A Retrospective and Prospective Overview of the Developmental Trends of Environmental Laws in Pakistan

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ABSTRACT

This research paper is a prospective and retrospective view of the many changes in environmental law dynamics that have occurred in the country of Pakistan over the years. It will take a unique perspective of qualitative methods and attempt to look at the core reasons why the current industrial infrastructure is not conducive for a change towards sustainability. The paper shall put forward a questionnaire that will judge the exact amount of disconnect between the government and the public regarding core environmental issues that Pakistan faces on a daily basis. It will try to debunk the prevalent notion in the small to medium enterprises which is that moving towards sustainability would mean a reduction in production performance and revenue. The laws and their imposition methods shall also be discussed in light of the current affairs of major industrial cities. No natural habitat is safe from the unsustainable practices of the country and it has caused irreparable damage to both land and water bodies of the country. The need to be sustainable is now more present than ever, as Pakistan wants to project a healthy global image to attract investors and businesses into its growing economy. Furthermore health and environmental campaigns also need to gain traction in order to attract more tourism thus in accordance more revenue into the country. This report will act as a fact finding effort from the grass root levels of the industry and will qualitatively explain how much work needs to be done in this regard.

Keywords: Sustainability, Pakistan Small to Medium Enterprises, Law Enforcement, Global Statistics

I. BACKGROUND

A retrospective note on the history of environmental laws of Pakistan is an interesting topic for research in the modern era. Amongst talks of long term sustainability and leaving the world a better place for the future generation everyone feels that this is something that is imperative and needs to be done. However in most of the developing parts of the world this is not entirely possible. So, in order to make significant impacts in this regard these countries have to move towards educating the masses to improve the situation in the future. For a country like Pakistan the industrial prowess has produced much advancement and has created numerous jobs for the overall development of the communities. However this means that they had to sacrifice the overall sanctity of their ecosystems to achieve this. Currently major Pakistan cities are at the forefront of the lists on most polluted cities of the world. The purpose of this paper would be to look at the trends of how environmental laws and industrial practices have changed with respect to Pakistan, especially after this newly added pressure of producing sustainable goods in order to gain access of high quality trade routes of the world.

II. RATIONALE OF RESEARCH

This specific research shall be based upon a survey model and will collect data for its conclusion through a properly designed questionnaire. These questions and their answers shall be discussed in a further topic of this paper. It is now the optimum time for this research as Pakistan is currently in the world spotlight as having one of the worst Air Quality Indexes (AQI) in the world and some of the major problems of land waste treatment in the Asia. No natural habitat is safe from the unsustainable practices of the country and it has caused irreparable damage to both land and water bodies of the country. The need to be sustainable is now more present than ever, as Pakistan wants to project a healthy global image to attract investors and businesses into its growing economy. Furthermore health and environmental campaigns also need to gain traction in order to attract more tourism thus in accordance more revenue into the country. This report will act as a fact finding effort from the grass
III. LITERATURE REVIEW

The focus on environmental welfare has increased exponentially over the years and now in the 21st century it is a glaring issue that needs to be solved. Ever since the Industrial Revolution the world as a whole has seen an immense increase in production volumes and quality. Automation has revolutionized the industry and has allowed the human race to achieve fully autonomous production solutions. The discovery of power through fossil fuels has led to a global supply of electricity which has ushered in the Industrial age. However with all these benefits and improvements in quality of lives came at a cost which is the overall degradation of the environment.

This paper shall focus on the country of Pakistan and how it has developed its environmental protection policy over the years to stay relevant in the global market of today. Sustainable production of goods and materials is now a necessary prerequisite in order to preserve our environment for the future generations of the country. A problem of this magnitude is deemed to be even more harmful for a country like Pakistan which is still in its developing phase and has a genuine population control problem. Recent environmental charters such as the Gulf Summit and the Paris Agreement have categorically stated the overwhelming need to phase out unsustainable practices of production and power dissipation and to move towards a more sustainable world order. The overall goal of these charters as signed by numerous countries of the world is to phase out the use of fossil fuels by the year 2050 and use scientific up gradations to find alternative, renewable energy sources.

