Use of Chemicals in Asia: Environmental Health, Threats and Challenges.

Environmental Justice For Environmental Health

(International Environmental Initiatives For Health Care)

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Public Interest
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Scope of Presentation

- Environment and degradation of environment
- Why we need to Protect environment?
- How to protect environment?
- Use of chemicals and its effects
- Enforcement of environment friendly laws
- Internationally adapted principles
- Ecological Footprints
- Environmental ethics
- Legislation
- Constitutional provisions and environment
- IEE-Initial Impact Assessment
- EIA-Environment Impact Assessment
- EIA in Pakistan.
- The ‘Assessing’ phase of EIA involves
- Impact assessment methods
- The role of EPAs
- All efforts attributed for the saving of Mother EARTH
- Achievements
- Pre-requisites

- USE OF CHEMICALS AND CRITICAL ANALYSIS -
  - Health care & Medical Waste disposal,
  - Chemicals in Food articles,
  - Water Contamination,
  - Freely use of Pesticides,
  - Toys manufacturing,
  - Paints,
  etcetera.
The term "environment" refers to everything that is around us: air, land, water, and atmosphere, places of special importance, plant and animal life that influence human life and the well-being of communities.
Legal Meaning of Environment

• Sub-section (x) of Section-2 Pakistan Environmental Protection Act, 1997 ... “Environment” means;

• (a) air, water and land;
• (b) all layers of the atmosphere;
• (c) all organic and inorganic matter and living organisms;
• (d) the ecosystem and ecological relationships;
• (e) building, structures, roads, facilities and works;
• (f) all social and economic conditions affecting community life; and
• (g) the inter-relationships between any of the factors specified in sub-clauses (a) to (f).
Degradation of Environment

Pollution

• Pollution is a term which means a situation or state of atmosphere, which is unfit or harmful for things.

• Legal meaning of the Pollution under Sub-section (xxxiii) of Section-2 of the Pakistan Environmental Protection Act, 1997:

The contamination of air, land or water by the discharge or emission of effluents or waste or air pollutants or noise or other matter which either directly or indirectly or in combination with other discharges or substances alter unfavorably the chemical, physical, biological, radiational, thermal or radiological, or aesthetic properties of the air, land or water or which may, or is likely to make the air, land or water unclean, noxious or impure or injurious to the health, safety, welfare or property of persons or harmful to biodiversity.
Why do we need to protect Environment?

- Indeed Environment is a life, and the human reliance and dependence on the Environment is very essential.
- As a part of nature human life depends on the uninterrupted functioning of the natural system.
- A healthy lifecycle requires access to clean air and water, safe living areas, sufficient and healthy food.
- And the pollution of air, land and water directly threatening the human lives and natural eco system.
How to protect Environment?
- Pollution free atmosphere -

- Awareness
- Customary traditions
- Social and cultural activities
- Legislation
- Constitutional cover (Fundamental Rights)
- Administrative actions
- Writ of law
- Through the Court of law
- Enforcement of environment friendly laws
- Code of conduct
- Environmental ethics

**Political will**
Enforcement of Environmental Laws

- Principles
- International Conventions
- Constitution of Pakistan, 1973
- Pakistan Environmental Protection Act, 1997
- Initial Environmental Examination and Environmental Impact Assessment Regulations, 2000
- National Environmental Quality Standards, 2001
- Local Government Ordinance, 2001
- Hospital Waste Management Rules, 2005
- National Environment Policy, 2005
- Environmental Friendly Laws.
Constitution of Pakistan, 1973

- **Article-9** ... No person shall be deprived of Life or liberty save, in accordance with law.

- **Article-4 (a)** ... INALIENABLE RIGHT; No action detrimental to the life, liberty, body, reputation or property of any person shall be taken except in accordance with Law;

- **Article-5 (2)** ... Obedience to the Constitution and law is the [inviolable] obligation of every citizen wherever he may be and of every other person for time being within Pakistan.

- The apex Courts observed ... "It encompasses within its ambit, the protection and preservation of Environment, ecological balance free from pollution of air and water, and sanitation without which Life can hardly be enjoyed. And act of omission contrary thereto will be violative to the said Right to Life."

