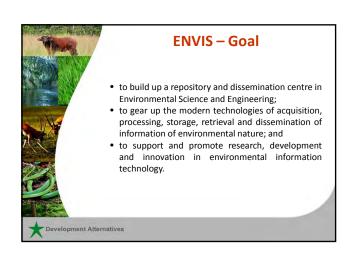


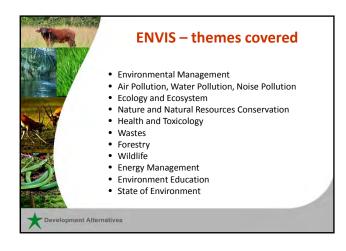


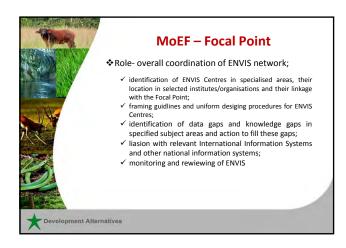


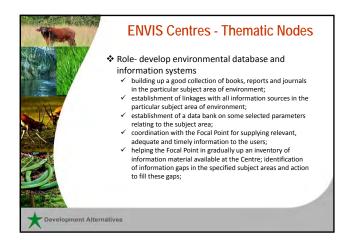




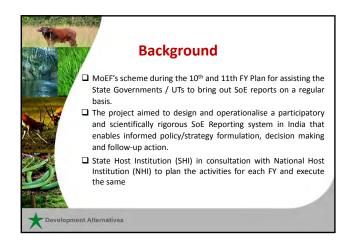




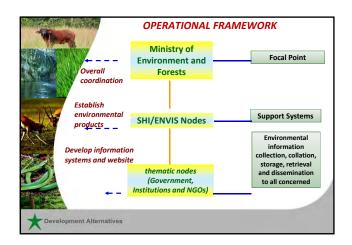




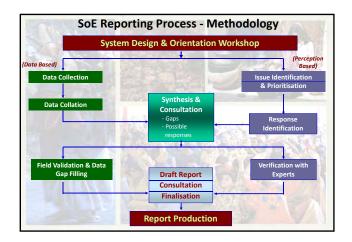




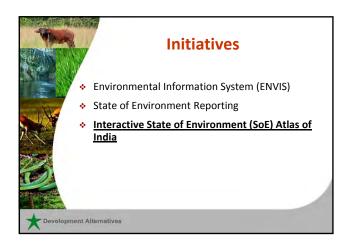


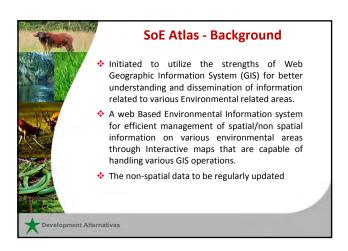


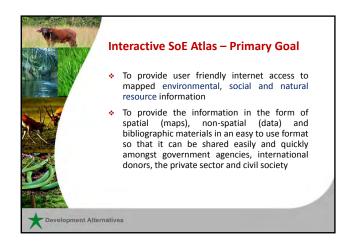


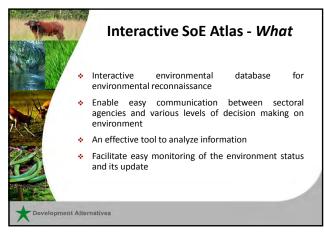


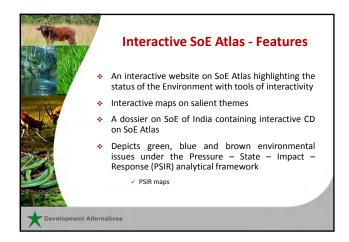


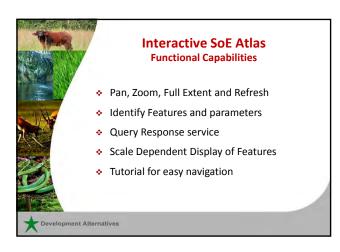


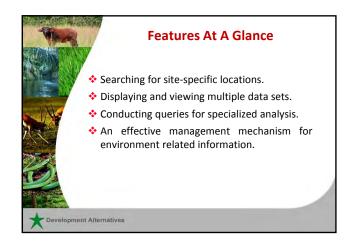




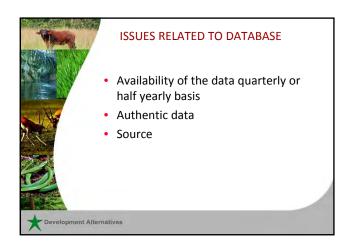








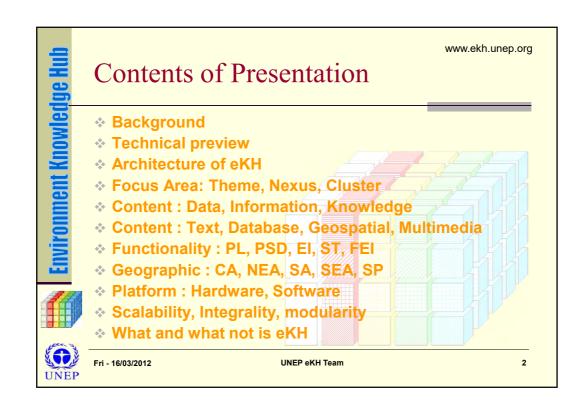


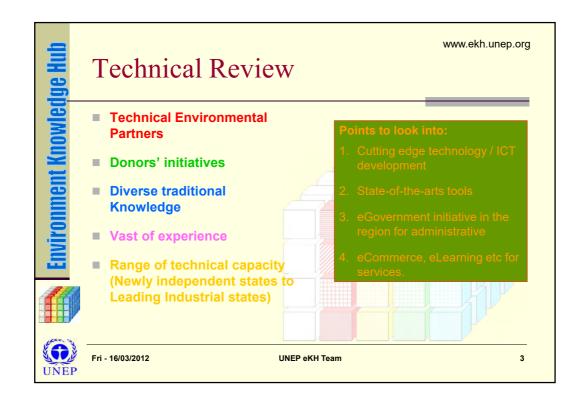


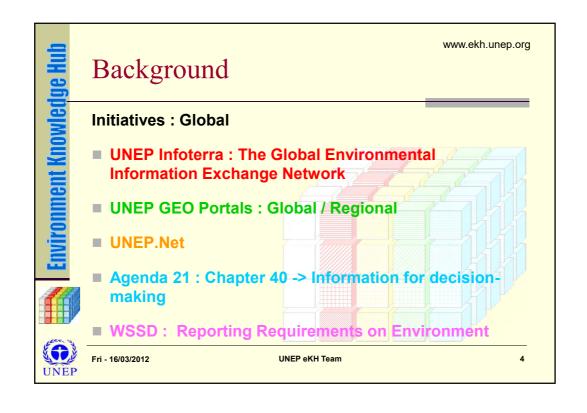












vironment Knowledge Huh

Background

www.ekh.unep.org

Initiatives: Regional/Subregional/National

- Sub-regional Environmental Management and Information Systems (SEMIS) Phase I and II ADB/UNEP/MRC/GMS
- GreenWeb of Thailand : www.deqp.go.th
- Envis of India: www.envis.tn.nic.in





Fri - 16/03/2012

UNEP eKH Team

5

nment Knowledge Hub

Background

www.ekh.unep.org

Specific Demands

- Establish a comprehensive system for collection, interpretation and dissemination of information with the support of a management information systems (MIS) and standard codes
- Compile information in such a manner that it can be used readily for decision-making
- Improve access for stakeholders and



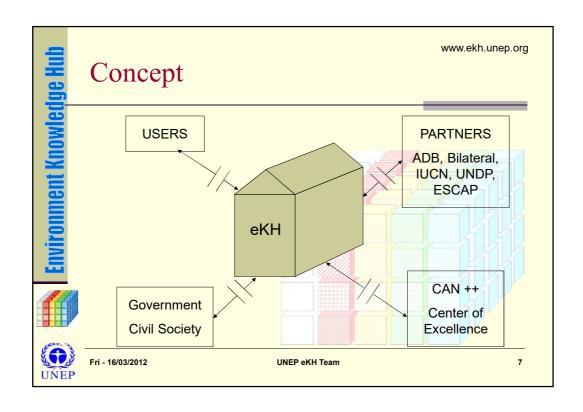
Establish and strengthen electronic networking capabilities.

