

# Valuing the Effects of Food Contamination on Human Health and Response from the Legal System of Pakistan

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## Abstract:

If the toxic chemicals are present in the food or fodder items, then it can be termed as food contamination or food pollution. Food contamination affects both human beings as well as animals. Think about the last meal you had and think of all possibilities of there being pollutants in your food. Food pollution is way more common than one likes to think about. As per the research millions of people suffer death per year due to food contamination. While food contaminants are the very substances objects which renders a food unfit for the human eating. This contamination of food might be intentional or even accidental, in case of substances it is often referred into mixing in food by mistake. On the other these contaminants might be the deliberate act of perpetrator to make it bulkier or even weighs more; adding

water to milk for instance. Food contamination can occur through any of the three ways; chemical, biological and physical, it might be a foreign object in our food such as plastic pieces class material, hair or steel can cause contamination in food, chemical substance can be both, artificial as well as natural, pesticides drugs etc. or it might be an organism produced substance which comes under the category of biological contamination.

## Background

Fresh air, pure water, balance diet and healthy environment are essential needs for human health. Balance diet means that diet which is nutritionally useful and provides essential ingredients for the human health. In a balance diet calorie are present according to the need of the body. Therefore, proper amount of carbohydrates, minerals, proteins and vitamins etc. are the mirror-holder of best diet. Physical health, freshness of the face and mental comfortableness are obliged of clean and pure diet. Actually, balance diet is surety of beauty and health and of beautiful personality. Only due to the deficiency of Vitamin A 0.5 million children in the world are partially or completely deprived from eyesight.(Sun, Yun et al. 2017)

## Purpose of the Study and Methodology

The Study under the title of the focus point of “Valuing the Effects of Food Contamination on Human Health and Response from the Legal System of Pakistan” is an attempt to find out the actual situation of food crises and food contamination in Pakistan. Furthermore, the study is aimed to discover the direct nexus between health, life and health food on the touch-stone of health food as a human right. The current study leads toward result of food contamination in Pakistan, the response from the legal system of Pakistan and pinpoints the achievements and causes of its failure. At the end a roadmap is suggested by which if put into practice can make a huge difference for the current generation as well as for the future to come. For the purpose achieve the abovementioned aims and objectives a meta-analytical research technique was adopted, both primary and secondary data was collected and carefully analyzed under various themes, headings and subheadings.

## Introduction

A common observation is that due to financial comfortableness today's man eats more and better food as compared to the humans of quarter

century and people living before but despite of this his health is worse from before and remains distressed in the encircle of wonderful infections. The fact is that the food which man considered to be the best for his health is poisonous which keeps eating human being like weevil from inside. The reason of this is food pollution.(Simon and Buikema Jr 1997) This food pollution has adopted very dangerous shape for the life. Due to the use of polluted food not only human but also marine animals and beasts and birds remains not safe.

Actually, in edible things along with fishes and other animals and birds, several fatal metals and elements enter through pollution. These elements when become the part of food for human and other animals then appears fatal. For example, few years before in Japan in several coastal areas a number of people face the diseases of redness and swollenness of the eyes and nervous breakdown. When this disturbing situation was examined it was founded that the fish ate by the people, in that fish the amount of mercury was high.(Feng, Hu et al. 2015) It should be remembered that mercury is one of the dangerous metals for human health. Ciguatera Poisoning occur in the humans by eating poisonous fishes. These diseases have quick and fatal effects.

In third world countries due to the deficiency of the resources and due to unawareness from the laws of health, food pollution has adopted dangerous shape. In Pakistan even the imagination of pure food is impossible.(Tai, Martin et al. 2014; Murgova, Popovicova; Krcmery and Olah et al., 2022). Apparently the food materials will be prepared according to hygienic principles but in actual they are the target places of diseases. You go to any market food stuff will present openly which can be easily attacked by flies, mosquitos and other harmful insects. The same situation is of the shops of fruits and platter on which the layer of harmful smoke emerges from the vehicles and dangerous dust arises from the

roads remains settled. If it is said that food pollution has penetrated in urban areas and in cities then it will not be improper because in villages getting clean and pure food has become impossible like before.

