



Generating Global
Environmental Benefits - GEB

ENVIRONMENTAL INFORMATION MANAGEMENT SYSTEM-GLOBAL EXAMPLES & LESSONS FOR PAKISTAN

18TH SEPTEMBER 2019
KARACHI

REPORT OF A 'SEMINAR' ARRANGED BY
GENERATING GLOBAL ENVIRONMENTAL
BENEFITS (GEB) IN COLLABORATION
WITH NED UNIVERSITY OF ENGINEERING
AND TECHNOLOGY, KARACHI

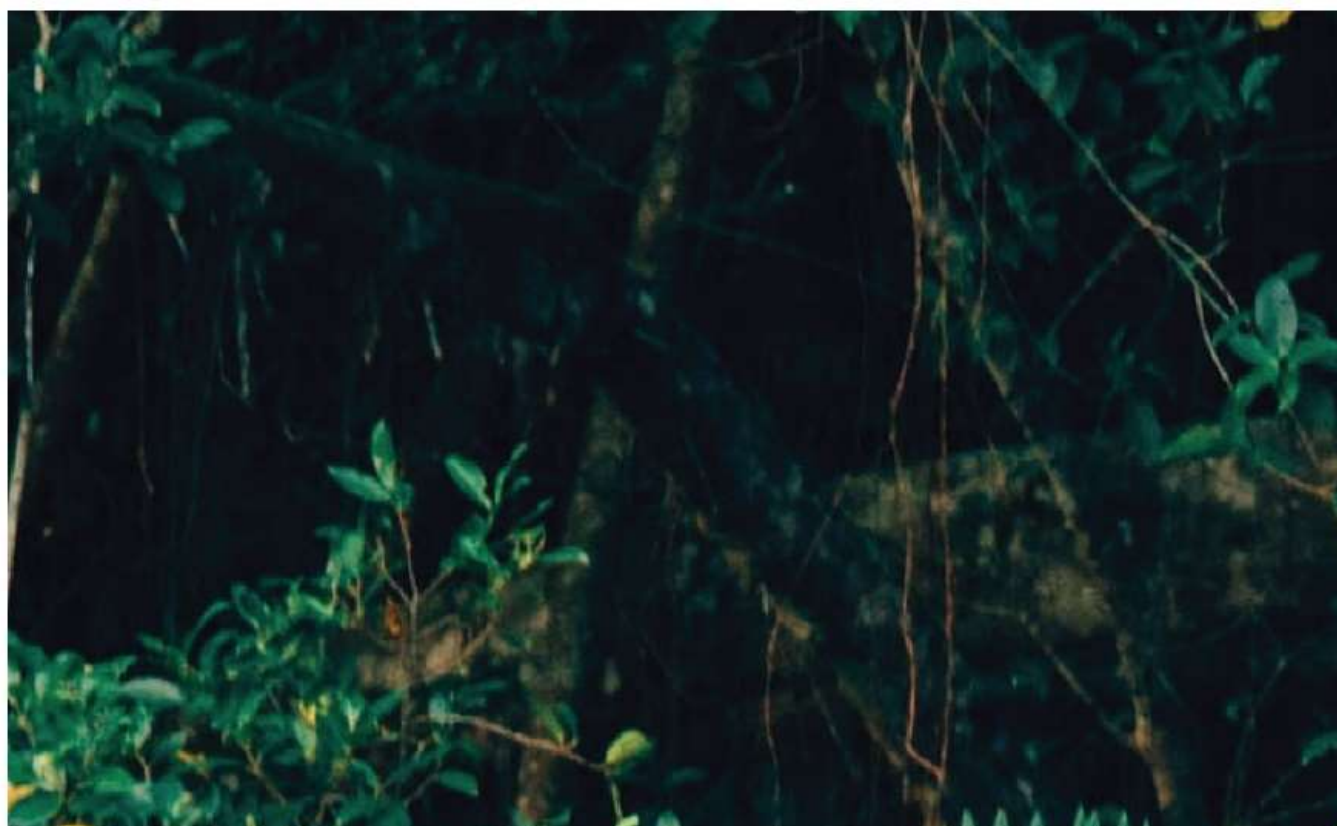
*GEB - A Joint Initiative of United Nations Development Programme (UNDP)
& Ministry of Climate Change (MoCC)*





