

Socio-psychological & legal conflicts: A case study of swat valley

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Abstract: For living a prosperous life mankind needs a suitable environment and peace. If these factors are not available or are disturbed in one way or another then it not will not only result in adverse effect on physical well-being, but it will also affect emotional and mental health of the inhabitants of the area. From last eighteen years a war against terrorism was faced by Pakistan. Although terrorism is controlled but the after effects of terrorism could be still found in the affected areas. And very little work has been done to find the impacts of conflicts on socio-psycho life of the affected population. The current paper is aiming to investigate the consequences of conflict on mental health and natural resources of the conflict suffered areas. This qualitative research with the help of descriptive and evaluative techniques finds out the solution of impacts of conflicts which creates many negative attitude and hopeless future. The current research work is mainly been conducted through primary and secondary sources e. g. official reports, books, articles published in various journals and interviews. The present study actually focusing on the socio-psycho impacts of conflicts in Swat Valley and its demerits, which remained the part the that region for unspecific duration.

Keywords: Mental Health, Terrorism, After-Effects, Socio-Psycho, Conflict, Emotional Health, Natural Resources.

INTRODUCTION

Unlike the progressive activities conflicts cause much more serious threats to the natural and socio-economic system of an area. This is because every conflict fought leaves ruins, causes deaths and pain, spread fear, stress and hatred. In other words, combats always bring threat and danger to life and leave a negative mark on life.

Terrorism not only aims for vicious destruction and corporeal damage. Another purpose is to utilize these acts for making a society frail, fanatical, displeasing and annoying in order to achieve a socio-psychological output in the form of mental and environmental stress. This is why militants target a nation's resilience, its socio-moral values, its morale, unity and administrative bodies. (Khan, 2020)

In 20th century, level of death rates was high because of rise in the death's proportional of civilian as compared to that of the militants. Civilian death rate was double (34 million) in contrast to military death rate (i-e, 17 million) in the World War II. This rise in civilians' deaths were caused by indirect reasons related to ongoing war, these involved lacking of water or unhealthy water supplies. Restricted electricity supplies, poor or non-functional sewerage deteriorating health services with mortality during complex emergencies such as digestive diseases, respiratory infections, new born deaths causes and malaria. (Grundy, Annear & Mirshahi 2008) Along with medical problems, population of conflict affected area suffers from mental health problems such as post-traumatic stress disorder, mood swings and substance use disorder. An analysis of 17 studies conducted on children of post-conflict societies from all around the world shows that post-traumatic stress disorder, anxiety and depression were raised in the effected population. (Levey, Oppenheim & Lange, 2016)

Increase in civil wars was seen about 12% from 1946 to 1991. Due to the development the difference between military targets and civilians are lost, now modern infrastructural war occurs in which the strategic targets are civilian water system. (Grundy, Annear & Mirshahi 2008) Military actions and conflicts produce toxic and harmful waste which infects the sand and water of the area. (Dycus, 1996) In 2007, Swat valley faced the war on terror and on February 2009 the first agreement arrived. According to a report assembled on swat conflict, the total time period of the conflict is said to b 17 months. An operation named as "Raah -i-Haq" was directed by Pakistan's security forces in May, 2009. This operation resulted in immigration of people. Predicted evacuated population of Swat valley was about 1.3 million. These evacuated people returned to their homes on 13 July 2009, when the military action was completed. (Fazal 2009)

As a result of conflict movement, use of heavy machinery, explosives and tree clearing adverse impacts were induced on natural resource of area. Troop's movement also resulted infiltration which causes soil erosion. (Price, 1995)

LITERATURE REVIEW

A number of studies have been conducted to check the impacts of military conflicts in Swat valley. A cross-sectional study, entitled as "psychological distress and its association with the past events in pregnant women affected by armed conflict, in Swat, Pakistan", advocates that conflict exposure give rise to long term effects on the mental health of maternal and their offspring. (Khan, Chiumento, Dherani, M. et al., 2015)

A research study of 2013 stated that Swat valley's conflict have deteriorated to an extent, where these conditions have antagonistic psychological impacts on children. (Shah, Anwar & Hilal 2013) Ahmed, Hussain and Shaheen, 2020 carried out a study on Internal dislocation; association of mental health and education of children of Swat, and acknowledged that children showing high mental issues were those who migrated and were not attending school. A high ratio of stress, anxiety and post-traumatic stress disorder was showed by female as compared to male children.

Sanaullah, 2021 conducted a study to find social impact of the armed conflict in swat valley, which was fought from 2007-2009. For this purpose, interviews and group discussions were carried out in swat valley; the aim of study was to inspect harm done to community life. The results revealed that local institutions, societal values and social relations were dramatically affected. Research carried out by Hendrix & Glaser 2007 in Africa, stated that the climate of disputed areas is mostly affected. The major

changes that can be observed are in temperature and rain fall. Conflict areas are more prone to erosion as compared to area of decreased likelihood of conflict.

