

Human Conflicts Under Changing Climate and its Impacts on Socio-Economic Growth: A Case Study of Rawalpindi District



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Abstract: Human conflicts due to climate change is becoming main concern of the world. Pakistan economy is facing the climate related issue in the most of the district and villages which lead to the socio economic growth. Most of the areas of Pakistan is facing the issue temperature which lead to the productivity of the land. Hence, a large amount of economic literature investigated human conflicts and its impact on socio economic growth in both developed and developing economies but they lack of few literatures available about different district of Pakistan. Therefore, this study mainly focused on human conflict and its impact on the socio economic growth of selected district Rawalpindi. The data collected for the empirical analysis from 5 tehsils of the district Rawalpindi and the selected population sample size was 150 used in the study and 30 farmers from each district was selected for the study. The results of the study showed that rainfall have insignificant and positive impact on socio economic growth which means that it have insignificant and positive impact on the cost of conflict and on the other side the coefficient value of the temperature is statically significant and positive impact on the behavior of the people which create the issue of the conflicts in the district Rawalpindi. However, this study suggested that government should need to make the policy that can reduce the cost of the conflict and government should need to conduct the awareness program for the people of the district.

Keywords: Cost of conflicts; Rawalpindi 2; Social characteristic, Climate factor; Human conflict

Introduction

Protecting a state's territorial integrity and political sovereignty has historically been equated with its national security and interests. Security of the state traditionally meant defending it from outside military invasion. Threats were formerly solely seen as coming from the militarization or rise in power of the adversarial states. The notion of security for nation-states, however, was enlarged as a result of the conclusion of the Cold War as nation-

states started to face threats of new varieties, altering the general concept of security threats. The challenges that were previously given little to no value, such as environmental degradation, resource shortages, sea level rise, ozone depletion, warming of the oceans, and faster melting of glaciers, made up the new security threats. Although since the 17th Century, scientists around the world started studying about the effects of climate change and proposed different theories, some of which were challenged, while some are held true to date. By

the 19th Century the concept of Earth warming up was welcomed for further research and by 20th century the scientists began explaining the effects of carbon emissions on the temperature of the Earth (Editors, 2017). One of the greatest concerns facing humanity today is climate change. The international community is making significant efforts to halt the process and lessen the harm, but this greatest problem does not appear to be having any less of an impact and Climate change-related developments like these have been connected to altering economic growth, political stability, and human mobility, including concerns with mass urbanisation, the refugee crisis, migration, etc. (Ide, Fröhlich, Donges, & et al., 2019). By 2050, millions of people would experience suffering as a result of the struggle between water scarcity and food shortages, according to the World Bank's research "Groundswell: Preparing for Internal Climate Migration," which was published in 2018. (Rigaud, et al., 2018). Human conflicts due to climate change is becoming main concern of the world. Pakistan economy is facing the climate related issue in the most of the district and villages which lead to the socio economic growth. Most of the areas of Pakistan is facing the issue temperature which lead to the productivity of the land. Human conflicts cause economic losses to societies. These losses are the direct consequence of violence and the foregone choices because people have to fund their conflicts (Bakhsh et al., 2020). Costs of conflicts in the rural areas can have ramifications for the households because they lose agricultural land, livestock, and family assets which consequently increase risk of poverty in those areas. Arias et al. (2014). The main of this study is to focus on the cost of conflict in the district Rawalpindi, Pakistan because most of the people of the district Rawalpindi is involved in the conflicts due to climate change factors. So there is need to dig out the different conflicts that are facing by the people of the district Rawalpindi in the shape of the civil conflict, family conflict, Murder.

LITERATURE REVIEW

The impact of human conflicts under a changing climate on socioeconomic growth is discussed in

this part, taking into account the lessons learned from both industrialized and developing nations.

As the livestock product and service are playing an important role for the human. The livestock inhabit the around about 26% of the ice free land with the one third of the cropland for the feed production as globally. The 40 % percent of the agriculture gross domestic product are produced by the livestock production and livestock provided the 33 percent of the global proteins and 17 percent of global calories consumed. The production activities of livestock are creating the job opportunities for the rural people and livestock are working as major provider for the food, nutritional security and income in developing countries. Therefore, Cheng et al (2022) suggested that livestock production is affected by the climate change and emissions are playing important role in the climate change but by the help of adaptation and mitigation actions that can limit the effects of climate change. Hanlon et al (2021) explained that high impact weather events such as extreme temperatures or rainfall can cause significant disruption across the UK affecting sectors such as health, transport, agriculture and energy and the frequency of high daily temperatures and rainfall increase systematically, while the frequency of very cold conditions (based on days where temperatures fall below 0 °C) is shown to decrease by 10 to 49 days per year.