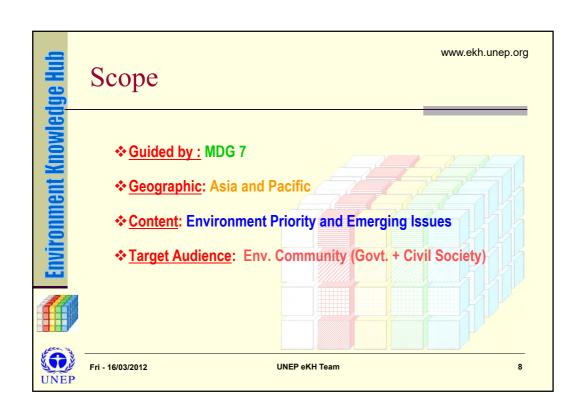


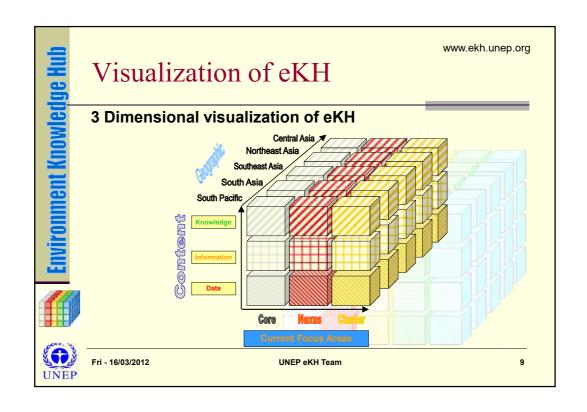
Fri - 16/03/2012

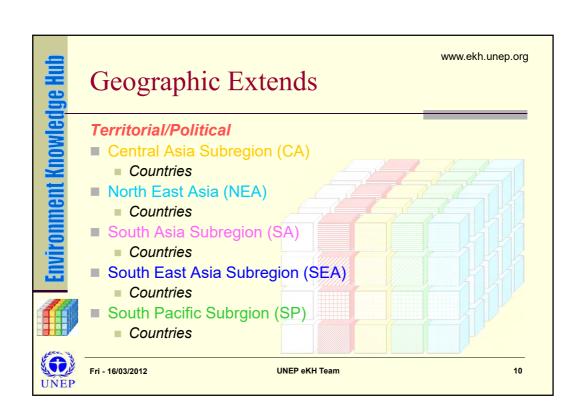
UNEP eKH Team

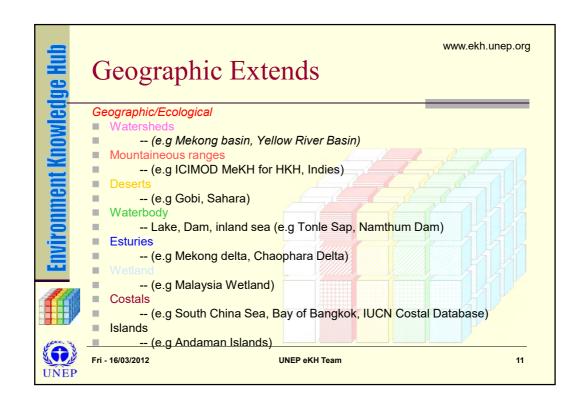
•



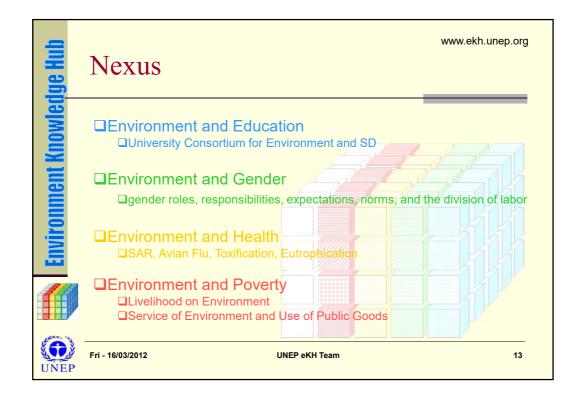


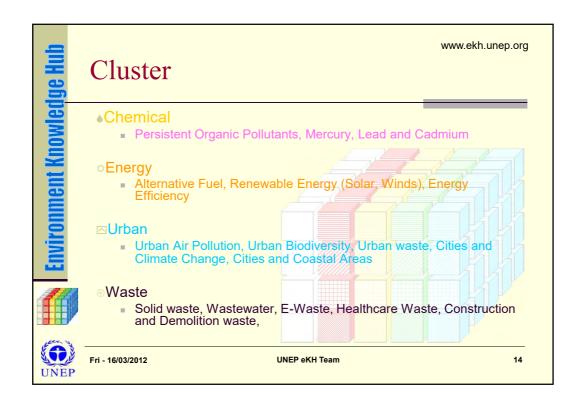












nvironment Knowledge Hub

www.ekh.unep.org

Content types

■Text based material

Reports, Manuals, Guidelines, Written Documents etc.

Numerical based database material

Statistics Databases, Monitoring Databases etc.

Geospatial based material

GIS, Remote Sensing Imageries, Maps etc.

Multimedia based materials



Audios, Videos, Graphics, Photos, Images, Presentations, Animations, Diagrams and Sketches etc.



Fri - 16/03/2012

UNEP eKH Team

15

ronment Knowledge Hu

Content types

www.ekh.unep.org

Reports / Proceeding
Periodicals
Case studies
Best practices / good practices
Lessons Learnt
Manuals
Cuidelines

Manuals Guidelines Policy brief Other textual documents National Statistics Organization source Statistics (UNDP, ADB, WB, WRI) Monitoring database Other databases

Photos (still images) Audio-Video (Movies and clips) Animation and presentation Other AV materials Aerial Photos) Maps (Topographic Map, Classification Map, Atlas) Other geospatial materials

GIS (Raster, Vector)
Imageries (Satellite Scenes,



Fri - 16/03/2012

UNEP eKH Team

0

ironment Knowledge Hub

www.ekh.unep.org

Content

The eKH contents materials are:

Knowledge

(Manual/Guidelines, case studies, best/good practices)

Information

(Policy brief, policy, law, strategy, action plan, assessment report (SoE, GEO), periodicals, proceedings etc.)



Data

(Time-series datasets, geospatial data, and Indicators)



Fri - 16/03/2012

UNEP eKH Team

17

onment Knowledge Hut

Content

www.ekh.unep.org

The eKH contents by functionality:

Policy and Legislation

(National/Regional/Global Strategy, National Declaration, Decree, Laws, Acts, Regulation, Policy brief, Country Profiles, Conventions, Treaties, Bilateral and Multilateral Agreements)

Planning and Sustainable Development

(National/Regional Plan, Manual/Guidelines, case studies, best/good practices)

Emerging Issues

(Potential Impacts Analysis, Consequences Analysis, Concerns of different stakeholders etc.)

Science and Technology

(Time-series datasets, geospatial data, Indicators, SoER, IEA, SEA, Research finding, Monitoring outputs, Assessment reports, Periodicals, Proceedings etc.)

