7. PAKISTAN

7.1 Water Resources Management Policies and Actions

In Pakistan, the first effort to introduce specific legislation for environmental protection was made in 1977. In 1992, the Pakistan National Conservation Strategy (NCS) was developed, and in 1999 the NCS was subject to mid-term review. The National Environmental Action Plan (NEAP) was approved by the Pakistan Environment Protection Council in 2001.[80] It addresses the various challenges to cope with different environmental problems, which include air, water and sanitation, land, forestry and climate change. [81]

The National Environment Policy, prepared under NEAP and published by the Ministry of Environment in 2005, provides an overarching framework for addressing the environmental issues facing the pollution of fresh water bodies and coastal waters. The Policy aims to protect, conserve and restore the country's environment in order to improve the quality of life of the citizens through sustainable development. It covered guidelines to different sectors. To provide sustainable access to safe water supply and effectively manage and conserve the country's water resources, the government aims to:

- Develop legal and policy framework for promotion of safe drinking water in Pakistan
- Increase coverage of water supply and water treatment facilities
- Establish a water quality monitoring and surveillance system
- Make installation of water treatment plants as an integral component of all drinking water supply schemes
- Promote low-cost water treatment technologies at the community and household levels
- Promote appropriate technologies for rain water harvesting in rural as well as urban areas
- Encourage artificial recharge of groundwater in arid and semi arid areas
- Promote metering of water consumption to discourage the indiscriminate use of water for industrial and municipal purposes
- Enact Water Conservation Act and relevant standards to foster water conservation
- Promote integrated watershed management
- Monitor sustained freshwater flows into the marine eco-systems
- Establish standards for classification of surface waterbodies
- Launch phased programmes for clean up and gradual up-gradation of the quality of water bodies.[82]

<u>Examples of actions and programmes mentioned in NEAP</u>

As mentioned above, under NEAP, some of the key policies and programmes have been proposed as follows:

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[80] Extracted from "The National Environmental Action Plan (NEAP)", http://www.pakistan.gov.pk/divisions/environment-division/media/NEAP.pdf, page 1

[81] Referenced to http://www.finance.gov.pk/survey/sur_chap_06-07/16-Environment.PDF, page 247-251

[82] Referenced to "National Environmental Policy 2005" by Government of Pakistan, Ministry of Environment, http://www.environment.gov.pk/nep/policy.pdf, pages 9-10

(i) Clean Drinking Water Programme

Pakistan's adaptation of Millennium Development Goals indicator for drinking water coverage defines it as the proportion of population (urban and rural) with sustainable access to improved water source, i.e. pipe and hand pump. The initiation of the Government's multi-billion rupee programme "Clean Drinking Water for All by 2008" aims to achieve this target by providing improved drinking water source especially to the poorest of the poor. This programme is one of the biggest initiatives related to water to come out of the NEAP. The Clean Drinking Water Programme was initiated by the Ministry of Environment on the directive of the President and the Prime Minister of Pakistan initiated in two parallel phases. The first is the "Clean Drinking Water Initiative" (CDWI) project whereby 544 plants are being installed one in each district and tehsil; and (ii) Clean Drinking Water for All (CDWA) project whereby filtration plants shall be installed one in each union council and villages.

The programme was approved by the Central Development Working Party (CDWP) in July 2004 and was included in the Medium Term Development Framework 2005-10. The CDWA is now a sub-programme of Khushal Pakistan notified for overall supervision and monitoring of the programme.[83]

(ii) Pakistan Wetlands Programme (PWP):

This Programme is an initiative of the Federal Ministry of Environment and is being implemented by the World Wide Fund for Nature, Pakistan since July 2005. This much-needed initiative is designed to arrest and reverse environmental damage to the country's wetland resources. The general objective is to conserve the globally important wetlands biodiversity in Pakistan while alleviating poverty.

Pakistan's wetlands are inhabited by an estimated 130 million people permanently living, and another three to four million temporarily living on the wetlands. Thus, right at the outset of the Programme it had been stressed that any conservation efforts must also incorporate poverty alleviation and income generation for the communities whose entire livelihoods are primarily dependent on wetlands resources.