The Cianconi et al explored that Climate change has an impact on a large part of the population, in different geographical areas and with different types of threats to public health and showed that climate change acts on mental health with different timing. Moreover, climate change also affects different population groups who are directly exposed and more vulnerable in their geographical conditions, as well as a lack of access to resources, information, and protection. Valley Koubi (2018), discussed how climate change acts as a threat multiplier in many places, notably how it fuels conflict in places where agriculture is dependent. In their 2016 study, Koubi et al. made the case that the likelihood of migration in Vietnam, Cambodia, Uganda, Nicaragua, and Peru is substantially influenced by the kind of environmental events like storms

and floods.

Gerdis Wischnath & Halvard Buhaug (2014) suggested that effects of climate change are frequently claimed to be responsible for widespread civil violence and found the little evidence that internal climate variability and anomalies are linked to historical conflict risk in the simple and general manner proposed by some earlier research. The Kristina Petrova(2021) explained that relationship between household experience opportunity is the dominate type of natural hazard related migration. Furthermore, this suggested that the flood hazards are the major reason for expending the live hood of internal migration but on the other side, the other types of the mobility, hazards related migration does not expend the frequency of protest in the migration in case of Bangladesh economy. Bakhsh.et.al., (2020) concluded that the household's assessment of the weather—particularly the temperature, rain, and wind—was important. Additionally, there was a positive correlation between human conflict and temperature. As a result, if the likelihood of temperature increases by 1%, human disputes within families' increase by 0.22%.

Rauf.et.al., (2017) It has been discovered that the Sindh province of Pakistan's resource depletion, population growth, such as overpopulation, poverty, unequal income distribution, and unemployment, act as catalysts

for climate change-related migrations and conflicts. In addition to being the primary contributor to the global warming, greenhouse gases also contribute to warming above the 3 °C threshold globally. There are numerous factors that contribute to climate change and its effects, which include societal collapse and food poverty. However, it is assumed that the way to undermine the agricultural system and disrupt the food supply is through climate change.

METHODOLOGY

This section explains the mechanics of the research study and describes conceptual framework

and data analysis the universe of study, data collection procedure, research design, sample size,

sampling techniques and analytical material.

3.1Theoretical framework:

3.1.1Routine Activity Theory

Routine activity theory, developed by Cohen and Felson in 1979, emphasizes the convergence of three factors that lead to crime: first, a motivated criminal; second, a suitable victim; and third, the absence of a capable guardian. This hypothesis came to the conclusion that victim and offender were both involved in everyday tasks.