- That, in a welfare state, it is the obligation of the state to ensure the creation and the sustaining of conditions congenial to good health, maintenance and improvement of public health have a rank high as these are indispensable to the very physical existence of the community and on the betterment of there depends the building of the society which the Constitution makes envisaged.
Constitutional Provision And Environment

• **The U. S. Constitution**
The Environment - the physical and cultural conditions under which human live - is not limited to the air, land, and water necessary for our survival. It includes bio-diversity, the wide range of plants and animals needed for a balanced and viable Environment, recreational facilities, natural resources, and historic artifacts.

“We must acknowledge that uncertainty is inherent in managing natural resources, recognize [that] it is usually easier to prevent Environmental damage than to repair it later, and shift the burden of proof away from those advocating protection towards those proposing an action that may be harmful,”

• **The Constitution of India**
Articles 48-A and 51-A (g), were added to Constitution by a constitutional amendment in 1976:

**Article 48-A** ... The State shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country.

**Article 51-A** ... It shall be the duty of each citizen of India --- (g) to protect and improve the natural environment including forests, lakes, rivers, and wild life, and to have compassion for living creatures.
Constitutional Provision And Environment

• **The Constitution of Sri Lanka**
  Article 28 (f) ... It shall be the duty of every citizen to protect nature and conserve its riches.

• **The Constitution of Thailand** (1997)
  Section 67 ... Acknowledges the "Right of a person to share with the State and communities in the preservation and exploitation of natural resources and biological diversity and in the protection, promotion and preservation of the quality of the Environment ... "

• **The Constitution of Albania** (1998)
  Every one has the right to be informed about the status of the Environment and its protection.

• **The Constitution of Mali** (1992)
  Every person has a right to a healthy environment. The protection and defence of the environment and the promotion of the quality of life are a duty for all and for the State.
Constitutional Provision And Environment

• **The Constitution of Spain** (1978)
  Right to the environment with a title of Basic Rights and Duties
  **Article 45** ... 1. Everyone shall have the right to enjoy an environment suitable for personal development and the duty to preserve it. 2. The public authorities, relying on the necessary public solidarity, shall ensure that all natural resources are used rationally, with a view to safeguarding and improving the quality of life and protecting and restoring the environment. 3. Anyone who infringes the above provisions shall be liable to criminal or, where applicable, administrative penalties as prescribed by law and shall be required to make good any damage caused.

• Similar provisions exist in the Constitution of **Congo** (1992) and the Constitution of **Vanuatu** (1980). And **Nepal, Indonesia, Papua New Guinea** also has constitutional commitments to protect the Environment and proclaiming that natural resources are to be used in trust for future generations.
Pakistan Environmental Protection Act, 1997

• The Hospital Waste Incineration and burning of Solid Waste has been severely affected the human health and the pristine Environment of the mother Earth which upsets the natural ecosystem and adversely effects the Environment, respectively defined under sub-sections of Section-2

• Sub-section (xix) ... “hazardous waste”, mean waste which is or which contains a hazardous substance or which may be prescribed as hazardous waste and includes hospital waste and nuclear waste.

• Sub-section (xxi) ... “hospital waste” includes waste medical supplies and materials of all kinds, and waste blood, tissue, organs, and other parts of the human and animal bodies, from hospitals, clinics and laboratories.

• Sub-section (vii) ... “ecosystem” means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

• Sub-section (i) ... “adverse environmental effect” means impairment of, or damage to, the environment and includes;

  • (a) impairment of, or damage to human health and safety or to biodiversity or property,
  • (b) pollution; and,
  • (c) any adverse environmental effect as may be specified in the regulations.
What Is Environment Impact Assessment

- EIA is a **planning process** used to help ensure that environmental matters are taken into account early in the project planning process, along with the more traditional technical and economic considerations.

- The EIA process identifies, predicts, interprets and communicates information about impacts of a proposed project on the biophysical environment (air, water, land, plants and animals) as well as on the social and economic environment of the people to be affected.

- EIA seeks ways to maximize the societal benefits of a project, and avoids or reduces unacceptable impacts.
WHY DO EIA

- Put environment into decision making process.
- Evaluate environmental consequences of a proposed activity.
- Seek development approval.
- Support sustainable development through protection of natural resources.
- A useful process for regulator, developer, planner, politician and public.
Impact Assessment Methods

- Professional/Expert Opinion
- Consultations/Questionnaires/Case studies
- Checklists
- Matrices
- Networks
- Overlays and geographical
- Geographical information systems (GIS-mapping)
- Carrying Capacity/Threshold Analysis
- Modeling
The ‘Assessing’ phase of EIA involves:

- Identification and detailed analysis of potential impacts and alternatives including the alternative of ‘No activity’.
- Defining short-term / long term benefits and/or implications of the project.
- Determining significance of impacts or acceptability.
THREE BASIC DEFINITIONS

- Environment and its components:
  - Physical: geology, topography, soils, water resources, air quality, etc
  - Biological: fauna, flora, biodiversity, and ecosystems
  - Social: including culture, religion, and local values
  - Economic

- Impacts
  - Deviations from a baseline situation (Adverse/ Beneficial, Cumulative, direct, indirect, short, medium, long, irreversible, reversible)

- Assessment
  - Identifying/ predicting impacts
  - Quantifying them
  - Assessing their significance
  - Monitoring
  - Auditing
EIA IN PAKISTAN

- PEPO, 1983 Section 8 states that every proponent of a project the construction or completion of which is likely to adversely affect the environment shall file with the Agency, at the time of planning the project.

- The EIA process was strengthened under Section 12 of PEPA, 1997.

- Guidelines were prepared with a thorough consultative process with the stakeholders 1997.

- Clause 12 of the Act became operational under IEE/EIA Regulations, 2000
The use of Chemicals and its effects

- Health care (Chlorinated materials like PVC-polyvinylchloride)
- Chemicals in Food articles (Preservation - to early ripe Fruits (Courbet - Zinc art ))
- Chemicals used in different household items
- Pesticides (unnecessarily free use)
- Toys (made from acidic materials)
- Paints (Lead)
- Polythin begs/shopping begs
- etcetera
Chemicals In Food Articles

- Chemicals used in Food articles (fruits and vegetables) for Preservation purposes
- Zinc-art used in Dates
- Courbet used in Fruits - to early ripe especially for Mangos
- Korean stored Kim chi without using any food preservatives or Chemical
National Environmental Quality Standards

• The Hospital Waste Incineration Plants are not listed with NEQS yet!

• That, the level of smoke emission/air pollutant discharge from the Hospital waste Incineration Plants is in general excess of the ‘NEQS-National Environmental Quality Standards’ established under sub-clause (i) of clause (g) of sub-section (i) of Section-6 of the “Pakistan Environmental Protection Act, 1997”.

• That, by the act of the Government Authorities it is proved that such contravention has been committed with the consent or connivance of, or is attributed to negligence on their part being installed Hospital Waste Incineration Plants without completing the mandatory provision of ‘Initial Environmental Examination’ and ‘Environmental Impact Assessment’ under Section-12 of the “Pakistan Environmental Protection Act, 1997”.
That, due to gross negligence of the Healthcare industry the actual state of worst Hospital Waste Management seems to be out side their facilities, where the people used to segregate the ‘Hospital Waste’ themselves and collect used disposable syringes & drip sets, for re-fill & re-sale purposes, and no one dare to interfere or intrepid this common practice. This stigma disorders the behavior of the society, which is consequential source for the spread of infectious diseases this open thereat to the public health at large is violative to the such provisions of the Ordinance:

Clause-76 (1) of Sixth Schedule under Section-195 ... The concerned Local Government shall adopt measures to prevent infections diseases and to restrain infection within its local area.

Clause-61 of Fourth Schedule under Section-141, 144 & 145 ... Damaging or polluting environment, inside or outside private or public premises, in a manner to endanger public health.
Hospital Waste Pollutants categorically contains:

- Infectious waste,
- Pathological waste,
- Sharp,
- Mercury
- Pharmaceutical waste,
- Genotoxic waste,
- Chemical waste,
- Radioactive waste,
- Human limbs
- Food waste,
- Paper & Card board waste,
- Packaging,
- Aerosols,
- Polythin begs/shopping begs.
Hospital Waste and its Incineration

- The Hospital Waste incineration; improper use of technology can actually produce a result in terms of Environmental or public health-harm, that is worse than the condition was employed to correct.

- This is a basic approach in medicine. Multiple pathways are proposed for treatment of disease-treat the whole person, not just the diseased part. When health care dose harm; it raised many questions because incineration is often erroneously listed as disposable technology.

- It is a great responsibility of the Health care providers in order to fulfill/maintain the Medical Ethic to “first do no harm”, the Health care industry has moral binding to manage waste in ways, that protect the Public Health and pristine Environment of mother Earth.
Hospital Waste Management
Hospital Waste and its Incineration

• Our Government Authorities are really unaware that, the Incineration has been understood as an ultimate way of disposing off Hospital Waste.