A key component of the PWP is to create awareness on all issue related to wetlands conservation. In this regard, the Programme has reached out to all sections of the Pakistan community through trainings, educational other conscious raising activities. The travelling wetlands carnival toured four of the country's major cities. It is a means of reaching out to the public to raise their understanding for the need to conserve, protect and mange Pakistan's wetlands resources. It stressed the valuable scientific and social roles they occupy within the country and region.

[83] Referenced to Chapter 16 "Environment" of the "Economic Survey 2006-07", http://www.finance.gov.pk/survey/sur_chap_06-07/16-Environment.PDF, page 252

7.2 Environmental Evaluation/SEA in Pakistan

In Pakistan, SEA is still in its formative stage. In 1970, the first set of legal and policy precedents for SEA were developed under EIA framework, however, formal implementation did not take place until late 1990s. At a global stage, SEA is on the threshold of widespread adoption and further consolidation. The most significant policy framework in Pakistan which incorporates SEA as a significant tool for addressing the environmental concerns is the Government's Mid Term Development Framework (MTDF) (2005-2010), which is mandatory to implement under the National Environmental Policy.[84] Besides, in the National Environmental Policy 2005, it states that SEA would be promoted as a tool for integrating environment into decision-making.[85]

The World Conservation Union (IUCN-Pakistan) established its Environment Assessment Services (EAS) Unit in 1994, which aims at, implementing Pakistan National Conservation Strategy through strengthening and supporting institutions involved in prevention and abatement of pollution and control of environmental degradation. Since its creation, EAS has undertaken a wide range of activities, including SEA of key policies, plans and programmes; and conducting training workshops on various environmental issues.[86]

In a workshop held in December 2004, it was recommended that SEA process should be integrated in the planning process of the country, particularly for urban development, industrial clusters, and mega projects. It should also be made part of the overall policy making process. The workshop focused on SEA as a tool for integrated policy-planning concept, which evaluates the environmental impacts of a policy, plan or programme and its alternatives. The workshop quoted the United Nations Environment Programme (UNEP) guidelines that SEA procedures includes screening, scoping, information collection, identification and comparison of alternatives and impact analysis, determination of impact significance, identification of mitigation measures, reporting, review of quality, decision making and monitoring. Such SEA procedure was being followed to review the MTDF (2005-2010).[87]

One of the goals of MTDF is to ensure environmental sustainability to span the green environment (i.e. forestry and watershed management, biodiversity, range management, desertification and marine pollution and brown environment (i.e. water, air pollution, solid wastes, hazardous wastes and noise pollution)). To achieve this, the MTDF

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[84] Referenced to the "State of Environmental Report 2005 (Draft)" under Part 2 Overview of Major Environmental Developments and Trends, http://www.environment.gov.pk/pub-pdf/StateER2005/part2.pdf, page 38, published in the web site of Pakistan Environmental Protection Agency

[85] Extracted from "National Environmental Policy 2005" by Government of Pakistan, Ministry of Environment, http://www.environment.gov.pk/nep/policy.pdf, page 18

[86] Referenced to the web site of the World Conservation Union (IUCN-Pakistan), http://www.iucn.org/places/pakistan/eas.htm

[87] Referenced to the "Workshop Proceedings – Capacity Building Workshop on Environmental Impact Assessment – Tool to achieve sustainability" organized by Sub-programme 'Pollution Control' Unit NEAP Support Programme in collaboration with Pakistan Environmental Programme (Pak-EPA Component), 2004, http://www.environment.gov.pk/WorkShop/Report-%20Capacity%20Building%20Workshop-Rev01.pdf, pages v, 22, 27

strategy for environmental conservation, management and use is based on a three-pronged approach:

- Equitable sharing of benefits of environmental management
- Increase community management of national resources
- Integration of environmental issues into socio-economic development planning to achieve sustainable development

Accordingly, an Action Plan covering the brown environment (water, air pollution, solid wastes, hazardous wastes and noise pollution) and the green environment (forestry and watershed management, biodiversity, range management, desertification and marine pollution) will be implemented during the MTDF. For sustainable development, environmental assessments and accounting and information management tools would be incorporated in the decision-making processes. Public sector will lead the way in application of environmental criteria. A particular focus would be energy conservation and increasing energy generation through renewable forms of energy. Emphasis would also be placed on human resource development for incorporating environmental dimensions in development planning, environmental education and awareness and environmental research.[88]