Javier and Baez (2007) studied the socioeconomic effects of the genocide of Rwanda and Burundi on Kegara -a north western state of Tanzania. Due to the civil conflicts many people died and others migrated to the neighboring states.

In United States a study was conducted on soil contamination due to use of explosives by using UV and HPLC. After testing the most contaminated soil was found to be of the sites of test and firing range of government security organization. Particles of TNT and RDX were observed in the contaminated soil. For the determination of explosives two methods were used in USEPA first is 8330 and next 8095, but the method acknowledge as best is 8330. This methodology is modified further as 8330 B, it is mostly similar to 8330 but is utilized for determination of low-level contamination. It is acceptable across the world because HPLC with UV and column C 18 are used in it. Standards were prepared with ratio of 2mg/L of explosives and 2ml of each solution with 300 g homogenized soil and extraction of the soil was taken according to USEPA. The used techniques include

- Solid Phase Extraction Cartridge
- Low Level Salting Method.

By utilizing 8330 B the short coming of traditional method was decreased. In contrast to traditional method, 8330 B standard deviation was low. This procedure can be used for checking the issues produced due to explosives-based contaminants. (Felt, et.al, 2008) Sanaullah, 2021 conducted a study to find social impact of the armed conflict in Swat valley, which was fought from 2007-2009. For this purpose, interviews and group discussions were carried out in swat valley; the aim of study was to inspect harm done to community life. The results revealed that local institutions, societal values and social relations were dramatically affected.

Edward et al (2010) measured the bearings of severe bombing on the poverty persistence in Vietnam. Most severe bombing and human's life loss was seen in the war of Vietnam. In contrast to World War II the bombing in Vietnam was three time more severe, and as compare to Korean War bombing was fifteen time more severe. Human capital and physical capital are mainly influenced by the armed conflicts. Post war assessment models predicted that economy of the country come back to its normal flow, there is no long-term effect of war. Technologies, institutes and social outcomes are affected by a war. A comparative study was carried out on heavily bombed area and demilitarized areas of country. Various statistical tests were utilized for data analysis. The magnitude of bombing is estimated by considering non bombing zone and average bombing zone of 32.3 bombs, missiles, and rockets per Km. 0.008 s the calculated result, and it is considerably low. Thus, it was concluded that one of the most heavily bombard area had very small impact on poverty rates of the country. This was because most of the bombing took place, little infrastructure was intact to destroy and fast reconstruction after war using the mass mobilization of labor was done.

RATIONALE OF STUDY

A number of researches have been conducted in Swat valley after the conflict aiming to explore the different impacts of conflicts. Similarly, the current study is decided to be conducted to explore the socio-psychological and environmental impact of conflict. It's been a decade since the conflict of Swat valley has been resolved but how much life has normalized in this area is still not known. Thus, the

current study aims to see impact of conflict and the social, psychological and environmental restoration of life in the region. As previously no such study/ work are done so the current research will provide a lot of useful data regarding the highlighted topic above.

RESEARCH OBJECTIVES

The main aim of the study is to assess the nature, magnitude and extent of the socio-psycho and environmental impacts of conflicts in Swat valley. This will be achieved by concentrating on assessment of following points

- Social impacts of operation and damage done in Swat (Matta).
- Mental health of local people effected due to conflict.
- Analysis of water and soil quality after the operation as well as reference zones of these resources where there had been military operation.
- To develop Geo Information (GIS) reference map to elaborate spatial and temporal intensity and extent of negative impacts of conflicts.

PROBLEM STATEMENT

Historians have emphasized that modern technologies play a vital role in reshaping the impacts of warfare; particularly it influences military personals and civilian population. The capacity of destruction has increased with modern technology and it changed the traditional way of warfare. Due to massive destruction infrastructure of societies and mental health and social life are greatly affected. Now a day's wars in terms of scope and impacts are becoming intra-state and involving more civilian casualties. Militants always have a strong hold on swat valley from the start of the conflict and were of great importance from military's point of view. The proposed study will not only generate the data on the magnitude of the military operation impacts on the soil, water and socio-psycho life of common people but will also be useful in studying and predicting the impacts of military operation in the different regions of world with similar socio-psycho, topographical and environmental condition.