The official start of the move towards environmental sustainability can be dated back to 1972 with the Stockholm Declaration. This specific ordinance outlined the potential hazards of operating the industries in this manner and how it can cause irreparable damage to the climate and environment of the world. This declaration was what pushed numerous countries of the world to make a proper system to induce environmental protection into their administrative cabinets. Pakistan was also one of those countries as it established the Federal Environment Ministry in 1975. The main objective of this administrative body was to put in provincial environmental protection laws to standardize the industries of Pakistan. Pakistan being mostly an agricultural country with almost 60% of its GDP being directly related to the products produced via agricultural practices meant that it’s carbon footprint was still irrelevant on a global scale. But as production processes improved and revolutions in industry came Pakistan too became a global entity for industrial production by the 21st century and thus needed to upgrade its environmental protection practices in order to become sustainable for their ever increasing population.

IV. IMPACT OF POLLUTION ON PAKISTAN

There are many adverse effects that the environment had to face due to the unsustainable practices of the heavy mechanical industry of Pakistan. One of the main causes of land and air pollution has been directly related to the mass urbanization of many cities of Pakistan. The loss of forestry and natural ecosystems in order to produce roads and infrastructure for production facilities, mines and power generation have done irreparable damage to the overall quality of living in the country. Many large scale industrial cities of Pakistan have one of the worst air quality indexes in the world and one of its major causes is the use of unsustainable vehicles and production methods. Moreover the current practices have also created basis issues of lack of hygiene, water and land pollution, chronic shortages of services and loss of open spaces. The basic right to clean water has been constantly neglected in Pakistan as many rural areas are faced with water shortages and basic health crisis.

Pakistan currently has one of the worst child healthcare facilities in the world. More than 400000 children die in their infancy due to inadequate supply of clean air and water. Chronic diseases such as pneumonia and asthma are prevalent in many urban locations of Pakistan due to constant neglect of global environmental standards. According to a UNIDO report about 200000 children in Pakistan die every year due to various water-borne diseases, one of the main causes of this dilemma has been tabulated in the reports of Pakistan Council of Research in Water Resources (PCRWR). The modern practices being used to increase agricultural production of the land in Pakistan has caused the drainage water supply of Pakistan to be contaminated. The study shows high levels of arsenic, fluorides and nitrates present in the drinking water of major urban cities in Punjab and Sindh which can be directly co related to the prevalence of bacteria related diseases. This report shall provide a retrospective study on the environmental laws of Pakistan and how they have developed over the years to cater to the current needs of the country.

V. HISTORY OF ENVIRONMENTAL LAWS IN PAKISTAN

Although government administrative infrastructure of the protection of environmental laws has been established in Pakistan since 1975, its main policy charters did not come into fruition until the proper Pakistan Environmental Protection Act (PEPA) 1997. This charter outlines an act to Act to provide for the protection, conservation, rehabilitation and improvement of the environment, for the prevention and control of pollution, and promotion of sustainable development. This act has provided various sections of control in order to provide for a universal environmental protection policy for the future generations of Pakistan. It has chapters related to emissions, ecosystem, discharge, and air and water pollution. These chapters outline certain guidelines for industries as well as households to incorporate certain preventive practices into their daily working routines. The charter also provides a clear distinction of harmful practices and substances that are currently relevant to the industrial and agricultural infrastructure of Pakistan and how sanctions will be placed on their production. Moreover the provincial ministers of environmental protection have also drafted laws relevant to their own localities to improve the overall living conditions of Pakistan (Kemkar, 2006).
The trends of environmental protection practices in Pakistan show a multitude of educational and awareness campaigns being set up by government organizations. Recent examples of these include the clean water campaign, dengue protection campaign and polio eradication efforts. The PEPF used to be under the direct supervision of the chief executive of the country but has since then separated into a proper ministry of environmental affairs as the prime minister has many other duties to cater to. Due to the recent invocation of focus on environmental laws there is little to no coordination between the federal, provincial and local bodies of environmental protection all across Pakistan. This impasse has led to many issues at the state and administrative level and has created an aura of corruption which already haunts many administrative departments of the country (Mahmood, 2012).