3.1.2 Conceptual framework

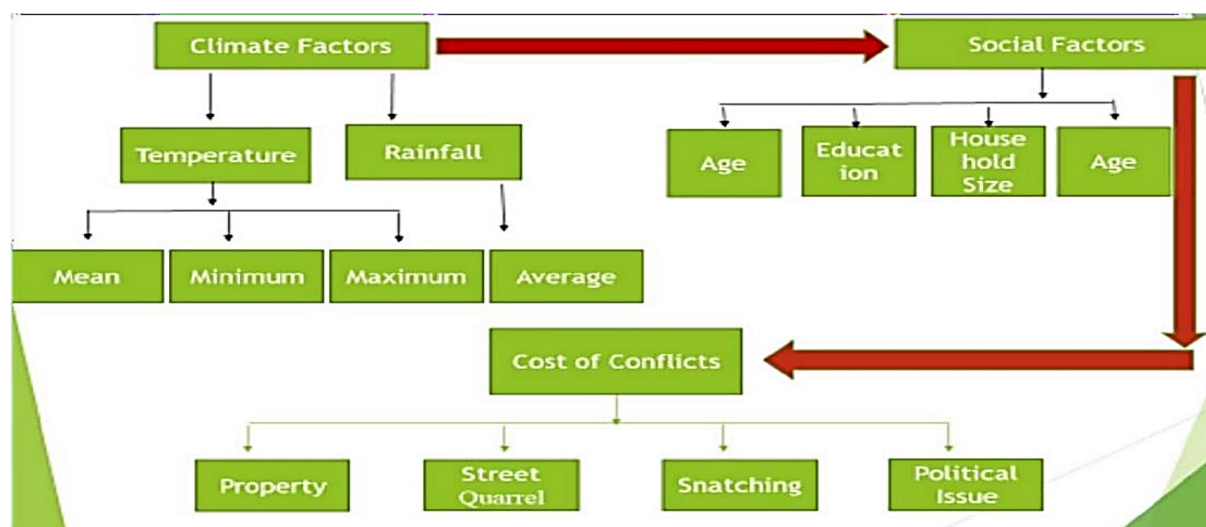


Figure 3.1 The conceptual framework

There are many variables that can affect the cost of conflict. These variables are: socio-economic factors and climate factors. Dependent variable cost of conflict come from social factors and climate change factors, independent variables are, social factors such age, education, household size and other independent variables are climate factor such mean, maximum, minimum and average rainfall. The above diagram show that firstly the climate factor

effects the social factor then it became the part of cost of conflict.

3.2 Data analysis:

3.2.1 Study area:

District Rawalpindi have seven tehsils, Gujar Khan, Taxila, Kahuta, chakari and Kallar Syedan were purposely selected for this study. The Rawalpindi district in Punjab Province, Pakistan is situated 32°08'00"N latitude and 72°67'00"E longitude

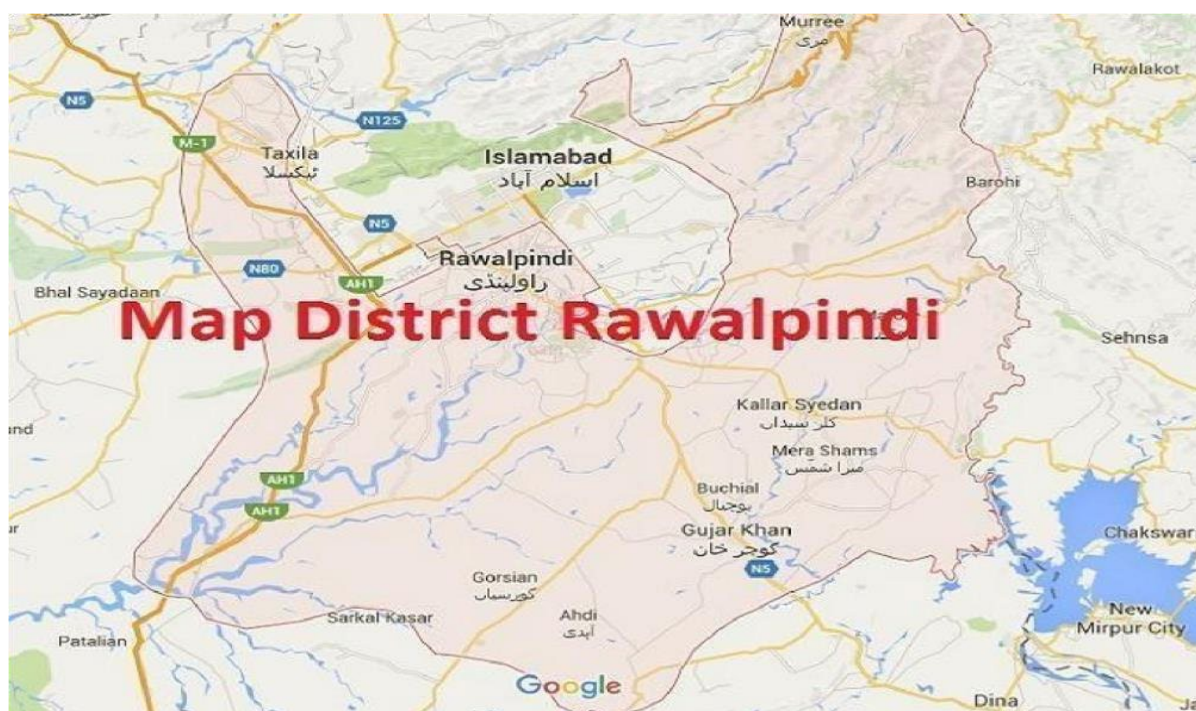


Figure 3.1: Map of Rawalpindi District

3.2.2 Data Collection:

Data for this study were obtained from a primary source; primary data was collected by questionnaire from farmers with the use of a structured interview schedule and guide. In the questionnaire of cost of conflict, information was collected of one has regards, land conflict, and returns of wheat production. Questionnaire was designed according to the objectives of research and questions were composed accordingly in order to collect valuable information. A questionnaire was created to gather linked information from the farmers who were directly and indirectly involved in the

conflict. The survey data contained detailed information regarding cost of conflict