### Harmful Effects of Food Pollution on Health

For the purpose to come out with exact ratio and estimate of damage caused by food pollution studies was conducted in many parts of the Pakistan. This study showed very wonderful results.<sup>1</sup> (Results is given in the table). This polluted food is very dangerous for human health and in some cases it may result in death as well. A big spectrum of disease may be caused by polluted foods, and may lead you many dangerous health problems. Here are some of the ordinary diseases caused by contaminated food in Pakistan. Following diseases appear as a result of polluted food:

- Food Poisoning
- Cholera
- Brucellosis
- Dysentery
- Diphtheria
- Typhoid
- Tuberculosis
- Ascariasis
- Gastroenteritis
- Hepatitis

### Elements Responsible for Food Pollution

- Microscopic insects
- Coliforms
- Salmonella
- Pseudomonas
- Staphylococcus

**Table 1** Peshawar, Rawalpindi, Islamabad: Selected Foods with Bacteriological Inspection

Types of Food	Contaminated	Satisfactory	Organisms Isolated
Chicken, Mutton, Beef, Eggs, Somosa, Kabab (Cooked Food)	54%	51%	Salmonella, E. Coli, Bacillus, Cerus, Pseudomonas Aerogenosa Fungus
Beef	51%	51%	Clostridium Perferinges, E. Coli Coliforms
Milk And Milk roducts	49%	51%	Salmonella, E. Coli, Bacillus, Cerus, Pseudomonas Aerogenosa Fungus
Fruits And Vegetables	49%	51%	Salmonella, E. ColiColi Forms
Meats And Poultry (Raw)	45%	57%	Pseudomonas Aerogun's Dastridium Perferinges E.Coli, Coliforms, Fungus
Dried Foods	41%	60%	Staph Coagulase Plus Ve Coli Forms, Fungus
Fish And Fish Products (Cooked)	40%	61%	Salmonella, E. Coli, Coli Forms
Cake, Sweet, Pastries, And Biscuit	25%	73%	Coliform, Funguses
Soft Drinks	5.90%	93.15%	Streptococcus's Faecalis
Pickles	21%	79%	Coliform, Funguses

Source: National Institutions for Health Studies Islamabad

<sup>1</sup> One of there was carried out at National Institute of Health Islamabad to assess the Bacterial Contamination in sample collected from Rawalpindi/Islamabad.

**Table 2** Peshawar, Rawalpindi and Islamabad: Food Pollution with Percentages

Food Type	Classes of Hotels/ Restaurants		
	High	Middle	Low
Milks And Milked Products	Nil	10%	-
Meat And Poultryes	8%	11%	-
Fruit And Vegetables	2%	Not Available	11%
Dry Foods	2%	11%	31%
Cake, Sweet, Pastries And Biscuit	Nil	11%	32%
Beef	31%	36%	51%
Chickens	Nil	Nil	53%

Source: National Institute of Health, Islamabad

The above table clearly shows that the contamination contained in the cooked food is comparatively high to fruits and natural foods. The chicken foods which were bought from the low quality shops and other ordinary stores at public place appeared to be more polluted and harmful for health as compare to the food which was properly packed.<sup>2</sup> The samples are much polluted may be the reason behind this is the worst, unsafe and un-healthy water and sanitary system.

### Harmful Metals, Elements, Substances and Chemical Compounds

Few examples are given below;

- Vegetable oil and Banaspati ghee is essential part of our diet. Sometime Banaspati ghee becomes insalubrious when nickel is put more in it from the required amount in its preparation. It should be fixed in the mind that nickel metal is used to convert fatty acid into Banaspati ghee; there is also a food which genetically modified and present in the food which cause diseases.(Garvey 2019)
- Soft drinks and other drinks are the needs of our daily routine. In their preparation several acids, gases and chemical compounds are used. In this citric acid, sulphuric acid and carbon dioxide are worthy to be mentioned.<sup>3</sup> Acid in-

creases acidity in the stomach and become the cause of ulcer and gastric problems.

- In the preparation of sugar a metal called Chromium is used. Due to the excess of its use risk of defect in the digestive system and cancer of lungs could occur.