Over the years there have been certain amendments and additions made to the Pakistan Environment Protection Act 1997 with regards to the developments in the industry of each individual sector. Due to privatization of many local production houses of Pakistan global standards of environment protect would have to be enforced to ensure sustainable growth of the Pakistani industries is ensured. Currently worldwide trade sanctions have taken into account the overall sustainability of production of any value added commodity. Many Pakistan produced local products have been rejected on the grounds that they were not made through properly designated sustainable materials and practices. Major trading routes of the Commonwealth, EU and Middle East not have requirements of sustainability as well as quality of a product to ensure business in the long term will not damage the environment (Akhtar, 2013). Recent arguments against environmental protecting revolve around the notion that economic and environmental growth cannot occur at the same time. The critics argue that enforcing environmental laws will cripple the energy and production facilities of Pakistan. This however is not the case as numerous practices have proven that both programs can work in unison and in a highly sustainable manner. Proper protection of the environment requires certain preventive practices that allow sustainable environmental growth. Regulating the use of pesticides and eliminating wastage of energy are sustainable methods of protecting the environment. Furthermore it is important to realize that current fossil fuel based energy production methods are not only harmful for the environment but are also non-renewable. So in order to pivot towards a more sustainable future it is important to discover and adopt renewable energy production practices such as hydel and wind power plants. Currently Pakistan has three major dams which are able to produce about 28% of the total energy requirements. In contrast about 60% of the energy shortfall is generated through fossil fuels such as coal, oil and natural gas (Naureen, 2009). This situation needs to be rectified through proper investment in renewable energy sources, doing this is not only sustainable for the environment but will also improve economic growth by introducing more efficient power generation methods.

Despite some shortcomings, the updated legislative framework is based on four essential principles: decentralization of environmental management in the form of delegation of monitoring and enforcement powers at the provincial level; prevention in the form of specific regulations for EIA to govern new economic activities; ‘polluters payment’ in the form of a pollution charge; and environmental improvement plans to be negotiated with major polluters (Tahir, 2013).

VI. INDUSTRY WISE SEGREGATION OF SUSTAINABILITY

In recent government procedures there have been some research regarding the presence of some basic facilities in the industrial plants of Sindh and Punjab. The main treatment plants that can be setup for international standards include water and air treatment. There are several studies that have been documented in government websites regarding these and they shall be discussed in this section.

A. Water Treatment

This process entails the post processing of any liquid waste that a production facility produces so that it does not harm the surface running or ground water of a locality. The problem of clean water has been a major issue of Pakistan and many deaths have occurred due to water borne diseases. Moreover much of the animal shelters at the Indian Ocean and the mangroves in southern Sindh have been affected by water pollution and the main cause of that has been industrial waste and over use of pesticides.

The data given below shows that unfortunate picture of how only about 10% of these industries have proper standardized water treatment plants in their facilities. There is much improvement to be had in this regard. Even though the legislature clearly states the proper composition of allowed waste water it is impossible to expect the locals to adhere to these policies without certain financial help. The government needs to invest in the proper categorization of these industries and educate them according to the need of this up gradation (Usman, 2017).

The below shown data gives the total facilities in Sindh that have proper or partial water treatment facilities.

![Water Treatment Data from epasindh Website](Fig_1)

**Fig 1: Water Treatment Data from epasindh Website**

B. Ban on Plastic Products

Government policies on environment have also included a lockdown on many plastic products currently prevalent in the market. The below shown government ordinance gives notice of how there is a categorical ban that is to be placed on all plastic made shopping bags as they are non-
biodegradable and a major cause of land pollution (Khan, 2001).

It is to be noted however that this is a provincial ordinance and thus individual provincial government and administrative bodies of Sindh shall be responsible for its enforcement. In this regard there should be some overall state level efforts from the federal government to support the major environmental issues of each individual government. The modern university education also needs to induce practices of sustainable business development to ensure that long term planning of agendas can be made possible. More ordinances such as the ban on plastic products are needed to cater for the current overall negligence of the production facilities. It is upon the consumers to research whether or not the product available at the market was made through sustainable means. If that is not the case alternatives should be discovered so that a certain amount of financial pressure can be imposed on these companies.

VII. POTENTIAL IMPROVEMENTS

From an administrative standpoint there are many improvements that can be added in the system to better introduce sustainability into the industrial practices of Pakistan. Historically there has been a clear distinction between federal and provincial laws related to imposition of environmental laws and clauses. It is thus recommended to have a core policy drafted by a central environmental committee of experts through which each industry can be judged. However even before that it is important to collect data regarding the current situation that prevails in Pakistan. There is currently no proper metric with which to judge whether a production facility in Pakistan is based upon the global environmental laws or not, proper categorization of industries in this regard is important before any regulatory actions can be taken. Currently PEPA and other provincial organizations are drafting protocols and rulings for certain industry but there is a need to centrally control the implementation of these clauses.