Financial/Economic Instruments

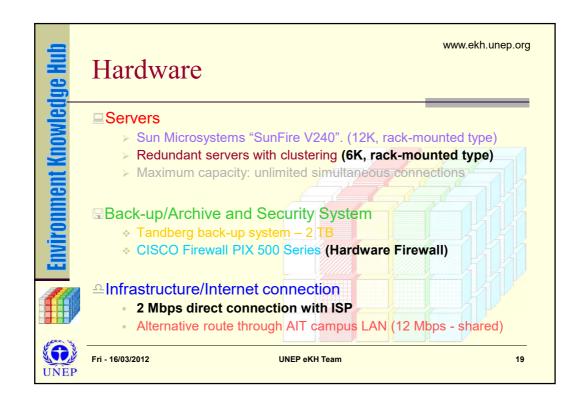
(Sustainable Finance initiatives, Green Tax, Green Custom, Clean Development Mechanism)

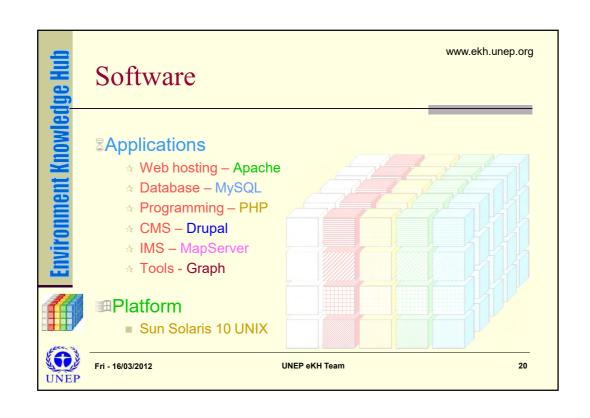


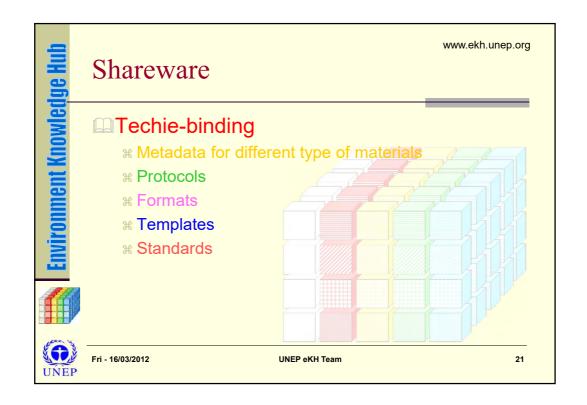
Fri - 16/03/2012

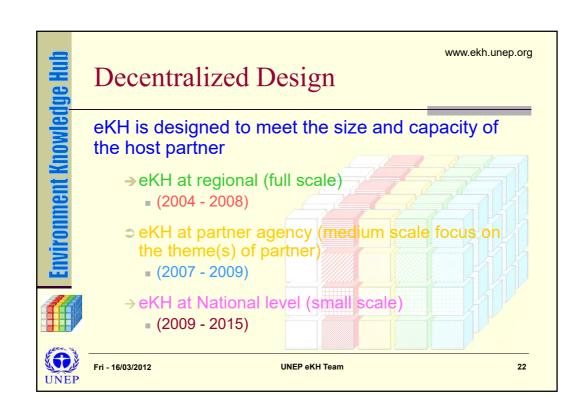
UNEP eKH Team

18









Modular Approach

eKH content in modular style

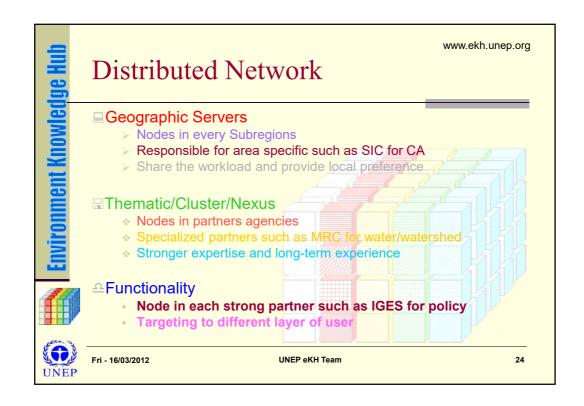
Follow the standardized metadata and databases structure for modular management

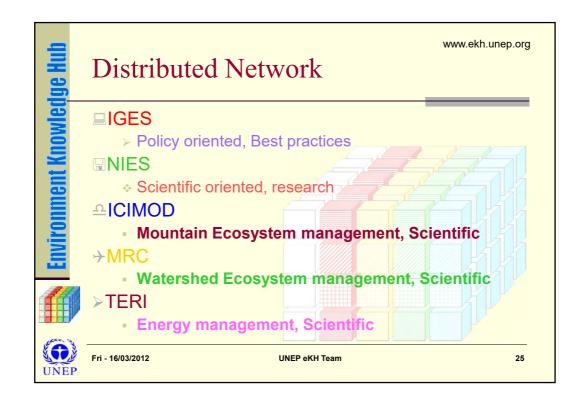
Any of the contents could be plugged-in or plugged-out

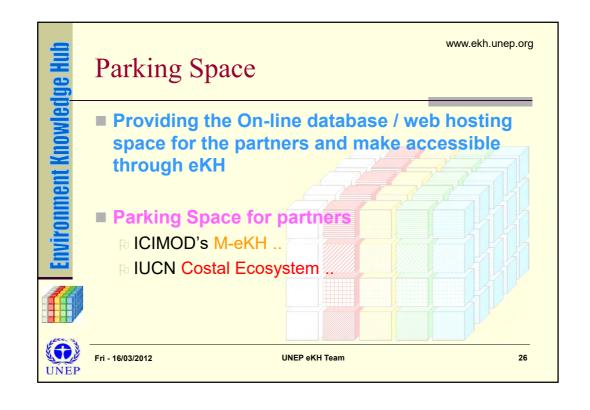
Expandable: i.e. addition of youth networks to the subregional programs