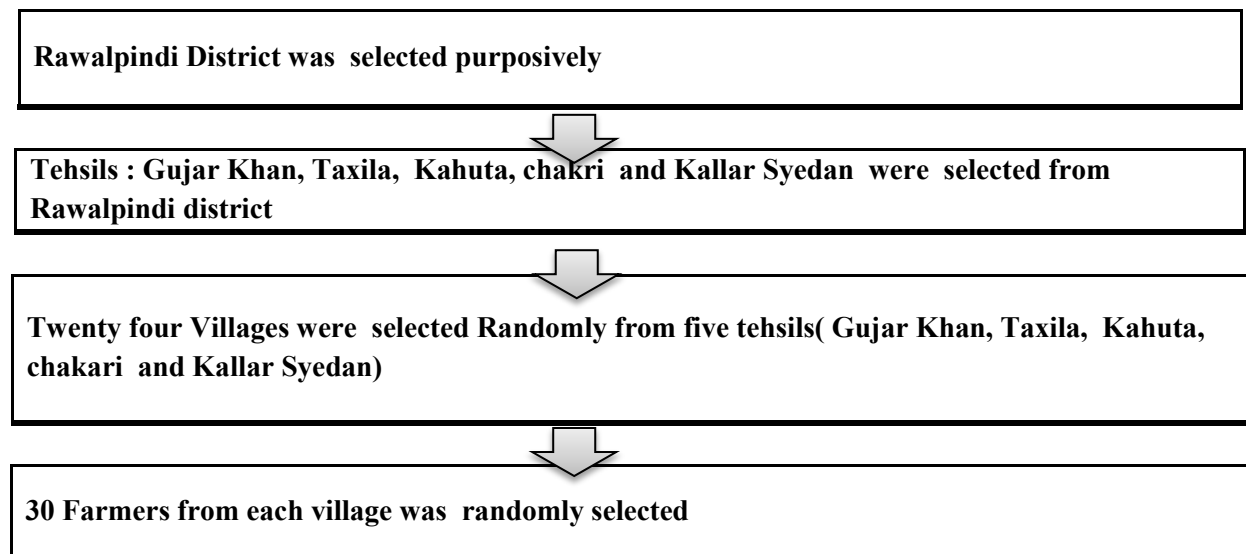
3.2.3 Research Design:

The research design explains the sampling procedure and experimental models. The current section details sampling procedure: collecting data in the field along with the sample size. In addition some empirical models are described which are used for estimating the cost of conflict in the Rawalpindi district.

3.2.4 Sampling techniques:

The purposive random sampling technique was selected for selection of tehsils of Rawalpindi District. The Gujar Khan, Taxila, Kahuta, chakri and Kallar Syedan were selected

purposively.



The sampling procedure consisted of different steps. In the first step, the district Rawalpindi was selected as the main study area. In the second step, tehsils (Gujar Khan, Taxila, Kahuta, chakari and Kallar Syedan) were randomly selected. In the third step, 24 four villages were randomly selected such as Baroothi, Batala, Bhagoon, Bhangali, Boer, Dadhumber, Dehri Dultala, Gagan, Gangu, Jatli,

Jwera, Klaool, Mohra, Mowara, Nara, Nata, Paryal, Shahpur, Sloha, Sukho, Tigiya, Wajna and Wali shah.in fourth step, thirty framers from each tehsil were randomly chosen. Finally, in the last step, we randomly selected and interviewed 30 farmers from each selected tehsil in the district Rawalpindi, resulting in 150 farmers in district Rawalpindi.

3.Sample Size:

For selecting simple size from the population the following was used;

$$n = \frac{N}{1 + N(e^2)}$$

Where:

n = sample size,
N = total number of farmer in District Rawalpindi and
e = level of significance.

3.2.5 Data analysis methods and techniques:

The collected data was coded and entered into the computer for further analysis. The collected data were entered in MS-Excel and analysis was done by using the SPSS software.