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Executive Summary

GEB project funded by the UNDP/ Global Environment Facility (GEF) and is being implemented by the Ministry of Climate Change (MoCC) aims to remove barriers to environmental information management and mainstream global environment concerns into the economic decision-making of Pakistan. As per the AWP-2019, a seminar was arranged by PMU, GEB project with the title of *“Environmental Information Management System-Global Examples & Lessons for Pakistan”* on September 18, 2019 at NED University, Karachi. The objective of the seminar was to apprise stakeholders/selected representatives regarding the integration of research, environment and development and thus enhance their commitment and capacity for the role of research in ensuring environmental sustainability. Environmental data and information serve as a tool in monitoring and ensuring compliance with regulations, standards, and environmental policies. It is an important instrument for policy integration that also assist in informed decision-making. The purpose of the seminar was to emphasize on the importance of environmental information and management, as well as address the barriers and challenges that government departments, private, and public sectors are facing in the country with respect to data collection, generation, and analysis. It also aimed to develop a clearer understanding among participants regarding environmental data and information, role of different stakeholders and devise policy/way forward for Pakistan in general and Sindh in specific.

Therefore, GEB project with the help of stakeholders like NED University intend to engage all patrons for constructing the prospective EIMS for Pakistan. Stakeholders present at the occasion greatly appreciated GEB project overall objectives, as well as its efforts to bring all relevant stakeholders on one page. It was agreed among the participants that activities such as this one are important to increase environmental understanding of the concerned stakeholders/representatives as they have a vital role to play in raising environmental awareness as well as forming public views and perceptions on development projects. Participants of the seminar appreciated the activity and efforts of GEB team and wished that capacity building activities such as this one may continue in future through different forums so that they are capacitated with the right information on the environment and thus play their role as “change agents”.

Seminar Proceedings

On 18th Sep 2019 the seminar at NED University, Karachi started with the recitation of Holy Quran followed by brief Introduction of participants. Prof. Dr. Raza Mehdi, Co-Chairman, NED University, Karachi delivered the Welcome Address. He welcomed the delegation of GEB project led by Dr. Saleem Janjua, NPC, GEB Project-UNDP, Islamabad and all participants.

Welcome Address by Dr. Sarosh Hashmat Lodi-Vice Chancellor NED University

Prof. Dr. Sarosh Hashmat Lodi, Vice Chancellor NED University was the guest of honor for the occasion. He appreciated the theme of event and Dr. Saleem Janjua, National Project Coordinator, GEB project, UNDP into organizing the seminar on a topic that is much needed for the environmental sustainability of Sindh in specific and Pakistan in general. He overviewed the academic and extracurricular activities of NED University. He explained that NED University is a flagship engineering institution which shall soon be celebrating its centenary. The university is known for producing high quality graduates and for its service to the nation. It has become a place of excellence in Pakistan in higher education and scientific research. These are the results of sustained efforts the university has made over the years towards faculty development, creativity and innovation. NED University provides best learning environment to its students and researchers. The university has state of the art laboratories for use by the students, faculty and industry. The mission is to make research, development, and innovation a strategic priority, as these are essential elements for the sustainable development and economic growth of the country.



Opening Remarks by Dr. Saleem Janjua, National Project Coordinator GEB Project

Dr. Saleem Janjua, NPC, GEB Project-UNDP delivered the Opening Remarks. He warmly welcomed all the participants and heartily thanked all to spare their time for joining the event. He briefly overviewed the project and its major components and objectives. The core outcomes of project activities are to ensure regular availability of consistent and reliable environmental data, develop a coordinated and robust environmental information management system; and enhance commitment and capacity for sustainable development



planning and legislation. He explained that projects like GEB are important for environmental information and management and the subsequent usage of this information for improved decision making.