### Reasons of Food Pollution

- **Improper use of Agricultural pesticides:** To protect edible species and vegetables from insects and vermin and to get more production pesticides are used on them. In market hundred kinds of vermicides are present. Due to their blindly and miss-usage venomousness penetrates into the species and vegetables and finally become the part of food of humans and animals and become fatal for them. A common man is not aware from this fact and is also compel because of the conditions. Thus he loses his immunity gradually and his body becomes the target of certain diseases.
- **Sprinkling of the medicines for preservation of the Food:** For the preservation of species and vegetables several germicides are sprinkle on them. Due to the use of these harmful matters species can be preserved for a period but thereafter the risk of the wastage of hundreds of life due to its harmful effects is possible which is indeed a very costly bargaining. Sim-

<sup>2</sup> Khan M.U. (1986), "&Ctract. from L,cture delivered to Participant. Ist training Course on Enuironmental ManaRlmlnt" NIPA-Peshawar.

<sup>3</sup> John Lucey (06-01-2006). "Management Should Serve as Role Models for Good Work Habits and Acceptable Hygienic Practices". *Food Quality*. Archived from the original on 2007-07-14.

ilarly in the preparation of dope, confect, jam and jelly etc. several chemicals are used that are harmful for human health.<sup>4</sup>

- **Use of dirty water and waste of Irrigation:** Often it is seemed that the crops cultivated near the cities are allowed to be irrigated with the dirty water emerged from industrial areas and other drains. Apparently it is considered to be the best water for the crops but in reality such poisonous substances and heavy metals are present in it that enters into the crops above a limit. When these crops come under the use of humans and animals then they put very bad effects on their health. For a little benefit industrial poisonous and logged water becomes the alarm of danger for the human life, there are some cases were heir are used in foods which not only harmful for health but is forbidden in Islam also.(Wilkinson, Mills et al. 2012)
- **Use of illicit Colours:** Various colours are used in the preparation of different drinks and other dissolved substances. Most colours are actually those chemical materials that are harmful for human health. Under country law several colours are prohibited but nonetheless monger of the human life uses them for selling his products. Also in the preparation of tea and spices these poisonous substances are used painlessly thus invisible diseases take root silently and weevil remain fasten to precious life of human.
- **Wastage of Herbs and Shrubs:** In fields beside the targeted crops such plants grow automatically that get the food of crops from the soil and damage those crops. For the wastage of these herbs apart from other methods chemical medicines mean herbicides are used. These medicines also fall on the actual crops. Thus when these crops are used by the humans and animals then they do not become safe from their harmful effects and the danger pertains to their life.
- **Use of Harmful Utensils:** The use of painted utensils is very dangerous because it contain

substances like lead, nickel and cobalt whose fewer amounts can also damages human life. From the constitution of the utensils certain substances enter into human Body and become the tent of breath and stomach diseases.<sup>5</sup>

- **Presence of Carcinogen in the Food:** Several types of cancer arise due to carcinogen. This material has been found in various chemical and natural shapes in different foods. This poisonous substance also arises by cooking food against hygienic principles.<sup>6</sup> Therefore nitrogen dioxide and carbon monoxide from air absorb in the food during the process of cooking and thus carcinogen arises. As though the lasting effects of the poisoning remains compiled in the same way.
- **Food poisoning:** Food poisoning means infective and addictive effects that produce as a result of eating polluted food. The symptoms of these effects are vomiting, stomach pain, Diarrhea and tiredness etc. Usually these symptoms appear in between 4 to 12 hours however in the foresight of the essence of pollution fluctuation is possible in these timings. Poisoning appears due to following five causative groups:
- **Bacterial Toxins:** This group includes; Bacterial Infectious Group, Parasites, Chemical compounds and Natural poisoning Group.

## Response and Achievement

The growing attitude and awareness about environmental pollution and its effects on human life have resulted in a clear change on the policy, strategy and programs of our state. Prior to this, very little attention was given to environmental protection in 60s, 70s till 1980. A certain change appears in environmental protection laws of Pakistan after Stockholm Conference. Following this Conference the Federal Government of Pakistan turned its attention towards environmental problems and their solution. In this regard in 1972, a meeting was convened by the ministry of presidential affairs which consisted of experts and

<sup>4</sup> "Toxic soy sauce, chemical veggies -- food scares hit Vietnam". *AFP* (Hanoi: Google News). Sep 11, 2007. Available at: <http://www.environmentalpollutioncenters.org/food/>; accessed at 24/05/15.