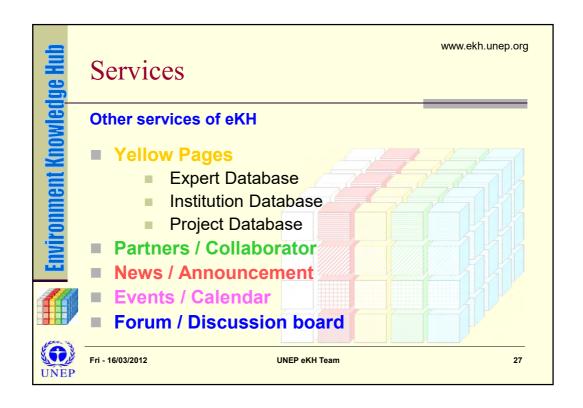
Fri - 16/03/2012

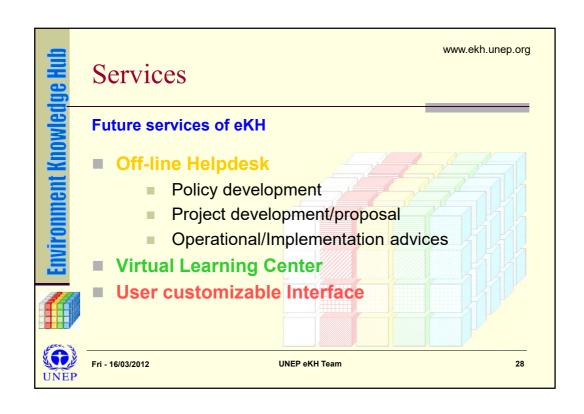
UNEP eKH Team 23

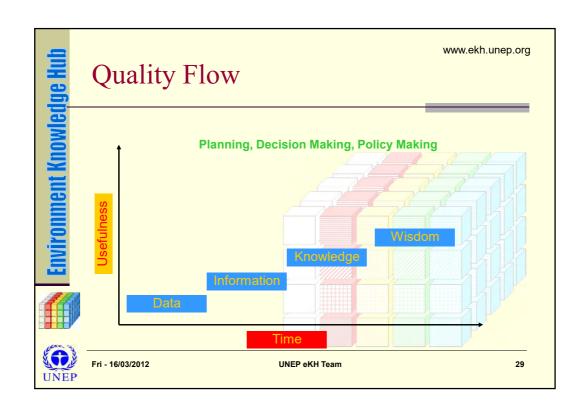


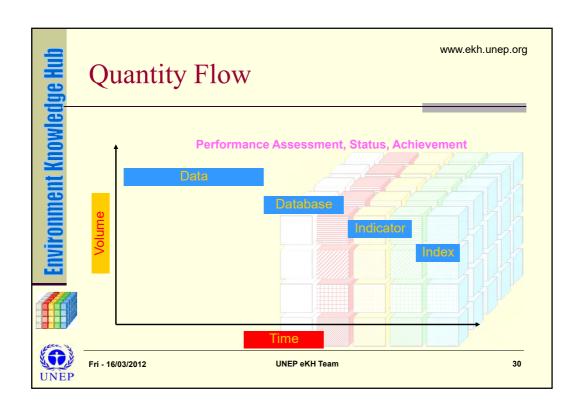


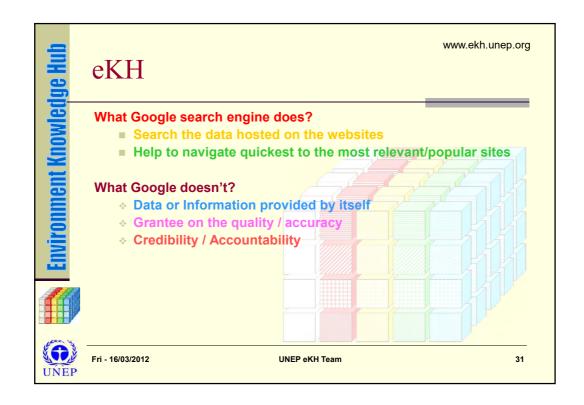


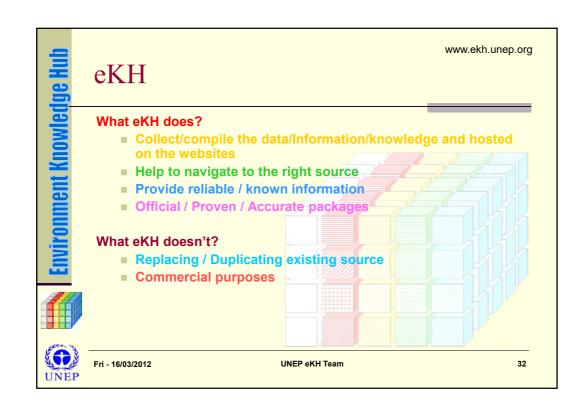










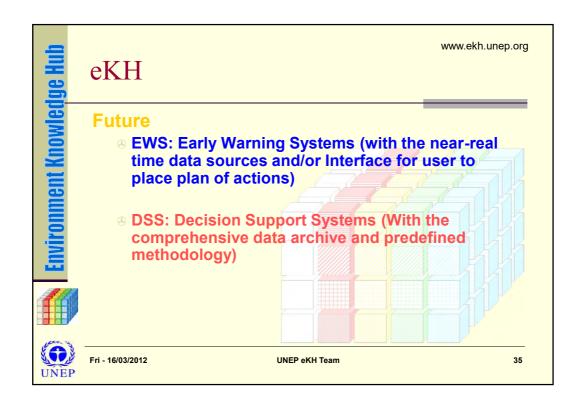


How to go together?

Used the capacity and expertise of the partners to provide the require data/information/knowledge to Environment Community

Use Google's technical advancement/search engine and other tools (Google Earth) to make better/more efficient way of information provision.

Value Added • eKH would provide to visualize the locations/place of the effective area (project coverage, environmental disaster etc.) on Internet by webbased Mapping of geospatial data service • eKH would help to make simple trend analysis and projection for the future with the linkage to the time series database (if any) on Internet by webbased graphing tools Fri-16/03/2012 UNEP eKH Team 34





National Environmental Information Management System Project – Pakistan Case Study Mahboob Elahi Colombo, Sri Lanka 9-10 February, 2012



Why NEIMS?



- We are in the information age
- Every one requires more and authentic information, verifiable from the sources
- We require information for policy making, environmental monitoring and control measures
- We need more awareness, education for general public and research by academia



Linkages with International Environment Systems

Contd....

- UN Statistical Office (USO)
- Earth Watch (EW)
- Man and Biosphere Program (MAB)
- · Global Resource Information Data (GRID)
- UN Division of Early Warning and Assessment (UNEP-DEWA)





Linkages with International Environment Systems

Contd....

- Group of Experts on Scientific and Marine Resources Protection (GESAMP)
- International Geosphere-Biosphere Programme (IGBP)
- Global Ocean Observation System (GOOS)
- · Global Terrestrial Observation System (GTOS)
- Global Earth Observation System (GEOS)





Linkages with International Environment Systems

Contd....

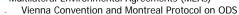
- UN Indicator for Sustainable Development (DESA-ISD)
- Millennium Development Goals (MDGs)
- World Conservation Monitoring Centre (WCMC)
- United National Regional Resource Centre for Asia and Pacific (UNEP-RRC.AP)
- · Asia Pacific Network for Global Change (APN)
- Global Change System for Research and Analysis (START)





Linkages with International Environment Systems

Multilateral Environmental Agreements (MEAs)



- BASEL Convention on Hazardous Wastes Movement
- UNFCCC
- Convention on Biological Diversity
- Convention on Desertification
- Convention on Chemicals in Agriculture and Industry (PIC)
- Convention on Persistent Organic Pollutants (POP)
- MARPOL, CITIES, CMS, World Heritage, IMO, Global Ballast Water



Past Efforts

Contd...

- Environmental Profile of Pakistan
- National Conservation Strategy (1992)
- Provincial and District Conservation Strategies (Sindh, NWFP, Balochistan, Abbotabad, Chitral)
- Forestry Sector Master Plan
- National Drainage Plan





Past Efforts

Contd...

- Climate Change Impact and Adaptation Study
- National Communication to UNFCCC
- Pakistan State of Environment Report
- National Policies on Environment, Forestry, **Drinking Water and Sanitation**
- National Reports to the MEAs





Past Efforts

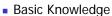


- National Compendium on Environmental Statistics, 2005 235 tables on different social, economic and environmental statistics
- National Environmental Sustainable Indicators Study (Core Indicators: 92, Sector Indicators: 33)
- Compilation of environmental issues and areas for collection of statistics November 2009
- 76 organizations consulted
- Revised list of Environmental Problems/Issues and possible datasets etc. circulated, covering 235
- Training Course arranged with SUPARCO, Karachi



Theory of Knowledge







Logical Knowledge

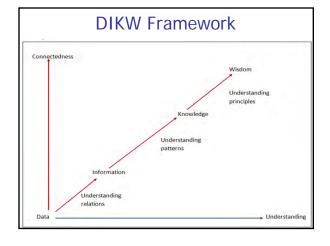
Belief based on TRUST

Belief based on LOGIC

Belief based on PERSONAL PREFERENCES







Background

Two Projects under NEAP-SP (2001-2007) Sub-programme: Environmental Policy and Governance

National Environmental Information Management System
 Environmental Accounting System of Pakistan

NEIMS Budget: US\$ 2.2 million 2005-2009 Time-frame: 20 December 2006 Actual Date of Start up: Suspension: 2007-2008 August 2008 Revived: Tenure Extended: November 2012



Project Objectives

Contd...

- Review the current state of environmental data and related information
- Identify a minimum set of environmental indicators, indices and related datasets
- Establish an organizational and technical framework for Environmental Data Management
- Determine the functionalities and features of NEIMS





Project Objectives

- Create a Project Plan for NEIMS including system architecture, resource identification and cost analysis
- Develop and deploy the system
- Train resources to maintain NEIMS





Major Activities of the NEIMS



- Signing of Project Document between Royal Netherlands Embassy and Country Director, UNDP
- Hiring of an expatriate consultant, Mr. Lex Brown, from the University of Griffith, Australia for the development of a Project Plan of NEIMS
- Preparation of Handbook/Template on Environmental Data and Information
- Compilation of Data and Information Received from different agencies and departments
- Coordination with reputed Software and Hardware Solution providers for the Development of Institutional & Technical Framework for NEIMS
- Engagement of Provincial Governments and other data generating and reporting agencies (Provincial Bureaus of Statistics) for additional survey for collection of primary data on different aspects of environment along with the related details, such as timeframe and cost implications



Major Activities of the NEIMS



- National Environmental Sustainable Indicators Study: 2007 2008
- Handbook on Environmental Data and Information
- Inception Workshop on NEIMS
- Engagement of Provincial Bureaus of Statistics and other related organization
- Inventory of all environmental issues/problems and possible supporting datasets, information, statistics and indicators and forwarded to all NEIMS Partner Agencies for incorporation in their work plans and activities
- Online availability of Data compiled from different sources on NEIMS Website
- Hiring of a counter-part local consultant to assist the expatriate consultant in the development of Project Plan of NEIMS



Major Activities of the NEIMS

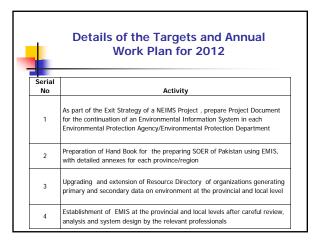
- Floating of RFP for selection of consulting firms for the preparation of National Environmental Sustainable Indicators Study
- Hiring of staff for PMU, NEIMS at Islamabad (03 out of 15)
- Collection of data on environment from relevant organizations at Islamabad
- Hiring of National Project Manager, NEIMS (01 Nov. 2007, resigned in Feb. 2008)
- Rehiring of National Project Manager and staff completed Oct-Dec 2009