The figure above shows the current state of Pakistan relative to other Asian countries as far as the current state of pollution is concerned (Shahbaz, 2012). Pakistan is currently the second most polluted country in the world according to its air and land quality and this image is very damaging to the overall growth of businesses in the country. Foreign investments and tourism is also highly affected by this situation and there is a general mistrust of the commodities produced in Pakistan. So in order to generate more revenue we need to make our industrial production techniques more sustainable (Jabeen, 2015).

The legal and institutional methods of improving the environmental situation will remain moot as long as there no proper method to monitor and enforce the rules. More than 80% of our entire industry consists of small to medium industrial enterprises which have little to no knowledge of the global environmental laws. Furthermore there are no sensors in strategic places to properly quantify the amount of pollution produced by an industrial process. So first and foremost, education is the key to improving the current state of the country. A higher quantity of trained manpower and proper technical expertise is required to help revolutionize the small scale industry of Pakistan. The regulatory authorities in the matters of environment have to monitor more than 80000 to 120000 industrial units all across Pakistan, in order for them to do their job properly there have to be certain technical resources that have to be provided by the government so that the committee can carry out its responsibilities properly (Naeem, 2009).

There are some areas in which existing laws and regulations are either non-existent or inadequate. Some of these areas are:

- Promotion of cleaner production activities through negotiated environmental improvement plans and mandatory audits; waste recycling and waste exchange programs
- Banning of certain chemicals, products and management practices
- Imposition of fees and penalties

World’s most polluted countries

| Country          | PM2.5 |
|------------------|-------|
| Bangladesh       | 68    |
| Pakistan         | 64    |
| Afghanistan      | 70    |
| Mongolia         | 74    |
| Kuwait           | 80    |
| Nepal            | 81    |
| India            | 82    |
| China            | 82    |
| Vietnam          | 82    |
| Sri Lanka        | 82    |
| Thailand         | 100   |

Source: World Air Quality Report

Fig 2: Global Census of Pollution
● Positive incentives for institutions meeting environmental improvement targets (Nardi, 2008).

VIII. SURVEY AND QUESTIONNAIRE RESULTS

Regarding this issue of environmental stability and the given history Pakistan laws in this matter it was important to perform a proper peer to peer review before making any concrete conclusions. This report will thus be using a questionnaire method to determine where the stance of a normal Pakistani citizen is on this specific issue. Moreover this study will tell whether the inclinations of the public are being properly translated into the legislature set by the ministry of environment. This report shall go over the general responses of each question and make logical conclusions from the results at the end.

A. QUESTION AND GENERAL ANSWERS

1. Do you think Pakistan is doing enough to protect its ecosystem?

People from the urban districts especially replied in the negative. This shows that their daily lives have truly been affected by the adverse conditions of the environment. The major source of concern in multiple answers was the shortage of clean water situation and it should be rectified especially in the urban areas of Sindh namely Karachi and Hyderabad.

2. Do you think it is worth protecting the environment in the long run?

Most people replied in the affirmative to this question with a major upholding argument being that they need the world to be a better place for their children. People want to be assured that the money are investing in their ventures are completed in a sustainable way so that the cycle can continue until better alternatives appear.

3. Are the current government legislative practices enough to ensure a sustainable future for Pakistan?

The answers to this question were extremely dynamic mainly due to the fact that people generally do not have any tangible idea of the current policies that have been introduced by the public offices. This is alarming as there is a very relevant disconnect between the government and the general public regarding this issue. Mostly the measures that are being taken are by the people themselves and since they are not properly coordinated they do not have the same effect.

4. How important and effective have the environmental awareness campaigns been that were funded by the government?

This question was asked mostly in connection to the various cancer awareness and dengue campaigns that were prevalent all throughout 2019. The opinion of most people was positive and they wanted to see more of such campaigns if they want to see some tangible change. However there was no real efforts made directly for the long standing industries of Pakistan and there is a special need to educate them so that they can incorporate sustainable practices into their production methods.

5. Are we tracking, reporting and reducing our energy wastage?

This question got different answers based on the demographic that was chosen. People in lower Sindh mostly answered in the negative due to the bad state of landfills in the areas. Land waste has always been a problem in Pakistan, especially in places that are designated industrial zones. People usually complained about little to no post processing of waste in order to make them less harmful for the environment.