METHODOLOGY

There is a wide range of research methods and technique that can be utilized to explore the environmental effects of military operation in conflict affected region. The current research will be quantitative research. To conduct this study following steps will be taken,

- Scientific literature in the form of research paper and books will be reviewed for all the relevant aspects of purposed research.
- A number of field visits will be conducted to collect the sample of water and soil, to check the contamination caused due to use of explosives.
- Water conductivity, PH, chemical oxygen demand will be checked by using OAKION conductivity meter and JENWAY 3505 PH meter.

PROCEDURE

Water samples were collected from six different streams of Kurray, Behind, Shawar, Depth pani, Shook Dari, Algal villages of Mata in the district of Swat Pakistan. Field visits were conducted for the collection of water samples. Samples were taken from the zone which was affected from bombardment. Water samples were taken from three different points of each selected stream. Two samples were taken from the same point, with the time difference of 30 minutes. The other samples were taken from each selected stream at the short distance of 400 meters. Water samples were collected in clean bottles and each bottle was well labeled. Cap of the sampling bottle was removed carefully to avoid contamination by hands or dust particles in the air by gripping on outside surface with inside surface facing down. Samples were collected from flowing water as recommended by US EPA and sampling bottle was carefully placed in the current facing up stream and filled. Samples were immediately sealed and stored in the ice at 4°C (US EPA) 4.2 Water Analysis. By using standard procedure in laboratory conductivity of ground and surface water sample was measured by using OAKION conductivity meter 10 series by EUTECH.

4.2.2 PH of the ground water and surface water sample was determined by the JENWAY 3505 pH meter in the laboratory by using standard procedure and method. 4.2.3 COD (Chemical Oxygen Demand) was determined in the laboratory. First digester solution was prepared by drying 1.02g of potassium dichromate at 150°C for two hours. Then dry potassium dichromate was added with 33.3g of HgSO_4 and some distilled water in a Volumetric flask. Then 167 ml sulfuric acid was added in the same Volumetric flask and make solution up to 1000ml with distilled water. The average lifetime of digester solution is 3 or 4 months. Then sulphuric acid reagent was prepared by adding 1.1 g AgSO_4 and 1 kg H_2SO_4 in volumetric flask. Finally, COD vials were prepared by adding 1.5ml digestion solution, and then 3.5 ml H_2SO_4 reagent was added. In the end 2.5 ml of water sample was added along the wall of the vial. Prepared COD Vials were put in digester for 2 hours and COD values were measured in spectrophotometer at 420 nm. 4.2.4 TNT determination TNT was determined by using HPLC device. 20 ml of sample was filtered from PTFE 0.45 μm filter. The mobile phase was water and methanol at 50:50 and flow rate was 1ml/min for 20 minutes injection volume of sample was 10 μl and detection was 254nm with UV detector. The Perkin Elmer HPLC (with pump) series 200, C18 columns; 25cm * 4.6cm, 5 μm with detector was used for the detection of TNT. The Results obtained were compared with the standard results.

RESULTS

Different experiments had been conducted on both surface and ground water samples taken from the impacted area to check the impacts of conflicts in the Mata Tehsil of Swat District. The results clearly show that there are no adverse impacts of the conflict in the water quality of area. The PH graph of first sampling visit clearly indicates that the PH value of all the surface water samples of Mata Tehsil is in range of 7.28 - 7.23 which is under the permissible limits (NSDWQ, 2008). The results clearly match the PH of Malakand division determined by F.K Bangash in 2003 (Bangash, et.al 2003). There is no evidence of any contamination due to the military operation or bombing. There is slight increase in the PH value of surface water samples in the second sampling visit because first sampling was done in wet season and the second was done in dry season. Second sampling water PH value are in range of 7.43 - 7.7 which is under the permissible limit (NSDWQ, 2008). Results of ground sampling PH also do not indicate any contamination in the drinking water use by the local residents from any of the well and

pumps in the impacted area. All the PH results are in the range of 6.9 - 7.57 and 7.06 - 7.54 in the both sampling.

Conductivity of the surface water samples from all the collected points of three streams ranges from 190 to 337 $\mu\text{S}/\text{m}$ at different elevations. Which tells no adverse activity in the water and quality of all the three streams was under permissible limits. The results from the second sampling also indicated no adverse impacts of the conflict on the surface water quality in the impacted zone. All the results show slightly decrease in conductivity of surface water samples in the second sampling visit. All the results lie between 179-311 S/m which clearly indicate on adverse impacts of the military operation or bombing on the surface water quality. The first sampling campaign conducted in the wet season has slightly higher EC value then the second sampling campaign done in the dry season. Electrical conductivity depends on the total dissolve solids (TDS) in the water that why sea water has higher EC and distilled water has the least EC value. The higher value of EC in the wet season are due to the increase of TDS run off into the streams and other factor that increase the TDS in the wet season ground water results in range from 410 mg/L to 587 $\mu\text{S}/\text{m}$ and for second sampling visit it ranges between 388 mg/L to 759 $\mu\text{S}/\text{m}$.