• And two Incineration Plants were imported in the year 1995, from Consumate-USA, which costs ‘30’ million rupees, it firstly installed in the year 1998, at SITE-Sindh Industrial Trading Estate, Karachi, with the burning capacity of ‘1000 KG’ per hour, and those were being manually operated without ‘Convear’ by M/s. Abasen Company (Private) Limited.

• In the city of Karachi Metropolis ‘612’ government and private run hospitals; Generates about 25-30 tons Hospital Waste per day; Out of which 3-4 tons collected by SWM-wing, CDGK from 135-140 hospitals; against the charges categorized A-E of Rs.110-3500 monthly from each hospital.

• In that way the health care providers work to “clean up their own house”, and the custodian of ‘Civil Rights’ of the citizens; the ‘City District Government of Karachi’, increasing the pollution level of the city of Karachi Metropolis and contribute the diseases against some pecuniary benefits. It is very amazing to note that neighboring India has started to shut down the Incinerators a year back of our installation in 1997.
World Health Care Scenario

- In 1994 the ‘U. S. Environmental Protection Agency’ drafted Dioxin Re-assessment identified MWI as the single largest source of “2,3,7,8-tetrachlorodibenzo-p-dioxin”, or TCDD and dioxin-like-substances. It further eliminate that the Dioxin may cause a life time Cancer risk that is “1000” times higher than the ‘acceptable risk level’.

- The Federal Rules of USA have resulted in the closing of medical Waste incinerators.

- **Kyoto Protocol**, 1997 CDM - Clean Development Mechanism


- India has started to shut down the Incinerators a year back of our installation in 1997.

- In the Philippines it leads to a total ban on the use of the incineration for any waste treatment. In Bhutan, Brazil, Canada, Chili, Columbia, England, India, Iran, Ireland, Japan, Korea, Nepal, Panama, Portugal, Saudi Arabia, Slovenia, Sweden, Taiwan and Tanzania, it has meant of steady decline a number of incinerations in use and a significant rise in the use of non-burn technologies, due to severally effects of Dioxin on human health; birth defects, reduced fertility, disorder metabolic function of the body, immune system disorders and many forms of Cancer or linked to Dioxin exposure.
World Health Organization & Hospital Waste Incinerators

- The **World Health Organization** guide on safe management of ‘Health Care Wastes’ provide specification for non-burn technologies.

- The incineration of the ‘Hospital Waste’ at health care facilities is being entirely mismanaged which not only affected the physical health but it also disorder the social well being of the Citizens.

- The **World Health Organization** broadly defined the health; health includes physical, mental and social well being and not merely the absence of disease or infirmity.
Right to Life & Hospital Waste Incinerators

• The incinerators are serious threat for continues risk to the Environmental Health at large, which is a clear violation of the law of land, because such provisions protect the ‘Right to Life’ as Fundamental Right guaranteed by the Constitution of Pakistan, 1973.

• The apex Courts observed ... “It encompasses within its ambit, the protection and preservation of Environment, ecological balance free from pollution of air and water, and sanitation without which Life can hardly be enjoyed. And act of omission contrary thereto will be violative to the said Right to Life.” And for the reason apex Courts of the deferent countries entertain ‘Environmental Litigations’ on priority basis.

• The Hospital Waste pollutants are the consequential source for ‘Global Warming’ and ‘Climate Change’ which adversely affects the Environmental Health, bio-diversity and ecological balance of mother Earth.
Worldwide Judicially Accepted Principles

Ecological Footprints

- The **Precautionary Principle** which means to ensure that unless an activity is proved to be presumed to the Environmentally harmful for the present and future generations of human being.

- The **Polluter Pays Principle** which means who so ever pollutes has to pay, for the protection of the Environment and other habitants, the conservation of nature and natural resources for the survival of the present and future generations of human being.

- The **World Charter of Nature** of the ‘Rio Declaration’, 1992, Schedule to the “Pakistan Environmental Protection Act, 1997”, under Section 31, drafted Environment concern at the priority.

- **Principle-15** ... In order to protect the Environment, the Precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage; lack of full scientific certainty shall not be used as a reason for proposing cost effective measures to prevent Environment degradation.
The Environment & Hospital Waste Incineration Plants

- The Hospital Waste incineration and burning of Sold Waste are nevertheless leading source of hazardous Air Pollutants such as Carbon Dioxide, Particulates, Sulphur, Nitrous Oxide, Hydrochloric Acid, Catalysts and specially Dioxin and Mercury;

- Once Dioxin is emitted into the air from INCINERATORS and other sources, rain, snow and dust can carry it to the surface of the earth and where it can enter the food chain.