Pakistan has a long past of environmental planning and management; however, it was the launch of its National Conservation Strategy (NCS) in 1992 that marked the beginning of its recent sustainability journey. Moreover, highlighting the importance of environmental information and its integration in broader economic development, NCS lead to the creation of the first set of national and provincial institutions that would carry this responsibility. Since then, several projects have been undertaken for the purpose. While significant environmental capacity and awareness have been created, sustainable environmental information management system and integration of environment and development remain to be adequately achieved. Dr. Saleem Janjua explained that the integration of environment and development requires proactive engagement from all stakeholders of society and engaging universities is an important one, He also explained that objective of arranging seminar is to provide information to the representatives along with other stakeholders regarding integration of environment and development and thus enhance their commitment and capacity for the role in ensuring environmental sustainability.

Mr. Rana Naeem- Program Associate-UNDP:

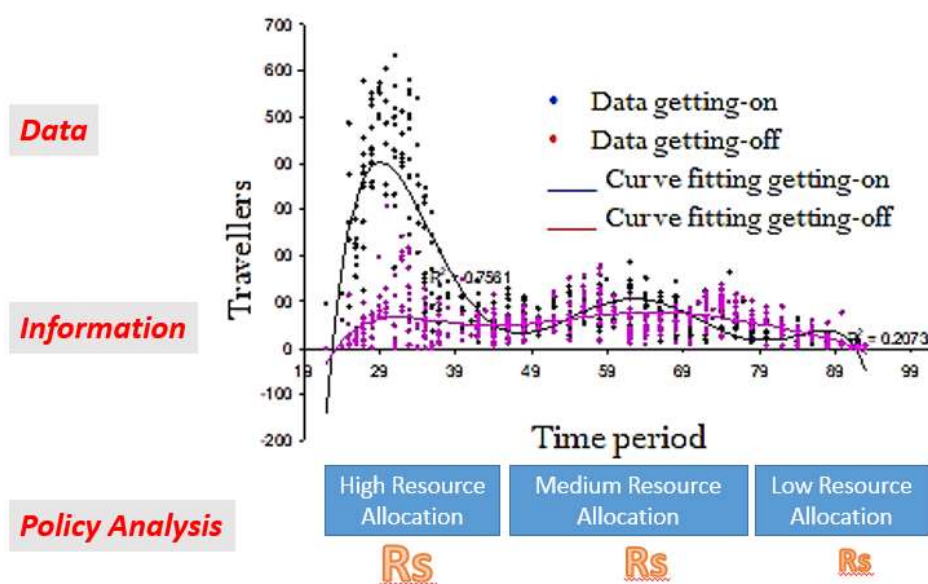
Mr. Rana Muhammad Naeem, Program Associate UNDP was also present on the occasion. He appreciated Dr. Saleem Janjua for the event organized under Generating Global Environmental Benefit (GEB) Project. He said that the purpose of this seminar is to provide a platform to all stakeholders and discuss issues of environmental data and information. He stressed on the fact that universities have a key role to play in the environmental sustainability of Pakistan. At the end he thanked all stakeholders and encouraged them for their enthusiastic participation in the seminar. The session proceeded with speeches and presentations and in-depth technical discussions on best practices for EIMS and way forward for Sindh, Pakistan.



Data Driven Policy Analysis for Sustainable Environmental Management by Dr. Prof Mir Shabbar Ali, Dean Civil Petroleum Engineering, NED University, Karachi

Prof. Dr. Mir Shabbar, Dean, Faculty of Civil and Petroleum Engineering, NED University of Engineering and Technology presented the topic that focused on understanding the link between data

and the policy. He highlighted the concept of data that is commonly associated with scientific research. Data is collected by a huge range of organizations and institutions, including businesses, governments and non-governmental organizations. He illustrated how the data is linked to policy analysis as shown in figure



He further elaborated the data driven policy framework as a cyclical process where there is need to identify the environmental issues first, research has to be done on those issues and solutions should be thought for making policy proposals. Policy made should be implemented and then monitored and evaluated for effective implementation.