RESULTS AND DISCUSSION

Over the past few decades, developing counties are facing the climate related issues in both rural and urban area but mostly the agriculture side area is affected by the climate change and it is

also major role to affect the socio economic growth of the developing economies especially in Pakistan economies, the most of agri-side areas are facing the climate change issue due to change in the mean temperature and rainfall. As the climate of Rawalpindi is so disturbed which create so many issue which lead to disturbed the socio economic growth of this area The study focuses on human conflict and its impact on socio economic growth for selected district Rawalpindi. The primary data comprised 150 respondents of selected 5 tehsils of district Rawalpindi such as Gujar Khan, Taxila, Kahuta,

chakri and Kallar Syedan and the data was collected from different 30 farmers of each tehsils.

3.3 PROFILE OF DISTRICT RAWALPINDI, PAKISTAN

Table 4.1: Age of respondents

The above table 4.1 showed that out of 150 sample, 46 respondents were the age of 40 years and 33 people were the age of 45 years. 22 people were the age of 50 years and 19 people were the age of 35 years. 11 people were the age of 30 years & 55 years. 5 people were the age of 60 years, and 1 respondent were the age of 28 & 47.

Table 4.2: Status of Household

Construct	Frequency	Percent
Not household head	18	12
household head	132	88
Total	150	100

The above table 4.2 showed the status of the household and the data of above indicates that out of 150 sample, 132 people were Household

head. While 18 respondents were not Household head.

Figure 4.2: Tehsil

Construct	Frequency	Percent
Gujjar Khan	30	20
Kahuta	30	20
Kallar Sayda	30	20
Chakri	30	20
Taxila	30	20
Total	150	100

The above table 4.3 data showed the tehsils that were used in the study such as Gujjar khan,

Kahuta, kallar sayda, Chakri, Taxila and where 30 respondent from each Tehsil

Table 4.3: Village:

Construct	Frequency	Percent
Baroothi	8	5.3
Batala	5	3.3
Bhagoon	4	2.7
Bhangali	6	4.0
Boer	4	2.7
Dadhumber	5	3.3
Dehri	7	4.7
Dultala	6	4.0
Gagan	6	4.0
Gangu	5	3.3
Jatli	5	3.3
Jwera	4	2.7
Klaool	4	2.7

Mohra	6	4.0
Mowara	14	9.3
Nara	5	3.3
Nata	7	4.7
Paryal	6	4.0
Shahpur	7	4.7
Sloha	12	8.0
Sukho	6	4.0
Tigiya	4	2.7
Wajna	7	4.7
Wali shah	7	4.7
Total	150	100

The table 4.4 showed the data of the different villages and the data collected by different Villages where highest 14 respondents were

from Mowara village and second highest 12 respondents were from Sloha. Minimum 4 people were from Bhagon village.

Table 4.4: Education of Respondent:

Construct	Frequency	Percent
Graduate	9	6.0
Intermediate	41	27.3
Matric	62	41.3
Middle	20	13.3
Primary	18	12.0
Total	150	100

The table 4.4 showed the collection of data from different tehsils, maximum 62 respondent were matric education, 41 people were intermediate,

20 respondents were middle education, 18 respondents were primary and 9 people were graduate.

Table 4.5: Education of Household:

Construct	Frequency	Percent
Graduate	6	4.0
Intermediate	37	24.7
Matric	56	37.3
Middle	29	19.3
Primary	21	14.0
under matric	1	0.7
Total	150	100

Education of Household Head categories where maximum 56 respondent were matric education, 37 people were intermediate, 29 people were

middle education, 21 respondents were primary and 6 people were graduate.

Table 4.6: Marital Status of respondent:

Construct	Frequency	Percent
Unmarried	4	2.6
Married	146	97.3

The table 4.7 showed the marital status of the respondents, where out of 150 sample, 146

respondents are married and 4 people are unmarried.

Table 4.7: Primary Occupation

Construct	Frequency	Percent
Farmer	83	55.3
Businessman	29	19.3
Employee	38	25.3
Total	150	100

The table 4.8 data showed the occupation of the respondent and the frequency of primary Occupation out of 150 sample, 83 respondents

were Farmer, 29 people were Businessman and 38 respondents were Employee.

Table 4.8: Are you involve in Conflict?