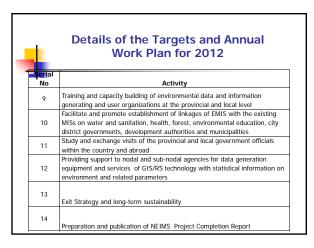
Major Activities of the NEIMS

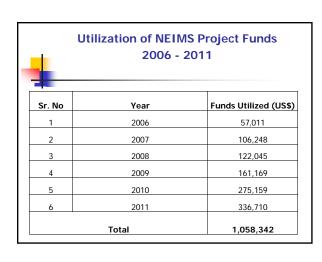
Preparation of Data Needs and Use assessment Document for NEIMS

- Development of a framework (along with details of datasets) for collection of sector and inter-sector databases in all thematic areas
- GIS application for monitoring of Environmental changes at national level and their future modeling
- Training and Capacity Building Workshops/Courses
- Commissioned Specialized Studies (Air Quality, Water Resources, Agriculture, GB-Profile, Met Data, Forest and Biodiversity, AJK Environmental Statistics, Resource Directory, Synthesis Report)
- Supply of Hardware and Technical Equipment to Federal and Provincial Agencies



	Details of the Targets and Annual Work Plan for 2012
Serial	
No	Activity
5	Procure and deliver licensed software and IT equipments for the establishment and operations of IT equipment and networks in the provinces
6	Preparation of users' manual for the operation and maintenance of EMIS at provincial and local level
7	Develop communication strategy and programme to support activities of the organizations at the provincial and local levels
8	Expert group meetings for the harmonization and standardization of various attributes and concept relating to environment







Outputs and Deliverables

Static

- Statistical Data on various Thematic Areas of Environment
- Sector and Inter-Sector Reports
- Synthesis Report on the State of Environmental Data and Information
- Environmental Profiles and SOER

Dynamic

- Maps, Spatial Data using GIS/RS Technology
- Environmental Management Information System



Methodological Issues in Developing Environmental Data

contd..

- Inherent characters that do not allow measurement by enumeration
- Lack of the understanding of the complexity of the factors responsible for variance in the system attributes
- Cost constraints, limit of measures and biases on measurement which influence reliability of statistics
- Spatial temporal validations
- Temporal aggregation of statistics





- Lack of capacity to develop high level statistics
- Data standards
- Data definitions
- Measurement units
- Method of measurement
- Sampling standards

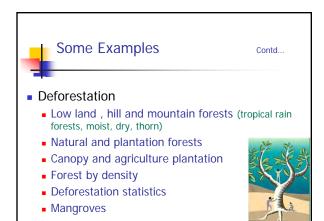


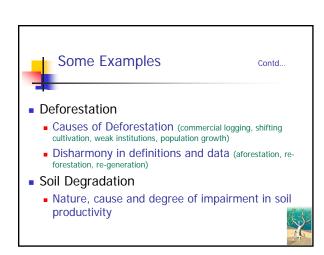


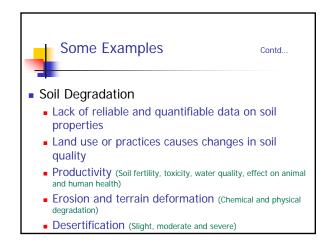
Some Examples

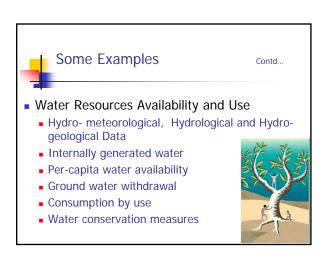


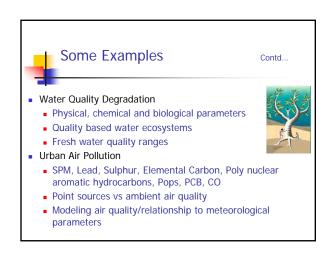
- Flow of changes and not stock
 - FAO shifting cropping patterns
- Classification (cropland, permanent pastures, forests, woodland, built up area and other land)
- WRI (closed and open forests, rain forests and dry forests)

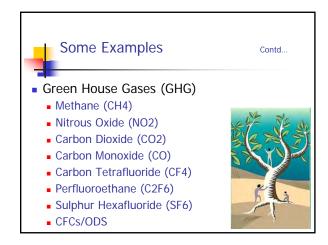


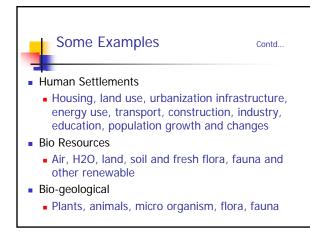


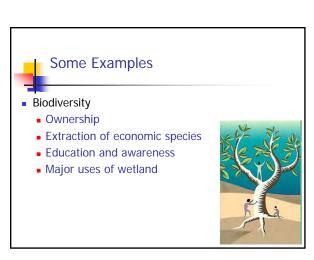


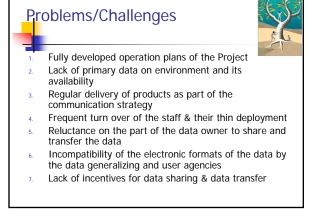














What is Capacity Development?

History	Year
Institutional Building	1970
Structural Adjustment Programmes	1980
Capacity Development (CD)	1990-91

- CD is a conceptual approach to development to enhance ability that will allow them to achieve measureable and sustainable results
- Estt. of conditions for process of learning and adapting to change (knowledge and skills)

Capacity Development Approach

contd....

- CD has evolved as concept and approach to replace earlier emphasize on training and institutional development
- Levels of CD: Individual , Sector and National



Capacity Development Approach

- Drivers of Change
 - Institutional Arrangements (creating capable inst.)
 - Leadership (building smart leadership)
 - Knowledge (increase knowledge)
 - Accountability (ensuring accountability)





Capacity 21 Approach



Supporting the development of policies, Processes, Skills knowledge they need to Perform better and contribute to the Achievement of National Development Goals

Process:

- Engage stakeholders on capacity development
- Assess capacity asserts and needs
- Formulate capacity development response
- Implement a capacity development response
- Evaluate capacity development (reaction, utilization & retention)



Capacity Measurement Framework

Cont

- Institutional Arrangements
 - Streamlined Processes
 - Clear Distribution of Role and Responsibilities
 - Merit-based Appraisal Mechanism
 - Coordination Mechanism
- Leadership
 - Clearly Formulated Vision
 - Communication Standards





Capacity Measurement Framework

- Management Tools
- Outreach Mechanism
- Knowledge
 - Reach Supply & Demand
 - Linkage Mechanism
 - Brain-gain and Retention Strategies
 - Knowledge Sharing Tools and Mechanisms



. ſ

Schematic Diagram



- National Institutions
- Performance (Output)
 - Institutional Arrangements
 - Leadership
 - Knowledge
- Performance (Input)
 - Availability of Resources (Human, Financial, Physical, Competencies)
- Stability Adaptability



Proposed Structure of the Inception and Training Workshop

- Working Group Tasks on the following areas:
 - Gaps in Generation, Compilation and Reporting of Environmental Data and Information
 - Strengths and Weaknesses of Sharing Data on Environment with various Stakeholders
 - Brain Storming Session on Exit Strategy for Long-Term Sustainability of Environmental Data System
 - Needs and Opportunities for Integration of Attributes and Geospatial (GIS/RS) Environmental Data
- Presentation of the Recommendations of the Working Groups



Education and Training

I hated every minute of training, but I said, "Don't quit. Suffer now and live the rest of your life as a champion

Muhammad Ali





Education and Training

It was my fortune, or misfortune, to be called to the office of Chief Executive, without any previous political training