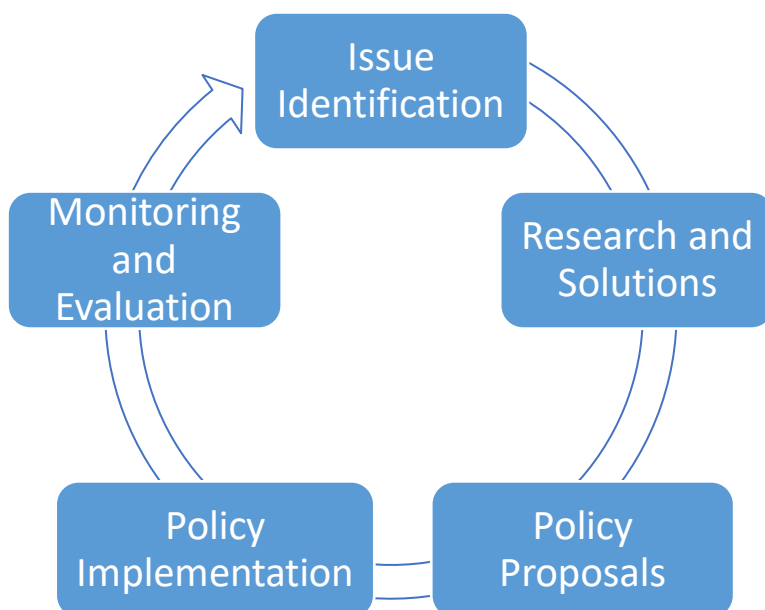


Fig: Data-Driven Policy Framework

The Sustainability Analytics comprised of environment, economy and society. These three components together drives towards policy driven sustainability. He also explained key indicators of Environmental Policy of Pakistan which include

- Preserving Agricultural Soils,
- Better Irrigation,
- Preserving Bodies of Water,
- Maintaining Biodiversity,
- Better Energy Efficiency,
- Managing Urban Waste and Developing Renewable Energy Sources.

The Big Data and Policy interventions are to be done to resolve contemporary urban issues. He also unfolded big data and policy intervention with example of Songdo, South Korea where there is better traffic management and congestion is mitigated and diverted along other less congested areas to reduce carbon emissions in a particular area. He then concluded his presentation with some important pointers stated as below:

- Data is the key to policy development and implementation.
- Research should be focused on better data collection and analysis tools.
- Clear link should be maintained from Data to information and from information to policy frameworks.
- Technology driven data will provide solutions for the theme Data Driven Policy Analysis for Sustainable Environmental Management.

Global Examples of Environmental Information and Management by Engr. Shahid Lutfi, Environmental Expert

Engr. Shahid Lutfi highlighted the global examples for EIMS. He stated that the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro called for the establishment of information systems that would improve access to information with environmental relevance and make it available as a basis for decision-making.

According to the United States (US)-EPA, EIMS organizes descriptive information (metadata) for data sets, databases, documents, models, projects, and spatial data. EIMS intends to provide the environmental management system of organizations with information that can be incorporated with other information requirements to assist organizations to achieve environmental and economic goals.