Construct	Frequency	Percent
No	66	44
Yes	84	56
Total	150	100

The table 4.9 data showed that people who are involved or not in the conflict and during the collection of data of total observation 150

sample, 84 respondents were involved in Conflicts and 66 people were not involved in any type of conflicts.

Table 4.9: Type of Conflict:

Construct	Frequency	Percent
no conflict	66	44.0
civil conflict	20	13.3
Family Conflict	56	37.3
Murder	8	5.3
Total	150	100

The table 4.10 data showed the three different types of conflicts such as civil conflict, family conflict and murder conflict. Out of 150 sample, 56 respondents were involved in Family

Conflict, 20 people were involved in civil Conflict and 8 respondents were involved in Murder conflict. While remaining 66 respondents were not involved in any conflict.

Table 4.10: Reason of conflict:

Construct	Frequency	Percent
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no conflict	66	44.0
Property	30	20.0
Land	52	34.7
political issue	2	1.3
Total	150	100

Table 4.11 showed the reasons of the conflict and the Reason of Conflict frequency out of 150 sample, majority 52 respondents were involved in Land conflict, 30 people involved in Property

Conflict and 2 respondents were involved in Political Issue. While 66 people were not involve in any conflict.

Table 4.11: To whom conflict:

Construct	Frequency	Percent
no conflict	66	44.0
husband wife	2	1.3
Brothers	13	8.7
Uncle	35	23.3
sister brother	8	5.3
Others	26	17.3
Total	150	100

The Table 4.12 showed the data of these people to whom conflict. To Whom conflict out of 150 observations, Majority 35 respondents were involved with Uncle, 13 respondents were

involved with Brothers, 8 people were involved with Siblings, 2 respondents were involved with Spouse and 26 respondents involves with others like neighbors etc.

Table 4.12: Do you know harsh weather conditions impact the human behavior?

Construct	Frequency	Percent
No	10	6.7
Yes	140	93.3
Total	150	100

The table 4.13 showed the data of those people who are affected or not by the weather condition Out of 150 sample, 140 respondents agreed that

Harsh weather condition impact human behavior and 10 people not agreed with this.

Table 4.13: Land information after conflict:

Construct	Frequency	Percent
no conflict	66	43.3
Increase	13	8.7
Decrease	71	48.0

Table 4.14 showed the data of land information after the conflict .After the collection of data 150 sample, Majority 71 respondents decrease land after conflict and 13 people increase land after

conflict. While 66 respondents not effected by land because they were not involved in any conflict.

Table 4.14: Invest on Land/Farm input Wheat crop production Tehsil Gujjar Khan (Rs/acre):

Particulars	Cost
Land preparation (Rs per acre)	10000
Seed (Rs.)	3700
Fertilizer (Rs.)	12000
Irrigation cost (Rs.)	5500
Plant Protection (Rs.)	5500
Harvesting (Rs.)	23000
Yield (Rs/mond)	2200

Table 4.15 showed the data of investment on different inputs in the tehsil Gujjar khan. The Invest on land input Wheat crop production Gujjar Khan average cost Per Acre, Land Preparation cost per acre Rs. 10,000, Seed cost

Rs. 3,700, Fertilizer cost per acre Rs. 12,000, Irrigation Cost Rs. 5,500, Plant protection cost per acre Rs. 5,500 and Harvesting cost per acre Rs. 23,000, Yield Rs/mond 2,200.

Table 4.15: Invest on Land/Farm input Wheat crop production Tehsil Taxila (Rs/acre):

Particulars	Cost
Land preparation (Rs per acre)	9000
Seed (Rs.)	3500
Fertilizer (Rs.)	11500
Irrigation cost (Rs)	5500
Plant Protection (Rs.)	5800
Harvesting (Rs.)	22000
Yield (Rs/mond)	2200

Table 4.16 showed the data of the investment on the inputs in the taxila .The Invest on land input Wheat crop production Taxila Average Cost Per

Acre, Land Preparation cost per acre Rs. 9,000, Seed cost Rs. 3,500, Fertilizer cost per acre Rs. 11,500, Irrigation Cost Rs. 5,500, Plant

protection cost per acre Rs. 5,800 and Rs/mond 2,200.
Harvesting cost per acre Rs. 22,000, Yield

Table 4.16: Invest on Land/Farm input Wheat crop production Tehsil Kahuta (Rs/acre):