The observed COD values in all the 3 streams are varying from 17 to 81 mg/L. The permissible limit of COD for drinking water is 255mg/L. In stream-1 shows an inclined trends in the COD with increase in elevation from 1107 to 1133 meters. The COD of stream-1 varies from 17 mg/L to maximum of 81 mg/L at 1133 meters. Stream-2 COD values varies from 61 mg/L at 1107 meters then the COD value again rises at 1122 meters i.e. 72 mg/L and the value again decrease to 67 mg/L at 1133 meters. At elevation of 1107 meters the COD value of stream-3 is 62 mg/L and it gradually decreases with elevation to a value of 53 mg/L at 1133 meters. The COD values of second sampling campaign in dry season vary from 22 mg/L at 1107 meters to 77mg/L at 1133 meters. Hence the observed COD values in all the 3 streams are well within the desirable limit in both sampling visit (WHO). COD values of surface water samples varying from 17 to 71 mg/L which are also clearly under the WHO permissible limits (Shyamala et.al, 2008).

Ground water samples of impact zones indicate no adverse impact of the bombing on the ground water PH. All the results clearly shows no traces of any contamination or change in the chemistry of the ground water and all the PH values are well with permissible limit (Shyamala et.al 2008). COD PH values of all the samples collected from the houses near impact zones show uneven pattern with decrease in elevation. But ground water results clearly shows seasonal changes in the second sampling done in the dry season and all the PH values are slightly higher than the sampling done in the wet season. Ground water PH of wet season COD values of ground water samples were also well within permissible limits of the WHO and vary from 9 to 53 mg/L.

COD values of all the ground water samples decreases with decrease in elevation except at 1199 meters where the COD values was highest amongst all the samples. TNT determination 2,4,6-Trinitrotoluene (TNT) is the most commonly used explosive since World War 1. Exposure to TNT has been reported to result in serious noxious effects, such as liver injury and noticeable changes in the hemopoietic system producing anemia (Ying Liu et.al 1995). All the surface and ground water samples collected from the impacted area under study were analyzed by using US EPA 8330B method on high performance liquid chromatography. All of the test results indicate no evidence of TNT presence in the surface or ground water samples. The reason might be that all the explosives shells used in the bombing gives a high level detonation and leaves too little residues to contaminate the ground water (Jenkins et.al., 2000) The

expected half-life of 2,4,6-trinitrotoluene in surface waters is 0.16-1.28 hours, based on the rate of photolysis and photo oxidation in sunlit natural waters (Howard et.al. 1991). Possibilities of surface water contamination due to the TNT are very low because of the fact that the selected streams are at some distance from the impacted zone. TNT does not undergo hydrolysis, as demonstrated by the stability of the compound in seawater after 108 days at room temperature (Hoffsommer and Rosen 1973). So the possibility of hydrolysis in water is not possible in case to TNT. If somehow surface water became contaminated with TNT it would have washed out from the area because the current study is conducted after nearly many years of military operation in Mata Tehsil. Photolysis of 2,4,6 trinitrotoluene in aqueous solutions is a well-known phenomenon, which is responsible for the development of pink water and is probably the most important fate process for 2,4,6 trinitrotoluene in aqueous systems (US.PHS, p.101) This may also be the reason for no detection of TNT in the surface water.

CONCLUSION

The current research work revolves around the socio-psycho and environmental impacts of conflicts in Swat Valley of Khybar Pakhtunkawa. The proposed work provides many answers of research questions and opens up the multiple impacts on the lives of the people of that region. The environmental impact was quite stronger because topographically sudden changes occur due to different conflicts and terrorism. While Socio-Psycho impacts are also horrible because people not only suffered lack of medicines and they also faced high rate of death. It was very difficult for them to see their relatives and own people dying due to the lack of basic necessities of life. Due to the war on terror and military operation Rah-e-Haq, mostly eighty percent people migrated from Swat Valley and shifted to the other places of Pakistan.

Due to the environmental impacts, the water lost its natural PH value due to intense bombing and shelling, but ground water does not show any contamination due to terrorist attacks. It is still safe and healthy for human life but the mostly thing occur is to radioactive layers which caused chronic diseases for unspecified time and duration. In the light of some above mentioned experiments, it is clear that though socio-psycho and environmental life of Swat people is suffered, in which environmental damage is healing but the most precious socio-psycho lose can never be materialized. For fit and healthy next generation, it is essential to reduce the terrorism in each and every corner of the globe so that we could get rid from the negative socio-psycho and environmental impacts of conflicts.

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