The establishment of EIMS provides a focal point at which decision-makers and planners can draw authentic and viable information on environmentally sound issues. Likewise, EIMS encourages interdisciplinary cooperation and networking, resulting in shared responsibilities and tackling of environmental issues in a holistic manner. He continued by stating that, the evolution of EIMS is closely associated with the technological advancement in the field of Information Technology (IT) sector from early 1970s and 1980s. During that era, two different remote sensing satellites, which include (LANDSAT & SPOT), were launched. The satellites provided large amounts of environmental data that could be used for analysis and management. Gradually, more institutes became aware of the need to establish environmental information systems due to increased pressure on natural resources from rising population levels as well as natural disasters such as floods and drought. He asserted that this period saw phenomenal growth in the number of actors involved in environmental information system development. Various numbers of systems are established worldwide to address different environmental and resource management issues. They serve for the assessment of environmental risks, such as flood, heat waves, glacier melting and storms etc. The system then helped to contribute towards sustainable development through efficient use of the available information. In response to UN Conference on Environment and Development (UNCED), some African governments have responded by formulating environmental management policies. The World Bank has funded initiating the EIS for Sub-Saharan Africa (EIS-SSA) Program (now EIS-AFRICA) with the idea to promote the implementation of effective EIS. Moreover in Zimbabwe, with the help of donor's interventions, they have initiated Integrated Resources Information System (IRIS), Vegetations Resources Information System (VERIS) & Agricultural Land Evaluation Information System (ALEIS); however these systems did not sustain due to funding issues. Countries such as Uganda, Ghana, Zambia, Eritrea and Tanzania have launched National Environmental Information Networks (EIN) (UNEP, 2002). The purpose of the network was to tackle technical and other institutional constraints they faced during EIS development. He pointed out that, multiple issues such as Institutional barriers, followed by financial, technical and lack of human resource capacities were among the major obstacles that hindered the process of EIS development in Africa.

He further revealed that the EIS system is comparatively more developed in Europe than Africa because the European Commission (EC) has established a Shared Environmental Information System (SEIS) in 2008. Its purpose was to improve the collection, exchange and use of environmental data and information across Europe. Since then, SEIS has become a collaborative initiative of the EC together with the European Environment Agency and the 39 countries of the European Environment Information and Observation Network (EIONET). SEIS aimed to create an integrated, web-enabled,

EU-wide environmental information system by simplifying and modernizing existing information systems and processes.

The following are some of the Environmental Information Systems which are currently being practiced across Europe:

- WISE: Water Information System for Europe is the European information gateway to water issues. It integrates reporting data flows from many water-related directives as well as water-relevant statistical data.
- INSPIRE: Initiative to build an Infrastructure for Spatial Information in Europe which aimed to improve the accessibility and interoperability of spatial data.
- BISE: The Biodiversity Information System for Europe.
- SEIS-ENP: EEA is implementing an EU-funded project (2010-2014) to extend SEIS to 16 European neighbors to the east and south (Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Moldova, Morocco, Palestinian Authority, Russian Federation, Syria, Tunisia and Ukraine).
- EEA: A portal for sharing ozone information links national and regional ozone websites informing users with real-time local air quality data.
- GMES: Global Monitoring for Environment and Security. Aims to provide information services based on Earth monitoring data obtained from satellites and institutes observations of water, air and land.
- Eye on Earth (EoE): A global public information service “for creating and sharing environmental information, and good practice for implementing a SEIS for Europe (EEA)”. The vision is that anybody in the world, including institution, scientist or business, will be able to use EoE for their information needs.
- GEO: Group on Earth Observations. A global partnership which includes the EC and its Member States is coordinating efforts to build a Global Earth Observation System of Systems (GEOSS).

He further added that when it comes to technological advancement, the United States stands ahead in the rest of the world. They have established *The National Oceanic and Atmospheric Administration* in 1970 (NOAA). It is an American scientific agency which focuses on the conditions of the oceans major waterways and the atmosphere. The agency is further contributing towards but not limited to National Weather Service, Oceanic Services, National Environmental Satellite, Data, and Information Service, National Marine Fisheries Service, National Integrated Drought Information System etc.

He stated that the Geographic Information System (GIS) is another good example of EIMS being used worldwide. In addition, it is a fundamental component of environmental management because they are capable of recording, storing and processing data with geographical, temporal and thematic content. Unlike paper maps, GIS is not static and can be updated continuously to provide a more current and useful information system. Importantly, once a GIS database for an area has been developed, it can be used for multiple projects. Mr. Lutfi concluded that, in case of Pakistan, multiple sectors are contributing towards generation of environmental data in one way or another. Nevertheless, due to lack of proper data management system, the data/information remains in the shelves and is not readily available for the decision-making process.