Ulysses S. Grant







Thank You for Your Attention

Summary of the Questionnaire of Environmental Data and Statistics

Part 2A Environment Monitoring

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
legal framework for Environment Monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
 Environmental Protection Act /Law 	\wedge	\wedge	\wedge	7		Y	Y	<u> </u>
Statistical Act	<u> </u>					<i>></i>	<i>></i>	
• Other	Environmental Regulation Legislative documents				Regulation Regulation			Marine Pollution Prevention act Forest Ordinance Coast Conservation act Fauna & Flora protection act Geological survey & mines bureau act
Environment Monitoring Networks/Systems – Host institution	No	Yes Dept. of Environment	Yes, National Environmental Commission	Yes, Central Pollution Control Board, State Pollution Control Boards Acommittees		Yes M/ Environment	Yes	Yes Central Environmental Authority
In the Environment Monitoring Networks, which subject areas are covered by your institution?	Air, Biodiversity, Waste	Air, Water, Land, Biodiversity, Forest, Waste	Air, Water, Waste, Other (Climate, Chemicals,	Air, Water, Land, Biodiversity, Forest,	Air, Water, Biodiversity	Air, Water, Land, Biodiversity, Forest,	Air, Water, Land, Biodiversity, Forest,	Air, Water, Land, Biodiversity, Forest, Waste

		(Noise, Climate Change, Ozone)	EIAs)	Waste		Waste	Waste	
• Air	SO ₂ , NO _x ,	SO2, NOx,	SO ₂ , NO _x ,	SO ₂ , NO _x ,	PM ₁₀	SO2, NOx,	SO ₂ , NO _x ,	NOx, PM10,
	PM10, Ozone	PM10, (SPM)	PM10, Ozone	PM10, PM2.5.		PM ¹⁰ , PM ^{2.5} .	PM ¹⁰ , PM ^{2.5} .	Ozone
				Ozone		Ozone	Ozone	
Water Quality		Safe drinking water, COD,	BOD, COB	Safe drinking	Safe drinking	Safe drinking	All Parameters	BOD, COD
		ВОД		water,	water,	water,		
				Dasic sanitation	Basic sanitation	Basic sanitation		
				facilities BOD, COD	facilities BOD, COD	facilities BOD, COD		
• Land				Land use,		Urban areas,	All	Land use
) 				Urban areas,		land cover	Parameters	Land Cover
				land cover		types		types
• Riodiversity	Protected land	Protected land		Protected	Protected	Protected	Protected	Protected land
	areas	areas		land areas	land areas	land areas	land areas	areas
	Number of	Protected		Protected		No. of	Protected	Protected
	endangered	marine areas		marine areas		endangered	marine areas	marine areas
	Spp.	No. of		No. of		Spp.	No. of	No. of
		endangered		endangered		No. of	endangered	endangered
		Spp. No. of invasive		Spp. No. of		invasive Spp.	Spp.	Spp. No. of
		Spp.		invasive Spp.		4		invasive Spp.
• Forest		Total forest		Total forest		Total forest	Total forest	Total forest
		area		area		area	area	area
		areas				forest areas	forest areas	areas
• Waste	√ (not	Total waste	√ (not	Covers all	Total waste	Total waste	All	Total waste
	specified)	generation	specified)	parameters	generation	generation	Parameters	generation
		Waste			Waste	Waste		Waste
		generation per			generation	generation		generation per
		capita per year			per capita	per capita		capita per year
					per year	per year		

Other								
Total number of staff working in the Environment Monitoring Networks								
In your institution	90	56	02	875	10	45	20	
Number of Professional staff		25	01		05	15	15	
Number of Support staff		31	01		05	30	05	
In other institutions						>300	100	
major constraints in developing the Environment Monitoring Network								
 Lack of institutional set-up/coordination 		^·			^	<u> </u>	<i>></i>	<i>></i>
 Lack of financial resources 	<u> </u>	^·	<i>></i>		\wedge	<i>></i>	<i>></i>	<i>></i>
 Lack of human resources 	<u> </u>	^·	<i>></i>		\wedge	<i>></i>	<i>></i>	<i>></i>
 Lack of interest by the users 							>	
 Lack of access to training material 	<u>^</u>	<u> </u>	<u> </u>		\nearrow	^	<i>></i>	>
• Other	Lack of Rule & Law	Lack of modern machineries & equipment		No constraints reported				
How is the Environment Monitoring data disseminated?								
 Environment Statistical Publications 		>		7		>	7	
Internet	Į.	\hat{\gamma}	\(\sigma\)	<u> </u>	<u> </u>	\(\sigma\)		\nearrow
 State of the Environment Report 			>	\checkmark		>	>	\ \
Other	Reporting	Annual reports						Annual reports

Part 2B Environmental Statistics

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
legal framework for Environment Statistics	Yes	Yes	Хes	Yes	No	Yes	Yes	No
Statistical Act		\wedge				\wedge		
 Environmental Protection Act 	>	>	>			>	>	
• Other				There is an Ombudsman Collection of Statistics Act and no separate Environment Statistics Act				
Programme on Environment Statistics – Host institution	Yes NEPA Partners	Yes Bangladesh Bureau of Statistics	O N	Yes M/Environment & Forests and its subordinate/attached offices	Yes	Yes Central Bureau of Statistics	Yes Statistics Division of M/Finance	°C O
In the Environment Statistics Programme, which subject areas are covered/supported by your institution?								
• Air	<u> </u>	^		^	\wedge	\nearrow	\nearrow	>
Water		\wedge		<u> </u>		V	\wedge	V
• Land				\ \		\(\sigma\)) N	>
Biodiversity	>	>		~		~	>	>
• Forest		\checkmark		1		\checkmark	>	\nearrow
Energy				\ \		\(\sigma\)) N	
Waste	\nearrow			<u> </u>		\[\lambda	\wedge	\nearrow
Other								
Total number of staff working in the Environment Statistics Programme								
In your institution	90	04			03	02	20	02

			Yes		^				No	No
15	05	100	Yes Line Ministries, institutions			Areas related to discharge and release of pollution			Yes	Yes UNDP, EKN 5
01	01	05	Yes Coordinate with CBS and other authorities in publishing Envt. Statistical publication and SoE		>				N _o	No
01	02		°N						$_{ m O}^{ m N}$	Yes
			Yes Coordinates with Ministry of Statistics and Programme Implementation (Govt. of India) and other agencies		$\sqrt{\text{(one of the leading agencies)}}$				Yes	Yes In the form of technical
			Yes, Association of Bhutanese Industries, Dept. of Customs, National Statistical Bureau, M/Agriculture & Forests, M/Economic Affairs							
02	02		Yes Bangladesh Bureau of Statistics			Air Quality, Water Quality, etc.			No	No
			Yes, Environmental Coordination all Ministries Committee		>				Yes, UN	Yes
Number of Professional staff	Number of Support staff	In other institutions	Does your Institution/Agency cooperate with other Institutions/Agencies in the compilation of Environment Statistics?	Is your Institution/Agency the leading agency in Environment Statistics?	In all areas	Only in specific areas	In no areas	In compiling Environment Statistics, has your Institution/Agency made use of the following:	Training material, methodological guidelines or country experiences	Technical assistance from international organizations or countries

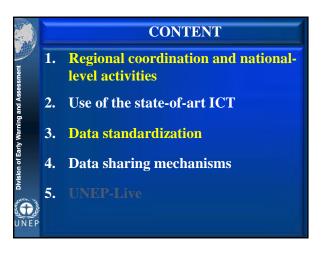
				cooperation with national and international organisations			years	
External funding	Yes	No			Yes	No	Yes UNDP, EKN 5 years	No
Are there plans to continue the compilation of Environment Statistics in your Institution/Agency?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Are there plans to expand the compilation of Environment Statistics to areas not yet compiled?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Air	>		<i>></i>			\wedge	\nearrow	
Water	<u> </u>		>		\(\)	\(\)	<u> </u>	
Land	>	>	<i>></i>			\wedge		
Biodiversity	>				<u> </u>	\		
Forest	>					~		
Waste	>	>	>			<u> </u>		
Other			Chemicals, Climate				Hazardous waste & substance	Green accounting Business & biodiversity
major constraints in developing the Environment Monitoring Network								
 Lack of institutional set- up/coordination 		>				>	\checkmark	\ \
 Lack of financial resources 	>	>	>		>	>	>	>
 Lack of human resources 	>	>	>		>	>	>	>
 Lack of interest by the users 						7		
 Lack of access to training material 	>	>	>		>	>		>