Pakistan Deep Water Container Port[89]

Water Reservoiur [90]

[88] Extracted from the "MTDF 2005-2010 – An overview", http://www.pakistan.gov.pk/ministries/planninganddevelopment-ministry/mtdf/Foreword,%20Preface%20and%20President%20Message/Overview.pdf, pages 15-16

[89] Source: http://www.kpt.gov.pk/Projects/Proj.html

[90] Source: http://anesthesia.afic.gov.pk/photogallery/pages/Water%20Reservoir.html

7.3 Environmental Evaluation/SEA on Water Resources Management in Pakistan

SEA is in formative stage in Pakistan. The concept of SEA is on the threshold of adoption for the overall policy making process, which evaluates the environmental impacts of a policy, plan or programme and its alternatives. In the National Environmental Policy 2005, it states that SEA would be promoted as a tool for integrating environment into decision-making.

In the action plan covering the environment implemented during the MTDF (2005-2010) under the National Environmental Policy, environmental assessments and accounting, and information management tools would be incorporated in the decision-making processes for sustainable development. Public sector will lead the way in application of environmental criteria. In particular, under the National Environmental Policy 2005, concerns have been put on how to provide sustainable access to safe water supply and effectively manage and conserve the country's water resources.

A summary table for the water resources management policies and Actions and SEA status in Pakistan is presented in **Exhibit PK-1:**

Exhibit PK-1 Summary of Water Resources Management (WRM) Policies and Actions and SEA status in Pakistan	
(a) WRM Policies and Actions	
WRM Policies and Actions	Policies ● National Environment Policy 2005 Actions ● Clean Drinking Water Programme ● Pakistan Wetlands Programme (PWP)
Guidance/Legislations in WRM	N/A
(b) Environmental Evaluations / SEA Status in WRM Policies and Actions	
Type of Assessment	SEA
Requirement Mechanisms	Administrative
Legislation for Environmental Evaluation / SEA	National Environmental Policy 2005
Applications	Policies, Plans and Programmes

7.4 Analysis and Conclusions

WRM Policies

In Pakistan, the National Environment Policy provides an overarching framework for addressing the environmental issues facing the pollution of fresh water bodies and coastal waters. It aims to protect, conserve and restore the environment in order to improve the quality of life of the citizens through sustainable development. In order to provide sustainable access to safe water supply and effectively manage and conserve the country's water resources, the government focuses on legislation, advanced technology development, public participation and so on. Examples of actions and programmes mentioned in NEAP include Clean Drinking Water for All and Pakistan Wetlands Programme (PWP).

Compared to Pakistan, Hong Kong's two main sources of water are from rainfall from natural catchment and supply from Guangdong. It is Water Supplies Department's (WSD) scope of work to cover the whole process from the collection of natural yield from rainfall, the reception of raw water from Guangdong to the provision of a supply with a quality of accepted international standards to the users' taps. WSD also supplies sea water for flushing purposes to over 80% of the population. For protection against flooding, sewage collection, treatment and disposal, it is under Drainage Services Department's (DSD) jurisdiction.

For the sustainable development of Hong Kong, WSD has initiated a ***Total Water Management programme*** comprising key elements of new water resources, water reclamation, water conservation and water resources protection and management was initiated for better utilization of the different water resources.

EE/SEA

Regarding the SEA/EE system in Pakistan, it is still in its formative stage. The concept of SEA is on the threshold of adoption for the overall policy making process, which evaluates the environmental impacts of a policy, plan or programme and its alternatives. Also, for the Government's Mid Term Development Framework (MTDF) (2005-2010) under the National Environmental Policy, it is the most significant policy framework in Pakistan which incorporates the concept of SEA as a significant tool for addressing the environmental concerns.

While the SEA/EE system in South Africa is under development, there are both statutory and non-statutory systems for PPP projects in Hong Kong. Hong Kong's SEA/EE is under Environmental Protection Department's (EPD) jurisdiction. At present, there are both statutory and administrative systems for PPP projects. While the statutory requirements govern primarily large scale development projects (i.e. over 20 ha of area or population over 100,000), the administrative counterpart has been applied to land use planning, transportation and sectoral PPP.