The Apt Way Forward for Sindh – Pakistan By Mr. Waqar Hussain Phulpoto, Additional Director General Sindh Environmental Protection Agency

Mr. Waqar Hussain Phulpoto, Additional Director General Sindh Environmental Protection Agency in his presentation discussed about the environmental issues of Sindh Province which are as follows:

- Degradation of fresh water bodies
- Marine pollution
- Urban & Indoor Air Pollution
- Higher Noise levels in Urban Centers
- Industrial and Municipal Solid Waste Contamination of Ground Water
- Agriculture run-off & excessive use of Pesticide/ Fertilizer/ Agro Chemicals
- Degradation of ecosystems
- Deforestation & Desertification Exploitation of Mangrove forest
- Loss of Biodiversity (Flora & Fauna)
- Improper disposal of Infectious Hospital Waste.
- Sea Intrusion
- Port related Pollution like; Risks of Oil Spills at Ports.

He elaborated that the time has come to save the nature. We can protect environment through mutual efforts. GEB project has taken initiative to gather and establish a system where the environmental data is available. The data can be collected through several resources. The resources for collection of information includes Environmental Impact Assessment (EIA) Report, Initial Environmental Examination (IEE) Report, Environmental Checklist, Environmental Management Plan (EMP), Environmental Audit Report, Hospital Waste Management Plan (HWMP), and Air Monitoring Data.

He explained that environmental data and information play an important role in environmental governance, supports in preparation of policies and implementation of plans and programmes for Sindh Province. He suggest that establishing EIMS is the way forward for Sindh province. Further actions that may be taken in this regard include Development of environmental profile of Sindh, climate change policy of Sindh and establishment of directorate of Climate Change, establishment of Development of Project to control Air & Noise Pollution in Sindh, Development of Integrated Solid Waste Management System (ISWMS). Efforts for protection & conservation of Water resources from contamination

- Efforts for installation of Sewerage Treatment Plants (STPs) & Combined Effluent Treatment Plants (CETPs)
- Development of Environmental Curriculum at School level

He concluded his speech on the remarks that *“There is Will, There is a way”*. This EIMS can play an important role in environmental performance as our commitment to implement this system successfully change the situation.

It is indeed the optimal balance between environment and development that ensures sustainability. The integration of environment and development requires proactive engagement from all stakeholders and institutions. Pakistan as a country faces numerous environmental challenges. It is imperative for Pakistan to move towards a low carbon economy, create green jobs, green growth, an ecological economy, and sustainable cities. Capacity-building activities such as this one are important to increase environmental understanding of the concerned stakeholders/participants as they play a vital role in raising environmental awareness as well as forming public views and perceptions on development projects. Participants of the seminar appreciated the activity and wished that it may be continued in the future through different forums so that they are capacitated with the right information on environment and play their role as “change agents”.*The activity concluded with the distribution of souvenirs among the guests and exchange of thanks between the guests and organizers.*

Press Release

1. https://www.dailyausaf.com/epaper/page?station_id=8&page_id=91667&date=2019-09-19



2. <https://www.brecorder.com/2019/09/18/523298/jamy-stresses-need-of-environmental-information-management-system-in-pakistan/>



3. <https://aimstv.tv/index.php/education/item/35390-2019-09-18-11-59-03>

The screenshot shows the AIMS TV website interface. At the top, there's a navigation bar with links for 'Home', 'About Us', 'Contact Us', 'Privacy Policy', 'Terms & Conditions', 'Sitemap', and 'Feedback'. Below this, there's a main header with the AIMS TV logo and a search bar. The main content area displays a news article titled 'ماحول دوستی میں حکومتی اداروں اور جامعات کو مزاد دلا کر ناپوگا' (Governmental institutions and universities will not be outbid in environmental friendliness). The article is dated 2019-09-18 11:59:03. The text of the article discusses the meeting of the Joint Education Committee (JEC) between the Government of Punjab and the Government of Sindh. It mentions that the meeting was held in Islamabad and was attended by officials from both governments, including the Chief Minister of Punjab and the Minister of Education of Sindh. The article also mentions the presence of the Joint Education Committee (JEC) members and the discussion of various educational issues.

Gallery





Group Photo



GEB MANAGEMENT



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