Availability of data	>	>	>			>	>	>
Ouality of data		>	>			~	~	>
• Other				Environmental Statistics is in process of gradual strengthening. Quality data in many areas has to be strengthened. Scattered data at different places need to be brought at one place				
How are the Environment Statistics disseminated?								
Statistical Publications		>		>	~	>	~	
Internet	<u> </u>		>	^	\wedge	\wedge		\nearrow
 State of the Environment Report 	>	<u> </u>	<u> </u>	\^		<u> </u>		^
• Other							On demand	Annual reports

Inception and Training Workshop on
Establishment of Environmental Data and
Information Management System for South
Asia
9-10 Feb 2012, Colombo

ELEMENTS OF REGIONAL
DATA AND INFORMATION
MANAGEMENT SYSTEM

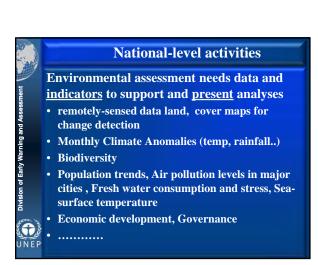
Johannes Akiwumi,
UNEP

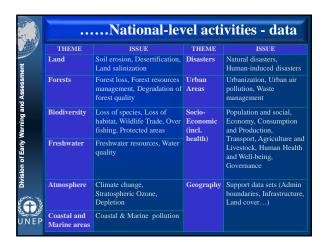


MANDATE Data and information vital to effective decision-making • The South Asia SOE 2001 and National SoE Reports pointed to the lack of necessary data • Data and information identified as key priority for environmental management by the 10th Governing Council of SACEP (2007)





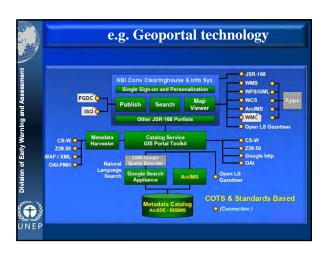






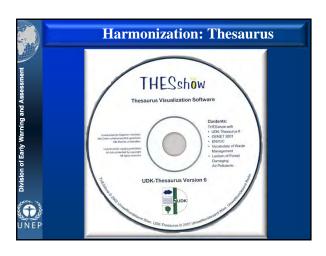


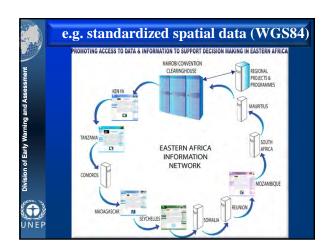






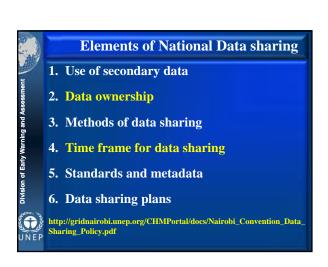


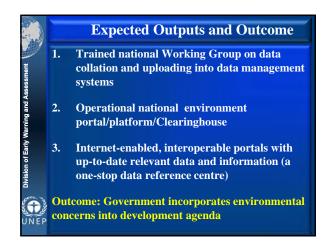




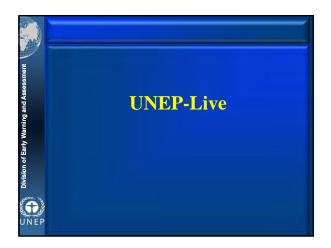




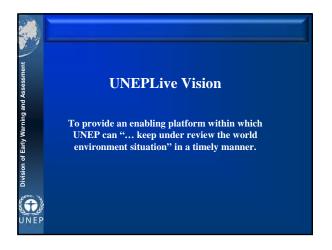


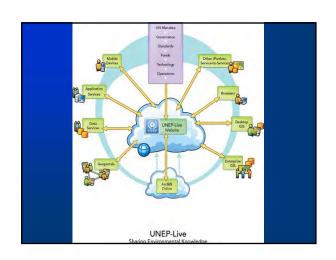






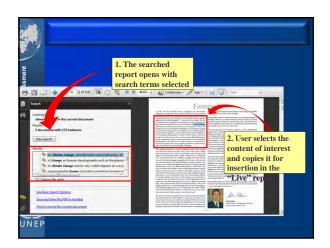






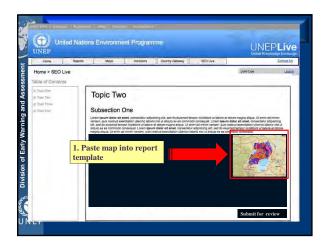


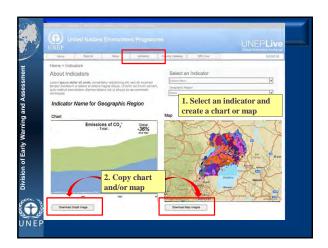


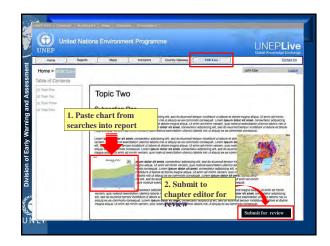


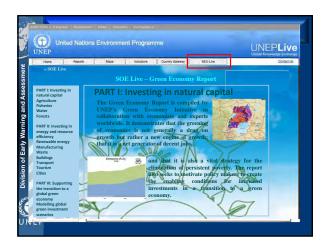


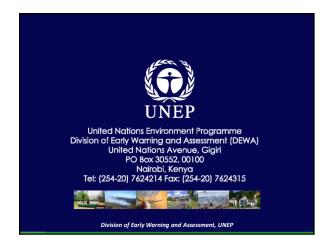












ANNEX VII

Establishment of Environmental Data and Information Management System for South Asia

Background

- 9th GC of SACEP held in 2006, identified information management as one of the 3 priority areas for the work plan for next two years
- Proposal was developed under the MoU with UNEP-ROAP
- Draft proposal was circulated among member countries for comments before finalizing
- 11th GC of SACEP held in 2008 approved the proposal

Objectives

Overall Objective is to strengthen the environmental data and information base in South Asia for improved decision making for sustainable development

Specific Objectives

- To assist in the development and operation of National Environmental Data and Information Centres, establish a Regional Environmental Data and Information Centre and their networking in the South Asia Region;
- To build capacity of national and sub-regional organizations on environmental data and information management applying standard formats and methodologies, who are involved and contributed to data and information reporting;
- 3. To harmonize the data and information reporting system at sub-regional and national level:
- To assist in the development and maintenance of national and regional metadata, information and data holding databases;
- 5. To assist in the development and dissemination of environmental data and information products responding to the needs of a wide variety of user groups using national and regional networks.

Project Components

- Assist in the development/strengthen and operation of National Environmental Data and Information management Centres in member countries of SACEP
- Establishment of Regional Environmental Data and information Centre and Networking of Regional Centre with the National Centres

Project Activities

- Assessment of needs and the resources available at national and regional level
- Provide assistance in the development and operation of National Environmental Data and Information management Centres in member countries of SACEP
- Organization of national coordination meetings to identify suitable host institutions for National Environmental Data and Information management Centre

- Provide training in data and information management applying standard formats and methodologies
- National Data and Information Management Training Course
- Regional Data Management Training Course
- Regional Information Management Training Course
- Preparation of national and regional training manuals on environmental data handling sharing and reporting
- Establishment of Regional Environmental Data and information Centre and Networking of Regional Centre with the National Centres
- Development of national and regional meta databases

Why we need a EDIMS?