7.5 Examples of Water Resources Management Policies / Actions or their Environmental Evaluation/SEA

Example PK-1	**National Sanitation Policy**[91]
Description of the Policy	This policy provides a broad framework and policy guidelines to the Federal Government, Provincial Governments, Federally Administrated Territories and the Local Governments, to enhance and support sanitation coverage in the country through formulation of their sanitation strategies, plans and programmes at all respective levels for improving the quality of life of the people of Pakistan and the physical environment necessary for healthy life.
Objectives of the Policy	The objectives of implementing the policy are: ● To ensure an open defecation free environment; the safe disposal of liquid, solid, municipal, industrial and agricultural wastes, and the promotion of health and hygiene practices. ● To link and integrate sanitation programmes with city and regional planning policies, health, environment, housing and education. ● To facilitate access of all citizens to basic level of services in sanitation including the installation of sanitary latrines in each household, in rural and urban areas, schools, bus stations and important public places and also community latrines in density populated areas. ● To promote Community Lead Total Sanitation (CLTS). ● To develop guidelines for the evolution of an effective institutional and financial framework. ● To enhance capacity building of government agencies and other stakeholders at all levels for better sanitation, particularly avoiding incidents of water borne diseases. ● To develop and implement strategies for integrated management of municipal, industrial, hazardous and hospital and clinical wastes of national, provincial and local levels, and ● To meet international/regional obligations effectively in line with national aspirations. ● To change the attitude and behaviour on the use of sanitation. ● To increase mass awareness on sanitation and community mobilisation.
Scenario of sanitation options	The scenario of sanitation options of this policy are: ● In urban areas or high-density rural settlements: flush latrines and/or pour flush latrines in homes (or privately shared) connected to an underground sewage system terminating in a sewage treatment facility. ● In un-served urban areas and low-density rural settlements: ventilated pit privies/pour flush latrines connected to a septic tank linked to a wastewater disposal and/or collection system. ● Integrated solid waste management will be promoted and practised by selection and application of appropriate measures, technologies and management programmes.

[91] Full document can be obtained at http://www.pakistan.gov.pk/divisions/environment-division/media/Sanitation%20Policy.pdf. Paragraphs are extracted from page 5, 8-11, 18.

Example PK-1	**National Sanitation Policy**[91]
	• Governments will promote the principle of 3 R's of waste management (i.e. reduce, reuse, recycle) and encourage waste separation to maximise resource use and conservation. • Minimum sewage treatment facilities will be of biological treatment and retention time will be calculated so that the effluent produced will be in keeping with the National Environmental Quality Standards (NEQS) notified under Pakistan Environmental Protection Act, 1997. The effluent from the low cost treatment plants in the rural areas will be used for agricultural purposes. • Master Plans for treatment of municipal and industrial wastewater in urban and rural areas will be devised and implemented. • Effective waste management system will be established in urban areas/major cities both for municipal and industrial waste water. Industries and factories that generate hazardous and toxic waste should have their own system for treatment of wastes. • Fines will be imposed on citizens, businessmen, factory owners and government institutions for any violation of the laws relating to solid waste management. • Appropriate solid and liquid waste treatment facilities will be made integral part of all development projects. • Disposal of storm water can be combined with sewage disposal provided the effluent can bypass the treatment plants during rains. • The disposal of untreated industrial effluents and municipal sewage into natural water bodies will not be permitted. • Sample collection points will be established in the sewage system and the effluent the tested before the exit of effluent into lakes/rivers/water bodies. Defaulters will be penalised/fined. • Solid waste in large and intermediate cities will be disposed off into properly designed landfill sites. In case of smaller settlements, area specific solutions will be developed in line with the NEQS. • Bio-Gas projects will be introduced to generate energy from the solid wastes.
Target of the Policy	Targets of implementing this policy are • to increase the number of households in Pakistan having access to improved sanitation from 55% to 77.5% and • to increase the number of households in urban areas connected to an underground sewage system from 46% to 73%.