<sup>5</sup> Various vegetables may get contaminated with toxic bacterial strains (from irrigation water, groundwater, or soil) which may only be destroyed by processing the polluted food at high temperatures. As for the toxic chemicals, they may get into the food causing food pollution in a variety of situations including:

<sup>6</sup> Commission Regulation (EC) No 2073/2005, Official Journal of the European Union, 15 November 2005, Retrieved 7 April 2015

heads of various departments. This committee becomes a reason for the formation of committee on human environment and a task on environmental problems and its solution was assigned to him.<sup>7</sup> The committee submitted that the environmental problems in Pakistan are very complex and severe and for the purpose to combat environmental issues in Pakistan, a comprehensive action plan must be must be lay down. Though in the start environmental legislation is Pakistan was like a mixture of penal, health, agricultural, planning and developmental education and other statutes which were, and to a great extent is still invoked to solve environmental problems.

The problems regarding environment has been controlled by Pakistan, by making laws and rules, creating environmental protection institutions and by improving human resources and technical capabilities through national resources and foreign aid. The constitution of Pakistan grants simultaneous statutory on the federation and the provinces to constitute with regard to ecology and environmental pollution. Pakistan constitution includes laws that contain requirements for the protection of environment. These laws, which were relatively inherited from the British India, are associated with air and water quality, canal irrigation, wildlife protection, land occupation and use,

forest protection, energy development, pesticides use, noise and public health. There are no such statements of principles or policies in regard to the rights and responsibilities of the State and its citizens with respect to the environment in the Constitution of the Islamic Republic of Pakistan 1973. According to the general legislative scheme in regard of issues enclosed in the Concurrent Legislative List, the principal liability lies with the Federal Government. Both the constitutional and executive powers have been defined in the Constitution. Therefore a constant nationwide leadership can be provided by the Federal Government while leaving detailed issues where assumes to each of the province.

The Provincial Governments are independent with respect to the subject areas coming under their horizon.<sup>8</sup> The only restriction to the provincial action is in a few areas that are within the exclusive authority of the Federal Government. These strategic areas are port quarantine; maritime shipping and navigation on tidal waters: major ports and port authorities and fishing and fisheries beyond territorial waters. Insofar in the Concurrent List, however, the Constitution gives priority to Federal Laws over Provincial laws, if the two fight. Article 9<sup>9</sup>, 14<sup>10</sup> and 184(3)<sup>11</sup> and 199(1) (c)<sup>12</sup> are the related articles of the Consti-

<sup>7</sup> GOP, committee on human environment, “„human environment in Pakistan.. Problems prospects and proposal“ Pansdoc Press, Karachi (1998).

<sup>8</sup> Dr. Pervez Hassan, Legislation of Environmental Protection; Trends in the Region and National Legislation, UN Economic & Social Commission for Asia and Pacific (ESCAP) – Environment and Development Series Environmental Management for Sustainable Socio-Economic Development, 1987.

<sup>9</sup> See generally, Article 9 of the Constitution of Islamic Republic of Pakistan, *ibid* [t] hat no person shall be deprived of life or liberty save in accordance with law”.

<sup>10</sup> See Article 14 *ibid*, “[t] the dignity of man and subject to law the privacy of home shall be enviable.”

<sup>11</sup> See Article 184(3), *ibid*, provides Public interest litigation. This article may grant relief to the extent of stopping the functioning of such units which create pollution and Environmental degradation.

<sup>12</sup> See Article 199(1)© provides Public Interest Litigation. This can also protect Environmental degradation by issuing orders to the polluters.