- Vital for effective decision-making
- Assist for more transparent decision-making
- It would assist to hold those who make decisions accountable for the consequences
- Scattered information and data, lack of tools, technical expertise and resources, etc have been the issues to provide proper information or to provide policy briefs to the decision makers

At the SACEP Secretariat Level

- Assist to prepare timely policy briefs, working papers, etc. for Governing Council
- Assist to development of its programme base
- Enhance the ability work cooperatively with other organizations
- Enhance the productivity at the Secretariat
- Assist to attract more resources for project implementation
- Assist for accurate and timely reporting

At the Country Level

- Assist in decision-making
- Provide timely and accurate information
- Facilitate Greater inter-agency coordination
- Enhance the transparency in decision-making
- Share the good practices between countries
- Promote south south cooperation between countries

THANK YOU

ANNEX VIII

Project Plan

The purpose of the project plan

- Define the scope, objectives and deliverables
- Outline the timing of each deliverable identified
- Identify resources
- Establish ownership and accountability

Scope and Objectives

Scope

Overall Objective is to strengthen the environmental data and information base in South Asia for improved decision making for sustainable development

Objectives

- To assist in the development and operation of National Environmental Data and Information Centres, establish a Regional Environmental Data and Information Centre and their networking in the South Asia Region;
- To build capacity of national and sub-regional organizations on environmental data and information management applying standard formats and methodologies, who are involved and contributed to data and information reporting;
- 3. To harmonize the data and information reporting system at sub-regional and national level;
- 4. To assist in the development and maintenance of national and regional metadata, information and data holding databases;
- 5. To assist in the development and dissemination of environmental data and information products responding to the needs of a wide variety of user groups using national and regional networks

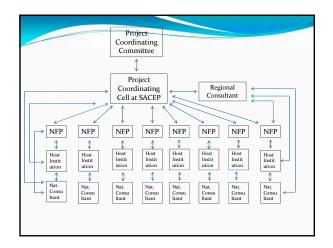
Project Deliverables

- A comprehensive document includes a detailed assessment on national and regional level needs, users and their information needs at the local, national and regional levels.
- A strategic document on strategy and methodology applying for data harmonization including data monitoring, metadata, quality control, reporting, etc at national and regional level
- National and Regional training manuals on environmental data handling sharing and reporting
- Fully operationalized eight National Environmental Data and Information management Centres in member countries of SACEP established
- Fully operationalized Regional Environmental Data and information Centre Networking with the National Centres at SACEP established
- Comprehensive eight national databases, each in member countries and regional database at SACEP established

Work Plan and Timing

Project administration/management

- Project Coordinating Committee
- Project Coordinating Office At SACEP
- NFPs of member countries as national coordinating agencies
- Host Institutions for national environmental data and information management centres





Work Plan and Timing

Activity			Year 01			Yea	Year 02			Yea	Year 03	
	1 st qtr	2 nd qtr	$3^{\rm rd}$ qtr	4 th qtr	1 st qtr	2^{nd} qtr	3 rd qtr	4 th qtr	$1^{\rm st}$ qtr	2^{nd} qtr	$3^{\rm rd}$ qtr	4 th qtr
4.1 Assessment of needs and the resources available at national and regional level												
National needs assessment workshops												
Regional level needs assessment workshop												
4.2. Provide assistance in the development and operation of National												
Environmental Data and Information												
management Centres in member countries of SACEP												
National coordination meetings to												
identify suitable host institutions												
for National Environmental Data												
and Information management Centre												
4.3. Provide training in data and												
information management applying												
standard formats and methodologies												
Preparation of National and												
National Data and Information												
Management Training Course												
Regional Data Management												
Training Course												
Regional Information Management												
Training Course												
4.4. Establishment of Regional												
Environmental Data and information												
Centre and Networking of Regional												
4 5 D GIT 1												
4.5. Provision of Hardware and												

Software Packages						
4.6. Provision of support for						
operational expenses data and						
information centre						
4.8. Data and Information						
Dissemination						
4.9. Coordinating committee meeting						

Inception and Training Workshop on Establishment of Environmental Data and Information Management System for South Asia

9 – 10 February 2012 Colombo, Sri Lanka

Group 1

- 1. Support from SACEP
- 2. Time frame
- 3. Investments on software
- 4. Capacity building

Support

- Common data format –data should be common to all countries what should be there, common indicator
- Information should be collected at national level
- Information should jell with the requirement from other commitments everything has a cost
- Common baseline data for every country- it can be different for each country as per availability of data what is actually we are looking from all the countries decide on few priority areas air and water can be given first priority

Time frame

- Put the Focal point in place for each country 3 months
- Deciing and developing data format, indicators, soft ware One year
- Information collection and feeding at national level 2 yrs India too long –as we are starting from the existing base, one year might be sufficient.
 - Some countries have to start from scratch, so might need more time GEO comes in every 4 yrs the countries are at different levels of development, so some can start it quickly

Who will do the funding – mainly for soft ware SACEP to facilitate

Data collection to be done by each country

Capacity building

Organized by SACEP and UNEP – more people – Master trainers -2-3 people from each country

Expertise is already available within the region – India and Sri Lanka

Group 2

- Environment is a vast subject —
 Core parameters are there, as the countries have developed their SOEs
 Core areas should be identified that should be not more than 4-5 areas- urban air quality, land, water,
- SACEP to prepare a template to share with the member countries
- Frequency of entering data should try to link SACEP with the institutions that collect data with in the countries

Periodicity for data collection — what should be there???? — on line with International organizations. Eg. ${\sf UNEP}$

the countries to follow a good common standards

- Meta data information catalogue e.g.
- Detailed stock taking identify competent authorities who are collecting information and the Focal Point should be fed with that information – Most important recommendation Directory of information – details of competent authorities
- Go for SOE SER, EIR reports for collecting information to gather more information
 We should focus on non-controversial information
- Capacity SACEP and member countries
 SACEP should also assess their capacities and capabilities and strengthen it to undertake future activities
- National level data sharing policy SACEP to assist the countries to develop such policies for the
 countries that are lacking such policy
 bilateral arrangements should be made within agencies for sharing of data
 - Each National Government have an arrangement for obtaining data
- National data stakeholder workshop SACEP to play a resource person role providing technical advice
- Mapping and Geo tech tools SACEP/ UNEP to assist in obtaining these technologies
 Very expensive, but UNEP has some arrangement and could obtain them so these should be made available to national governments and SACEP
- Capacity building training at SACEP and member countries

Main objective – some countries does not have a national data base – Bhutan, Bangladesh We have to develop this to get a proper reporting system – data format and software is needed for this Focal point of National Governments to act as the clearing house – the most important aspect of this system

Capacity is need and SACEP should come forward to build the capacity

National system needed to be strengthen before coming up with the regional –if the project to be more meaningful either the national government should develop the capacity national focal points – SACEP need to help in this

Then only the regional system will

SACEP need to develop a common software for data base development

Remote sensing and GIS – UNEP should provide support

The national government have to peruse this as this has an effect on National security

Cheaper rates are available through the UN system, so these could be make available to SACEP and countires

Inception and Training Workshop on Establishment of Environmental Data and Information Management System for South Asia

9 – 10 February 2012 Colombo, Sri Lanka

1. Background

The 9th Meeting of the Governing Council of SACEP held in 2005 at Thimphu, Bhutan identified Environmental Data and Information Management as one of the priority areas of the work plan for SACEP.

The 11th Meeting of the Governing Council of SACEP held in Jaipur, India in 2009 approved the proposal on Establishment of Environmental Data and Information Management System for South Asia

UNEP was requested to support for the implementation of the proposal at the 12th Meeting of the Governing of SACEP held in Colombo, Sri Lanka in 2010.

Taking forward the above decisions, SACEP with the assistance of UNEP organized an Inception and Training Workshop on Establishment of Environmental Data and Information Management System for South Asia on 9 – 10 February 2012, in Colombo, Sri Lanka. 27 participants including two delegates from each member country of SACEP, resources persons, UNEP and SACEP participated at the workshop.

2. Proposal

SACEP Secretariat introduced the Proposal and the Draft Work Plan for implementation of the project which has the following objectives at the meeting.

Overall Objective: Strengthen the Environmental Data and Information Management System in South Asia for improved decision making on environment and sustainable development.

Specific Objectives

- Establish a Regional Environmental Data and Information Management System at the SACEP Secretariat;
- Networking existing Centers of Excellence in South Asia
- Build capacity of sub-regional and national organizations on environmental data and information management applying standard formats and methodologies, which are involved and contributed to data and information reporting;
- Assist in the development and dissemination of environmental data and information products responding to the needs of a wide variety of user groups using regional and national networks

3. Road Map

The meeting agreed the following road map

- Identify Focal Point for each member government for regular communication with SACEP Secretariat by two months
- 2. Establishing the Project Coordinating Committee composition should be finalized with the consent from the member governments
- 3. Detailed stock taking identify competent authorities who are collecting information and the Focal Point should be fed with that information by 6 months
- 4. Background document on project would be prepared by SACEP Secretariat by 3 months.
- 5. Capacity building at the SACEP Secretariat level as well as National Government level to be done Continuous process, start early as possible.
- 6. Development of a common data format/template for member countries which will facilitate data sharing- if comfortable follow existing formats already established by two member countries
- 7. For the Regional Data base, information should be provided at National levels
- 8. Organize Review Meetings every six months