Particulars	Cost
Land preparation (Rs per acre)	9000
Seed (Rs.)	3500
Fertilizer (Rs.)	12000
Irrigation cost (Rs)	5000
Plant Protection (Rs.)	5500
Harvesting (Rs.)	20000
Yield (Rs/mond)	2200

The table 4.17 data showed the investment on inputs in the tehsil kahuta .The Invest on land input Wheat crop production Kahuta Average Cost Per Acre, Land Preparation cost per acre Rs. 9,000, Seed cost Rs. 3,500, Fertilizer cost per

acre Rs. 12,000, Irrigation Cost Rs. 5,000, Plant protection cost per acre Rs. 5,500 and Harvesting cost per acre Rs. 20,000, Yield Rs/mond 2,200.

Table 4.17: Invest on Land/Farm input Wheat crop production Tehsil Chakri (Rs/acre):

Particulars	Cost
Land preparation (Rs per acre)	10000
Seed (Rs.)	3500
Fertilizer (Rs.)	12000
Irrigation cost (Rs)	5000
Plant Protection (Rs.)	5000
Harvesting (Rs.)	20000
Yield (Rs/mond)	2200

The above table 4.18 ahowed the data of the tehsil chakri where the investment on land input have different cost. The Invest on land input Wheat crop production Chakri average cost Per Acre, Land Preparation cost per acre Rs. 10,000,

Seed cost Rs. 3,500, Fertilizer cost per acre Rs. 12,000, Irrigation Cost Rs. 5,000, Plant protection cost per acre Rs. 5,000 and Harvesting cost per acre Rs. 22,000 Yield Rs/mond 2,200.

Table 4.18: Invest on Land/Farm input Wheat crop production Tehsil Kallar Sayda (Rs/acre):

Particulars	Cost
Land preparation (Rs per acre)	9000
Seed (Rs.)	3300
Fertilizer (Rs.)	11500
Irrigation cost (Rs.)	5000
Plant Protection (Rs.)	5500

Harvesting (Rs.)	20000
Yield (Rs/mond)	2200

The above table 4.19 showed that investment on land input. The Investment on land input Wheat crop production Kallar Sayda average cost Per Acre, Land Preparation cost per acre Rs. 9,000, Seed cost Rs. 3,300, Fertilizer cost per acre Rs.

11,500, Irrigation Cost Rs. 5,000, Plant protection cost per acre Rs. 5,500 and Harvesting cost per acre Rs. 20,000, Yield Rs/mond 2,200.

Table 4.19: Mean monthly cost of interpersonal conflicts (Rs/month):

Particulars	Minimum	Maximum
Registry Fee	4000	4500
Lawyer Fee	30000	40000
Travelling Cost	2000	4000
Family members visiting court (#/month)	1	2
Time consumed (h/month)	4	6
Number of inquiry/months	1	2

The above 4.20 table showed the cost of interpersonal conflict as mean monthly. The information regarding cost paid by the people to court matters shows that people need to pay registry fee, lawyer fee, traveling cost Rs 4000, Rs 30000, Rs 2000 respectively. Minimum 1 person and maximum 2 people were bound to visit the court in a month. This information shows that during the visit people spent minimum 4 hours and maximum 6 hours at court in a month. People visit court at least 1 time in a month.

CONCLUSION

Currently, developing nations are facing the issue of climate change and it's also impact on the socio economic growth of the developing nations in the form of the conflicts it can be civil conflict, family conflict and murder etc. In the scenario, the foundation of this research is to investigate the impact of human conflicts on the socio economic growth in selected district. The primary data were used and 150 farmers selected from the district Rawalpindi different tehsils such as Gujar Khan, Taxila, Kahuta, Chakri and Kallar Syedan. The empirical model used in the analysis was binary in shape and the estimation technique was a logit model. Cost of conflict is

the dependent variable, socio economic growth and climate change is the explanatory variables. Furthermore, the result of this research is econometrically efficient for the policy implication. In estimated models, the slope coefficient of rainfall is a statically insignificant and its impact on socio economic growth is positive which means that if the rainfall has some up and down then it will automatically effect on socio economic growth. Similarly, the coefficient of temperature is positive and statistically significant which indicates that an increase in temperature has a positive impact on socio economic growth which means that an increase in temperature has an effect on socio economic growth which effect the socio economic growth in terms of quality of life. As the developing countries are facing the human conflicts in different regions of the developing nation mostly the agriculture side of these developing nations

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