6. What is the state of waste recycling in the production facilities of Pakistan?

Recycling has been a major component of a sustainable future. This not only reduces waste, but also increases the overall efficiency of processes as less heat is emitted into the atmospheres. The current state of recycling is minimal in Pakistan. Most of the people that answered this question could not recall the last time they properly recycled a product and except certain glass and ceramic products. The recycling of plastics is not possible and there is an abundance of them to be found in the general market places of Pakistan. Although certain cities have tried to introduce paper bags which are biodegradable into the system, there is still much to be done before a significant impact can be felt by the environment.

7. How has the air quality of Pakistan progressed over the years?

To this question there was almost a unanimous answer of ‘worse every day’. In the industrial cities of Lahore and Karachi the air quality index has been one of the worst in the world. There are special complaints in the winters as the abundance of vehicles on the road cause staying outside without masks extremely hazardous for the health. The hospitals and medical personnel have also noted an increase of diseases such as bronchitis and lung cancer in these conditions as they are directly related to the air quality of a locality.

8. What is the frequency of green products in the markets of Pakistan?

Special green products are now prevalent in the world as they are recyclable and are made via processes of zero emissions. Currently the only green products in Pakistan are the ones that are produced by multinational run factories or the pure agricultural substances produced by the land of Pakistan. Other than that the locally produced products are not green and can cause harm to the environment in one way or another.

9. Is the present government fit to deal with the environmental problems of today?

This was an especially politically charged question so it incited various answers of a different magnitude. However about 60% of the people believed that the government could do better in this regard. The fact that there is no proper structure or fund available to the proper up gradation of industries shows that it is not really the prime priority of the government. Most people believed that currently the people have too much on their plates to properly give the environment the attention it deserves. However many people
also pointed out the plantation drives and polio campaigns that have started in this country and look towards that for a sign of positivity.

10. What is the level of implementation and monitoring of environmental laws in various estates of Pakistan?

This question was mainly targeted towards the small and medium scale industries of Pakistan and the response was mostly in the negative. The last proper survey of industries was done in 2013 and that is now obsolete. Although various officials from the ministry of environment have shown up no real legislative measures have been taken to rectify the situations of wastage and emissions in the major industries of Pakistan. The agriculture industry however has seen some improvement over the years as there have been several farmer education schemes started up by recent governments in order to increase the overall yield of crops via sustainable methods and reducing the usage of artificial pesticides.

IX. CONCLUSION

The history and progression of the environmental laws of Pakistan is mostly stagnant and has not seen much tangible action to speak of. However the results of the study prove to be much more thought provoking than initially predicted. The young educated generation of Pakistan definitely knows the value in sustainable practices and intends to make a proper effort to improve the situation of Pakistan in this regard.

The main problem still lies in the medium to small scale enterprises of Pakistan. Most people at this level cannot afford the initial budget require to make their businesses more sustainable even if it means saving on money and improving their customer base in the long run. The owners of these shops even charge for biodegradable bags from the customers themselves as they are not able to bear the added expense. This requires active efforts from the government to introduce subsidies for more sustainable practices in the business.

The survey has also showed that there is a need to enforce the rules that have been drafted by PEPA in various meetings. Unless there is a check and balance system in the organizations it will be very hard to control the future emissions and polluters that are causing a lot of damage to people living in these localities. The issue of proper control of these issues needs to start by a proper audit of what an industry needs to be and what it currently is. It is only after this is done can the government decide how much needs to be spent in order to work towards the sustainability standards of the world. The survey carried out through the questionnaire in this department also shows a lack of education that needs to be catered for by government awareness campaigns. The situation of air quality in major cities has been a wakeup call for many and the fact that there are so many water borne diseases prevalent in the rural areas show that the unsustainable activities in the agricultural and industrial departments are directly affecting the habitants of Pakistan (Zhang, 2017).

Some needs to cater for include:

- Government needs to provide for proper awareness campaigns that can help the small industries to know the value of sustainable development. They should also bridge the financial gap that is required by these industries so that they can uphold the values of the environmental laws without losing their financial viability.
- It is also important that the private agencies and NGO’s facilitate the government in moving towards sustainability. The importance of sustainability needs to be taken in context of increasing the overall trade efficiency of the country and to do that it is important to achieve sustainable value addition in the industries of Pakistan (Hasan, 2006).

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