<sup>13</sup> See, Pakistan Law Digest (PLD) 1994 Supreme Court (SC) the brief summary of this case is discussed in Jawad Hassan, Judicial Intervention; Court Grant Relief for Protection of Environmental Rights, 2 Middle East Commercial Law Review 16 (Sweet and Maxwell Pub. UK (1995) (The eventual outcome of this particular case aside, the interim judgment is already of historic significance for various reasons. The case has pioneered in a most un-ambiguous and unequivocal way the protection of Environmental rights and has by the emphasis to their protection, made them fundamental human rights under the “rights to life” and “right to dignity” in the Pakistan Constitution. Particularly elating is the fact that a principle of Environmental law has been accepted and even though the Rio Declaration has not been signed by Pakistan, it seems that this judgment finds it persuasive enough to incorporate Environmental law with the Constitution of Pakistan).

tution of Pakistan 1973 dealing with the protection of environment. These have been used in a milestone environmental law case of the Supreme Court of Pakistan, *Shehla Zia Vs. Wapda*.<sup>13</sup>

It is worthy to be noted that safe and pure food is recognized as one of the basic human right, as it is directly interlinked with right to life; without healthy food no one can even think about health and eventually healthy life. As it is mentioned earlier that constitution of Pakistan 1973 shows less rather no sympathy to environment and health safety, however there are other related laws which dealing with food items which were enacted decades ago namely;

- Pakistan Standard and Quality Control, 1996: The purpose of the Act is to test and inspect the quality of products, its characteristics and specification at the time of use and import export.
- Pure Food Ordinance, 1960: the Act deals with purity and maintenance of fodder items and keeps eye on the adulterated food items.
- Punjab Meat Control Order, 1978: Regulates the grant of licencing, sale and purchase related matters.
- Paddy and Rice Control Order, 1981: The Act regulates the transportation means of Paddy within the specified areas.
- Punjab Sugar Licencing Control Order, 1972: The Act deals with sugar stocks.
- Pakistan Penal Code, 1860: The Code enlists any type of food adulteration and renders it a crime punishable under the Code.

### **Precautions for decreasing Food Pollution**

Our religion gives the teaching of neatness and cleanness and advises to avoid from dirtiness and uncleanliness. In the light of these golden principles it is our duty that we should not only provide clean and foods purified from dirtiness but also perform diligence of its righteous and fine use so that human generation remains persistent. Several preventive steps are shortly discussed:

- A wide range of powers should be given to the ministry responsible for controlling food pollution at even district level. First of all causes of food pollution are examined and proper actions should be taken to control them instantly. In the chase of getting more and more production one should avoid venturing human life.

- Adulteration in agricultural species and making them defective by storing is against Islamic soul. Bad effects lie on the human health due to both these repugnant offenses. Thus society becomes weak and pollution of the environment increases.
- It is not only enough to produce agricultural species clean from germs, insects and infections but scientific methods should be adopted for their preservation. So that these blessings of God may not vanish and to be used for the survival of the living organisms. The research work should be made faster on it in light of modern science.
- Attention shall be given to make foods usable. Whether food is prepared for the humans or for the beasts and birds, Islamic teachings should be adopted in every situation. Cleanliness of the kitchen, personal cleanliness of the cook, cleanliness of the food utensils, use of clean water, drinking and eating with comfortableness and un-concernedness, washing hands and cleaning teeth before and after eating etc., are such golden principles if followed regularly then we can get benefits from these gifts granted by the God and can control food pollution.
- Children eat toffees, bubble gum and chewing gum etc., eagerly, these things contain harmful substances which produce stomach and teeth diseases. Therefore the preparation of such products and their uses should be discouraged.
- Pollution transfers into food by using the utensils used by a bedridden person due to which a healthy person can become infected.
- Not covering mouth and nose during coughing and sneezing, in lakhs of number germs enter into the air. These germs pollute the food of the people setting nearby. Thus diseases get the chance to prosper and health comes in their target and environmental pollution gets promoted whereas one can abstain from this food by taking little care. Good manners can also make the environment delightful.
- It is necessary to wash unripe vegetables and salad etc., thoroughly with water so that they can be preserved from germs and other harmful insects. Moreover to make it tasty pepper and slices are not sprinkled in it in much amount.
- Domestic animals and birds should also be kept neat and clean. If they are dirty and ill then the good health of the family members

will not remain persistent. They should be inoculated according to the fixed timings and during illness they should be treated in veterinary hospitals.

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