- The estimated over 90% of our exposure is through food, with major source including meat, dairy products, fish and breast milk. Dermal, oral and inhalation routes of exposures can also be important for people living near Dioxin source.

- The primary source of Dioxins from the health care sector has historically been waste Incineration. Chlorine containing products burned in Incinerators, including medical devices and products, provide the Chlorine necessary for Dioxin formation. Dioxin compounds can also be formed during the manufacture of Chlorinated materials like PVC-polyvinylchloride.
Health Care Without Harm

- It is a great responsibility of the Health care providers in order to maintain the Medical Ethic to first do no harm, the Health care industry has moral binding to manage waste in ways, that protect the Public Health and pristine Environment of mother Earth, so every health care service must be start from the mile stone of Health Care Without Harm.

- The research study signifies by The Network, 2003 Injection Practices in Pakistan is yearly 8.5% per person. And ‘Injection Practices in the developing world’ by SIGN-Safe Injection Global Network, under sub-ordination of WHO, in Pakistan 95% injections at the initial diagnostic stages are unnecessary and 80% of them caused to spread Hepatitis-B & C and more over HIV-aids.

- UNICEF has just announced that the number of children under the age of five dying each day from preventable diseases has dropped significantly: from 24,000 to 22,000.
Health Care Without Harm

According to the **United Nations** Programme on HIV/AIDS (UNAIDS) ... “The most direct mode is HIV transmission through needles shared by injecting drug users, the sharing or use of contaminated needles carries a very high risk of HIV infection and it spread like wildfire. More and more countries are reporting cases of injecting drug use from 80 countries in 1992 to 136 in 2002 of these 136 countries, 114 of them have reported HIV cases as a result of injecting drug use. Asia is undoubtedly the region with the largest number of HIV/AIDS cases associated with injecting drug use by worst Hospital Waste Management System.”

The misuse of discarded syringes as well as repackaging and re-sale is observed as a common practice countrywide and its also consequential source for spread of diseases such as Hepatitis, HIV-aids and other infectious diseases.

According to **WHO**, every year a large number of population being infected by the caring of infectious diseases like Hepatitis-B in 82,000,00 persons, Hepatitis-C in 23,000,00 and HIV-aids in 1,000,00. The most direct mode is Hepatitis & HIV transmission through needles shared by injecting drug users.
Our Approach & Hospital Waste Incineration Plants

• We think about things not as they are but as we feel.

• The world health care scenario has been entirely changed but we’re in Pakistan not still using the same incineration technology for Hospital Waste disposal, but it’s very amazing that we had started to install the Incineration Plants on the time when it went to shut down around the world even in our neighboring India it was completely closed in 1997.

• The example of Murphy’s Law (Any thing that can go wrong, will go wrong at the worst possible) is correctly applied here by the irresponsible attitude and entirely mismanagement of the Government authorities; which is self created continues threat to the Environmental health of the countrymen against spending of a huge public amount of ‘30 Million Rupees’, which is contravene to the ‘Right to Life’ provided under the “Constitution of Pakistan, 1973”

• SCIENTIFIC management of hospital waste seems a far cry as the Punjab Health Department has failed to install 11 out of 19 incinerators sponsored by the federal government even after a delay of two years. (Reported by The News, dated November 20, 2009)
Incineration Plants at Karachi
Achievements

- **CONTRIBUTED**


In support to finalized the resolution of the UN General Assembly ((A/HRC/18/31, Eighteenth Session, Agenda Item 3) "Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development" dated 04 July 2011).
Goal of Achievements

• **Nature is a volume of which God is the Author.** Image of the Divine is also reflected from the beauty of nature.

• The fundamental motivation for science and scientific method is, *how we justify that we’re the men, we’re the best.* Because Environment concern with and for the benefit of mankind, the best creation of Almighty Allah "verily we created man in best form." and "You could never find any defect in the state of Rahman" (55 al-Rahman)

• And by **Plato** (Sucrets) philosophically "**Man is the measure of every thing**" *(The Democracy, Aristotle)*

• **Charles Fried** has attempted to argue that the role of Lawyers can usefully be analogized to that of a ‘Friend of the Society’, similar favoring behavior is also permissible for Lawyers.
Questions ....

thank you
For Environmental Legal Assistance

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